FINAL REPORT

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ADOPTED OCTOBER 27, 2010

2035 Long Range Transportation Plan Update

Livable Community Reinvestment Plan

Submitted to:
Metropolitan Transportation Planning Organization
for the Gainesville Urbanized Area

Submitted by:
Renaissance Planning Group

In association with:
Cambridge Systematics, Inc. & Data Transfer Solutions

2035 Long Range Transportation Plan Update

Livable Community Reinvestment Plan

Adopted October 27, 2010 by the
Metropolitan Transportation Planning Organization
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Prepared by the
North Central Florida Regional Planning Council
with assistance from the
Florida Department of Transportation, District 2

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Introduction

The Year 2035 Long Range Transportation Plan (LRTP) for the Gainesville Urbanized Area, referred to as the "Livable Community Reinvestment Plan," is a strategic document for multimodal transportation strategies and priority investments to support and strengthen the area's economic vitality, improve connectivity of people and freight to their desired destinations, enhance the quality of life for people of all ages and abilities, and preserve the community's environment. The Year 2035 Livable Community Reinvestment Plan was developed and adopted on October 27, 2010, by the Metropolitan Transportation Planning Organization (MTPO) for the Gainesville Urbanized Area, the agency responsible for the continuing, comprehensive, and cooperative urban transportation planning program for the Gainesville Metropolitan Area. This planning program is required in order to receive federal and state funds for transportation projects.

The MTPO's voting members include the Mayor of the City of Gainesville, the six City of Gainesville Commissioners and the five Alachua County Commissioners. The membership composition is established by the Governor. Non-voting (ex-officio) advisory members of the MTPO include the University of Florida, District Two of the Florida Department of Transportation and a rural advisory member representing the municipalities in Alachua County located outside of the urbanized area boundary.

The plan entails two main elements: a Needs Plan and a Cost Feasible Plan. The Needs Plan charts a strategic direction for how the MTPO and its partners will achieve important mobility and accessibility goals over the next 25 years. The Cost Feasible Plan identifies priority transportation projects, and their associated costs, that can be funded by the estimated year of expenditure using projected revenues from a variety of federal, state and local sources over the planning horizon. The LRTP must meet certain established federal requirements to maintain the MTPO's eligibility to receive federal transportation funding. As such, the LRTP is the foundation of the MTPO's transportation planning process, and provides a vision for regional and local mobility and accessibility to address the needs and priorities within the urbanized area.

Growth Forecasts

Alachua County and the City of Gainesville serve as the economic hub of an 11-county region of North Central Florida. University of Florida, Shands Hospital, the Veterans Administration Hospital, the Gainesville Regional Airport, the federal courthouse and other important downtown destinations are among the employment centers that attract workers and visitors from across the state and the largely rural and suburban surrounding counties. In addition, commercial centers like the Oaks Mall and Butler Plaza, located near Interstate 75 interchanges, attract people from many of the counties surrounding Gainesville. The presence of the University, in particular, is expected to continue fueling growth in Alachua County through its research and educational activities, as well as the attraction it represents to its many alumni and people who enjoy the benefits of living in a college town community. The natural lands, springs and waterways surrounding the community also attract residents, tourists and visitors seeking the beauty of the North Florida environment. In addition, the presence of Interstate 75 provides regional access to Gainesville and Alachua County, fueling a substantial amount of commercial and residential growth around its interchanges and along the state roadways connecting to the interstate.

The environmental context of Alachua County serves as a critically important consideration in the development of the Year 2035 Plan. From the Santa Fe River, and numerous natural springs on its northwestern boundary, to Paynes Prairie on its southern boundary, much of Alachua County consists of wetlands, protected lands and aquifer recharge areas. This setting presents challenges for conventional highway projects and also shapes where growth can occur in the future. As a result, land use and transportation in this community require careful thought and a consistent policy framework to guide future growth in a responsible manner.

As the graph in **Figure SR-1** shows, Alachua County is projected to add nearly 70,000 people and 50,000 jobs by the year 2035. This projection is based on the land development capacity and growth areas defined through adopted city and county comprehensive plans, prepared consistent with Florida's Growth Management legislation. This growth is expected to result in about 320,000 people and 190,000 employees in Alachua County in 2035.

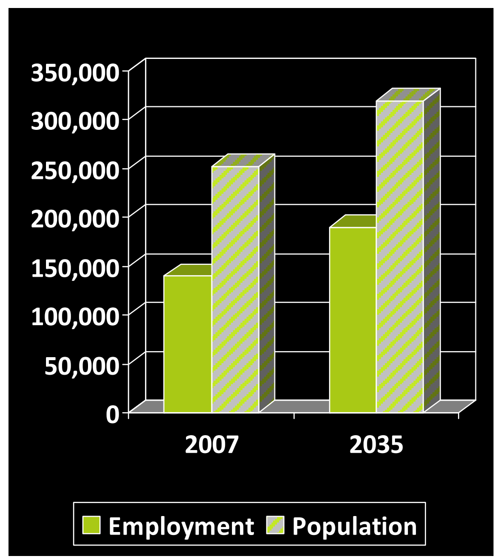
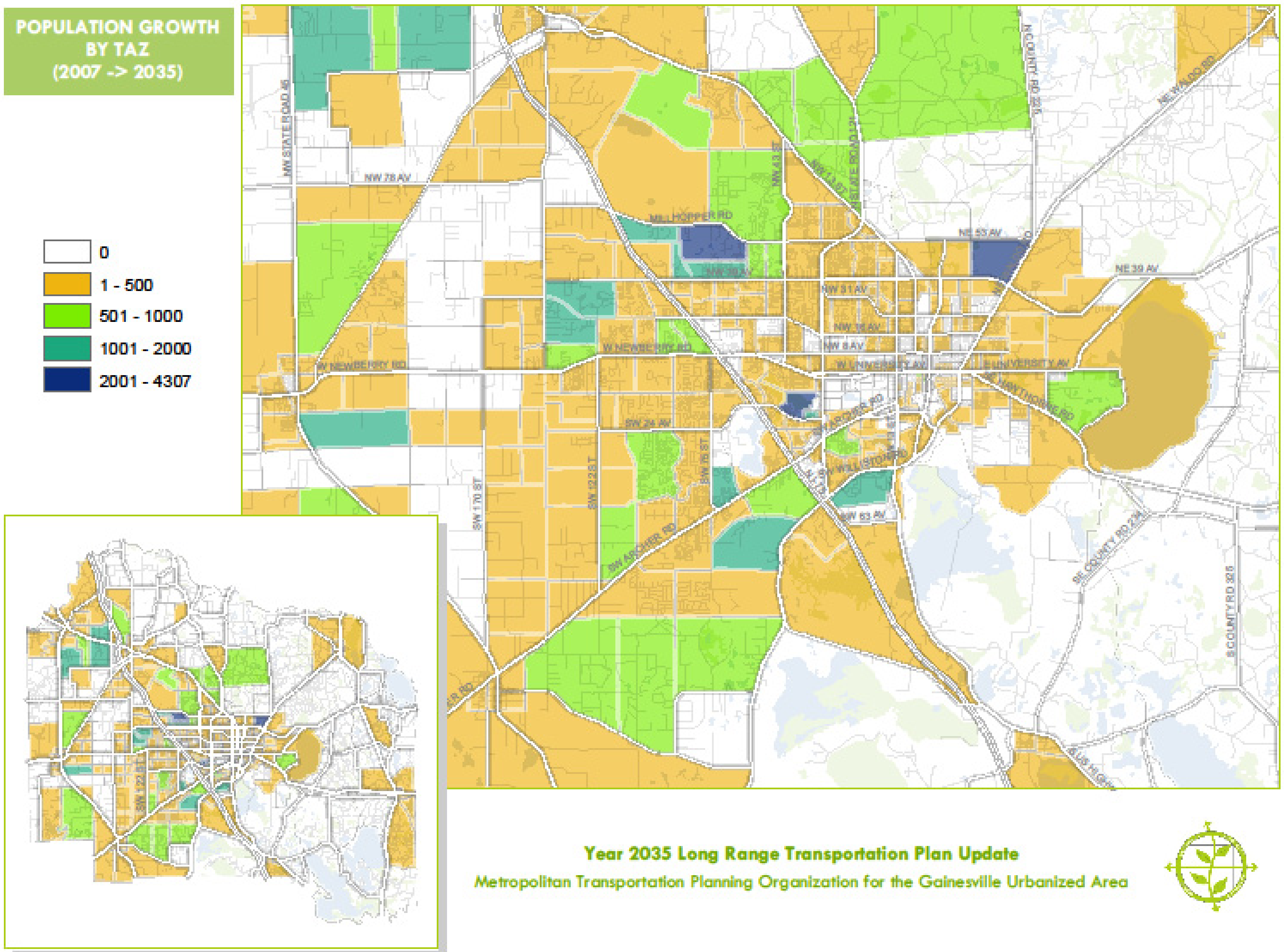


Figure SR - 1: Countywide Growth to 2035

Map SR-1 illustrates where population growth is expected to occur in the County through the year 2035. These projections were developed by the staff of the MTPO in cooperation with City of Gainesville, Alachua County, the University of Florida and other agency staff, reflecting adopted plans with land use, redevelopment and economic development policies guiding the location and intensity of future development.

Map SR - 1: Population Growth by Traffic Analysis Zone (TAZ), 2007 - 2035



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Map SR-1 shows the anticipated increase in population between 2007 and 2035, as reflected in the adopted City and County Comprehensive Plans, along with known plans for private development. A similar map was developed for employment growth. As indicated in the maps, much of the growth is expected to occur along the I-75 corridor, near the NW 39th Avenue, Newberry Road, Archer Road and Williston Road interchanges. There is also substantial growth anticipated along the US 441 corridor in the northern part of the Gainesville Metropolitan Area, and generally along North 39th Avenue. These two areas are trending toward attracting a larger share of employment growth, reflecting good regional accessibility via I-75 and access to the Gainesville Regional Airport. There is also considerable population growth occurring in the outlying cities of Alachua County, particularly around Newberry, Alachua and High Springs.

Planning Context

Planning Factors

The Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) is another important guide to the MTPO's transportation planning process. This federal law authorizes funding for metropolitan areas, and requires plans to be developed that reflect consideration of the following eight planning areas to be eligible for funding:

- Support the economic vitality of the region by enabling global competitiveness, productivity and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;
- Increase the security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operations; and
- Emphasize preservation of the existing transportation system.

The goals, objectives and performance measures developed for the Year 2035 Livable Community Reinvestment Plan are consistent with the SAFETEA-LU planning factors, and the factors were considered in developing both the Needs Plan and Cost Feasible Plan. In addition, since taking office in 2009, the United States Department of Transportation under the Obama Administration has emphasized livability in the transportation planning process. This includes establishing a formal partnership between USDOT, the Housing and Urban Development (HUD) department and the Environmental Protection Agency (EPA) to advance livability principles in an integrated way.

Peak Oil

There is increasing concern about the future of the worldwide oil supply and the effects of a decline in oil production. In February 2007, the United States General Accountability Office released the report, *Crude Oil: Uncertainty about Future Oil Supply Makes It Important to Develop a Strategy for Addressing a Peak and Decline in Oil Production*. The report laid out a sobering assessment of the United States' vulnerability to this geologic phenomena and lack of a national, state or local plan to deal with the economic and social consequences. Further, the Alachua County Energy Conservation Strategies Commission identified planning for peak oil production and decline as a major concern for the County's transportation future and requested that the MTPO incorporate consideration of peak oil scenarios in the Year 2035 LRTP. Specifically, the MTPO chose to review and test peak oil production and decline variables to determine potential future transportation and land use scenarios necessary to mitigate local effects and to recommend alternatives to accomplish transportation and land use mitigation strategies. The results of the peak oil analysis are described in the full report, and the recommended strategies are incorporated in the Cost Feasible Plan.

Growth Management

Two recent state laws – Senate Bill (SB) 360 and House Bill (HB) 697 – that emphasize the integration of land use and multimodal transportation strategies provide a backdrop for a substantial shift in transportation policy. HB 697 (2008) requires that local governments incorporate strategies to reduce greenhouse gas emissions (GHG) in their future land use, housing and transportation elements. SB 360 (2009) provides for changes to development and transportation concurrency requirements, especially for areas designated as "Dense Urban Land Areas" (DULA) as defined in the bill.

Vision Statement, Goals and Objectives

With that context, the Year 2035 update of the Livable Community Reinvestment Plan began with development of a vision statement designed to reflect a desired approach to resolving transportation issues in the Gainesville metropolitan area. The MTPO crafted the vision statement to be consistent with the approach taken for mobility strategies in the local government comprehensive plans, as well as the goals of transportation planning in a community that is a major regional destination with a major university, health care facilities and significant natural resources.

Vision Statement

The Gainesville Urbanized Area will have a multimodal transportation system that integrates land use and transportation planning and investments to promote community well-being through good and healthy relationships with the region's other communities and natural systems. Specific outcomes will be:

1. sustainable, safe, secure, energy efficient and livable land use patterns and complementary context-sensitive transportation networks that provide mobility choices within and between compact, mixed-use, multimodal-supportive development;
2. balanced east-west Gainesville Urbanized Area growth to reduce socioeconomic disparity through increased transportation mobility and accessibility;
3. transportation infrastructure investments that direct growth to existing infill and redevelopment areas;
4. greenbelts to preserve natural and agricultural lands between all municipalities in the Alachua County region through compact land use patterns served by express transit service and park-and-ride facilities; and
5. a network of Rapid Transit Facilities connecting regional employment centers in order to enhance the economic competitiveness of the area.

Goals

An important guide to the development of the Year 2035 plan update entailed creation of goals, objectives and performance measures that support the vision statement. These served as the basis for identifying projects contained in the Year 2035 Needs Plan, as well as the evaluation of Needs Plan projects to develop an initial list of priority projects for consideration in the development of the Year 2035 Cost Feasible Plan. Each goal statement is supported by a series of measurable objectives, which are detailed in the Public Involvement chapter of the final report. These objectives provide the MTPO with a useful guide for integrating the Long Range Transportation Plan with the Congestion Management Process and development of the Transportation Improvement Program, while also providing benchmarks for measuring the long-term success of the LRTP.

Goal Statement 1: Economic Vitality and Community Livability

Plan and invest to develop and maintain a comprehensive, multimodal transportation network for the Gainesville Urbanized Area that promotes economic vitality, community livability, and increased housing-employment proximity.

Goal Statement 2: Sustainable Decision-Making and Preservation

Develop and maintain a sustainable transportation system that supports and preserves the existing transportation network through integrated land use and transportation decision-making that results in compact development patterns, preservation of environmental, cultural and historic areas, reduced demand for oil, and lower greenhouse gas emissions.

Goal Statement 3: Safety for Mobility and Accessibility

Develop and maintain a safe transportation system that supports increased mobility and better accessibility for all users and neighbors of transportation facilities and services.

Goal Statement 4: Security and Resilience

Develop and maintain a transportation system that secures the ability of the Gainesville Urbanized Area to prevent, respond to, and recover from crime, disaster, and other adverse conditions with resilience.

Goal Statement 5: Transportation Network Management and Operations

Improve system management, operations, coordination and communication to make sound transportation decisions that reflect wise use of financial resources.

From these goals and objectives, evaluation measures were defined to develop a ranking list of the projects in the adopted Needs Plan. A point system was developed for each measure, and projects receiving the most points ranked highest. This ranking list provided initial guidance to MTPO staff and the advisory committees about which projects should be advanced for funding consideration in the Cost Feasible Plan. The results of this step in the process are detailed elsewhere in the final report.

Study Process

The development of the Year 2035 Livable Community Reinvestment Plan included both technical and policy considerations that were integrated with a public participation program designed to obtain input and guidance on key mobility and accessibility issues, and feedback on transportation strategies as the plan evolved. Of particular significance, the development of the Year 2035 plan was aligned with the development of the University of Florida's Campus Master Plan Transportation Element for the 2010-2020 horizon. The two plans benefitted

from shared technical analysis and public participation activities to promote a consistent transportation planning approach for the entire community.

Public Participation

The foundation of the plan update entailed a public involvement plan to provide various opportunities through which the community could learn about the transportation planning process and provide their input and ideas for the Gainesville Urbanized Area's future. The goal was to obtain substantive and broad-based feedback on transportation issues and options to build consensus on solutions that best reflected the varied needs and interests in the area. To achieve this goal, the public involvement plan included a range of public engagement mechanisms, including community workshops, focus groups, stakeholder meetings, and a project website. Each was used in various ways to shape the plan.

A series of small group discussions helped shape the context for development of the plan, involving groups like the Transportation Disadvantaged Coordinating Board, the Community Traffic Safety Team, the Business Community Coalition and the East Gainesville Development Task Force to understand transportation issues and ideas. A series of other meetings and presentations focused on transportation issues and opportunities at the University of Florida, environmental and sustainability issues, comprehensive plan changes and the ideas of young leaders in the community.

Major project milestones included a series of three community workshops. The first workshop focused on transportation issues and opportunities, coordinated with the Regional Transit System's 10-year Transit Development Plan, which entailed a mapping exercise to identify problem areas and potential solutions, along with a survey of issues and perspectives relating to transportation. The second community workshop provided guidance for development of transportation network alternatives for evaluation, and identification of potential responses for peak oil and climate change. The purpose of the workshop was to identify how to better connect people and destinations in the Gainesville area to various modes, determine the best ways to address the potential effects of peak oil production and greenhouse gas emissions on the transportation network, confirm how to know if the transportation plan is effective and what should be measured, and identify safety concerns and strategies to address them. A final workshop was held following adoption of the Needs Plan to help identify priorities for consideration in development of a recommended Cost Feasible Plan. The key objectives of the workshop were to have participants identify how transportation dollars should be allocated among roadway, transit, and trail projects, weigh in on how their priorities would change in response to very high gas prices under a peak oil scenario, and identify what projects will help ensure that the MTPO reaches its transportation goals in the Gainesville area.

Development of the Year 2035 Needs Plan

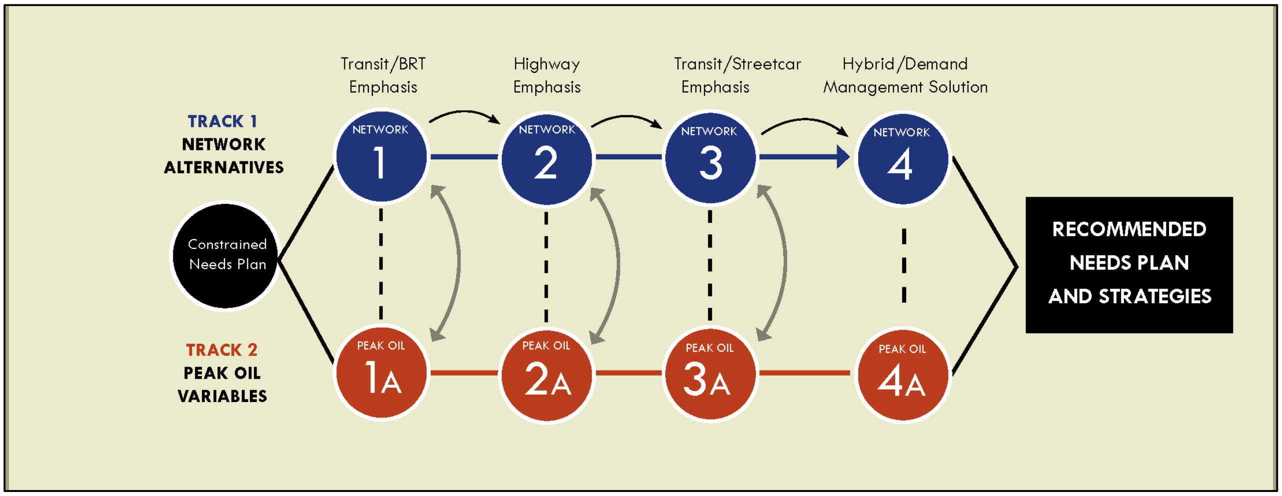
The Needs Plan is an important document in the development of an urbanized area's Transportation Plan because it reflects the implications of growth trends and land use/development policies on the transportation network. It also provides a useful vision to guide how the transportation network should evolve over time to best serve the region's mobility and accessibility needs, and serves as the foundation for adoption of a Cost Feasible LRTP that reflects projected funding sources available for transportation projects in the Gainesville Metropolitan Area.

In addition to the public participation component described above, a newly validated Alachua Countywide Travel Demand Model provided an analytical basis for projecting and evaluating alternative transportation networks, including testing the effects of peak oil implications on travel behavior. An accessibility analysis evaluated land use and transportation network characteristics for consideration in developing the Needs Plan. These methods and their results are described elsewhere in the final report.

Working with the local government staff and other agencies, MTPO staff developed allocations of population, dwelling units and jobs for the 560 traffic analysis zones (TAZs) in the Alachua County Travel Demand Model. The population and employment allocation was developed for a 2007 base year for use in validating the countywide travel model, which served as a foundation for projecting growth in TAZs through the year 2035.

As shown in **Figure SR-2**, the MTPO identified four alternative transportation networks that would be tested to develop the Year 2035 Needs Plan: a Bus Rapid Transit emphasis, a highway emphasis, and streetcar emphasis. A fourth hybrid alternative blended the best of those elements for the Needs Plan (details about each of the four alternatives are provided in a separate chapter of the final report). In addition, the LRTP was to "review and test peak oil production and decline variables so as to determine potential future transportation and land use scenarios necessary to mitigate local effects of peak oil; and recommend alternatives to accomplish transportation and land use mitigation strategies." A single year 2035 land use scenario based on the adopted local government comprehensive plans was used instead of testing land use and transportation scenarios given the recent overhaul of Alachua County's growth management plan around a planned BRT network.

Figure SR - 2: Testing Alternative Networks for the Year 2035 LRTP



An accessibility analysis that examined the availability of various land use and transportation factors supporting use of non-auto travel modes served as a basis for testing peak oil and guiding the development of Year 2035 Needs Plan transportation projects. The accessibility analysis was employed to help the MTPO consider and answer a key question for development of the plan:

Should transportation investments be made to reinforce and support future growth in the core part of the urbanized area where transportation alternatives already exist, or should transportation investments be made to improve accessibility and mobility in the urban periphery or outlying areas, where much of Alachua County's future growth is expected to occur in the future?

To address that question, a GIS-based model was developed by coding all of Alachua County into 10-acre grid cells and then evaluating the land use and transportation network characteristics within ½ mile of each cell for a range of variables to derive a cumulative cell score that measured its relative accessibility. The factors are detailed in a separate chapter of the final report. Natural breaks in the data were used to divide the grid cells into low, medium or high accessibility areas. This analysis indicated that the core area around downtown Gainesville and the University of Florida provided a relatively high level of accessibility. Areas of moderate accessibility generally fall within the city limits, primarily east of I-75, and in the cities outside of the urbanized area. Much of the remainder of Alachua County was classified as having low accessibility, including much of the rapidly growing western areas of the county. While about 55 percent of countywide employment is in highly accessible locations, less than 30 percent of dwelling units are in such areas. In fact, from 2007 to 2035, the percentage of dwelling units in highly accessible locations actually declines by three percent; those in low accessible areas increase almost 15 percent. Clearly, that's not a desirable direction.

The analysis also reveals that strategic investments in public transportation services and other infrastructure can reverse this trend. As indicated in the detailed summary, the alternatives focusing on transit expansion – the Bus Rapid Transit network included as part of Alternative 1 and the BRT plus streetcar network included in Alternative 3 – help to slow the trend of increasingly lower levels of overall countywide accessibility by returning the percentages closer to their 2007 existing condition. Without adjusting future land use patterns for this analysis, the accessibility summary clearly reveals the influence of smart transportation investments, as well as the potential implications on vehicle miles traveled, greenhouse gas emissions and the time spent commuting to work or traveling for other purposes.

The implications from the accessibility analysis relate directly to policy and investment decisions to be made by the MTPO, Alachua County and the City of Gainesville. As described above, should transportation investments go toward improving accessibility in those outlying, high growth areas, or should future growth (as encouraged with targeted transportation investments and supporting land use policies) occur within the high and moderate accessible locations that have the redevelopment and infill development potential to support higher densities? The accessibility matrix in **Figure SR-3** illustrates one of the key objectives of the plan, which is to move people and jobs from the upper left hand part of the matrix into the lower right hand area, largely by making transportation investments and adjusting land use policies where needed.

Figure SR - 3: Accessibility Matrix for Planning Strategies

		Transportation Accessibility		
		Low	**Medium**	**High**
Land Use Sustainability	**Low**	Area with poor sustainability & accessibility (Improve or leave as it is?)	Area needed to improve land use more intensively	Area needed to improve land use
	Medium	Area needed to improve transportation more intensively	Area needed to improve both land use and transportation	Area with potential (improve land use)
	High	Area needed to improve transportation	Area with potential (need to improve transportation)	Area with excellent sustainability & accessibility

The Year 2035 Needs Plan reflected the best elements of the hybrid or fourth network alternative, with the objective of improving mobility and accessibility along major corridor served by a Bus Rapid Transit network and development of a streetcar service that would connect downtown Gainesville, the University of Florida and retail/student housing areas to the west of the main campus. The Needs Plan includes roadway, transit and bicycle/pedestrian projects.

Peak Oil and Greenhouse Gas Mitigation Strategies

Peak Oil Strategies

There are two primary ways to address transportation needs: through speed and proximity. Speed addresses the ability to cover relatively longer distances in a reasonable amount of time, reducing the cost of travel (time and money) to a point where the trip makes economic sense. Proximity enables shorter trips to occur that are less dependent on speed because the travel time, and the resulting cost, is less. Both are important parts of an urbanized area's transportation network, but under peak oil, proximity and the accessibility of destinations by more energy-efficient travel modes becomes an increasingly important factor. As the urban footprint contracts, speed is less critical to mobility. This is an important consideration in developing policies and strategies for a peak oil condition in the future.

Land Use Strategies

Land use strategies related to peak oil relate to location efficiency and modifying existing land use patterns to expand the types of uses that will be more in demand with higher energy prices and scarcity of supplies. *Location efficiency* means creating more affordable housing choices close to public facilities and services, establishing better linkages of housing, jobs and other destinations in close proximity, ensuring that community services and facilities are located along public transportation corridors, and that convenient transit, bicycle and pedestrian networks exist to serve new development. *Modifying land use patterns* means adaptive re-use of existing sites, such as automobile dealerships and other auto-oriented uses into higher density transit-supportive uses or clean energy uses, such as solar energy catchment and distribution areas. Similarly, these existing uses can be converted into urban agricultural gardens that would provide locally-grown fresh food products.

Transportation Strategies

There are a wide range of transportation strategies that would support efforts to respond to peak oil. In general, the transportation strategies are linked directly with land use strategies to reduce vehicle miles of travel and increase the ability of people to use human-powered transportation options for more of their trips. Suggested transportation-focused ways to reduce energy demand and support both accessibility and mobility within the urbanized area and Alachua County include designating transit priority corridors, parking, congestion (or value) pricing, complete streets policies, alternative fuel vehicles and developing a stronger and more connected bicycle and pedestrian network.

Year 2035 Cost Feasible Project Ranking

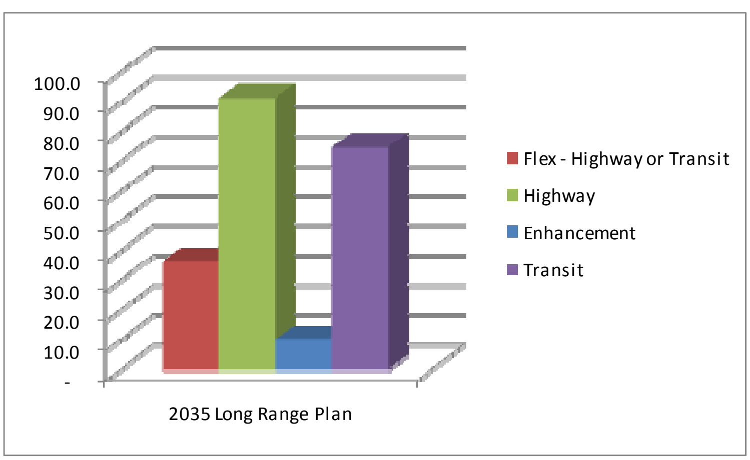
Based on information provided by FDOT, the Year 2035 LRTP's 22-year total for state and federal revenue sources is $139.6 million for highways and transit projects (Flex, Highway, Enhancements), in inflation-adjusted revenues, plus an additional $74.7 million for only transit, for a total of $214.3 million. This total covers the years from 2014 to 2035. The breakdown by five-year period and revenue source is shown in **Table SR-1** and **Figure SR-4**. These sources are those that have historically been considered by the MTPO during preparation of the LRTP. It should be noted that $71 million of the $74.7 million in transit operating revenue is needed to operate the existing bus network through the year 2035, leaving $3.7 million available for minor service enhancements or transit capital expenses.

Table SR - 1: State and Federal Program Revenues (in millions, YOE)

Capacity Programs	FY 2014-2015 Subtotal	FY 2016-2020 Subtotal	FY 2021-2025 Subtotal	FY 2026-2030 Subtotal	FY 2031-2035 Subtotal	22 Year Total
Flex – Highway or Transit	2.3	7.1	8.1	8.8	9.8	36.1
Highway	6.0	18.5	20.8	22.4	24.3	92.0
Enhancement	0.9	2.5	2.6	2.7	2.7	11.5
Transit*	5.6	14.5	16.4	18.3	19.9	74.7
Total	14.8	42.7	47.9	52.2	56.7	214.3

** Gainesville Regional Transit System estimates that $71 million of these funds are needed to operate the existing bus network through the year 2035.*

Figure SR - 4: Total Revenues (Dollars in Millions)



The process of developing the recommended Year 2035 Cost Feasible Plan began with an evaluation of Needs Plan projects using criteria developed to reflect the adopted vision statement, goals and objectives. This was presented to the MTPO's advisory committees for review and refinement. The MTPO staff developed a preliminary list of Cost Feasible projects in current year 2010 dollars. The starting point was to build upon highly ranked projects from the last (Year 2025) LRTP. Bicycle and pedestrian projects recommended for the Cost Feasible Plan using federal Enhancement program funds were developed from priorities already established by the MTPO's Bicycle/Pedestrian Advisory Board, with cost estimates in year 2007 dollars.

The list of Cost Feasible projects also included City of Gainesville and Alachua County projects funded through the financially feasible Comprehensive Plan Transportation Elements, in addition to the highway, transit and bicycle/pedestrian projects eligible for state and federal funds. A full list of all of these projects in year of expenditure costs by funding period is included in the Cost Feasible Plan chapter of the final report.

Map SR-3 depicts the Year 2035 Cost Feasible Long Range Transportation Plan based on the estimated year of expenditure. The map references the type of projects and studies funded by their primary funding source. Given the escalation of project costs over time due to inflation, the MTPO chose to prioritize full funding for some projects and allocate partial funding to others.

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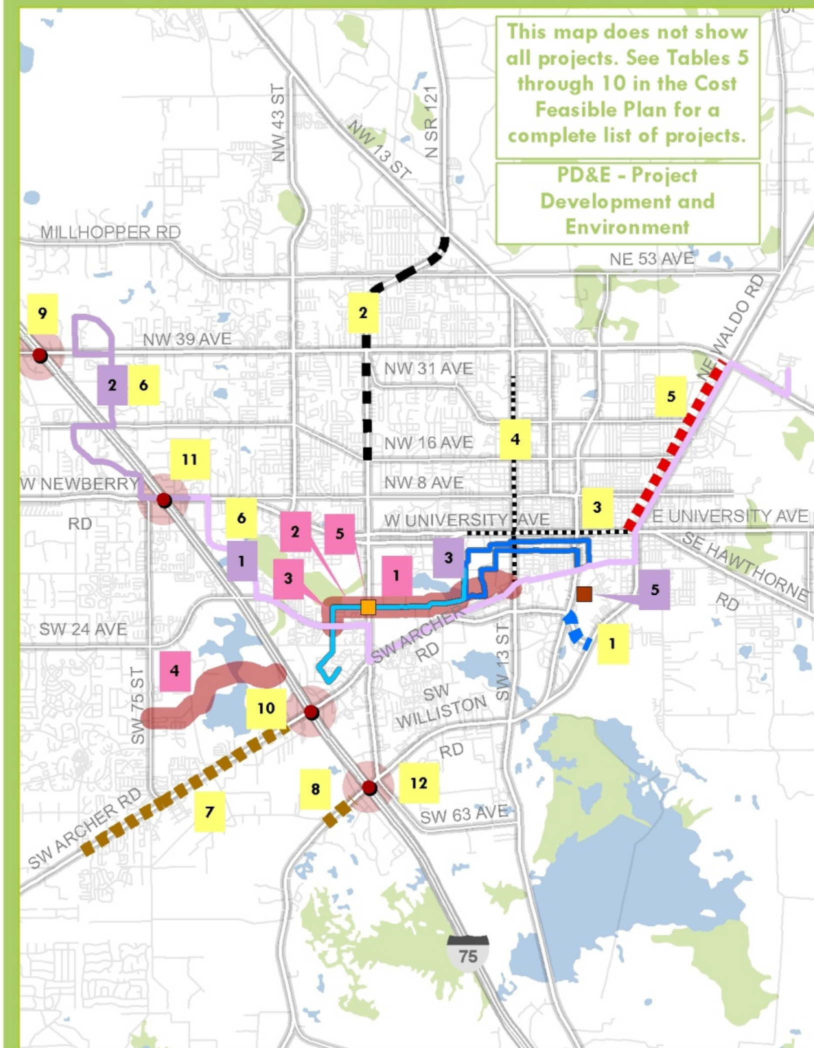
Map SR - 2: Year 2035 Cost Feasible Plan

YEAR 2035 COST FEASIBLE PLAN



Year 2035 Long Range Transportation Plan Update

Metropolitan Transportation Planning Organization for the Gainesville Urbanized Area

Priority		Description	Project	From / To:
State Highway System				
1		State Road 226 (SE 16th Avenue)	Widen to four lanes	Main Street to Williston Road
2		State Road 121 (NW 34th Street)	Construction of turn lanes to improve safety and traffic flow	NW 16th Avenue to US 441
3		State Road 26 (University Ave)	Multimodal Emphasis Corridor	Gale Lemerand Drive to Waldo Road
4		US 441 (W. 13th Street)	Multimodal Emphasis Corridor	NW 33rd Avenue to Archer Road
5		Waldo Road Multiway Boulevard	Redesign to support Bus Rapid Transit (BRT) and corridor redevelopment study (PD&E)	University Avenue to NE 39th Avenue
6		Bus Rapid Transit (BRT)*	Corridor Infrastructure	Santa Fe Village to Gainesville Regional Airport
7		State Road 24 (Archer Road)	BRT dedicated lanes design, additional roadway capacity and corridor study (PD&E)	MTPO Boundary to SW 45th Street
8		State Road 121 (Williston Road)	Additional roadway capacity and corridor management study (PD&E)	SW 62nd Avenue to SW 35th Way
9		I-75 @ SR 222/39th Avenue	SIS Interchange Modification	--
10		I-75 @ SR 24/Archer Road	SIS Interchange Modification	--
11		I-75 @ SR 26/Newberry Road	SIS Interchange Modification	--
12		I-75 @ SR 331/Williston Road	SIS Interchange Modification	--
Surface Transportation Program				
1 *		Oaks Mall to Airport Bus Rapid Transit Alternatives Analysis	Alternatives Analysis	Oaks Mall to Airport (via Archer Road and Downtown)
2 *		Santa Fe to Oaks Mall Bus Rapid Transit Alternatives Analysis	Alternatives Analysis	Sante Fe to Oaks Mall
3		Streetcar Feasibility Study	Feasibility Study	Downtown to Butler Plaza via University of Florida
4		Intermodal Center / Park and Ride Lot	Park and Ride Lot	TBD (not shown on map)
5		Transit Maintenance Facility	Facility Expansion	--
Surface Transportation Program Enhancements				
1		Cross Campus Greenway	Bicycle/Pedestrian Trail	Archer Road to SW 34th Street
2		Hull Road Parking Area	Bicycle/Pedestrian Trail	SW 34th Street to End of Hull Road Parking Area
3		Hull Road Connector	Bicycle/Pedestrian Trail	Hull Road Parking Area/ SW 20th Avenue
4		Lake Kanapaha Trail	Bicycle/Pedestrian Trail	Tower Road west to Interstate 75
5		SW 34th Street Grade Separated Crossing	Bicycle/Pedestrian Trail	SW 34th Street at Hull Road

*** Project alignment will be determined by feasibility studies and alternatives analysis.**

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Summary

The policy direction of the MTPO in considering projects for financial feasibility focused on ensuring a multimodal approach to meeting the area's mobility needs. This policy is reflected in the Year 2035 LRTP as indicated in **Figures SR-5 and SR-6**. As shown in the first chart, there is an initial investment in roadway widening and operational modifications for long-standing priority projects, but the plan increasingly allocates future funding toward multimodal projects that support increasing transit service and bicycle/pedestrian connectivity. The plan assumes accumulation of funds over time to fund the Regional Transit System maintenance facility and the Bus Rapid Transit corridor infrastructure in the final five year planning period of the LRTP horizon. Funding sources for the RTS maintenance facility include a federal earmark, a grant from the Federal Transit Administration and use of the MTPO's allocation of Flex funds that can be spent on highway or transit projects. The second chart presents a summary of overall funding for roadway capacity and non-automobile projects, reflecting a nearly 4:1 ratio in favor of multimodal (non-auto) transportation projects.

Figure SR - 5: Allocation of Funds by Year of Expenditure

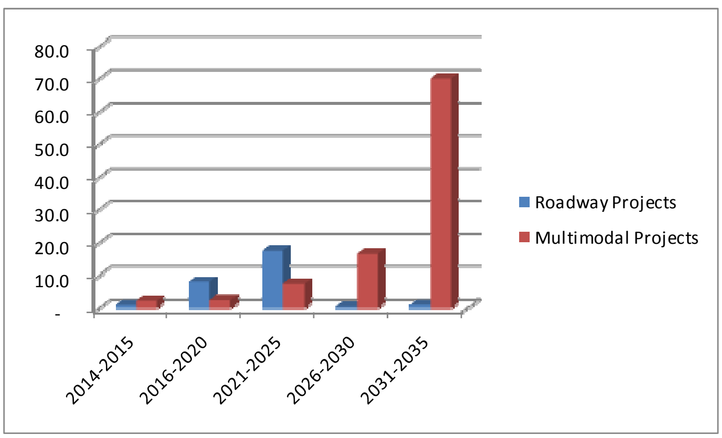
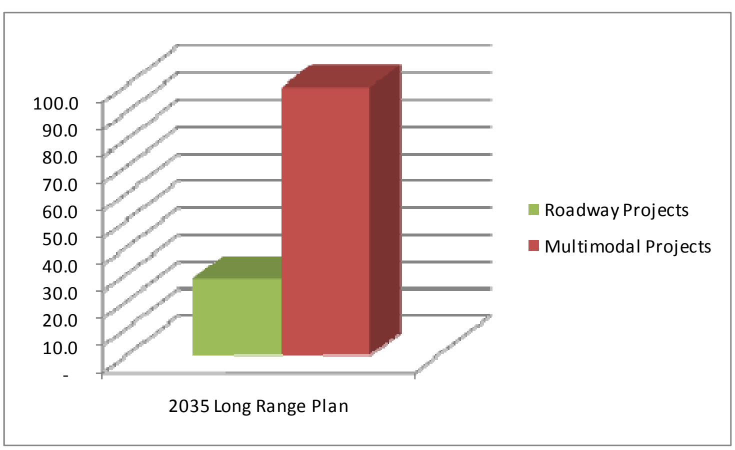


Figure SR - 6: Overall Allocation of Funds



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CONTEXT FOR THE YEAR 2035 LRTP UPDATE

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Planning Context

A number of planning requirements and issues frame the Year 2035 LRTP for the Gainesville Urbanized Area. While federal transportation legislation guides the general content and components of the LRTP process, state and local requirements further define the planning framework, and each metropolitan planning organization (MPO) has the ability to identify analysis and policies that address major community goals for transportation and land use.

LRTP Planning Factors

The Year 2035 LRTP is required by the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), the current federal transportation legislation, to reflect consideration of the following eight planning areas:

- Support the economic vitality of the region by enabling global competitiveness, productivity and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;
- Increase the security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operations; and
- Emphasize preservation of the existing transportation system.

Peak Oil

There is increasing concern about the future of the worldwide oil supply and the effects of a decline in oil production. In February 2007, the United States General Accountability Office released the report, *Crude Oil: Uncertainty about Future Oil Supply Makes It Important to Develop a Strategy for Addressing a Peak and Decline in Oil Production*. The report laid out a sobering assessment of the United States' vulnerability to this geologic phenomena and lack of a national, state or local plan to deal with the economic and social consequences. Further, the Alachua County Energy Conservation Strategies Commission identified planning for peak oil production and decline as a major concern for the County's transportation future and requested that the MTPO incorporate consideration of peak oil scenarios in the Year 2035 LRTP. Specifically, the review and test peak oil production and decline variables to determine potential future transportation and land use scenarios necessary to mitigate local effects and to recommend alternatives to accomplish transportation and land use mitigation strategies. The results of the peak oil analysis are described later in this report, and the recommended strategies are incorporated in the Cost Feasible Plan.

Growth Management

Two recent state laws – Senate Bill (SB) 360 and House Bill (HB) 697 – that emphasize the integration of land use and multimodal transportation strategies provide a backdrop for a substantial shift in transportation policy. HB 697 (2008) requires that local governments incorporate strategies to reduce greenhouse gas emissions (GHG) in their future land use, housing and transportation elements. The second draft of the proposed rules issued by the State of Florida Department of Community Affairs would currently require that local governments demonstrate through policies and capital projects how they will work toward reducing vehicle miles of travel. SB 360 (2009) provides for changes to development and transportation concurrency requirements, especially for areas designated as "Dense Urban Land Areas" (DULA) as defined in the bill. The City of Gainesville currently qualifies as a DULA and has the opportunity to undertake additional planning efforts that will clarify transportation requirements for new development and provide strategies and funding methods to achieve the community's vision for creating a multimodal transportation network that provide transportation choices and increases access and mobility. Local governments need to work closely with each other, the MTPO, FDOT and other entities to identify funding opportunities, including potential grants, that can help them implement projects identified in both their own Transportation Elements and the Year 2035 Long Range Transportation Plan.

PUBLIC INVOLVEMENT

PUBLIC INVOLVEMENT

Public Involvement Activities

The purpose of the public involvement plan for the Year 2035 Long Range Transportation Plan (LRTP) was to provide various opportunities through which the community could learn about the planning process and provide their input and ideas for the Gainesville Urbanized Area's transportation future. The goal was to obtain substantive and broad-based feedback on transportation issues and options to build consensus on solutions that best reflected the varied needs and interests in the Metropolitan Transportation Planning Organization (MTPO) area. To achieve this goal, the public involvement plan included a range of public engagement mechanisms, including community workshops, focus groups, stakeholder meetings, and a project website. In addition, the LRTP elements were presented to the MTPO and advisory committees (Technical Advisory Committee, Bicycle/Pedestrian Advisory Board and Citizens Advisory Committee) at key points throughout the process. The public involvement plan is included in the Appendix.

Involvement of Local Agencies, Organizations and the General Public

The public involvement plan encompassed a broad definition of "public" for purposes of this planning process. The public includes those *affected by* changes (the plan) as well as those *effecting* change – individual citizens, organizations, the business community, public agencies, and others. In addition to general categories of "the public," the process also sought to engage persons and organizations with particular interests and needs, such as people with disabilities, UF students/faculty/staff, transit users, bicyclists, and others.

Project Website

Information on the LRTP process was posted on the MTPO website and a separate project website, *www.livabletransportation.org*, which was launched at the onset of the process and managed by consultant staff. The website included general information about the LRTP planning process, as well as contact information for study staff and upcoming meetings. The website, updated throughout the process, provided interested parties with project information, links to surveys and other opportunities to provide comments and to sign up to receive communications and announcements about the LRTP.

Focus Groups

One of the key components of the public involvement program entailed a series of focus group discussions. While public workshops provide an opportunity for the public to come out and give input, workshops often require a large amount of resources and are not always effective in terms of conducting broad outreach to a diverse cross-section of the community. For that reason, the MTPO also emphasized focus groups for this LRTP process, providing for a wider range of geographic and sociocultural diversity and opinions about transportation issues. The public engagement activities emphasized reaching out to many groups and organizations, including environmental interests, the business community, the Transportation Disadvantaged Coordinating Board, the Community Traffic Safety Team, East Gainesville residents/businesses, and others. While not all groups that were contacted participated in the process, a number of focus group discussions provided valuable input into development of the transportation needs plan.

The overarching objectives of the focus group meetings were to identify values and priorities and communicate information and issues to be considered in the transportation planning process. Feedback was solicited during the discussions to identify stakeholder values and their sense of how anticipated development and transportation investments will address individual and regional needs. Ideas on key themes, issues, opportunities and specific investments and strategies to consider in the planning process were recorded. The sessions concluded with a discussion about how their input will be used in the development of the Long Range Transportation Plan and the attendees were encouraged to participate in the public workshops.

FOCUS GROUP DISCUSSION GUIDE

- Are there specific areas where traffic safety is a major concern?
- What transportation modifications could be made to improve safety for all users of the transportation network?
- What is needed to enhance transit options, expand bicycle and pedestrian mobility and provide for safer streets?
- What is your commute like? Could it be better?
- How important is it to expand transit options to improve mobility? Where should transit improvements occur?
- What are your thoughts on potential downtown redevelopment strategies involving Main Street and University Avenue?

These focus group discussions provided a better understanding of the major mobility issues in the Gainesville Urbanized Area and were used in developing the various alternatives for evaluation. Minutes from the focus group discussions and other meetings attended are included in the following pages:

Transportation Disadvantaged Coordinating Board -- August 12, 2009 Minutes

On behalf of the MTPO, Renaissance staff presented a brief overview of the Year 2035 LRTP at a regular meeting of the TD Board at the Jack Durrance Auditorium. There were about a dozen members of the public in the audience who were invited to speak following the presentation, but discussion primarily came from the board members.

There was a question concerning the extent to which the LRTP would address or recommend use of alternative fuels as part of strategies to address climate change and peak oil. There was considerable discussion in support of an MTPO action at its previous meeting to endorse seeking a Congressional appropriation for Bus Rapid Transit (BRT) to serve proposed developments and improve transit service linking Northwest Gainesville with commercial destinations, Santa Fe College, the University of Florida and downtown. Within the urban area, board members commented on the need for full transit connectivity along NW 39th Avenue between Waldo Road and NW 83rd Street (or perhaps NW 98th Street). There are breaks in service, and the presence of the Adult Basic Education program at Santa Fe College means that service is lacking for people who need it. Santa Fe College (SFC) needs to be able to negotiate service with the Regional Transit System (RTS). Northwest transit service connectivity needs to improve access at NW 53rd Avenue and NW 43rd Street.

It was noted that the County encourages people to annex into the City to receive urban services, particularly transit. The NW 53rd and NW 43rd area is one that has resisted annexation.

Another main topic was park and ride lots to facilitate transit service from outlying areas into the employment, service and educational destinations. Several potential park and ride lot locations were discussed, including at SFC, Jonesville and in the outlying cities of Alachua County. There was discussion of a Massachusetts State Commuter/Express bus that pulls off the interstate at selected park and ride locations to connect to the rail system and airport. Board members commented that for park and ride to work well in Gainesville, there is a need for the cost of parking to increase. Express buses are also needed to make it work effective, such as more of a radial transit system structure than a loop network. Smaller buses could be used to circulate through certain areas to connect with the radial or express bus network. There was also discussion of a mobility fee with zones to charge people different amounts to ride transit, with the fee used to cover operational costs for better service. Some board members felt that, in order to make transit service available to everyone, the costs should be shifted to the broader community as is done with other public facilities such as libraries.

Community Traffic Safety Team (CTST) – September 17, 2009 Minutes

On behalf of the MTPO, Renaissance staff presented a brief overview of the Year 2035 LRTP at a regular meeting of the Alachua County CTST at Gainesville Technology Enterprise Center (GTEC). There were about 15 members of the CTST in attendance. Following a brief overview of the LRTP process, the attendees were invited to provide input and comment on safety or other mobility issues facing the community. Safety at Idylwild Elementary – access via Williston Road for parents picking up or dropping off their kids – was mentioned. It was also suggested that the UF/Shands Trauma Center might be a good contact for crash information. The CTST discussed a number of ongoing issues and engineering concerns related to safety. In terms of discussion regarding the LRTP, key issues include having better transit throughout the county so people can drive less, examining how to tailor generic recommendations in the State Highway Safety Plan so they are applicable in Alachua County, elderly mobility issues, and likely community and business opposition to further road diets (e.g., University Avenue). There was some discussion concerning performance measures for safety, such as crashes, fatalities and speeding.

Business Community Coalition (Builders Association of North Central Florida/ Gainesville Area Chamber of Commerce) – September 22, 2009 Minutes

On behalf of the MTPO, Renaissance staff presented a brief overview of the Year 2035 LRTP at a special meeting of the Business Community Coalition at the Builders Association office on NW 66th Court. There were about 12 participants from the Chamber of Commerce, Homebuilders and other groups involved in the development and real estate industries. Following a brief overview of the LRTP process, the attendees were invited to provide input and comment on mobility issues facing the community. Major issues discussed included the need for more roads, concern that increased transit would not solve congestion problems or be useful for most working people with family responsibilities, and concern that current policies in the community sought to create a dense urban community within a sprawl community. Participants also indicated a feeling that the development process in Alachua County was too lengthy and that impact fees have caused more growth in outlying areas and other counties (based on their observations of AM and PM peak congestion on Williston Road and Archer Road). Park and ride lots were suggested as a way to capture commuters and shift them into other modes. Most agreed there needs to be a balanced approach between transit and roads. Participants indicated a better road network and more efficient/reliable transit would help. There was support expressed for bus turnout lanes, especially along Archer Road. It is important to modify the existing infrastructure to make both bus and car traffic work, rather than emphasizing one over the other. There was also discussion about ride matching/carpools and incentives as viable strategies that should be investigated further. The need for a regional solution that addresses all modes given this area's employment and educational presence as a regional destination was suggested. The extension of NW 83rd Street to Millhopper Road was mentioned as an important project. Finally, the group mentioned the need to explore funding options such as sales tax, etc., to fund a mix of transit and road construction projects (to gain support from business interests). The general feeling was that impact fees are inhibiting growth, so other funding solutions are needed that provide more balance for all users.

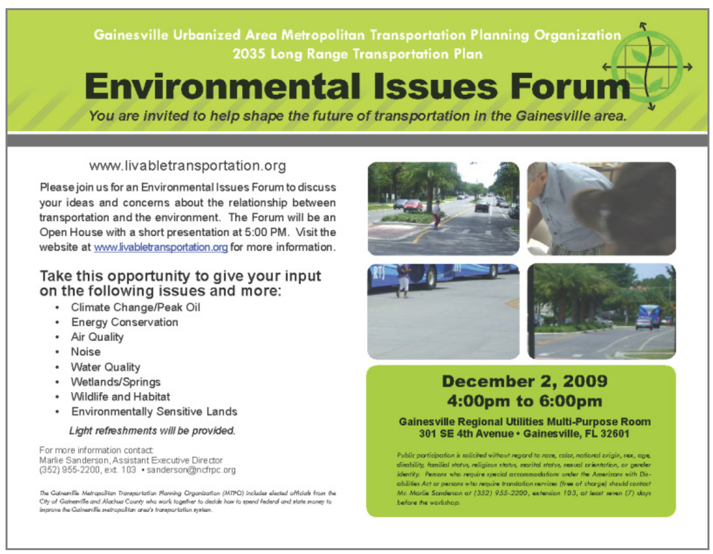
East Gainesville Focus Group – November 9, 2009 Minutes

The City of Gainesville Economic Development Division assisted Renaissance Planning Group with putting together a focus group meeting for businesses and residents in East Gainesville. The meeting, held at the Gainesville Technology Enterprise Center (GTEC), included representatives from the East Gainesville Development Corporation, Gainesville Regional Airport, Gainesville Front Porch Florida, Anglin Construction, and Our Town Gainesville. Major issues identified by this group included the need for safer opportunities to cross Waldo Road, better transit connections traveling east-west in Gainesville, high traffic speeds on Williston Road, and traffic volumes and safety issues in school zones. The group was supportive of identifying Hawthorne Road as a Bus Rapid Transit corridor, providing more transportation choices for residents of East Gainesville, and consideration of park and ride facilities in the airport area.

Attendees: Gary Anglin (Anglin Construction and Our Town), Shaad Rehman (City of Gainesville), Chris Coleman (East Gainesville Development Corp.), Allon Penksa (Gainesville Regional Airport), Juanita Miles Hamilton (Gainesville Front Porch Florida)

Environmental Issues Forum – December 2, 2009

An Environmental Issues Forum was held on December 2, 2009 at the Gainesville Regional Utilities (GRU) Meeting Room to provide an opportunity for environmental agencies and organizations to provide input on how the LRTP should address and consider various environmental issues, such as climate change/peak oil, energy conservation, air quality, noise, water quality, wetlands/springs, wildlife and habitat, and environmentally sensitive lands. Approximately 15 people (both agency staff and citizens) attended the forum, representing various agencies including the Department of Environmental Protection, Sierra Club, Women for Wise Growth, Gainesville Regional Utilities, St. Johns River Water Management District, and Alachua County Growth Management. Major issues identified by meeting participants included the need for continuous bicycle facilities/lanes, improved lighting and crosswalks for pedestrians, increased enforcement for bicycle and pedestrian safety, alternative fuel vehicles and associated support facilities, increased visibility of the transit system and more shelters, and interest in using local companies for construction of infrastructure.



Attendees: James Weimer, Bill and Rae Marie Gilbert, Josh and Sally Dickinson, Anthony Miller, Kathy Viehe, Bill Shepherd, John Gifford, Randy Weills, Nella Jagtap, Carlye Gates, Elizabeth Hernandez, Valerie Rosenkrantz, Kathleen Pagan

Other Meetings/Presentations

MTPO and consultant staff made a number of other presentations to community groups, agencies and others throughout the LRTP process. The minutes of these meetings and presentations are provided below:

Evaluation and Appraisal Report Meeting, March 12, 2009 Minutes

MTPO staff made a brief presentation introducing the LRTP at a joint meeting of the Alachua County Commissioners and the Planning and Zoning Commission. The meeting, held at the Jack Durrance Auditorium, 12 SE 1st Street, Gainesville, was part of the County's effort to update its Comprehensive Plan and was open to the public. The meeting focused on the connection between transportation and land use, an important concept for the LRTP as well as the County's growth management plan.

University of Florida (UF) Sustainable Transportation Workgroup, December 9, 2009 Minutes

The LRTP process was closely coordinated with development of the update of the UF Campus Master Plan Transportation Element. To that end, consultant staff presented an update on the LRTP process and data development to the UF Sustainable Transportation Workgroup. Discussion included a suggestion that the mode counts at certain entry locations can serve as screenlines for the LRTP model. More detailed minutes prepared by the University of Florida are included in the Appendix.

Transit Planning Workshops for UF, March 16, 2010 Minutes

Two public workshops to discuss transit issues for the Campus Master Plan update were held at the University of Florida on March 16, 2010 (1:30 and 5:00 PM). Workshop participants marked up maps of the UF area with their suggestions for transit service and completed discussion guides with additional questions on incentives and barriers for using transit to get to and around campus. The presentation included an overview of the LRTP process and the alternative networks that were being evaluated. Workshop participants provided comments and marked up maps for the alternative networks. More detailed minutes for this workshop are included in the Appendix.

Presentations

Presentations on the LRTP process were made by MTPO staff and/or consultants at the following meetings of various agencies and organizations. Participants provided input on the area's transportation needs.

- Alachua County League of Cities, March 30, 2010
- Home Builder's Association of North Central Florida, May 5, 2010
- Chamber of Commerce Public Policy Committee, May 11, 2010
- City of High Springs (at their request), May 13, 2010
- Sustainability Forum, May 19, 2010
- Sierra Club, June 6, 2010
- Women for Wise Growth, June 30, 2010
- Alachua County Emerging Leaders (ACEL), July 28, 2010

MTPO Committee Meetings

Briefings were provided to the Technical Advisory Committee and Citizens Advisory Committee throughout the LRTP process. MTPO staff also coordinated with City of Gainesville staff to present LRTP materials to the Bicycle/Pedestrian Advisory Board. These Advisory Committees provided valuable guidance that was incorporated into the recommendations made to the MTPO for the plan.

MTPO Presentations

Briefings were provided to the MTPO at key points in the LRTP process, including at the following meetings: April 2009, December 2009, March 2010, June 2010, August 2010 (Needs Plan public hearing) and October 2010 (Cost Feasible Plan public hearing). Agendas and minutes for the MTPO meetings are available on the MTPO website. MTPO meetings are public meetings and include a time for public comment, serving as an additional opportunity for the public to weigh in on the transportation needs and priorities.

Public Workshop 1: Issues and Opportunities, April 23, 2009 Minutes

Introduction

About 45 citizens of Gainesville and Alachua County attended the first scheduled public workshop for the Year 2035 Long Range Transportation Plan (LRTP), sponsored by the Metropolitan Transportation Planning Organization (MTPO) for the Gainesville Urbanized Area. The workshop, held at an accessible location in downtown Gainesville, was designed to allow participants to provide input to identify the area's transportation issues and needs, and to comment on the MTPO's existing vision and several

transportation issues facing the community. Public involvement is very important to this planning process, as the LRTP will set transportation priorities and guide the use of federal, state, and local funding for transportation projects over the next 25 years.

The evening workshop agenda included an informal open house period to review maps, followed by a 20-minute presentation giving an overview of the LRTP process, major topics and schedule. After a short question/answer period, the participants were organized into four groups based on geographic parts of the Gainesville area. Each group was asked to spend about 30 minutes or so marking up maps using colored pens to show transportation issues, network gaps or barriers, along with opportunities for improving the transportation network for various travel modes.

In addition, flip charts, individual maps, surveys, and evaluation forms were used to collect both specific and general comments from participants about the Gainesville area's transportation system. A map series provided important context information about existing and planned transportation networks and study area features. Both the worksheet responses and the mapping exercise responses will guide the development of the scenarios, and will help identify projects that should be considered for analysis, and ultimately, funding priority. The mapping exercise also allowed participants to review a collection of maps and draw areas where they wanted improvements. Both exercises aim to identify transportation system needs.

This workshop was also coordinated with Gainesville Regional Transit System's (RTS) Transit Development Plan (TDP) process. Materials about the TDP were provided to meeting participants, part of the evening's presentation covered the TDP process, and participants were requested to complete surveys regarding future transit facilities and services in the Gainesville area.

Survey responses

Participants completed a survey that sought to gauge the level of support or resistance to certain transportation issues facing the area that will be addressed in this planning process. A survey summary was posted to the LRTP website (*www.livabletransportation.org*). The following key points highlight the findings from that activity.

- A plurality – about 60 percent – agreed or strongly agreed with the current MTPO vision for transportation and land use decision-making, which has guided the last two long range transportation plans (adopted in 2000 and 2005)
- More than 90 percent agreed that the area needs to invest in rapid transit on major corridors serving destinations in the City of Gainesville (e.g., Newberry, Archer and Waldo Roads); more than 60 percent strongly agreed with the statement.
- A large majority would like to see more park and ride lots to support transit service connecting outlying areas into destinations.

- More than 70 percent strongly agree that it makes sense to create parallel transit corridors instead of widening the congested major state roadways into the University of Florida and Gainesville
- Only about 15 percent of workshop participants believe existing bus service is adequate to meet most of their daily travel needs; more than 60 percent disagreed.
- Nearly 80 percent believe more emphasis should be placed on improving bicycle and pedestrian facilities to connect people to places in the community
- Most participants (61 percent) would like to see a greenbelt buffer separating the Gainesville urban area and development occurring in the outlying cities of Alachua County.
- 65 percent of workshop attendees believe declining oil resources will "fundamentally" shift how people live, work and travel in the coming 25 years. About a quarter were unsure or had no opinion.
- Interestingly, about 85 percent of respondents believe more emphasis is needed to improve traffic flow and efficient operations on the existing roadway network
- Most workshop participants (36% strongly agree; 29% agree) believe improving traffic safety for all users is more important than adding road capacity or providing more transit service.
- Exactly half of all participants believe Gainesville's transportation system is capable of handling an emergency response or major evacuation, if warranted.

Mapping Exercise

As described above, participants broke into geographically-oriented groups to mark up maps and make comments on transportation issues, needs and opportunities. A composite map of the major comments has been created for use by the study team in preparing the plan. This section summarizes the written comments on the maps and flip charts for each group.

North Planning Sector

- There is limited transit service to medium density areas
- Public transportation should be extended beyond Gainesville City Limits
- Transit service is needed to Santa Fe College at night
- Newberry Road bypass needed
- Increase speed on 143rd Street near Jonesville
- Bus service is needed to Alachua and High Springs (GNV Shands)
- Homeless shelter at 53rd and 441 needs bus service – particularly to the hospital
- Consider adding a transit shelter at 16th and 441 (Old Guthrie's)

Northwest Planning Sector

- Increase in transit coverage needed

Central Planning Sector

- BRT lines on major roadways

- Beef up 34th St transit corridor
- Difficulties crossing 34th St in wheel chair (up to 10 minutes)
- Difficulties crossing 13th St in wheelchair
- 34th St/35th Pl difficult to cross due to short pedestrian green cycle
- Later bus service needed – especially at apartments
- Transit connectivity to other cities and counties needed
- Bus routes end earlier when students are on break
- Aesthetic improvements for bike/ped facilities needed to improve use
- Bicycle connection needed to avoid 6th Street and 13th Street
- Need two-way bus service on 34th St (from University Avenue to Williston Road)
- Several bicycle and pedestrian barriers (noted on map)
- Bicycle/pedestrian opportunities on NW 23rd Avenue and 16th Avenue

East Planning Sector

- Lamplighter (neighborhood) is in Gainesville – transit routes should be provided
- Bus stop recommendation on Waldo Road
- Transit routes on major roads, such as University/SR 26, Waldo Rd, and SR 20

Southwest Planning Sector

- Transportation barriers along I-75 (few adequate crossings for all users)
- Increase in transit routes on major roadways
- Bicycle access to Butler Plaza is needed
- Express transit route on Newberry Rd
- Road opportunities
- SW 122nd St: from Newberry Rd to 39th Ave
- 143rd St: From Newberry Rd to 232 (Millhopper Rd)
- Park and ride lot at Newberry Rd to capture Gilchrist County traffic
- RTS facility downtown leaves passengers feeling unsafe

General Comments

- Need additional service to Newberry possibly a BRT although I would like to see a dedicated bus lane for buses only.
- The ecology of the Earth is rapidly changing - we're destroying the natural systems that sustain us. When ocean levels rise several inches within the next few decades, thousands if not millions of people will be moving to the higher point or the spine of the state. Plan for it!
- Why is there less bus service on weekends when people would be more willing to ride the bus if there was bus service (so we could go to movies or bowling or out to eat and to go to theater or go shopping or church)?

- Could there be more bus stops - like a stop closer to 1st Presbyterian Church on SW 2nd Ave?
- Why do we have shorter service/less service just because the students are gone? There are those of us who aren't students who ride the bus a lot too.
- More emphasis on pedestrian safety is needed. More connections between roads are needed. Many bicyclists use unsafe roads because your "infill" developers are allowed to close streets and build cul-de-sacs. A net of streets responds to stress better than trunk and branch which can be easily shut down by a single incident.
- Current growth management rules drive development to the west. Due to the environmental sensitivity of eastern point of the county prohibits any growth in the area, thereby drastically reducing the infill capabilities.
- Comments on the proposed MTPO Vision Statement
    - Activity centers and town centers should guide the MTPO Vision plan.
    - Creating balances should not overlook the current need.
    - More buses, longer hours, transportation to Archer, Micanopy, High Springs/Alachua. More transportation on weekends.
    - The west side has more roads over or near capacity - more transit from west of I-75 to employment centers. Low income people on east side need more transit services.
    - I strongly agree with the statement, however, CONTRA the city, 53rd avenue should NOT be a redevelopment area. Pine forest to concrete is not progress.
    - The statement is good but does not seem to be broad enough. Maybe it should be more comprehensive.

Next Steps

Based on the input from this workshop and other public involvement activities later in the year, the MTPO study team developed goals, objectives and performance measures (measures of effectiveness), as well as alternative networks to be considered in the development of a recommended Year 2035 Needs Plan.

Public Workshop 2: Develop Network Alternatives and Climate Change Factors, February 16, 2010 Minutes

The second community workshop was held February 16, 2010 at The Thomas Center, 302 NE 6th Avenue, Gainesville. The purpose of the workshop was to:

- Identify how to better connect people and destinations in the Gainesville area by car, bus/bus rapid transit, streetcar, biking, and walking.
- Determine the best ways to address the potential effects of peak oil production and greenhouse gas emissions on the transportation network.
- Confirm how to know if the transportation plan is effective and what should be measured.
- Identify safety concerns and strategies to address them.

The workshop included an open house period while meeting participants registered and reviewed maps and other materials available in the room. A 30-minute presentation provided an overview of the LRTP process, the proposed vision, goals, and objectives, and the accessibility analysis. Meeting participants were given the opportunity to help define alternative networks for evaluation and to provide guidance on peak oil strategies. After the presentation, participants were asked to review maps of travelsheds/corridors in the Gainesville Urbanized Area and mark their "vision" for the corridor on the map. In addition, maps of the highway, transit (including potential bus rapid transit and streetcar), and bicycle/pedestrian networks were provided for comments. Participants were asked to identify how their vision and ideas for the corridors fit into the regional networks for various modes of travel. Participants identified the locations of specific safety problems they perceive and to think about key employment and activity centers and connections would be needed to support their vision for the future. Participants were asked to complete a worksheet and meeting evaluation to provide additional input on policy and strategy options to achieve LRTP vision, goals and objectives. The results of the surveys are provided below.

Workshop #2 Survey Results

- Roads
    - Network of 4-lane roads
    - Expand road network to alleviate congestion
- Access/connectivity
    - More access to UF for cultural events
    - Connect campuses
- Safety
    - Many locations pointed out for specific safety issues/solutions
- Speeds
    - Don't reduce speeds on Archer Rd in front of Shands and VA Hospital
    - Reduce speeds along NW 8th Ave
- Transit
    - Concerns about BRT route through intersection of Archer Rd & 34th St
    - Increase bus service; free bus service
    - Add streetcar line to Butler Plaza
- Bicycle/Pedestrian
    - More on/off-road facilities in W. Gainesville area
    - Designated routes to specific places
- Gas at $4/gallon?
    - 72% are likely to use a mode other than single occupant vehicle (SOV)
    - Gas at $10/gallon?
    - 84% likely to switch from SOV
    - 43% likely to move closer to job or school

Is it important for the community to establish the following policies?

	Yes	No	No Opinion
Direct funding to make areas west of I-75 more accessible?	60%	25%	15%
Invest in highly accessible areas?	71%	9%	20%
Allow increased congestion to encourage transit?	52%	35%	14%
Improve access to employment centers?	89%	0%	11%
Reserve ROW for future transit?	80%	9%	11%

Would the future transportation be successful if:

	Yes	No	No Opinion
Live within ¼ mile of transit stop	91%	5%	4%
Get to multiple destinations within 20 minutes by transit	93%	5%	2%
My job or home is within ¼ mile of basic services	86%	12%	2%
I would have fewer delays on my commute	71%	16%	13%

Most appropriate strategies for:

Transit	Highway	Bicycle/Pedestrian
45% -- Serve larger area	42% -- More grid in western part of county	20% -- Regional connectivity/networks in outer areas
55% -- Higher level of service in existing service area	58% -- Improve efficiency in urban core	80% -- Retrofit existing roadways

Public Workshop 3: Development of Cost Feasible Plan, September 21, 2010 Minutes

The third public workshop, held on September 21, 2010, at the GRU Multi-Purpose Room in Gainesville, focused on prioritizing transportation project. The key goals of the workshop were to have participants:

- Identify how transportation dollars should allocated among roadway, transit, and trail projects.
- Weigh in on how their priorities would change in response to very high gas prices.
- Identify what projects will help ensure that the MTPO reaches its transportation goals in the Gainesville area.

The workshop included an open house period while meeting participants registered and reviewed maps and other materials available in the room. A 30-minute presentation provided an overview and status report on the LRTP process, including the evaluation of the three network alternatives, development and evaluation of the fourth hybrid needs network, and the recommended Needs Plan for transit, roadway, and bicycle/pedestrian projects. Meeting participants were given the opportunity to help define alternative networks for evaluation and to provide guidance on peak oil strategies. After the presentation, participants were asked to review the Needs Plan projects and identify their priorities using colored dot stickers allocated by relative percentages of various funding types available (roadway, transit, enhancements, and flexible funding). Participants were asked to provide comments on their priorities (on the maps and on a worksheet) and on policies and key issues. The results of the workshop are summarized on the following pages:

Priorities

Participants were asked to rank the following items in priority order.

- Widen roads to relieve traffic congestion
- Build new roads to provide alternate routes
- Synchronize traffic signals
- Change roads to make them easier for people to ride a bike, walk, or take the bus (may mean fewer lanes)
- Expand current local bus service (more hours of service and/or bus comes more often)
- Add new types of transit service (streetcar or bus rapid transit) that would run to downtown and UF very often
- Build paved trails for people to walk and bike

The highest priority items from participants were widening roads to relieve congestion, change roads to make them easier for people to ride a bike, walk, or take the bus (may mean fewer lanes), and expand current local bus service (more hours of service and/or bus comes more often).

Participants were then asked how their priorities would change if gas prices were $15 per gallon? Responses are included below:

- I would want more transit service and bike trails.
- Priorities 3 (synchronize signals) and 4 (new transit service) would switch.
- No change.
- Try to align my daily activities either close to home or along transit routes.
- More park and ride.
- No change.
- Not at all.
- I would buy a horse! Just kidding! I would look for work close to home.
- I will walk!
- Switch priorities 2 (synchronize traffic signals) and 3 (change roads to make it easier to bike/walk).
- Seek more RTS services. Move closer to Gainesville center.
- Same.
- Such a change would only confirm the reasoning for my priority rankings.

Specific comments made on the maps are included below:

<u>Adopted Needs Bicycle and Pedestrian Network</u>
- Use power line easements for bike trails
- Need more neighborhood linkages
- Add bike friendly streets to complete network. e.g, Northwest 31st Avenue not on major arteries.

<u>Adopted Needs Map – East</u>
- Trolley should be routed on University Avenue and not on South 2nd Avenue
- I put all of my roadway money into multimodal because it addresses busiest and most dire traffic congestion near downtown, midtown and UF campus, which with all respect to other neighborhoods, is our cultural economic center.

<u>Adopted Needs Map – Northwest</u>
- Neighborhood multiuse path
- Neighborhood planning process with "Rutledge" area did not support widening of NW 23rd Avenue. Community did support multiuse path as noted.

<u>General Comments:</u>

- No median closures at NW 16th avenue between NW 16th Terrace and NW 13th Street.
- I am concerned that B/PAB is falling out of touch with both the cycling and residential/business communities regarding the 16th Avenue/23rd Avenue re-tooling. At a meeting several months ago a group w/ competing interests and visions came to a cost effective and forward thinking consensus that was to be recommended to the county. The B/PAB representatives there agreed to this proposal. Now, the B/PAB is recommending an entirely different proposal to the county, which was not discussed at the meeting and which was considered to be infeasible, since it would radically reduce automobility (by going from 4 lanes to 3).

Evaluation/Outcomes

The various methods used to engage the public in the development of the LRTP provided a wide range of feedback throughout the process. The combination of workshops, focus groups, and advisory committee meetings allowed participants to focus on their priorities and needs for the transportation network in the Gainesville Urbanized Area. Held at various points in the process, these activities provided important feedback on the plan recommendations, shaping the final Needs and Cost Feasible Plans. As mentioned earlier, this process sought to incorporate a wide range of citizens and organizations with diverse opinions and needs, and the approach was successful. The focus groups supplemented the input provided at the workshops and formed a basis for development of the Needs Plan and priorities. The input received through these various activities, including the website, was valuable and made an impact on the plan. Participants at all workshops were asked to complete evaluation forms (see Appendix). A summary of the meeting evaluations is included below:

Workshop 1:

The meeting location was accessible for people with disabilities, and participants indicated they felt it would be a good location for future meetings. Meeting materials were generally clear and easy to understand, there were ample opportunities to offer input, and staff was receptive to public comments. Most participants felt the workshop exercises were valuable, and all but one indicated the workshop was enjoyable and informative. Several persons with disabilities attended the workshop, and the majority of participants were over age 40. Participants heard about the workshop in a variety of ways, including flyers, email, and other ways. Specific comments were received from some participants:

- I liked the mapping exercise.
- Don't know at this point. Will let you know after I've been to more meetings.
- To have some buses have more time on routes.
- You have worked things out quite well now, thank you.

Workshop 2:

The meeting location was accessible for people with disabilities, and participants indicated they felt it would be a good location for future meetings. Meeting materials were generally clear and easy to understand, there were ample opportunities to offer input, and staff was generally receptive to public comments. Most participants felt the workshop exercises were valuable and that the workshop was enjoyable and informative. The majority of participants were over age 30, and one participant indicated that English was his/her second language. Participants heard about the workshop in a variety of ways, including friends, email, and direct contact. Specific comments were received from some participants:

- Better pens!
- Advertise them better.
- More maps/spaces for each corridor, so as to allow individual access - more clearly labeled streets.
- More structured discussion groups. I like the idea of options, but some areas had more participation than others.
- Computer showing entire county with zoom capabilities. Show regional linkages.

Workshop 3:

Meeting location was accessible for people with disabilities, and participants indicated they felt it would be a good location for future meetings. Meeting materials were generally clear and easy to understand, there were ample opportunities to offer input, and staff was generally receptive to public comments. Most participants felt the workshop exercises were valuable and that the workshop was enjoyable and informative. Participants heard about the workshop in a variety of ways: including flyers, friends, email, and others.

Disposition of Public Comments

Throughout the planning process, public comments were collected at public meetings and workshops, through the website/email, and other venues as described in this report. These comments were incorporated into the development of all plan components, including the Needs and Cost Feasible Plans.

Workshop #1:

The comments received from the public at Workshop #1 are outlined in the workshop minutes included earlier in this document. The following section discusses how the comments were incorporated into the development of the LRTP.

Vision, Goals, Objectives

Meeting participants were asked to comment on the existing MTPO vision. While most people agreed with the current vision, there were a number of comments regarding priority areas on which the MTPO should focus its planning and funding. These comments were used in the development of the Vision, Goals and Objectives for the Year 2035 LRTP. For example, participants supported the idea of a greenbelt buffer separating the urban area from more rural areas, an outcome that was included in the revised vision statement. Meeting participants also indicated the need to reduce disparity between the east and west portions of the Gainesville Urbanized Area.

Modes of Transportation

Many workshop participants commented on the need for additional transportation options, especially express bus, Bus Rapid Transit, park and ride lots, and bicycle/pedestrian facilities. These options were incorporated into the Needs Plan and Cost Feasible Plan and several transit projects were prioritized for funding.

Peak Oil

This first workshop introduced the idea of peak oil and how it might affect our transportation needs/networks and land use decisions in the future. Participants indicated general agreement that higher oil costs and/or scarcity would change the choices people make about where they live/work and how they get around. This information was used throughout the planning process as the accessibility analysis and peak oil scenarios were developed and evaluated.

Other Issues

Participants indicated that operation of the existing network, safety, natural systems, and emergency response were all important issues. These were incorporated into future workshop activities and in the development of the alternative network for evaluation for the Needs Plan.

Mapping Exercise

Specific comments provided in the mapping exercise were also incorporated into the development of the Existing Plus Committed network and the alternative networks for evaluation.

Workshop #2:

As for Workshop #1, the comments received from the public at Workshop #2 are outlined in the workshop minutes included earlier in this document. A discussion of how the comments were used in the development of the LRTP is included below.

Feedback was provided by workshop participants on a number of transportation network issues, including roads, access/connectivity, safety, speed, transit, and bicycle/pedestrian facilities. These comments were used in conjunction with maps marked up by participants to further define the three alternative networks that were evaluated following the workshop, especially the roadway and transit infrastructure. Comments regarding bicycle and pedestrian facilities were incorporated into the proposed bicycle/pedestrian network and priorities. Very specific information about the locations of safety issues was collected on the maps. This information was incorporated into the LRTP Safety Element and provided to the Community Traffic Safety Team for further discussion and/or action.

Feedback received on how participants would respond to higher gas prices and the policy priorities that should be considered by the MTPO and local governments was incorporated in the network alternatives, the Needs Plan, Finally, information on how to determine if the transportation network was successful in the future was used in the development of evaluation measures and benchmarks.

Workshop #3:

As for Workshops #1 and 2, the comments received from the public at Workshop #3 are outlined in the workshop minutes included earlier in this document. A discussion of how the comments were used in the development of the Year 2035 Cost Feasible Plan is included below.

Participants were asked to rank a series of project types in priority order. They were also asked prioritize possible changes to make in the event of very high (simulating a peak oil scenario). The results of this workshop were used to develop the Cost Feasible Plan. These results were especially useful in the allocation of funding and identify the recommended land use and transportation strategies to mitigate for peak oil.

LTRP Adoption Hearings, October 4, 2010 and October 27, 2010

The only significant public comment received on the draft long range transportation plan was received from representatives of the City of Archer who attended the third public workshop (September 21, 2010) and the two Cost Feasible Plan adoption hearings (October 4 and 27, 2010) and requested that the widening of Archer Road be included in the Cost Feasible Plan. The project was included in the draft Cost Feasible Plan that was presented to the MTPO for adoption. Ultimately a policy decision was made to describe this project as “BRT dedicated lanes design, additional roadway capacity and corridor study (P D and E). The minutes from MTPO meetings which included discussion of the LRTP are included in the Appendix.

Vision, Goals, and Objectives

Vision Statement

The Gainesville Urbanized Area will have a multimodal transportation system that integrates land use and transportation planning and investments to promote community well-being through good and healthy relationships with the region's other communities and natural systems. Specific outcomes will be:

1. sustainable, safe, secure, energy efficient and livable land use patterns and complementary context-sensitive transportation networks that provide mobility choices within and between compact, mixed-use, multimodal-supportive development;
2. balanced east-west Gainesville Urbanized Area growth to reduce socioeconomic disparity through increased transportation mobility and accessibility;
3. transportation infrastructure investments that direct growth to existing infill and redevelopment areas;
4. greenbelts to preserve natural and agricultural lands between all municipalities in the Alachua County region through compact land use patterns served by express transit service and park and ride facilities; and
5. a network of Rapid Transit Facilities connecting regional employment centers in order to enhance the economic competitiveness of the area.

Goals and Objectives

Goal Statement 1: Economic Vitality and Community Livability

Plan and invest to develop and maintain a comprehensive, multimodal transportation network for the Gainesville Urbanized Area that promotes economic vitality, community livability, and increased housing-employment proximity.

OBJECTIVES

1.1 Coordinate the development of the transportation network with the development of affordable housing to promote proximity between residential and employment centers.

1.2 Encourage development and location of employment centers to promote desired housing patterns and densities.

1.3 Encourage location of health care and commerce in proximity to all residential areas.

1.4 Direct location of goods distribution centers to avoid negative impact on residential areas.

1.5 Improve the viability of alternatives to the single occupant vehicle (bicycling, walking, public transit, carpooling/vanpooling and teleworking) as options for all users of the transportation network through accessibility, convenience and comfort.

1.6 Increase the number of "complete streets" that provide accommodations for all users.

1.7 Expand the reach of the regional transit system to improve accessibility, availability and competitiveness of transit as a viable travel option.

1.8 Improve access for pedestrians, bicyclists and transit users to public places and centers of activity.

1.9 Improve pedestrian/bicycle accessibility by providing connections between commercial centers and surrounding neighborhoods.

1.10 Improve connectivity between modes, including transit, bicycle, pedestrian, and automobiles.

1.11 Increase bicycle and pedestrian accessibility through an interconnected and continuous system of off-road trails and greenways.

1.12 Coordinate transportation and future land use decisions to promote efficient development patterns and a choice of transportation modes.

1.13 Enhance transportation linkages to promote economic development and employment opportunities, especially in the eastern Gainesville Urbanized Area.

1.14 Improve access to transportation facilities and services for elderly, children, people with disabilities and economically disadvantaged individuals.

1.15 Minimize the adverse impacts of transportation on established neighborhoods through development of a network of transportation facilities.

1.16 Preserve the intended function of the Florida Strategic Intermodal System (SIS) and other appropriate corridors for intercity travel and freight movement, but minimize adverse impacts resulting from this policy that are inconsistent with other goals and objectives.

Goal Statement 2: Sustainable Decision-Making and Preservation

Develop and maintain a sustainable transportation system that supports and preserves the existing transportation network through integrated land use and transportation decision-making that results in compact development patterns, preservation of environmental, cultural and historic areas, reduced demand for oil, and lower greenhouse gas emissions.

OBJECTIVES

2.1 Minimize travel distances for work, shopping and recreation.

2.2 Encourage infill and redevelopment, to increase accessibility for all residents and visitors, especially people with disabilities, lower income citizens, elderly, and children.

2.3 Encourage the siting of government facilities such as schools and service centers in areas that have existing and adequate infrastructure in place, providing accessibility by all modes.

2.4 Improve the interconnectivity of streets and other modal systems of the transportation network, including sidewalks, bikeways and transit ways.

2.5 Create opportunities for access by all modes of travel at centers for employment, education, services, commerce and housing through land use strategies and urban design principles that minimize travel distances and allow for a mix of uses.

2.6 Enhance connectivity between different forms of travel by creating multimodal access hubs within new development or redeveloping areas.

2.7 Use transportation investments to support development and redevelopment in mixed use activity centers to promote economic development and preserve environmentally-sensitive lands.

2.8 Reduce the adverse impacts of transportation on the environment, including habitat and ecosystem fragmentation, wildlife collisions, and non-point source pollution.

2.9 Make transportation decisions that support the creation of a greenbelt between the Gainesville Urbanized Area and surrounding municipalities and rural communities to reduce sprawl and preserve environmentally sensitive areas.

2.10 Improve energy efficiency and reduce greenhouse gas emissions by promoting street designs that maximize opportunities for use of transportation choices and sustainable building techniques.

2.11 Phase in new vehicle fleets for public agencies to maximize energy efficiency and reduce air quality impacts.

2.12 Reduce impervious surface areas by promoting reuse of surface parking areas for infill development, urban agriculture and other uses and encouraging Low Impact Development (LID) and other creative and innovative ways of handling stormwater from roadways and other transportation facilities.

Goal Statement 3: Safety for Mobility and Accessibility

Develop and maintain a safe transportation system that supports increased mobility and better accessibility for all users and neighbors of transportation facilities and services.

OBJECTIVES

3.1 Address existing and potential safety problems on or adjacent to transportation corridors through an interagency planning and prioritization process.

3.2 Implement techniques to calm traffic in residential, educational and commercial areas where walking and bicycling are common.

3.3 Implement a comprehensive Safe Routes to School Program to increase the percentage of children walking or bicycling to school.

3.4 Increase safety for vulnerable road users, including the elderly, children, pedestrians, bicyclists, motorcyclists and motorscooter riders.

3.5 Implement techniques and roadway design to reduce fatalities and serious injuries from common intersection crashes, lane departure crashes, and aggressive driving.

3.6 Improve performance through safety improvements and countermeasures.

3.7 Coordinate with the Florida Department of Transportation to implement the Florida Strategic Highway Safety Plan.

3.8 Incorporate safety-related strategies, plans and activities (including transit safety) in the Safety Element of the long range transportation plan.

Goal Statement 4: Security and Resilience

Develop and maintain a transportation system that secures the ability of the Gainesville Urbanized Area to prevent, respond to, and recover from crime, disaster, and other adverse conditions with resilience.

OBJECTIVES

4.1 Increase the ability of the transportation network to accommodate variable and unexpected conditions without catastrophic failure.

4.2 Compile existing plans and protocols into a transportation security plan that protects lives and coordinates the use of resources.

4.3 Increase personal security of users by implementing appropriate design strategies, such as improved lighting and visibility measures, at appropriate locations such as transit stops and intermodal facilities where people are waiting.

4.4 Review and update the Continuity of Operations Plan on a regular basis to ensure the continuity of essential office functions if a major event/emergency/disaster occurs.

4.5 Support development of alternative fuel sources and infrastructure to provide continuing transportation services in the event of scarcity.

4.6 Coordinate with appropriate agencies to protect the critical transportation infrastructure against disaster by identifying vulnerable assets and possible threats to these assets, developing prevention strategies, and planning for recovery and redevelopment after disaster (in coordination with the Local Mitigation Strategy).

4.7 Incorporate security-related strategies, plans and activities (including transit security) in the Security Element of the long range transportation plan.

Goal Statement 5: Transportation Network Management and Operations

Improve system management, operations, coordination and communication to make sound transportation decisions that reflect wise use of financial resources.

OBJECTIVES

5.1 Give priority to preservation and maintenance of the existing transportation network.

5.2 Preserve current and planned rights-of-way for transportation system improvements.

5.3 Implement transportation demand management and system management strategies before adding general purpose lanes to a roadway.

5.4 Improve the operational efficiency of the existing transportation system for all modes of travel based on a balance of needs within the corridor.

5.5 Implement a coordinated traffic signal system plan to improve network efficiency and maintain traffic flow.

5.6 Coordinate transportation plans and programs with all stakeholders in the transportation system, including the public, public agencies, transit, emergency management, police and fire, etc.

5.7 Develop a balanced transportation system that includes a dispersion of traffic across multiple smaller roads rather than concentrating traffic on a few major roadways and provides a better parallel network for vulnerable users, including the elderly and children.

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DEVELOPMENT OF THE TRANSPORTATION MODEL

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Data Collection, Mapping, and Data Development

Introduction

This section documents the entire data development process for the Gainesville Urbanized Area Year 2035 Long Range Transportation Plan (LRTP) Update. The data development process included development of maps, model networks and data files needed to validate and run the transportation model as well as development of existing and projected financial resources to fund needed transportation projects by the Year 2035. This section describes the entire map development effort, including the development of ZDATA and research of future financial resources. Key tasks for the data development process included data collection, mapping, data development, designation of screenlines, traffic count data, highway and transit networks, transit service data, data projections, and financial resources (tasks 2.1 through 2.9 in the project scope of services).

Task 2.1 Data Collection

In Task 2.1, datasets were collected from the existing model, reviewed, and updated as necessary. These datasets, outlined in Tasks 2.1.1 through 2.1.5, included the following: screenlines and cutlines, traffic count data, highway network, transit network, and transit service data. For each dataset, this section describes the data content and date, data source, and modifications made to the data. All datasets were updated as necessary during Task 3: Data Review and Verification and Task 4: Model Update and Validation.

Task 2.1.1 Screenlines and Cutlines

Screenlines and cutlines from the previous Long Range Transportation Plan Update were evaluated for their applicability to the Year 2035 Update and determined to be sufficient for this project. Some screenlines may be added to address future development areas, such as along SW Archer Road. The screenlines were evaluated during model validation. A map of the screenlines is included as **Map 1**. The screenlines shown in the map reflect major travel flows and patterns in the Gainesville Urbanized Area and the rest of Alachua County. In light of environmental constraints, limited transportation networks and growth management policy, it is unlikely that these traffic patterns will change substantially in the next several years or through the planning horizon to warrant substantial revisions in the screenlines.

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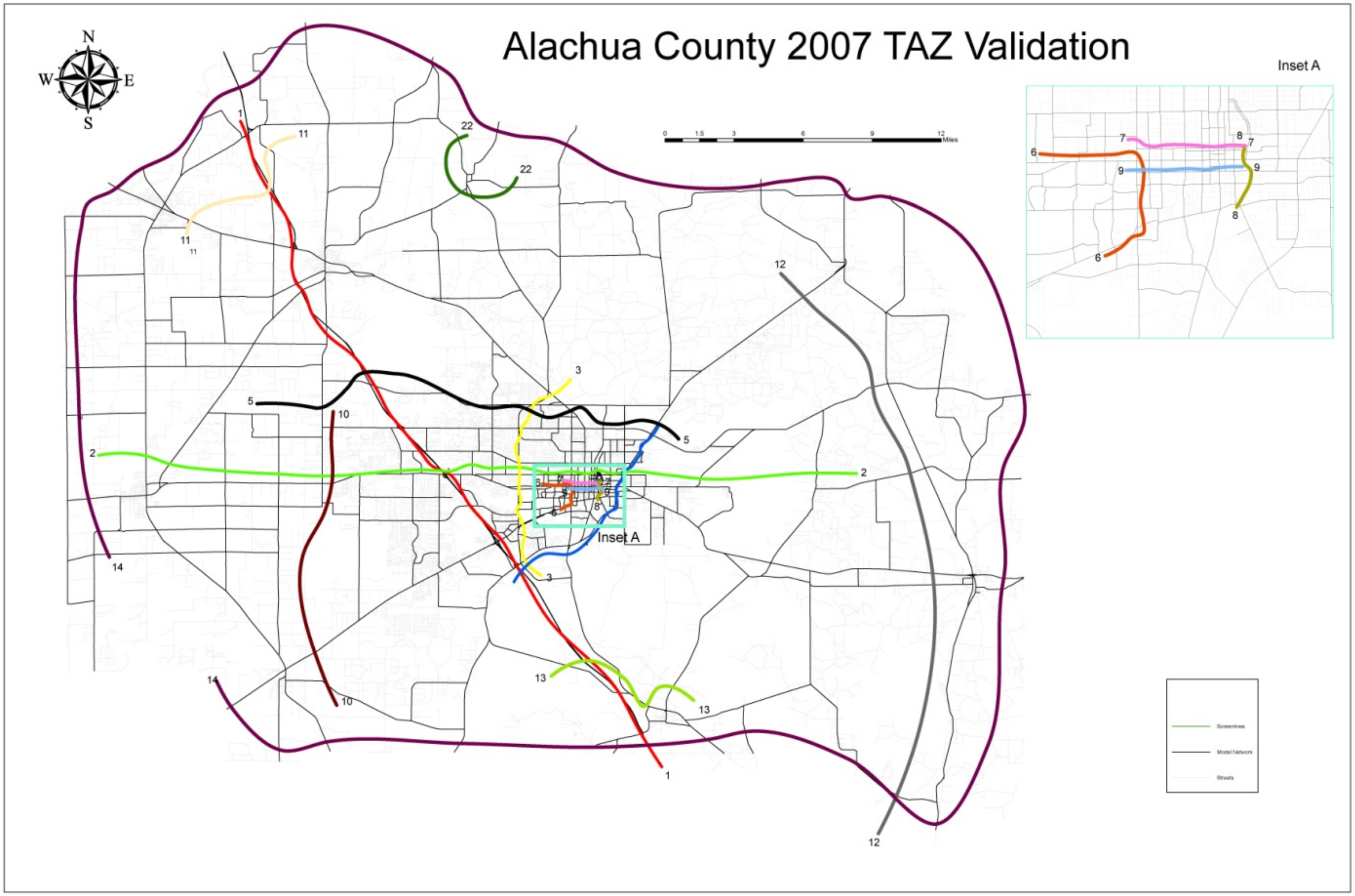
Map 1: Screenlines



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Task 2.1.2 Traffic Count Data

Traffic count data and locations were made available for the 2007 Base Year by the MTPO, the Florida Department of Transportation, City of Gainesville, Alachua County and the University of Florida. Count data collected by several Developments of Regional Impact (DRIs) that were undergoing review during this period were obtained for use in model validation. Additional counts taken on the University of Florida campus as part of the Master Plan Update in 2009 were also obtained for use in the validation, as necessary. All data will be reviewed for use in the 2007 Base Year validation. Count data locations are adequate for model validation purposes, and have been converted into Annual Average Daily Traffic (AADT) using the 2007 peak season average weekday adjustment factor, where appropriate. Counts provided by the MTPO were already in AADT format. A map of traffic count station locations for use in model validation is included as **Map 2**. The map identifies the links in the base year highway network where traffic count data exists.

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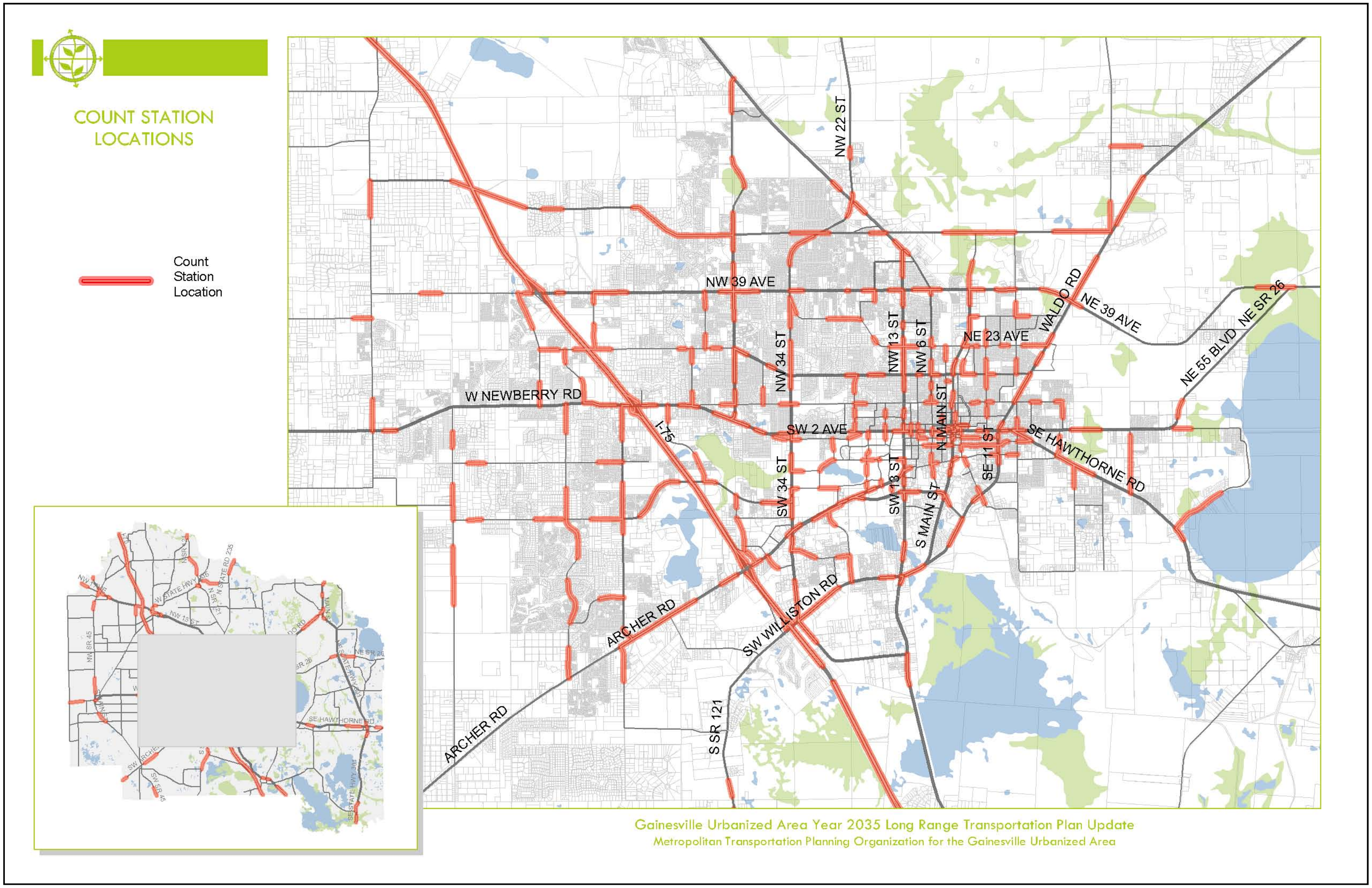
Map 2: Traffic Count Station Locations



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Task 2.1.3 Highway Network

A highway network for the 2007 Base Year has been developed based on the network used for the previous LRTP update. The 2007 Base Year Network incorporates changes since the last plan update, to reflect the current number of lanes and roadway functional classification. Maps of the highway network are included under Task 2.2.2 below. These updated networks (highway and transit) were provided to the modeling consultant for use in creating and validating the updated model in Cube Voyager. A full description of the model networks and updates is be provided in the following sections.

Task 2.1.4 Transit Network

The transit network for the 2007 Base Year has been developed based on information provided by the Gainesville Regional Transit System (RTS). A map of the transit network is included under Task 2.2.3 below. As mentioned above, this network was provided to the modeling consultation for model update and validation.

Tasks 2.1.5 Transit Service Data

Transit service data for Fiscal Year 2008 were obtained from the RTS for Citywide and University of Florida (UF) campus routes. **Table 1** below shows the ridership data by month for each route. In addition to route ridership data, information on service characteristics (fare, frequency, span of service, stop locations, etc.) was obtained for fixed route transit service in the Gainesville urbanized area. During the LRTP process, RTS was conducting a Bus Rapid Transit Feasibility Study and System Master Plan for Gainesville and the urbanized areas of Alachua County. Once the study was completed, relevant data were incorporated into the Year 2035 Update process. In the spring of 2009, RTS conducted an extensive systemwide on-board survey to capture passenger characteristics and origin-destination travel patterns. This database of information was obtained and was incorporated into the validation of the mode split model.

Table 1: RTS Fiscal Year 2008 Ridership by Route

RTS Fiscal Year 2008 Ridership by Route

October 1, 2007 to September 30, 2008

Route	City Routes	October Passengers	November Passengers	December Passengers	January Passengers	February Passengers	March Passengers	April Passengers	May Passengers	June Passengers	July Passengers	August Passengers	September Passengers	FY TOTAL FY 2008Pass.
1	Butler Plaza to Downtown via Archer Rd	47,675	38,931	29,128	40,399	38,770	34,138	36,659	33,582	33,796	38,153	41,424	51,934	464,589
2	Downtown to Robinson Heights via SE 15th St.	8,339	7,433	7,189	9,132	8,625	8,151	8,006	6,824	6,566	7,021	7,153	9,421	93,860
5	Oaks Mall to Downtown via University Ave.	47,958	41,059	30,224	41,627	41,213	36,633	41,779	28,355	27,855	30,548	32,876	50,493	450,620
6	Downtown to Gainesville Mall via 6th Avenue	9,093	7,689	7,412	7,687	7,946	8,133	8,080	8,545	8,309	9,125	8,721	10,089	100,829
7	Downtown to Eastwood Meadows	9,152	8,890	8,553	10,546	9,564	10,701	11,011	9,112	7,846	7,462	8,057	9,785	110,679
8	Pine Ridge to Shands via NW 13th St.	33,898	26,893	17,711	29,302	29,398	24,867	27,390	22,422	21,635	24,270	23,934	38,625	320,345
9	Lexington Crossing to McCarty Hall	96,228	69,761	22,139	77,789	84,804	60,674	71,762	35,104	34,504	43,388	35,457	88,819	720,429
10	SFCC to Downtown via NW 16th Ave./University Ave.	9,456	7,285	4,982	5,985	6,021	5,377	5,613	5,111	4,890	5,485	5,754	9,735	75,694
11	Eastwood Meadows to Downtown via University Ave.	10,420	8,686	8,162	9,816	9,546	8,825	9,446	10,130	9,268	9,603	9,443	10,494	113,839
12	Campus Club to McCarty Hall	81,255	61,548	24,315	67,120	72,928	54,670	64,319	28,038	27,613	34,136	41,069	90,660	647,671
13	Job Services to Newell Dr./Museum Rd. via 13th St.	50,228	39,540	18,569	41,775	43,512	34,055	39,505	19,225	19,371	23,321	24,518	39,724	393,343
15	Downtown to NW 23rd St./NW 6th St.	24,833	22,046	21,036	22,228	22,510	21,343	23,209	24,178	22,852	23,288	20,609	24,007	272,139
16	Newell Dr./Museum Rd. to Sugar Hill via 16th Ave.	34,847	27,186	14,092	27,837	29,583	25,045	28,525	16,378	16,419	18,894	20,780	35,954	295,540
17	Shands to Downtown(Began August 2007)	33,271	25,450	13,921	22,635	23,932	18,455	22,574	11,524	10,822	12,501	16,806	30,160	242,051
20	Oaks Mall to McCarty Hall via SW 20th Ave.	100,418	77,249	35,438	81,748	85,178	64,652	78,650	46,500	46,417	61,078	56,265	115,975	849,568
21	SW 43rd St. to McCarty Hall	51,376	36,826	12,152	45,095	47,576	32,635	36,516	3,766	3,976	5,698	13,679	48,018	337,313
24	Downtown to Job Corps via SR 24 (Waldo Rd.)	10,919	9,438	7,518	8,968	9,162	9,165	8,710	7,680	7,169	7,588	7,860	10,742	104,919
29	Shands to Cobblestone (Began August 2007)	3,316	2,274	692	2,673	3,120	2,394	2,616				-		17,085
34	Lexington Crossing to the Hub	45,560	32,816	11,418	36,879	39,330	29,555	33,967	13,765	14,051	18,294	22,678	55,229	353,542
35	McCarty Hall to Homestead Apartments	76,741	57,513	20,170	59,388	63,149	46,026	54,052	21,001	20,506	23,872	28,453	72,638	543,509
36	McCarty Hall to SW 34th St./Archer Rd.	19,415	13,433	3,964	15,931	17,708	12,508	13,433	-			4,806	16,474	117,672
43	SFCC to Downtown via 43rd St.	16,345	12,073	6,850	13,724	14,154	11,522	13,241	10,534	10,556	11,549	12,004	20,428	152,980
75	Butler Plaza to Oaks Mall via 75th St.	17,272	16,181	16,720	18,934	19,637	18,892	19,196	20,055	19,746	20,613	19,926	21,551	228,723
300	Later Gator A (Downtown to Reitz Union)	5,815	4,441	2,057	4,602	5,199	3,266	5,415			3,764	4,257	6,517	45,333
301	Later Gator B (Lexington Cr. to Downtown)	2,956	2,891	1,148	2,021	2,669	1,460	2,732			3,050	2,627	4,568	26,122
302	Later Gator C (Oaks Mall to Downtown)	3,486	4,280	1,405	3,102	3,310	2,290	3,603			3,631	3,222	5,293	33,622
305	Later Gator F (Campus Club to Downtown)	1,479	1,547	687	1,064	1,561	984	1,538			1,264	1,262	2,433	13,819
400-408	Sunday Service Routes (Demonstation Project)	3,282	3,587	4,055	3,754	3,928	4,334	3,403	2,809	3,671	3,474	4,964	4,591	45,852
	City totals	**855,033**	**666,946**	**351,707**	**711,761**	**744,033**	**590,750**	**674,950**	**384,638**	**377,838**	**451,070**	**478,604**	**884,357**	**7,171,687**

Route	Campus Routes	Passengers	Passengers	Passengers	Passengers	Passengers	Passengers	Passengers	Passengers	Passengers	Passengers	Passengers	Passengers	FY 2008Pass.
117	Park-N-Ride 2 (SW 34th St.)	26,413	18,019	5,019	16,337	17,602	12,039	13,909	329			5,785	21,972	137,424
118	Park-N-Ride 1 (Harn Museum)	94,568	66,289	17,622	70,324	80,379	58,152	67,816	924			14,480	65,431	535,985
119	Family Housing	8,916	6,578	2,326	7,494	8,485	6,125	7,783	3,319	3,361	7,667	4,709	9,520	76,283
120	West Circulator (Fraternity Row)	36,238	25,857	7,735	34,352	37,898	27,594	31,968	6,126	6,932	21,259	14,343	41,514	291,816
121	Commuter Lot	28,046	20,342	7,287	18,239	22,990	18,092	22,932	10,038	12,145	21,615	13,800	32,057	227,583
122	UF North/South Circulator	7,736	5,360	1,390	6,062	6,869	4,718	5,197	1,681	1,742	2,152	1,863	4,313	49,083
125	Lakeside	32,909	22,807	6,604	22,951	24,116	15,183	19,121	7,529	8,057	28,854	17,260	32,599	237,990
126	UF East/West Circulator (Evening)	8,742	6,395	2,629	5,941	7,200	4,626	6,187	642	703	2,743	4,206	9,662	59,676
127	East Circulator (Sorority Row)	31,858	21,613	6,276	25,665	28,559	20,178	23,401	4,539	4,561	6,961	10,257	32,531	216,399
128	Lake Wauburg	99	28	27	110	50	164	130	120	10	167	97		1,002
	Campus totals	**275,525**	**193,288**	**56,915**	**207,475**	**234,148**	**166,871**	**198,444**	**35,247**	**37,511**	**91,418**	**86,800**	**249,599**	**1,833,241**

	Other Services Totals	117	35,017	1,442	3,972	3,056	2,781	1,539	53	68	-	10,513	20,882	79,440
	Systemwide Totals	**1,130,675**	**895,251**	**410,064**	**923,208**	**981,237**	**760,402**	**874,933**	**419,938**	**415,417**	**542,488**	**575,917**	**1,154,838**	**9,084,368**

Indicates route not in operation
Sunday Service

Fiscal Year 2007-08
RTS Ridership by Route

The transit service data also include the following datasets that were be developed during the Model Validation process:

- AM Peak Screenline Ridership by route, mode and corridor;
- Midday (off-peak) Screenline Ridership by route, mode and corridor;
- Average Weekday Ridership by route, mode and corridor; and
- Average Weekday Transfer Data for AM Peak and Midday Ridership transferring between modes and between routes of the same mode.

Task 2.2 Mapping

Task 2.2.1 Traffic Analysis Zone Map

Traffic Analysis Zones (TAZs) used for the previous Plan Update (2000) were evaluated for use in the Year 2035 Update. An additional 100 TAZs were added as well as other boundary adjustments to reflect changes in land development activity, better reflect driveway access to the highway network, and to account for possible future road connections contemplated in Alachua County's adopted Comprehensive Plan. TAZ boundaries were adjusted as follows:

- The 2000 zones of 131, 230 and 431 were combined into each neighboring 2007 TAZ, as a result of necessary zone boundary shifts. (Therefore, numbers of 131, 230 and 431 are not used in the 2007 model.)
- Year 2007 zones 444, 456 and 466 were newly used in the 2007 TAZ structure, but they were not used in 2000 TAZ structure. (As a note, numbers of 111, 119, 129, 145, 175, 457, 458 and 459 remained unused in 2007 model since they were not used in 2000 model.)
- External zones were renumbered to 600 - 624 in 2007 TAZ structure. The 2000 model used 500 - 524 for external stations.

Map 3 shows both the 2000 and 2007 TAZ structures to highlight changes made.

Task 2.2.2 Highway System Network Map

The following figures show various characteristics of the highway network for the 2007 Base Year, including number of lanes (**Map 4**), area type (**Map 5**), and facility type (**Map 6**). These maps were distributed to agency staff for review and comment.

Task 2.2.c3 Transit System Network Map

Map 7 displays the 2007 transit routes provided by RTS for use in model validation and as a base of transit network alternatives to be developed and evaluated in the LRTP.

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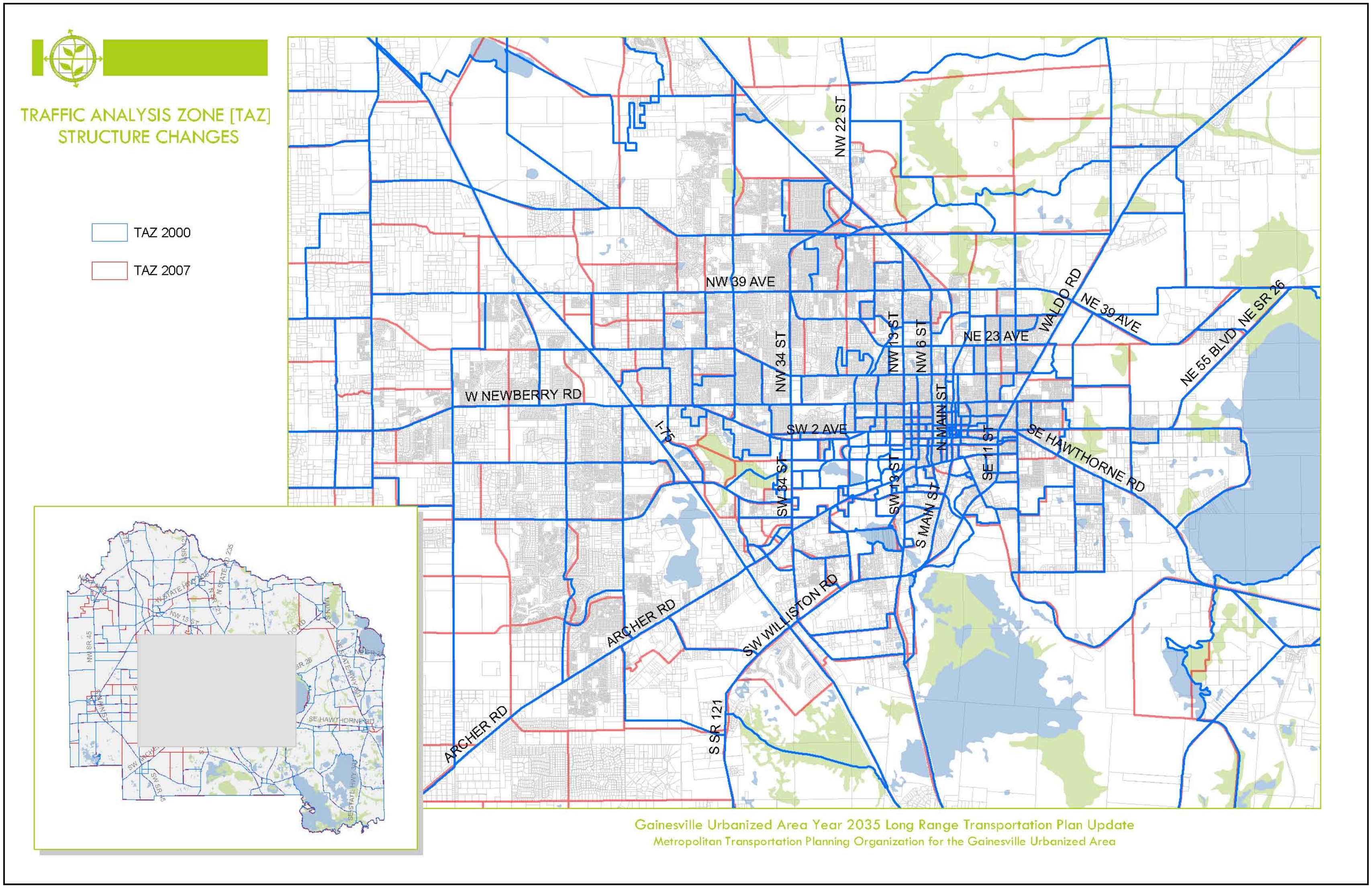
Map 3: Traffic Analysis Zones



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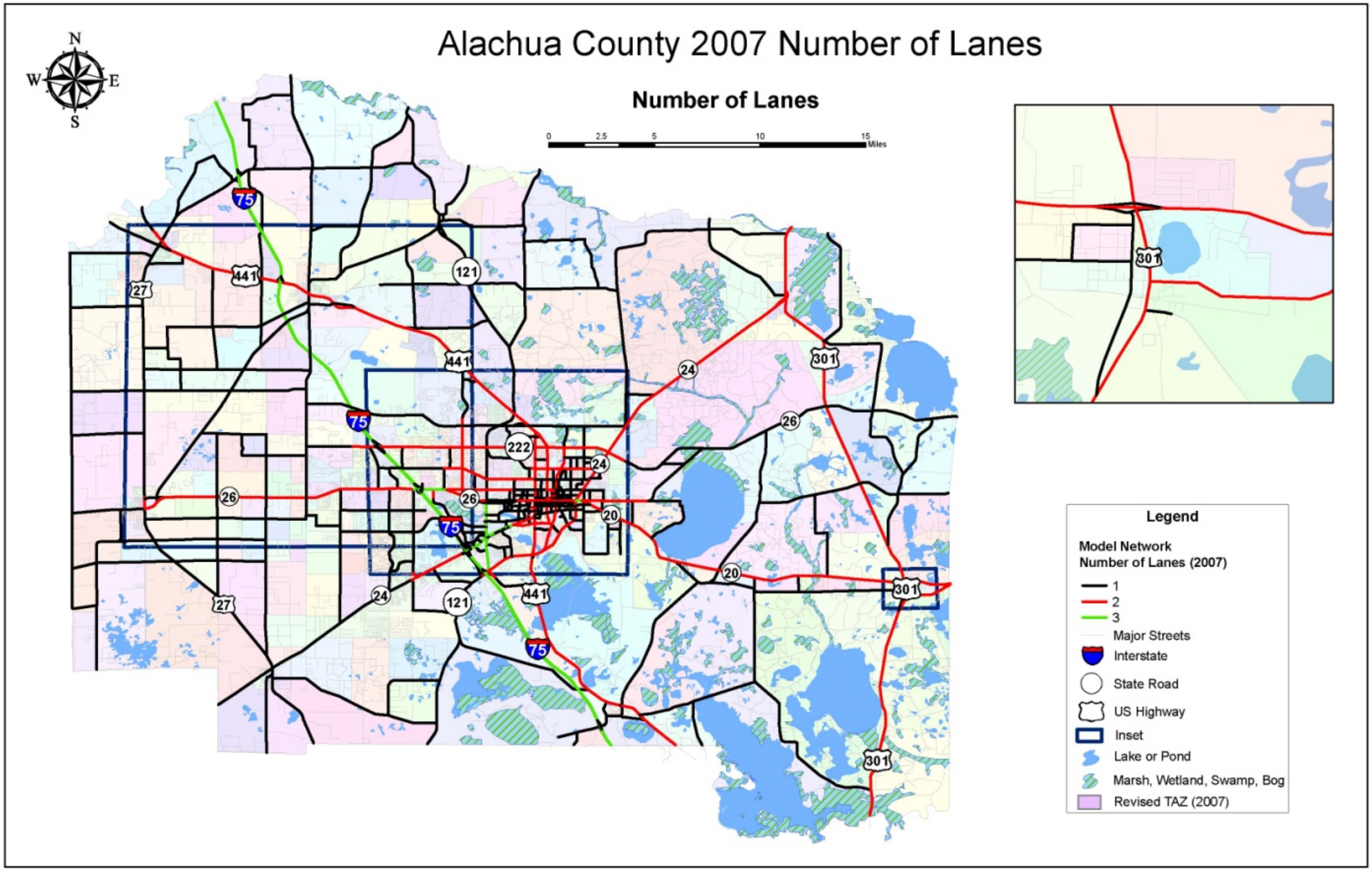
Map 4: Highway System Network: Number of Lanes



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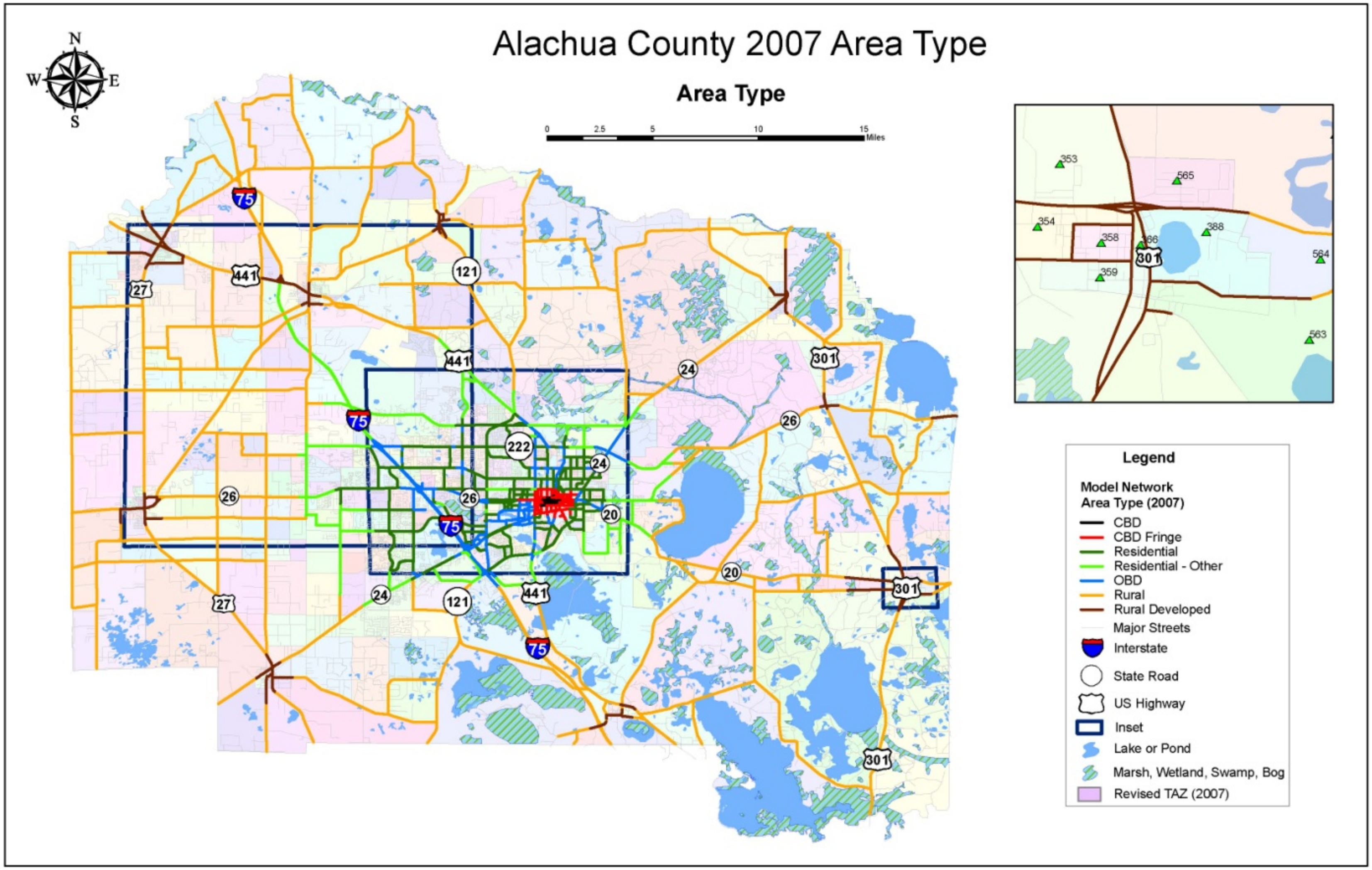
Map 5: Highway System Network: Area Type



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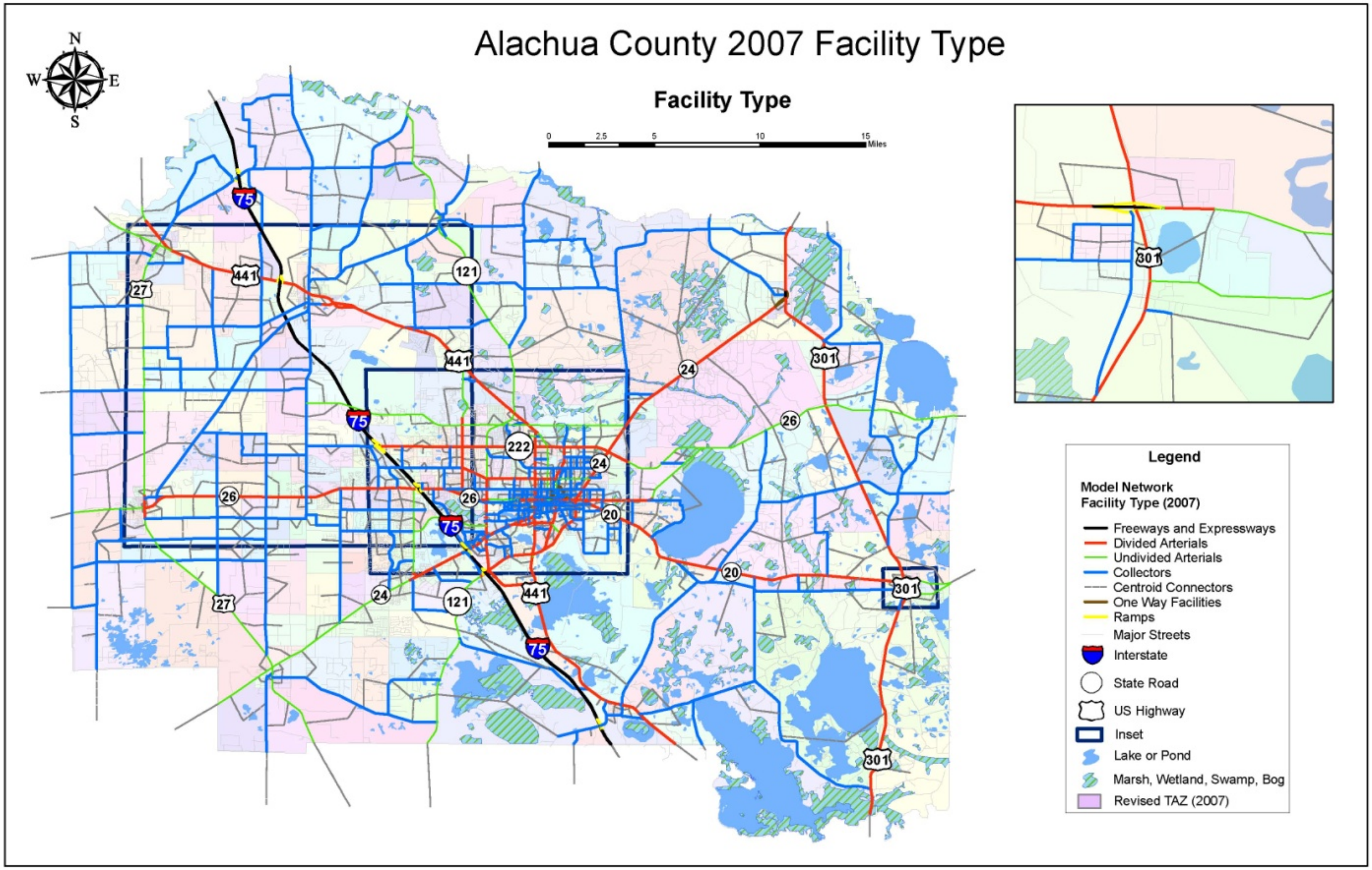
Map 6: Highway System Network: Facility Type



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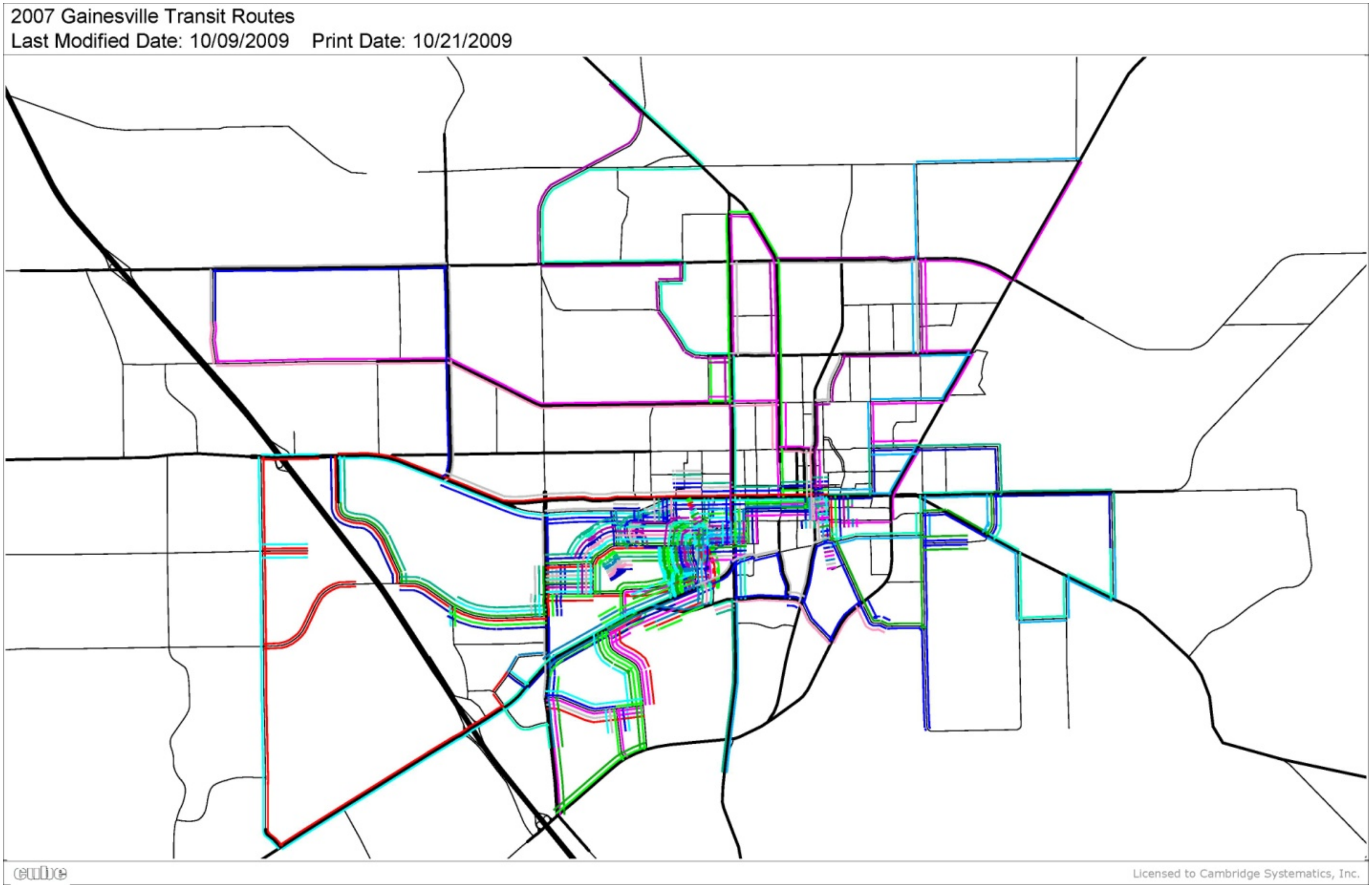
Map 7: Transit Routes



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Task 2.3 Data Development

The Data Development task focused on socioeconomic data for the model and use in preparing the Long Range Transportation Plan. These data were prepared by MTPO and University of Florida staff and are based on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity. One future land use scenario which represents the most realistic forecast of where people will live and work in Alachua County in the Year 2035 based on City and County adopted Comprehensive Plans is being tested and evaluated for this Plan Update. All of the socioeconomic data for inclusion in the ZDATA files for the modeling portion of the Year 2035 Update are included in the MTPO's report *Year 2035 Livable Community Reinvestment Plan Socio-Economic Report: Base Year 2007 and Forecast Year 2035* (available for download at *http://ncfrpc.org/mtpo/sedata.htm*). The following section outlines the datasets provided and a status report on the development of any additional data.

Task 2.3.1 ZData1: Population and Household Data

MTPO staff provided population and housing data for each TAZ. The data include the following:

- Base year (2007) population and housing data from the 2000 U.S. Census for each TAZ, including:
    - Population and number of single-family and multi-family units;
    - Auto availability;
    - Percentage of vacant single-family and multi-family units; and
    - Population and number of single-family and multi-family units occupied by non-permanent residents.
- Future year population forecasts from the University of Florida, Bureau of Economic and Business Research (BEBR), interpolated to estimate the Year 2035 study area population. MTPO staff reallocated the 2035 data to reflect TAZ adjustments described previously.
- Number of hotel/motel units from and associated occupancy rates.
- Vacancy rates for single-family and multi-family dwelling units (Year 2000 Census).

Tasks 2.3.2 ZData2: Employment and School Enrollment Data

MTPO staff provided base year (2007) employment data for each TAZ classified by type (service, commercial, industrial). The ZDATA2 dataset also includes the following:

- Parking cost data for City and UF campus TAZs where short-term paid parking and long-term paid parking are available.
- Base Year (2007) public school enrollment from Alachua County School Board and comparable data for private schools within the study area.
- MTPO staff reallocated the 2035 data to reflect TAZ adjustments described previously.

Task 2.3.3 ZData3: Special Generators

The goal for this model validation effort is to minimize the use of special generators. The special generators used for the previous 2025 Plan Update (2000 Base Year) are listed below. At the current time, only Santa Fe College and the Gainesville Regional Airport are included as special generators for the Year 2035 Update. Certain regional parks may be added as necessary once the corridor validation checks are complete. The new model replicates traffic patterns without use of many special generators, and if the model validation process indicates that more are needed, they will be added.

2000 Special Generators

- Various Group Housing Quarters (8)
- Various Housing Complexes (3)
- UF Parking Garages (6)
- UF Dorms (6)
- Santa Fe College
- Oaks Mall
- Butler Plaza
- Various Retail Centers (3)
- Thornbrook

Task 2.3.4 ZDATA4 and EETRIPS Data

ZDATA4 and EETRIPS Data developed for the previous update were reviewed and updated and are discussed in the following sections. They were reviewed and updated to reflect FDOT's Interstate Master Plan Study for the I-75 corridor. These data were adjusted as necessary during the model validation process to ensure accurate reflection of external trips (outside the county).

Task 2.4 Designation of Screenlines

As discussed under Task 2.1.1 above, screenlines and cutlines from the previous Long Range Transportation Plan Update were evaluated for their applicability to the Year 2035 Update and determined to be sufficient for this project. Some adjustment may be made for the SW Archer Road corridor to reflect changing travel patterns in that area, depending on validation steps.

Task 2.5 Traffic Count Data

As discussed under Task 2.1.2 above, traffic count data and locations were made available by the MTPO to reflect counts taken by various agencies. These data are being reviewed for adequacy, and the counts have been adjusted to average weekday peak season counts, where necessary. Most of the data obtained were already in AADT format. Seasonal adjustment factors for local roads are being reviewed and will be used where appropriate.

Task 2.6 Highway and Transit Networks

Task 2.6.1 Highway Network

As discussed under Tasks 2.1.3 and 2.2.2 above, the highway network was developed for the 2007 Base Year.

Task 2.6.2 Transit Network

As discussed under Tasks 2.1.4 and 2.2.3 above, the transit network was developed for the 2007 Base Year.

Task 2.7 Transit Service Data

As discussed under Task 2.1.5 above, the transit service data for Fiscal Year 2008 have been obtained from the Regional Transit System (RTS) for City and University of Florida (UF) campus routes. The additional required datasets will be were developed during the model validation process.

Task 2.8 Data Projections

MTPO staff provided the socioeconomic data files (ZDATA1 and ZDATA2) for the Year 2035. ZDATA4 and EETRIPS data developed for the previous update were reviewed and updated and are reported in the following sections. Refer to the separate MTPO report documenting the development of 2035 population and employment projections. The Needs and Cost Feasible Plans are based on the forecasts, as adjusted to reflect TAZ splits.

Land Use and Transportation Accessibility Analysis

In addition to these required activities outlined in the scope of services, a significant amount of effort in this task entailed data development necessary to perform a land use and transportation accessibility analysis to support the peak oil/climate change factors associated with a preferred Needs Plan for the Year 2035. The first step involved breaking down the entire county into quarter mile grids and reallocating the socioeconomic data to this smaller geography. This was necessary to better understand and evaluate proximity of development to various transportation network characteristics. Data developed included detailed street network layer (Alachua County road centerline file), RTS network and detailed route information, bicycle and pedestrian facilities from City and County sources, MTPO socioeconomic data, existing land use information from the Alachua County Property Appraiser, and future land use from County and City sources. Using this smaller unit of analysis and more detailed network data, it sets the framework to properly assess the relationship of land use and transportation with the following variables:

- Network / intersection density (which is an indicator of safety and mode share in the research literature)

- Proximity to various modes (service and facilities)
- Walkable destinations (civic, institutional, retail, services)
- Land use density and diversity (mix)

These measures have been aggregated to identify a cumulative measure of land use/transportation accessibility for both existing and future year (2035) conditions, and were instrumental in the development and evaluation of alternative networks and peak oil/climate change factors. This is further documented in the Needs Plan.

Conclusion

This section documents the data development activities undertaken to prepare for the validation of the 2007 Base Year Gainesville Urbanized Area Transportation Study Model and the development of the Year 2035 Long Range Transportation Plan. The data developed as part of this task were used in the iterative model validation process in subsequent steps, and some information documented here was subject to change based on agency review and efforts to optimize model performance. These final adjustments are documented in the Model Validation section and in subsequent tasks associated with the LRTP Update.

Data Review and Verification

Introduction

This section documents the data development and review process for updating the Alachua County base year 2007 model. This was done as part of the Year 2035 Long-Range Transportation Plan (LRTP) Update for the Metropolitan Transportation Planning Organization (MTPO) for the Gainesville Urbanized Area. The 2007 model is an update of the previously validated 2000 Alachua County model for the Metropolitan Transportation Planning Organization for the Gainesville Urbanized Area completed in 2005.[1] Like the Alachua County 2000 model, the 2007 model study area covers the entirety of Alachua County, including all nine municipalities within the county. **Map 8** shows the Alachua County model study area.

The Year 2035 LRTP Update was initiated in early 2009, with the selection of a consultant team led by Renaissance Planning Group with Cambridge Systematics, Inc. (CS) as subconsultants responsible for conducting the model validation and developing the 2035 existing-plus-committed (E+C) model. The primary objectives of the Alachua County 2007 model update were to evaluate the previous Alachua County 2000 model structure, compile base year 2007 data, review and update data and parameter assumptions, validate a new base year 2007 model, and implement the

[1] *Corradino Group, Gainesville Urbanized Area Year 2025 Long-Range Transportation Plan Update Technical Report 4: Gainesville Urbanized Area Model Update. Prepared for Metropolitan Transportation Planning Organization for the Gainesville Urbanized Area, December 2005.*

latest Florida Standard Urban Transportation Model (FSUTMS) standards and file formats using Cube-Voyager software.

This section describes the process of collecting data and updating the socioeconomic data, traffic analysis zones (TAZ), the highway and transit networks, traffic count data, and screenlines. This section also describes preparation of the base year 2007 TAZ and socioeconomic data and the development of the highway and transit network data. The primary sources of data were the Florida Department of Transportation (FDOT) District 2, Metropolitan Transportation Planning Organization for the Gainesville Urbanized Area staff, the Gainesville Regional Transit System (RTS), and University of Florida (UF) staff. Data were gathered for both the Gainesville 2007 base year model and the future horizon year 2035 E+C model.

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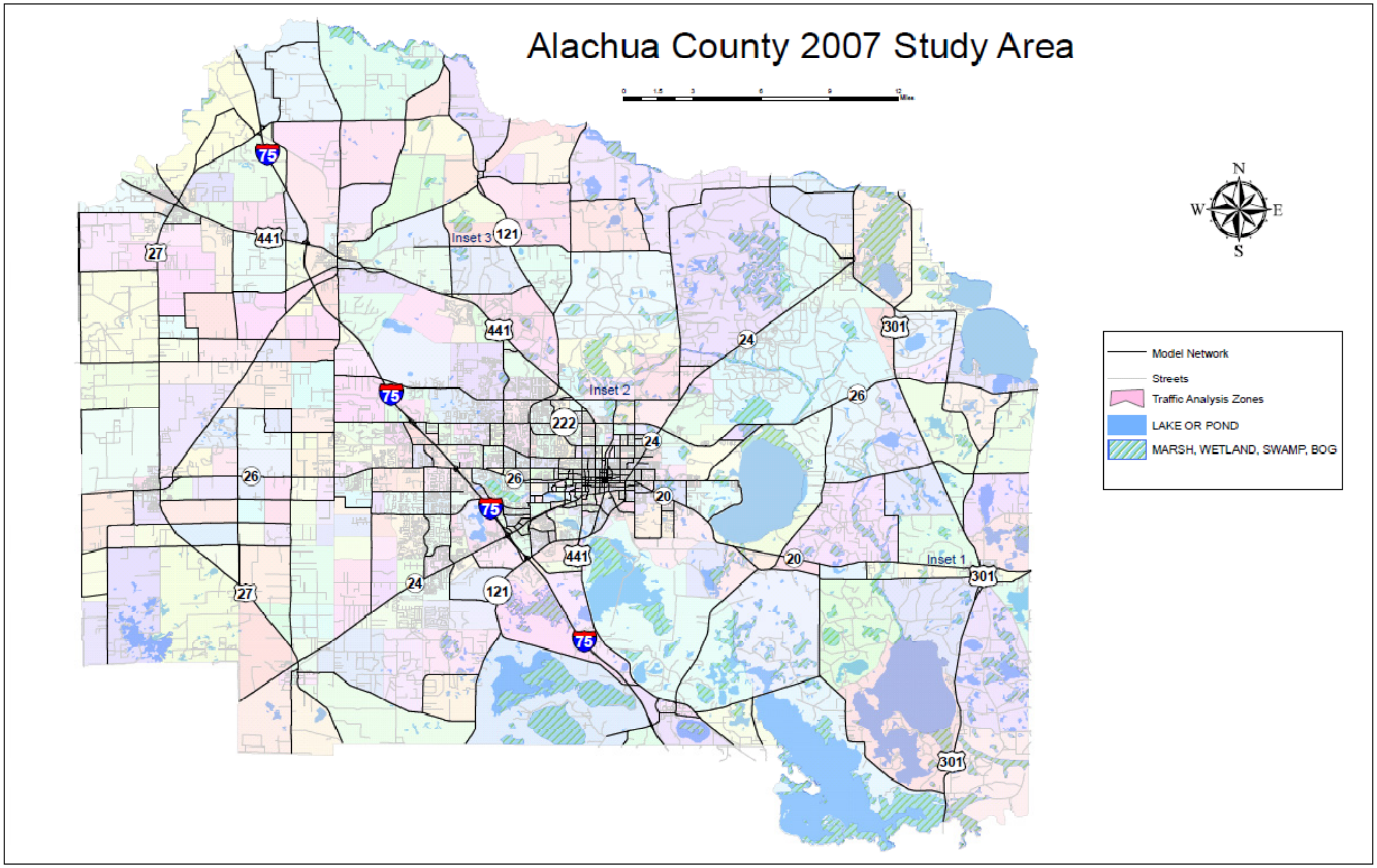
Map 8: Alachua County-Gainesville 2007 Study Area



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Socioeconomic Data and TAZs

The 2000 Alachua County model was a newly developed model that used a new set of zonal data files created by the Metropolitan Transportation Planning Organization (MTPO) for the Gainesville Urbanized Area staff to support the Northeast Florida Regional Planning Model (NERPM) trip generation program developed by FDOT District 2.[2] As part of the Alachua County 2007 model validation effort, the MTPO provided updated socioeconomic data files for the new base year, which were reviewed and modified by the consultant team. Special generator and external trip files were updated by the consultant team. A review of the Traffic Analysis Zone (TAZ) shape file also led to zonal modifications described in this section.

Traffic Analysis Zones

TAZ shape files from the Alachua County 2000 model were reviewed for consistency with recent recommendations on TAZ delineation for the State of Florida[3] and recommendations for zone splits were made by the Consultant team. Consultant staff reviewed the Alachua County-Gainesville MTPO 2000 (2025 LRTP) TAZ map for the following considerations:

- TAZ splits to reflect existing roadways and physical features;
- TAZ splits to reflect proposed developments of regional impact (DRI);
- TAZ splits to eliminate elongated zone shapes;
- TAZ splits to reflect proposed future roadway corridors;
- TAZ boundary shifts to reflect major corridors; and
- Locations where TAZs could be combined.

A paper copy of the TAZ map was marked up with potential zone boundary changes and provided to MTPO and UF staff for review and concurrence. Of the zone splits recommended by the Consultant team, most of these were approved for implementation. The TAZ file modifications are described below.

Early during the 2007 model update, a decision was made to combine zones 148 and 191 into a single zone designated as 148. Prior to the Alachua County 2000 model, zones 148 and 191 were separate zones. Zone 148 runs along the north border of Payne's Prairie Preserve State Park, just south of Williston Rd; and zone 191 is just south of 148, running along the west border of Payne's Prairie and east of U.S. 441. The consultant determined that the zones should have remained split

[2] *Cambridge Systematics, Inc., in Association with The Corradino Group and Advanced Planning, Inc.,* Northeast Florida Regional Planning Model Technical Report No. 2, 2000 Model Validation. *Prepared for Florida Department of Transportation, December 2003.*

[3] *Cambridge Systematics, Inc. in Association with AECOM.* A Recommended Approach to Delineating Traffic Analysis Zones in Florida. *Prepared for Florida Department of Transportation September 2007.*

as the resulting combined zone resulted in a "figure 8"shape and thus the zones were again separated in the 2007 model.

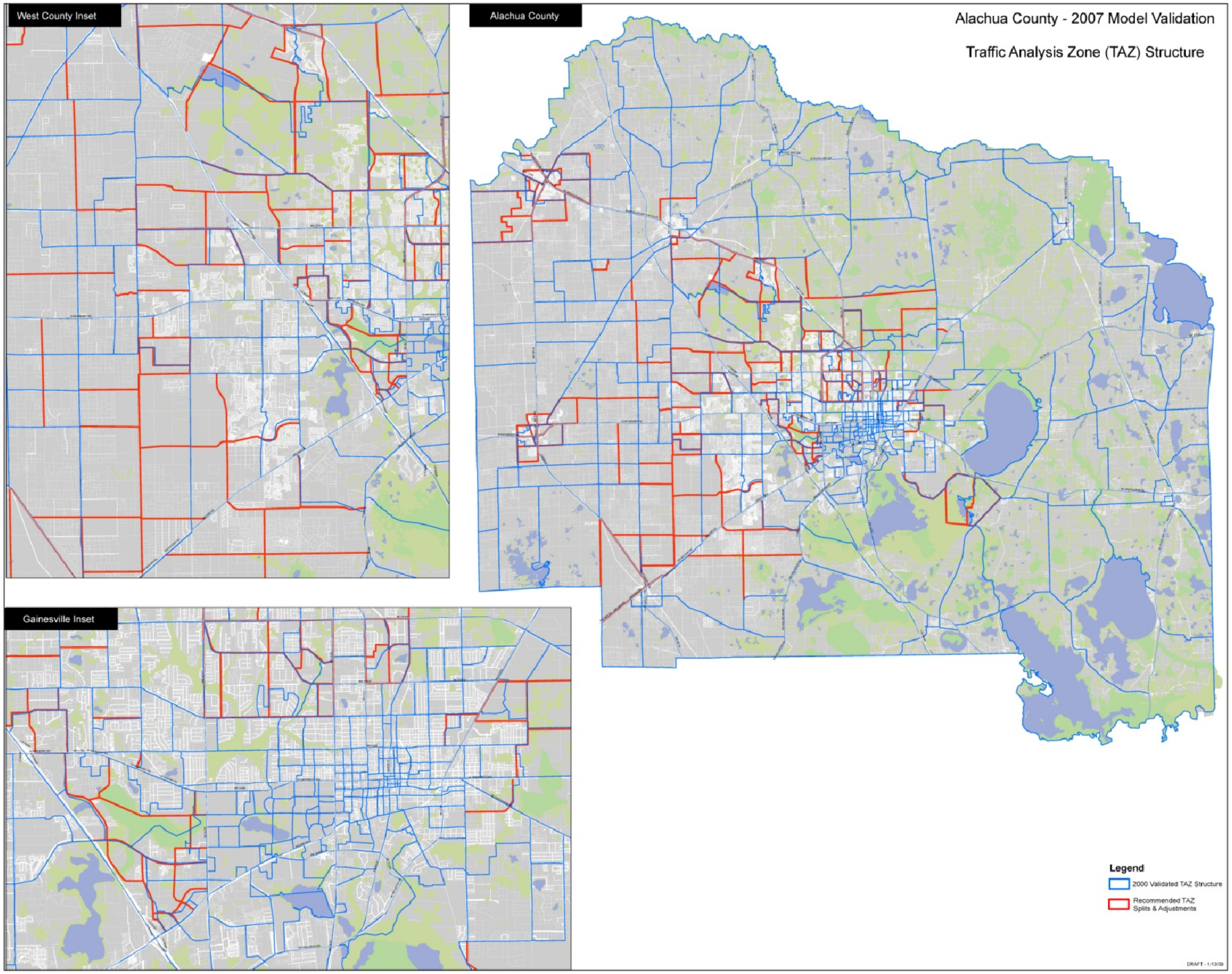
Located east of I-75 in the City of Alachua, zone 311 was adjacent to zone 337 in the 2000 network. In early phases of the 2007 model update, zone 337 was split into two zones. The west portion became zone 515 and the east portion was merged into zone 311, completely removing zone 337. The Consultant decided that the eastern portion of 337 should be separated from zone 311 and returned to zone 337, again due to a resulting "figure 8" shaped zone. For the zone splits listed above, socioeconomic data were divided up proportionately to accommodate the zone splits, consistent with previously split data from base year 2000.

Additionally, socioeconomic data for zones 232 and 237 were modified to account for the existing land use of each zone. This area likewise had been combined into a single elongated zone. Zone 237 includes The Oaks Mall and zone 232 contains only apartment complexes. The socioeconomic data was subsequently modified, placing all the employment in zone 237 and all the residential in zone 232. **Map 9** highlights the zone splits made at the beginning of the 2007 validation effort.

Base Year Socioeconomic Data

One key difference between the 2000 and 2007 Alachua County models was implementation of Cube-Voyager scripting and new FSUTMS file formats and naming conventions. The previous base year Alachua County 2000 model used the NERGEN FORTRAN program for trip generation and relied on a number of ASCII text file formats for input data. Conversely, the base year 2007 model uses Cube-Voyager scripting in place of NERGEN FORTRAN routines and uses input files in a database, rather than text, format. New FSUTMS file naming standards have eliminated the old file naming conventions of ZDATA1-4 in favor of file names that better relate to the use and function of the files.

Map 9: Alachua County-Alachua County 2007 model Zone Splits



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ZONEDATA File – Production, Attraction, and UF Zonal Data

Base year trip production and attraction data were created by MTPO staff to reflect the 2007 base year and the 2035 E+C future horizon year scenario. Also, school enrollment data were updated by MTPO staff using information provided by the Alachua County School Board. Data previously included in a separate UFZDATA file in the Alachua County 2000 model are now included in the single ZONEDATA file that also combines what was previously known as ZDATA1 and ZDATA2. Santa Fe College enrollment is included but also as a special generator in the SPECGEN file.

In addition to merging ZDATA1, ZDATA2, and UFZDATA into a single file, industrial employment was disaggregated into two separate components for better consistency with the NERGEN process for truck trip generation using trip rates from the Quick Response Freight Manual.[4] Therefore, industrial employment was disaggregated into manufacturing and other industrial, similar to categories used in the original NERGEN.

GIS mapping was used as part of the data review process. Regular meetings were held with the Metropolitan Transportation Planning Organization for the Gainesville Urbanized Area Long Range Transportation Plan Technical Advisory Committee Subcommittee in order to facilitate additional feedback on data inputs. In particular, UF staff played a significant role in providing input and refining the UF-related socioeconomic variables. **Maps 10 and 11** show the Alachua County single- and multifamily population densities by TAZ. Appendix C is a listing of ZONEDATA attributes along with notations for the UF data that are unique to this model.

SPECGEN File – Special Generators by Zone

It is best practice in travel demand forecasting to minimize the use of special generators. Special generators should only be used where validation discrepancies exist that cannot be corrected with edits to other model files and parameters. Consistent with this philosophy, validation of the 2007 Alachua County model began without special generators. Once model validation was complete, the only record added to the SPECGEN file was for Santa Fe College, added in order to correct for trip assignments in the vicinity of its campus. While the treatment of UF in the model bears some resemblance to special generators, these data are instead contained in the UFDATA section of the ZONEDATA file.

Administrative staff at Santa Fe College were contacted for future year growth forecasts. In response, the Consultant was provided with Florida Department of Education (FDOE) future enrollment projections for 2015, and an annual longer-term growth rate between 1 and 2 percent. Additional enrollment figures were also gathered from the Santa Fe College web site. To extrapolate the future enrollment, the Consultant decided that a 1.5 percent growth rate would be used, as this best represented the 1 to 2 percent provided by the Santa Fe administrative staff.

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[4] *Cambridge Systematics, Inc., COMSIS Corporation, and University of Wisconsin, Milwaukee.* Quick Response Freight Manual. *Prepared for Federal Highway Administration, 1996.*

The Consultant extrapolated a 2035 enrollment projection using the enrollment figures from each source. The number extrapolated from the Santa Fe College web site was determined to best represent the expected 2035 enrollment, consistent with the 1.5 percent growth rate, and was used to determine the 2035 special generator trips for Santa Fe College in the SPECGEN file.

INTEXT File – External Trip Data

There are 26 external zones in the Alachua County 2007 model, depicted in **Map 12** and numbered as zones 600 to 625. Due to the number of zone splits in the 2007 model, external zones were renumbered from the 2000 sequence of 500 to 525 by simply adding 100 to the former external zone/station number. The 2007 base year external trip files were updated using data from the *2007 Florida Traffic Data* CD, provided by FDOT. External trip adjustments and corrections made to the previous model as part of the I-75 Master Plan project[5] also were used as a starting point for the 2007 model update.

No recent external origin-destination intercept survey data were collected at Alachua County external stations so the existing splits between internal-external (IE) and external-external (EE) trips were generally assumed to be valid for the 2007 base year model. Some adjustments to the previous external splits, made during the I-75 Master Plan based on a combination of logic and local knowledge, were maintained for the 2007 model.

Future year external trips were generated by extrapolating figures from three sources: the I-75 Year 2035 Master Plan; the 2025 Alachua County model; and count trend extrapolations generated using the *2007 Florida Traffic Data* CD. The 2035 values were generated from each source and the best fit numbers for each of the external count stations were used. External forecasts for the I-75 corridor were based on projections from the Florida Statewide Model[6], consistent with the I-75 Master Plan. **Table 2** depicts the resulting 2007 and 2035 external trips. Appendix D includes tables depicting alternate external forecasting methodologies considered and the resulting trip numbers from each alternative forecasting approach.

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[5] *Cambridge Systematics, Inc., in Association with RS&H.* I-75 Master Plan Alachua County to State Line No Build Traffic Technical Memorandum. *Prepared for Florida Department of Transportation. December 2007.*

[6] *Cambridge Systematics, Inc.* Florida Statewide Model 2000 Validation Report. *Prepared for Florida Department of Transportation. June 2007.*

Table 2: Resulting 2007 and 2035 External Trips

Total 2007 External Trips		2007 EE and IE Number of Trips		EE and IE Percent of Trips		2035 Model Input Targets		
Ext Zone	Two-Way Vols	EE	IE	EE	IE	2035 EE Total	2035 IE	2035 Target
600	50,534	38,464	12,070	76%	24%	50,833	15,908	66,741
601	1,219	388	831	32%	68%	887	1,882	2,769
602	4,747	1472	3,275	31%	69%	2,864	6,311	9,175
603	187	26	161	14%	86%	101	621	722
604	3,618	344	3,274	10%	90%	451	4,291	4,742
605	481	142	339	30%	70%	245	580	825
606	24,658	14,964	9,694	61%	39%	21,164	13,732	34,896
607	1,124	350	774	31%	69%	691	1,512	2,203
608	8,562	4,302	4,260	50%	50%	5,495	5,433	10,928
609	388	138	250	36%	64%	251	452	703
610	9,625	4,860	4,765	50%	50%	8,546	8,288	16,834
611	11,982	10,640	1,342	89%	11%	15,354	1,938	17,292
612	346	56	290	16%	84%	107	548	655
613	7,733	826	6,907	11%	89%	918	7,682	8,600
614	65,271	42,456	22,815	65%	35%	63,129	33,967	97,096
615	3,657	1266	2,391	35%	65%	2,451	4,585	7,036
616	7,785	1890	5,895	24%	76%	2,598	8,102	10,700
617	4,332	1262	3,070	29%	71%	2,208	5,318	7,526
618	1,383	320	1,063	23%	77%	1,051	3,460	4,511
619	8,043	2,298	5,745	29%	71%	3,975	9,839	13,814
620	1,323	370	953	28%	72%	714	1,818	2,532
621	9,598	2,266	7,332	24%	76%	4,381	14,176	18,557
622	2,194	610	1,584	28%	72%	1,469	3,775	5,244
623	4,293	1216	3,077	28%	72%	1,899	4,756	6,655
624	9,896	2,800	7,096	28%	72%	4,316	10,942	15,258
625	6,802	2,000	4,802	29%	71%	2,868	6,822	9,691
Totals	**249,781**	**135,726**	**114,055**			**198,966**	**176,737**	**375,704**
			249,781					

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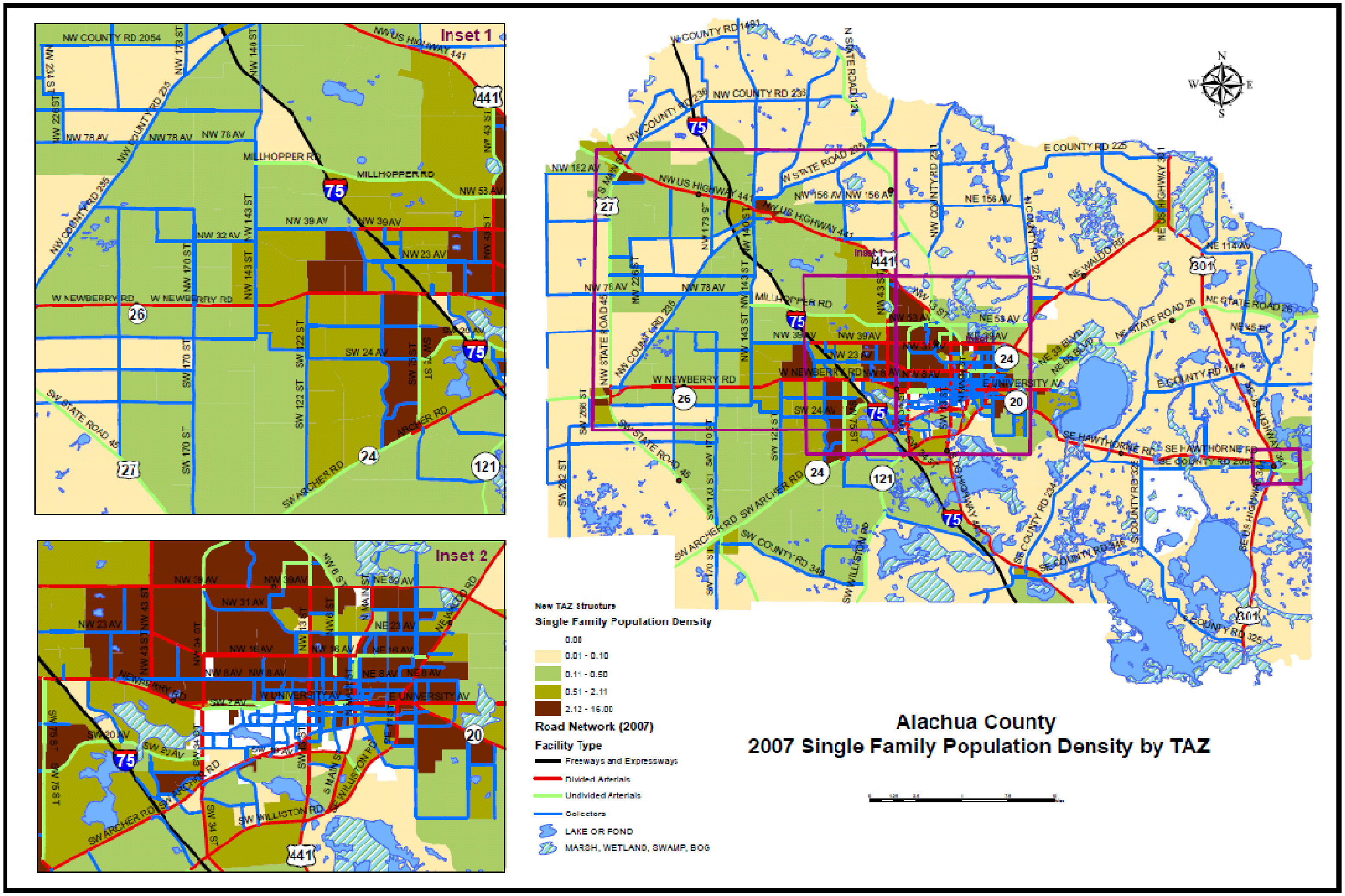
Map 10: Alachua County 2007 Single-Family Population Density by TAZ



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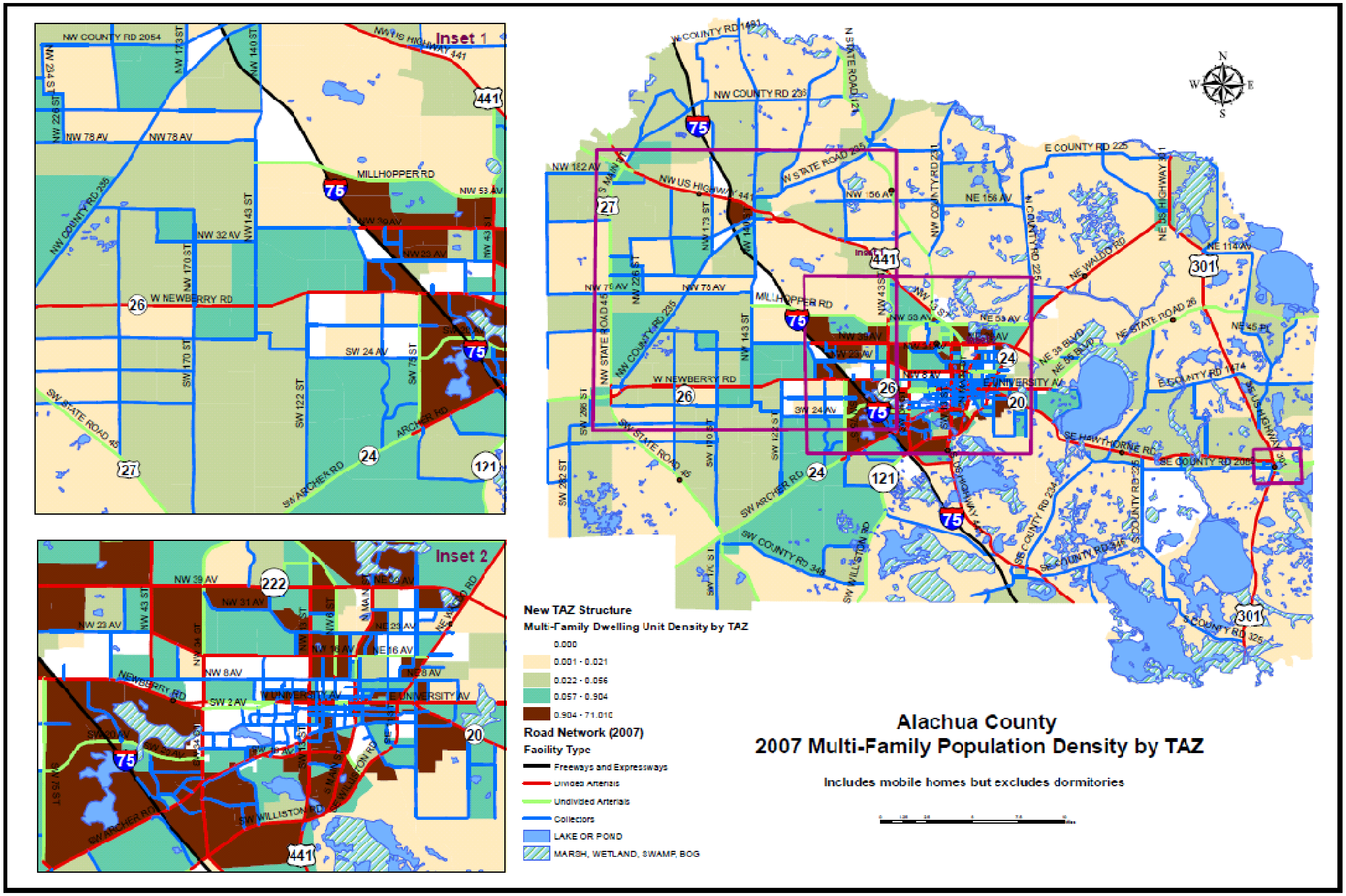
Map 11: Alachua County 2007 Multifamily Population Density by TAZ



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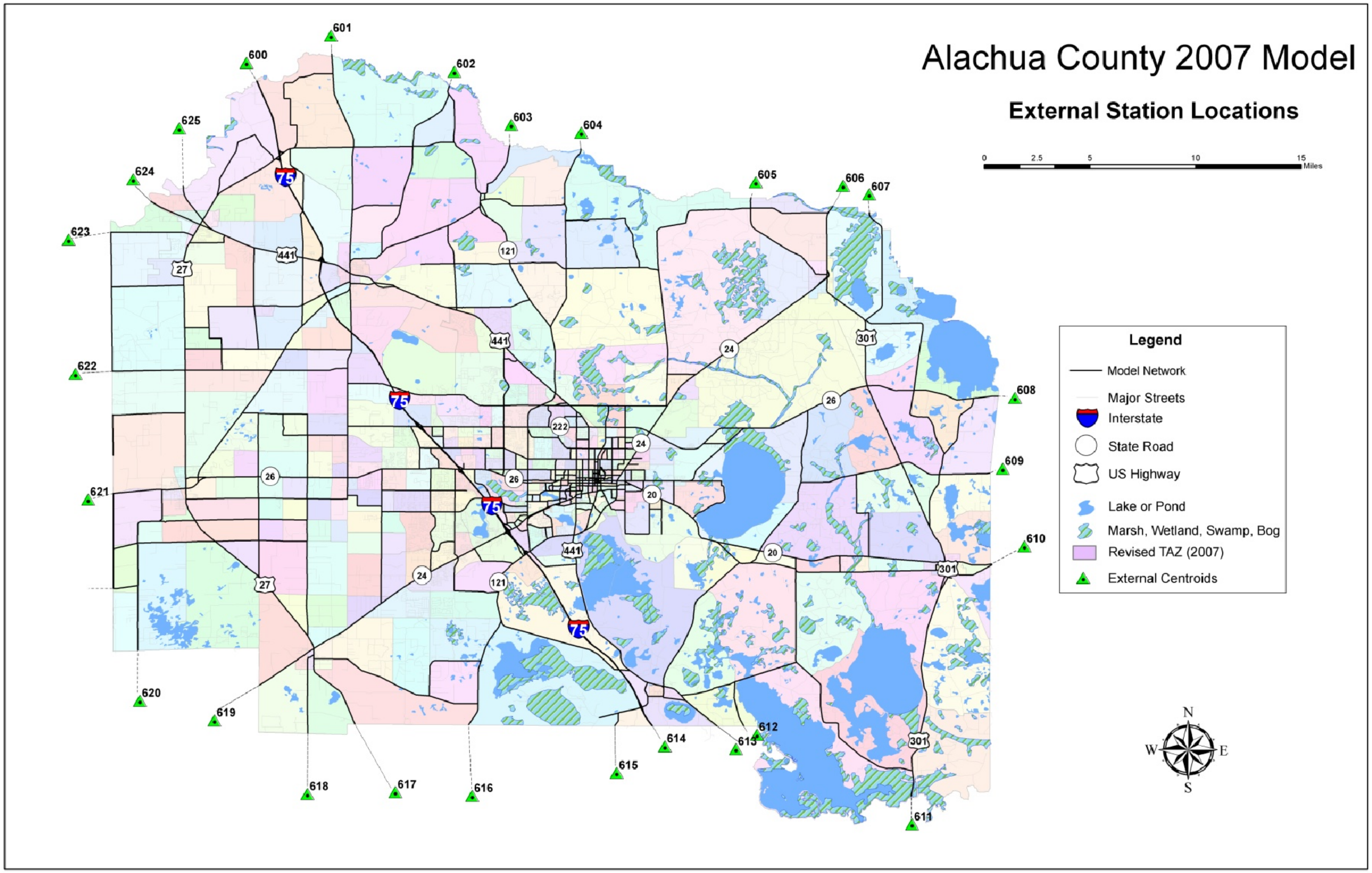
Map 12: Alachua County 2007 Model – External Station Locations



Highway and Transit Networks

As part of the Alachua County 2007 model validation effort, the base year highway and transit networks were updated starting with the Alachua County 2000 base year networks. Data needed for the validation process were gathered from FDOT, the MTPO, the RTS, and UF staff. The data were used to make roadway edits, including centroid connectors, facility types, area types, number of lanes, and traffic counts throughout Alachua County as well as route edits to fares, headways, and stop locations in Gainesville. The following section provides details on data collection and modifications made to the highway and transit networks.

Updating Highway Network Data

The highway network was reviewed for accuracy and reasonableness through use of field visits, maps, aerial photographs, standard coding practices, network-zone compatibility considerations, local knowledge, and staff recommendations to the consultant from the MTPO, FDOT, RTS, and UF. This combination of resources resulted in extensive edits to the highway network. Updates to the Alachua County 2007 highway network were made primarily by editing the 2000 base year network to represent 2007 network conditions. Many of the modifications made to the highway network included updating the area types, facility types, and number of lanes to represent 2007 conditions.

The 2000 base year model only included the following area types: central business district (CBD), CBD fringe, residential, and rural area types. This means that in the 2000 network all outlying business district (OBD) area types were left out of the model. OBD includes all retail and commercial development located outside the CBD and CBD fringe areas. A major effort was made to locate all OBD development and appropriately code these areas into the network. This included coding most of UF as high-density OBD, typified by development with multistory buildings and a greater focus on pedestrian travel. An additional area type was included for undeveloped portions of the urbanized area to account for undevelopable areas within and around Gainesville such as parks, preserves, and wetlands. Also, all existing area types were checked and updated where needed to represent expanding residential areas within Alachua County.

Facility types and number of lanes were adjusted to reflect any construction that occurred between the 2000 and 2007 base years. Network editing also included adjusting the location of numerous centroids and centroid connectors to provide for proper access to each TAZ. In addition, several intersections were recoded to reflect current access. Examples included the NW 13th Street (U.S. 441) flyover at NW 8th Avenue, the intersection of NW 8th Avenue with Newberry Road (SR 26), the grade separation at SR 20 and U.S. 301, and the loop ramp from westbound SR 222 to southbound I-75 (the latter corrected previously during the I-75 Master Plan). Also, directionality of one-way streets in and around the Gainesville CBD were corrected based on driving each corridor in the field and taking notes on findings as aerials failed to provide enough confirmation.

Additional changes and corrections were requested by UF staff and other members of the LRTP Steering Committee by way of marked up maps identifying the changes to be made by the Consultant. These changes included updating campus network coding, adding and removing campus streets, and relocating centroid connectors. Recent developments such as the Wal-Mart shopping center near Waldo Road (SR 24) in east Gainesville also were noted such that internal circulator streets could be included in the highway network. **Tables 3 and 4** below illustrate the adopted area type and facility type designations. **Map 13** shows the highway network by area type, Figure 3.2 shows the highway network by facility type, and **Map 14** shows the highway network by number of lanes.

The 2035 E+C future year highway network edits were made using a project list provided by the MTPO identifying recently completed projects. Many of the projects were minor changes to the network, only requiring changes to the number of lanes and facility types of existing roadways. There were two new roadways that were added, each were expansions of existing roads, connecting two or more roadways. The first network modification extended SW 8th Avenue to SW 61st Street, ultimately connecting SW 8th Avenue with SW 20th Avenue. Then NE 19th Street/NE 19th Terrace was extended from E University Avenue to NE 8th Avenue and NE 8th Avenue to NE 12th Avenue, creating a single north-south corridor between NE 12th Avenue and E University Avenue. Appendix E includes a set of screen shots depicting these edits. Other modifications included reducing Main Street from four to two lanes with turn bays through downtown, and coding bicycle lanes into the network.

Table 3: Adopted 2-Digit Area Type Codes for Gainesville/ Alachua County

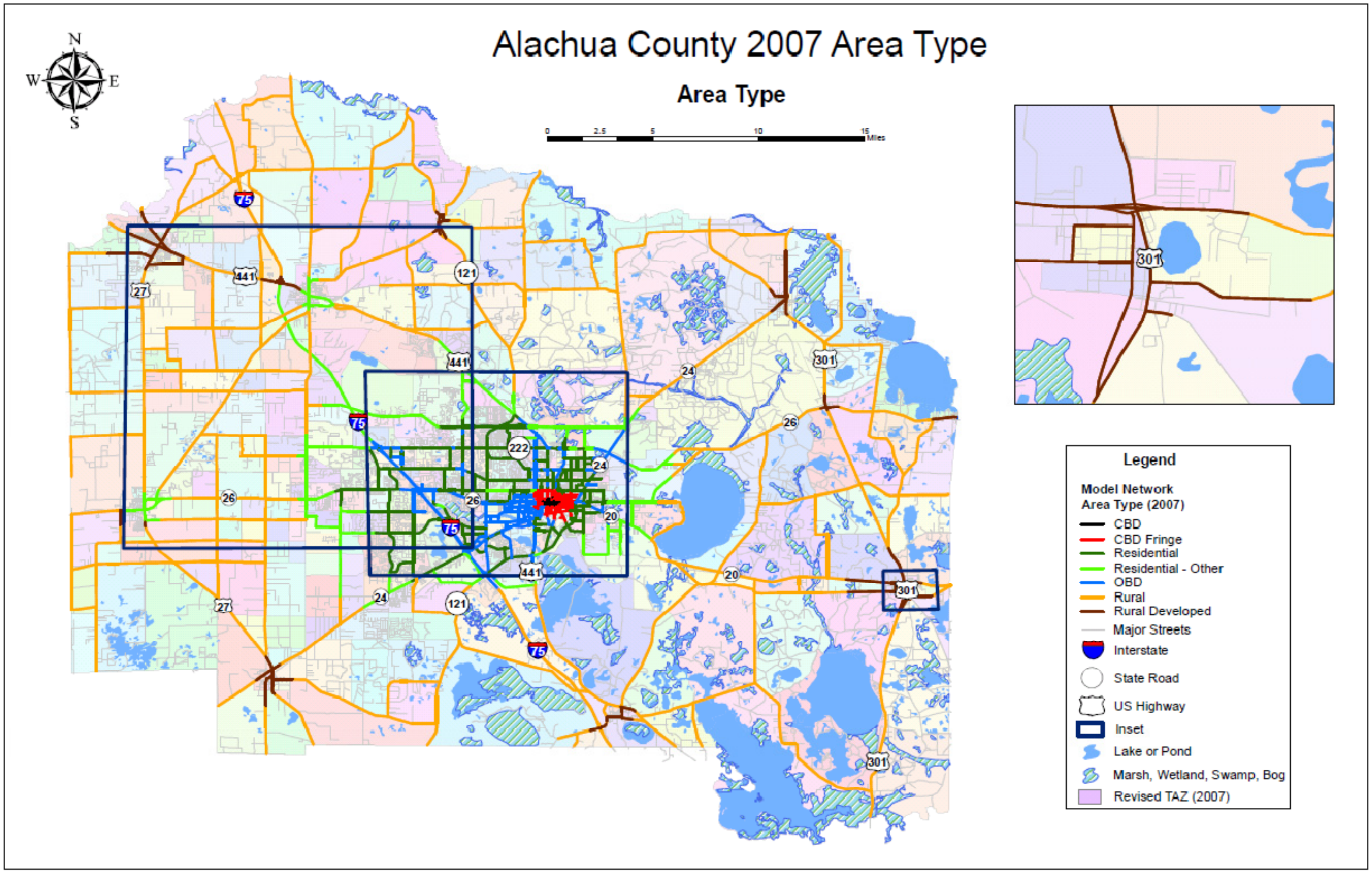
AT 1	**CBD Areas**
AT 11	Urbanized Area (over 500,000) Primary City Central Business District
AT 12	Urbanized Area (under 500,000) Primary City Central Business District
AT 13	Other Urbanized Area Central Business District & Small City Downtown
AT 14	Non-Urbanized Area Small City Downtown
AT 2	**CBD Fringe Areas**
AT 21	All Central Business District (CBD) Fringe Areas
AT 3	**Residential Area**
AT 31	Residential Area of Urbanized Areas
AT 32	Undeveloped Portions of Urbanized Areas
AT 33	Transitioning Areas/Urban Areas over 5,000 Population
AT 34	Beach Residential (not used)
AT 35	Residential Divided Arterial with a speed limit of 35 mph (BROWARD only case)
AT 4	**OBD Areas**
AT 41	High Density Outlying Business District
AT 42	Other Outlying Business District
AT 43	Beach OBD (not used)
AT 44	Low Density Industrial Area
AT 45	OBD Divided Arterial with a speed limit of 35 mph
AT 5	**Rural Areas**
AT 51	Developed Rural Areas/Small Cities under 5,000 Population
AT 52	Undeveloped Rural Areas

Table 4: Adopted 2-Digit Area Type Codes for Gainesville/ Alachua County

FT 1	**Freeways and Expressways**
FT 11	Freeway Group 1 (City of 500,000+)
FT 12	Other Freeway (Group 2)
FT 15	Collector/Distributor Lanes
FT 16	Controlled-Access Expressway
FT 17	Controlled-Access Parkway
FT 2	**Divided**
FT 21	Divided Arterial 55 mph
FT 22	Divided Arterial 45 mph
FT 23	Divided Arterial Class Ia
FT 24	Divided Arterial Class Ib
FT 25	Divided Arterial Class II/III
FT 26	Low Speed Divided Arterial
FT 3	**Undivided**
FT 31	Undivided Arterial 45 mph (TB)
FT 32	Undivided Arterial Class Ia (TB)
FT 33	Undivided Arterial Class Ib (TB)
FT 34	Undivided Arterial Class II/III (TB)
FT 35	Undivided Arterial 45 mph (NTB)
FT 36	Undivided Arterial Class Ia (NTB)
FT 37	Undivided Arterial Class Ib (NTB)
FT 38	Undivided Arterial Class II/III (NTB)
FT 4	**Collector**
FT 41	Major Divided Collector
FT 42	Major Undivided Collector (TB)
FT 43	Major Undivided Collector (NTB)
FT 44	Other Divided Collector
FT 45	Other Undivided Collector (TB)
FT 46	Other Undivided Collector (NTB)
FT 47	Low Speed Collector
FT 48	Very Low Speed Collector
FT 5	**Centroid**
FT 51	Centroid Connector
FT 52	External Centroid Connector
FT 53	Used as DUMMIES
FT 6	**One Way**
FT 61	One-Way Street 45 mph
FT 62	One-Way Street Class Ia

FT6	**One Way**
FT 63	One-Way Street Class Ib
FT 64	One-Way Street Class II/III
FT 65	Frontage Roads 45 mph
FT 66	Frontage Roads Class Ia
FT 67	Frontage Roads Class Ib
FT 68	Frontage Roads Class II/III
FT 7	**Ramps**
FT 71	Freeway On-Ramp
FT 72	Freeway Loop On-Ramp
FT 73	Other On-Ramp
FT 74	Other Loop On-Ramp
FT 75	Freeway Off-Ramp
FT 76	Freeway Loop Off-Ramp
FT 77	Other Off-Ramp
FT 78	Other Loop Off-Ramp
FT 79	Freeway – Freeway Ramp
FT 8	**Exclusive HOV**
FT 81	HOV Lane Grp. 1 (Separated)
FT 82	HOV Lane Grp. 2 (Separated)
FT 83	HOV Lane Grp. 1 (Non-Separated)
FT 84	HOV Lane Grp. 2 (Non-Separated)
FT 85	Non-Freeway HOV Lane
FT 86	AM & PM Peak HOV Ramp
FT 87	AM Peak Only HOV Ramp
FT 88	PM Peak Only HOV Ramp
FT 89	All Day HOV Ramp
FT 9	**Toll**
FT 91	Toll Freeway Group 1
FT 92	Other Toll Freeway
FT 93	Toll Expressway/Parkway
FT 94	Toll Divided Arterial
FT 95	Toll Undivided Arterial
FT 97	Toll On-Ramp
FT 98	Toll Off-Ramp
FT 99	Toll Plaza

Map 13: Alachua County 2007 Highway Network by Area Type



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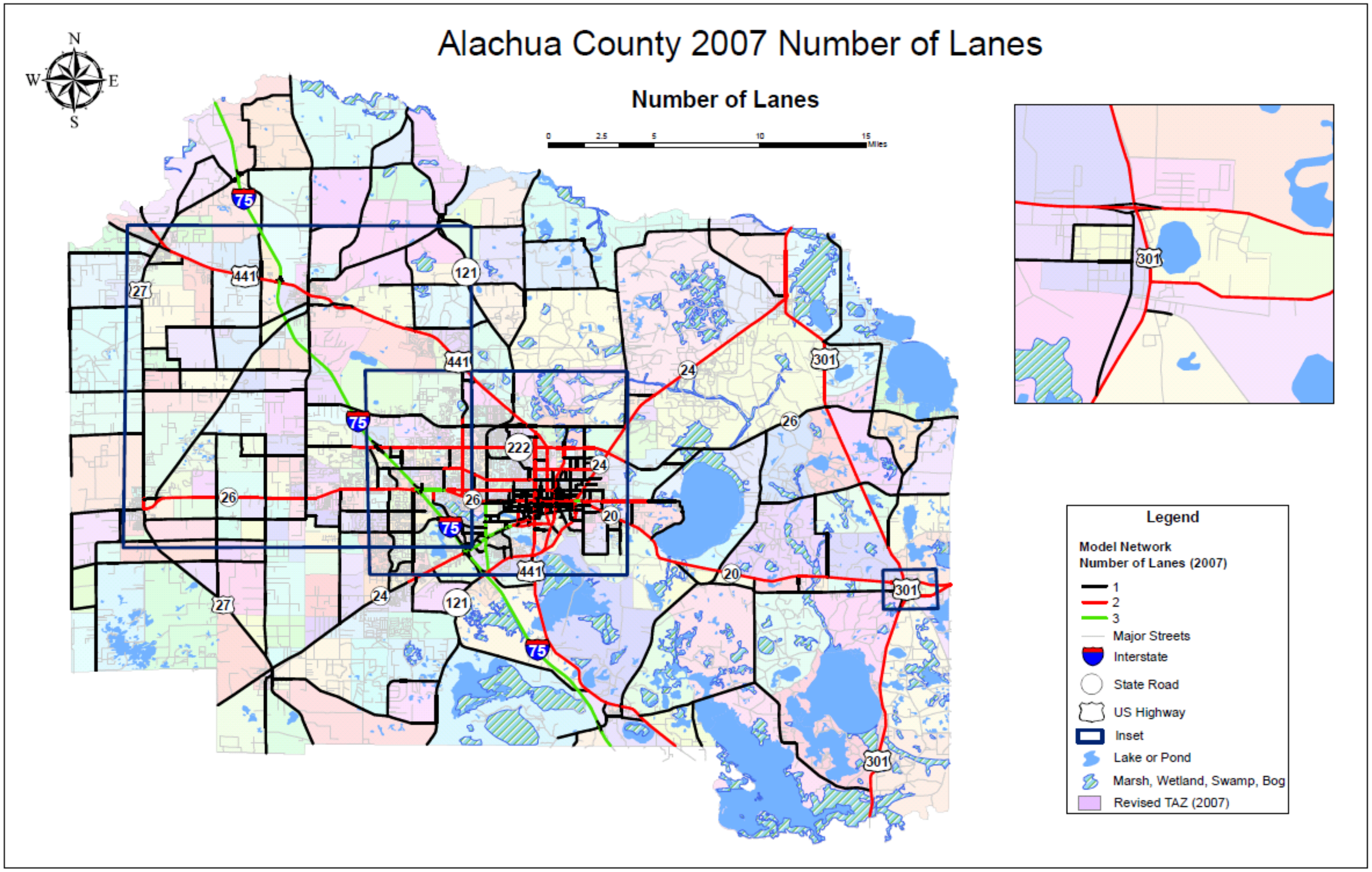
Map 14: Alachua County 2007 Highway Network by Number of Lanes



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Updating Transit Network Data

Data for each transit route in the Alachua County 2007 model are stored in transit line files. Each route was coded into the previous 2000 transit line file, including mode, operator, and peak and off-peak headway attributes. To ensure that each of the routes was updated properly to 2007 conditions, transit line data were requested from RTS staff. The data provided by RTS staff included 2007 ridership estimates, an on-board survey, park-and-ride and transfer locations, route and stop location shape files, fare data, and headway data. Data for future year E+C conditions also were provided by the RTS. These data included updates to existing routes, new headways, and the addition of four new routes (17, 22, 29, and 38) that did not exist in the base year.

Park-and-ride lot and transfer station data were added to the STATDAT.txt file. In the Alachua County 2000 model there were only two stations coded, both were park-and-ride lots located on the UF campus. The Rosa Parks Downtown Transfer Station was added to the 2007 transit network, bringing the total number of "stations" to three. Based on data provided for the UF park-and-ride locations, 300 parking spaces were assigned to the UF Hilton Convention Center parking area and 500 were assigned to the UF park-and-ride located in the UF Museum District. The Rosa Parks Downtown Station is not a park-and-ride facility; therefore, only 10 parking spaces were assigned to account for some limited on-street parking available downtown.

Transit fare data can be found within the Cube/Voyager script file. According to the bus fare data provided by RTS, the year 2007 bus fare was $1.00, while the 2009 bus fare was $1.50. While the full 2007 bus fare amount was applied to transit trips for the home-based other (HBO) trip purposes, discounted bus fare amounts were assumed for the home-based work (HBW) and home-based university/dormitory (HBU/HBDORM) trip purposes. Based on employee pass program information provided by the RTS, 25 percent of the full fare was assumed for the HBW trip purpose. University students are charged with bus fare as part of class registration fees which generally help increase bus ridership for students (i.e., it is prepaid whether used or not and does not require students to pay upon boarding the bus). Therefore, 10 percent of full fare was assumed for HBU/HBDORM trip purposes, based on discussions with RTS staff. During preparation of the 2035 future year E+C scenario, the 2009 bus fare of $1.50 was used and the same discounts were applied.

Traffic Count Data

Validation of any travel demand model relies on the existence of a comprehensive set of base year traffic count data. Volume-over-count ratios generated by the model are used to measure the ability of a travel demand highway assignment model to simulate observed traffic conditions. Traffic counts are needed for a variety of different roadway categories distributed throughout the study area in order to validate highway assignment performance among screenlines, and by each facility type, area type, and lane category.

Like most FSUTMS models, the Alachua County 2007 model assigns trips to the highway network in terms of peak-season weekday average daily traffic (PSWADT). Traffic count data from most reliable sources are reported in average annual daily traffic (AADT). Where PSWADT values already were not provided, AADT figures were then converted to PSWADT using the inverse of the model output conversion factor (MOCF), as provided by FDOT on the CD entitled *2007 Florida Traffic Information*. Along with MOCFs, this CD contains geographically related data on traffic count location and AADTs.

Traffic count data for the study area came from three primary sources. First, the *2007 Florida Traffic Information* CD from FDOT presents traffic count data mostly along state highways. The FDOT count database is far more robust than any other in Florida, enabling the highest level of confidence such that whenever possible, traffic count data from FDOT were the preferred source. When data were not available from FDOT, count data from the Metropolitan Transportation Planning Organization for the Gainesville Urbanized Area Multimodal Level of Service Report were used. Finally, for roads located on UF's campus, supplemental traffic counts were supplied by UF staff.

If particular locations existed without counts for the year 2007 but were necessary in order to preserve screenlines and external stations, count volumes were estimated by using past count data at the location or other locations nearby to establish a rate of growth. If no count data existed for a given location for either the base year or any other given year, then no count were entered for that location. The Year 2035 LRTP Update did not include any special traffic count field data collection effort. Resulting traffic count data were stored as the COUNT07 attribute in the FSUTMS highway network.

Designation of Screenlines

Screenlines are imaginary lines drawn across the model network throughout the study area for summary of traffic volumes in subareas and along major corridors. Screenlines are used to report an aggregate volume-over-count ratio for all of the links that comprise any given screenline. This allows for measurement of travel flows between subareas within the overall study area. Screenlines typically follow natural features, major transportation facilities, or political boundaries. Also, screenlines can be used to cordon off certain portions of the study area in order to measure the flows into and out of those areas (such as measuring the flow of travel demand into and out of CBDs or the external model boundary).

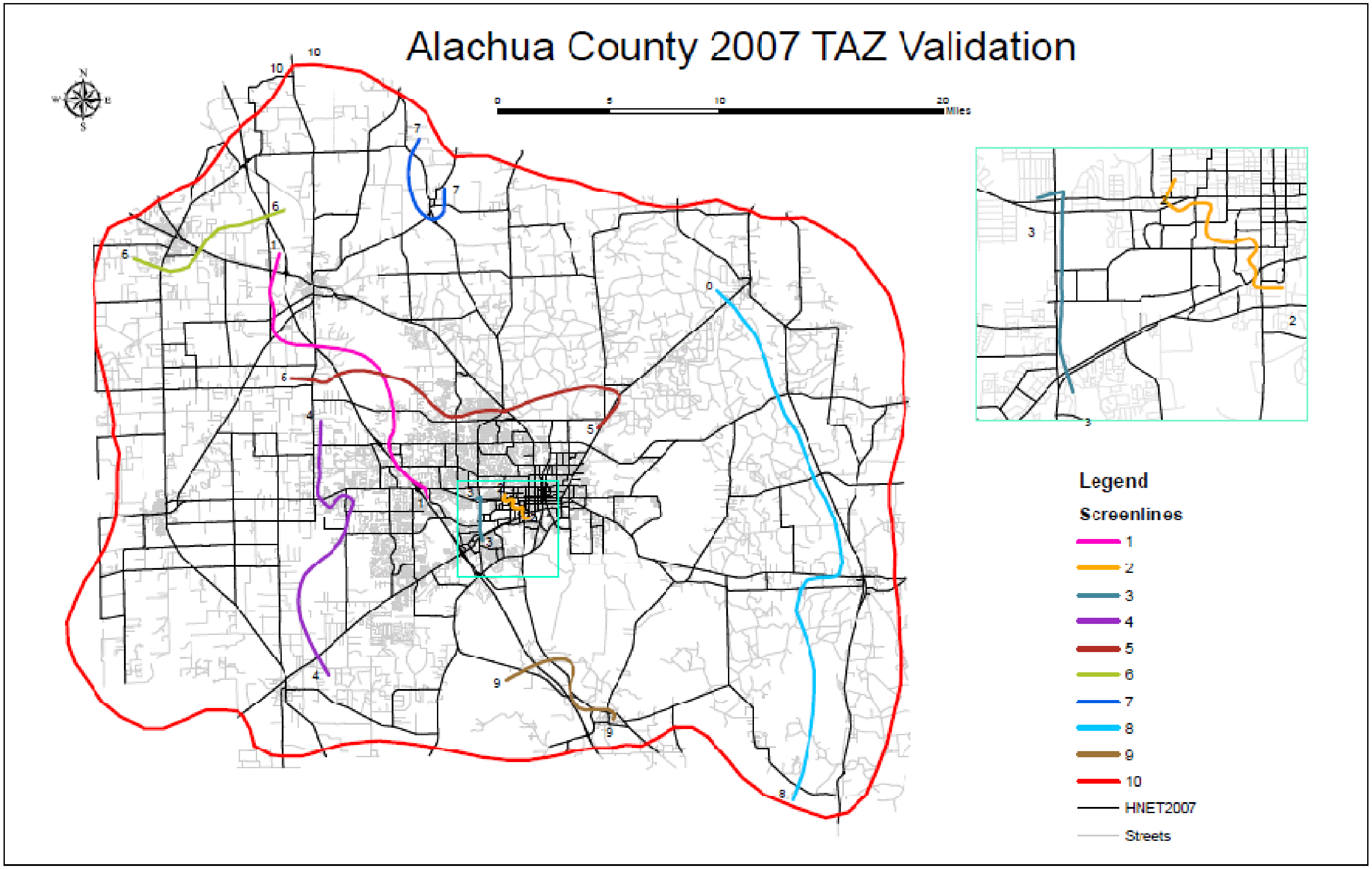
The starting point in developing screenlines for the Alachua County 2007 model was to review the screenlines that already were present in the Alachua County 2000 model. These screenlines were checked to ensure that their orientation coincided with traffic count locations. Every effort was made to maintain consistency between screenline locations and traffic count locations. When a count was missing, either the count would be identified from an exhaustive review of count data sources or the screenline was moved to a nearby count location that was a reasonable substitute for the missing count.

After securing the orientation of current screenlines, it was necessary to determine where new screenlines were needed and where old screenlines were obsolete or redundant. There were 14 screenlines in the Alachua County 2000 model. These were maintained, where possible, but were sometimes modified in order to minimize "double counting" of the same travel movements. A few screenlines were added, removed, or reconfigured to better reflect available traffic count locations. The final screenlines are depicted below in **Map 15.**

Highway Paths and Turn Prohibitors

CS staff used Cube/FSUTMS to build minimum travel time and distance paths between a variety of zone pairs within the model network. This effort was conducted to identify breaks in the network coding (i.e., unintended "dead end" links), compare model estimates of travel time and distance against other sources, verify the logic of model pathing between zones, and to identify the implications of turn prohibitors already coded into the Alachua County 2000 model network. All turn prohibitors coded in the model were checked for relevance and impact to ensure that these movements in fact should be prohibited.

Map 15; Alachua County 2007 Highway Network by Screenline



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Summary and Conclusions

The Alachua County 2007 base year model update included an extensive data and review effort focused on socioeconomic data and other zonal data as well as highway and transit network data. Zone data files were updated to reflect 2007 conditions and estimate reasonable growth for the future horizon year 2035 E+C scenario.

Highway network data updates included extensive checks and modifications of the facility types, area types, and number of lanes. Traffic counts also were updated and where possible added to count locations that were not included in the previous Alachua County 2000 model. Screenlines were evaluated and modified relative to prior locations, major travel corridors, obvious subareas, and count locations.

Transit network updates included verifying and modifying all transit routes to reflect 2007 and 2035 future year conditions, adjusting headways, updating all stop locations and station information, and adjusting fare files to reflect special fare conditions.

The level of detail achieved during data development and review paid off in identifying and correcting preexisting coding errors remaining from the 2000 base year model as evidenced by a greatly improved simulation of observed travel patterns on major transportation corridors throughout the County. As discussed in the following section, highway validation statistics looked reasonable from the time of the first base year 2007 model run, thus allowing for additional time to focus on validating the considerably more complex transit model components.

Testing also was performed via a separate contract[7] to convert the Alachua County highway network to a master network database and subsequently to a Cube Geodatabase format, the latter anticipated as the future format of all FSUTMS networks. The master network database concept involves storing alternative network scenarios all within a single network database such that edits completed on one network (e.g., base year) could simultaneously be made to another network scenario (e.g., Cost Feasible Plan) without duplicative efforts usually associated with editing multiple network scenarios. The Geodatabase takes this concept one step further by better linking network information to ESRI-based GIS platforms for additional editing, display, and analysis.

Additionally, there are a number of model input parameter files required in FSUTMS, and these are discussed as part of the model validation process.

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[7] *Florida International University in Association with Cambridge Systematics, Inc., Corradino Group, and AECOM.* Draft Final Report, Development of a Data Framework for FSUTMS. *Prepared for Florida Department of Transportation. May 2010.*

Model Update and Validation

Introduction

The following section documents validation efforts on the Alachua County 2007 base year model for the Gainesville Urbanized Area Year 2035 Long Range Transportation Plan (LRTP) Update. The 2007 model is an update of the Alachua County 2000 Model for the Metropolitan Transportation Planning Organization (MTPO) for the Gainesville Urbanized Area. The 2007 model study area covers all of Alachua County, including the nine municipalities within the county. Validation efforts included updating all required input data and parameter files as well as script files for trip generation, distribution, highway and transit network development, mode choice, assignment, and reporting steps. Streamlining and clean up of script files and model structure also was completed. Finally, file formats were modified for consistency with the latest FSUTMS (Florida Standard Urban Transportation Model Structure)/Cube-Voyager[8] standards.

This section describes the process of reviewing highway traffic volumes and transit loadings and how input and parameter files were adjusted. When input files were modified, traffic analysis zones (TAZ), the highway and transit networks, and traffic count data were rechecked. This section describes the update of external trips, and explains trip generation and trip distribution. It also describes transit accessibility and path-building process and the mode choice step and documents highway assignment validation efforts and how the model performs and meets established FSUTMS standards. Finally, this section describes transit assignment and resulting transit loadings and explains how the future year 2035 Existing + Committed (E+C) model was created.

External Trips

The development of external trip input files was described earlier.9 As noted in this prior document, there are 26 external zones in the 2007 Alachua County model, and these zones are now numbered 601 through 625 as depicted in **Map 16**, which also depicts the model study area. This section of the report will focus on external trip adjustments made during model validation.

Internal-External Trips

Initial development of an external model for FSUTMS requires that external trips be divided into at least two categories: internal-over-external (IE) trips and external-to-external (EE) trips. IE trips are those trips that either have an origin outside of the study area and a destination within

[8] *Cambridge Systematics, Inc.* FSUTMS Cube-Voyager Data Dictionary. *Prepared for Florida Department of Transportation and Model Task Force, February 2006.*

[9] *Cambridge Systematics, Inc.* Gainesville Urbanized Area Year 2035 Long Range Transportation Plan Update Technical Report No. 3: Data Development and Review. *Prepared for the Metropolitan Transportation Planning Organization for the Gainesville Urbanized Area, June 2010.*

the study area or vice versa. EE trips have both an origin and a destination outside of the study area, but pass through the study area. There are two input files that influence external trips. These are the INTEXT and EETRIPS files with scenario year at the end of each file name. For example, the base year 2007 files are INTEXT_07A and EETRIPS_07 where the letter "A" represents an alternative name.

Although the INTEXT input file is part of the trip generation process, it is integral to generating the IE trips for the external model. The percent IE/EE splits for each external zone were derived from the I-75 Master Plan base year 2006 model. The 2006 I-75 model was validated with a focus on the I-75 corridor and appropriate adjustments as to IE/EE splits. As noted previously, since no recent external intercept surveys were conducted, these adjustments were primarily based on logic and local knowledge. These adjustments also were conducted in an iterative manner based on impacts to volume-over-count ratios on corridors near the study boundary.

The final 2007 splits are displayed in **Table 5**. The percent IE trips were applied to the 2007 Peak Season Weekday Average Daily Traffic (PSWADT) to calculate the total number of IE trips at each external zone for the INTEXT file. The EETRIPS input file is generally the residual left after estimating IE trips in the INTEXT file. The percentage of EE trips was applied to the PSWADT by external zone and then distributed from each origin zone to each destination zone using distribution patterns from the 2006 I-75 Master Plan model.

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Map 16: External Station Locations

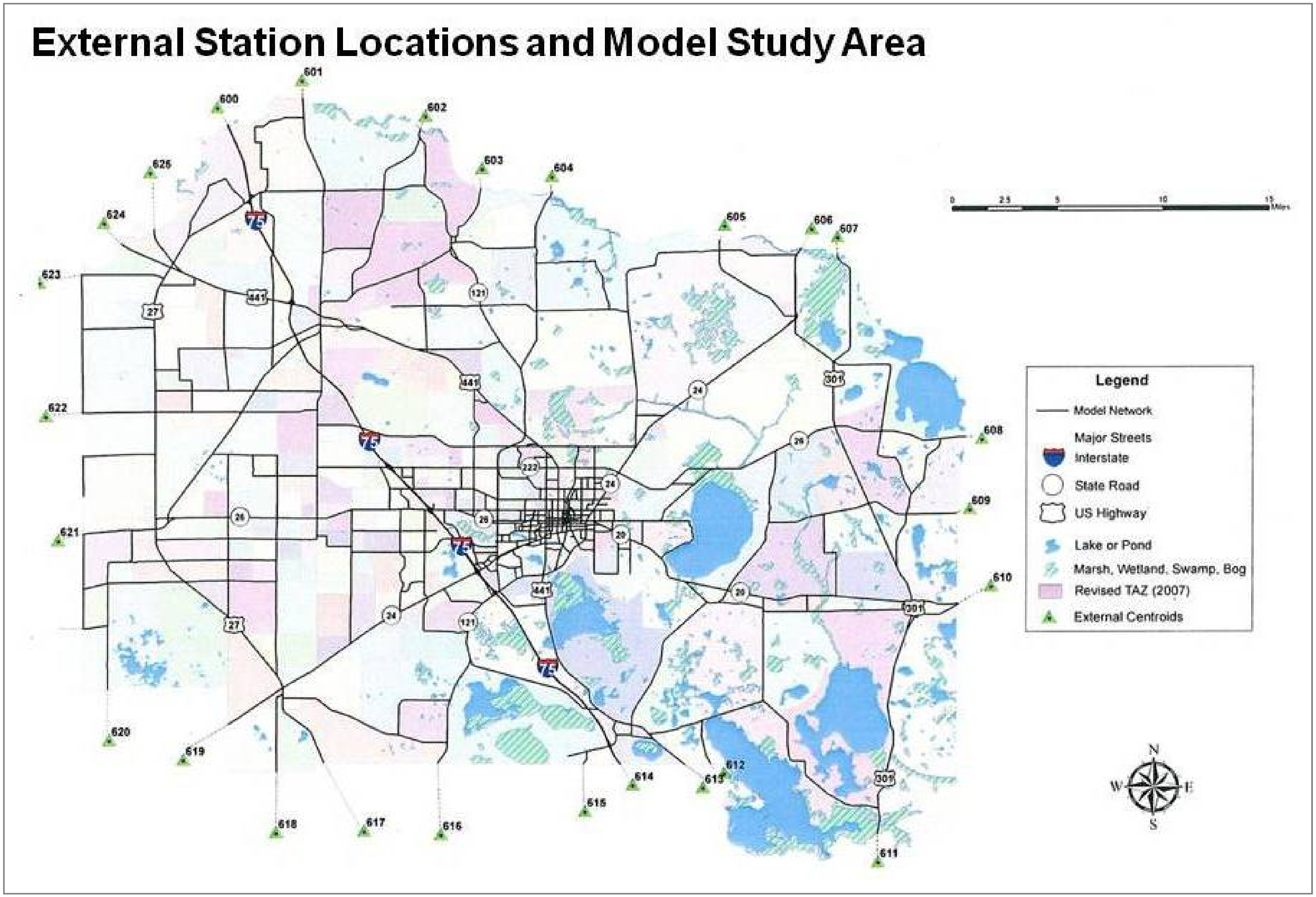

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Table 5: Internal-External (IE) and External-External (EE) Percentage Splits

External TAZ	Total External Trips	Roadway	IE Percent	EE Percent	Total EE Trips
600	50,534	I-75 (North) at Columbia County Line	24%	76%	38,464
601	1,219	CR 241 (North) at Union County Line	68%	32%	388
602	4,747	SR 121 (North) at Union County Line	69%	31%	1,472
603	187	CR 237 (North) at Bradford County Line	86%	14%	26
604	3,618	SR 235 (North) at Bradford County Line	90%	10%	344
605	481	CR 1475 (North) at Bradford County Line	70%	30%	142
606	24,658	U.S. 301 (North) at Bradford County Line	39%	61%	14,964
607	1,124	CR 325 (North) at Bradford County Line	69%	31%	350
608	8,562	SR 26 (East) at Putnam County Line	50%	50%	4,302
609	388	CR 1474 (East) at Putnam County Line	64%	36%	138
610	9,625	SR 20 (East) at Putnam County Line	50%	50%	4,860
611	11,982	U.S. 301 (North) at Marion County Line	11%	89%	10,640
612	346	CR 225 (South) at Marion County Line	84%	16%	56
613	7,733	U.S. 441 (South) at Marion County Line	89%	11%	826
614	65,271	I-75 (South) at Marion County Line	35%	65%	42,456
615	3,657	CR 234 (South) at Marion County Line	65%	35%	1,266
616	7,785	SR 121 (South) at Levy County Line	76%	24%	1890
617	4,332	SR 45 (South) at Levy County Line	71%	29%	1,262
618	1,383	CR 241 (South) at Levy County Line	77%	23%	320
619	8,043	SR 24 (Southwest) at Levy County Line	71%	29%	2,298
620	1,323	CR 337 (South) at Levy County Line	72%	28%	370
621	9,598	SR 26 (West) at Gilchrist County Line	76%	24%	2,266
622	2,194	CR 232 (West) at Gilchrist County Line	72%	28%	610
623	4,293	NW 182 (West) at Gilchrist County Line	72%	28%	1,216
624	9,896	U.S. 27 (Northwest) at Gilchrist County Line	72%	28%	2,800
625	6,802	U.S. 441 (Northwest) at Columbia County Line	71%	29%	2,000

External Validation Adjustments

For the most part, validation adjustments to the external model consisted of modifying the INTEXT and EETRIPS files. Several iterations of the external model were executed in order to balance volumes at the external stations in such a manner as to improve model validation within the study area. Year 2007 traffic counts were used and efforts were made to achieve a 1.00 volume-over-count ratio at each external zone. Traffic counts at adjacent links were used with appropriate adjustments for the external zones of 610 and 621 since traffic counts were not available at the Alachua County line. For the external zones of 609, 612 and 620, where no nearby traffic counts were available, external volumes were prepared using previous model external volumes for the year 2000 along with year 2006 I-75 validated model external volumes.

Minor changes also were made to the INTEXT and EETRIPS files so that I-75 EE percents at external zones of 600 and 614 were increased by 10 percent to achieve a better match between model volumes and 2007 traffic counts along the I-75 mainline. Increasing the EE percent on the I-75 corridor was previously accomplished in the year 2006 I-75 Master Plan model; however, further adjustment of EE percents was needed for the year 2007 Alachua County model.

External Validation Results

Model validation results are described later in the section on the highway assignment. In particular, a review of the external cordon line indicates a reasonable match of external travel movements. The external cordon line achieves a volume-over-count ratio of 1.00. Corridors leading to or nearby external zones also were validated to satisfactory levels, based on this iterative adjustment process.

Trip Generation

The Alachua County 2007 model uses a variation on the standard FSUTMS trip generation process. Trip productions and attractions are generated by zone according to trip generation rates derived from statistical analyses of local household travel behavior. The previous 2000 model had used an external FORTRAN program called NERGEN. For the 2007 validation, Cube-Voyager scripts were instead used consistent with the latest FSUTMS procedures. This section discusses the generation process as well as efforts that were needed for the script conversion process.

Trip Generation Process

Like most FSUTMS models, the Alachua County 2007 model uses cross classification trip production rates stratified by auto availability (0, 1, 2, and 3+ auto households), dwelling unit type (single-, multifamily, and transient units), and household size (1, 2, 3, 4, and 5+ persons per household. Trip production rates for home-based work, home-based shop, home-based social/ recreation, and home-based other purposes are depicted in **Table 6**. The source for these trip production rates was the North Florida Household Travel Survey, consistent with the previous 2000 Alachua County Model.

Trip attraction rates were derived from the 2005 Northeast Florida Regional Planning Model (NERPM) and are depicted in **Table 7**. It was found that borrowing these trip attraction rates led to a better balance between total productions and attractions by purpose than with using the previous Alachua County model attraction rates. Alachua County is located in the same FDOT District 2 (Northeast Florida) as the NERPM. Both model regions share a few similar socioeconomic characteristics such as less of a reliance on tourism and seasonal residents than other parts of Florida.

Dwelling unit (DU) weights were recalculated based on Census 2000 data. Census 2000 provided an accurate reflection of household distribution throughout Alachua County. The methodology used for deriving the new DU weights is the same as documented in the *FSUTMS Interactive Users' Library.*[10] In those instances where Census data demonstrated no cases within a given "Average Persons per Dwelling Unit" range, the values from the prior Gainesville 2000 model DUWEIGHT file were used. Dwelling unit weights are depicted in **Table 8**.

[10] *Post, Buckley, Schuh, and Jernigan, Inc.* FSUTMS Interactive Users' Library CD. *Prepared for Florida Department of Transportation, 1996-1998.*

Table 6: Trip Production Rates

Home-Based Work

Dwelling Unit Type	Number of Autos Available	Number of Persons in Household: 1	2	3	4	5+
Single-Family	0	0.35	0.64	1.01	1.50	2.08
	1	0.69	0.98	1.35	1.84	2.42
	2	1.35	1.64	2.01	2.50	3.08
	3+	1.76	2.05	2.42	2.90	3.49
Multifamily	0	0.41	0.70	1.01	1.31	1.62
	1	0.95	1.49	2.02	2.56	3.10
	2	1.65	2.30	2.95	3.60	4.25
	3+	2.21	2.89	3.59	4.27	4.96
Hotel/Motel Units		1.04	0.72	0.50	0.39	0.39

Home-Based Shopping

Dwelling Unit Type	Number of Autos Available	Number of Persons in Household: 1	2	3	4	5+
Single-Family	0	0.30	0.53	0.95	1.55	2.34
	1	0.59	1.02	1.55	2.18	2.89
	2	0.65	1.08	1.61	2.23	2.95
	3+	0.77	1.22	1.76	2.39	3.10
Multifamily	0	0.22	0.57	1.02	1.54	2.11
	1	0.50	0.95	1.40	1.83	2.27
	2	0.72	1.22	1.66	2.08	2.46
	3+	0.84	1.35	1.79	2.20	2.56
Hotel/Motel Units		0.33	1.43	2.20	2.75	3.19

Home-Based Social/Recreational

Dwelling Unit Type	Number of Autos Available	Number of Persons in Household: 1	2	3	4	5+
Single-Family	0	0.21	0.28	1.28	1.47	2.20
	1	0.48	0.85	1.43	1.31	2.37
	2	0.53	0.89	1.85	2.07	2.77
	3+	0.70	1.07	2.04	2.24	2.97
Multifamily	0	0.18	0.63	1.08	1.53	1.98
	1	0.22	0.67	1.12	1.57	2.02
	2	0.64	1.09	1.54	1.99	2.44
	3+	0.84	1.29	1.74	2.19	2.64
Hotel/Motel Units		0.66	1.81	2.97	4.29	6.49

Home-Based Other

Dwelling Unit Type	Number of Autos Available	Number of Persons in Household: 1	2	3	4	5+
Single-Family	0	0.29	0.64	1.67	3.38	5.78
	1	0.48	1.29	2.59	4.38	6.67
	2	0.62	1.79	3.34	5.20	7.33
	3+	0.68	1.94	3.58	5.59	7.99
Multifamily	0	0.35	0.78	2.28	4.00	6.23
	1	0.74	1.36	3.16	4.92	6.91
	2	1.12	1.87	3.71	5.59	7.34
	3+	1.17	2.09	4.05	5.75	7.56
Hotel/Motel Units		0.55	1.32	2.31	3.63	4.84

Table 7: Attraction Rates

Purpose	Employment					Dwelling Units	School Enrollment
	Manufacturing	Other Industrial	Commercial	Service	Total		
Home-Based Work	0.00	0.00	0.00	0.00	1.80	0.50	0.00
Home-Based Shopping	0.00	0.00	0.00	0.61	0.00	0.00	0.00
Home-Based Social/Recreational	0.00	0.50	0.50	0.50	0.00	1.61	0.00
Home-Based Other	0.00	1.50	1.50	1.50	0.00	0.30	1.50
Nonhome-Based	0.00	3.54	3.54	1.71	0.00	0.30	0.00
Four-Tire Truck	0.47	0.55	0.45	0.22	0.00	0.13	0.00
Single-Unit Truck	0.12	0.15	0.13	0.04	0.00	0.05	0.00
Tractor-Trailer	0.05	0.09	0.04	0.01	0.00	0.02	0.00

Table 8: Dwelling Unit Weights

Average Persons Per Dwelling Unit	Percent of Households by Size[a] Category				
	One-Person Households	Two-Person Households	Three-Person Households	Four-Person Households	Five-Person + Households
0.00-1.12	0.89	0.11	0.00	0.00	0.00
1.13-1.37	0.76	0.22	0.02	0.00	0.00
1.38-1.62	0.59	0.34	0.05	0.01	0.01
1.63-1.87	0.46	0.34	0.11	0.06	0.03
1.88-2.12	0.32	0.36	0.16	0.11	0.05
2.13-2.37	0.24	0.36	0.18	0.14	0.08
2.38-2.62	0.21	0.33	0.19	0.16	0.12
2.63-2.87	0.12	0.35	0.19	0.23	0.11
2.88-3.12	0.13	0.34	0.18	0.16	0.19
3.13-3.37	0.12	0.29	0.18	0.17	0.24
3.38-3.62	0.08	0.24	0.2	0.2	0.28
3.63-3.87	0.05	0.2	0.19	0.23	0.33
3.88-4.12	0.04	0.16	0.17	0.24	0.39
4.13-4.37	0.02	0.15	0.14	0.21	0.48
4.38-4.62	0.01	0.15	0.13	0.17	0.54
4.63-5.99	0.00	0.05	0.07	0.14	0.74
6.00+	0.00	0.00	0.02	0.05	0.93

Home-based university (HBU) and UF Campus/Dorm (DORM) trip purposes are unique to the Alachua County model. These additional purposes also were used in the Alachua County 2000 model, as it was found that this was necessary to properly model a region with a university town such as the City of Gainesville as a major trip attractor. The home-based university purpose is for trips traveling from off-campus housing to parking spaces within the UF Campus. On the other hand, the UF Campus/Dorm (DORM) trip purpose is for trips from UF on-campus dormitories to classrooms that are specified in the ZONEDATA file. It should be noted that the model has limited capabilities in simulating parking capacity beyond the number of parking spaces being stored in the ZONEDATA file and used in the attraction equations.

Trip factors, if changed from a default of zero, are applied to productions and attractions for the HBU and DORM purposes. Trip factors are available as an adjustment tool for validation; however, the Consultant team developing the 2007 model tried to minimize the use of exogenous factors that have no basis in travel behavior theory. HBU and DORM equations were maintained the same as used in the Alachua County 2000 model, without the use of trip factors, after carefully reviewing the generated trips for these purposes. Trip production and attraction equations for the HBU and DORM purposes are listed below, as extracted from model scripts. During validation, these trip rates were relocated to the Cube catalog keys (names depicted in {brackets}) to enhance model transparency.

Home-Based University Productions:

RO.HBUP = {RATE_HBUP}*ZI.1.UF_OC_ST

; UF_OC_ST is off-campus (students)

; Default value of {RATE_HBUP} is 2.996

Home-Based University Attractions:

RO.HBUA = {RATE_HBUA}*ZI.1.UF_PARKING

; PARKING is UF Parking Spaces

; Default value of {RATE_HBUA} is 1.375

UF Campus/Dorm Productions:

RO.HDORMUP = {RATE_HDORMUP} *ZI.1.UF_DORM_ST

; UF_DORM_ST is Campus housing/Dormitory students

; Default value of {RATE_HDORMUP} is 2.262

UF Campus/Dorm Attractions:

RO.HDORMUA = {RATE_HDORMUA} *ZI.1.SEATS

; SEATS is UF Classroom Seats

; Default value of {RATE_HDORMUA} is 0.7513

The ZONEDATA file format is depicted in Appendix A. ZONEDATA{YEAR}.DBF is a DBF file that combines the contents of the previous ZDATA1, ZDATA2, UF Data, and transit specific PEV (Pedestrian Environment Variable) file that were used in the Alachua County 2000 model. The ZONEDATA{YEAR}.DBF file in the Alachua County 2007 model includes population, households, employment, UF data, and PEV values.

The Alachua County 2007 model uses a total of 11 FSUTMS trip purposes:

- Home-based work;
- Home-based shop;
- Home-based social/recreation;
- Home-based other (Home-based nonwork, excluding university trips);
- Nonhome-based;
- Home-based university;
- UF campus/dorm;
- 4 tire truck;
- Single-unit truck;
- Tractor-trailer; and
- Internal-external.

UF Campus/Dorm Attractions:

RO.HDORMUA = {RATE_HDORMUA} *ZI.1.SEATS

Trip Generation Validation Adjustments

Several adjustments were made to the Alachua County 2007 FSUTMS trip generation model during validation. The use of special generators was kept to a minimum during model validation. The only special generators included were to account for a sufficient number of trips attracted to Santa Fe College and produced by dormitories within the University of Florida destined for off-campus attractors. The amount of special generator attraction trips to Santa Fe College was determined using student trip rates from the *State University System Transportation Study*[11] for the University of Florida. Special generator dormitory productions were needed for trips leaving campus as the DORM trip purpose only addresses dorm trips attracted to on-campus classrooms.

A complete listing of special generators used in the model, along with sources for trip rates, is provided in **Table 9.**

Table 9: Special Generator Trips[a]

TAZ	Production or Attraction	Addition or Subtraction	Person[b] Trips	Percent Trips by Purpose					Description
				HBW	HBSH	HBSR	HBO	NHB	
536	A	+	27,000	2	2	2	92	2	Santa Fe College
440	A	+	655	20	38	38	0	4	UF Dorm
441	A	+	576	20	38	38	0	4	UF Dorm
443	A	+	408	20	38	38	0	4	UF Dorm
449	A	+	662	20	38	38	0	4	UF Dorm
453	A	+	1,816	20	38	38	0	4	UF Dorm
460	A	+	362	20	38	38	0	4	UF Dorm

[11] *Transportation Consulting Group.* State University System Transportation Study (BR-052) Final Report. *Prepared for the Florida State University System, August 1993.*

Trip Generation Validation Results

Throughout the validation process, trip generation statistics were summarized to assess model validity. Comparisons were made between the Alachua County 2000 model, the Alachua County 1990 model, the Polk County 2000 model, the CRTPA (Capital Region Transportation Planning Agency, of Tallahassee, FL) 2003 model and other comparable nontourist/retiree-oriented FSUTMS models. Statistical comparisons also were made against reasonableness ranges and other models in the United States using statistics available in the *FSUTMS-Cube Framework Phase II: Model Calibration and Validation Standards Final Report.*[12] Statistics from other models were sometimes aggregated to account for different trip purpose schemes. The script files and model flowchart for the Trip Generation routine can be found in the appendices.

Table 10 provides a summary of trips by purpose. When compared against the Alachua County 2000 model, the Alachua County 2007 model indicates that the percent production trips by purpose remains fairly constant with a maximum difference of up to one percent. Total trip productions increased by approximately 18 percent between 2000 and 2007 models, representing growth in households, student enrollment, and employment.

Table 11 provides comparisons of aggregate trips per household, person, and employee, along with persons per household between the Alachua County 2007 model and several other models. **Table 12** provides comparisons of trip rates per household with typical benchmark values and other models throughout the United States. These comparisons show that the Alachua County 2007 model is reasonably consistent with other models in terms of aggregate trip rates. Compared to other Florida models, the Alachua County 2007 model is somewhat at the high end of typical ranges; however, this seems to be reasonable given the fact that Gainesville is populated by many university students who typically generate more trips per household than nonstudent households.

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[5] *Cambridge Systematics, Inc.* FSUTMS-Cube Framework Phase II: Model Calibration and Validation Standards Final Report. *Prepared for Florida DOT Central Office, October 2008.*

Table 10: Summary of Trips by Purpose

	Alachua County 2007			Alachua County 2000		1990	2003	2000
Purpose	**Productions**	**Percent by Productions**	**Unbalanced Attractions**	**Productions**	**Percent by Productions**	**Alachua County**	**CRTPA**	**Polk County**
Home-Based Work	183,299	13.96%	334,938	150,235	13.45%	19.64%	14.00%	15.73%
Home-Based Shop	132,480	10.09%	192,495	114,552	10.25%	12.70%	11.00%	9.84%
Home-Based Socrec.	119,659	9.11%	246,954	103,996	9.31%	12.81%	7.00%	9.32%
Home-Based Other	253,457	19.30%	317,271	220,197	19.71%	30.49%	30.00%	24.58%
Nonhome-Based	329,228	25.07%	329,947	286,573	25.65%	24.35%	24.00%	24.48%
Home-Based University	75,939	5.78%	22,067	52,809	4.73%			
Dormitory-Based University	23,570	1.79%	27,495	26,492	2.37%			
Truck-Taxi	81,502	6.21%		69,127	6.19%	0.00%	8.00%	8.21%
Internal-External	114,063	8.69%		93,299	8.35%	0.00%	6.00%	7.85%
Total	**1,313,197**	**100.00%**		**1,117,280**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Table 11: Aggregate Trip Rates

Unit of Measure	2007 Alachua County	2000 Alachua County	2003 CRTPA	2000 Polk	2000 Census *
Persons per Household	2.21	2.84	2.39	2.60	2.25
Internal Trips per Household	11.05	11.35	9.63	9.70	N/A
Internal Trips per Person	5.00	4.65	4.03	3.73	N/A
Internal Trips per Employee	9.05	7.73	7.68	8.68	N/A

Table 12: National Comparison of Person Trips per Household

Region	Year	Person Trip/Household
Bay County, Florida	2003	8.48
Orlando, Florida	2000	8.73
Jacksonville, Florida	2000	8.84
Polk County, Florida	2000	8.84
Tallahassee, Florida	2003	9.63
Tampa, Florida	1999	7.76
Treasure Coast Region, Florida	2000	11.28
Chattanooga, Tennessee	2000	8.05
South Bend, Indianapolis	2002	7.90
Nashville, Tennessee	2002	8.59
Memphis, Tennessee	2004	8.20
Atlanta, Georgia	2000	8.15
Charleston, South Carolina	2003	7.62
Knoxville, Tennessee	2000	8.40
Gainesville, Florida	1990	10.18
Gainesville, Florida	2000	11.35
Gainesville, Florida	2007	11.05

Trip Distribution

Trip Distribution models link trip productions and attractions between pairs of TAZs. These interchanges are typically calculated through the application of a Gravity Model. A Gravity Model distributes trips among zones directly proportional to the relative attractiveness of each individual zone and inversely proportional to the friction between each zone (i.e., distance). The result is a matrix of person trips that is later balanced in order to be defined in terms of origins and destinations (as opposed to productions and attractions). Resulting person trip matrices are processed later in the model chain during mode choice to allocate trips by auto occupancy and transit categories and convert these to vehicle trips.

Validation of the Alachua County 2007 trip distribution model primarily involved modification of the highway and transit networks. Evaluation of the trip distribution model was accomplished by comparing statistics for average trip length and the percentage of intrazonal trips between the Alachua County 2007 model and other comparable models across Florida, including the Alachua County 2000 model and the Polk County 2000 model. Additionally, desire line maps were prepared to show travel movements between zones aggregated to districts and reviewed for general logic.

Trip Distribution Model Structure

The general distribution process includes the building of highway networks and travel time skims as well as application of the Gravity Model. The elements of these processes are described below.

Building Highway Networks

FSUTMS includes a module known as "Highway Network" to construct highway networks of model areas. As part of the model validation process, the consultant conducted an in depth review of the highway network. Network characteristics were updated to more accurately reflect 2007 conditions of the roadway system throughout Alachua County. In addition to updating existing roadway characteristics, the Consultant also added Outlying Business District area types (OBD AT 41-43) where appropriate, as this category was not included in the 2000 model network. As described earlier, several roadways were added to the model to better reflect local travel patterns and arterial flyovers and other access controls were coded where these exist in the network. Also, the previous model speed and capacity lookup table (SPDCAP file) was replaced with one previously updated by the Consultant for use in the 2000 Polk County and NERPM models, reflecting capacities found in the latest FDOT *Quality/Level of Service Handbook*

Travel Time Skims

Free-flow travel time skims between zone pairs are developed as the last substep in the "Highway Network" step of FSUTMS, including the updating of travel time skims with intrazonal and terminal times. Highway network characteristics are input to this process. In addition to the highway network characteristics, other input files are generally used during network skimming as well.

The first of these is the TCARDS file. The TCARDS file contains a record of all prohibited movements in the network. Turning movements were reviewed to include any updated prohibited movements for year 2007 conditions during validation. The TCARDS file also can include time penalties; however, time penalties were not recommended in the model area as the highway assignment validated reasonably well without supplemental travel time factors. An input file called TOLLLINK is used in most Florida models to identify toll plaza characteristics. However, because no toll roads exist in Alachua County, this file is not used in the Alachua County 2007 model.

Intrazonal times represent the travel time it takes to travel within or across a zone. These times are calculated as one-half the travel time from one zone to the nearest adjacent zone. Terminal times represent the time required at either end of a trip to travel from an origin to a vehicle or from the vehicle to a final destination. More specifically, this accounts for the time necessary to walk to or from the vehicle used for any given trip. Terminal times are typically greatest in central business districts and lowest in residential areas. **Table 13** lists the terminal times by area type used in the Alachua County 2007 model.

Table 13: Terminal Times

Terminal Times[a]	Area Types	Area Type Descriptions
5	12	Urbanized Area (under 500,000) Primary City Central Business District
5	13	Other Urbanized Area Central Business District and Small City Downtown
5	14	Nonurbanized Area Small City Downtown
3	21	Central Business District Fringe Areas
3	22	Industrial
1	31	Residential Area of Urbanized Areas
1	32	Undeveloped Portions of Urbanized Areas
1	33	Transitioning Areas/Urban Areas over 5,000 Population
2	42	Other Outlying Business District
1	51	Developed Rural Areas/Small Cities under 5,000 Population
1	52	Undeveloped Rural Areas

Trip Distribution Module

The "DISTRIBUTION" module distributes trips between zones using a Gravity Model and produces a set of congested highway skims. The primary input data used for DISTRIBUTION is the friction factor (FF) file. This file is used by the Gravity Model to measure the effects of spatial separation between zones for the purposes of trip distribution. It is generally assumed that productions are less likely to be linked to destinations with greater travel times if alternative destinations with lesser travel times and similar attractiveness are available. Friction factors from the Alachua County 2000 model were used for the Alachua County 2007 model without modification. Since no new household travel surveys were conducted since the prior 2000 model calibration and validation, and no significant errors were found in the resulting trip distribution, it was decided to maintain the sanctity of the existing friction factor set in the 2007 model.

Friction factors are used by the Gravity Model to link the trip productions and attractions generated by GENERATION. These trip interchanges denote person trips traveling specifically from one zone in the model to another. Trips are distributed according to the 10 trip purposes found in the Alachua County 2007 model. These person trips are later converted into vehicle trips during mode choice and then loaded onto networks during highway and transit assignment. The next subsection describes checks, modifications, and adjustments made to trip distribution assumptions in order to verify and improve model validity.

Trip Distribution Model Development and Validation

Errors in the trip distribution phase can lead to significant problems in the execution of subsequent steps in the model chain (i.e., mode choice and trip assignment). Consequently, efforts were taken to maximize the accuracy of the Alachua County 2007 trip distribution module. This effort included adjustments to network speeds and capacities and corrections of network link attributes.

Speeds and Capacities

As noted earlier, a speed and capacity lookup table, developed to be consistent with the *Quality/Level of Service Handbook* from FDOT, was used in the Alachua County 2007 model validation. After implementation of the SPDCAP file, an iterative process of manual adjustments to speeds was conducted in order to improve model validation while maintaining a logical hierarchy of speeds. Primarily, adjustments were made to be specific to certain area type/facility type combinations so as to avoid unintended impacts. Generally, speeds on the interstates were increased, and facilities other than one-way roads within CBDs and CBD fringe areas were somewhat increased. The SPDCAP adjustments are shown in Appendix B, along with the VFACTORS file that adjusts absolute capacities to practical capacities for trip assignment diversion.

Penalties and Prohibitors

The TURN.pen file, formerly known as TCARDS, allows for the adjustment of travel times on specific links by either including a time penalty to pass from one link to another or by prohibiting the movement all together. Prohibitors are confined to ramps located along the Interstate 75, mainly to guide trips to the correct ramps for each travel movement. No time penalties were added during the 2007 model validation effort. The TURN.pen file, is depicted in Appendix C

Friction Factors

The friction factor file used in the Alachua County 2007 model is identical to the file used in the Alachua County 2000 model. Further consideration of the friction factors did not indicate a need for modification in order to improve trip distribution. Average trip lengths seemed reasonable, intrazonal percentages made sense, and aggregate trip distribution patterns looked logical. Furthermore, there were no updated household travel diary survey data for Alachua County to allow for calibration of new friction factors. A copy of the validated friction factor file (FF.dbf) is depicted in Appendix H.

Trip Distribution Model Results

The three fundamental Gravity Model checks discussed in this section are aggregate trip distribution patterns by district, the average trip length by purpose and the percentage of intrazonal trips. An analysis of volume-over-count summaries along screenlines also can be helpful in establishing the accuracy of trip distribution. However, as screenline summaries apply more significantly to the analysis of traffic assignment, these are discussed later.

Aggregate Trip Distribution Patterns by District

The Consultant requested input from the Metropolitan Transportation Planning Organization for the Gainesville Urbanized Area Long Range Transportation Plan Technical Advisory Committee Subcommittee on logical district boundaries in order to aggregate trips from zones to districts for desire line analysis. The subsequent production of desire line maps to visualize trip distribution patterns by purpose within the Alachua County 2007 model, allowed for a greater level of comfort in the reasonableness of travel movements between key subareas within the model. Figure 4.1 depicts an example desire line map for the home-based work trip purpose within the Gainesville urbanized area.

Average Trip Length by Purpose

Table 14 shows a comparison of average trip length statistics generated by the 2000 and 2007 Alachua County models, and several other models of comparable size throughout Florida. Comparisons between the Alachua County 2000 model and the Alachua County 2007 model show a general increase in average minutes traveled from 2000 to 2007.

Table 14: Average Trip Lengths (in Minutes)

Purpose	2007 Alachua County	2000 Alachua County	1990 Alachua County	2000 North Florida HH Travel Survey[a]	2007 ACS[b]	2003 CRT PA	2000 Polk County
Home-Based Work	14.73	13.92	14.74	24.60	16.20	19.80	17.03
Home-Based Shop	13.10	13.60	12.21	17.60	N/A	17.76	14.04
Home-Based Social/ Recreation	12.55	11.97	11.26	18.60	N/A	17.56	15.01
Home-Based Other	13.37	12.79	11.88	20.80	N/A	18.86	15.06
Nonhome-Based	10.79	9.05	8.92	19.00	N/A	17.10	13.73
Home-Based University	9.14	8.08	N/A	N/A	N/A	N/A	N/A
UF Campus/Dorm	6.22	4.19	N/A	N/A	N/A	N/A	N/A
Truck-Taxi	15.18	13.74	11.32	N/A	N/A	16.73	15.52
Internal-External	25.69	25.78	30.01	N/A	N/A	46.20	26.17
TOTAL	**13.62**	**11.65**	**11.65**	**20.12**	N/A	**22.00**	**16.85**

[a] Source: North Florida 2000 HH Travel Survey Final Report Table 5.15 (Reported Mean).

[b] Source: 2000 American Community Survey Data for City of Gainesville.

Intrazonal Trip Distribution

Comparisons between the Alachua County 2000 model and the Alachua County 2007 model indicate that the percentages of intrazonal trips decrease for most trip purposes. This decrease is a result of zone splits made to the 2007 model. The exception to this is home-based shop, which increased by approximately 1.6 percent. These results are illustrated on Table 4.3.

Map 17: Alachua County HBW Per son Trip Desire Lines

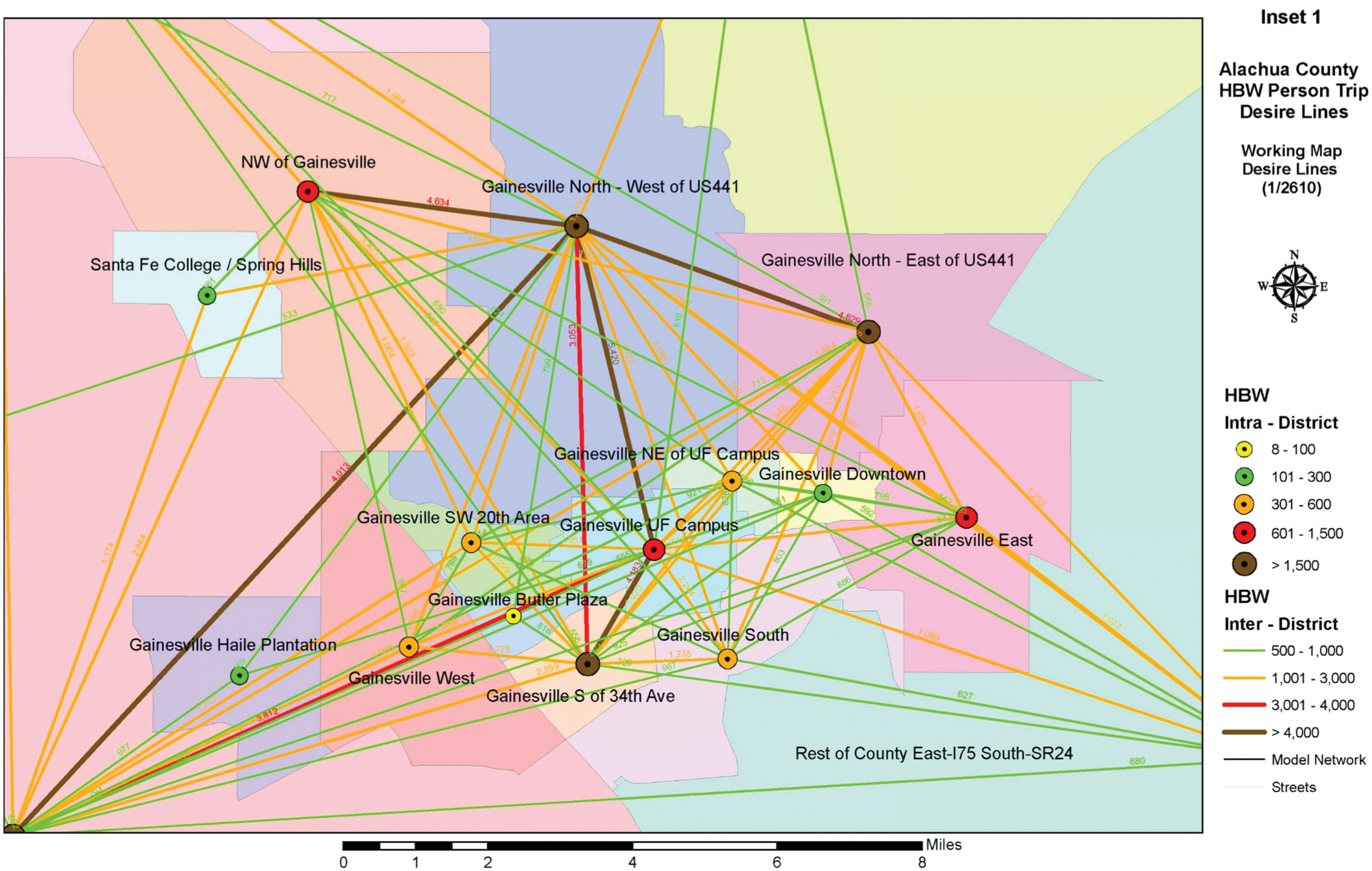

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Table 15: Intrazonal Trip Summary

	Alachua County 2007			Percent Intrazonal			
Purpose	**Total Trips**	**Intrazonal Trips**	**Percent Intrazonal**	**2000 Alachua County**	**1990 Alachua County**	**2003 CRTPA**	**2000 Polk County**
Home-Based Work	183,288	2,783	1.52%	1.91%	1.81%	0.24%	3.16%
Home-Based Shop	132,443	5,585	4.22%	2.67%	3.35%	0.45%	3.63%
Home-Based Social/Recreation	119,642	9,302	7.77%	9.51%	6.51%	0.73%	10.77%
Home-Based Other	252,428	10,971	4.35%	4.96%	5.38%	0.62%	4.16%
Nonhome-Based	329,119	23,675	7.19%	8.96%	4.73%	0.83%	4.89%
Home-Based University	75,940	39	0.05%	0.47%	N/A	N/A	N/A
UF Campus/Dorm	23,570	1,313	5.57%	2.01%	N/A	N/A	N/A
Truck-Taxi	81,199	1,212	1.49%	1.76%	5.55%	1.25%	5.71%
Internal-External	114,055	0	0.00%	0.00%	0.00%	0.00%	0.00%
Total	**1,311,684**	**54,880**	**4.18%**	**5.00%**	**4.51%**	**0.66%**	**4.93%**

Transit Accessibility and Path-Building

Integral to the building of a transit network is the availability of access to transit. A critical component of transit access is identifying the zones that are within an acceptable walking distance to a transit stop. Walk access is generally provided from centroids to stops.

Transit path-building involves the generation of zone-to-zone transit paths, transit skims, transit fares, and station matrices. These files are built for each of the transit modes during peak and off-peak periods occurring in the model. The Alachua County 2007 model currently only has one mode, local bus, but has the capability of expansion to other transit modes in the future.

This section of the report provides information concerning validation of the transit access and path-building steps in the model. Script files directing the execution of building the transit network and transit paths can be found in Appendix I.

Transit Access and Path-Building Model Structure

The Alachua County 2007 model uses a nested logit mode choice transit model. The FSUTMS Transit Network module was used to establish transit access and path-building. The module constructs separate peak-period (AM) and midday (MD) transit networks using restrained highway skims as an input to represent congested zone-to-zone travel times. Transit path-building involves the generation of transit path matrices, fares, skims, and station-to-station interchanges.

Transit accessibility was represented by each zone's pedestrian environmental variables (PEV) that are stored in the ZONEDATA file, as described earlier. The PEV defines several factors that are essential to have sufficient accessibility to bus stops, such as sidewalk availability, ease of street crossing, nonmotorized connections, and building setbacks. Each variable is given a score between 0 and 3, and accumulated scores of all the four PEVs are saved as "SUM" in the ZONEDATA file, which ranges from 0 to 12. Future changes to the zonal transit accessibility will require modification of PEV scores as well as updating "SUM" values to get total PEV scores for each TAZ. **Table 16** indicates what each PEV value represents. These variables and categories remain unchanged from the 2000 model.

Table 16: Pedestrian Environment Variables (PEV)

	Pedestrian Environment Variable (PEV) Values			
Variables	**PEV = 0**	**PEV = 1**	**PEV = 2**	**PEV = 3**
Sidewalk Availability	No sidewalks	<10 percent have sidewalks	10 to 90 percent have sidewalks	>90 percent have sidewalks
Ease of Street Crossing	Crossing difficult	<10 percent with easy crossing	10 to 90 percent with easy crossing	>90 percent with easy crossing
Non-motorized Connections	No connections	<10 percent have connections	10 to 90 percent have connections	>90 percent have connections
Building Setbacks	All large setbacks	<10 percent have minimum setbacks	10 to 90 percent have minimum setbacks	>90 percent have minimum setbacks

Transit Access and Path-Building Model Development and Validation

Most of the effort in validating the transit accessibility and path-building focused on ensuring that the transit network was up to date and accurately reflected base year conditions. In addition, walk access links were checked in order to ensure adequate connectivity.

Transit Accessibility

The key effort in validating the transit network consisted of three parts. The first was to review the existing transit network and update it to year 2007 operating conditions. This required significant rerouting of the transit lines. The second was to remove some UF on-campus circulators that resulted in overassignment. Finally, PEVs in the ZONEDATA file were reviewed and updated for each zone. Walk access links that were built using the PEVs were checked for connectivity.

Transit Path-Building

Validation of transit path-building generally includes iterative adjustments to the following parameters:

- Maximum transfers;
- Maximum travel times;
- Wait times;
- Transfer times;
- Minimum and maximum wait penalties;
- Run time factors;
- Transfer penalties; and
- Maximum fare.

These parameters and other aspects about transit path-building currently reflect base year 2007 conditions. During the validation process, model estimates for transit transfers seem to be higher than 16 percent that the Regional Transit Systems (RTS) reported in their recent on-board travel survey,[13] thus the transfer penalty was adjusted.

Transit Fare

The RTS transit fare was $1.00 during the year 2007, used for the Alachua County base year 2007 model validation. This fare has since increased to $1.50, according to the RTS. Details on how the bus fare was adjusted during validation are further explained below. A scenario key named as BUSFAREFAC has been introduced as a bus fare factor for this model. BUSFAREFAC represents a dollar amount of transit fare, which the subsequent mode choice script uses to apply any fare change for future year scenarios. BUSFAREFAC is set to 1.0 for base year 2007, resulting in no impact to base year validation of transit trips.

Review of Transit Access and Transit Routes

As validation efforts moved towards reasonable transit assignments, bus stop locations and local zonal access to bus stops were reviewed, using the RTS bus stop GIS location file. Headway data also was provided from the RTS and the transit route file (troute07.lin) was updated. The transit route file had to be overlaid with the highway network when new bus locations were added due to the necessity of splitting highway links where a bus stop exists. The highway network was updated at the same time as the transit route file was updated. "Later Gator" bus routes that were previously included in the 2000 model were subsequently removed from the year 2007 Alachua County model during validation as these are evening bus services specifically for

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[13] *Tindale-Oliver & Associates, Inc.* Gainesville Regional Transit System 2010 to 2019 Transit Development Plan *Major Update Technical Cemorandum #1 Regional Transit System On-Board survey. Prepared for Gainesville Regional Transit System. June 2009.*

University of Florida students and operate for only limited hours while the model is designed to estimate daily peak and off-peak transit ridership.

As described earlier, several transit "stations" were coded into the transit network, each of which allow park-and-ride access in addition to walk access. The locations where park-and-ride access was coded can be summarized as follows:

- Oaks Mall Park-and-Ride Lot – 300 spaces;
- Harn Museum – 100 spaces;
- UF Park-and-Ride Lot – 200 spaces;
- UF Hilton Convention Center Hotel – 200 spaces; and
- Rosa Parks Downtown Transfer Station – 10 spaces (coded more for its station-like amenities than for parking capacity).

Transit Access and Path-Building Model Results

Average weekday transit trips in the year 2007 were estimated by the RTS at 34,300. The model currently is estimating an average of 36,600 transit riders per day. This results in a deviation of less than seven percent. Additional details on transit assignment are provided below.

Mode Choice

Mode choice models can range from simple person-to-auto trip conversion models to more complex nested logit models that estimate modal shares among several categories of auto and transit modes. The Alachua County 2007 model uses a nested logit model approach for mode choice. This section of the report describes the structure and validation of the Alachua County 2007 mode choice model.

Mode Choice Model Structure

The standard FSUTMS process makes use of a nested logit model for mode choice, except in the case of highway only models (i.e., those that do not include transit networks). The entire mode choice process is executed via Cube/Voyager scripting, using the programs MATRIX and TRCOPY. This model uses the same mode choice constants that were used for the Alachua County 2000 model; however, mode choice coefficients and targets were carefully modified for a better match to mode splits for Gainesville and Alachua County, as reported in the latest data from the Census' American Community Survey (ACS).[14]

One script, MCMAT00A.S, directs the creation of a trip table containing five purposes: home-based work (HBW), home-based other (HBO), nonhome-based (NHB), home-based university (HBU) and UF Campus/Dorm (DORM) purposes. Transit fare data are compiled and restrained

[14] *http://www.census.gov/acs/www/Products/index.html.*

highway skims generated during trip distribution are input into the "MODE" module. The peak period utilizes the restrained skims, whereas the off-peak period uses the free flow skims. After running the mode choice model, the outputs are balanced into an origin and destination trip table. This trip table is then used during the highway and transit assignment phases of the model.

A separate script, MCMAT00C.S, combines trip purposes and outputs separate trip tables for the following modes:

- Drive alone auto;
- Carpool auto;
- Light duty trucks;
- Heavy duty trucks;
- External-external trips;
- Peak period transit;
- Off-peak period transit;
- Nonmotorized travelers; and
- Internal auto persons (combination of modes 1 and 2, above).

The scripts referenced above and others pertaining to Mode Choice can be found in Appendix E, along with the corresponding model flowchart for each step.

Development and Validation of Mode Choice Model

The mode choice model step for the Alachua County 2007 model was developed from the Alachua County 2000 model, with a few changes mainly to mode choice scripting (MCMAT00A.S). Validation efforts included iterative adjustment of parameter files, such as the coefficient (MCCOEFFICIENTS.CSV) and constant files (MCCONSTANTS.CSV). Care was taken to maintain coefficients in a numeric range consistent with current Florida DOT model validation standards, referenced earlier in this report and depicted in **Table 17** below. As indicated, all 2007 coefficients for in-vehicle travel time (IVTT) are consistent with Florida DOT guidelines, which also reflect recent New Starts guidance from the Federal Transit Administration (FTA).

Table 17: Mode Choice Coefficients for 2007 Model

Mode Choice Model Parameters	2007 Alachua County	New FDOT Guidelines[a]
HBW IVTT[b]	-0.025	-0.02 to -0.03
HBNW IVTT (HBO IVTT)	-0.02	-0.002 to -0.01
NHB IVTT	-0.024	-0.02 to -0.03
UNI IVTT	-0.024	-0.02 to -0.03
HBW OVT[c]	-0.049	N/A
HBNW OVT (HBO OVT)	-0.048	N/A
NHB OVT	-0.07	N/A
UNI OVT	-0.048	N/A
HBW OVT/IVTT	2.0	2.0 to 3.0
HBNW OVT/IVTT (HBO OVT/IVTT)	2.4	2.0 to 3.0
NHB OVT/IVTT	2.9	2.0 to 3.0
UNI OVT/IVTT	2.0	2.0 to 3.0

[a] FSUTMS-Cube Framework Phase II: Model Calibration and Validation Standards Final Report.

[b] IVTT = in-vehicle travel time.

[c] OVTT = out-of-vehicle travel time.

Mode Choice Model Results

Mode choice results were adjusted to match statistics from Census ACS data for the home-based work (HBW) trip purpose. Also, home-based university (HBU) and UF Campus/Dorm (DORM) trip purposes were maintained to perform following suggestions provided by input from UF and RTS staff. With respect to transit mode split, Alachua County 2007 mode split percentages were greater than the 2000 model for the HBW purpose. The HBW purpose showed 4.39 percent of all HBW trips being transit as opposed to 0.75 percent for the Alachua County 2000 model and 3.38 percent from Census 2007 ACS. In total, 2.17 percent of all trips in the Alachua County 2007 model were allocated to transit modes while 2.35 percent of all trips in the Alachua County 2000 model were allocated to transit.

The total number of transit trips increased between the years 2000 and 2007, as a result of incentives put in place by RTS and UF to encourage transit ridership. While on the surface, it appears that HBU transit trips dropped between 2000 and 2007, this is primarily due to removing Later Gator and other Campus circulator bus routes from the year 2007 transit network, as mentioned earlier. Any reductions in campus bound transit trips were shifted to nonmotorized travel modes (walk and bicycle), which were potentially underestimated in the 2000 model based on discussions with UF staff.

Validation runs with an even higher transit mode split resulted in substantial transit overassignment, as discussed later in this report. Since mode split targets are only available for the HBW purpose from Census ACS, a greater reliance was placed on matching unlinked transit ridership numbers by route, as provided by RTS. Transfer rates supplied by RTS were used to assess linked versus unlinked transit trips in an attempt to balance mode choice and transit assignment results.

Table 18 contains the Alachua County 2007 model Mode Choice validation results.

Table 18: Mode Choice Validation Summary

Trip Allocation By Mode	Alachua County				Census ACS[a]	
	2007		2000		2007	
	Trips	Percent of Trips	Trips	Percent of Trips	Classes	Percent of Trips
Home-Based Work						
Drive Alone	143,880	78.51%	122,692	81.72%	Drive Alone	76.78%
Two Passengers	15,951	8.70%	14,492	9.65%	Carpool	10.80%
Three+ Passengers	8,019	4.38%	7,249	4.83%		
Total Transit	8,043	4.39%	1,125	0.75%	Transit	3.38%
Walk	4,098	2.24%	2,947	1.96%	Walk	3.39%
Bike	3,278	1.79%	1,641	1.09%	Motor/Bicycle	3.54%
HBW Total	**183,269**	**100.00%**	**150,146**	**100.00%**		
Home-Based Other						
Drive Alone	200,318	39.63%	167,037	38.10%		
Two Passengers	191,683	37.92%	169,427	38.64%		
Three+ Passengers	90,914	17.99%	83,985	19.15%		
Total Transit	2,943	0.58%	1,375	0.31%		
Walk	17,952	3.55%	15,134	3.45%		
Bike	1,631	0.32%	1,497	0.34%		
Total	**505,441**	**100.00%**	**438,455**	**100.00%**		
Nonhome-Based						
Drive Alone	166,902	50.70%	129,768	45.29%		
Two Passengers	106,625	32.39%	97,798	34.13%		
Three+ Passengers	45,341	13.77%	47,888	16.71%		
Total Transit	2,587	0.79%	2,033	0.71%		
Walk	5,105	1.55%	6,085	2.12%		
Bike	2,640	0.80%	2,981	1.04%		
Total	**329,200**	**100.00%**	**286,553**	**100.00%**		
Home-Based University						
Drive Alone	34,900	45.96%	26,274	49.75%		
One Passenger	4,399	5.79%	3,098	5.87%		
Two+ Passenger	2,261	2.98%	1,555	2.94%		
Total Transit	9,178	12.09%	11,303	21.40%		
Walk	15,025	19.78%	5,546	10.50%		
Bike	10,179	13.40%	5,032	9.53%		
Total	**75,942**	**100.00%**	**52,808**	**100.00%**		
UF Campus/Dorm						
Total Transit	1,981	8.40%	6,624	25.00%		
Walk	15,615	66.25%	12,810	48.36%		
Bike	5,974	25.35%	7,057	26.64%		
Total	**23,570**	**100.00%**	**26,491**	**100.00%**		
All Purposes						
Drive Alone	546,000	47.80%	445,771	46.70%		
One Passenger	318,658	27.90%	284,815	29.84%		
Two+ Passenger	146,535	12.83%	140,677	14.74%		

Trip Allocation By Mode	Alachua County				Census ACS[a]	
	2007		2000		2007	
	Trips	Percent of Trips	Trips	Percent of Trips	Classes	Percent of Trips
Total Transit	24,732	2.17%	22,460	2.35%		
Walk	57,795	5.06%	42,522	4.46%		
Bike	23,702	2.08%	18,208	1.91%		
Total	**1,142,154**	**100.00%**	**954,453**	**100.00%**		

Highway Assignment

The purpose of a highway assignment model is to load auto trips onto a highway network, resulting in traffic estimates on individual links that ultimately attempt to simulate general vehicular travel patterns throughout the study area. For the Alachua County 2007 model, a series of postprocessing steps also are accomplished during highway assignment to generate output statistics, create new network attributes, and add nonmotorized trips to the highway network as a separate loaded "purpose".

Validation of the highway assignment involved adjustments to external travel and trip generation assumptions, iterative highway network modifications, adjustment of model speeds, and other changes related to the transit system to shift trips among modes most effectively. A number of key evaluation statistics were generated during the assignment phase of the model. Volume-over-count ratios were compared by area type, facility type, laneage, and screenline and volume groups. Along with these statistics, the root mean square error (RMSE) was generated and evaluated by volume group.

This section describes validation of the highway assignment model. It includes an overview of the model structure, development, and iterative adjustment of model inputs and parameters, and a review of final model validation results.

Highway Assignment Model Structure

Auto trips are loaded onto the network by means of an iterative equilibrium highway load program based on an all or nothing capacity restrained assignment algorithm. A series of statistical summaries are subsequently generated through postprocessing steps. The most significant statistics for highway assignment validation are generated in reports collectively known as "Highway Evaluation or HEVAL" in conjunction with RMSE. Postprocessing scripts from the 2000 model were modified during the 2007 validation to produce additional assignment statistics and summaries not available in the previous model. The scripts and corresponding model flowchart for highway assignment can be found in Appendix E.

Development and Validation of Highway Assignment Model

In total, 23 model runs were executed in order to validate the Alachua County 2000 model, excluding numerous test runs that were necessary for iterative validation adjustments. Model validation was accomplished by minimizing the difference between model estimated volumes and observed traffic counts for the year 2007 on network links throughout the study area. As many count locations were accounted for as possible in order to ensure a wide range of coverage geographically as well as to incorporate as many examples of facilities and land uses located within the study area.

Adjustments were made to key elements of the modeling process to achieve satisfactory validation results. After each run, a summary of the results was compiled and analyzed by the Consultant in order to identify areas for improvement in the model and successful strategies toward validation enhancement. Appropriate changes consistent with the findings revealed during analysis of results were then implemented and subsequent runs were executed. This iterative process was continued until validation accuracy standards were achieved.

Changes made to the model during highway assignment validation consisted mainly of iterative adjustments to speeds and highway network editing, including adjustment of centroids and centroid connectors, verifying highway alignments against street GIS layers and aerial photography, and modifying highway characteristics based on input and comments that were provided by the Metropolitan Transportation Planning Organization for the Gainesville Urbanized Area Long Range Transportation Plan Technical Advisory Committee Subcommittee.

Highway Assignment Validation Results

Perhaps the most common use of travel demand models is to forecast future traffic volumes in order to identify the impacts of growth over time and better plan to mitigate these impacts. In the Gainesville Urbanized Area, a greater focus is placed on transit mobility than most comparably sized areas and validation of the Alachua County 2007 model likewise focused more effort on transit assignment accuracy. Even under these conditions, however, proper validation of the highway assignment is critical to the meaningful use of travel demand models as the highway network forms the backbone of the transit network and is assumptions. Key statistics analyzed as part of the validation process include the following:

- Volume-over-count ratios on count locations;
- Percent root mean square error;
- Volume-over-count ratios along screenlines;
- Vehicle-miles traveled (VMT); and
- Vehicle-hours traveled (VHT).

Each of the above measures is discussed separately in the remainder of this section.

Assignment Performance by Area Type/Facility Type/Lanes Categories

The areawide accuracy of highway assignment is measured, in part, by means of volume-over-count ratios for area type, facility type, and lanes categories. FDOT standards generally allow for an accuracy of +/- 15 percent per category and +/- five percent areawide. The Alachua County 2007 model achieves the areawide accuracy for volume-over-count ratio at 1.01. There were no occurrences of link group volume-over-count ratios (i.e., area type and facility type categories) that exceeded the standard tolerances by group.

Table 19 demonstrates a detailed record of the volume-over-count ratios for each link group category of area type, facility type, and number of lanes. In comparing accuracy of the 2007 model against the 2000 model, the results are comparable. At the areawide level, both models show a percent error of two percent, the difference is that the 2000 base year highway assignment was underestimating vehicle trips by two percent whereas the 2007 base year model is overestimating these trips by two percent.

In looking at validation by area type, facility type, and laneage categories, there are examples where one model is better than the other but nothing particularly troublesome. Some key validation improvements over the 2000 model include undivided arterials, collectors, and central business districts (CBD). Ramp counts were not included in the 2000 model and validation of these affects validation of the mainline I-75 corridor. Achieving a higher volume-over-count ratio on freeways also would mean a higher ratio on ramps, which are presently running as high as one would want at present (+14 percent).

Table 19: Volume to Count Performance by Category

		Volumes Over Counts	
		Percent Difference (+/- 15%)	
		Alachua County	
Category		**2007**	**2000**
Facility Type	Freeway	0.94	1.01
	Divided Arterial	1.08	1.02
	Undivided Arterial	0.99	0.92
	Collectors	0.89	0.79
	One-Way/Frontage	0.93	1.00
	Ramp	1.14	N/A
Area Type	CBD	1.05	0.89
	CBD Fringe	0.98	1.01
	Residential	0.92	0.93
	OBD	1.06	N/A
	Rural	1.10	1.01

Category		Volumes Over Counts Percent Difference (+/- 15%) Alachua County 2007	2000
Number of Lanes	One Lane	0.95	N/A
	Two Lanes	1.03	N/A
	Three Lanes	1.08	N/A
Total		**1.02**	**0.98**

Screenline Performance

Analyzing volume-over-count ratios along screenlines allows for examining flows into, out of, and across geographic subareas and corridors. This constitutes a key component of highway assignment as well as assisting in the examination of trip distribution patterns. There are 10 screenlines in the Alachua County 2007 model. An external cordon measuring trips coming into and going out of the study area is included as well. **Map 18** depicts the screenlines used in the Alachua County 2007 model.

FDOT has established four ranges for measuring accuracy based on total counts comprising each screenline. Screenlines that carry less than 35,000 vehicles per day (VPD) should validate within +/- 20 percent. Screenlines that carry between 35,000 to 70,000 VPD should validate within +/- 15 percent. Screenlines that carry more than 70,000 VPD should validate within +/- 10 percent. External cordons should validate within +/- one percent. Out of 10 total screenlines, all met established accuracy targets. The results of the volume-over-count ratios by screenline are depicted in **Table 20**.

Percent Root Mean Square Error

The percent root mean square error (RMSE) indicates whether the simulated network contains an acceptable level of assignment error. This is based on both areawide and volume group summaries. Accuracy is more stringent for higher volume facilities than for lower volume facilities, as the same percent error equals a higher assignment volume.

No RMSE category failed to meet established accuracy ranges with the Alachua County 2007 model. The overall RMSE for the study area was 31.7 percent, below the 32 to 39 percent minimum recommended accuracy range for areawide total RMSE. This is better than the Alachua County 2000 model, which reported a total RMSE of 32.8 percent. These results are summarized in **Table 21.** RMSEs are significantly improved in the Alachua County 2007 model versus the Alachua County 2000 model especially for the volume group with less than 5,000 VPD by 9.6 percent and for the groups between 30,000 and 50,000 VPD by 7.2 percent.

Streets with less than 5,000 VPD are mostly urban collectors and rural arterials so this improved accuracy equates with a better estimate of trips coming into the Gainesville urbanized area from outlying areas as well as neighborhood collectors and circulators. Urban arterials with 30,000+ VPD are among the most important corridors in the Gainesville urbanized area and an enhanced accuracy here means a greater confidence in proposals for major investments, regardless of mode.

Map 18: Gainesville MTPO 2007 Model Screenlines

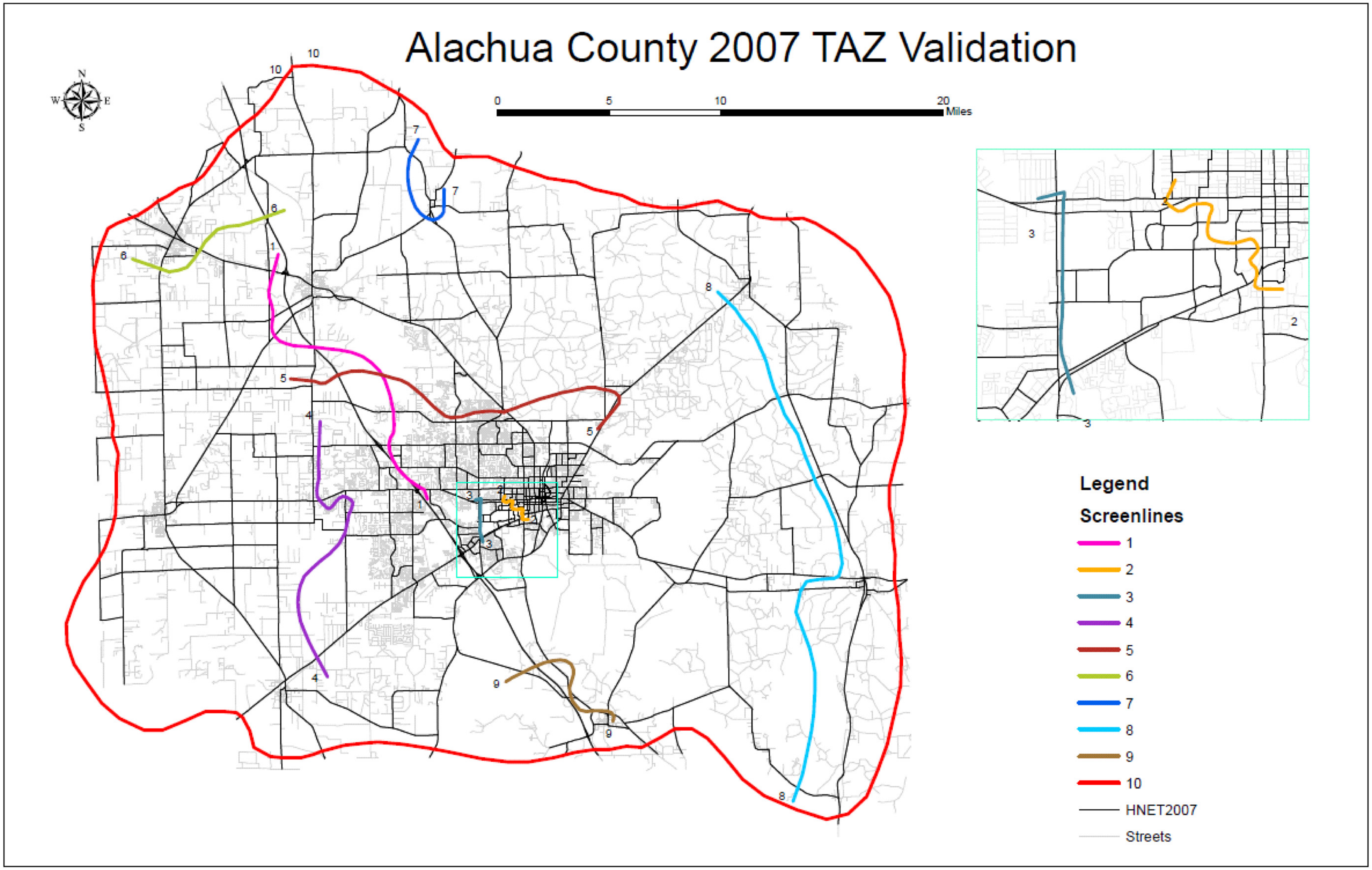

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Table 20: Volume to Count Performance by Screenline

	Alachua County		V/C Ratio		
	2007		2007		
Screenline	Total Volume	Total Count	Alachua County	FDOT Accuracy Level[a]	Screenline Descriptions
1	152,030	145,068	1.05	+/- 10%	1 Crossing I-75
2	141,566	133,473	1.06	+/- 10%	2 Crossing East UF Campus
3	153,847	133,655	1.15	+/- 10%	3 Crossing SR 121
4	66,168	62,873	1.05	+/- 15%	4 EW Cutline west of I-75
5	148,081	141,938	1.04	+/- 10%	5 NS Crossing SR-222 (39th Avenue)
6	86,335	82,100	1.05	+/- 10%	6 NS Cutline in NW County/High Springs
7	11,255	10,619	1.06	+/- 20%	7 La Crosse Area
8	35,479	37,126	0.96	+/- 15%	8 EW Crossing U.S. 301
9	92,341	90,827	1.02	+/- 10%	9 Micanopy Area
10	244,482	244,474	1.00	+/- 1%	10 External Cordon

[a] *FSUTMS-Cube Framework Phase II: Model Calibration and Validation Standards Final Report,* October 2008.

Table 21: Root Mean Squared Error

Count Range	Accuracy Range[a]	2007 Alachua County	1990 Alachua County
1-5,000	45-55	46.0%	55.6%
5,000-10,000	35-45	30.7%	30.2%
10,000-20,000	25-35	25.4%	22.2%
20,000-30,000	15-27	21.4%	15.4%
30,000-40,000	22-24	8.3%	25.8%
40,000-50,000	20-22	18.6%	N/A
Average Total	**32-39**	**31.7%**	**32.8%**

[a] FSUTMS-Cube Framework Phase II: Model Calibration and Validation Standards Final Report, October 2008.

Transit Assignment

The transit assignment step in the Alachua County 2007 model loads trips to the transit network. Separate loads are conducted by mode and period as allocated in the mode choice model. HBW trips are assigned to the "peak period" network while HBNW and NHB trips are assigned to the "midday" network (so in reality this is more of a comparison between work and nonwork trips than time periods). Overall validation for transit assignment was based on an analysis of the transit ridership not only as a system but also on a route by route basis. Transit assignment loadings were compared to daily "unlinked" route ridership data provided by the RTS.

The Alachua County 2007 transit assignment model estimated approximately 36,599 "unlinked" riders systemwide, while the RTS reported 34,326 daily ridership systemwide for FY 2007 as shown in **Table 22.** For comparison purposes, only those bus routes that were included in the Alachua County 2007 model were reported in **Table 22.** On average, the ridership for the Alachua County 2007 model differs by only 6.6 percent from data provided by the RTS. This is within the preferred 15 percent FDOT validation standard.

On a route-by-route basis, the Alachua County 2007 transit assignment model validates well with 23 out of 29 bus routes performing within the preferred accuracy range. Of the remaining bus routes, four bus routes are performing within the acceptable range (but not the "preferred" range) as well. Therefore, 27 out of 29 bus routes are assigning within FDOT standards. In general, four-step models do not typically validate well on a segment-by-segment basis for local bus routes. Other applications do exist that are more appropriate for use in assessing local bus operational adjustments. However, through validation efforts and iterative modification of input and parameter files, the Alachua County 2007 model performs well in transit assignment not only as a system but on a route-by-route basis as well.

At the bottom of **Table 22,** are a number of interrelated statistics such as linked trips, unlinked trips, transfers, and annual ridership. "Observed" linked trips were calculated by applying a 16 percent transfer rate documented in the recent on-board rider survey. "Estimated" linked trips are the number of transit trips output by the mode choice model. Even though the linked trips from mode choice are somewhat lower than desired, it was felt that the observed unlinked ridership numbers were more defensible (derived from passenger counts) than the linked observed number (derived from on-board survey response to a question about transfers). Any increase in the number of linked trips would always result in more unlinked trips as well, and systemwide model estimates of unlinked trips are very close to RTS observed numbers.

Appendix I contains the model script files and flowchart for transit assignment. These indicate the processes, input parameters, and output file locations.

Table 22: Year 2007 Transit Loading Estimates

Route	Route Description	RTS Ridership 2007	Alachua County 2007 Model	Percent Error	Acceptable (+/-)[a]	Preferable (+/-)[b]
Route 1	Butler Plaza to Downtown via Archer Road	1,667	2,768	66.1%	100%	65%
Route 2	Downtown to Robinson Heights via SE 15th Street	343	31	-91.0%	150%	100%
Route 5	Oaks Mall to Downtown via University Avenue	1,562	2,291	46.7%	100%	65%
Route 6	Downtown to Gainesville Mall via 6th Avenue	361	307	-14.9%	150%	100%
Route 7	Downtown to Eastwood Meadows	406	41	-89.9%	150%	100%
Route 8	Pine Ridge to Shands via NW 13th Street	1,199	2,288	90.8%	100%	65%
Route 9	Lexington Crossing to McCarty Hall	2,764	2,066	-25.3%	65%	35%
Route 10	SFCC to Downtown via NW 16th Avenue/University Avenue	280	149	-46.8%	150%	100%
Route 11	Eastwood Meadows to Downtown via University Avenue	411	253	-38.4%	150%	100%
Route 12	Campus Club to McCarty Hall	2,430	3,454	42.1%	65%	35%
Route 13	Job Services to Newell Drive/Museum Road via 13th Street	1,488	840	-43.6%	100%	65%
Route 15	Downtown to NW 23rd Street/NW 6th Street	998	564	-43.5%	150%	100%
Route 16	Newell Drive/Museum Road to Sugar Hill via 16th Avenue	1,116	991	-11.2%	100%	65%
Route 20	Oaks Mall to McCarty Hall via SW 20th Avenue	3,122	2,520	-19.3%	65%	35%
Route 21	SW 43rd Street to McCarty Hall	1,567	1,574	0.4%	100%	65%
Route 24	Downtown to Job Corps via SR 24 (Waldo Road)	386	257	-33.3%	150%	100%
Route 34	Lexington Crossing to the Hub	1,366	758	-44.5%	100%	65%
Route 35	McCarty Hall to Homestead Apartments	2,113	2,190	3.6%	65%	35%
Route 36	McCarty Hall to SW 34th Street/Archer Road	731	1,790	145.0%	150%	100%
Route 43	SFCC to Downtown via 43rd Street	603	1,579	162.0%	150%	100%
Route 75	Butler Plaza to Oaks Mall via 75th Street	815	247	-69.7%	150%	100%
Route 117	Park-and-Ride 2 (SW 34th Street)	830	1,433	72.7%	150%	100%
Route 118	Park-and-Ride 1 (Harn Museum)	3,070	2,282	-25.60%	65%	35%
Route 119	Family Housing	346	294	-14.90%	150%	100%

Route	Route Description	RTS Ridership 2007	Alachua County 2007 Model	Percent Error	Acceptable (+/-)[a]	Preferable (+/-)[b]
Route 120	West Circulator (Fraternity Row)	1,198	1,158	-3.30%	100%	65%
Route 121	Commuter Lot	1,020	2,061	102.10%	100%	65%
Route 122	UF North/South Circulator	220	369	67.70%	150%	100%
Route 125	Lakeside	955	1,006	5.30%	150%	100%
Route 127	East Circulator (Sorority Row)	962	1,039	8.00%	150%	100%
Route 120, 122, 127	All UF Circulators	2,379	2,565	7.80%	65%	35%
Total Unlinked Riders		34,326	36,599	6.60%	+/- 20 %	+/- 15 %
Without Circulators		31,947	34,034	6.50%		
Transfers*		5,492				
Total Linked Trips		28,834	24,732	-14.20%	+/- 9 %	+/- 3 %
FY 07 Annual Riders		8,939,334				
Expansion Factor		252.28				

[a] Based on 16 percent reported in RTS on-board survey.

[b] FSUTMS-Cube Framework Phase II: Model Calibration and Validation Standards, Final Report, October 2008.

Year 2035 Existing +Committed Scenario

This section discusses development of the Year 2035 Existing-plus-Committed (E+C) scenario. Year 2035 socioeconomic data and external trips were combined with E+C highway and transit projects to generate forecasts of highway and transit trips. Iterative adjusting of bus fares showed that the model was overly sensitive to fare changes. Discussions with RTS staff led to a decision on implementation of a Bus Fare Factor.

The Bus Fare Factor was introduced as a Scenario Key that can be edited by model user should alternative fare changes be tested using the model. Bus fare factor (BUSFAREFAC) is a dollar amount. The base year 2007 local bus fare is $1.00, while the current bus fare has increased to $1.50 as of the year 2010, when the model was validated. Therefore, any future scenarios, including the E+C scenario, should use a bus fare of no less than $1.50.

Initial efforts to change the fare from $1.00 to $1.50 in the bus fare text input file (ALACHUA.FAR) were not successful, resulting in severely reduced transit trips and ridership for future year scenarios. Due to this reason, a Bus Fare Factor (BUSFAREFAC) was introduced so that the transit mode choice script minimizes the impact from the transit fare increase to 10 percent, consistent with ridership changes experienced and documented by the RTS. Details on how the mode choice script was modified can be found in Appendix E, along with the model process flowchart.

Summary and Conclusions

The model validation phase of the Gainesville Urbanized Area Year 2035 Long Range Transportation Plan (LRTP) Update essentially began with data development and review which was documented in the previous section. Data review, adjustment, and correction was an iterative process throughout the model validation effort, reflecting identification of data issues based on model results.

Once the input data were initially deemed sufficient to proceed, work continued on validating each component of the FSUTMS travel demand model. A validation worksheet was prepared and used to summarize each validation run and model performance against prior versions of the Alachua County model as well as other comparable travel demand models. This updated validation worksheet incorporates the latest FDOT model validation accuracy standards and allows for a complete record of all model adjustments made during the validation effort and the resulting impacts.

Model results were shared periodically with staff from the MTPO, FDOT District Two, Alachua County, UF staff, RTS, and other members of the Metropolitan Transportation Planning Organization (MTPO) for the Gainesville Urbanized Area LRTP Technical Advisory Committee Subcommittee. The highway side of the model validated reasonably well from the start, largely a reflection of the efforts put forth by the study team in data development, review, disaggregation, and refinement. The aforementioned Subcommittee agreed to focus much of the validation effort on the transit side of the model, as the MTPO Board has demonstrated a strong commitment to the role of transit in the area's future mobility.

The base year 2007 Alachua County travel demand forecasting model meets most established FSUTMS and national standards for model accuracy and reasonableness. The validated model has been used in subsequent phases of the Gainesville Urbanized Area Year 2035 LRTP Update to develop and test numerous transportation needs alternatives.

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FINANCIAL RESOURCES

FINANCIAL RESOURCES

FINANCIAL RESOURCES

Executive Summary

The purpose of this analysis is to document the financial resources and revenues available for consideration in developing the Cost Feasible element of the Gainesville Metropolitan Transportation Planning Organization's (MTPO's) 2035 Long Range Transportation Plan (LRTP). This memo identifies both committed and potential transportation revenues at the federal, state, and local level, including funding sources dedicated to maintenance and operations activities. To meet federal requirements of the Safe Efficient Accountable Transportation Equity Act –Legacy for Users (SAFETEA-LU), all revenues are expressed in year of expenditure (YOE) dollars to reflect the rate of inflation. The use of YOE dollars may present an appearance of a greater availability of funds, but this is not necessarily the case.

The 2035 LRTP's 22-year total for state and federal revenue sources is $139.6 million for highways and some transit projects (Flex, Highway, Enhancements), in inflation-adjusted revenues, plus an additional $74.7 million for only transit, for a total of $214.3 million, as shown below in **Table 23.** These sources are those that have historically been considered by the MTPO during preparation of the LRTP.

Table 23: State and Federal Program Revenues (in millions, YOE)

Capacity Programs	FY 2014-2015 Subtotal	FY 2016-2020 Subtotal	FY 2021-2025 Subtotal	FY 2026-2030 Subtotal	FY 2031-2035 Subtotal	22 Year Total
Flex – Highway or Transit	2.3	7.1	8.1	8.8	9.8	36.1
Highway	6.0	18.5	20.8	22.4	24.3	92.0
Enhancement	0.9	2.5	2.6	2.7	2.7	11.5
Transit	5.6	14.5	16.4	18.3	19.9	74.7
Total	**14.8**	**42.7**	**47.9**	**52.2**	**56.7**	**214.3**

Source: Florida Department of Transportation (FDOT), 2009.

Additional state and local revenues available to the MTPO were also identified, in order to better meet the SAFETEA-LU mandate regarding the identification of revenues to support operations and maintenance. For example, fuel tax revenues are historically used for these purposes. Projections for fuel tax receipts in the analyses do not account for conditions associated with "Peak Oil" or other per capita motor fuel consumption reductions, such as large-scale transitions to other modes of transportation. The analyses presented at this time assume per capita consumption will remain at today's level through 2035, and should be considered a Trend scenario for financial resources. Additional analyses will be performed to illustrate different fuel consumption and fuel availability scenarios.

Regarding potential future revenue sources, the analysis includes the implementation of the Charter County Transportation System surtax, maximizing the allowable discretionary local sales surtax, and the implementation of mobility fees, the latter of which are currently under evaluation by Alachua County. Other options, such as public-private partnerships and New Starts/Small Starts transit dollars will be considered as the analysis proceeds.

In addition to the federal and state transit funding sources identified by FDOT, the Gainesville Regional Transit System (RTS) 2009 Transit Development Plan (TDP) identified potential revenue sources for both operating and capital expenditures from local sources, as well as federal and state sources. These local sources include a developer's agreement with the University of Florida, fare box collections, and employee pass programs.

Transit revenue projections from local sources, and those sources not captured by FDOT revenue projections, used in this analysis are based on the RTS Transit Development Plan (2009). The analysis specifically excludes those sources identified as being unfunded, and those identified as originating from federal and state sources, including New Starts and FDOT grants, so as to not overstate potential future revenues.

Potential new local revenue sources were also analyzed, but are not included in the above total. The financial forecasts included within the analysis contain several general assumptions.

- The rate of inflation is assumed to be an average of three percent annually.

Some financial experts feel inflation will rise sharply in the short term, and fall back over time, but the three percent figure is intended to represent an average across the long-term horizon and is consistent with FDOT methodology.

- The rate of increase for funding sources will be tied to population growth.

The population projections are generally estimated by BEBR, and are adjusted slightly to fit the LRTP 2035 socioeconomic data projections used in the transportation model.

- Revenue collections estimated for the current fiscal year provide the basis for future projections.

Although these figures have trended downward over the past couple years, this preliminary analysis projects that all revenues will remain flat (status quo) and only increase at the rate of population growth and according to inflation. Current contributions toward transportation modifications are down statewide due to economic conditions.

Table 24 on the following page presents a summary of the revenue projections for each of the evaluated revenue sources, which include state and federal programs, local transit revenues identified in the RTS Transit Development Plan (2009), state and federal-based gas tax revenues, Local Option Fuel Tax revenues, and local impact fees. The sum of each of these sources indicates a potential revenue total just over $1.11 billion for FY 2014-FY 2035, in YOE dollars.

Table 24: Projected Revenues through 2035 (in millions, YOE)

Revenue Sources	FY 2014-2015 Subtotal	FY 2016-2020 Subtotal	FY 2021-2025 Subtotal	FY 2026-2030 Subtotal	FY 2031-2035 Subtotal	22 Year Total
State and Federal Revenues						
Flex - Highway or Transit	2.3	7.1	8.1	8.8	9.8	36.1
Highway	6	18.5	20.8	22.4	24.3	92
Enhancement	0.9	2.5	2.6	2.7	2.7	11.4
Transit	5.6	14.5	16.4	18.3	19.9	74.7
Total State and Federal Programs	**14.8**	**42.7**	**47.9**	**52.2**	**56.7**	**214.3**
Constitutional Fuel Tax Revenues (2 cent)	4.2	10.8	11.3	11.8	12.0	50.2
County Fuel Tax Revenues (1 cent)	1.8	4.8	5.0	5.2	5.3	22.1
Municipal Fuel Tax, from Revenue Sharing (1 cent)	2.6	6.6	7.0	7.3	7.4	30.8
State-Distributed Fuel Tax Revenues	**8.6**	**22.2**	**23.3**	**24.3**	**24.7**	**103.2**
TOTAL STATE / FEDERAL REVENUES FROM WITHIN URBANIZED AREA	**23.4**	**64.9**	**71.2**	**76.5**	**81.4**	**317.5**
Existing Local Revenue Sources						
Ninth Cent Fuel Tax	*1.9*	*4.9*	*5.2*	*5.4*	*5.5*	*22.9*
Local Option 6-Cent Fuel Tax - Unincorporated portion of Urbanized Area	4.5	11.7	12.3	12.8	13.0	54.3
Local Option 5-Cent Fuel Tax- Unincorporated portion of Urbanized Area	3.3	8.6	9.0	9.4	9.5	40.0
Gas Tax Revenue Bond Payment Contributions, Series 2006*	(1.6)	(4.1)	(0.8)	0.0	0.0	0.0
Gas Tax Revenue Bond Payments, Series 2008~	(2.1)	(5.1)	(2.0)	0.0	0.0	0.0
Unincorp. Alachua County portion of Local Option Fuel Tax in Urbanized Area	*4.2*	*11.2*	*18.5*	*22.2*	*22.5*	*78.5*
Local Option 6-Cent Fuel Tax - City of Gainesville portion	5.6	14.5	15.3	15.9	16.2	67.6
Local Option 5-Cent Fuel Tax - City of Gainesville portion	4.1	10.7	11.2	11.7	11.9	49.7
City of Gainesville portion of Local Option Fuel Tax in Urbanized Area	*9.7*	*25.2*	*26.5*	*27.7*	*28.1*	*117.3*
Total Local Option Fuel Tax Revenues within Urbanized Area	**15.8**	**41.3**	**50.1**	**55.2**	**56.1**	**218.6**
Alachua County Urbanized Area Impact Fees	**1.5**	**4.3**	**5.3**	**6.4**	**7.5**	**25.0**
City, County, and Other Local Capital and Operational Transit Revenues	**35.1**	**98.4**	**114.5**	**138.5**	**163.1**	**549.6**
TOTAL EXISTING LOCAL REVENUE SOURCES FROM WITHIN URBANIZED AREA	**52.5**	**144.1**	**169.9**	**200.0**	**226.7**	**793.2**
GRAND TOTAL REVENUE SOURCES WITHIN MTPO URBANIZED AREA	**75.9**	**209.0**	**241.1**	**276.6**	**308.1**	**1,110.6**
Potential New Local Revenue Sources						
County-wide Sales Tax = 0.5% for Infrastructure	27.6	79.4	96.5	116.6	137.4	457.5
County-wide Sales Tax = 1% for Infrastructure	55.2	158.8	192.9	233.3	274.8	915.0
Charter County Transportation System Surtax (Up to 1%)	54.5	156.7	190.4	230.2	271.1	902.8
Funds Available for District 2 Projects						
District 2 TRIP Funds	30.4	67.1	64.9	64.9	64.9	292.3
Funds Available for New Transit Starts						
Statewide New Starts Funds	150.0	291.7	270.9	270.9	270.9	1,254.3

Note: Totals may vary due to rounding.

Revenue Forecast/Projection Methodologies

Change in Dollar Value and Representation

In order to comply with SAFETEA-LU requirements, and increase the potential for more accurate dollar value forecasts, each LRTP must now calculate its revenues and expenditures in year of expenditure (YOE) values. Each year, an inflation factor is applied to potential revenues. The practice figures in the likely spending power of a particular amount of money for a given year, or over a period of time. The result is a presentation of values that appear much larger relative to past LRTP revenue projections and totals.

Note the available revenues for total state and federal programs for 2035 and 2025 in **Table 25** below. The Year 2035 LRTP's 22-year total for state and federal revenue sources is $139.6 million for highways and some transit projects (Flex, Highway, Enhancements), in inflation-adjusted revenues, plus an additional $74.7 million for transit. When that total of $214.3 million is adjusted down into 2005 dollar values, it becomes equal to $159.5 million, or $7.2 million annually. This provides a basis for comparison with the total 2025 LRTP projection of $74.5 million (highway and transit), or $5.0 million annually from those state and federal sources. By directly comparing these average annual total revenues between the two LRTPs, which take into account both inflation and the number of years in their respective projection horizons, the difference in state and federal revenues is found to be $2.2 million annually. This comparison is presented in **Table 25**.

Table 25: Comparison of Revenue Totals, 2035 vs. 2025

Capacity Programs	2035 (YOE) 22 Year Total	2035 (2005 $s) 22 Year Total	2025 (2005 $s) 15 Year Total
Flex – Highway or Transit [1]	36.1	26.9	N/A
Highway [1]	92.0	68.5	38.5
Enhancement	11.5	8.5	5.6
Sub-Total	*139.6*	*103.8*	*44.1*
Transit	74.7	55.6	30.4
TOTAL CAPACITY PROGRAMS	**214.3**	**159.5**	**74.5**
Average Annual Total Revenue	***9.7***	***7.2***	***5.0***

[1]: *Other Arterial Construction/ROW in 2025 LRTP*

Note: SIS Highways/FIHS Construction/ROW not funded in either 2025 or 2035 LRTP

Although the comparison shows a substantial increase in available revenue from total state and federal programs between the Year 2025 LRTP and the Year 2035 LRTP, the use of YOE dollars, and a different number of years in the time horizon lends the appearance of even larger available revenue streams for the year 2035 update.

Population Projections

The basis for all revenue assumptions in this analysis are the population projections for the Gainesville urbanized area. Using BEBR projections from the Alachua County Evaluation and Appraisal Report (EAR) draft from August 2009, the County population projections through 2035, in five-year intervals, were obtained. The LRTP model only provides the population of the base year and for the final year of the time horizon. In order to link the two projections, the last five years of the time horizon use a different rate of growth, so the end-year projections become consistent. The disparity in the two projections was not spread over a larger time frame, because the last years of a time horizon are the ones most subject to uncertainty. A full description of the population projection methodology can be found in Appendix A.

State/Federal Revenue Sources

There are several sources of revenue for use by local governments on transportation strategies that originate at the state level. Funds identified by FDOT are generally pass-through revenues allocated from the federal government. These are identified below as "capacity programs," and are intended for specific uses. The other source of state-determined revenue comes from three types of fuel taxes. Each of these revenue sources, and their sub-sets, is described in further detail below. **Table 26** identifies the funding types that are available from the state and federal government.

Table 26: State and Federal Sources and Uses for FDOT-Identified Funding Types

Funding Type	Source	Uses
SIS	State/Federal	SIS facilities (corridors, connectors and hubs)
Flex – Highway or Transit; Highway (Other Arterials) [1]	State/Federal	Non-SIS/FIHS state highway system roadways, or eligible transit projects
Transit	State/Federal	Technical, operating or capital assistance for transit, paratransit, or rideshare
Enhancement	Federal	Non-capacity improvements
TRIP	State/Local (match)	Regionally significant facilities

[1] *Gainesville MTPO has "Other Arterials" separated into two sub-sets.*

The Gainesville MTPO receives its share of the above revenues based on a series of formulas tied to population and gas-tax receipts. **Table 27** below provides revenue projections of state and federal sources available to the MTPO as provided in the Year 2035 Revenue Forecast Handbook (May 2008, 2010 update) prepared by the Florida Department of Transportation. The Flex – Highway or Transit, and Highway categories are subsets of what has formerly been called Other Arterials. These revenues can be applied to non-FIHS/SIS State Highway System roadways for capacity and non-capacity programs, or to eligible transit projects for the Flex category. Transit revenues may be used for technical and operating/capital assistance for transit, paratransit, and rideshare programs. The Enhancement funds in the table are used for locally defined projects providing enhancements, typically for bicycle and pedestrian projects.

Table 27: State and Federal Program Revenues (in millions, YOE)

Capacity Programs	FY 2014-2015 Subtotal	FY 2016-2020 Subtotal	FY 2021-2025 Subtotal	FY 2026-2030 Subtotal	FY 2031-2035 Subtotal	22 Year Total
Flex – Highway or Transit [1]	2.3	7.1	8.1	8.8	9.8	36.1
Highway [1]	6.0	18.5	20.8	22.4	24.3	92.0
Enhancement	0.9	2.5	2.6	2.7	2.7	11.5
Subtotal Roadway Programs	*9.2*	*28.2*	*31.5*	*33.9*	*36.8*	*139.6*
Transit	5.6	14.5	16.4	18.3	19.9	*74.7*
Total Capacity Programs	**14.8**	**42.7**	**47.9**	**52.2**	**56.7**	**214.3**

Source: FDOT, 2010

[1]*Other Arterial Construction/ROW in 2025 LRTP*

Note: SIS Highways not funded in 2035 LRTP

The state continues to place an emphasis on allocating revenues to the Strategic Intermodal System (SIS) facilities. SIS facilities in Alachua County that are eligible for SIS funding include:

- Interstate-75 (SR 93)
- Newberry Road (SR 26) – West of I-75
- Williston Road (SR 331) – From W. University Avenue to I-75
- Hawthorne Road (SR 20) – East of Waldo Road (SR 24)
- NW 39th Avenue (SR222) – I-75 to Airport Entrance
- NE 23rd Avenue (SR 120) – From SR 24 to SR 120 to Greyhound Terminal Entrance
- US 301/SR 200 – Countywide

In addition to the SIS facilities listed above, the Gainesville Regional Airport and the Gainesville Greyhound Intercity Bus Terminal are identified as Emerging SIS Hubs. This designation implies an increase in regional and statewide importance of these transportation hubs in the future.

There are two other pools of revenue the State of Florida may allocate to projects located within the MTPO. In addition to funds specifically dedicated to the Gainesville MTPO, the state also allocates funds from the Transportation Regional Incentive Program (TRIP) and New Starts/Small starts for transit. TRIP funds apply to modifications on facilities designated as regionally significant, and funds are allocated within each FDOT District based on regional project prioritization processes. The MTPO has entered into a TRIP agreement with Marion County, and is eligible for funding of regionally significant projects, should funding be available. The state also receives federal funding for new transit programs. These New Starts/Small Starts are available to transit agencies statewide, and are described further in the "Transit Revenues" section below. **Table28** outlines the available state and federal sources and the potential uses of the funds. The TRIP funds and New Starts/Small Starts are not included in the totals in **Table 28** above, due to their discretionary nature.

Table 28: Discretionary State/Federal Revenue Sources (in millions, YOE)

Revenue Sources	FY 2014-2015 Subtotal	FY 2016-2020 Subtotal	FY 2021-2025 Subtotal	FY 2026-2030 Subtotal	FY 2031-2035 Subtotal	22 Year Total
Funds Available for District 2 Projects						
District 2 TRIP Funds	30.4	67.1	64.9	64.9	64.9	292.3
Funds Available for New Transit Starts						
Statewide New Starts Funds	150.0	291.7	270.9	270.9	270.9	1,254.3

State Fuel Taxes

There are three types of fuel taxes collected at the state level that are allocated to local governments. These taxes are not part of the local option taxes, and are collected for every gallon of fuel sold in the state. For each gallon of motor fuel sold, the Constitutional Fuel Tax yields two cents per gallon, and the County Fuel Tax yields one cent per gallon. The Municipal Fuel Tax is a one-cent per gallon tax, and each municipality may dedicate a percentage of their Municipal Revenue Sharing Program funds for certain types of transportation projects. Alachua County's estimated revenues from this source were collected from the Local Government Financial Information Handbook for each of the years from 2004-2009 (FY05-FY10). Generally, per capita values have decreased over the five-year period and are assumed for these analyses to remain fixed at today's (FY10) value. The section below describes the methodology and assumptions used to project the revenues for each of these state-mandated gas taxes, and **Table 29** displays the projected revenues from these sources.

Constitutional Fuel Tax

This revenue source is based on a 2-cent per gallon tax on fuel sales, and may be used for the acquisition, construction, and maintenance of roads. Each county is eligible for revenues, based on the county's fuel receipts, the county's population, the county's land area, and a distribution factor. The annual estimates for 2004-2009 revenues were used to calculate a per capita revenue value, and the per capita value of the last year of the series became the base year for the projections. To determine the value of the revenues collected within the MTPO's geographic bounds, the per capita value of the County's revenues was applied to the population of the urbanized area. This population-based area revenue was then projected to the end-year (2035) using population growth as the upward trend.

County Fuel Tax

The County Fuel Tax was calculated using the same methodology as the Constitutional Fuel Tax. The County Fuel Tax may be used for the acquisition of rights-of-way; the construction, reconstruction, operation, maintenance, and repair of transportation facilities, roads, bridges, bicycle paths, and pedestrian pathways; or to reduce bond indebtedness incurred for transportation purposes. The legislative intent for this tax is to reduce the burden of county ad valorem taxes.

Municipal Fuel Tax

This tax is a one-cent per gallon tax on motor fuel sold within the state's municipalities, and is collected within the Municipal Revenue Sharing Program trust fund. Each municipality's share of funds is calculated based on an adjusted municipal population, municipal sales tax collections, and a municipality's relative ability to raise revenue. Only the City of Gainesville's revenue from this source is included in the analysis.

As with the Constitutional and County fuel taxes, the 2009 Local Government Financial Information Handbook provided estimates for the total annual revenue from the trust fund. The Municipal Fuel Tax's portion of this fund is based on an annual assumed percentage, which varies each year and represents the minimum value of funds available for transportation projects. Municipal Fuel Tax revenues may be used for the purchase of transportation facilities and road and street rights-of-way; construction, reconstruction, and maintenance of roads, streets, bicycle paths, and pedestrian pathways; adjustment of city-owned utilities as required by road and street construction; and construction, reconstruction, transportation-related public safety activities, maintenance, and operation of transportation facilities.

The analysis used the identified percentages to determine a per capita (based on city population) annual value of the revenues. The per capita value of the estimated FY2010 Municipal Fuel Tax's share of the Municipal Revenue Sharing Program trust fund was used as the base value from which the projections through 2035 were calculated, based on the City of Gainesville's population. The projections were based on the City's population growth.

Table 29: State Distributed Fuel Tax Revenues (in millions, YOE)

Revenue Sources	FY 2014-2015 Subtotal	FY 2016-2020 Subtotal	FY 2021-2025 Subtotal	FY 2026-2030 Subtotal	FY 2031-2035 Subtotal	22 Year Total
Constitutional Fuel Tax Revenues (2-cent)	4.2	10.8	11.3	11.8	12.0	50.2
County Fuel Tax Revenues (1-cent)	1.8	4.8	5.0	5.2	5.3	22.1
Municipal Fuel Tax, from Revenue Sharing (1-cent)	2.6	6.6	7.0	7.3	7.4	30.8
State-Distributed Fuel Tax Revenues	**8.6**	**22.2**	**23.3**	**24.3**	**24.7**	**103.2**

Projections for fuel tax receipts in the above analysis, do not account for conditions associated with "Peak Oil" or other per capita fuel consumption reductions, such as large-scale transitions to other modes of transportation. The analyses presented at this time assume motor fuel consumption will remain at today's level through 2035.

Existing Local Revenue Sources

The Florida Statutes provides the opportunity for local governments to impose taxes and fees in order to raise funds for specific public purposes. One of the means by which local governments are able to raise funds for transportation projects is through the implementation of local option fuel taxes. There are several optional fuel taxes that counties are permitted to levy per each gallon of fuel sold within their jurisdictional boundary. These taxes must be approved by the county governing body, or by voter approval in a countywide referendum. Alachua County currently uses the maximum rate of local optional fuel taxes available. Each of these is shown in **Table 30**.

Local Option Gas Taxes

All Florida counties have the option to raise additional revenues by augmenting the state's taxes on highway fuels, discussed above. Local governments are authorized to collect an additional 12 cents (ninth-cent fuel tax and maximum local option fuel taxes) per gallon, which may be spent on local or state transportation projects.

Six-cent and Five-cent Local Option Fuel Taxes

These are two separate local fuel taxing options that are collected and distributed in the same manner. The 6-cent Fuel Tax is levied at a rate of six cents for each gallon of fuel, both regular and diesel, sold within the County. The 5-cent Fuel Tax is not applied to diesel fuel, and was not instated in Alachua County until 2008. These two types of taxes may be used for general transportation expenditures, and the 5-cent tax may also be used for transportation expenditures needed to meet the requirements of the capital improvement element of an adopted local government comprehensive plan.

The collected tax revenues are distributed to each local government in a county using a set of established percentages. The percentages are based on county expenditures of transportation funds within each jurisdiction. Alachua County and the City of Gainesville receive the lion's share of the available revenues from these sources, 52.15 percent and 38.635 percent respectively, for a total of 90.785 percent for each of the two types of fuel taxes. The percentages are determined one of two ways: a) established percentages are recalculated every 10 years, and depend on actual spending over the previous five years; or b) percentages are set through an interlocal agreement. In Alachua County, the percentages are determined through an interlocal agreement.

The projected revenues for each of these two fuel taxes used the same methodology. The Local Government Financial Information Handbook provided estimated revenues for both the City of Gainesville and for the unincorporated portion of Alachua County. Using existing population figures for these two jurisdictions, per capita values for the revenues collected within the urbanized area were calculated, and applied to the population projections for the City of Gainesville and for the unincorporated Alachua County portion of the urbanized area. The two geographies were kept separate in order to demonstrate the effect Alachua County's Transportation Bonds have on the availability of local option fuel taxes within that jurisdiction. Additional discussion of the bonds is provided below.

Ninth Cent Fuel Tax

This tax is collected on both regular and diesel fuel, and is used to fund transportation expenditures. Applied at a rate of one-cent per gallon, the County does not share the Ninth Cent Fuel Tax with the municipalities within its jurisdiction. The projection methodology, therefore, is more similar to that used for the Constitutional Fuel Tax than for the other local optional fuel taxes. The estimated tax receipts, applied on a per capita basis, from the 2009 Local Government

Financial Information Handbook was used as the base for the annual projections. The resultant per capita value was then applied to the population projections for the urbanized area, resulting in annual revenues for the urbanized area.

Gas Tax Revenue Bonds

Alachua County has issued two bond series to raise money for transportation projects. The 2006 series will mature in 2021, and the 2008 series will mature in 2022. Until these bonds mature, a portion of the County's collected local option fuel taxes will be used to pay the bondholders. The County's debt service is paid through receipts from the 5-cent, 6-cent, 7th-cent (state-funded County Fuel Tax), and Ninth Cent fuel taxes.

Alachua County's debt service for its transportation bonds does not use tax revenues from the City of Gainesville, or any other local government. In order to calculate the impact of the bonds on future gas tax revenues, the revenues were isolated according to the collecting jurisdiction within the urbanized area. The fuel taxes collected countywide (County Fuel Tax, Ninth Cent Fuel Tax) were distributed on a per capita basis, using the County's overall population. The fuel taxes collected within the urbanized area, distributed specifically to the City of Gainesville and unincorporated Alachua County, have been separated by local government (6-cent and 5-cent taxes) within the urbanized area.

Annual bond series payments for each bond are only available through FY 2014. The remaining bond indebtedness was calculated as a yearly average of the remaining principal and interest, and is ultimately subtracted from the County's local revenue sources in **Table 30**. The table presents the per capita debt service contributed by the residents of unincorporated Alachua County living within the urbanized area.

Impact Fees/Assessments

Impact fees are assessed on new development projects to provide funding for infrastructure needed to offset the impacts of new development. The Alachua County Transportation Impact Fee Amendment (Ordinance 07-23, adopted 10/30/2007), indicates that fees were to rise by 33 percent from 2008 to 2009, and 33 percent from 2009 to 2010. On January 1, 2010 and annually thereafter, the ordinance mandates the fees be adjusted to keep pace with inflation. The projections take the identified increases into account, and assume the fees will not otherwise be raised during the planning period. As with all other portions of this analysis, the inflation rate is assumed to be held at a constant three percent annual increase.

Within the Gainesville Urbanized Area, only Alachua County collects impact fees. The City of Gainesville does not collect impact fees, in order to encourage annexation into the municipal limits. To project future impact fee collections, and maintain a rational basis for the estimates, the current rate of collections for all transportation-related impact fees collected in the county was calculated on a per capita basis. This per capita calculation was then applied to the population projections for the urbanized area located ONLY within unincorporated Alachua County. As with the projections for the fuel taxes, the methodology assumes that population growth will drive (and be tied to) development and the collection of impact fees.

Although not reflected independently in **Table 30** below, the University of Florida maintains a development agreement with the City and the County in which the University promises to pay its fair share to mitigate off campus transportation system congestion. The University has agreed to roadway modifications including intersection modifications, new road connections, acquisition of right-of-way and construction of new roadways, as well as their fair-share of funding for a county-wide traffic management system. These contributions are in addition to the agreed upon contributions for transit, and for bicycle and pedestrian modifications. The current agreement was signed in 2006, and continues through FY 2010. Updates to agreements such as this have regularly occurred since 1998, and are expected to continue in the future.

Table 30: Existing Local Revenue Sources (in millions, YOE)

Revenue Sources	FY 2014-2015 Subtotal	FY 2016-2020 Subtotal	FY 2021-2025 Subtotal	FY 2026-2030 Subtotal	FY 2031-2035 Subtotal	22 Year Total
Ninth Cent Fuel Tax	*1.9*	*4.9*	*5.2*	*5.4*	*5.5*	*22.9*
Local Option 6-Cent Fuel Tax - Unincorporated portion of Urbanized Area	4.5	11.7	12.3	12.8	13.0	54.3
Local Option 5-Cent Fuel Tax- Unincorporated portion of Urbanized Area	3.3	8.6	9.0	9.4	9.5	40.0
Gas Tax Revenue Bond Payment Contributions, Series 2006*	(1.6)	(4.1)	(0.8)	0.0	0.0	0.0
Gas Tax Revenue Bond Payments, Series 2008~	(2.1)	(5.1)	(2.0)	0.0	0.0	0.0
Unincorp. Alachua County portion of Local Option Fuel Tax in Urbanized Area	*4.2*	*11.2*	*18.5*	*22.2*	*22.5*	*78.5*
Local Option 6-Cent Fuel Tax - City of Gainesville portion	5.6	14.5	15.3	15.9	16.2	67.6
Local Option 5-Cent Fuel Tax - City of Gainesville portion	4.1	10.7	11.2	11.7	11.9	49.7
City of Gainesville portion of Local Option Fuel Tax in Urbanized Area	*9.7*	*25.2*	*26.5*	*27.7*	*28.1*	*117.3*
Total Local Option Fuel Tax Revenues within Urbanized Area	**15.8**	**41.3**	**50.1**	**55.2**	**56.1**	**218.6**
Alachua County Urbanized Area Impact Fees	**1.5**	**4.3**	**5.3**	**6.4**	**7.5**	**25.0**
TOTAL LOCAL OPTION FUEL TAX, IMPACT FEE REVENUES	**17.3**	**45.7**	**55.4**	**61.6**	**63.6**	**243.6**

**Matures in 2021; Unincorporated Alachua County within Urbanized Area portion only*

~Matures in 2022; Unincorporated Alachua County within Urbanized Area portion only

The projected revenue totals in **Table 30** above do not necessarily provide an accurate representation of available funding. As noted above in the discussion of bonds and debt service, according to staff at Alachua County, just over half (50.74 percent in 2009) of the annual collected local fuel taxes are allocated toward debt service of the transportation bonds, and the remaining revenues are dedicated to operations expenditures. This only leaves the County's portion of the Constitutional fuel tax, and the municipal fuel tax for use on new projects until the bonds are repaid. Additional bonds may be issued in the future, however.

Projections for fuel tax receipts in the above analysis also do not account for conditions associated with "Peak Oil" or other per capita fuel consumption reductions, such as large-scale transitions to other modes of transportation. The analyses presented at this time assume motor fuel consumption will remain at today's level through 2035. Additional analyses will be performed to illustrate different fuel consumption and fuel availability scenarios.

Transit Revenues

In addition to the projections of state and federal sources available to the MTPO, as provided in the 2035 Revenue Forecast Handbook (May 2008) prepared by the Florida Department of Transportation, the Gainesville Regional Transit System (RTS) Transit Development Plan (TDP) includes a 10-year projection of capital and operating revenues that lists all anticipated revenue sources. A City department, RTS provides transit service to the City and limited service to unincorporated portions of the urbanized area. RTS receives both operating and capital revenues from federal, state, and local sources. Operating revenues include agreements with the University of Florida, Santa Fe College, fare box collections, employee pass programs, and FDOT Block and Commuter Assistance Grants, along with transportation disadvantaged equipment and planning grants. Non-operating revenues include federal capital assistance and grant funds from the New Freedom and Job Access Reverse Commute programs.

One funding source for transit projects is the Federal Transit Administration's Small Starts/New Starts program. This program supports locally planned, implemented, and operated major transit capital investments, such as new, and extensions to, existing fixed guideway transit systems, including commuter rail, light rail, heavy rail, bus rapid transit, and streetcars. The state is allocated funds for these types of projects (**Table 29**), which are selected for funding based on a set of evaluation criteria and feasibility of the required committed local match. A project that receives Small Starts/New Starts funding is eligible for federal funding of up to 50 percent of project costs, with state funding providing up to an additional 25 percent. Small Starts funding is allocated to projects with a maximum cost of $250 million, with no more than $75 million in funding from FTA, and requires at least a 20 percent local match.

The list of operating and capital revenues contained within the TDP provides estimates through FY 2019, and includes unfunded programs and grants in the calculations. This analysis only included those sources identified as being "funded." RTS assumes a portion of the identified capital revenues will be provided through the New Starts program, and those revenue assumptions were not included in the analysis. All other federal and state revenue assumptions in the TDP, for both the capital and operating categories, were also not included in the analysis, in order to reduce the likelihood of double-counting potential federal and state revenues. Transit figures from the Year 2035 Revenue Forecast Handbook were used instead. Additionally, the TDP estimates for FY 2010-FY 2019 assume a 2.5 percent rate of inflation, instead of three percent, and their assumptions for that time period are used in this analysis.

Projections to 2035 were estimated by dividing the TDP-estimated revenue (FY 2010-FY 2019) from local sources by the population of the urbanized area to obtain a per capita revenue value for those years. Based on the TDP's projections, the top revenue source is the University of Florida, followed by existing City and County operating funds, farebox revenues, and anticipated contributions from Santa Fe College.

From FY 2020 through FY 2035, the annual increase in revenue was tied to the increase in population and the three percent rate of inflation (starting in 2020). To project revenues for FY 2020-FY 2035, the five-year average for per capita revenues for FY 2015-FY 2019 was set as the base per capita value from which to calculate annual inflation-adjusted values. These were in turn applied to the population projections of the urbanized area to yield annual transit revenues. The individual local sources were projected as an aggregation for fiscal years 2020-2035, in order to reduce the possible cumulative effect of forecast overestimation. **Table 31** below identifies the revenue projections for transit operations and capital revenues through 2035.

Table 31: City, County, and Other Local Transit Revenue Projections (in millions, YOE)

Revenue Sources	FY 2014-2015 Subtotal	FY 2016-2020 Subtotal	FY 2021-2025 Subtotal	FY 2026-2030 Subtotal	FY 2031-2035 Subtotal	22 Year Total
Transit Revenues	35.1	98.4	114.5	138.5	163.1	549.6

Source: RTS TDP, 2009.

Revenue projections for the transit component of the LRTP were taken from FDOT projections, and supplemented by the RTS TDP (2009), and excluded sources identified as being unfunded, or those identified in the TDP as originating from federal or state sources. These exclusions reduced the potential for double-counting revenues, but coordination with RTS will be required to ensure transit's share of revenue potential is not overstated in the LRTP.

Potential New Local Revenue Sources

Given the above-stated volatility of gas prices and long term revenue tied to fuel consumption, initiatives are currently underway to re-evaluate fuel tax revenues, and consider alternatives to consumption-based taxes.

Mobility Fees

With the passage of Senate Bill 360 (2009-096, Laws of Florida), mobility fees may be another source of potential local revenue. These revenues are above and beyond credits granted for impact fees or proportionate fair share payments, and would likely be based on vehicle miles traveled (VMT) or some other measure with at least an indirect association to urban sprawl. Alachua County is currently engaged in the development of a theoretical, pilot mobility fee calculation methodology that would be imposed on new development within the County. Refinements to the pilot methodology are currently being considered, and implementation has not yet begun.

City of Gainesville Impact Fees

As noted above, the City of Gainesville does not currently collect impact fees on development located within the incorporated city limits, in order to encourage development in the City, instead of in unincorporated Alachua County. Should the City determine that the value of any potential impact or mobility fees is greater than encouraging development within the city limits, it could institute its own schedule of local fees to raise additional revenues.

County-wide Discretionary Sales Surtax

Alachua County currently imposes an additional 0.5 percent sales tax on goods and services, above the six percent standard sales tax, as a revenue stream for local government infrastructure. Fees collected may be used to finance, plan, and construct infrastructure, which includes transportation infrastructure (and now also land purchases for affordable housing). It may also be used to purchase land for public recreation, conservation, or protection of natural resources. The latter of these is the intended use for the existing 0.5 percent sales tax, which was approved by voter referendum in 2008, effective between January 1, 2009 and December 31, 2010.

The County is eligible for an additional 0.5 percent surtax until December 31, 2010, when the existing surtax expires, or a one percent total discretionary sales surtax as of January 1, 2011. In order to levy the additional surtax, an ordinance must be enacted by the County Commission and approved by voters in a countywide referendum. Projection estimates for this surtax, both at 0.5 percent and one percent, were calculated based on the Local Government Financial Information Handbook's determination of potential utilization of a one-percent surtax. Like the methodology for the 6-cent and 5-cent local option fuel taxes, the collected tax receipts were distributed to each unit of local government in the County according to a predetermined formula. Those proportions yielded revenues for the City and the unincorporated County, which were then summed and applied to the population of the urbanized area. An inflation rate of three percent was applied to the annual totals. The 0.5 percent surtax was calculated by halving the results of the one-percent calculations.

Charter County Transportation System Surtax

The State of Florida authorizes Charter Counties to levy up to an additional one percent surtax specifically for transportation purposes. Only two counties currently employ this surtax, and then only at 0.5 percent each. The analysis for the Gainesville MTPO used the maximum available surtax (one percent). Unlike the discretionary sales surtax described above, this tax is independent of the cap on optional taxes, outlined in Section 212.055(1), F.S. The Charter County Transportation System surtax is subject to a charter amendment approved by a majority vote of the county's electorate. Generally, the tax receipts are used for the development, construction, operation, and maintenance of fixed guideway rapid transit systems, bus systems, and roads and bridges.

Calculations for revenue projections were based on the Local Government Financial Information Handbook's determination of potential utilization of a one-percent surtax applied and collected countywide, with no distributive percentages to each unit of local government within the County. Therefore, per capita revenues were based on the population of the entire County, applied to the population projections for the urbanized area.

Table 32: Potential New Local Revenue Sources (in millions, year of expenditure)

Revenue Sources	FY 2014-2015 Subtotal	FY 2016-2020 Subtotal	FY 2021-2025 Subtotal	FY 2026-2030 Subtotal	FY 2031-2035 Subtotal	22 Year Total
County-wide Sales Tax = 0.5% for Infrastructure	27.6	79.4	96.5	116.6	137.4	457.5
County-wide Sales Tax = 1% for Infrastructure	55.2	158.8	192.9	233.3	274.8	915.0
Charter County Transportation System Surtax (Up to 1%)	54.5	156.7	190.4	230.2	271.1	902.8

Other Local Sources

Another source of locally generated funds is municipal service taxing (or benefit) units (MSTU). These sources represent direct revenues to fund infrastructure for identified projects within a specified area, potentially covering both capital and operations/maintenance costs. No revenues from MSTUs are included in the projections provided in this analysis. MSTU revenues may be included at a later time as projects are identified as part of the Cost Feasible element of the LRTP.

Other local revenue sources available for transportation modifications or maintenance and operations activities include grants, proportionate fair share contributions, ad valorem or general revenues, and tax increment financing or other Community Redevelopment Area sources. The current climate of reduced local revenues makes forecasting the availability of these resources difficult; these resources are already being tapped to their maximums. As such, these sources are not included in the projections at this time.

Summary

The above analysis documents the financial resources and revenues available for consideration in developing the Cost Feasible element of the MTPO's Year 2035 LRTP, and includes revenue projections for each identified source. Potential new local revenue sources were also analyzed, including the implementation of the Charter County Transportation System surtax, maximizing the allowable discretionary local sales surtax, and the implementation of mobility fees, the latter of which are currently under evaluation by Alachua County.

This preliminary analysis represents a continuation of the status quo for all revenue sources, and projects that all revenues will increase only according to the rate of population growth and according to inflation. These estimates assume that impact fees will continue to be collected, and at the same rate as during the past five years, and that fuel taxes will continue to provide a steady stream of revenues. Local gas tax and impact fee revenues are included in this analysis even though these revenues are dedicated for operations, maintenance, and management activities, because SAFTETEA-LU places a greater emphasis on demonstrating continuation of facilities and operations and maintenance. These components will be more prominent in this LRTP update than in the past.

One item to note is that the University of Florida may not provide future funding in the quantities it has in the past. The University receives its funding for local transportation projects from the Department of Education as a pass-through, and this source may become limited over time. The University's contributions will continue to have positive impacts, but may not be able to continue off-setting the cost of needed roadway modifications. The developer's agreement between the City, the County, and the University does, however, include a requirement to "at a minimum" (italics in original) maintain the transit level of service within the urbanized area.

The total estimated revenue over the planning period is projected to be approximately $1.11 billion. This figure is optimistic, based on the current economic conditions and a general and statewide decline in contributions toward transportation modifications. Additionally, projections used for fuel tax receipts in the analyses also do not account for conditions associated with "Peak Oil" or other per capita motor fuel consumption reductions, such as large-scale transitions to modes of transportation not powered by gasoline or other motor fuels, or VMT reductions based on land use development patterns. The analyses presented at this time assume per capita consumption will remain at today's level through 2035, and should be considered a Trend scenario for financial resources. Additional analyses will be performed to illustrate different revenue availability scenarios.

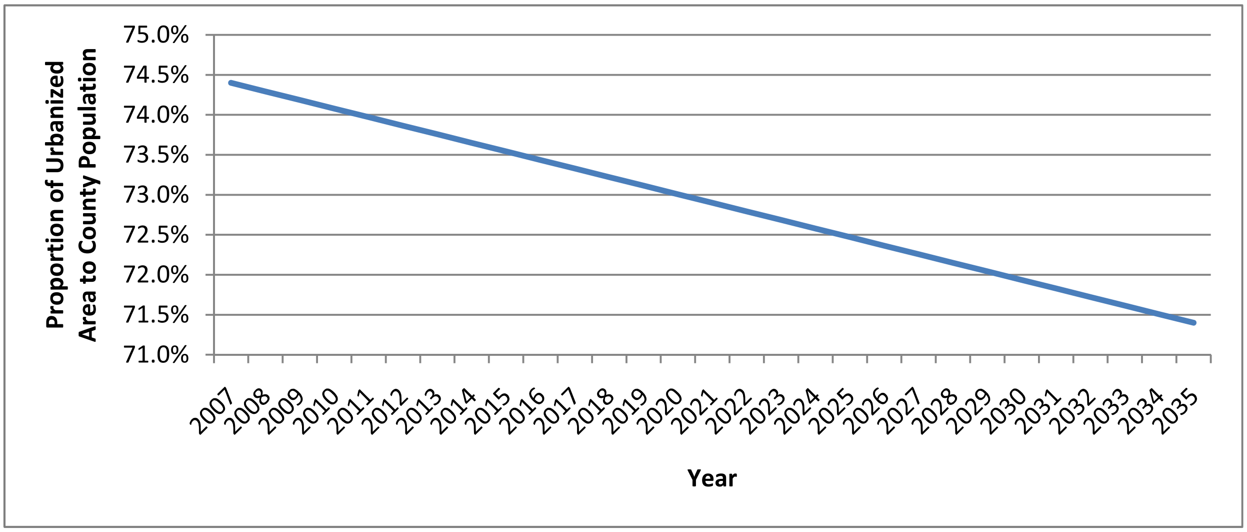
Population Projection Methodology

In order to determine annual population projections for Alachua County from the five-year intervals provided by BEBR, the rate of change for each five-year period was calculated and divided by five to yield an average annual rate of change for that five-year period. The annual rates of change were applied to the population of the first year in the five year series to yield interim population values. As noted above, the last five-year period (2030-2035) used a BEBR-projected 2030 value and a model-projected 2035 value. The model assumed a lower overall rate of growth for the entire 25 year time period, but this lower rate is only represented in the last five year period where the rate of growth is closer to one percent, rather than the approximately five to six percent the other five-year periods display.

Because the County is larger than the MTPO's boundary of the Gainesville Urbanized Area, a methodology for projecting the population of that smaller geography was established. Historic populations of the urbanized area available from FDOT, and BEBR figures for the City of Gainesville were used to establish trends from 2000-2008. This step was included in order to determine historic per capita "contributions" for each revenue source in the analysis. They also provided proportional trends that could be used as a basis for comparison to the proportions determined by the LRTP model outputs.

The socioeconomic data developed for the LRTP model provided the base year (2007) population and the end-year (2035) population projection for the urbanized area. The model also provided the end-year projection for the City of Gainesville, while BEBR provided the base year population for the City (2008). These population figures for the urbanized area and the City were compared to the County's population projections in order to determine the population proportions of both geographies to the County. Using a straight-line trend analysis, the slope of the line created by plotting the base and end years was applied to the County's annual population projections to yield annual proportions for the City and for the urbanized area. Over time the trend displays a negative slope, since the County assumes an increase in the population base outside of the urbanized area over time. This trend is displayed in Figure A below.

Figure 1: Trend for Gainesville Urbanized Area, as a proportion of Alachua County Population



The differences between these two proportions were used to determine the population proportion of unincorporated Alachua County within the Gainesville urbanized area to the entire County. Each of the proportional trends was then applied to the annual Alachua County projections in order to determine annual population projections for:

- Gainesville Urbanized Area;
- City of Gainesville; and
- unincorporated Alachua County lands within the urbanized area.

These annual projections were the basis for all revenue source projections in the analysis. **Table 33** below displays the projections for these areas, in five-year intervals.

Table 33: Population Projections for Selected Geographies in Alachua County, in Five-Year Intervals

Place	2010	2015	2020	2025	2030	2035
Gainesville Urbanized Area	189,715	198,713	208,873	218,574	227,533	227,777
City of Gainesville	125,935	132,018	138,886	145,461	151,555	151,852
Unincorporated Alachua County within Urbanized Area	63,780	66,695	69,988	73,113	75,978	75,926
Alachua County	256,100	270,200	286,100	301,600	316,300	319,016

YEAR 2035 NEEDS PLAN

YEAR 2035 NEEDS PLAN

YEAR 2035 NEEDS PLAN

Introduction

This report documents the development, evaluation and selection of the Needs Plan for the Gainesville Urbanized Area's Year 2035 Long Range Transportation Plan (LRTP). The Needs Plan is an important document in the development of an urbanized area's Transportation Plan because it reflects the implications of growth trends and land use/development policies on the transportation network. It also provides a useful vision to guide how the transportation network should evolve over time to best serve the region's mobility and accessibility needs, and serves as the foundation for adoption of a Cost Feasible LRTP that reflects projected funding sources available for transportation projects in the Gainesville Metropolitan Area.

The Year 2035 Needs Plan represents the continuing evolution of the Livable Community Reinvestment Plan, which the Metropolitan Transportation Planning Organization (MTPO) for the Gainesville Urbanized Area first adopted as its LRTP in 2000 for a 2025 planning horizon year and subsequently updated in 2005 for 2030.This 2010 update, with a 2035 horizon, reflects a continued emphasis on multimodal mobility and accessibility, primarily through continued expansion of the area's public transportation system, providing additional street connectivity, and extension of a multi-use trail network known as the Archer Braid.

A combination of public participation in the transportation planning process and various analytical tools helped to guide the development of the Year 2035 Needs Plan. The MTPO engaged the public early and throughout the process through a series of focus group discussions and workshops, as well as use of an interactive web site, livabletransportation.org. Through surveys, marking up maps and responses to facilitated discussions, the public helped shape the projects that were considered for the Needs Plan. A separate report documents those activities. On the technical side, the Alachua Countywide travel demand model provided an analytical basis for projecting and evaluating alternative transportation networks, including testing the effects of "peak oil" (implications of declining worldwide oil production) on travel behavior. An accessibility analysis evaluated land use and transportation network characteristics for consideration in developing the Needs Plan. These methods will be described elsewhere in this report.

A significant driver of the Year 2035 Needs Plan is the vision statement and supporting goals and objectives that were approved by the MTPO in March 2010. The vision statement approved for this LRTP is generally consistent with the direction of transportation planning and development the MTPO has taken over the last decade. It is supported by five goal statements, each having a series of supporting objectives. The vision influenced the development and evaluation of the four transportation network alternatives and, ultimately, the selection of a Year 2035 Needs Plan. The vision statement for the 2035 Livable Community Reinvestment Plan is:

The Gainesville Urbanized Area will have a multimodal transportation system that integrates land use and transportation planning and investments to promote community well-being through good and healthy relationships with the region's other communities and natural systems. Specific outcomes will be:

- sustainable, safe, secure, energy efficient and livable land use patterns and complementary context-sensitive transportation networks that provide mobility choices within and between compact, mixed-use, multimodal-supportive development;
- balanced east-west Gainesville Urbanized Area growth to reduce socioeconomic disparity through increased transportation mobility and accessibility;
- transportation infrastructure investments that direct growth to existing infill and redevelopment areas;
- greenbelts to preserve natural and agricultural lands between all municipalities in the Alachua County region through compact land use patterns served by express transit service and park-and-ride facilities, and
- a network of rapid transit facilities connecting regional employment centers in order to enhance the economic competitiveness of the area.

The following goal statements, along with a series of objectives, supported the plan's development.

Economic Vitality and Community Livability

- Plan and invest to develop and maintain a comprehensive, multimodal transportation network for the Gainesville Urbanized Area that promotes economic vitality, community livability, and increased housing-employment proximity.

Sustainable Decision-Making and Preservation

- Develop and maintain a sustainable transportation system that supports and preserves the existing transportation network through integrated land use and transportation decision-making that results in compact development patterns, preservation of environmental, cultural and historic areas, reduced demand for oil, and lower greenhouse gas emissions.

Safety for Mobility and Accessibility

- Develop and maintain a safe transportation system that supports increased mobility and better accessibility for all users and neighbors of transportation facilities and services.

Security and Resilience

- Develop and maintain a transportation system that secures the ability of the Gainesville Urbanized Area to prevent, respond to, and recover from crime, disaster, and other adverse conditions with resilience.

Transportation Network Management and Operations

- Improve system management, operations, coordination and communication to make sound transportation decisions that reflect wise use of financial resources.

Growth in Alachua County

Alachua County and the City of Gainesville serve as the economic hub of an 11-county region, with the University of Florida, Shands Hospital, the Veterans Administration Hospital, the Gainesville Regional Airport, the federal courthouse other important downtown destinations among the employment centers that attract workers and visitors from across the state and the largely rural and suburban surrounding counties. In addition, commercial centers like the Oaks Mall and Butler Plaza located near Interstate 75 interchanges attract people from many of the North Central Florida counties surrounding Gainesville. The presence of the University, in particular, continues to fuel growth in Alachua County through its research and educational activities, as well as the attraction it represents to its many alumni and people who enjoy the benefits of living in a college town community, The large amount of natural lands, springs and waterways surrounding the community also attract residents, tourists and visitors seeking the serenity and beauty of the North Florida environment. In addition, the presence of Interstate 75 provides regional access to Gainesville and Alachua County, fueling a substantial amount of commercial and residential growth around its interchanges and along the state roadways connecting to the interstate.

The environmental context of Alachua County serves as a critically important consideration in the development of the Year 2035 Needs Plan. As shown in **Map 19**, much of Alachua County – particularly the areas surrounding the City of Gainesville on the north, east and south – is environmentally sensitive. This includes officially designated wetlands, creeks and lakes, as well as natural habitat lands purchased by the Alachua County Forever conservation program. In addition, much of the western part of Alachua County consists of aquifer recharge areas to sustain groundwater quality, as well as numerous springs and forested uplands. The environmental context affects the consideration of many types of transportation projects, as well as the location of future growth.

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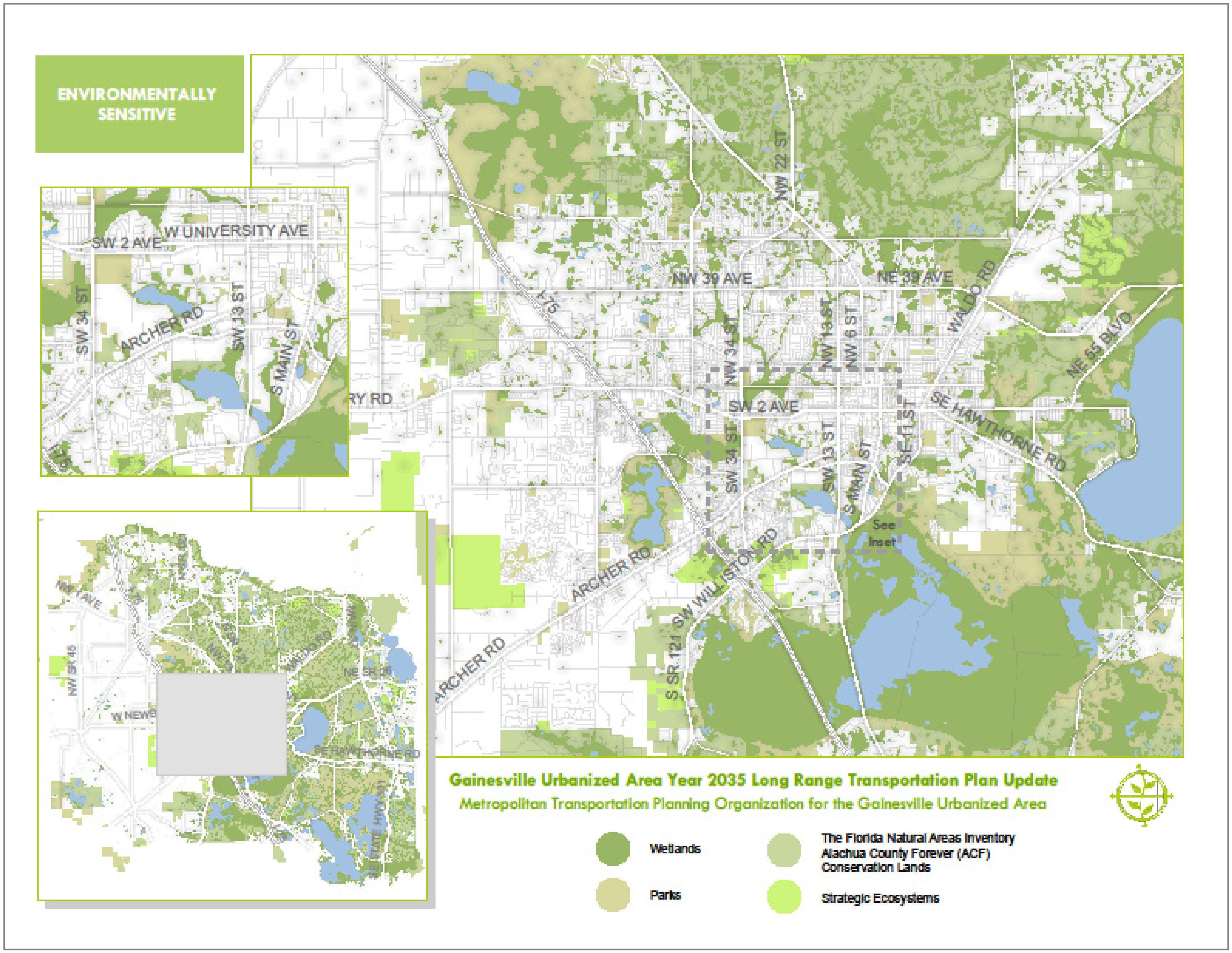
Map 19: Environmentally Sensitive Areas



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As the graph in **Figure 2** shows below, Alachua County is projected to add nearly 70,000 people and 50,000 jobs by the year 2035. This projection is based on the land development capacity and growth areas defined through adopted city and county comprehensive plans, prepared consistent with Florida's Growth Management legislation. This growth is expected to result in about 320,000 people and 190,000 employees in Alachua County in 2035.

Population and Employment Projections

Maps 20 and **21** illustrate where growth is expected to occur in the County through the year 2035. These projections were developed by the staff of the MTPO in cooperation with City of Gainesville, Alachua County, the University of Florida and other agency staff, reflecting adopted plans with land use, redevelopment and economic development policies guiding the location and intensity of future development.

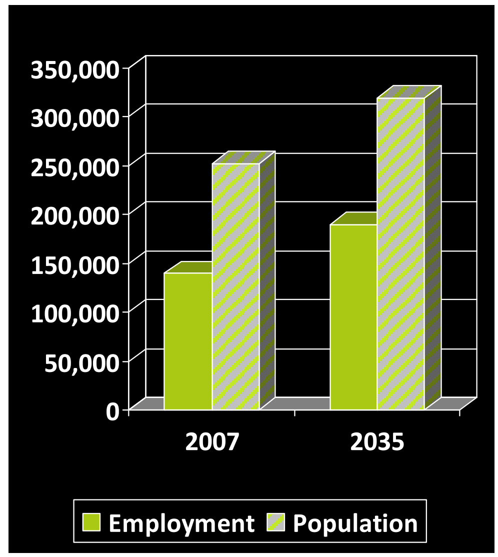

Figure 2: Countywide Growth to 2035

Working with the local government staff and other agencies, MTPO staff developed allocations of population, dwelling units and jobs for the 560 traffic analysis zones (TAZs) in the Alachua County Travel Demand Model. The population and employment allocation was developed for a 2007 base year for use in validating the countywide travel model, which served as a foundation for projecting growth in TAZs through the year 2035. The development of these countywide socioeconomic data projections are documented elsewhere in the Year 2035 Livable Community Reinvestment Plan Socio-Economic Report (Base Year 2007; Forecast Year 2035), prepared by MTPO staff.

Maps 22 and **23** present the distribution of projected year 2035 growth in Alachua County for both population and employment. The maps show the anticipated increase in population and jobs between 2007 and 2035, as reflected in the adopted City and County Comprehensive Plans, along with known plans for private development. As indicated in the maps, much of the growth is expected to occur along the I-75 corridor, near the NW 39th Avenue, Newberry Road, Archer Road and Williston Road interchanges. There is also substantial growth anticipated along the US 441 corridor in the northern part of the Gainesville Metropolitan Area, and generally along North 39th Avenue. These two areas are trending toward attracting a larger share of employment growth, reflecting good regional accessibility via I-75 and access to the Gainesville Regional Airport. There is also considerable population growth occurring in the smaller cities of Alachua County, particularly around Newberry, Alachua and High Springs.

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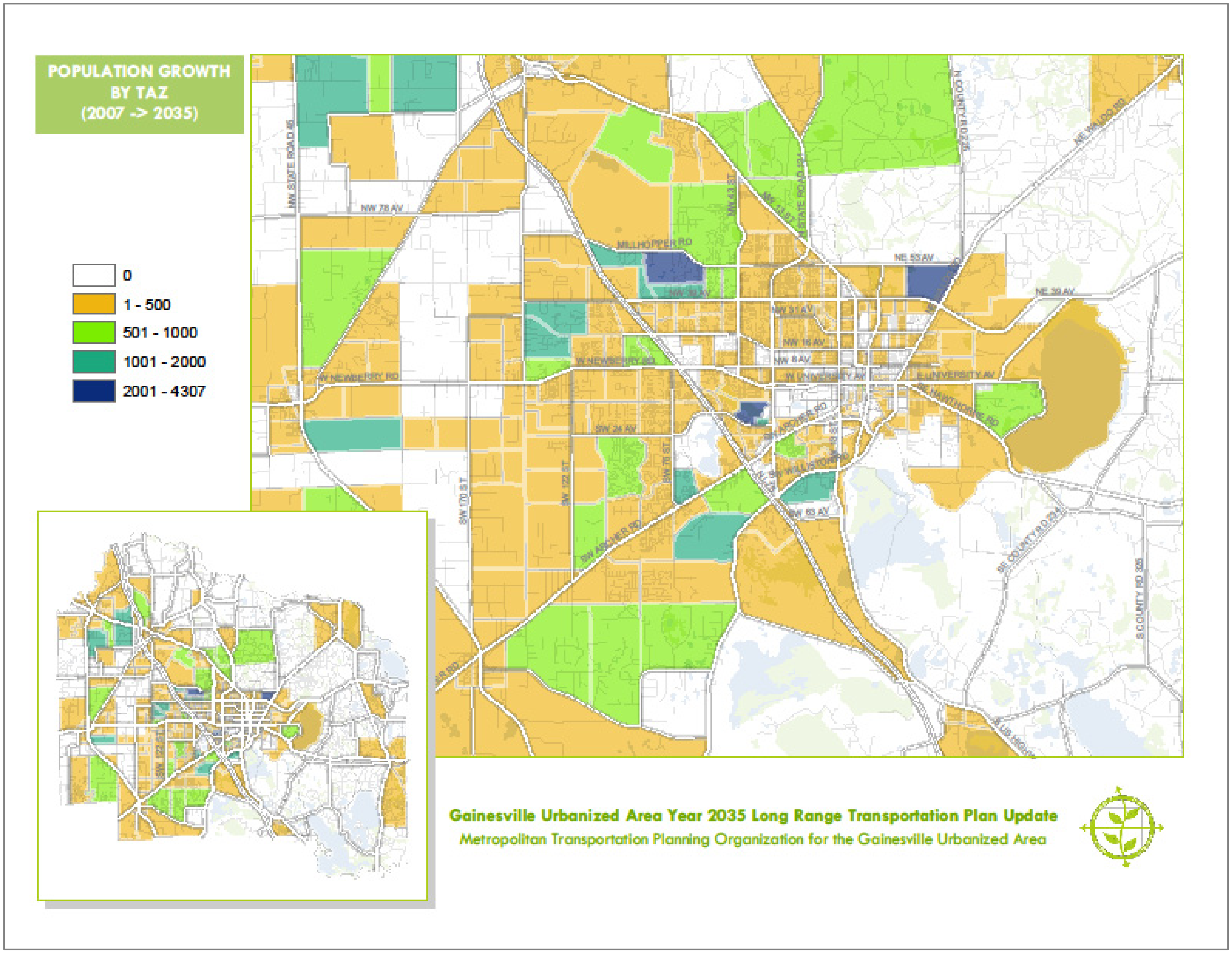
Map 20: Population Growth by Traffic Analysis Zone, 2007 - 2035



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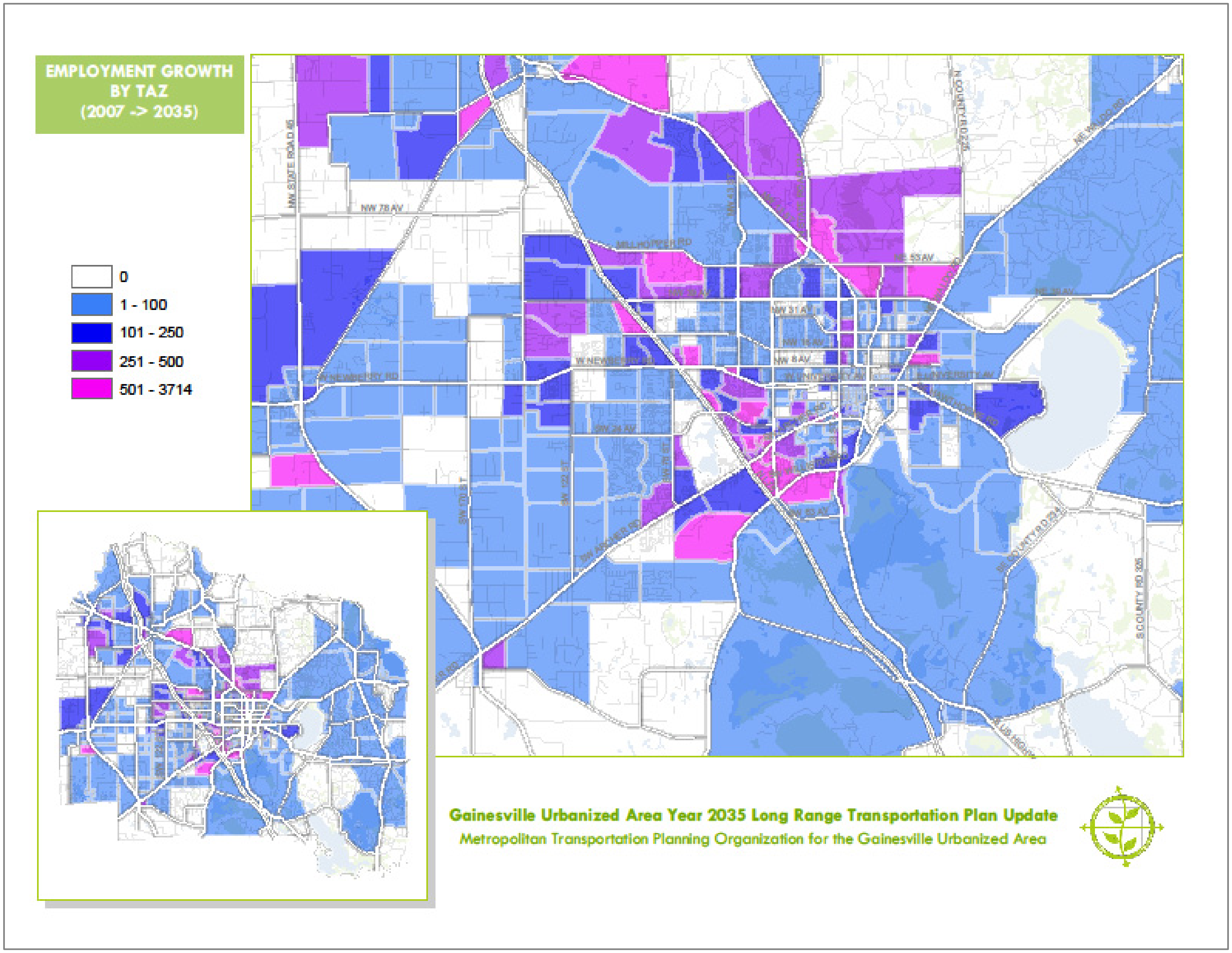
Map 21: Employment Growth by Traffic Analysis Zone, 2007 – 2035



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Land Use Plans and Initiatives

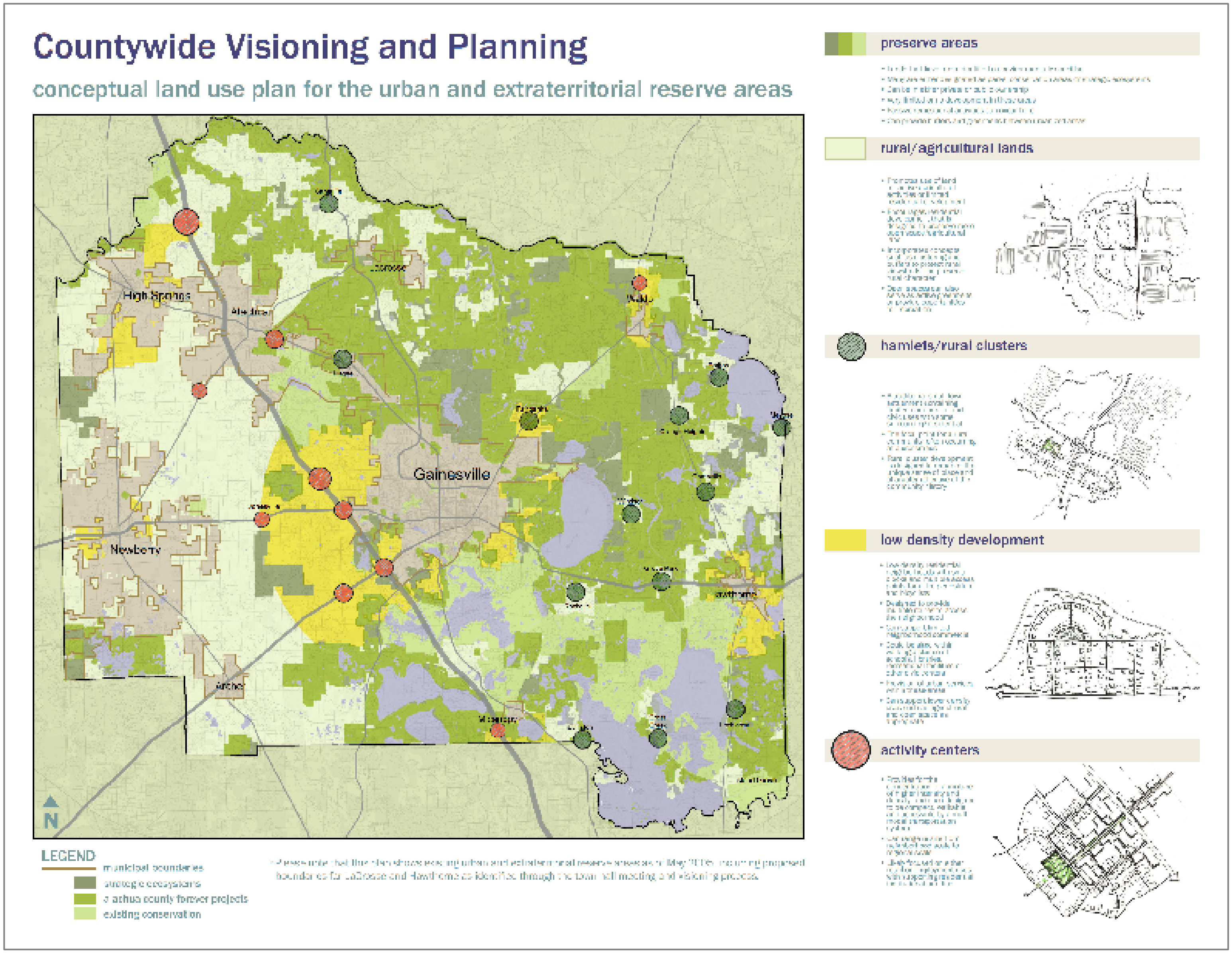
At the outset of Year 2035 Long Range Transportation Plan, Alachua County was in the process of completing an Evaluation and Appraisal Report (EAR) for its Comprehensive Plan. The EAR served as a guide for amendments to the County's growth management plan, and identified transportation mobility as a major issue that needed to be addressed, with complementary land use strategies to create compact, mixed use centers that would support public transportation in Alachua County and limit sprawl development patterns. The County subsequently adopted a new Comprehensive Plan in 2010 that includes a Transportation Mobility Element featuring a Bus Rapid Transit (BRT) network that would connect large-scale development activity centers and expand transportation options serving key destinations. Through the transportation concurrency provisions in the Comprehensive Plan, Alachua County has begun securing agreements with several large developments to dedicate right-of-way and provide funding to support the BRT network. The network is planned to connect developments near the I-75 interchanges of Newberry Road and NW 39th Avenue, linking with Santa Fe College, the Oaks Mall, Butler Plaza and the University of Florida.

Plan East Gainesville remains a driving vision for development in the Gainesville Urbanized Area. Approved in 2003, the plan has provided a strong foundation for economic development, quality redevelopment and environmental preservation efforts in East Gainesville, a large area in the City of Gainesville and unincorporated Alachua County that generally runs from downtown Gainesville east to Newnan's Lake, and encompassing the area north of Paynes Prairie to the Gainesville Regional Airport. Plan East Gainesville included a transportation, development and land conservation strategy to guide future growth, environmental resource preservation and economic development in the area.

A major transportation emphasis of Plan East Gainesville was a BRT connection linking the University of Florida and downtown to the Gainesville Regional Airport along Waldo Road, as well as a similar BRT connection along Hawthorne Road to the Eastside Activity Center at SE 43rd Street. The federal government provided the City of Gainesville with $400,000 for a BRT feasibility study, which was a priority project in the 2030 LRTP. The City of Gainesville completed the BRT study during the development of the Year 2035 LRTP, and identified a primary BRT corridor that links Santa Fe College in the northwest part of the Gainesville Urbanized Area to Butler Plaza, the University of Florida, downtown Gainesville and the Gainesville Regional Airport. The next step is to obtain funding to complete a Transit Alternatives Analysis that would provide the basis for continued federal participation in the development of a BRT network serving Alachua County and Gainesville. Another outcome of Plan East Gainesville was a more detailed analysis of the Waldo Road corridor by the Florida Community Design Center. This study resulted in recommendations for a multi-way boulevard that would support the planned BRT segment to the airport and provide a parallel local street on the western side of the road for enhanced pedestrian and bicycle accessibility to support redevelopment. Other recommendations included bicycle and pedestrian crossing treatments on Waldo Road.

Another important planning effort that was completed since the 2005 adoption of the MTPO's last Long Range Transportation Plan was a Countywide Visioning and Planning process, undertaken by Alachua County in partnership with the County's nine municipalities. While the visioning process focused primarily on building consensus about potential annexation areas surrounding the cities and did not have an emphasis on transportation, it did entail several key recommendations that influenced the development of the Year 2035 LRTP. First, the visioning process called for a greenbelt of undeveloped or lower density land with ample preserved open space running in a semi-circle along the western edge of the Gainesville Urbanized Area. The idea of the greenbelt was to preserve open space and maintain aquifer recharge areas against sprawling development. Second, the vision entailed the concept of greater street connectivity to distribute traffic, and provide express bus service into Gainesville to help minimize the need for major roadway widening projects.

Map 22: Alachua Countywide Vision



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Peak Oil and Land Use-Transportation Accessibility Analysis

Purpose

Each update of the Gainesville Urbanized Area Long Range Transportation Plan typically introduces something unconventional to the transportation planning process. For the year 2035 update of the "Livable Community Reinvestment Plan," as the LRTP has been known since 2000, the unique angle is the incorporation of peak oil scenarios into the alternatives and development of land use and transportation strategies to mitigate those effects.

The federal government's shifting emphasis on energy, sustainability and reduction of greenhouse gases serves as a backdrop for the Year 2035 LRTP. An important consideration is to align the plan with potential funding opportunities coming through the USDOT/HUD/EPA Livable Communities Partnership. At the state level, an important context for this analysis is HB 697, which the Florida Legislature passed in 2008 to reduce energy consumption and lower greenhouse gas emissions. Locally, the Alachua County Energy Conservation Strategies Commission (ECSC) addressed issues related to peak oil as part of a comprehensive report aimed at reducing energy consumption and saving money through a variety of methods, including land use and transportation strategies, many of which are reflected in the County's new Comprehensive Plan. The LRTP builds upon that foundation as well as the City of Gainesville's BRT initiative and the University of Florida's 2020 Campus Master Plan, which has a major theme of sustainability.

As shown in **Figure 3**, the MTPO identified four alternative transportation networks that would be tested to develop the Year 2035 Needs Plan: a Bus Rapid Transit emphasis, a highway emphasis, and a light rail or streetcar emphasis. A fourth hybrid alternative blends the best of those elements for the Needs Plan (details about each of the four alternatives are provided later in this report). In addition, the LRTP was to "review and test peak oil production and decline variables so as to determine potential future transportation and land use scenarios necessary to mitigate local effects of peak oil; and recommend alternatives to accomplish transportation and land use mitigation strategies." A single 2035 land use scenario based on the adopted local government comprehensive plans was used instead of testing land use and transportation scenarios given the recent overhaul of Alachua County's growth management plan around a BRT network.

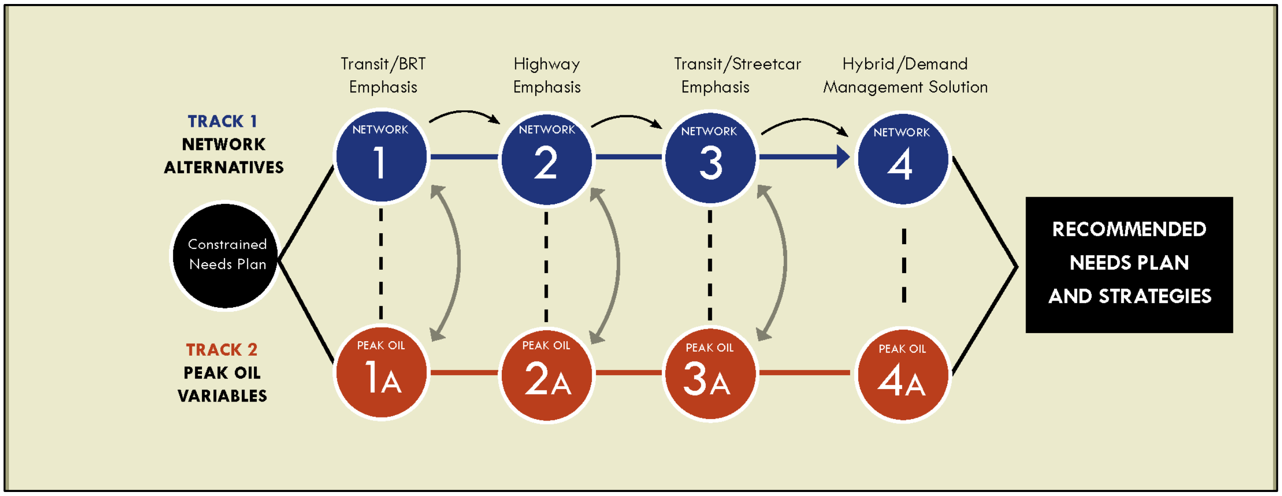

Figure 3: Testing Alternative Networks for the Year 2035 LRTP

According to various sources, peak oil theory states that oil production follows a bell shaped curve when charted on a graph, with the peak of production occurring when about half of the oil has been extracted. Several respected authorities place global peak oil production around 2010; after which oil becomes less available, and more expensive. 'Peak Oil,' as this event has become widely known, potentially represents an historical turning point from an era of growth to an era of contraction unless other suitable sources of fuel can be used at a similar or lower economic cost than fossil fuels. **Figure 4** illustrates this declining production of fossil fuels as identified by the International Energy Agency (IEA), which has recently stated that peak oil actually occurred in 2006.

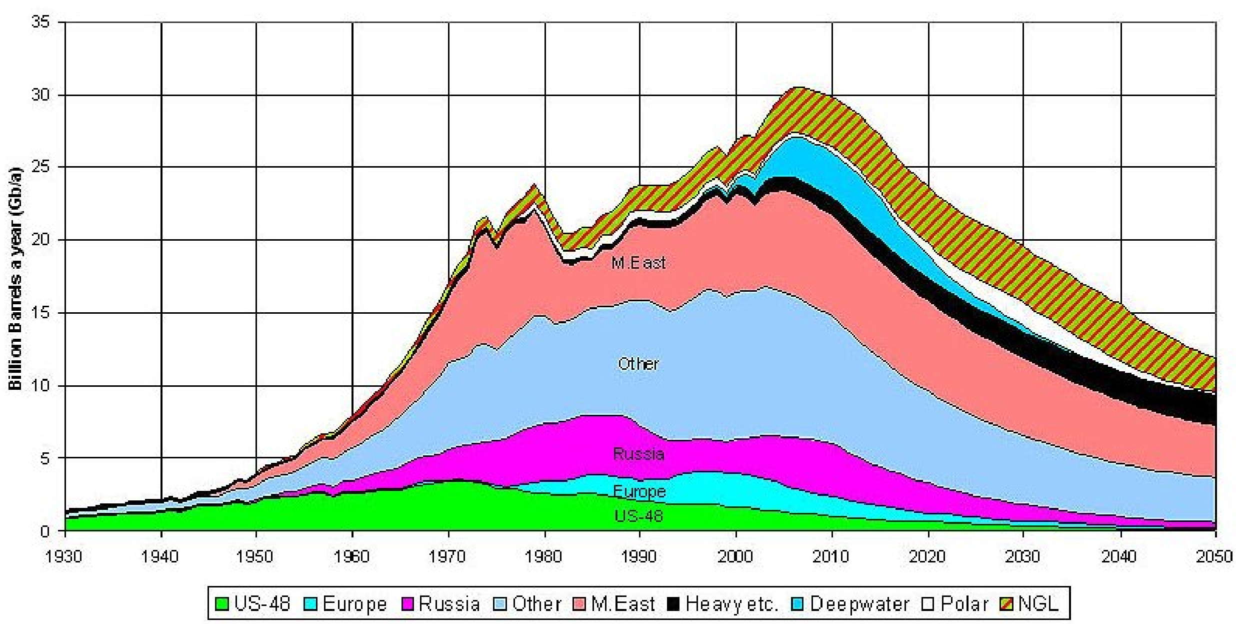

Figure 4: Projected Fossil Fuel Production

The IEA predicts rising demand for oil as global industrialization occurs, particularly in rapidly developing countries like China. This increasing demand, combined with harder to reach oil production sites and declining production levels, has significant environmental and geo-political implications. This confluence of factors is predicted to increase sharply as the world economy rebounds, which could result in chain of events that threatens to dramatically affect how people live, work and reach their destinations. Many activities we now take for granted could become cost prohibitive. The more sober predictions of impacts include dramatic changes in personal mobility as private automobiles become too expensive for the average citizen, with commensurate changes in freight mobility as the economic advantages of production, processing and truck distribution evaporate. Land use impacts likely mean the urban footprint contracts, agricultural production requires increased human labor, and employment is more labor-intensive and focused in centers of economic activity.

While better technology and renewable energy sources are becoming increasingly important, many sources dismiss their ability to prevent major changes to industrial society. Hydroelectricity aside, renewable sources of energy provide only about one percent of world energy production. The US Department of Energy found that a crash program of renewable energy measures would take decades to mitigate the effects of peak oil production decline.

Accessibility Analysis Methodology

The MTPO's LRTP tested each of the transportation alternative networks under a "peak oil scenario" to guide the plan. An accessibility analysis that examined the availability of various land use and transportation factors supporting use of non-auto travel modes served as a basis for testing peak oil and guiding the development of Year 2035 Needs Plan transportation projects. The accessibility analysis was employed to help the MTPO consider and answer a key question for development of the plan:

Should transportation investments be made to reinforce and support future growth in the core part of the urbanized area where transportation alternatives already exist, or should transportation investments be made to improve accessibility and mobility in the urban periphery or outlying areas, where much of Alachua County's future growth is expected to occur in the future?

To start a dialogue on that question, a GIS-based model was developed by coding all of Alachua County into 10-acre grid cells and then evaluating the land use and transportation network characteristics within ½ mile of each cell for a range of variables to derive a cumulative cell score that measured its relative accessibility. Natural breaks in the data were used to divide the grid cells into Low, Medium or High accessibility areas. The following table is a summary of the factors used:

Table 34: Accessibility Analysis Factors

Transportation Network Factors	Variable	Notes
Street Network Density	Intersections per square mile	Literature indicates lower crash rates and higher mode shares with greater intersection density
Bicycle Facility Availability	Type of facility (on/off road) Speed of road Proximity to walk destinations	Challenge is to recognize different types of users and the presence of a network (grid) of lower speed local streets, not just "bike facilities"
Transit Availability	Cumulative route frequency Hours of service Connections to park-n-ride, BRT	Important to go beyond merely having a route within ¼ mile walk distance; convergence of routes is critical
Land Use Factors		
Walk Destinations	Retail uses Schools Civic uses	Identifying places people would walk to; not necessarily places that are "walkable"
Density	Employees/acre Dwelling units/acre	Thresholds as guides for potential types of transit service
Diversity	Jobs-Housing ratio	A basic indicator of land use mix

Figure 5 provides an illustration of how the accessibility analysis was applied, using the measure of intersection density. The orange square represents one 10-acre grid cell, and the connectivity of the surrounding street network is measured by summarizing the number of intersections within ½ mile of the grid cell. Each variable was measured individually, and then a cumulative score was developed for all variables as they applied for each grid cell in Alachua County.

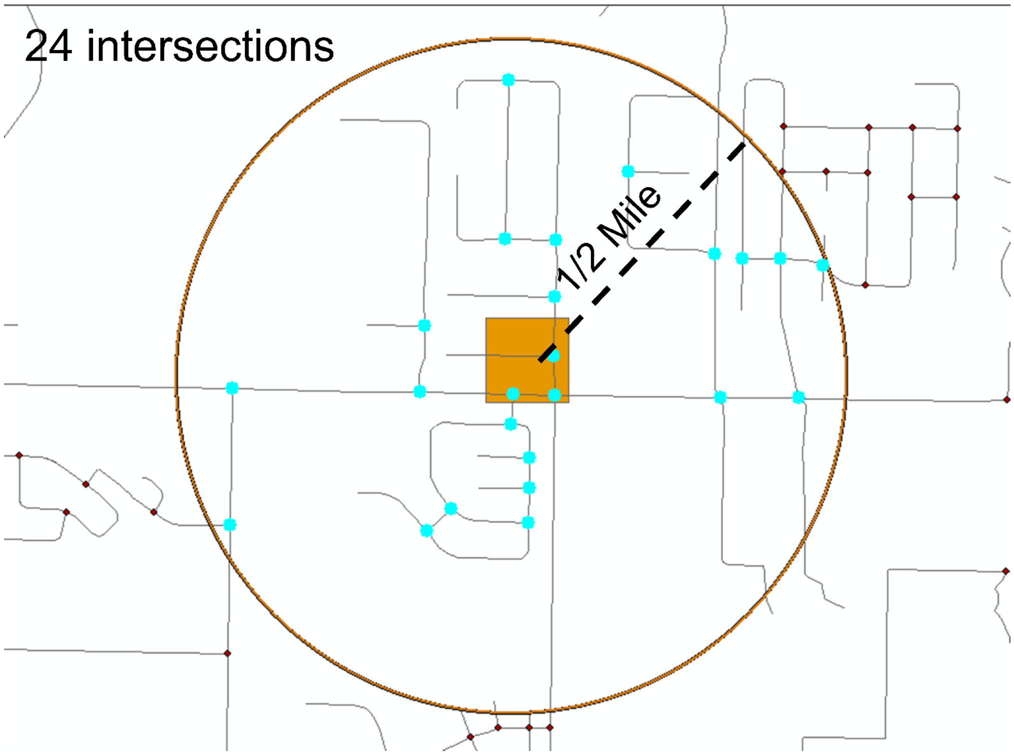

Figure 5: Accessibility Analysis Methodology: Intersection Density

The accessibility analysis considered existing conditions and future 2035 conditions, with no additional transportation projects and with the Year 2035 Needs Plan. It should be noted that, like all of the Needs Plan alternatives, there was no adjustment to the land use data (population and employment density and mix of use) except for the anticipated growth from 2007 to 2035, consistent with the city and county comprehensive plans.

Findings / Implications

Maps 23 and 24 reflect the existing conditions and 2035 base condition results of the accessibility analysis. There is little variation in the two maps because transportation conditions do not change; the maps only reflect growth in population and employment. However, as indicated in the third map on **Map 25**, with consideration of a transit emphasis alternative, the accessibility analysis reveals an expanded area of high and moderately accessible locations as a result of better bus service within certain corridors and areas of Alachua County.

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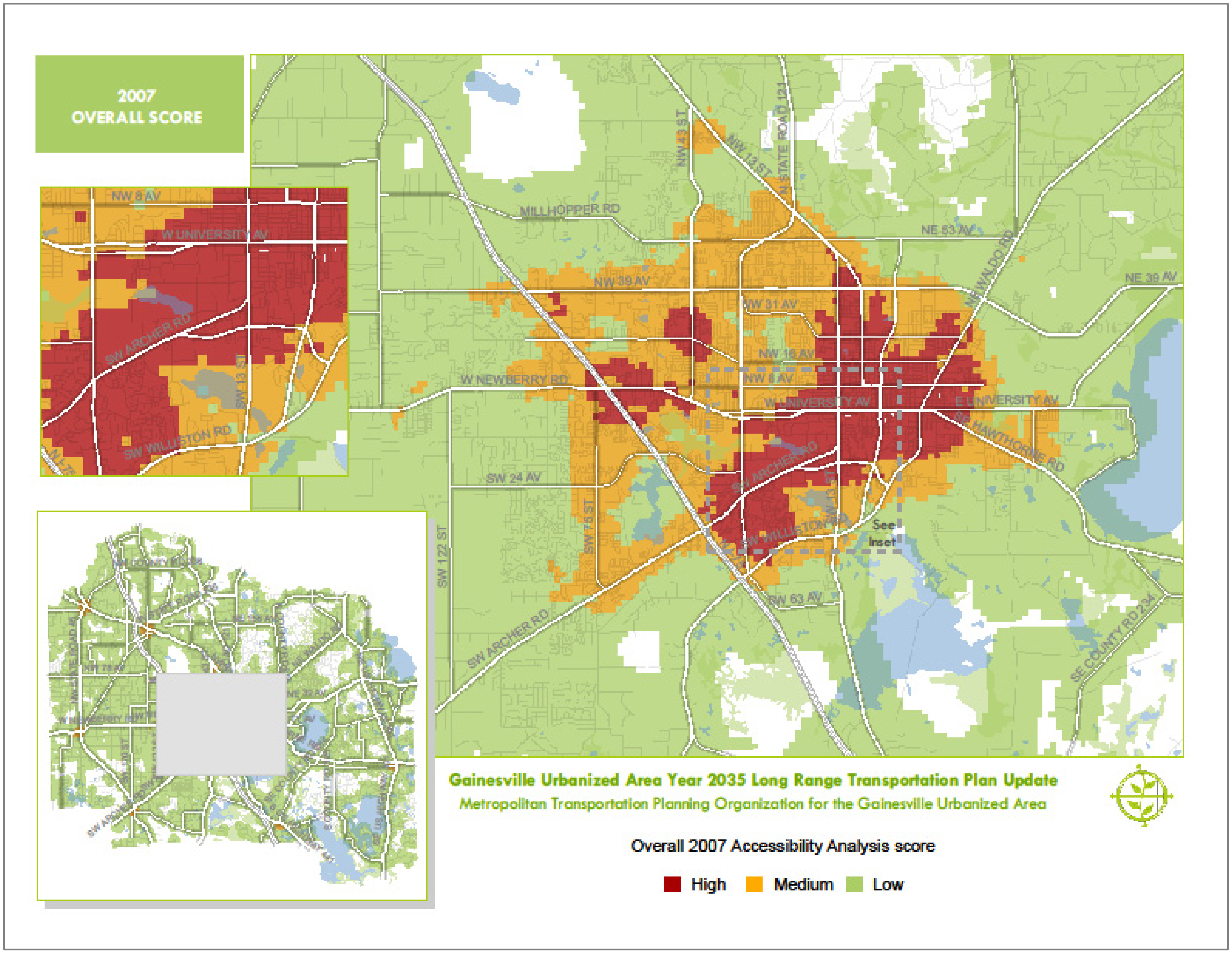
Map 23: Overall 2007 Accessibility Analysis Scores



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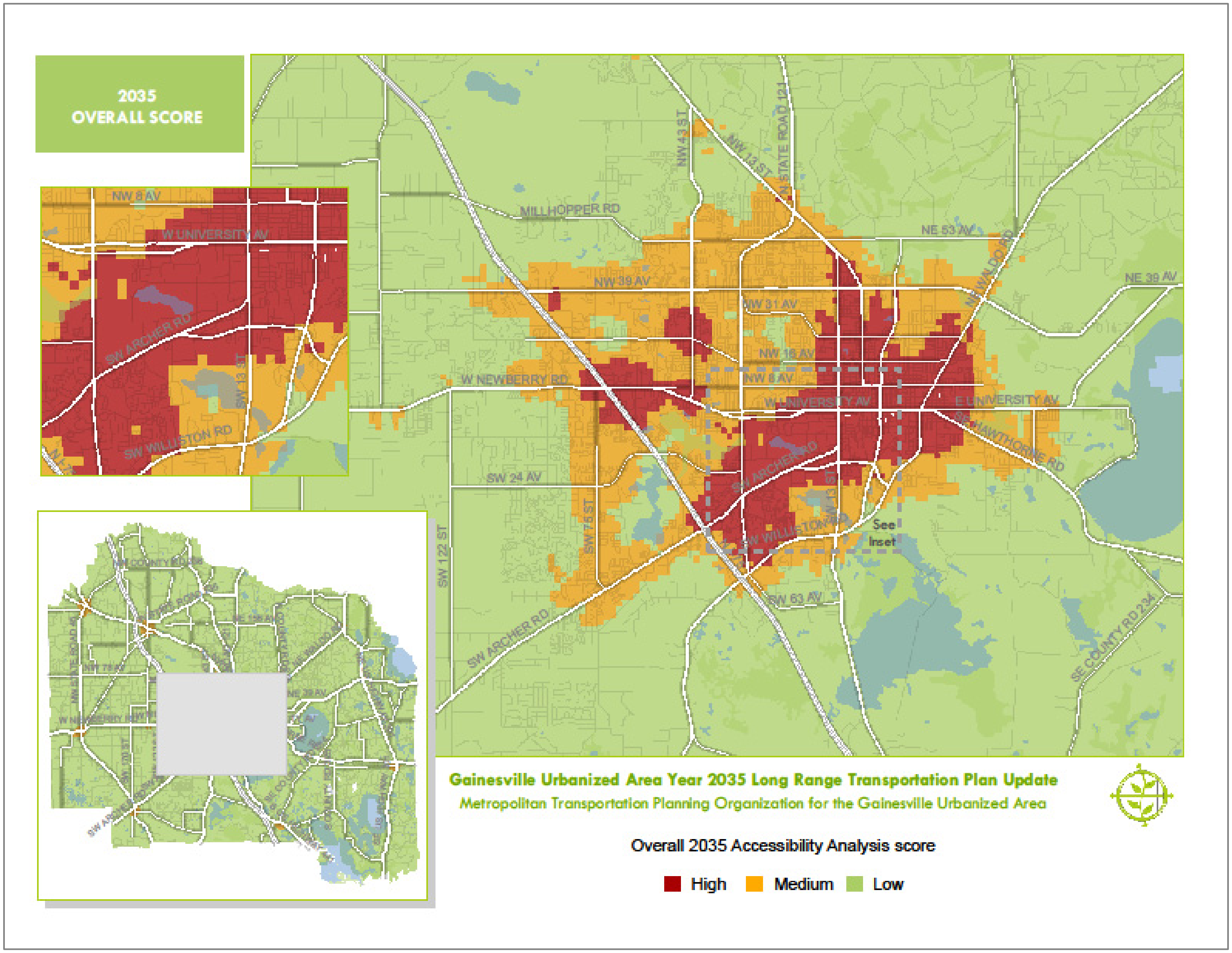
Map 24: Overall 2035 Accessibility Analysis Scores



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Map 25: Overall 2035 Accessibility Analysis Scores for Alternative 1 – Bus Rapid Transit Emphasis

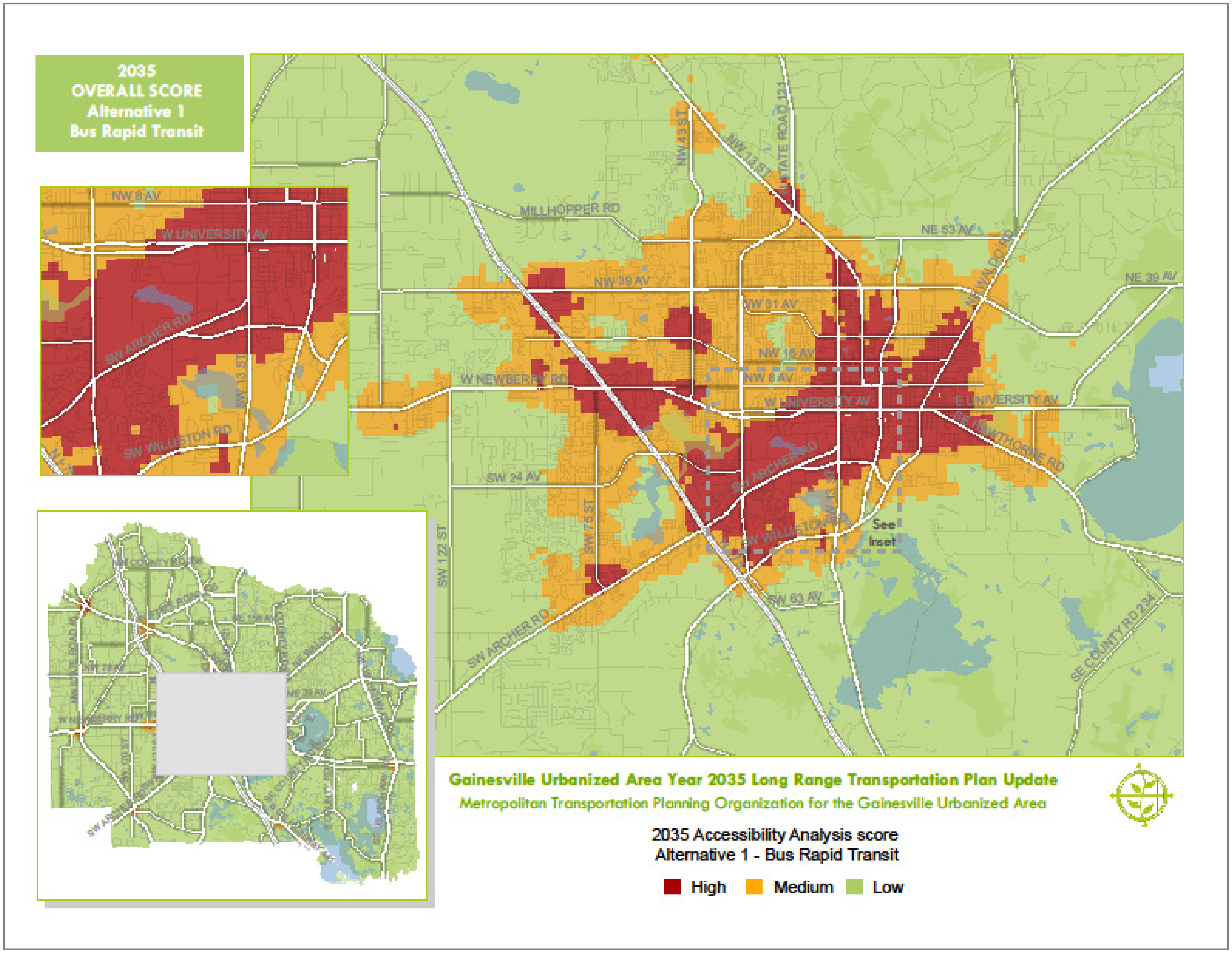

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Table 35 summarizes some key findings from the accessibility analysis. It is revealing to note that the trend for growth and development is for the percentage of households in highly accessible locations to decline from 32 percent to 29 percent between 2007 and 2035, indicating that most of the future growth is expected to occur in outlying areas that are relatively poor in terms of transportation accessibility. Of even more significance as an indicator of sprawling development patterns, the percentage of households in areas with low accessibility rises from 27 percent in 2007 to 41 percent in 2035. Employment also rises in low accessibility areas, although by a much smaller percentage.

This analysis indicated that the core area around downtown Gainesville and the University of Florida provided a relatively high level of accessibility. Areas of moderate accessibility generally fall within the city limits, primarily east of I-75, and in the smaller cities outside of the urbanized area. Much of the remainder of Alachua County was classified as having low accessibility, including much of the rapidly growing western areas of the county. While about 55 percent of countywide employment is in highly accessible locations, less than 30 percent of dwelling units are in such areas. In fact, from 2007 to 2035, the percentage of dwelling units in highly accessible locations actually declines by three percent; those in low accessible areas increase almost 15 percent. Clearly, that's not a desirable direction.

The analysis also reveals that strategic investments in public transportation services and other infrastructure can reverse this trend. As indicated in the table, the alternatives focusing on transit expansion – the Bus Rapid Transit network included as part of Alternative 1 and the BRT plus streetcar network included in Alternative 3 – help to slow the trend of increasingly lower levels of overall countywide accessibility by returning the percentages closer to their 2007 existing condition. Without adjusting future land use patterns for this analysis, the accessibility summary clearly reveals the influence of smart transportation investments, as well as the potential implications on vehicle miles traveled, greenhouse gas emissions and the time spent commuting to work or traveling for other purposes.

Table 35: Results of Year 2035 LRTP Accessibility Analysis

	2007 Existing	2035 Base	Alt 1 BRT	Alt 2 Highway	Alt 3 Streetcar
Employment in Highly Accessible Areas	71,400 54%	97,200 54%	104,200 58%	96,900 53%	101,800 56%
Dwelling Units in Highly Accessible Areas	35,900 32%	42,000 29%	47,700 33%	40, 900 28%	46,300 32%
Employment in Low Accessibility Areas	27,300 21%	40,900 23%	37,000 20%	38,100 21%	37,300 21%
Dwelling Units in Low Accessibility Areas	38,700 27%	59,700 41%	55,000 38%	55,800 38%	55,600 38%

The implications for the accessibility analysis relate directly to policy and investment decisions to be made by the MTPO, Alachua County and the City of Gainesville. As described above, should transportation investments go toward improving accessibility in those outlying, high growth areas, or should future growth (as encouraged with targeted transportation investments and supporting land use policies) occur within the high and moderate accessible locations that have the redevelopment and infill development potential to support higher densities? An accessibility matrix illustrates one of the key objectives of the plan, which is to move people and jobs from the upper left hand part of the matrix into the lower right hand area, largely by making transportation investments and adjusting land use policies where needed. These strategies are defined in the adopted Year 2035 LRTP.

		Transportation Accessibility		
		Low	Medium	High
Land Use Sustain-ability	Low	Area with poor sustainability & accessibility (Improve or leave as it is?)	Area needed to improve land use more intensively	Area needed to improve land use
	Medium	Area needed to improve transportation more intensively	Area needed to improve both land use and transportation	Area with potential (improve land use)
	High	Area needed to improve transportation	Area with potential (need to improve transportation)	Area with excellent sustainability & accessibility

Figure 6: Accessibility Matrix for Planning Strategies

Testing of Network Alternatives

Performance Measures

Performance Measures were developed for the Year 2035 LRTP to serve several purposes. First, the Performance Measures provided a starting point to evaluate transportation alternatives in development of the Needs and Cost Feasible Plans that were recommended to the MTPO. Second, the Performance Measures provided guidance on benchmarks and targets that can be used over time to evaluate progress and the outcomes of the Year 2035 LRTP. Finally, the Performance Measures demonstrate adherence to principles and standards as well as links to various federal and state programs.

There is increasing emphasis in the federal government on use of performance measures and benchmarks to measure the outcomes of the metropolitan planning process. This is likely to be a cornerstone of the next federal transportation law, both for states and the nation's MPOs. In addition, the Federal Highway Administration is already requiring a stronger link between the MPO's Long Range Transportation Plan and the Congestion Management Process, which is used as a basis to evaluate transportation conditions and trends, and guide the selection of short-term mobility strategies. This linkage is intended to ensure that short-term mobility strategies fit within the LRTP vision, and also provide feedback to the update of the LRTP on the success (or outcomes) of projects as they are implemented. By establishing benchmarks or performance targets to go along with the vision, goals and objectives, the MTPO has a useful point of reference for the effectiveness of its LRTP and associated strategies implemented by state and local agencies in the urbanized area.

The Performance Measures are based on existing datasets that will generally be available as a result of LRTP development. They are also based on information that other agencies, such as the City, County, and FDOT, are required to collect and update as part of their routine planning requirements. These Performance Measures provide consistency between the requirements of recent growth management legislation (HB 697 in 2008 and SB 360 in 2009) as they relate to city and county comprehensive plans and strategies to reduce greenhouse gas emissions through the development of mobility plans.

The LRTP process provided baseline data that, when updated in future years, will provide an indication of how well the Plan Goals and Objectives are being met. The Performance Measures encompass a wide range of measures and data that provide a comprehensive assessment of the Plan's vision of a sustainable transportation network.

The performance measures and benchmarks, shown in **Table 26**, are based on two primary approaches to transportation measures: focus on speed (level of service, delay, travel speed) and proximity (quality of service, travel time, access, connectivity). These performance measures enable the MTPO to track progress on meeting these Year 2035 LRTP goals and objectives. They will also be incorporated to guide MTPO annual priorities and work programs, as well as future LRTP updates. **Table 37** shows the baseline data for the performance measures for the Base Year 2035 (Existing plus Committed) network and the four alternative networks that were tested during development of the LTRP.

Table 36: Performance Measures and Benchmarks

	LRTP Goals				
Performance Measures	**Economic Vitality and Community Livability**	**Sustainable Decision-Making and Preservation**	**Safety for Mobility and Accessibility**	**Security and Resilience**	**Transportation Network Management and Operations**
Vehicle Miles Traveled (total and per capita) (MTPO Model)	X	X	X	X	
Vehicle Hours Traveled on major corridors (MTPO Model)	X		X		X
Average Delay per road traveler (summarized at county, urbanized area and corridor/travel market scale) (MTPO Model)	X	X			X
Mode share and transit ridership (systemwide, corridor, and route) (RTS) (summarized at urbanized area and corridor travel market scale) (MTPO Model)	X	X		X	
Number and percent of homes within ¼ mile of a bus stop or ½ mile of BRT (LRTP Accessibility Analysis)	X	X		X	
Mobility Index (bus ridership per congested lane mile) (MTPO Congestion Management Process Report)	X	X			X
Benchmarks					
Lane miles of roadways with designated bicycle & pedestrian facilities (MTPO, City, County, FDOT) *Benchmark* measures for plan outcomes and monitoring Benchmark ONLY	X	X		X	
Percentage of transit vehicles using alternative fuels (non-petroleum based) (RTS) *Benchmark* Only		X		X	
Number of Alachua County Schools implementing a comprehensive Safe Routes to Schools program (Alachua County Schools) *Benchmark* Only	X	X	X		
Number and Percentage of Community Traffic Safety Team roadway concerns resolved annually (CTST) *Benchmark* Only	X		X	X	
Review and update of the Continuity of Operations Plan on a bi-annual basis (MTPO) *Benchmark* Only				X	
MTPO participation in the County Local Mitigation Strategy Work Group (MTPO) *Benchmark* Only			X	X	
Signal priority and preemption for transit (RTS/City) *Benchmark* Only	X				X

Table 37: Network Alternatives Evaluation Results

	2035 Base (E+C)	Alt 1 BRT	Alt 2 Highway	Alt 3 Streetcar	Alt 4 Hybrid
Vehicle Miles of Travel (VMT)	11,918,235	11,757,751 -1%	11,741,714 -1%	11,727,968 -2%	11,714,159 -2%
Vehicle Hours of Travel (VHT)	381,467	353,537 -7%	340,227 -11%	341,681 -10%	340,868 -11%
Congested Lane Miles	373 17%	226 10%	217 9%	177 8%	166 8%
Riders per Congested Lane Miles (MTPO Mobility Index)	41.44	61.49	62.14	71.15	82.77
Delay (minutes)	514	400	317	321	348
Within ¼ mile of local bus or ½ mile of premium transit stop:					
Dwelling Units	71,112 39%	86,038 47%	83,297 46%	84,375 47%	85,820 47%
Employment	123,794 85%	137,345 94%	136,522 93%	136,494 93%	138,216 94%
Mode of Travel					
Transit	26,936	36,644	36,005	39,225	38,900
Bicycle/Pedestrian	70,048	69,382	69,224	68,909	69,080
Mode Split					
Auto	96.5%	92.5%	92.5%	92.3%	92.3%
Bicycle/Pedestrian	2.1%	4.9%	4.9%	4.9%	4.9%
Transit	1.4%	2.6%	2.6%	2.8%	2.7%

Overview and Major Features of the Network Alternatives

Four transportation network alternatives were tested to develop the Year 2035 Needs Plan: a Bus Rapid Transit emphasis, a highway emphasis, a streetcar emphasis, and a fourth hybrid alternative. The four network alternatives provided an opportunity to evaluate how the future transportation network would function under various multimodal scenarios. Based on the results of testing the first three alternatives, a fourth hybrid needs plan alternative, blending the best of the highway, BRT, and streetcar elements, was then developed. These network alternatives were based on the Preliminary Needs Plan identified from an initial evaluation of projected congestion for the Year 2035 Base network of existing plus committed (E+C) transportation facilities. The Preliminary Needs Plan was further refined to identify a Constrained Needs Plan which eliminated facilities which could not be modified due to various policies or environmental features. The Preliminary and Constrained Needs Plans are discussed in more detail in the following section.

The network alternatives were initially developed using this initial analysis and input received at a public workshop on February 16, 2010. Alternatives 1, 2, and 3 were presented to the MTPO's Technical Advisory Committee (TAC) and Citizens Advisory Committee (CAC) on March 3, 2010 and to the Gainesville/Alachua County Bicycle and Pedestrian Advisory Board. Both the TAC and CAC suggested modifications to the network alternatives and recommended them to the MTPO for approval. The three Alternatives were approved for testing and evaluation by the MTPO on March 15, 2010. Network alternatives 1, 2, and 3 are described in the following sections. Alternative 4, the hybrid needs network, is described later in this report.

Alternative 1 – Transit/Bus Rapid Transit Emphasis

Alternative network I includes a mix of highway and transit solutions, but primarily considers transit-related modifications. This network alternative includes some highway modifications, but consists primarily of a future Bus Rapid Transit system, new and/or extended regular and express bus routes, bus ways and other transit-related modifications, such as park and ride lots. Key components of Alternative I include:

- A BRT system that provides access to the Santa Fe College area, the airport, Butler Plaza, East Gainesville, Northwood, along Tower Road, Archer Road, and University Avenue.
- Express bus service from Alachua, Archer and Newberry to the BRT system.
- Existing and expanded/new fixed route bus service.
- Park and ride lots to provide connections to premium transit service.
- New roadways and roadway widening projects to provide key connections for BRT and relieve congestion along major corridors.

The Bus Rapid Transit system tested in Alternative I is based on the BRT Feasibility Study and other BRT concepts developed by the City of Gainesville's Regional Transit System (RTS) and Alachua County's adopted Mobility Plan. Express bus, fixed route bus service, and park and ride lots are based on those in the RTS Transit Development Plan completed in August 2009. A complete description of the transit characteristics used is provided later in this report. **Map 26** and **Table 38** show the transportation facilities evaluated in Alternative1.

Map 26: Alternative 1 – Transit/Bus Rapid Transit Emphasis

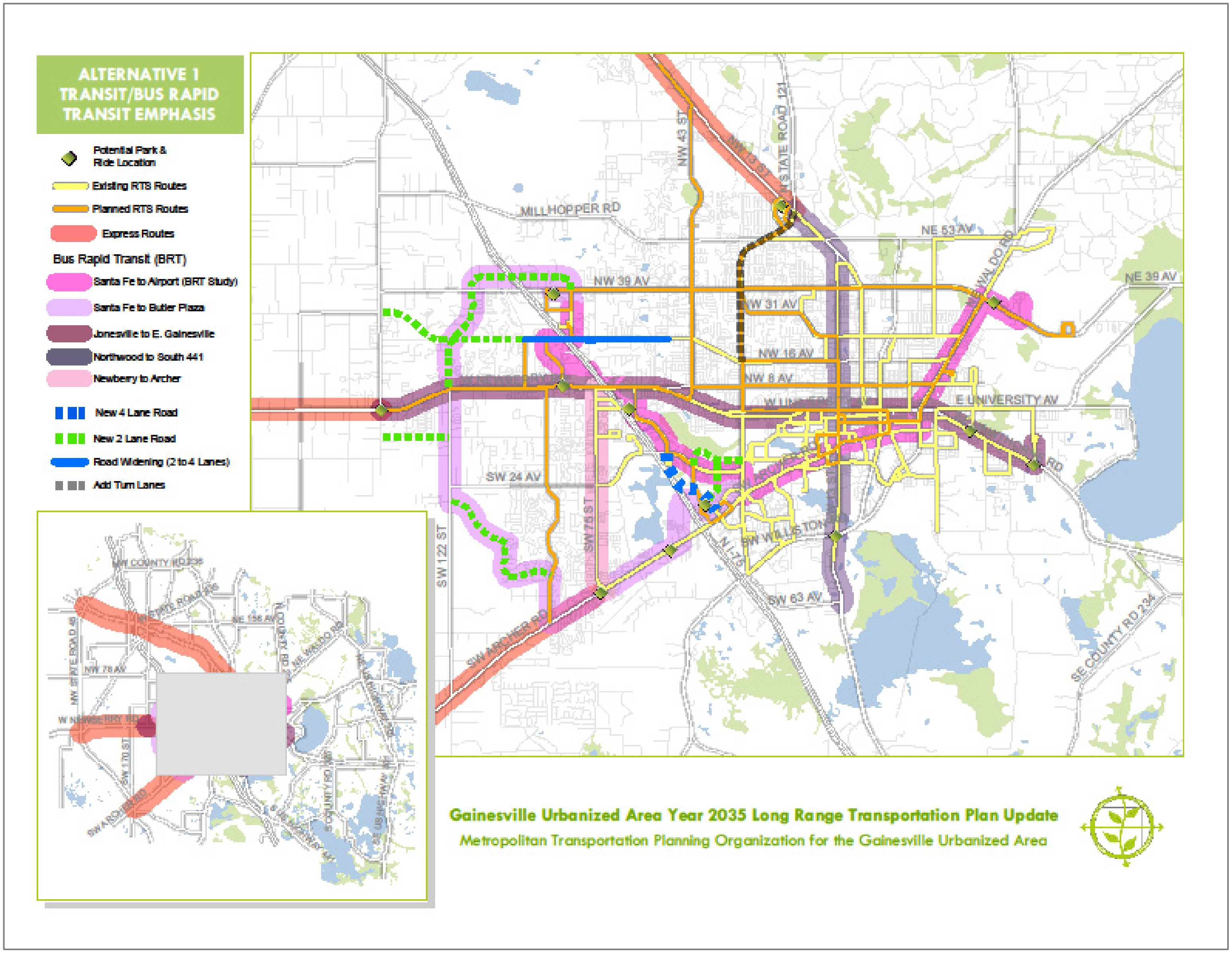

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Table 38: Alternative 1 - Transit/Bus Rapid Transit Emphasis List of Projects

Facility/Location	Type
Transit	
Santa Fe College to Airport (BRT Study w/Extension to Santa Fe)	Bus Rapid Transit
Santa Fe College to Butler Plaza (via Haile Village Center)	Bus Rapid Transit
Jonesville to E. Gainesville	Bus Rapid Transit
Northwood Village to UF via 13th Street	Bus Rapid Transit
Newberry Road to Archer Road (via Tower Road)	Bus Rapid Transit
Alachua to BRT (via US 441)	Express Bus Route
Archer to BRT (via Archer Road)	Express Bus Route
Newberry to BRT (via Newberry Road)	Express Bus Route
Existing RTS Fixed Route Bus	Fixed Route Bus
Planned RTS Fixed Route Bus	Fixed Route Bus
I-75 and Newberry Road (Oaks Mall)	Park & Ride Lot
Newberry Road and Ft. Clarke Road	Park & Ride Lot
Newberry Road and CR 241 (Jonesville)	Park & Ride Lot
Butler Plaza Area	Park & Ride Lot
Archer Road west of I-75 and Archer Road (near SW 52nd Terrace)	Park & Ride Lot
Archer Road and Tower Road (SW 75th Street)	Park & Ride Lot
US 441 and Williston Road	Park & Ride Lot
Eastside Activity Center (SE 43rd Street and SE Hawthorne Road)	Park & Ride Lot
SE Hawthorne Road and SE 24th Street/SE 8th Ave	Park & Ride Lot
NW 34th Street and US 441 (Northwood Village)	Park & Ride Lot
NW 39th Avenue and I-75	Park & Ride Lot
NE 39th Avenue and Waldo Road	Park & Ride Lot
Roadway	
NW 23rd Avenue	Add 2 lanes (2 to 4)
SW 62nd Boulevard	Add 2 lanes (2 to 4)
NW 34th Street (NW 16th Ave to US 441)	Add turn lanes
Hull Road Extension	New 2 lane road
NW 122nd Street Extension	New 2 lane road

Facility/Location	Type
NW 23rd Avenue Extension	New 2 lane road
Springhills Boulevard	New 2 lane road
SW 38th Terrace Extension	New 2 lane road
SW 40th Boulevard (to SW 47th Avenue*	New 2 lane road
SW 43rd Street	New 2 lane road
SW 45th Boulevard Extension	New 2 lane road
SW 8th Avenue Extension	New 2 lane road
SW 62nd Boulevard Extension	New 4 lane road
*Note: This project was tested in Alternative 1 and is now "committed." It has been added to the Existing plus Committed Network.	

Alternative 2 – Highway Emphasis

Alternative network 2 includes a mix of highway and transit solutions, but primarily considers highway-related modifications that expand the grid network of roads. This network alternative includes transit modifications, but consists primarily of new roads or projects that add capacity to existing roads. Key components of Alternative 2 include:

- Express bus service from Alachua, Archer, Hawthorne, Newberry and Waldo to downtown Gainesville.
- Existing and expanded/new fixed route bus service.
- New roadways and roadway widening projects to provide increased capacity to existing and provide greater network connectivity to relieve congestion along major corridors.

Map 27 and **Table 39** show the transportation facilities evaluated in Alternative 2.

Map 27: Alternative 2 – Highway Emphasis

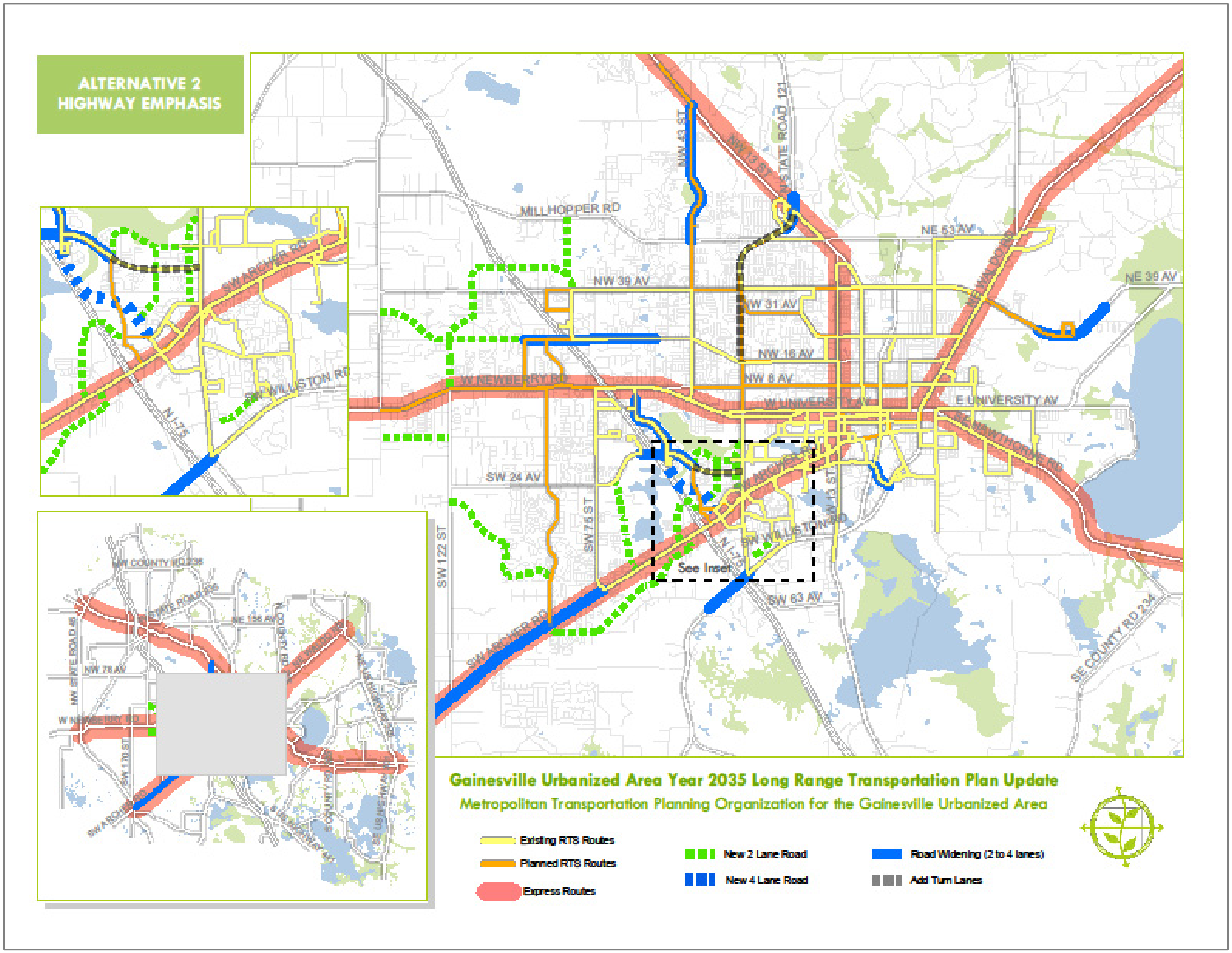

Table 39: Alternative 2 – Highway Emphasis List of Projects

Facility/Location	Type
Transit	
Alachua to Downtown Gainesville (via US 441 & 6th Street)	Express Bus Route
Archer to Downtown Gainesville (via Archer Road & 13th Street)	Express Bus Route
Newberry to Downtown Gainesville (via Newberry Road)	Express Bus Route
Waldo to Downtown Gainesville (via Waldo Road/US301)	Express Bus Route
Hawthorne to Downtown Gainesville (via Hawthorne Road)	Express Bus Route
Existing RTS Fixed Route Bus	Fixed Route Bus
Planned RTS Fixed Route Bus	Fixed Route Bus
Roadway	
Archer Road (west of I-75 to Archer)	Add 2 lanes (2 to 4)
NE 39th Avenue	Add 2 lanes (2 to 4)
NW 23rd Avenue	Add 2 lanes (2 to 4)
NW 43rd Street	Add 2 lanes (2 to 4)
SE 16th Avenue	Add 2 lanes (2 to 4)
SR 121 (NW 58th Avenue to NW 67th Place)	Add 2 lanes (2 to 4)
SW 20th Avenue (SW 43rd Street to SW 62nd Boulevard)	Add 2 lanes (2 to 4)
SW 62nd Boulevard	Add 2 lanes (2 to 4)
Williston Road (West of I-75 to SW 62nd Avenue)	Add 2 lanes (2 to 4)
NW 34th Street (NW 16th Ave to US 441)	Add turn lanes
SW 20th Avenue	Add turn lanes, bus bays
Hull Road Extension	New 2 lane road
NW 122nd Street Extension	New 2 lane road
NW 23rd Avenue Extension	New 2 lane road
NW 83rd Street Extension	New 2 lane road
Radio Road Extension	New 2 lane road
Springhills Boulevard	New 2 lane road
SW 35th Boulevard Extension	New 2 lane road
SW 38th Terrace Extension	New 2 lane road
SW 40th Boulevard (to SW 47th Avenue)*	New 2 lane road

Facility/Location	Type
SW 43rd Street	New 2 lane road
SW 45th Boulevard Extension	New 2 lane road
SW 47th Street Extension (east to SW 40th Place)	New 2 lane road
SW 47th Way Extension (should have been SW 57th Road)	New 2 lane road
SW 8th Avenue Extension	New 2 lane road
SW 62nd Boulevard Extension	New 4 lane road
*Note: This project was tested in Alternative 1 and is now "committed." It has been added to the Existing plus Committed Network.	

Alternative 3 – Transit/Streetcar Emphasis

Alternative network 3 includes a mix of highway and transit solutions, but primarily considers transit-related modifications. This network alternative includes some highway modifications, but consists primarily of a future bus rapid transit system, new and/or extended regular and express bus routes, bus ways and other transit-related modifications. In this alternative network, a streetcar system was tested and evaluated.

Key components of Alternative 3 include:

- A BRT system from the Santa Fe College area to the airport, with access to UF/Shands, and running along Archer Road.
- Two streetcar lines connecting downtown Gainesville, UF, and the Butler Plaza area.
- Express bus service from Alachua to downtown Gainesville and from Archer, Hawthorne, Newberry, and Waldo to the BRT system.
- Existing and expanded/new fixed route bus service, including premium service along 39th Ave from Santa Fe to the airport.
- New roadway to relieve congestion along major corridors.

The Bus Rapid Transit system tested in Alternative 3 is consistent with the preferred alignment identified in the RTS's BRT Feasibility Study, with the extension of the line from the Oaks Mall area to Santa Fe. **Map 28** and **Table 40** show the transportation facilities evaluated in Alternative 3.

Map 28: Alternative 3 – Transit/Streetcar Emphasis

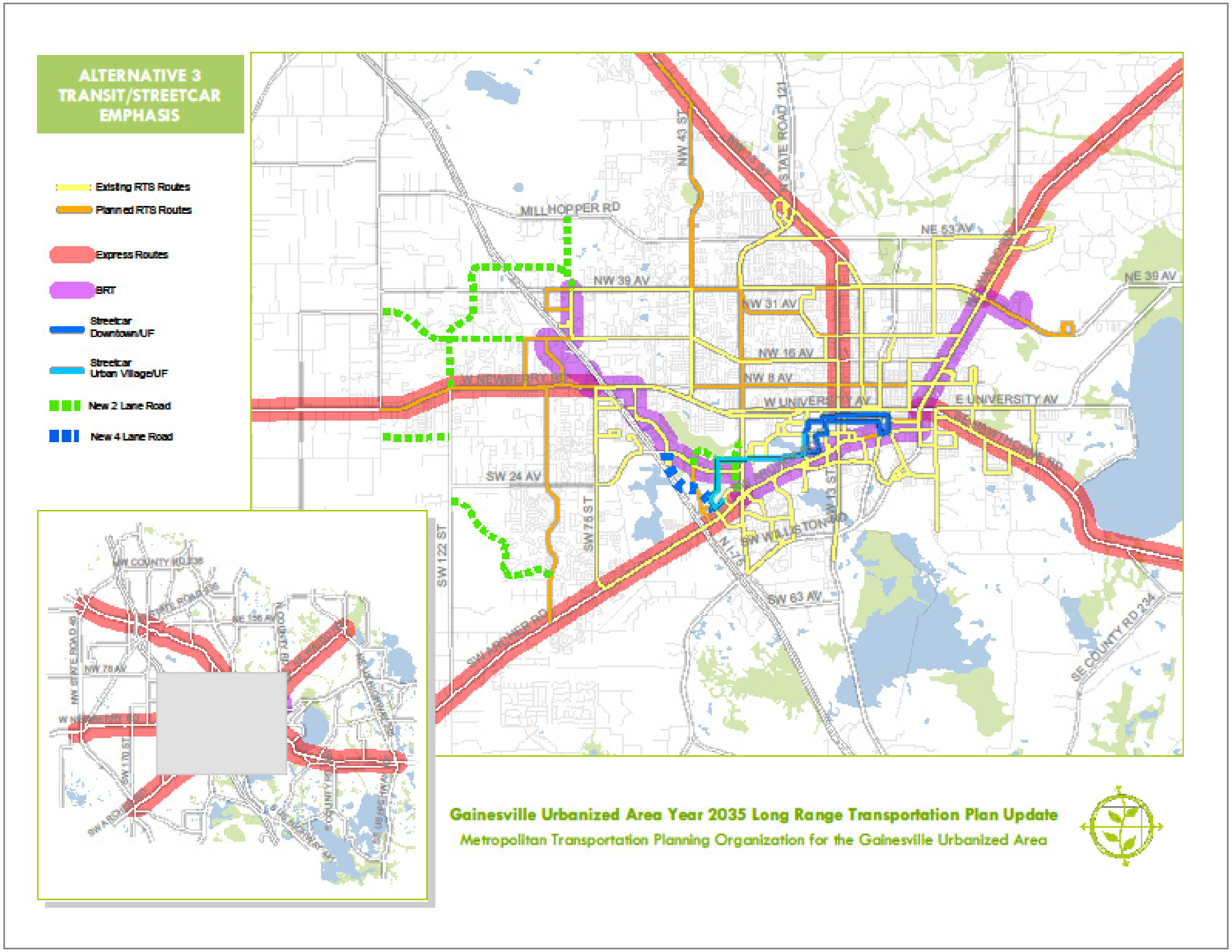

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Table 40: Alternative 3 – Transit/Streetcar Emphasis List of Projects

Facility/Location	Type
Transit	
Santa Fe College to Airport (BRT Study w/Extension to Santa Fe)	Bus Rapid Transit
Downtown/UF	Streetcar
Urban Village/UF	Streetcar
Alachua to Downtown Gainesville (via US 441 & 6th Street)	Express Bus Route
Archer to BRT (via Archer Road)	Express Bus Route
Newberry to BRT (via Newberry Road)	Express Bus Route
Waldo to BRT (via Waldo Road/US301)	Express Bus Route
Hawthorne to BRT (via Hawthorne Road)	Express Bus Route
Existing RTS Fixed Route Bus	Fixed Route Bus
Planned RTS Fixed Route Bus	Fixed Route Bus
Fixed Route Bus from Santa Fe to Airport on NW/NE 39th Ave	Premium Fixed Route (15 minute frequencies)
Roadway	
SW 62nd Boulevard	Add 2 lanes (2 to 4)
Hull Road Extension	New 2 lane road
NW 122nd Street Extension	New 2 lane road
NW 23rd Avenue Extension	New 2 lane road
NW 83rd Street Extension	New 2 lane road
Radio Road Extension	New 2 lane road
Springhills Boulevard	New 2 lane road
SW 35th Boulevard Extension	New 2 lane road
SW 38th Terrace Extension	New 2 lane road
SW 43rd Street	New 2 lane road
SW 45th Boulevard Extension	New 2 lane road
SW 8th Avenue Extension	New 2 lane road
SW 62nd Boulevard Extension	New 4 lane road

Transit Service Characteristics for Evaluation of Network Alternatives

The three alternative networks approved included alignments for Bus Rapid Transit, streetcar, express bus, and fixed route transit service. While the specific alignments and components included in each network alternative varies, the transit service characteristics for each transit type were consistently applied across the alternatives. In conjunction with staff from Alachua County, City of Gainesville, and the University of Florida, the transit operating characteristics and overriding principles regarding future transit service in the Year 2035 were determined. These characteristics and principles were based on best practices from Federal Transit Administration, existing and planned transit service in the Gainesville/Alachua County area (RTS Transit Development Plan, Alachua County Mobility Plan, BRT Feasibility Study), and input from the public and staff at various meetings/workshops. These transit service characteristics were then coded into the model for the three alternative networks and evaluated to determine the transit ridership and mode share for each alternative. A general description of the transit service characteristics is provided in this section.

Transit Service Span and Frequency

General service span and frequencies provided by RTS were reviewed, and several adjustments were made to represent the expected service characteristics for future transit in the Gainesville Urbanized Area. **Table 41** provides the service span and frequencies for the types of transit service included in the three network alternatives.

Table 41: RTS Service Span & Frequencies by Service Type

Service	Frequency (min.)		Service Span (min. hours)		
	Peak	Off-Peak	Weekday	Saturday	Sunday
Streetcar	10	15	17-20	14	10
Bus Rapid Transit	10	15	17-20	14	10
Intercity Express Bus	30	-	3/3 (AM/PM)	-	-
Local Express Bus	20	-	3/3 (AM/PM)	-	-
Local Bus	15	30	8-20	8	7
Local Bus Feeder*	20	40			
Campus Circulators	15	30			
Complimentary Paratransit**	-	-	17-20		

Note: *feeders to connect to BRT or other premium services at stations, **3/4 mile service area beyond fixed route system

Bus Rapid Transit

Both Alternatives 1 and 3 include BRT service. It was determined that BRT would run on a mix of designated transit lanes and mixed traffic lanes, depending on the projected roadway cross-sections. More information about the projected BRT running ways and routes is shown below:
Designated lanes would be provided on the following segments:

- 62nd Blvd from SW 20th Avenue to the Oaks Mall
- Archer Road from SW 34th Street to SW 13th Street
- Waldo Road from University Avenue north (except the portion to the airport along NE 39th Avenue)
- In the Butler Plaza area, the BRT will move from SW 20th Avenue to SW 62nd Boulevard once the SW 62nd Boulevard Extension is completed with designated transit lanes.
- Other locations as identified on the Alachua County Mobility Plan Rapid Transit map

Mixed traffic

- The Tower Road BRT route will connect with other BRT routes to the north and south and will run in mixed traffic with signal preemption.
- All other BRT segments not listed above would run in mixed traffic.

Fares

The fare structure used for modeling purposes is as follows:

- BRT: $1.50
- Local Express Bus: $2.00 per trip; all day pass $5 (includes transfer to fixed route service)
- Regular fixed route: $1.50
- Streetcar: Free

Park and Ride Locations

Proposed Park and Ride Lots were included in Alternative 1 (Transit/BRT Emphasis) based on the Alachua County Mobility Plan and the RTS Transit Development Plan.

Transit Stops

BRT stations were located at Park and Ride Locations as possible. BRT stops are located throughout the route. Express bus stops for each alternative were located at major destinations along each route (and the endpoints). In Alternatives 1 and 3, express bus routes end in Gainesville where they intersect BRT routes (except the Alachua-Gainesville route in Alternative 3, which continues down 13th Street into downtown). In Alternative 2 (Highway Emphasis), express bus routes end at either the downtown transfer center or the UF transfer center.

Streetcar stops in Alternative 3 were identified at logical destinations and activity centers along the routes.

Evaluation and Development of Needs Plan

The development of the 2035 Needs Plan entailed a combination of technical analysis and public participation to narrow down the range of alternative networks into a recommended plan. Integration of those two elements was key to the process; at various points in the study process, various methods of public engagement helped to shape development and evaluation of alternatives. This included identification of performance measures based on the initial public workshop, a series of focus group discussions with diverse interests, and an online web-based survey of transportation issues; development of network alternatives and safety element recommendations from the 2nd public workshop, in which participants marked up maps of problem areas and potential solutions; and identification of potential land use and transportation strategies to mitigate the potential effects of peak oil.

In addition, the project team provided feedback on future growth trends and mobility impacts, potential transportation projects, and results of the alternatives development and testing process to the public through the workshops, materials posted on the project web site, and presentations to community groups, the MTPO's advisory committees and the MTPO board during public forums. Finally, at several points in the planning process, there was engagement with the University of Florida faculty, staff and students on regional transportation issues, needs and opportunities through workshops primarily focused on the Year 2020 Update of the University's Campus Master Plan, which was closely coordinated with the MTPO Year 2035 LRTP, using much of the same data and analysis. Each of those efforts helped to shape and refine the adopted Year 2035 Needs Plan, as well as the subsequent development of a Cost Feasible plan.

Results of Alternative Network Evaluation

The countywide travel demand model was employed to test each of the network needs plan alternatives and provide information on changes in travel demand that might result. The first series of tests evaluated Alternatives 1, 2 and 3 in comparison with the E+C Network and each other. Following review of those results, a fourth hybrid network alternative was developed that served as the basis for the recommended Year 2035 Needs Plan, which the MTPO ultimately adopted.

The primary means of evaluating the results of each alternative entailed analysis of volume-to-capacity ratio changes for roadway segments throughout the Gainesville Urbanized Area and Alachua County, and a summary of those findings at the countywide level. The model was also used to assess changes in vehicle miles of travel (VMT) associated with each alternative and changes in transit ridership. The following presents an overview of the findings from this analysis.

Volume-to-capacity results used the daily traffic volume projections in the model based on population and employment growth in comparison with the estimated daily capacity on each roadway segment. The estimated capacity is derived from the number of through travel lanes, the number of traffic signals per mile and whether there is a center turn lane or median. The generalized level of service (LOS) tables, developed by the Florida Department of Transportation and used by the MTPO for analysis of available capacity in the roadway network, were used to assess congestion levels for development of the Year 2035 LRTP. The generalized LOS tables assign a capacity to a given road segment based on its functional classification and the physical characteristics described above. The segment volume-to-capacity ratio (v/c) was used as a basis for evaluating Needs Plan projects. A v/c of 1.0 or above generally indicates a congested condition in which projected volume exceeds available capacity. For purposes of this LRTP, roadways with a .85 to 1.05 v/c were flagged as borderline congested, while roads having a v/c of 1.2 or greater indicate a severe level of congestion. Typically, transit, demand management and operational strategies can resolve congestion levels below a v/c of 1.2, while roadway capacity changes are likely needed to resolve severely congested roadways that are at least 20 percent over available capacity.

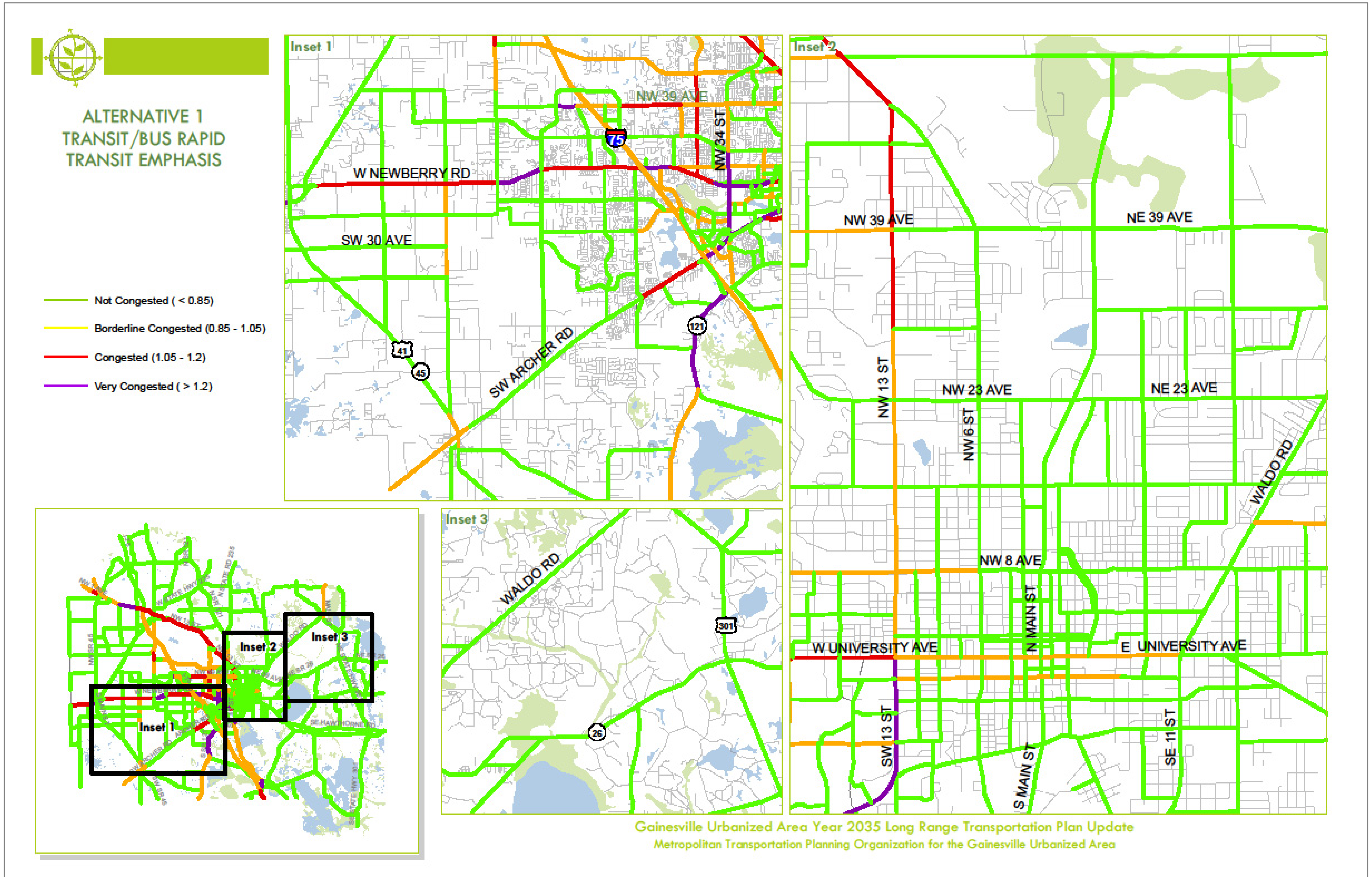
The following map series (**Maps 29 through 31**) present the results of each network alternative in comparison with the Existing Plus Committed (E+C) network. The E+C network includes those roadway capacity projects built since the model validation year of 2007 and committed for construction funding through the 2009-2014 adopted Transportation Improvement Program (TIP) and the FDOT Five Year Work Program through 2014. As shown in the map series, the differences in congested roadway segments are very subtle, with only minor changes from one alternative to another. This is primarily because the three alternatives did not exhibit dramatic differences between each other in terms of the highway network, and while there were relatively significant differences in the transit networks, the model generally does not substantially reflect those changes in the traffic projections on a segment by segment basis. As will be described later, the roadways with persistent congestion levels are likely to remain so in the future because solutions to resolve the congestion through widening or building parallel roadways are not supported by policy or carry extremely high cost or environmental impacts.

Table 42 presents a summary of the results of testing Alternatives 1-3 against the E+C network. Overall, Alternative 3 (streetcar/Bus Rapid Transit) had the greatest effect on VMT, with a two percent reduction in comparison with the E+C network. Conversely, Alternative 2 (highway emphasis) had the greatest effect on vehicle hours of congestion (VHT), which is a measure of delay from congestion, although Alternative 3 is close. Alternative 3 exhibited the fewest congested lane miles and the highest number of transit riders per congested lane mile. Alternatives 2 and 3 have comparable amounts of delay, and both are substantially lower than the E+C network and Alternative 1.

Table 42: Alternative Evaluation Results

	2035 Base (E+C)	Alt 1 BRT	Alt 2 Highway	Alt 3 Streetcar
Vehicle of Miles of Travel (VMT)	11,918,235	11,757,751 -1%	11,741,714 -1%	11,727,968 -2%
Vehicle Hours of Travel (VHT)	381,467	353,537 -7%	340,227 --11%	341,681 -10%
Congested Lane Miles	373 17%	226 10%	217 9%	177 8%
Riders per Congested Lane Miles	41.44	61.49	62.14	71.15
Delay (minutes)	514	400	317	321

Map 29: Year 2035 Congestion Levels for Alternative 1 – Transit/Bus Rapid Transit Emphasis



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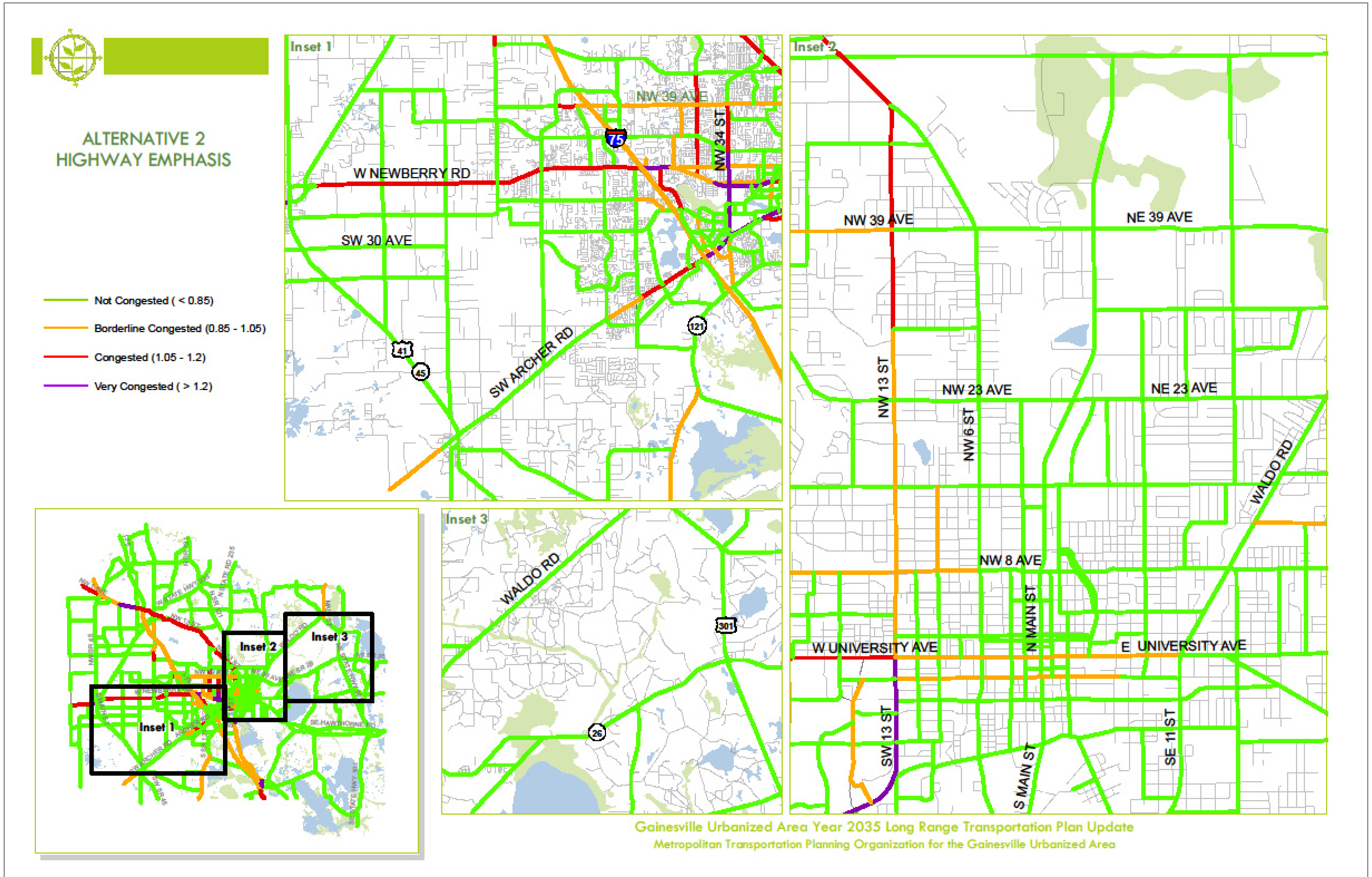
Map 30: Year 2035 Congestion Levels for Alternative 2 – Highway Emphasis



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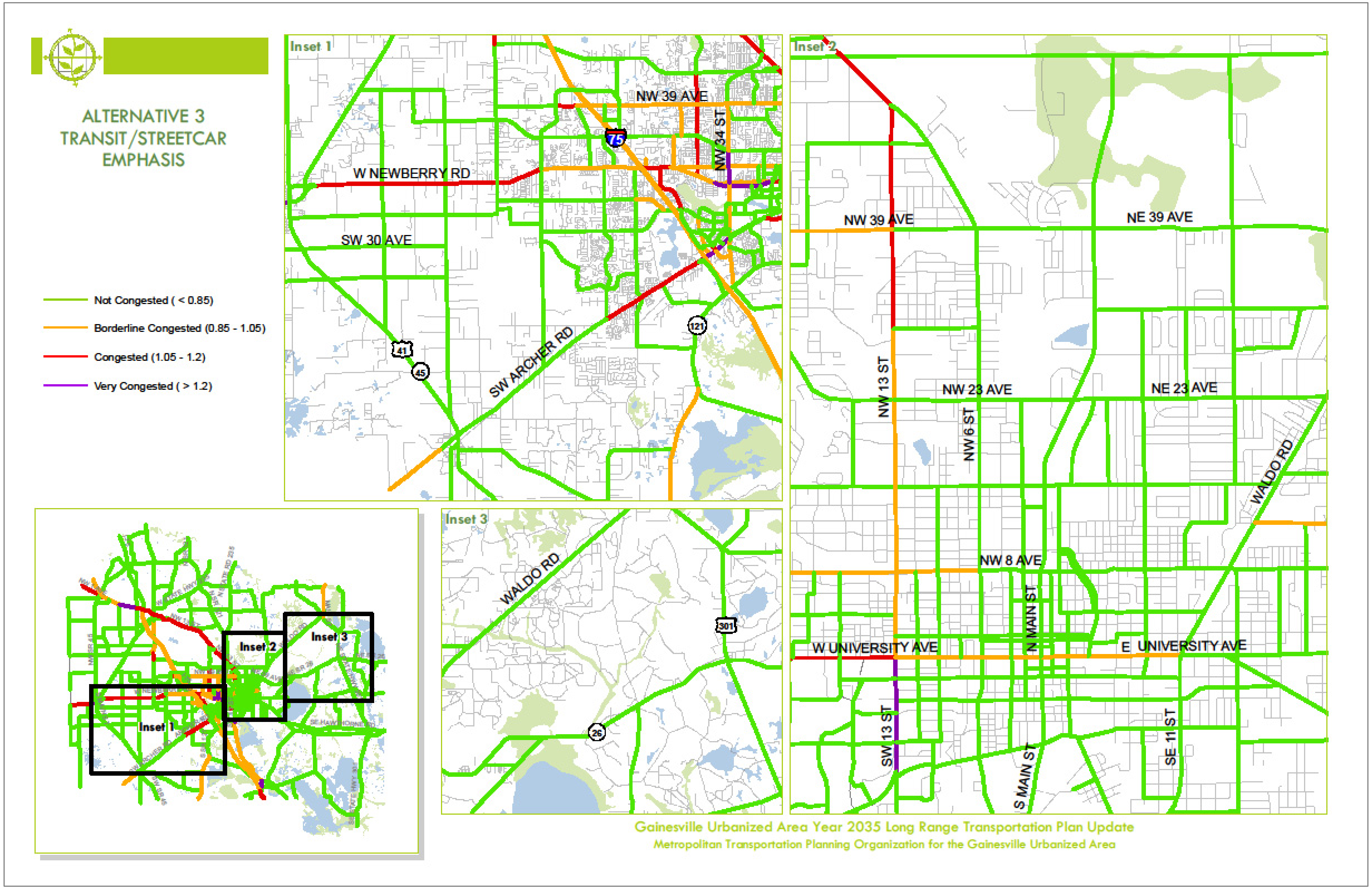
Map 31: Year 2035 Congestion Levels for Alternative 3 – Transit/Streetcar Emphasis



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Using the Alachua Countywide Travel Model it is possible to estimate the number of bicycle/pedestrian trips and those made using transit. As shown in **Table 43**, Alternative 1 showed the greatest increase in fixed route bus ridership, with Alternatives 3 and 4 (hybrid) generating more ridership from the premium forms of transit (streetcar and BRT) because those systems are provided in those alternatives to a greater degree. When combined, Alternative 3 produced the greatest increase in transit ridership over the E+C network, resulting in a 46 percent increase. Bicycle and pedestrian trip-making was generally the same across all alternatives, although slightly lower in comparison with the E+C network because of the amount of additional transit service provided.

The BRT tends to perform well in ridership tests because when compared to auto travel times from west Newberry Road and west Archer Road into the University of Florida, the BRT is able to complete the trip at an 8-10 minute time savings over congested auto speeds.

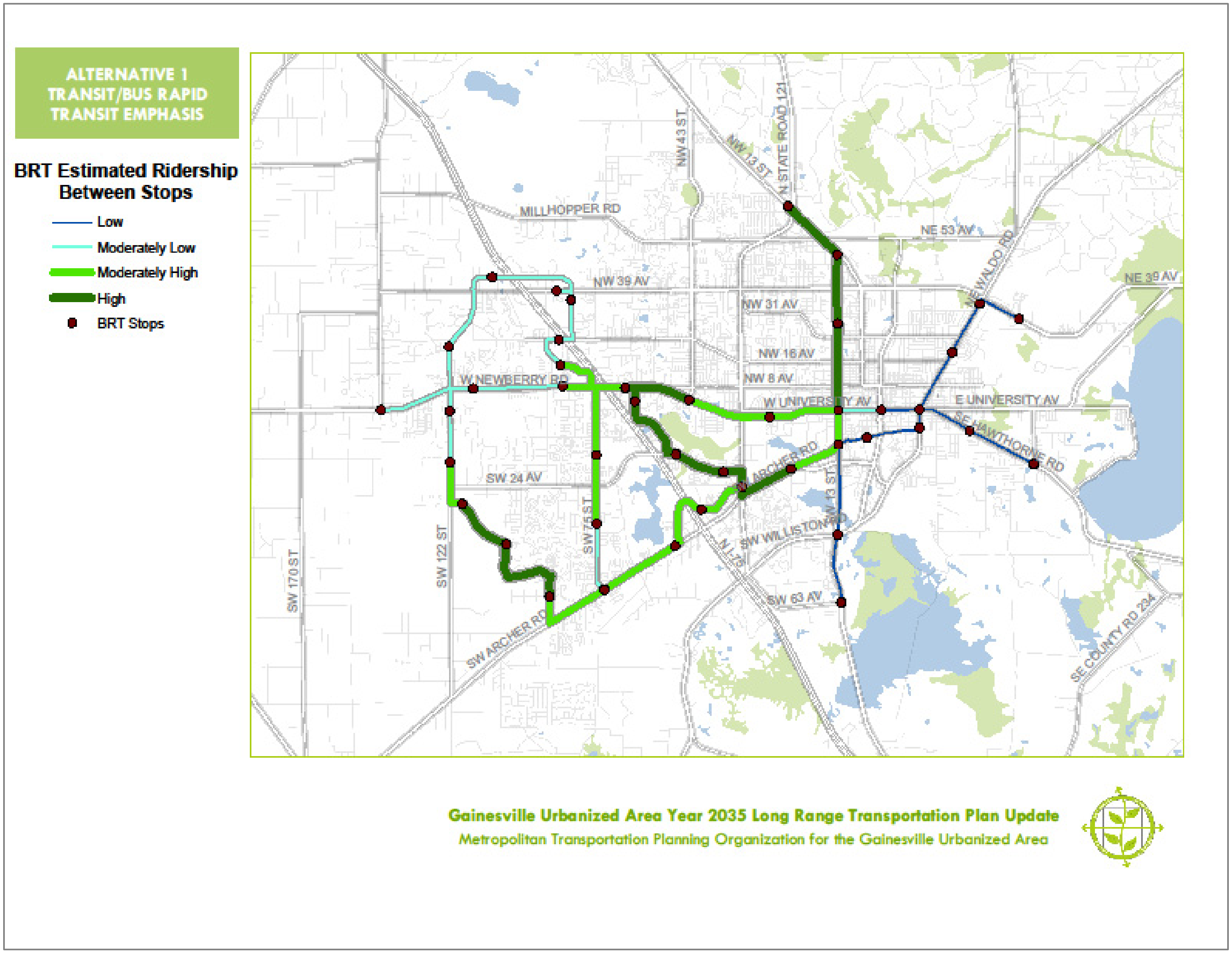
Table 43: Year 2035 Transit and Bicycle/Pedestrian Mode Share

Transit & Bicycle/Pedestrian (trips)									
	Existing + Committed (E+C)	Alt 1 BRT Emphasis		Alt 2 Highway Emphasis		Alt 3 Streetcar		Alt 4 Hybrid	
Fixed Route	26,936	34,625		34,822		33,365		32,795	
Premium Transit	-	2,019		1,184		5,861		6,105	
Total Transit	26,936	36,644	36%	36,006	34%	39,226	46%	38,900	44%
Bike / Pedestrian	70,048	69,382	-1%	69,224	-1%	68,909	-2%	69,080	-1%

Maps 32 through 35 show a series of maps that illustrate the results of the BRT and streetcar network analysis for Alternatives 1, 3 and 4. The maps identify the areas in the BRT and streetcar network with the highest levels of projected ridership. Alternatives 1 and 3 show results in terms of ridership between stops, indicating where the most passengers will use the system. While transit ridership along a given route generally follows a bell curve shape in which fewer riders board and alight at either end of the route, the maps give a fairly strong indication of which BRT and streetcar segments are likely to be the most productive. As shown in **Map 32**, Alternative 1 has the highest level of ridership connecting into the University of Florida on the NW 13th Street/US 441 corridor, SW 62nd Boulevard, SW 20th Avenue and Archer Road. The Haile Village to SW 91st Street segment also performs well. Lower ridership levels are in East Gainesville and the northwest part of the urbanized area. **Map 33**, showing Alternative 3 ridership between stops, indicates the ridership potential of the downtown to UF streetcar segment, with moderately high levels of ridership to the west, including the BRT connection to the Oaks Mall.

Map 34 and 35 present similar results for the Alternative 4 hybrid network. The first map shows average ridership between stops, and indicates the streetcar and BRT corridor connecting UF/Butler Plaza to the Oaks Mall via SW 20th Avenue and SW 62nd Blvd will perform best. Other moderately high performing route segments are shown in lighter green color. The second map shows average ridership by line, and demonstrates the potential of an east-west spine BRT route to effectively connect east and west Gainesville through an intermodal hub at the Shands/VA Hospital area south of the main University of Florida campus. The streetcar line is also reported as having strong ridership. While ridership will vary by segment as people board and alight, the average ridership by line is a strong indicator of the key origins and destinations along a proposed route that will generate higher levels of ridership. Thus, the spine BRT route from Santa Fe College to the Gainesville Regional Airport is the strongest line relative to others in terms of ridership. The streetcar also performs well given the limits on parking and the higher density of development in the core part of the Urbanized Area.

Map 32: Alternative 1 Estimated BRT Ridership between stops



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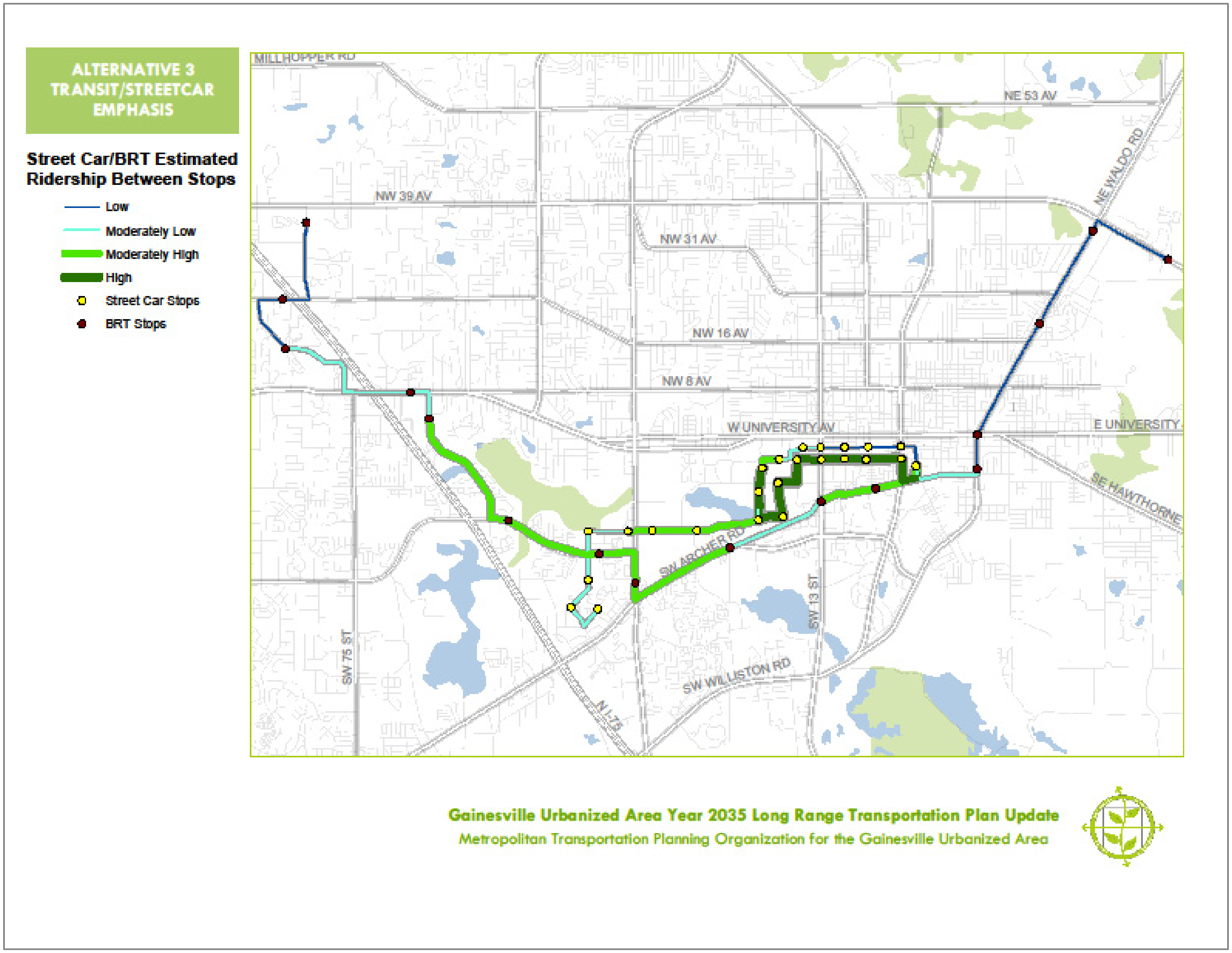
Map 33: Alternative 3 Estimated Streetcar/BRT Ridership between Stops



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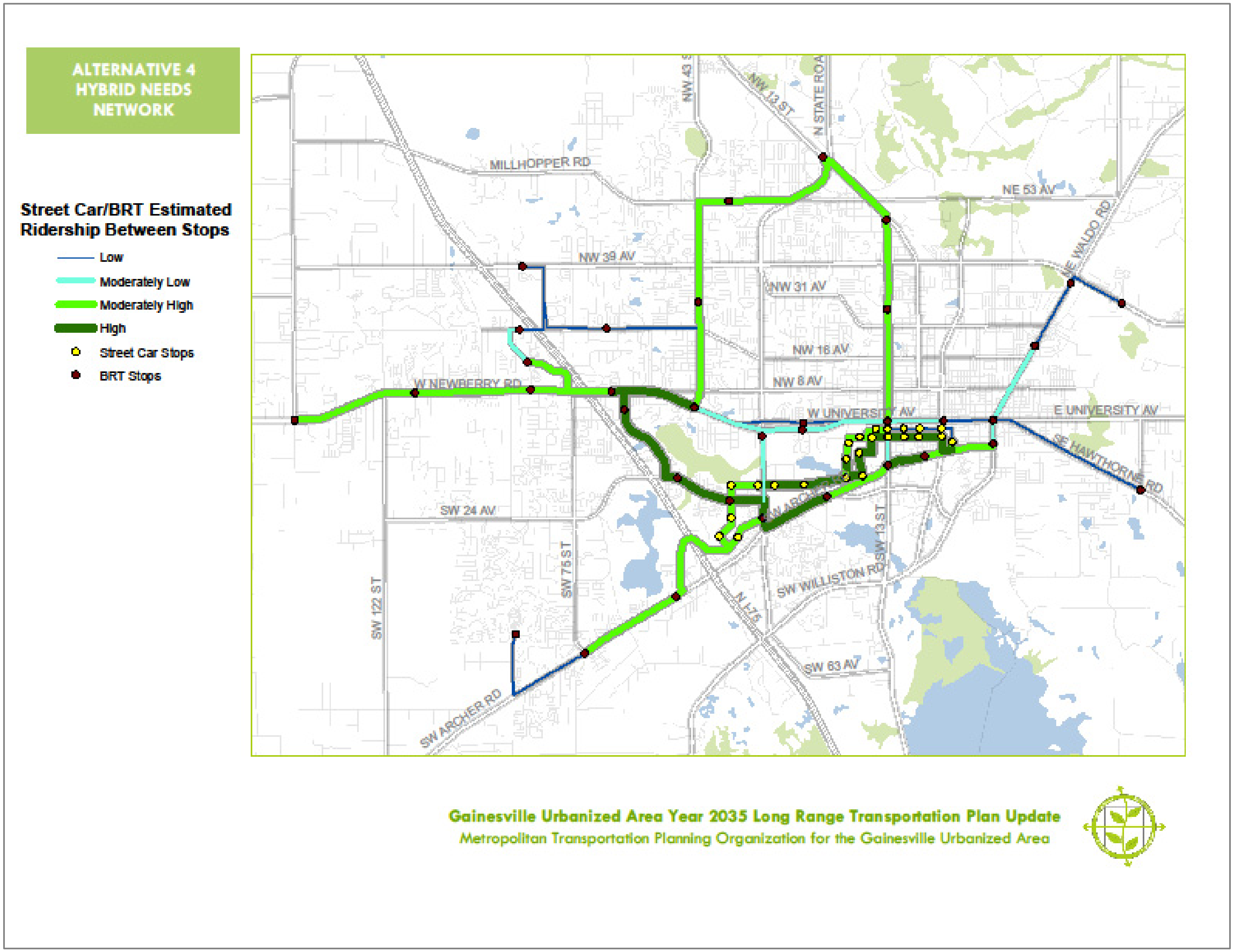
Map 34: Alternative 4 Estimated Streetcar/BRT Ridership between Stops



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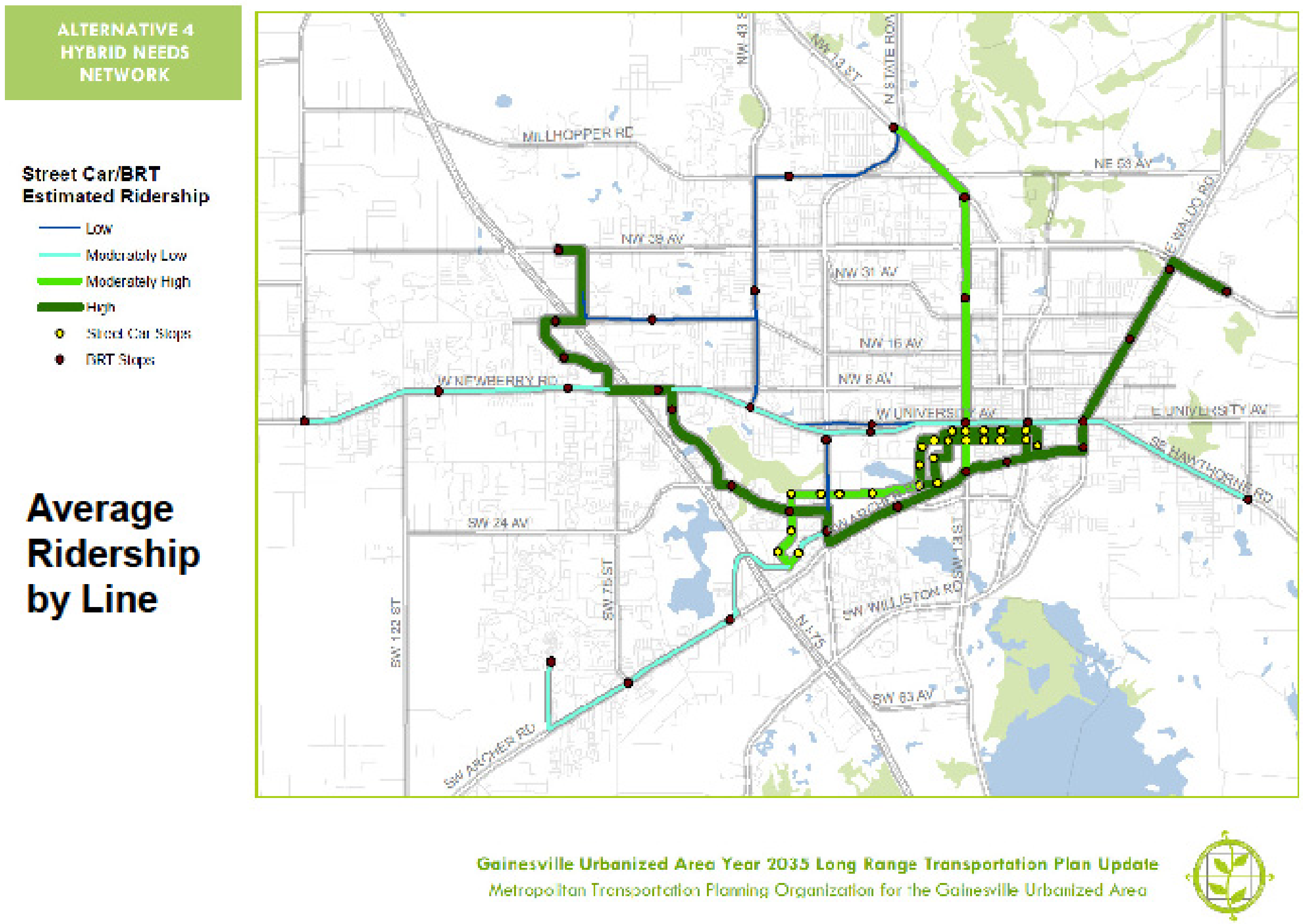
Map 35: Alternative 4 Average Streetcar/BRT Ridership by Line



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Peak Oil Adjustments and Findings

The peak oil analysis for the network alternatives included adjustments to the countywide travel demand model to estimate how rising fuel prices may affect travel demand. It is expected that more carpooling and ridesharing will take place for essential trips, and people will shift to other modes where practical, particularly for shorter trips, while reducing their non-essential auto trips. Eventually, people may decide to give up one or more cars and move closer to essential services and destinations.

Thus, testing peak oil adjustments to develop the Year 2035 Needs Plan entailed two primary factors: 1) adjusting automobile ownership, and 2) increasing vehicle operating costs. The accessibility analysis was the basis for the automobile ownership adjustments. In traffic analysis zones (TAZs) rated as High for accessibility, the scenario assumed an increase in 0- and 1-auto households (10 percent and 15 percent, respectively, over the base auto ownership percentages) and a reduction of similar magnitude in 2- and 3+- auto households (10 and 15 percent, respectively) in those same TAZs. This adjustment represents changes in travel habits of residents due to availability of multiple transportation options, jobs, housing, and retail/services. For Medium accessibility, the scenario adjusted these same percentages by three and seven percent (10 percent total). No adjustments were made to TAZs in the Low accessibility areas because of the relative lack of viable travel alternatives.

For vehicle operating costs, the peak oil analysis quadrupled these costs, with the basis of $2.50 per gallon fuel price to roughly approximate a $10 per gallon fuel price. While this may be low from a real-world perspective in 2035, this increase was viewed as a reasonable adjustment within the context of the 2007 validated model. The vehicle operating cost adjustments were made countywide, regardless of accessibility rating.

Table 44 below presents the results of the peak oil analysis when applied to each of the alternatives. Overall, the analysis indicates major increases in transit ridership and a large reduction in VMT and VHT as higher fuel prices and lower automobile ownership result in shorter trip lengths and fewer discretionary trips made by automobile. Transit ridership nearly triples under the hybrid Alternative 4, while traffic congestion on the roadway network virtually disappears. If this scenario becomes reality in some form, it lends substantial support to the idea of retrofitting the major roadway corridors in the area to accommodate transit-only lanes and improved facilities for bicycling and walking.

Table 44: Peak Oil Finding Results

Peak Oil Finding Results									
	Existing + Committed (E+C)	Alt 1 BRT Emphasis		Alt 2 Highway Emphasis		Alt 3 Streetcar		Alt 4 Hybrid	
Vehicle Miles of Travel (VMT)	11,918,235	9,829,106	-18%	9,806,616	-18%	9,780,660	-18%	9,836,402	-17%
Vehicle Hours of Travel (VHT)	381,467	257,464	-33%	250,630	-34%	249,365	-35%	252,512	-34%
Roadway Lane Miles	2,206	2,247		2,295		2,281		2,296	
Transit Only Lane Miles	0	105		0		43		116	
Total Lane Miles	2,207	2,352	7%	2,295	4%	2,324	5%	2,412	9%
Congested Lane Miles	373	70	-86%	57	-89%	38	-90%	38	-90%
Percent Congested	17%	3%	-82%	2%	-85%	2%	-90%	2%	-90%
Delay (minutes)	514	210	-59%	145	-72%	146	-72%	153	-70%
Fixed Route	26,936	45,751		45,999		42,972		56,368	
Premium Transit	-	10,944		4,736		18,042		18,728	
Total Transit	26,936	56,695	110%	50,735	88%	61,014	127%	75,096	179%
Bike / Pedestrian	70,048	90,275	29%	90,329	29%	89,230	27%	91,842	31%

Development and Testing of Alternative 4 / Hybrid Needs Network

Based on the results of the evaluation of Alternatives 1, 2, and 3, a fourth hybrid needs network was developed for testing as a potential needs plan.

Major Features of Alternative 4

A fourth hybrid or recommended needs plan alternative was developed based on evaluation of Alternatives 1-3 as well as guidance from the MTPO Committees (TAC and CAC) and the MTPO. Key components of Alternative 4 include:

- A core BRT system that provides access to the Santa Fe College area, the airport, Butler Plaza, East Gainesville, Northwood, along Tower Road, Archer Road, and University Avenue.
- Two streetcar lines connecting downtown Gainesville, UF, and the Butler Plaza area.
- Express bus service from Alachua, Archer, Hawthorne, Newberry and Waldo to the BRT system.
- Existing and expanded/new fixed route bus service, including premium service along 39th Ave from Santa Fe to the airport.
- Park and ride lots to provide connections to premium transit service.
- Multimodal emphasis corridors on University Ave and W 13th Street.
- New roadways and roadway widening projects to provide key connections for BRT and relieve congestion along major corridors, including the widening of Archer Road west of I-75.

Map 36 shows the transportation facilities evaluated in Alternative 4.

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Map 36: Alternative 4 Hybrid Needs Network

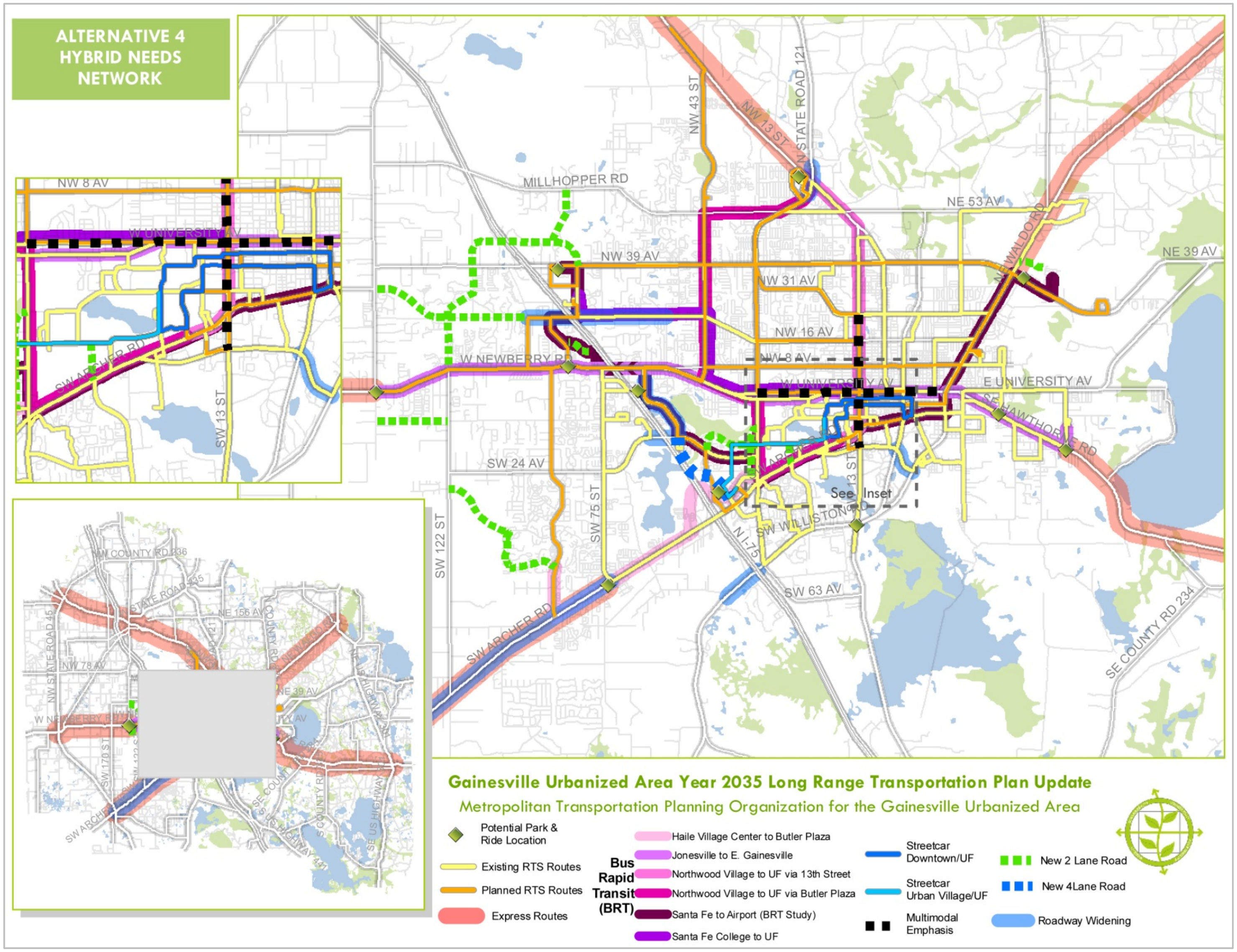

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Table 45 below presents a comparison of Alternative 4 elements versus the E+C network. As shown in the table, the alternative assumes a much greater level of transit operations than currently exists in the Gainesville area. These changes include regular fixed route bus service expansion as well as the BRT and streetcar networks. In addition, there is 90 additional lane miles of roadways included in this network alternative.

Table 45: Comparison of E+C / Alternative 4 Elements

	Increase in Transit Revenue Hours of Service from E+C to Alt 4	Increase in Transit Land Miles from E+C to Alt 4	Increase in Number of Buses from E+C to Alt 4	Increase in Highway Lane Miles from E+C to Alt 4
Fixed Route	1,822	82	144	90
Express Bus	240	53	30	
BRT	1,400	58	24	
Street Car	400	9	4	
Total	3,862	202	187	90

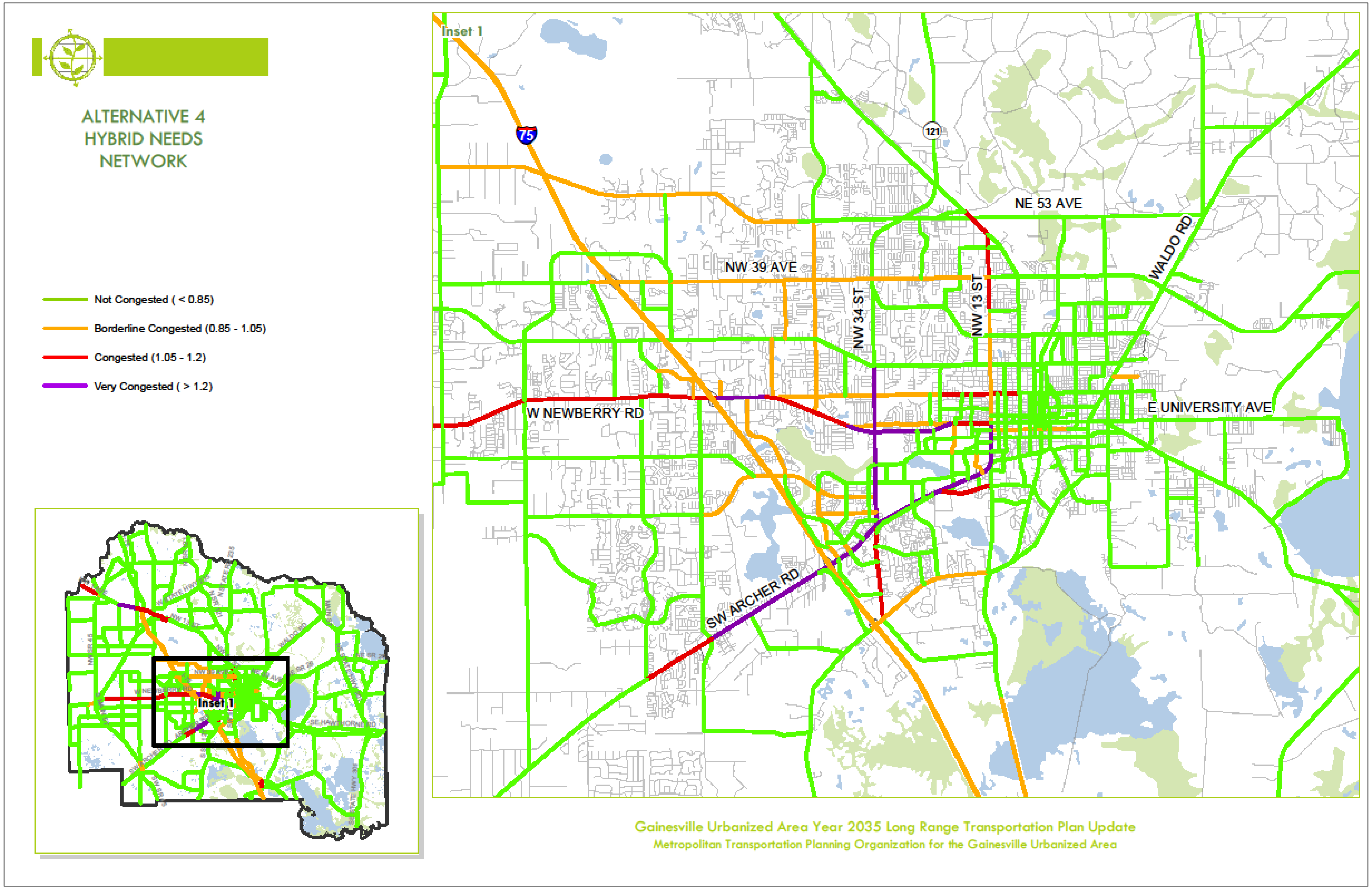
As shown in **Table 46** below, Alternative 4 is comparable to or outperforms the other alternatives on most evaluation factors, including reduction of VHT (-11%) and VMT (-2%). Congestion levels decline by more than half, with delay dropping by 32 percent over the E+C network. Transit ridership increases by 44 percent. The table shows the Alternative 4 results when tested with the peak oil factors for comparison purposes. **Map 37** shows projected congestion levels for Alternative 4.

Overall, the alternatives testing process demonstrated that there are viable approaches to the Gainesville Urbanized Area's mobility challenges through a combination of roadway, transit and bicycle/pedestrian strategies. Given the employment and educational concentrations at the University of Florida and Santa Fe College, as well as downtown Gainesville, transit is an extremely important part of the equation. The alternatives testing process revealed certain travel markets can support higher levels of transit service, including premium types of service that offer competitive travel times to automobile driving. Some level of congestion will likely always exist in the Gainesville area, unless peak oil conditions dramatically alter the land use and transportation environment and there is no short-term technology substitute. Some roadway capacity modifications will be needed, and these must be complemented with development of a parallel street network and a robust transit network serving all of the County's target growth areas.

Table 46: Alternative 4 Evaluation Results

Alternative 4 Findings					
	Existing + Committed	Alt 4 Hybrid Peak Oil		Alt 4 Hybrid	
Vehicle Miles of Travel (VMT)	11,918,235	9,836,402	9,836,402	11,714,159	-2%
Vehicle Hours of Travel (VHT)	381,467	252,512	252,512	340,868	-11%
Roadway Lane Miles	2,206	2,296	2,296	2,296	
Transit Only Lane Miles	0	116	116	116	
Total Lane Miles	2,207	2,412	2,412	2,412	9%
Congested Lane Miles	373	38	38	177	-53%
Percent Congested	17%	2%	2%	8%	-54%
Delay (minutes)	514	153	153	348	-32%
Fixed Route	26,936	56,368	56,368	32,795	
Premium Transit	-	18,728	18,728	6,105	
Total Transit	26,936	75,096	75,096	38,900	44%
Bike / Pedestrian	70,048	91,842	91,842	69,080	-1%

Map 37: Year 2035 Congestion Levels for Alternative 4 - Hybrid Needs Network



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30 Percent Mode Share

The MTPO staff used the Alternative 4 Hybrid Needs Network as the basis for an analysis of potential network modifications to achieve a 30 percent mode share for transit in the Year 2035. The analysis tested a variety of factors in sequence to achieve a 30 percent mode share, including a light rail network, higher parking costs and rising fuel prices. Ultimately, achieving a 30 percent overall mode share would require a combination of extensive transit service and substantially higher prices for fuel and parking.

Year 2035 Needs Plan

Overview

The development of the Year 2035 Needs Plan reflected a broad level of community dialogue, technical analysis and consideration of adopted local plans and policies. Most importantly, the MTPO's Long Range Transportation Plan provides an opportunity to examine various plans and strategies and put them into a coherent context for the urbanized area as a whole, to help guide the development of a transportation network coordinated with land uses and the integration of various modes. Thus, the Year 2035 Needs Plan reflects a desired level of mobility and accessibility throughout the Gainesville Urbanized Area that connects established and planned economic and activity centers of the region. The plan also reflects a desire to keep rural and lower density parts of the region in their present form by avoiding certain transportation investments that would encourage development in those areas. In that context, the Needs Plan is a useful tool for consideration at the state, regional and local levels because it can serve as an effective guide for how transportation and land use should work in concert to support the community and region from a "triple bottom line" sustainability perspective of responsible economic growth, environmental protection and social well-being and equity.

The selection of Needs Plan projects involved close coordination with the MTPO's advisory committees to review and consider the technical merits of individual transportation projects, as well as their consistency with the approved vision statement, goals and objectives defined earlier in the LRTP planning process. With Alternative 4, a hybrid version of the other three network alternatives, as a starting point, the advisory committees each recommended several refinements to create a preferred Needs Plan that was presented to the MTPO for its endorsement and adoption.

To aid in the development of Needs Plan recommendations, each of the projects was ranked against of set of criteria that were developed consistent with the vision statement, goals and objectives. The criteria, described more fully in the following section, allotted potential points to each project based on whether it is parallel to an existing or future congested roadway; whether it extends existing transit service to serve areas meeting minimum population and employment density thresholds; whether the project is located in a high, medium or poor accessibility location in the metropolitan area; whether the project connects two or more collector or arterial roads; and whether the project increases transit service frequency less than 30 minutes or expands operating hours. While it is difficult to come up with a project ranking formula that completely accounts for all important project variables, the MTPO's ranking process reflected a multimodal approach to identifying transportation projects for the Needs Plan. MTPO staff used the ranking to develop its initial set of Needs Plan recommendations for review by the advisory committees.

Public input also served to help select Needs Plan projects. Based on the Needs Plan public workshop in February 2010, feedback on the project web site, and meetings with various community groups, transportation projects that received support from meeting participants were highlighted in discussions with the MTPO and advisory committees. In particular, Archer Road appeared to receive most of the public input. Whether it involved widening the road to four lanes from the Gainesville Urbanized Area to the City of Archer, or ways to more safely accommodate pedestrians, bicyclists and transit riders within the Urbanized Area, the Archer Road corridor was a key community focal point during development of the plan. While other major corridors in the plan, such as Newberry Road, Tower Road, SW 20th Avenue and NW 23rd Avenue all received some level of public input, Archer Road generated the most conversation, likely because of its importance to serve key economic centers in Alachua County and Gainesville.

Following review and refinement based on input from the advisory committees, the MTPO voted to adopt the Year 2035 Needs Plan at its June 2010 meeting. **Map 38** presents the adopted 2035 Needs Plan. The multimodal plan includes roadway projects that address long-standing traffic congestion issues in the community, as well as freight mobility projects to better connect truck traffic with the Strategic Intermodal System. The plan also includes an extensive set of transit projects that build upon the robust transit network serving the University of Florida and surrounding areas, including a network of Bus Rapid Transit service projects and a streetcar network that would link downtown Gainesville with the University and Butler Plaza. Finally, the Needs Plan includes Trails and other bicycle/pedestrian projects that reflect adopted plans and established priorities defined by the MTPO's Bicycle/Pedestrian Advisory Board, including the Archer Braid network of facilities that connects western parts of the Urbanized Area across I-75 and into the University area.

The Year 2035 Needs Plan is an integrated plan that recognizes the adopted Comprehensive Plans on the part of the City and County, and reflects other community planning initiatives for environmental preservation, targeted economic growth and social well-being and equity, as reflected by the availability of transportation options and strategies to overcome barriers to mobility and accessibility in the transportation network. Another aspect of the integrated nature of the Needs Plan is the development of the roadway network to support plans for Bus Rapid Transit. For BRT to be an effective transportation alternative, it needs competitive travel times to travel by automobile. Thus, a central part of the roadway needs plan is to provide the roadway connections, particularly in unincorporated Alachua County in the western part of the Urbanized Area, to ensure that BRT can efficiently and effectively serve planned land development projects and connect people with logical educational, employment and retail shopping destinations elsewhere in the County and City of Gainesville.

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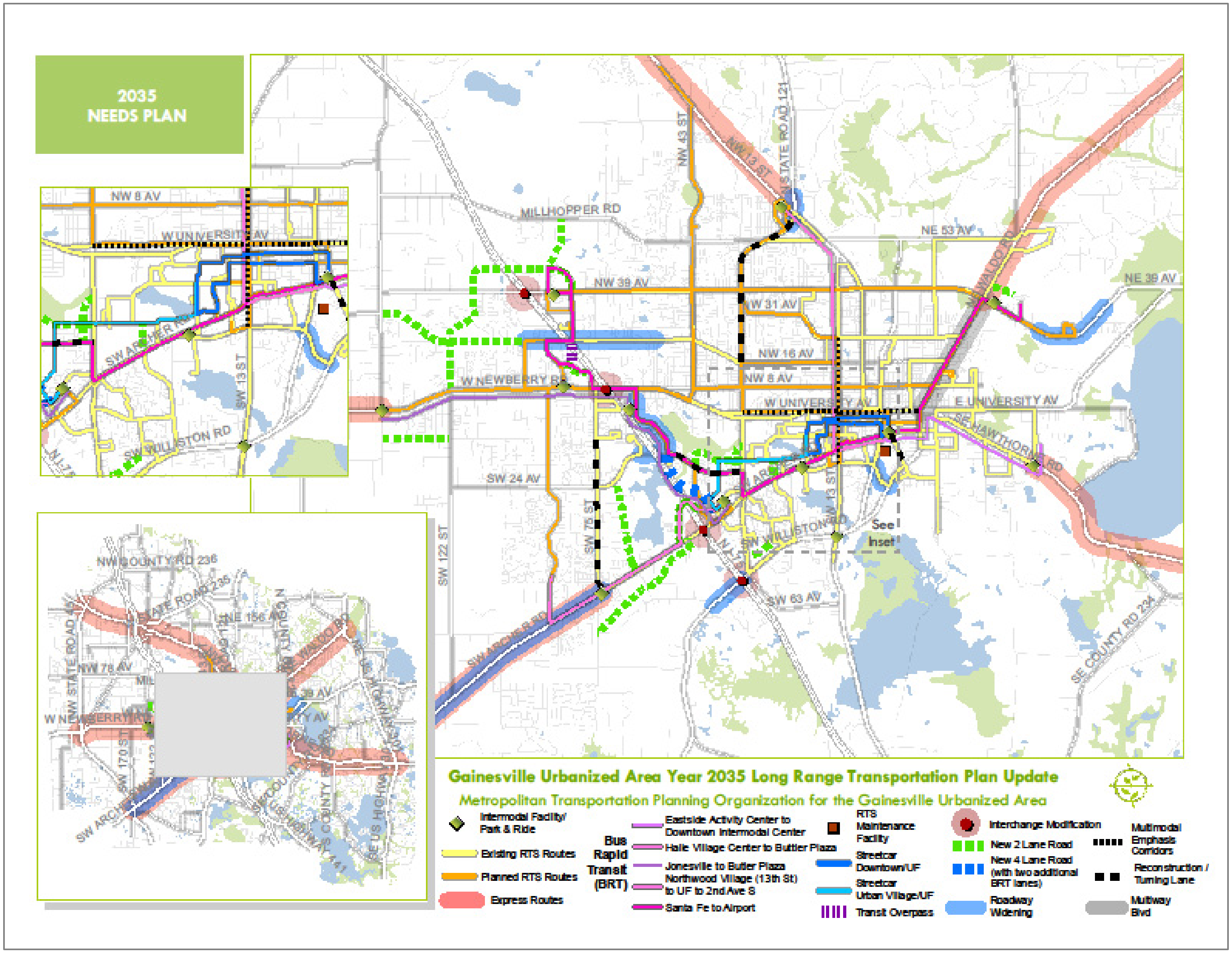
Map 38: Year 2035 Needs Plan



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The Year 2035 Needs Plan does not solve all the congestion problems that are projected by 2035. Rather, the Needs Plan is primarily a strategic mobility plan targeting improvements that create additional travel choices for people, with only a selected number of roadway capacity projects to address congestion problems. This approach reflects the constrained nature of many congested roadways in the Gainesville area, such as Millhopper Road, Archer Road, SW 34th Street and Newberry Road, which for various reasons are not planned for widening due to environmental, physical or policy reasons. The plan also focuses on more street connectivity to provide other route options that parallel congested roads or provide shorter travel paths to enable travelers to reach their destinations while avoiding congested road segments.

Map 39 shows congested roadways with the Year 2035 Needs Plan. As shown in the map, chronically congested roadways such as portions of Newberry Road, West 34th Street, US 441, SW 16th Avenue, NW 8th Avenue and Archer Road will likely continue some level of congested operating conditions into the future. With the exception of NW 8th Avenue in the core part of the Gainesville Urbanized Area where a strong grid street network exists, each of these roadways includes a higher level of transit service as part of the needs plan, including various Bus Rapid Transit network segments. In addition, as shown on the map, the adopted Needs Plan indicates that much of the projected 2035 congestion with the Existing Plus Committed network (assuming only projects included through 2014 per the adopted Transportation Improvement Program and FDOT Work Program) will be effectively resolved. In particular, the widening and extension of NW 23rd Avenue helps congestion levels on both Newberry Road and NW 39th Avenue. Other projects, such as capacity improvements to NW 34th Street and SW 20th Avenue to add turn lanes, do not entail adding to the number of through travel lanes but still help to improve both access and mobility, while also reducing safety problems that often occur on two-lane roads where left-turning vehicles must wait for gaps in on-coming traffic to turn, thus backing up all cars in the queue behind them.

The following sections describe the specific elements of the Year 2035 Needs Plan, including a discussion on the relative merits of various projects for transit, roadways and multi-use trails.

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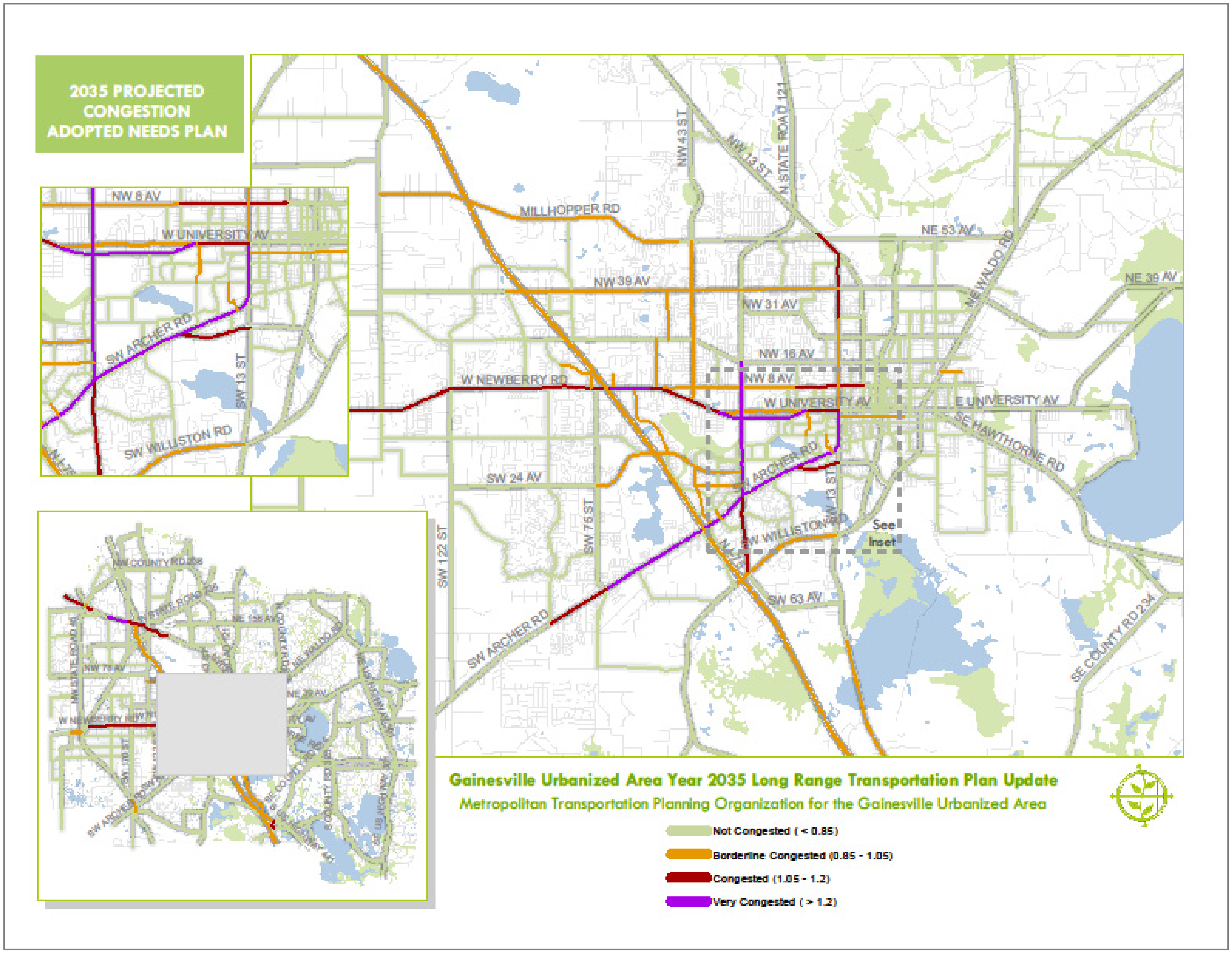
Map 39: Year 2035 Projected Congestion for the Adopted Needs Plan



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Transit

Transit is a key element of the Year 2035 Needs Plan, as much of the roadway network in the Gainesville Urbanized Area is constrained to the existing number of lanes, and Alachua County's recently adopted Comprehensive Plan enables development to contribute toward a Bus Rapid Transit network as a means of achieving concurrency for traffic impacts.

Table 47 provides a summary of the Transit Needs Plan project types, and **Map 40** presents a map of the Transit Needs Plan projects.

The adopted Needs Plan for transit outlines a vision for transportation in which a spine Bus Rapid Transit line provides a high capacity east-west connection through the core of Urbanized Area, linking newer commercial, health care and educational centers in the I-75 corridor on the west with the University of Florida and the Shands/VA medical complex, downtown Gainesville and the Gainesville Regional Airport to the east. With end points generally at Santa Fe College and the airport, the spine route converges on the Shands/VA complex, which is the major employment center in the county and is located immediately south of the core part of the University of Florida campus. A new Multimodal Regional Transportation Center is envisioned in this area – potentially at the triangle where Archer Road and SW 16th Avenue split – to serve as a connecting point for the regional spine BRT route and a combination of local bus service and shuttle feeder routes, as well as bicycle and pedestrian connections.

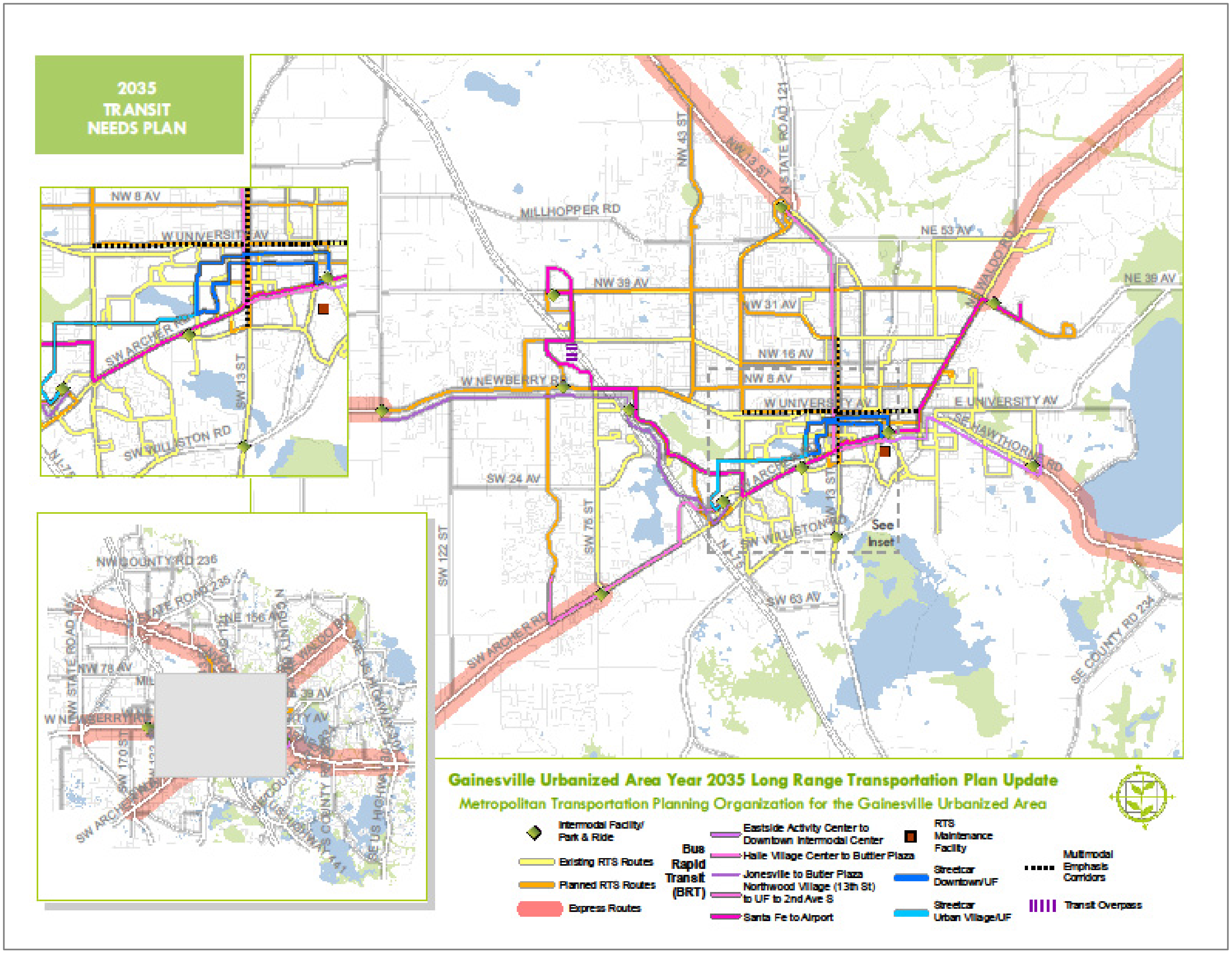
Other BRT lines are included in the Needs Plan to feed into the spine route linking Santa Fe College with the airport. These feeder routes would provide connections from the Haile Village Center and along Archer Road to the Butler Plaza commercial center, along US 441 at NW 34th Street into downtown, and from the Eastside Activity Center along SE Hawthorne Road into downtown.

For the BRT network, it is important to note that there are several new roadway projects included in the plan that exist primarily to provide running ways for the BRT. One of these – the southern extension of NW 83rd Street with an overpass at I-75 – is an example of how new street connections are needed to provide more direct transit access between origins and destinations to improve transit travel time and overcome barriers to mobility.

Table 47: Year 2035 Transit Needs Plan Components

Year 2035 Needs Plan: Transit			
Element	**Vision**	**Goal Area**	**Objectives**
Bus Rapid Transit	Multimodal transportation system: network of rapid transit facilities	Economic vitality/ community livability	Improve viability of alternatives to SOV
Streetcar	Integrated land use/transportation: context-sensitive transportation	Economic vitality/ community livability	Improve access to public places and centers of activity
Regional express bus service	Multimodal transportation system/regional: preserve greenbelts	Economic vitality/ community livability	Expand reach of regional transit system
Fixed route bus	Multimodal transportation system: increased east-west mobility/accessibility	Sustainable decision-making/preservation	Increase accessibility for all residents and visitors
Intermodal centers / park & ride	Integrated land use/transportation: multimodal-supportive	Sustainable decision-making/ preservation	Create multimodal access hubs
RTS maintenance facility and bus replacements	Multimodal transportation system: investments to direct growth to infill/redevelopment areas	Transportation network management/ Sustainable decision-making/preservation	Prioritize preservation / maintenance; phase in new vehicle fleets to maximize energy efficiency

Map 40: Year 2035 Transit Needs Plan



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In the core part of the area, a streetcar is planned to link downtown Gainesville with the University of Florida and the Butler Plaza/urban village area located immediately west of the main campus. The streetcar would potentially operate along West University Avenue or SW 2nd Avenue, connecting through the main UF campus to Shands Hospital, and then continue west along Museum and Hull Roads across SW 34th Street into the Butler Plaza area. An exact alignment would be determined from a future feasibility study.

In addition, the Needs Plan includes a network of commuter/express bus routes linking the outlying municipalities of Archer, Newberry, High Springs, Alachua, Waldo and Hawthorne into Gainesville. The plan envisions these express routes operating primarily during the AM and PM peak periods, and connecting with the BRT lines at a park-and-ride lot/intermodal facility. The specific characteristics of these transfer points would need to be refined in a more detailed plan, but the intent is to facilitate transfers between modes and types of service, and provide supporting infrastructure (e.g., shelters, kiosks, etc.). In some cases, park-and-ride could be a component, but in others, such as at the airport, that might not make the most sense.

Other features of the Transit Needs Plan include the expansion of local bus service to improved service frequency levels on existing routes and new service on major corridors, such as NW/NE 53rd Avenue and NW 43rd Street.

An essential element of this transit vision is the need for a new RTS maintenance facility. As a reflection of the system's rapid growth over the last decade, it has become a challenge to make sure the capital facilities are in place to support the expanded level of bus operations. The Federal Transit Administration has put the City of Gainesville on notice that further bus service expansion cannot occur without a comparable upgrade in the maintenance facilities necessary to support a safe and efficient operating environment. The only new buses that can operate in revenue service are replacements for aging buses in the fleet. Thus, the RTS bus network is essentially in a holding pattern at existing service levels, regardless of additional funding for new buses and drivers, without significant expansion of its maintenance capacity.

Table 48 presents a list of the individual Transit Needs Plan projects shown on **Map 40**.

Table 48: Year 2035 Transit Needs Plan Projects

Facility/Location	From/To	Type	Length
Santa Fe to Airport (via Oaks Mall, Archer Road, Downtown)		Bus Rapid Transit (Dedicated Lane)	16.3
Santa Fe to Newberry Road (NW 83rd St, NW 76th Blvd)		Bus Rapid Transit (Dedicated Lane)	3.7
Newberry Road (NW 76th Blvd to NW 62nd Blvd		Bus Rapid Transit (Dedicated Lane)	0.9
NW 62nd Blvd / SW 37th Blvd (Newberry Rd to Archer Rd)		Bus Rapid Transit (Dedicated Lane)	3.9
Archer Rd (SW 37th Blvd to US 441)		Bus Rapid Transit (Dedicated Lane)	2.3
Depot Ave / Waldo Rd (US 441 to Airport)		Bus Rapid Transit (Dedicated Lane)	5.5
Haile Village Center to Butler Plaza Intermodal Center		Bus Rapid Transit (Dedicated Lane)	6.5
Jonesville to Butler Plaza Intermodal Center (via Oaks Mall)		Bus Rapid Transit (Dedicated Lane)	14.2
Northwood Village to UF/ 2nd Ave S (via 13th Street)		Bus Rapid Transit (Dedicated Lane)	5.3
Eastside Activity Center (@ SE 43rd St) to Downtown RTS Transfer Center		Bus Rapid Transit (Dedicated Lane)	
Downtown/UF		Streetcar	5.4
Urban Village/UF		Streetcar	7.1
High Springs to US 441/Northwood Village Intermodal Center		Express Bus Route	13.2
Archer to Butler Plaza Intermodal Center (via Archer Road)		Express Bus Route	7.2
Newberry to Newberry Road Intermodal Center (via Newberry Road)		Express Bus Route	6.8
Waldo to Airport Area Intermodal Center (via Waldo Road/US301)		Express Bus Route	10.2
Hawthorne to Eastside Intermodal Center (via Hawthorne Road)		Express Bus Route	12.2
Existing RTS Fixed Route Bus (increased frequency)		Fixed Route Bus	5 Routes
Planned RTS Fixed Route Bus (new fixed route service)		Fixed Route Bus	6 Routes
Fixed Route Bus from Santa Fe to Airport on NW/NE 39th Ave		Fixed Route Bus	
I-75 and Newberry Road (Oaks Mall)		Park & Ride Lot	

Facility/Location	From/To	Type	Length
Newberry Road and Ft. Clarke Road		Park & Ride Lot	
US 441 and Williston Road		Park & Ride Lot	
SE Hawthorne Road and SE 24th Street/SE 8th Ave		Park & Ride Lot	
Newberry Road and CR 241 (Jonesville)		Intermodal Center/Park & Ride Lot	
Butler Plaza Area		Intermodal Center/Park & Ride Lot	
Archer Road and Tower Road (SW 75th Street)		Intermodal Center/Park & Ride Lot	
Eastside Activity Center (SE 43rd Street and SE Hawthorne Road)		Intermodal Center/Park & Ride Lot	
NW 34th Street and US 441 (Northwood Village)		Intermodal Center/Park & Ride Lot	
NW 39th Avenue and I-75 (Springhills Area)		Intermodal Center/Park & Ride Lot	
NE 39th Avenue and Waldo Road (Airport Area)		Intermodal Center/Park & Ride Lot	
Downtown Intermodal Center (RTS Transfer Center)		Intermodal Center/Park & Ride Lot	
RTS Maintenance Facility		Transit Maintenance Facility	
Multimodal Regional Transportation Center (Archer Rd/SW 16th Ave)		Multimodal Regional Transit Center	
Bus Replacement Program			

Roadway

The Roadway Needs Plan for the Gainesville Urbanized Area is relatively modest in scope, focusing on key connectivity strategies, enhanced mobility for trucks, targeting critical segments for "complete street" treatments to enhance mobility and accessibility for all users, and operational strategies to reduce delays and increase safety. These projects reflect an assessment of constrained roadways and opportunities to create parallel street networks to better distribute traffic and provide travel alternatives.

Table 49 provides a summary of the Roadway Needs Plan project types, and **Map 41** presents the Year 2035 Roadway Needs Plan for the Urbanized Area.

The main capacity-adding features of the Roadway Needs Plan entails widening SW 62nd Boulevard between the Oaks Mall area (Newberry Road) and SW 20th Avenue, and constructing a new four-lane extension of the road south into the Butler Plaza commercial development, where it would connect to Archer Road using existing the street network. This new four-lane segment would include two additional center lanes exclusively for the planned Bus Rapid Transit spine route. The connection provides an alternative route to avoid congested SW 20th Avenue and Newberry Road, and provides a key link between higher density residential and employment/shopping areas. Another major capacity project is the widening of Archer Road (SR 24) from the Archer City limits to approximately SW 75th Street, only a portion of which is inside the Gainesville Urbanized Area. This roadway is exceeding current level of service thresholds, and also experiences safety problems due to the position of the sun during morning and evening commute periods. In addition, the Needs Plan identifies widening a portion of NW 23rd Avenue to improve east-west mobility in the vicinity of Santa Fe College, providing parallel capacity to congested and constrained segments of NW 39th Avenue and Newberry Road. Finally, there are shorter segments of added capacity on Williston Road at the approach to I-75, SR 121 (NW 34th Street) at US 441, a segment of NE 39th Avenue, and SE 16th Avenue, between Main Street and Williston Road. This latter project is needed to bring SE 16th Avenue up to standard for potential designation as SR 24 in the future, and to facilitate truck movement around downtown Gainesville to Strategic Intermodal System highways, such as Williston Road (SR 331) and SE Hawthorne Road (SR 20). This may eventually enable more pedestrian- and transit-oriented roadway modifications to Archer Road, although that is not currently planned.

Three other important projects support improved traffic operations and better accommodation of transit: adding center turn lanes on NW 34th Street, the addition of a center turn lane with enhanced mid-block transit stops on SW 20th Avenue, and the reconstruction of SW 75th Street (Tower Road) to enhance operations with a series of intersection modifications. Each of these projects represents context-sensitive mobility solutions to roadways that, for different reasons, experience significant levels of congestion during the AM and PM peak periods.

Table 49: Year 2035 Roadway Needs Plan Components

Year 2035 Needs Plan: Roadway			
Element	**Vision**	**Goals**	**Objectives**
New Roadways	Integrated land use/transportation: complementary context-sensitive transportation networks	Sustainable decision-making/preservation	Improve interconnectivity of streets
Widening	Integrated land use/transportation: complementary context-sensitive transportation networks	Transportation network management and operations	Increase safety and disperse traffic across multiple roadways with parallel network
Multimodal Emphasis Corridors	Multimodal transportation system: investments to direct growth to infill/redevelopment areas	Sustainable decision-making/preservation	Improve energy efficiency/GHG emissions by promoting sustainable street designs
Reconstruction / Turning Lane / Multi-way Blvd	Integrated land use/transportation: complementary context-sensitive transportation networks	Transportation network management and operations	Improve operational efficiency based on balance of needs in corridor
Interchange Modification	Multimodal transportation system: safe and secure	Economic vitality/ community livability	Preserve intended function of the SIS for intercity travel and freight movement

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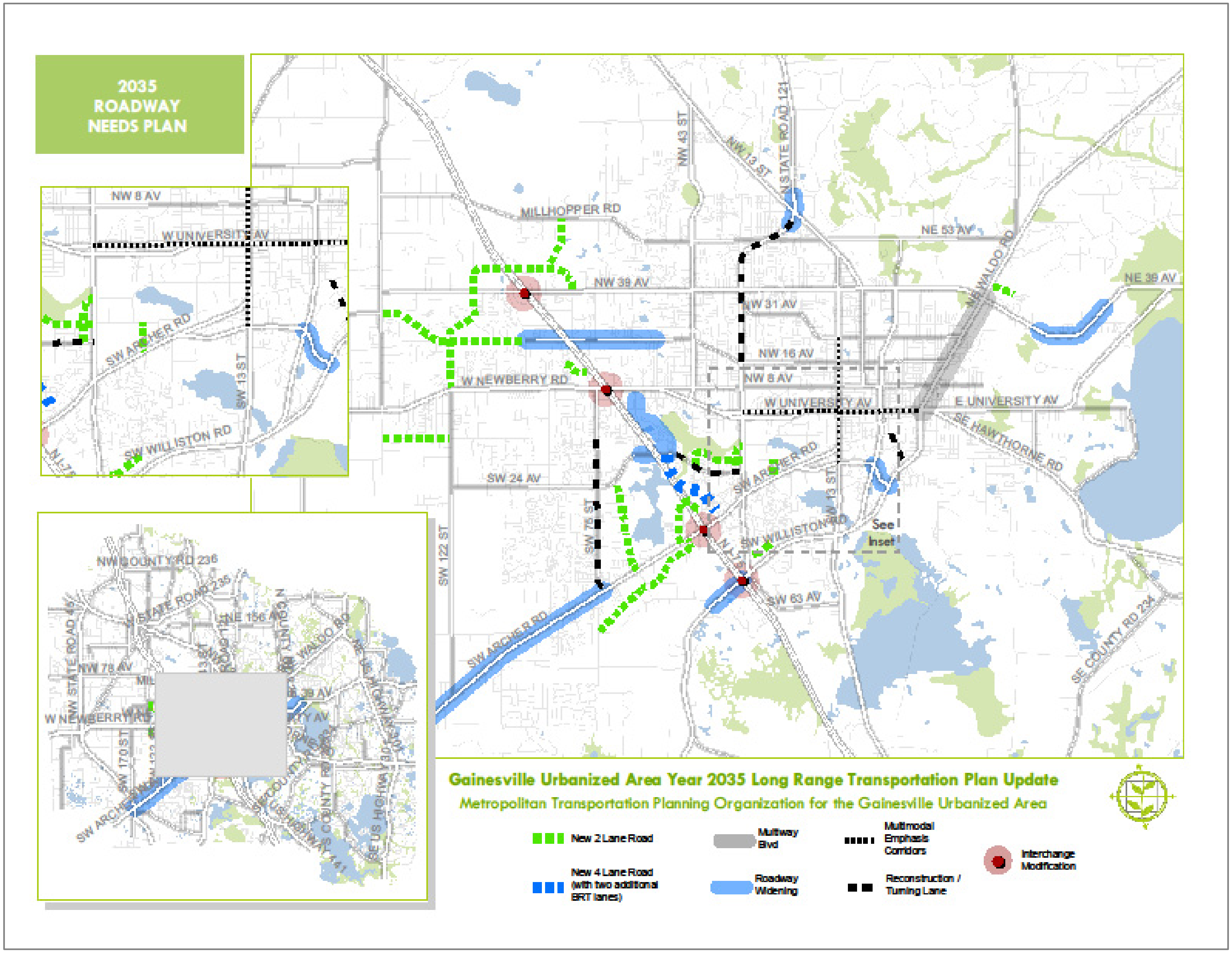
Map 41: Year 2035 Roadway Needs Plan Projects



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Multimodal Emphasis Corridors

Another aspect of the Roadway Needs Plan is the identification of segments of University Avenue and West 13th Street (US 441) as multimodal emphasis corridors. The segments run from West 34th Street to Waldo Road and NW 31st Avenue to SW 16th Avenue, respectively. These two corridors function as the main connections into the heart of the Gainesville Urbanized Area, and their adjacent land uses include a relatively dense and diverse mix of institutional, residential and commercial land use destinations that promote walking, cycling and use of transit. As state roadways, they also function as important corridors for automobile and truck traffic, so the key is to find a good balance among modes so that both mobility and accessibility work effectively in tandem for all the users of these two roadways.

Due to their unique geographic location, constrained right-of-way and the need for a high level of accessibility, the Multimodal Emphasis Corridors identified in the Plan are places where design treatments shall be considered to provide additional safety for non-motorized transportation users or to achieve an appropriate balance among competing needs of all users of these roadways. The Multimodal Emphasis Corridors are candidates for design elements that may include signage, pavement markings, medians, facility modifications or additions (including narrower or fewer lanes, wider sidewalks and bike lanes), operational strategies, curb extensions and other measures to enhance multimodal mobility and accessibility. The specific strategies for these corridors will be determined in consultation with the Florida Department of Transportation, City of Gainesville, Alachua County and the public in the future. Potential strategies to be applied to these corridors may entail the following treatments:

Roadway

- Roadway reconstruction to reduce long-term maintenance liabilities
- Improved operational and traffic flow through intersections and roundabouts that both slow traffic and facilitate its flow
- Reduce lane widths as appropriate to enable better non-auto infrastructure
- Roadway modifications that support multi-occupant vehicle use
- Roadway-related (functional efficiency/safety) improvements
- Signal coordination optimization based on current traffic flow patterns

Pedestrian

- Complete segments of missing sidewalks to provide direct and continuous connections between destinations and to transit
- Making sidewalks wider where appropriate to improve pedestrian comfort and access
- Adding enhanced pedestrian crossings at strategic locations
- Installation of pedestrian signals and crossing countdown heads

Bicycle

- Complete missing bicycle paths and bicycle lanes to provide direct and continuous connections
- Provide enhanced and more visible bicycle parking
- Provide bicycle route signage

Transit

- Construct enhancements at key transit stops to include, at a minimum, transit signs and pavement platforms; at higher demand transit stops, provide shelters, benches and trash receptacles
- Operational system efficiency such as ITS/ up-to-the-minute technology, bus bypass lanes, bus signal prioritization

At this time, these projects do not include lane reductions. Future study would need to justify such potential treatments by demonstrating adequate capacity for mobility on parallel streets as well as the ability to maintain safe and efficient traffic operations.

Strategic Intermodal System

Florida's Strategic Intermodal System (SIS) of highways connects urban areas and economic hubs such as seaports, airports and rail intermodal facilities. In the Gainesville Urbanized Area, the SIS includes SR 26 (Newberry Road), Interstate 75, SR 331 (Williston Road) and SR 20 (Hawthorme Road). Of these roadways, both SR 26 and I-75 currently experience recurring congestion, and by 2035 the level of congestion is expected to worsen. The other SIS roadways generally operate at an acceptable level of service, and are expected to continue operating in that acceptable condition through 2035.

While the Year 2035 Needs Plan does not entail further widening of either SR 26 or I-75 through the Gainesville Urbanized Area, there are substantial mobility improvements planned for these roadways. First, Newberry Road, portions of which are already at six lanes, is viewed as a primary transit corridor into the University of Florida. A major BRT spine route is planned for a portion of this corridor, along with a feeder BRT line from Jonesville into the Oaks Mall area. Both would be supported by an express bus route from outlying Newberry to connect with the BRT and local fixed route bus network at a park-and-ride location in the vicinity of Fort Clarke Boulevard and at the Oaks Mall. The specific park-and-ride lot location will likely be determined through development mitigation and more detailed analysis.

Second, the Florida Department of Transportation has identified several interchange modifications for I-75 in the Gainesville area as an outcome of the I-75 Master Plan. Each of the four interchanges in the Gainesville Urbanized Area – at NW 39th Avenue, Newberry Road, Archer

Road and Williston Road – are in need of additional capacity to safely accommodate future ramp volumes and avoid queues backing up into the mainline lanes on the interstate.

Table 50 presents a summary of the Roadway Needs Plan projects.

Table 50: Year 2035 Roadway Needs Plan Projects

Facility/Location	From/To	Type	Length
Airport Access Road	Waldo Rd to Airport	New 2 lane road	0.5
Archer Road	West of I-75 to Archer (city limits)	Add 2 lanes (2 to 4)	7.0
Hull Road Extension	SW 34th St to SW 43rd St Ext	New 2 lane road	1.1
Radio Road Extension	SW 34th St. to Hull Rd Extension	New 2 lane road	1.0
Springhills Boulevard	NW 83rd St Ext to NW 115th St	New 2 lane road	2.3
Tower Road	SW 8th Avenue to Archer Road	Reconstruct (2 lane upgrade)	3.2
University Avenue	NW 34th St to Waldo Rd	Multimodal Emphasis	3.7
Waldo Road Multiway Boulevard	University Avenue to NE 39th Street	New 2 lane road	2.6
Williston Road	West of I-75 to SW 62nd Ave	Add 2 lanes (2 to 4)	0.8
NE 39th Avenue (SR 222)	Gainesville Regional Airport to NE 27th Ave	Add 2 lanes (2 to 4)	1.7
NW 122nd Street Extension	NW 46th Ave to Newbery Rd	New 2 lane road	2.2
NW 23rd Avenue	NW 55th St to NW 98th St	Add 2 lanes (2 to 4)	2.7
NW 23rd Avenue Extension	NW 98th St to NW 143rd St (CR 241)	New 2 lane road	3.1
NW 34th Street	NW 16th Ave to US 441	Add turn lanes	3.7
NW 34th Street/SR121	NW 58th Ave to NW 67th Place	Add 2 lanes (2 to 4)	0.7
NW 76th Boulevard Extension	NW 76th Blvd to Ft Clarke	New 2 lane road	0.6
NW 83rd Street Extension	NW 39th St to Millhopper Rd	New 2 lane road	1.5
NW/SW 13th Street	SW 16th Ave to NW 23rd Ave	Multimodal Emphasis	2.6
SE 4th Ave	Depot Ave to Williston Rd	Reconstruct (2 lane upgrade)	0.7
SE 16th Avenue	Main St to Williston Rd	Add 2 lanes (2 to 4)	0.6
SW 8th Avenue Extension	SW 122nd St to SW 143rd (CR 241)	New 2 lane road	1.4
SW 20th Avenue	SW 34th Ave to SW 43rd St	Add turn lanes	1.0
SW 20th Avenue	SW 43rd St to SW 62nd Blvd	Add 2 lanes (2 to 4)	0.6

Facility/Location	From/To	Type	Length
SW 23rd Terrace Extension to University of Florida campus	Hull Rd to Archer Rd	New 2 lane road	0.3
SW 45th Street	Archer Rd to I-75	New 2 lane road	0.6
SW 47th Street Extension	SW 47th St to SW 40th Place	New 2 lane road	0.45
SW 57th Road	SW 75th Street to SW 63rd Boulevard	New 2 lane road	2.24
SW 62nd Boulevard*	Newberry Rd to SW 20th Ave	Add 2 lanes (2 to 4)	1.7
SW 62nd Boulevard Extension*	SW 20th Ave to Windmeadows Blvd	New 4 lane road	1.0
SW 63rd/SW 67th Ave	SW 24th Ave to Archer Road	New 2 lane road	1.9
I-75 @ SR 222/39th Avenue		SIS Interchange Modification	
I-75 @ SR 24/Archer Road		SIS Interchange Modification	
I-75 @ SR 26/Newberry Road		SIS Interchange Modification	
I-75 @ SR 331/Williston Road		SIS Interchange Modification	

Bicycle and Pedestrian Needs

The Gainesville Urbanized Area has long enjoyed a reputation as one of the most supportive communities for bicycling and walking, with an extensive network of sidewalks, bike lanes and shared use paths, such as the Waldo Road Trail, the Depot Avenue Trail and Gainesville – Hawthorne Rail Trail, which was recently extended into the downtown area to connect with the new 6th Street Trail. However, there is certainly more room for improvement, particularly in the western part of the Urbanized Area, which lacks the same caliber of off-road shared use paths as exists east of the University of Florida. Heavy traffic volumes, higher speed roads and a limited number of crossing points at I-75 make it even more important to consider additional on- and off-road non-motorized transportation facilities.

The Long Range Transportation Plan focuses on major bicycle/pedestrian facilities, such as off-road trails and places where enhanced roadway crossings should occur, rather than completing sidewalk gaps or modifying existing facilities. There are other elements of the metropolitan transportation planning process, including the Congestion Management Process, the work of the Bicycle/Pedestrian Advisory Board, and identifying where and how to spend Enhancement funds, that better lend themselves to more specific and detailed facility treatments, as well as various programs and policies that encourage walking and cycling.

Table 51 provides a summary of the Bicycle and Pedestrian Needs Plan project types.

Table 51: Year 2035 Bicycle/Pedestrian Needs Plan Components

Year 2035 Needs Plan: Bicycle/Pedestrian			
Element	**Vision**	**Goals**	**Objectives**
Safety Strategies	Integrated land use/transportation: complementary context-sensitive transportation networks	Safety for mobility and accessibility	Increase safety for vulnerable road users
Braids Network	Multimodal transportation system: sustainable, energy efficient, livable land use/transportation	Economic vitality/ community livability	Improve bicycle/pedestrian accessibility
Regional Trails	Integrated land use/transportation: complementary context-sensitive transportation networks	Sustainable decision-making/preservation	Enhance connectivity; support creation of greenbelt

As shown in **Map 42**, the Year 2035 Bicycle and Pedestrian Needs Plan includes a network of multi-use urban trails (also called shared use paths) to improve connectivity, mobility and access between higher density residential areas and the commercial, educational and employment centers in the I-75 corridor and at the University of Florida. Of these trails, the Archer Braid has been identified by the MTPO's Bicycle/Pedestrian Advisory Board as a top priority. Consisting of 16 off-road trail segments or components, the Archer Braid weaves between the University of Florida, future development in the Butler Plaza area and the SW 91st Street/Tower Road corridor, with grade separated crossings of SW 34th Street and I-75. Other needed bicycle and pedestrian projects include bicycle lanes on West 13th Street (US 441) from NW 23rd Avenue to Archer Road, and bike lanes/paved shoulder on SW 122nd Street, NW 91st Street and Newberry Road. Other projects are scattered through the Urbanized Area. **Table 52** presents a summary of the Bicycle and Pedestrian Needs Plan projects.

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Map 42: Year 2035 Bicycle/Pedestrian Needs Plan

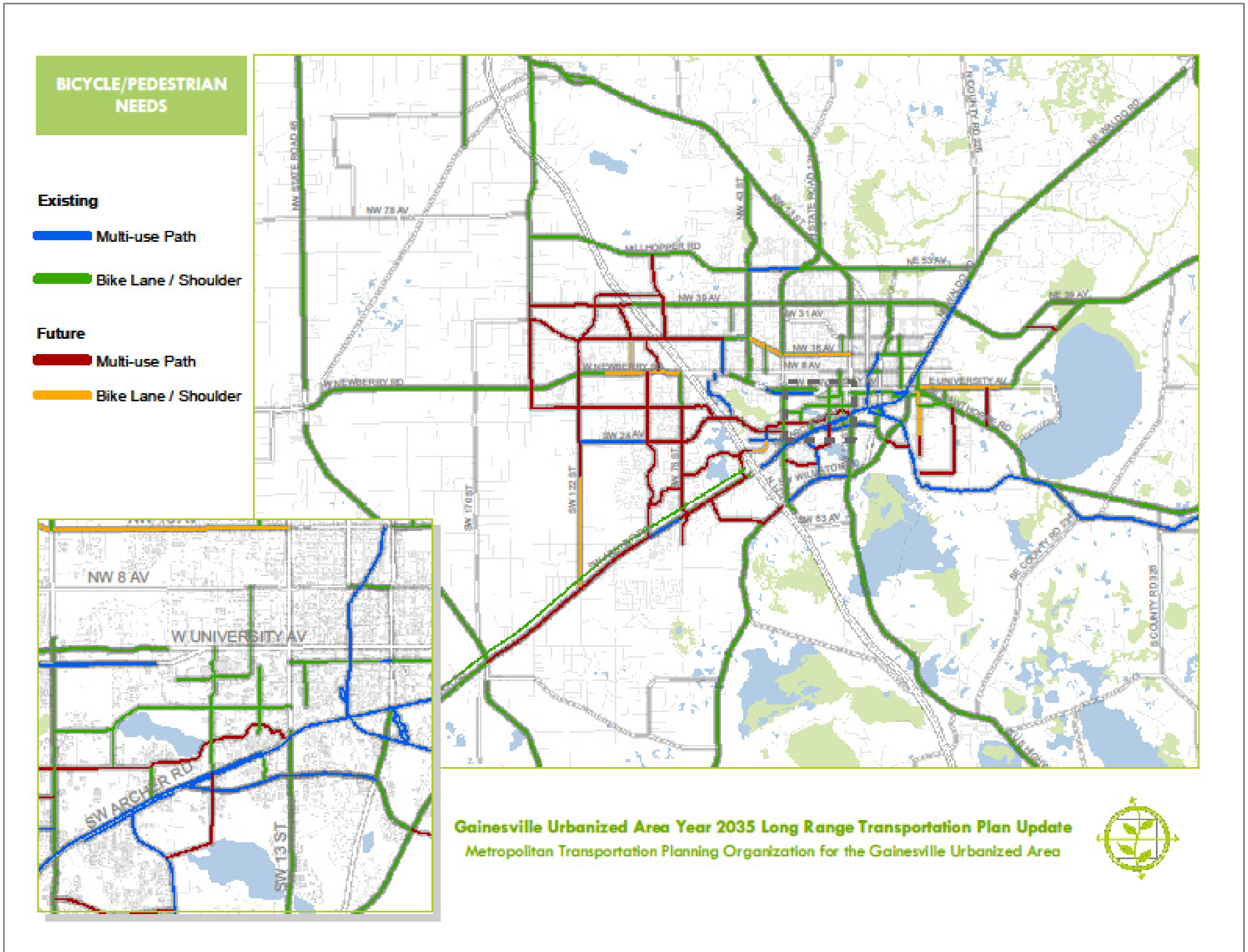

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Table 52: Bicycle and Pedestrian Needs Plan Projects

Braid	Segment/Description
ARCHER[2]	University of Florida Cross Campus Greenway Trail
	SW 34th Street Grade Separated Crossing
	Hull Road Parking Area to SW 34th Street
	SW 38th Terrace (north of SW 20th Avenue to Hull Road Parking Area)
	Butler Plaza Planned Development
	Interstate 75 Grade Separated Crossing
	Tower Road east to Interstate 75
	Tower Road north of Haile Boulevard
	Tower Road south of Haile Boulevard
	Enhance pedestrian crossing between Shands Hospital and Cancer Center
	Waldo Road Bicycle/Pedestrian Overpass at or near NE 8th Avenue
	SW 91st Street from Archer Road to Haile/SW 46th Boulevard
	Haile/SW 46th Boulevard from SW 91st Street to Tower Road[1]
	SW 41st Place from Tower Road to SW 63rd Boulevard
	Archer Braid Trail from SW 41st Place to SW 45th Street Bridge
	SW 45th Street Bridge from SW 45th Street to SW 42nd Street
ALACHUA	US 441 Bike Lanes (NW 23rd A venue to Archer Road)
UNIVERSITY	Enhance bike trail crossing at E. University/Waldo/Williston Road Intersection
HAWTHORNE	(Bicycle/pedestrian trail has been completed)
BIVENS	SW 23rd Street Trail from Archer Road to SW 23rd Terrace
WESTSIDE	Enhance pedestrian crossing at SW 34th Street and Archer Road
	Bike Lanes on NW 34th Street between NW 23rd A venue and SW 2nd A venue
MILLHOPPER	Bike Lanes & Sidewalks as part of NW 23rd Avenue 4-laning from NW 55th Street to NW 98th Street
	NW 83rd Street from NW 23rd Avenue to NW 39th Avenue
GLEN SPRINGS	Enhance pedestrian crossing at US 441 and NW 23rd Avenue

Braid	Segment/Description
INDIVIDUAL PROJECTS (NOT PART OF A BRAID)	Bike Lane/Shoulder on E. University A venue from NE 15th Street to State Road 26
	Bike lane/Shoulder on Kincaid Road from SE 22nd A venue to Hawthorne Road
	Bike Lane/Shoulder on Newberry Road from NW 115th Street to Tower Road/SW 75th Street
	Bike Lane/Shoulder on NW 16th/23rd Avenue from NW 43rd Street to NW 13th Street
	Bike Lane/Shoulder on NW 98th Street from Newberry Road to NW 23rd Avenue
	Bike Lane/Shoulder on SW 122nd Street from Archer Road to Diamond Sports Complex
	Multi-Use Path on Archer Road from SW 75th Terrace to SW 45th Street
	Multi-Use Path on Archer Road from State Road 45 to SW 91st Street
	Multi-Use Path on Downtown East Central Trail from Depot Avenue Rail/Trail to NE 39th Avenue
	Multi-Use Path on Fort Clarke Boulevard from Newberry Road to NW 23rd Avenue
	Multi-Use Path on NE 27th Avenue from NE 39th Boulevard to NE 55th Boulevard
	Multi-Use Path on NW 23rd/32nd Avenue from NW 143rd Street to NW 98th Street
	Multi-Use Path on NW 39th Avenue from NW 143rd Street to Interstate 75
	Multi-Use Path on NW 83rd Street from NW 39th Avenue to Millhopper Road
	Multi-Use Path on NW 98th Street from NW 23rd Avenue to NW 98th Street
	Multi-Use Path on SE 15th Street from SE 32nd Place to SE 22nd Avenue
	Multi-Use Path on SE 41st Avenue/27th Street from SE 15th Street to Hawthorne Road
	Multi-Use Path on SE 43rd Street from Hawthorne Road to E University Avenue
	Multi-Use Path on SW 8th Avenue from SW 143rd Street to SW 24th Avenue
	Multi-Use Path on SW 20th/24th Avenue from SW 91st Street to SW 34th Street
	Multi-Use Path on SW 45th Street from Archer Road to SW 45th Street Bridge
	Multi-Use Path on SW 62nd Avenue/Williston Road from Archer Road to Interstate 75
	Multi-Use Path on SW 91st Street from SW 46th Boulevard to Newberry Road
	Multi-Use Path on Sweetwater Preserve from Williston Road to SE 15th Street
	Multi-Use Path on Tower Road/SW 75th Street from SW 41st Place to SW 8th Avenue
	Multi-Use Path on Tower Road/SW 75th Street from SW 57th Avenue to Archer Road
	Multi-Use Path on W 122nd Street from Diamond Sports Complex to NW 39th Avenue
	Multi-Use Path on W 143rd Street from SW 8th Avenue to NW 44th Avenue

Braid	Segment/Description
	Sidewalk on SW 35th Place from SW 23rd Terrace to SW 34th Street
	Proposed 1-75 Crossing from NW 115th Terrace to NW 83rd St
	Trail corridor on east side of Interstate 75 from Newberry Road north to Millhopper Road

Notes

1 The Archer Braid from SW 91st Street to Tower Road is a committed project.

2 The Archer Braid from SW 24th Avenue to SW 20th Avenue is constructed.

Summary

The development of the Year 2035 Needs Plan entailed a combination of technical and policy analysis, and substantive input from the public and the MTPO's advisory committees. The Needs Plan represents a strategy of improving both mobility and accessibility to key existing and emerging future destinations by increasing the number of viable travel choices, particularly within congested and constrained corridors such as Newberry Road, SW 20th Avenue and Archer Road. The plan includes actions that strengthen mobility within highly and moderately accessible parts of the Gainesville Urbanized Area, while also identifying projects like express bus service and park and ride lots that increase accessibility to areas that lack adequate transportation alternatives. Where feasible and appropriate in the context of local government policies, the plan identifies selected road capacity modifications to improve traffic flow and to provide alternative routes parallel to congested or constrained roads. The planned road network modifications include strategies to expand transit service through development of Bus Rapid Transit service, support freight mobility via improved access to the Strategic Intermodal System, and provide bicycle and pedestrian network connectivity to better link trip origins and destinations through both on-road and off-road facilities.

In addition to measures of mobility and accessibility, the Year 2035 Needs Plan reflects key considerations for the development of the transportation network, including safety, sustainability, environmental preservation and socio-cultural effects, freight mobility, and security. The Needs Plan recognized the importance of the Strategic Intermodal System for regional connectivity and emergency evacuation, and identified roadway modifications to improve safety for all users of the transportation system. Ultimately, the adopted Needs Plan is expected to reduce the growth in vehicle miles of travel and lower vehicle hours of travel in comparison with the Existing Plus Committed network in 2035. The plan improves accessibility for households and employees in the Gainesville Urbanized Area, and reduces the amount of congested lane miles. While some level of congestion is persistent in the Gainesville area and will not be fully resolved with the Needs Plan, those corridors are planned to see substantial improvements in transit service that will offer highly competitive travel times compared to automobile travel in the future.

The Needs Plan provided a strong foundation for the development of priority projects for consideration in the Year 2035 Cost Feasible Plan using available local, state and federal funding. Capital and operating costs were developed for all Needs Plan projects for development of the Cost Feasible Plan. Additionally, each project in the Year 2035 Needs Plan underwent a screening evaluation for environmental and socio-cultural impacts through Florida's Efficient Transportation Decision Making (ETDM) process. These steps are described elsewhere in the plan.

Preliminary and Constrained Needs Plan

Introduction

The Year 2035 Long Range Transportation Plan for the Gainesville Urbanized Area reflected an analytical and policy-based approach to define the transportation needs for potential investment of federal, state and local funding sources that support community goals for mobility and access. The Metropolitan Transportation Planning Organization for the Gainesville Urbanized Area (MTPO) led a process of identifying those needs that considered the impact of growth and development in Alachua County and surrounding areas on transportation conditions, as well as the policy framework established in adopted plans. Those adopted plans and policies, along with consideration of environmental impacts, helped to create a strategic and policy-directed Long Range Transportation Plan that aligns vision with actions to achieve desired outcomes of the Livable Community Reinvestment Plan, the name applied to the MTPO's Long Range Transportation Plan.

This section describes the process employed to create a constrained Year 2035 Needs Plan that was ultimately adopted by the MTPO in June 2010. The Needs Plan served as a basis for defining a Cost Feasible Plan that reflects projected revenue sources to fund transportation projects through the year 2035. The following sections of this report address the development of a preliminary (unconstrained) Needs Plan, and the factors used to modify the preliminary plan to create the Needs Plan that better aligns projects with local policies, programs and initiatives. In addition, this report describes the process used to develop priorities for Needs Plan projects and screen those projects for environmental impacts prior to development of the Cost Feasible Plan, which the MTPO adopted on October 27, 2010.

Preliminary Needs Plan

The first step in developing the Year 2035 Needs Plan was an assessment of projected traffic conditions based on the completion of currently-funded projects and growth in population and employment throughout Alachua County and in surrounding parts of the region by the year 2035. In addition to a review of the Needs Plan projects in the currently adopted 2025 Long Range Transportation Plan (adopted in December 2005), the most congested transportation facilities that were identified as a result of this analysis were considered to be the basis for the Preliminary Needs Plan. This preliminary plan was solely based on the need to reduce auto congestion by widening existing transportation facilities within the Gainesville Urbanized Area, and therefore, is only the first step taken in developing the multimodal transportation plan desired by the MTPO. While the 2025 LRTP was a good starting point in the development of the Preliminary Needs Plan for continuity reasons, changes in travel patterns, growth assumptions or policies may mean those projects are no longer fully supported by local governments. Therefore, new analysis was largely used to define the Preliminary Needs Plan. Details regarding the analysis of the Existing Plus Committed Network and development of the Preliminary Needs Plan are described in this section.

Existing Plus Committed Network

Development of the E+C Network

The Existing Plus Committed (E+C) Network consists of projects funded for construction through the Year 2014 in the FDOT Work Program, the MTPO's Transportation Improvement Program, the City of Gainesville and Alachua County current budgets/Capital Improvements Programs, and other sources of programmed construction funding, such as developer commitments. **Table 53** lists the projects included in the E+C Network, and **Map 43** shows the project location and funding source.

Table 53: Committed Projects (2007-2014)

Map #	Facility/Location	From/To	Type
1	SR 45/US 41 at SW 30th Avenue		Add Turn Lanes
2	SW 8th Ave	SW 24th Ave to SW 143rd Street	New Roadways/2 lane reconstruction
3	SW 6th Street	SW 4th Avenue to University Avenue	Reconstruction
4	I-75 at SR 26 (W Newberry Road) (SE quadrant of interchange only)		Interchange Modification/Operational Improvement
5	SW 8th Avenue Connector	SW 8th Avenue to SW 20th Avenue	New Road Connection - SW 8th Ave to SW 61st St
6	SW 20th Avenue at SW 43rd Street		Intersection Modification
7	SW Archer Road at SW 40th Boulevard		Intersection Modification
8	I-75 Ramps at Paynes Prairie Rest Area		Traffic Ops Modifications - Ramp Turn lanes
9	SW Archer Road at SE 16th Avenue		Intersection Modification
10	NW 23rd Avenue at 16th Terrace		Traffic Signal Reconstruction
11	NE 53rd Avenue at N Main Street		New Traffic Signal
12	SR 329 (Main Street)	NW 8th Ave to NW 16th Ave	Road Diet - Resurface/Reduce from 4 lanes to 2 lanes with center turn lane
13	SR 329 (Main Street)	Depot Avenue to NW 8th Ave	Road Diet - Resurface/Reduce from 4 lanes to 2 lanes with center turn lane

Map #	Facility/Location	From/To	Type
14	SW 40th Boulevard Extension	SW 40th Boulevard to SW 47th Avenue	New 2-lane roadway
15	Depot Avenue	Archer Road to Williston Road	Reconstruction
16	NE 19th Terrace from NE 8th Ave to NE 12th Ave and NE 12th Ave	Waldo Rd to NE 21st St	New 2-lane roadway
17	NE 19th Street/NE 19th Terrace	E University Avenue to NE 8th Avenue	New Road Construction
18	SR 26 at SR 222		Intersection Realign and Install Flashing Beacons
19	SR 26 at NE CR 234		Add Turn Lanes
20	SR 200(US 301) at CSX Railroad Overpass (in Waldo)		CSX Railroad Overpass Modification
N/A	W 6th Street Rail/Trail	SW 2nd Avenue to NW 10th Avenue	Rail Trail
N/A	NW 34th Street	NW 55th Boulevard to US 441	Sidewalk
N/A	SW 35th Place	SW 34th Street to SW 23rd Terrace	Sidewalk

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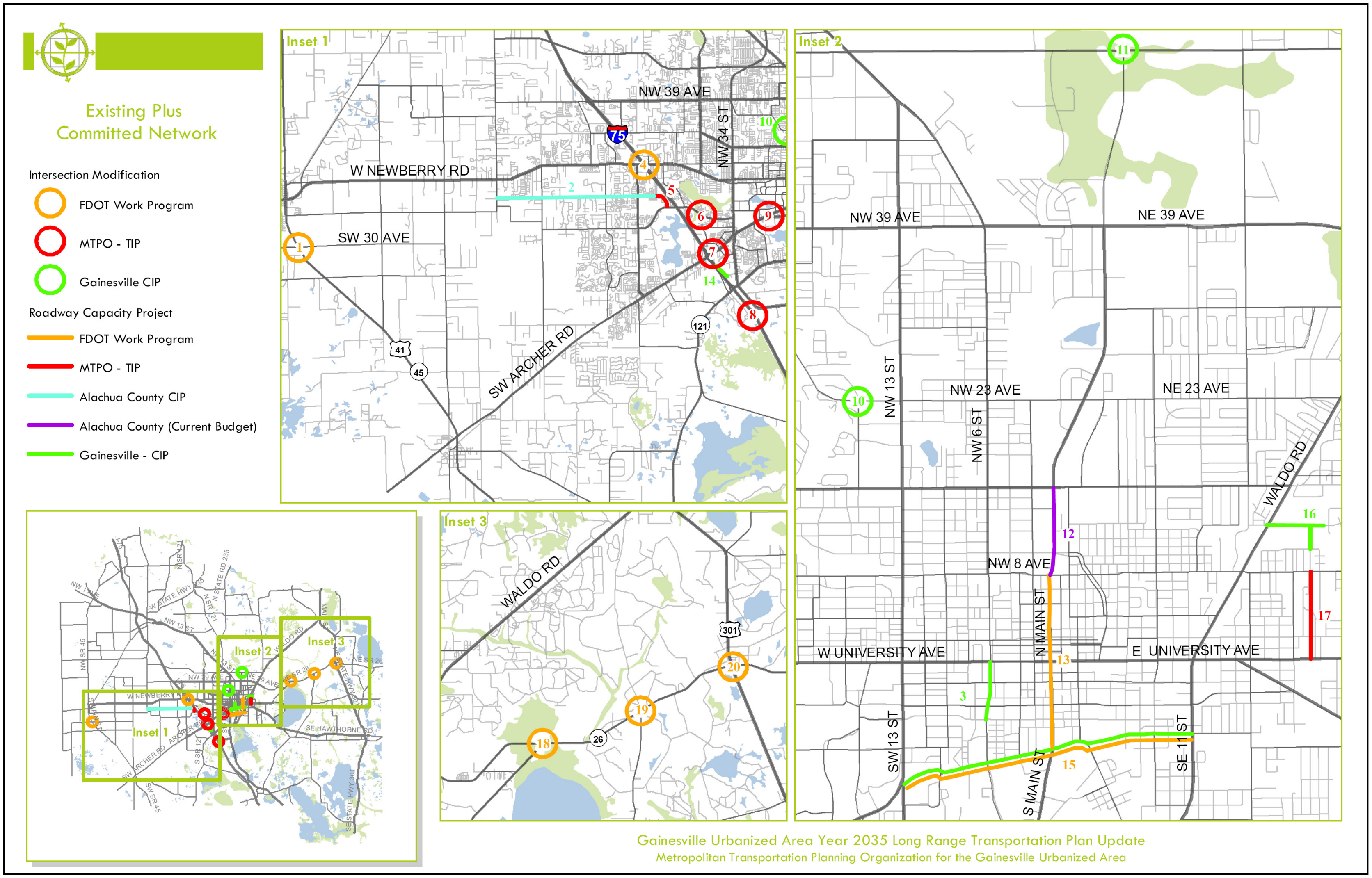
Map 43: Existing Plus Committed Network



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Coding the Existing Plus Committed Network in the Year 2035 Model

In order to evaluate the projected performance of the Existing Plus Committed Network in the Year 2035, the network was coded into the model and run as a transportation scenario. This entailed adding any capacity projects or new roadways built since the 2007 base year of the countywide model used in the validation process plus those locations in the network where funding commitments would increase roadway capacity through addition of travel lanes.

Model Adjustments for External Stations' Growth

To ensure the most accurate results of testing the E+C and various transportation network alternatives, a number of adjustments were made to the model to account for increased traffic volumes at stations outside Alachua County (external stations) where roadways connect traffic from surrounding areas and I-75 into the study area. A brief description of the adjustments to the travel demand model is provided in this section.

As stated earlier, future year external trips were generated by extrapolating figures from three sources: the I-75 Year 2035 Master Plan; the 2025 Alachua County model; and count trend extrapolations generated using the 2007 Florida Traffic Data CD. The 2035 values were generated from each source and the best fit numbers for each of the external count stations were used. External forecasts for the I-75 corridor were based on projections from the Florida Statewide Model6, consistent with the I-75 Master Plan. Where necessary, count volumes were estimated by using past count data at the location or other locations nearby to establish a rate of growth.

For the most part, validation adjustments to the external model consisted of modifying the INTEXT and EETRIPS files, which include internal-external and external-external (EE) trips. The purpose of these adjustments was to balance volumes at the external stations in such a manner as to improve model validation within the study area and so that I-75 EE percents at certain external zones were increased to achieve a better match between model volumes and 2007 traffic counts along the I-75 mainline. Validation of the highway assignment also involved adjustments to external travel and trip generation assumptions, iterative highway network modifications, adjustment of model speeds, and other changes related to the transit system to shift trips among modes most effectively. These adjustments are necessary to ensure that the Needs Plan network reflects projected growth on the interstate and growth in surrounding counties in light of Gainesville's status as a regional employment, educational and institutional center.

Creating the Existing Plus Committed Scenario

The model update and validation sections describe in greater detail the development of the E+C network and 2035 external trips. Year 2035 socioeconomic data and external trips were combined with E+C highway and transit projects to generate forecasts of highway and transit trips. Iterative adjusting of bus fares showed that the model was overly sensitive to fare changes. Discussions with Gainesville Regional Transit System (RTS) staff led to a decision on implementation of a Bus Fare Factor in the model. This Bus Fare Factor was introduced to account for the fact that the 2010 local bus fare had increased to $1.50 (over the year 2007 bus fare of $1.00), and was used as the base fare for evaluation of future scenarios, including the E+C scenario. The effect of the Bus Fare Factor was to provide a more realistic estimate of ridership with small increases in bus fares, rather than the inaccurate (low, based on actual figures) ridership estimates that occurred during model testing.

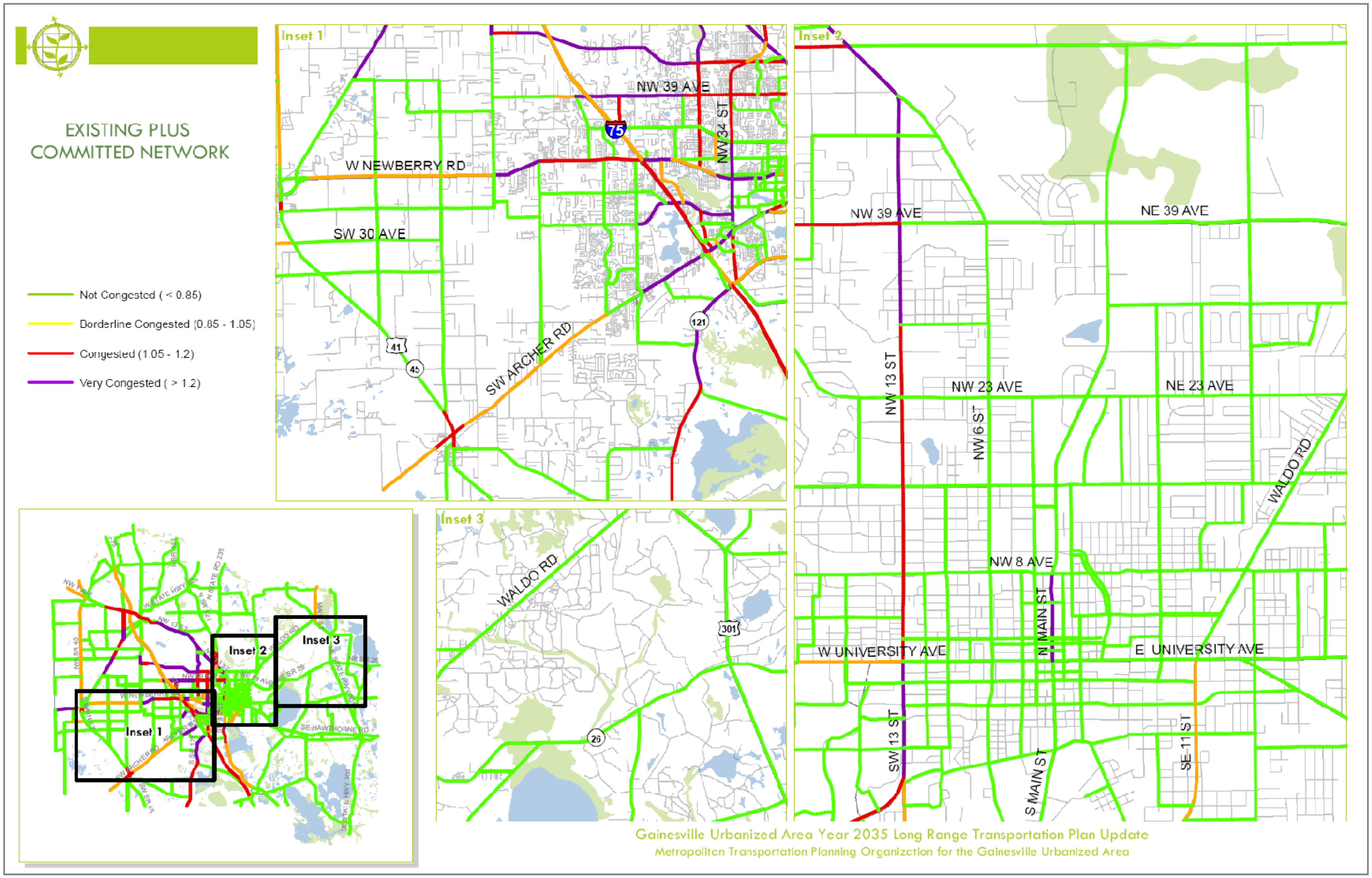
The 2035 E+C future year highway network edits were made using the project list shown earlier in **Table 53.** Many of the projects were minor changes to the network, only requiring changes to the number of lanes and facility types of existing roadways. There were several new roadways that were added; each was an expansion of an existing road, connecting two or more roadways. Other modifications included reducing Main Street from four to two lanes with turn bays through downtown, and coding bicycle lanes into the network. Transit data for the E+C Network included updates to existing routes, new headways, and the addition of new routes that did not exist in the base year.

Projected Congestion and Transit Ridership

Map 44 depicts the projected congestion for the Existing Plus Committed Network in the Year 2035. Roadways with a volume to capacity ratio (v/c) greater than 1.05 were considered to be "congested." Much of the congestion was projected in the area west of downtown and the University of Florida along the major corridors leading to UF and downtown, such as US 441/W. 13th Street, Newberry Road, SW 20th Avenue, Archer Road, NW 34th Street, and I-75. The congested roadway segments (with v/c ratio greater than 1.05) were considered to be the Preliminary Needs Plan, as shown in **Map 45**.

Table 54 provides a summary of how the E+C Network was projected to perform in relation to the performance measures discussed in the previous section and other characteristics of the transportation network, such as mode share and transit ridership figures. This analysis provided a baseline set of data for developing and testing of the four network alternatives during the next phase of Needs Plan development.

Map 44: Year 2035 Projected Congestion: Existing Plus Committed Network



Map 45: Preliminary Needs Plan

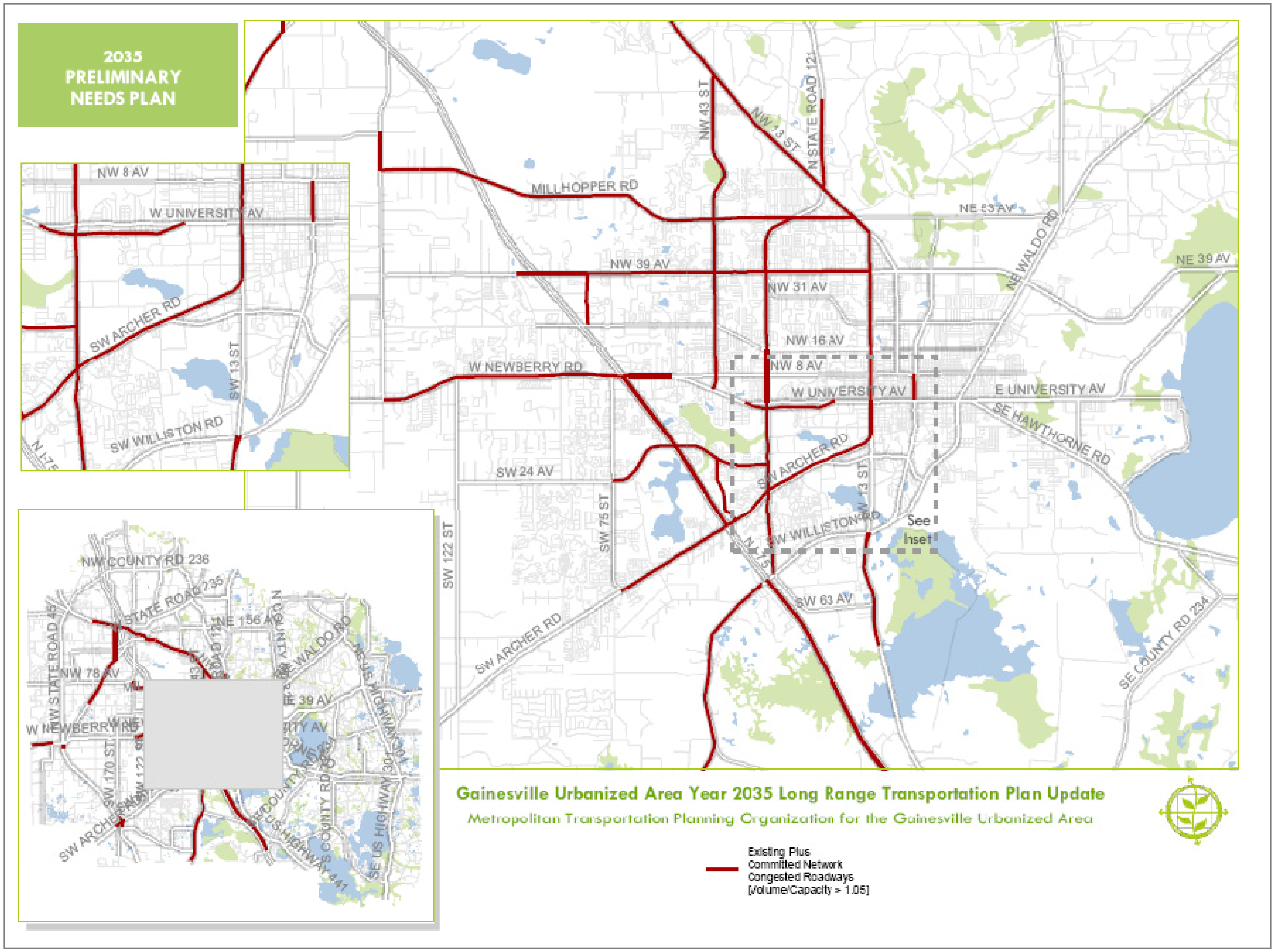


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Table 54: Evaluation of the Existing Plus Committed Network

Existing Plus Committed Network Evaluation Results	
Vehicle Miles of Travel (VMT)	11,918,235
Vehicle Hours of Travel (VHT)	381,467
Roadway Lane Miles	2,206
Congested Lane Miles	373 (17%)
Transit Riders per Congested Lane Miles	41.44
Delay (minutes)	514
Within ¼ mile of local bus or ½ mile of premium transit stop:	
Dwelling Units	71,112 (39%)
Employment	123,794 (85%)
Mode of Travel	
Transit	26,936
Bicycle/Pedestrian	70,048
Mode Split	
Auto	96.5%
Bicycle/Pedestrian	2.1%
Transit	1.4%

Constrained Needs Plan

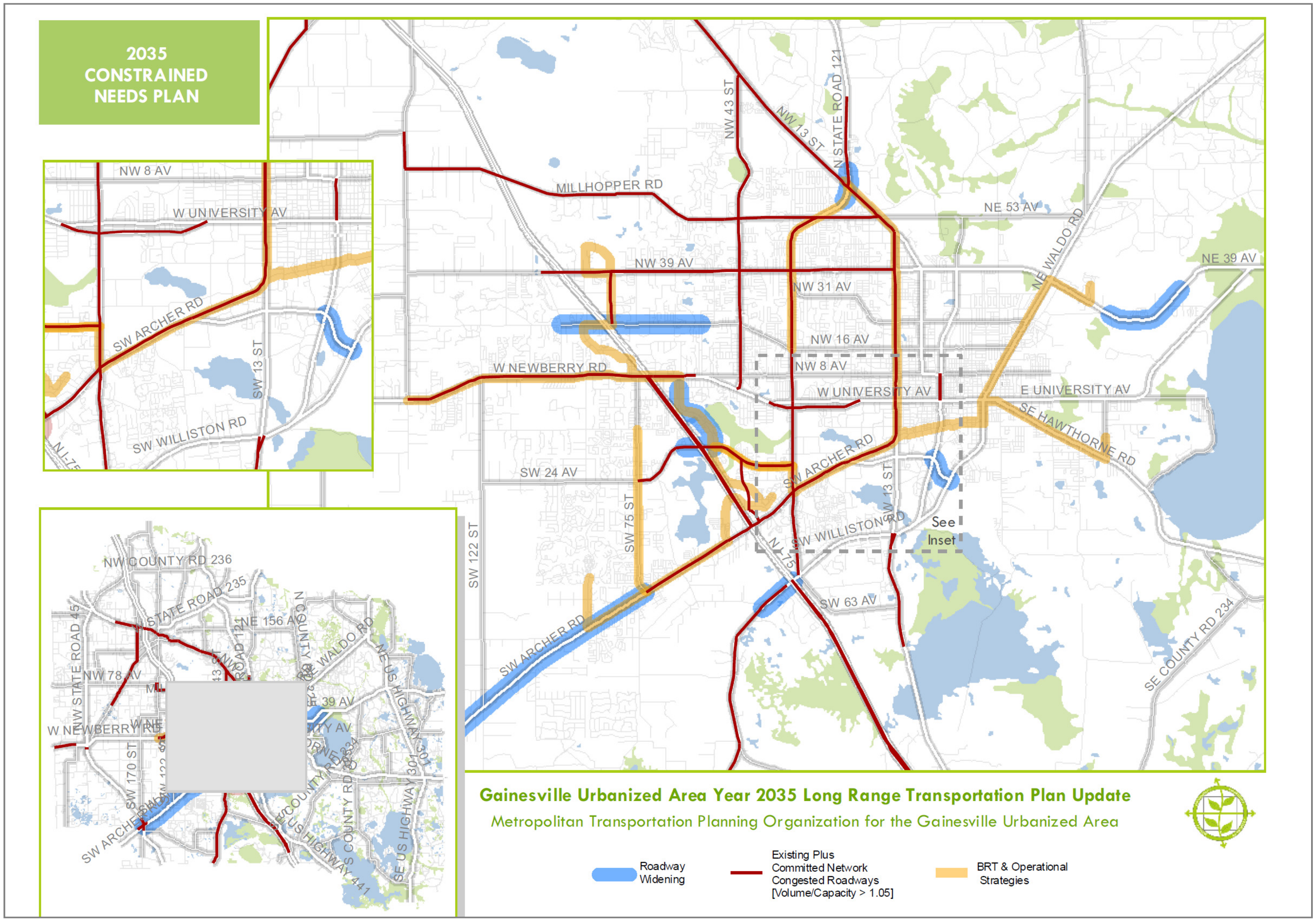
Once the Preliminary Needs Plan was developed, a Constrained Needs Plan was developed by identifying facilities in the Preliminary Needs Plan that cannot be widened due to adopted policies, community impacts, and/or major cost. Specifically, roadways were eliminated from the Preliminary Needs Plan based on the following factors:

- The existing geography or development patterns caused the project to be too difficult or expensive;
- Current state or local policies prohibited widening of the roadway; and
- Widening the roadway would have a major impact on either a designated historic district or environmentally sensitive lands.

A review of Alachua County's Future Traffic Circulation Map identified a number of roadways that were considered "constrained." In addition, Policy 7.1.1 of the Transportation Mobility Element in the City of Gainesville's adopted Comprehensive Plan states that "the maximum number of travel lanes for a new or widened street within city limits shall not exceed 4 travel lanes." An example of a project that was included in previous Long Range Transportation Plans, but that was omitted from this Constrained Needs Plan, was E 27th Street between East University Avenue and NE 39th Avenue. While considered by some to be an important connector road to the airport, Alachua County staff believed the environmental constraints and high project costs of this new roadway would make it cost-prohibitive to build.

Based on this analysis, a Constrained Needs Plan was developed that included roadway widening projects where feasible based on the criteria identified above. The Constrained Needs Plan also identified corridors/facilities where operational strategies and transit service, including Bus Rapid Transit, would help to alleviate a portion of the projected congestion or provide a viable travel option. The Constrained Needs Plan is depicted in **Map 46**.

Map 46: Year 2035 Constrained Needs Plan



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Network Alternatives

Overview and Major Features of Network Alternatives

Once the Constrained Needs Plan was developed, a series of network alternatives were developed and tested to determine how the future transportation network would function under various scenarios reflecting different strategies for improving mobility. Four transportation network alternatives were developed for the Year 2035 Needs Plan, as follows: Alternative 1/Bus Rapid Transit emphasis, Alternative 2/highway emphasis, Alternative 3/streetcar emphasis, and Alternative 4/hybrid needs alternative. Each network alternative included a mix of roadway and transit projects that were identified from local plans, public input, the MTPO advisory committees and the initial analysis of the E+C network. The network alternatives provided a set of realistic options for resolving congestion and providing improved mobility and accessibility in the Gainesville Urbanized Area. Alternative 4, the hybrid needs network, was developed based on the results of testing the first three alternatives. Alternative 4 blended the best of the highway, BRT, and streetcar elements from Alternatives 1-3, and was intended to serve as the basis for development, evaluation and selection of the Year 2035 Needs Plan. The previous section provides more detail on the Network Alternatives, including the results of the testing. **Table 55** provides a comparison of the transportation projects tested under each of the four alternatives.

Table 55: Transportation Projects Tested in Network Alternatives 1-4

FACILITY/LOCATION	TYPE	Alt 1: Transit/ BRT	Alt 2: Highway	Alt 3: Transit/ Streetcar	Alt 4: Hybrid Needs
Transit					
Santa Fe College to Airport (BRT Study w/Extension to Santa Fe)	Bus Rapid Transit	X		X	X
Santa Fe College to Butler Plaza (via Haile Village Center)	Bus Rapid Transit	X			X*
Jonesville to E. Gainesville	Bus Rapid Transit	X			X
Northwood Village to UF via 13th Street	Bus Rapid Transit	X			X
Northwood Village to UF via Butler Plaza	Bus Rapid Transit				X
Santa Fe College to UF	Bus Rapid Transit				X
Newberry Road to Archer Road (via Tower Road)	Bus Rapid Transit	X			
Downtown/UF	Streetcar			X	X

FACILITY/LOCATION	TYPE	Alt 1: Transit/ BRT	Alt 2: Highway	Alt 3: Transit/ Streetcar	Alt 4: Hybrid Needs
Urban Village/UF	Streetcar			X	X
Alachua to Downtown Gainesville (via US 441 & 6th Street)	Express Bus Route	X**	X	X	X**
Archer to Downtown Gainesville (via Archer Road & 13th Street)	Express Bus Route	X**	X	X**	X**
Newberry to Downtown Gainesville (via Newberry Road)	Express Bus Route	X**	X	X**	X**
Waldo to Downtown Gainesville (via Waldo Road/US301)	Express Bus Route		X	X**	X**
Hawthorne to Downtown Gainesville (via Hawthorne Road)	Express Bus Route		X	X**	X**
Existing RTS Fixed Route Bus	Fixed Route Bus	X	X	X	X
Planned RTS Fixed Route Bus	Fixed Route Bus	X	X	X	X
Fixed Route Bus from Santa Fe to Airport on NW/NE 39th Ave	Premium Fixed Route (15 minute frequencies)			X	X
I-75 and Newberry Road (Oaks Mall)	Park & Ride Lot	X			X
Newberry Road and Ft. Clarke Road	Park & Ride Lot	X			X
Newberry Road and CR 241 (Jonesville)	Park & Ride Lot	X			X
Butler Plaza Area	Park & Ride Lot	X			X
Archer Road west of I-75 and Archer Road (near SW 52nd Terrace)	Park & Ride Lot	X			
Archer Road and Tower Road (SW 75th Street)	Park & Ride Lot	X			X
US 441 and Williston Road	Park & Ride Lot	X			X
Eastside Activity Center (SE 43rd Street and SE Hawthorne Road)	Park & Ride Lot	X			X
SE Hawthorne Road and SE 24th Street/SE 8th Ave	Park & Ride Lot	X			X
NW 34th Street and US 441 (Northwood Village)	Park & Ride Lot	X			X
NW 39th Avenue and I-75	Park & Ride Lot	X			X

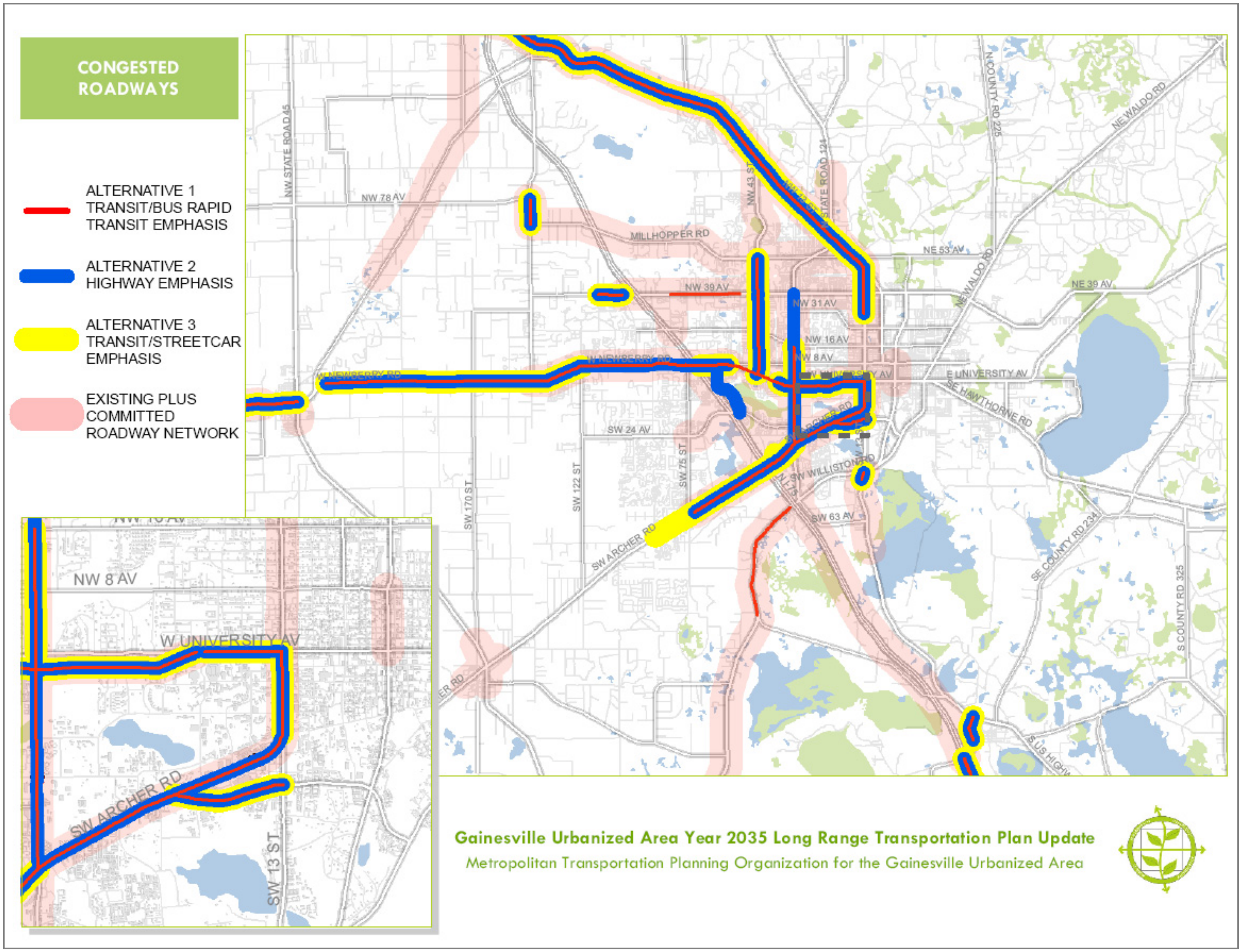
FACILITY/LOCATION	TYPE	Alt 1: Transit/ BRT	Alt 2: Highway	Alt 3: Transit/ Streetcar	Alt 4: Hybrid Needs
NE 39th Avenue and Waldo Road	Park & Ride Lot	X			X
Roadway					
Archer Road (west of I-75 to Archer)	Add 2 lanes (2 to 4)		X		X
NE 39th Avenue	Add 2 lanes (2 to 4)		X		
NW 23rd Avenue	Add 2 lanes (2 to 4)	X	X		X
NW 43rd Street	Add 2 lanes (2 to 4)		X		
SE 16th Avenue	Add 2 lanes (2 to 4)		X		X
SR 121 (NW 58th Avenue to NW 67th Place)	Add 2 lanes (2 to 4)		X		X
SW 20th Avenue (SW 43rd Street to SW 62nd Boulevard)	Add 2 lanes (2 to 4)		X		X
SW 62nd Boulevard	Add 2 lanes (2 to 4)	X	X	X	X
Williston Road (West of I-75 to SW 62nd Avenue)	Add 2 lanes (2 to 4)		X		X
NW 34th Street (NW 16th Ave to US 441)	Add turn lanes	X	X		
SW 20th Avenue	Add turn lanes, bus bays		X		
NW/SW 13th Street (SW 16th Avenue to NW 23rd Avenue)	Multimodal Emphasis				X
University Avenue (NW 34th Street to Waldo Road)	Multimodal Emphasis				X
Airport Access Road	New 2 lane road				X
Hull Road Extension	New 2 lane road	X	X	X	X
NW 122nd Street Extension	New 2 lane road	X	X	X	X
NW 23rd Avenue Extension	New 2 lane road	X	X	X	X
NW 76th Boulevard Extension	New 2 lane road				X
NW 83rd Street Extension	New 2 lane road		X	X	X
Radio Road Extension	New 2 lane road		X	X	X
Springhills Boulevard	New 2 lane road	X	X	X	X
SW 23rd Terrace Extension to University of Florida campus	New 2 lane road				X

FACILITY/LOCATION	TYPE	Alt 1: Transit/ BRT	Alt 2: Highway	Alt 3: Transit/ Streetcar	Alt 4: Hybrid Needs
SW 35th Boulevard Extension	New 2 lane road		X	X	X
SW 38th Terrace Extension	New 2 lane road	X	X	X	
SW 40th Boulevard (to SW 47th Avenue)	New 2 lane road	X***	X***		
SW 43rd Street	New 2 lane road	X	X	X	X
SW 45th Boulevard Extension	New 2 lane road	X	X	X	X
SW 47th Street Extension (east to SW 40th Place)	New 2 lane road		X		
SW 47th Way Extension (should have been SW 57th Road)	New 2 lane road		X		
SW 8th Avenue Extension	New 2 lane road	X	X	X	X
SW 62nd Boulevard Extension	New 4 lane road	X	X	X	X
Notes					
*Note: BRT line from Haile Village Center to Butler Plaza.					
**Note: Express Bus Route terminates at BRT rather than continuing into downtown.					
***Note: This project is now committed and has been added to the Existing plus Committed Network.					

Testing the Network Alternatives

Alternatives 1-3 were first evaluated against the E+C Network, as well as against the peak oil factors, to account for increased volatility of fuel prices as a result of rising global demand and declining oil production. The peak oil analysis factors are documented in the previous section. As shown in **Map 47,** none of the three Network Alternatives was projected to completely eliminate congestion on the roadway network, especially along several of the major corridors in the County. This is primarily due to the constrained nature of the Needs Plan networks, reflecting the policy choices in the community described previously. Based on the results of testing Alternatives 1-3 and evaluation of the outcomes with the MTPO's advisory committees, Alternative 4 was developed and tested. The results of the Network Alternatives testing process are described in detail in the previous section.

Map 47: Comparison of Projected Congestion Levels for Alternatives 1, 2, and 3



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Transitioning from Alternative 4 to the Year 2035 Needs Plan

With Alternative 4 serving as a starting point, technical analysis and input from the public and MTPO advisory committees guided identification of a preferred Needs Plan for presentation to the MTPO for its consideration and adoption. The goal was to carry forward the information learned and best elements of each of the four network alternatives tested and incorporate additional projects that were needed to achieve a multimodal transportation network as envisioned in the adopted Vision, Goals, and Objectives. The MTPO adopted the Needs Plan in June 2010 based on recommendations developed by MTPO staff and the advisory committees. The key projects in the Year 2035 Needs Plan are shown in **Table 56** below.

Table 56: Year 2035 Needs Plan Key Projects

Year 2035 Needs Plan Key Projects	
Transit Needs Plan Projects	
Bus Rapid Transit Trunk Line	Santa Fe College area to Gainesville Regional Airport (via Oaks Mall, Butler Plaza, UF/Shands, RTS Downtown Transfer Center, and Five Points)
Bus Rapid Transit Feeder Routes	From Jonesville, Haile Village Center, Northwood Village and Eastside Activity Center into the BRT trunk line or RTS Downtown Transfer Center
Streetcar	Two streetcar lines connecting downtown, UF, and the Butler Plaza area
Intermodal Centers & Park and Ride Lots	Butler Plaza and RTS Downtown Transfer Center (upgrade existing facility) and other locations
RTS Maintenance Facility	Expansion of existing maintenance facility
Fixed route bus	New and expanded routes; increased frequency
Express bus service	From Alachua/High Springs, Archer, Hawthorne, Newberry and Waldo to the BRT line/Downtown Gainesville
Roadway Needs	
Roadway projects that were tested in Alternative 4	
Strategic Intermodal System interchange modifications at 4 locations along I-75	Interchanges at SR 222/39th Avenue, SR 24/Archer Road, SR 26/Newberry Road, and SR 331/Williston Road
Additional roadway projects to provide increased network connectivity for all modes	
Bicycle and Pedestrian Needs	
The Bicycle and Pedestrian Needs Plan projects were developed by MTPO staff in conjunction with the Bicycle/Pedestrian Advisory Board, consistent with the priorities indicated in the updated Bicycle Master Plan.	

Needs Plan Prioritization

Development of Evaluation Criteria

To assist with the development of the Year 2035 Cost Feasible Plan, the adopted Needs Plan was evaluated against a set of criteria shown in **Table 57** below. These criteria provide an indication of how well the Needs Plan projects increase mobility and accessibility in the Gainesville Urbanized Area, consistent with the MTPO's goals and objectives for the Year 2035 LRTP. These criteria were refined based on MTPO staff and advisory committee feedback. They complement the performance measures and benchmarks and use data from both the accessibility analysis and the MTPO model.

Table 57: Project Prioritization Criteria

Project Prioritization Criteria			
Number	**Description**	**Scoring**	**Data Source**
1	On or parallel to an existing or future congested roadway?	1.2 or more = 20 1.05 to 1.2 = 15 .80 to 1.05 = 10	MTPO Model
2	Extends existing transit service to high population and employment density areas? (9 du/acre or 12 employees in 2035)	Transit service = 20 Park-and-ride connection = 15 Roadway project to enable future transit service = 10	Accessibility Analysis
3	Located in highly accessible area?	Completely within highly accessibility area = 20 Partially within highly accessible area = 15 Within moderately accessible area = 10 Within low accessibility area = 5	Accessibility Analysis
4	Connects two or more collector or arterial roads?	Both roads are congested = 20 One road is congested = 10	MTPO Model
5	Increases frequency of transit service to less than 30 minutes or expand operating hours?	Both = 20 One = 10	MTPO Model/Transit Characteristics

The Year 2035 LRTP update placed an emphasis on increased accessibility, network connectivity, and availability of transit expansion for consideration in project prioritization. The results of the evaluation criteria screening are shown in **Table 58**. No project prioritization process is completely devoid of subjective judgments, and there are various ways in which the merits of the projects may be interpreted using the scoring criteria. However, the process helped to ensure that some of the key considerations in the MTPO's vision, goals and objectives would be reflected in the identification of candidate cost feasible transportation projects. The evaluation criteria results were used as an initial screening to help differentiate among potentially competing projects, but were not intended to determine definitively whether a project should be incorporated into the Cost Feasible Plan. Rather, it was to help provide some analytical support to MTPO staff and the advisory committees as they developed recommendations for the Cost Feasible Plan for consideration by the MTPO.

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Table 58: Results of Project Prioritization Scoring

Facility/Location	From/To	Type	Length	Prioritization Criteria					
Roadway				**1**	**2**	**3**	**4**	**5**	**Total**
Hull Road Extension	SW 34th St to SW 43rd St Ext	New 2 lane road	1.1	20	10	15	20	0	65
University Avenue	NW 34th St to Waldo Rd	Multimodal Emphasis	3.7	20	10	15	20	0	65
SW 62nd Boulevard*	Newberry Rd to SW 20th Ave	Add 2 lanes (2 to 4)	1.7	20	10	15	20	0	65
SW 62nd Boulevard Extension*	SW 20th Ave to Windmeadows Blvd	New 4 lane road	0.97	20	10	15	20	0	65
Radio Road Extension	SW 34th St. to Hull Rd Extension	New 2 lane road	1.0	20	0	20	20	0	60
NW/SW 13th Street	SW 16th Ave to NW 23rd Ave	Multimodal Emphasis	2.6	20	0	20	20	0	60
NW 83rd Street Extension	NW 39th St to Millhopper Rd	New 2 lane road	1.5	20	0	15	20	0	55
NW 34th Street	NW 16th Ave to US 441	Add turn lanes	3.67	20	0	10	20	0	50
Archer Road	West of I-75 to Archer (city limits)	Add 2 lanes (2 to 4)	7.0	15	0	10	20	0	45
Tower Road	SW 8th Avenue to Archer Road	Reconstruct (2 lane upgrade)	3.2	20	0	20	0	0	40
Williston Road	West of I-75 to SW 62nd Ave	Add 2 lanes (2 to 4)	0.8	20	0	10	10	0	40
NW 23rd Avenue	NW 55th St to NW 98th St	Add 2 lanes (2 to 4)	2.7	20	0	10	10	0	40

Facility/Location	From/To	Type	Length	Prioritization Criteria					
SW 20th Avenue	SW 43rd St to SW 62nd Blvd	Add 2 lanes (2 to 4)	0.6	20	0	20	0	0	40
SW 57th Road	SW 75th Street to SW 63rd Boulevard	New 2 lane road	2.2	20	0	10	10	0	40
Waldo Road Multiway Boulevard	University Avenue to NE 39th Street	New 2 lane road	2.6	10	0	15	10	0	35
SE 4th St	Depot Ave to Williston Rd	Multimodal Emphasis	0.7	0	10	15	10	0	35
Springhills Boulevard	NW 83rd St Ext to NW 115th St	New 2 lane road	2.3	20	0	10	0	0	30
NW 122nd Street Extension	NW 46th Ave to Newbery Rd	New 2 lane road	2.2	0	0	10	20	0	30
NW 34th Street/SR121	NW 58th Ave to NW 67th Place	Add 2 lanes (2 to 4)	0.7	15	0	15	0	0	30
NW 76th Boulevard Extension	NW 76th Blvd to Ft Clarke	New 2 lane road	0.6	15	0	15	0	0	30
SW 20th Avenue	SW 34th Ave to SW 43rd St	Add turn lanes	1.0	20	0	10	0	0	30
SW 23rd Terrace Extension to University of Florida campus	Hull Rd to Archer Rd	New 2 lane road	0.3	20	0	10	0	0	30
SW 63rd/SW 67th Ave	SW 24th Ave to Archer Road	New 2 lane road	1.9	0	0	10	20	0	30
NW 23rd Avenue Extension	NW 98th St to NW 143rd St (CR 241)	New 2 lane road	3.12	20	0	5	0	0	25
SE 16th Avenue	Main St to Williston Rd	Add 2 lanes (2 to 4)	0.6	15	0	10	0	0	25

Facility/Location	From/To	Type	Length	Prioritization Criteria					
SW 47th Street Extension	SW 47th St to SW 40th Place	New 2 lane road	0.5	0	0	20	0	0	20
SW 8th Avenue Extension	SW 122nd St to SW 143rd (CR 241)	New 2 lane road	1.4	10	0	5	0	0	15
Airport Access Road	Waldo Rd to Airport	New 2 lane road	0.5	0	0	10	0	0	10
SW 45th Street	Archer Rd to I-75	New 2 lane road	0.6	0	0	10	0	0	10
NE 39th Avenue (SR 222)	Gainesville Regional Airport to NE 27th Avenue	Add 2 lanes (2 to 4)	1.7	0	0	5	0	0	5

Facility/Location	Type	Length	Prioritization Criteria					
Transit			1	2	3	4	5	Total
Downtown/UF	Streetcar	5.4	20	20	20	20	20	100
Urban Village/UF	Streetcar	3.6	20	20	20	20	20	100
Santa Fe to Airport (via Oaks Mall, Archer Road, Downtown)	Bus Rapid Transit (Dedicated Lane)	16.3	20	20	15	20	20	95
Haile Village Center to Butler Plaza Intermodal Center	Bus Rapid Transit (Dedicated Lane)	6.5	20	20	15	20	20	95
Jonesville to Butler Plaza Intermodal Center (via Oaks Mall)	Bus Rapid Transit (Dedicated Lane)	14.2	20	20	15	20	20	95
Eastside Activity Center (@ SE 43rd St) to Downtown RTS Transfer Center	Bus Rapid Transit (Dedicated Lane)		20	20	15	20	20	95
Northwood Village to UF/ 2nd Ave S (via 13th Street)	Bus Rapid Transit (Dedicated Lane)	5.3	10	20	20	20	20	90
Planned RTS Fixed Route Bus (new fixed route service)	Fixed Route Bus	6 Routes	0	20	15	20	20	75
Fixed Route Bus from Santa Fe to Airport on NW/NE 39th Ave	Fixed Route Bus		20	0	15	20	20	75
High Springs to US 441/Northwood Village Intermodal Center	Express Bus Route	13.2	20	0	5	20	20	65
Archer to Butler Plaza Intermodal Center (via Archer Road)	Express Bus Route	7.2	15	0	5	20	20	60
I-75 and Newberry Road (Oaks Mall)	Park & Ride Lot		20	0	20	20	0	60
RTS Maintenance Facility	Transit Maintenance Facility		0	20	20	0	20	60
Existing RTS Fixed Route Bus (increased frequency)	Fixed Route Bus	5 Routes	0	20	15	0	20	55
Butler Plaza Area	Intermodal Center/ Park & Ride Lot		20	15	20	0	0	55

Facility/Location	Type	Length	Prioritization Criteria					
Transit			1	2	3	4	5	Total
Multimodal Regional Transportation Center (Archer Road and SW 16th Avenue)	Multimodal Regional Transit Center		20	15	20	0	0	55
Newberry to Newberry Road Intermodal Center (via Newberry Road)	Express Bus Route	6.8	10	0	5	10	20	45
NW 39th Avenue and I-75 (Springhills/SFC Area)	Intermodal Center/ Park & Ride Lot		20	0	20	0	0	40
Downtown Intermodal Center (RTS Transfer Center)	Intermodal Center/ Park & Ride Lot		0	0	20	0	20	40
Newberry Road and CR 241 (Jonesville)	Intermodal Center/ Park & Ride Lot		20	0	10	0	0	30
Archer Road and Tower Road (SW 75th Street)	Intermodal Center/ Park & Ride Lot		20	0	10	0	0	30
NW 34th Street and US 441 (Northwood Village)	Intermodal Center/ Park & Ride Lot		20	0	10	0	0	30
Waldo to Airport Area Intermodal Center (via Waldo Road/US301)	Express Bus Route	10.2	0	0	5	0	20	25
Hawthorne to Eastside Intermodal Center (via Hawthorne Road)	Express Bus Route	12.2	0	0	5	0	20	25
Newberry Road and Ft. Clarke Road	Park & Ride Lot		15	0	10	0	0	25
US 441 and Williston Road	Park & Ride Lot		15	0	10	0	0	25
NE 39th Avenue and Waldo Road (Airport Area)	Intermodal Center/ Park & Ride Lot		10	0	5	0	0	15
SE Hawthorne Road and SE 24th Street/SE 8th Ave	Park & Ride Lot		0	0	10	0	0	10
Eastside Activity Center (SE 43rd Street and SE Hawthorne Road)	Intermodal Center/ Park & Ride Lot		0	0	10	0	0	10
Bus Replacement Program	Capital Project	N/A	--	--	--	--	--	N/A

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Environmental and Sociocultural Considerations

The planning provisions of SAFETEA-LU emphasize a collaborative and integrated planning process that considers environmental stewardship in the development of metropolitan transportation plans and programs. The provisions required the MTPO to conduct the following activities in the development of the Year 2035 LRTP:

- Consider conservation plans and natural and historic resources in the development of the plan's projects and strategies;
- Consult with state and local agencies responsible for land use management, economic development, natural resources, environmental protection, and historic preservation;
- Identify potential environmental mitigation strategies and potential areas to carry out these activities; and
- Provide opportunities for public and agency participation in the development of a project purpose and need.

Florida's Efficient Transportation Decision Making (ETDM) Process provides a planning framework for fulfilling the intent of SAFETEA-LU provisions and government regulations supporting the integration of the transportation planning process with the environmental review process. It creates linkages between land use, transportation and environmental planning through early and continuing collaboration among planning, environmental resource agencies and the public.

An environmental resource evaluation was conducted for each candidate transportation project in the Year 2035 Needs Plan to determine the relative potential project effects to natural and cultural resources. The environmental resource evaluation characterized each candidate project in the Needs Plan as having potentially low, moderate or high effects to the natural and cultural resources. Potential project effects were analyzed within a defined buffer area around each candidate project. Low potential effects suggest that the project's potential impacts to environmental resources are relatively low in comparison to other candidate projects. Moderate potential effects indicate that the project's potential impacts are moderate relative to other projects. High potential effects indicate relatively high impacts and suggest that environmental mitigation measures may need to be identified during the project development phase.

The potential project effects were evaluated for certain issues defined within the ETDM Process Environmental Screening Tool (EST). These issues include: Contaminated Sites, Farmlands, Floodplains, Historic Resources, Archaeological Sites, Navigation, Recreation Areas, Section 4(f) Potential, Special Designations, Water Quality and Quantity, Wetlands, Wildlife and Habitat. Evaluation measures, shown in **Table 59**, were used to determine potential low, moderate, and high impacts on various environmental and cultural resources. Datasets of the EST that are specific to Alachua County were used to support the evaluation and measurement of potential project effects for each defined issue. Results of the EST were reviewed by the MTPO advisory committees and staff, and were used in part to identify projects that were included in the Cost Feasible Plan. Most importantly, the results of this analysis were focused on identifying any serious or fatal flaws in the consideration of potential projects in the adopted Needs Plan. By flagging such projects at the Needs Plan point in the process, it would help the MTPO and its partners at the local and state level understand potential implications and consider an alternative project or at least go forward with the prior knowledge of likely impacts. The results of the Environmental Screening are included in the Appendix.

Table 59: Environmental Evaluation Measures

Environmental Resource	Analysis Area	Resources Impacted	Potential Effects
Contaminated Sites	Urban = 100', Rural = 200'	None	Low
		1 or 2 sites	Moderate
		3 or more sites	High
Farmland	Urban = 100', Rural = 200'	5 acres or less	Low
		5 to 10 acres	Moderate
		More than 10 acres	High
Floodplains	Urban = 100', Rural = 200'	5 acres or less	Low
		5 to 10 acres	Moderate
		More than 10 acres	High
Historic and Archaeological Sites	Urban = 100', Rural = 200'	None	Low
		1 or 2 sites	Moderate
		3 or more sites	High
Navigation	Intersects	Absent	Low
		Present	Moderate
Recreation	Urban = 100', Rural = 200'	Absent	Low
		Present	High
Section 4(f) Potential	Urban = 100', Rural = 200'	Absent	Low
		Present	High
Special Designations	Urban = 100', Rural = 200'	5 acres or less	Low
		5 to 10 acres	Moderate
		More than 10 acres	High
Water Quality and Quantity	Urban = 100', Rural = 200'	No Impaired Waterbodies	Low

Environmental Resource	Analysis Area	Resources Impacted	Potential Effects
		Impaired Waterbodies	Moderate
Wetlands	Urban = 100', Rural = 200'	5 acres or less	Low
		5 to 10 acres	Moderate
		More than 10 acres	High
Wildlife and Habitat	Urban = 100', Rural = 200'	FFWCC Management Areas State and Federal Listed Species	Highly Dependent on Project Type, Habitats, and Species

Contaminated Sites

The potential effect for the Contaminated Sites category is based on the total number of known contamination sites and known producers of toxic or hazardous wastes identified within the project's 100-foot buffer (urban) or 200-foot buffer (rural). The following eight datasets provide information on these sites and facilities: FDEP Off-Site Contamination Notices, Hazardous Waste Sites, National Priority List Sites, Super ACT Risk Sources, Solid Waste Facilities, Superfund Hazardous Waste Sites, Toxic Release Inventory Sites, and US EPA Resource Conservation and Recovery Act (RCRA) Regulated Facilities. The total number of sites within the buffer area was used to estimate low, moderate, or high effect.

Since the same site may occur in multiple databases, the listing of sites within each dataset were compared to the search results of the other datasets to ensure that sites were counted only once in the analyses.

Farmlands

The potential effect for the Farmlands category is based on the acreage of Prime Farm Land within the 100–foot project buffer (urban) or 200-foot project buffer (rural). The total acreage was used to estimate a potentially low, moderate, or high project effect. Recent aerial imagery was consulted, in addition, to confirm the presence of Prime Farm Land (i.e. row or commodity crops) in the project area.

Floodplains

The potential effect for the Floodplains category is based on the total acreage of designated 100-year floodplain identified within the project's 100-foot buffer (urban) or 200-foot buffer (rural). The two datasets assessed in this category include: DFIRM 100-Year Flood Plain and FEMA Flood Insurance Rate Maps 1996. The reported 100-year floodplain acreage was used to estimate a potentially low, moderate, or high effect (i.e., the results of the two datasets were not added).

Historic Resources

For the purposes of this study, historic resources are categorized as those listed in or eligible for the National Register of Historic Places and those locally designated as historic properties by the City of Gainesville, Alachua County and other local governments. National Register resources can be categorized as historic buildings, structures, districts, objects, cemeteries, roads, canals, railroads, and landscapes. This data is available through the following Florida Master Site File datasets:

- Historic structures (individual buildings, structures, and objects)
- Historic bridges
- Historic cemeteries
- Resource groups (roads, canals, railroads, neighborhoods, districts)
- National Register of Historic Places.

The potential effect to historic resources is based on the number of historic resources within the project's 200-foot buffer for both urban and rural areas. The total number of resources within the buffer area was used to estimate low, moderate, or high potential project effect.

Archaeological Sites

Archaeological Resources include campsites, villages, settlements and other evidence of past human activity that span Florida's long period of human occupation from the earliest hunters and gathers through the early to mid 1900s. For this analysis, these resources are categorized into Sensitive Sites and Unevaluated Archaeological Sites. Sensitive sites include those listed on or potentially eligible for the National Register of Historic Places, sites with known or suspected human remains, or known Seminole, Miccosukee, or Creek cultural or heritage sites, as identified in the Florida Master Site File archaeological sites and National Register datasets. Unevaluated sites include those sites included in the Florida Master Site archaeological sites dataset for which no National Register eligibility is recorded. The potential effect to archaeological sites is based on the total number of sites within the project's 200-foot buffer for both urban and rural areas. A project is considered to have a potentially high effect if a Sensitive Site is located within the project buffer. For Unevaluated sites, the total number of sites within the buffer area was used to estimate low, moderate, or high potential project effect.

Navigation

The potential effect for the Navigation category is based on the presence or absence of navigable water crossings within the project corridor. If the proposed project does not cross a navigable waterway, the potential effect was assumed to be low. If the proposed project includes adding lanes to an existing water crossing, the potential effect was assumed to be moderate. If the proposed project involves a new crossing over a navigable waterway, the degree of effect was assumed to be high.

Recreation Areas

The potential effect for the Recreation Areas category is based on the absence or presence of recreational features within or in proximity to the project corridor. Such resources include: multi-use trails, local and state parks, marine facilities, etc. (refer to list of datasets). If a recreational feature was not identified within the 100-foot project buffer (urban) or 200-foot project buffer (rural), then the degree of effect was assumed to be low. If a recreational feature is present within the 100-foot project buffer (urban) or 200-foot project buffer (rural), then the degree of effect was assumed to be high.

Section 4(f) Potential

The potential effect for the Section 4(f) category is based on the absence or presence of Section 4(f) protected resources. Such resources include: historic and archaeological features, public land, recreational facilities, etc. (refer to list of datasets). If a Section 4(f) resource was not identified within the 100-foot project buffer (urban) or 200-foot project buffer, then the degree of effect was assumed to be low.

If a Section 4(f) resource is present within the 100-foot project buffer (urban) or 200-foot project buffer (rural), then the degree of effect was assumed to be high.

Special Designations

The potential effect for the Special Designations category is based on the total acres of the special designated properties and features within the 100-foot project buffer (urban) or 200-foot project buffer (rural). The special designated properties and features assessed in this category include: Florida Forever Board of Trustees (BOT) Projects, Native American Lands, South Florida Water Management District (SFWMD) – Save Our Rivers Lands, and Special or Outstanding Florida Waters. The total acreage was used to estimate a potentially low, moderate, or high effect.

Water Quality and Quantity

The potential effect for the Water Quality and Quantity category is based on the presence of designated impaired waterbodies within the project's 100-foot buffer (urban) or 200-foot buffer (rural). Listings of impaired waterbodies are contained in the FDEP Total Maximum Daily Loads for Listed Waters dataset and Impaired Waters – 303(d) dataset. If an Impaired waterbody was not identified within the 100-foot project buffer (urban) or 200-foot project buffer, then the degree of effect was assumed to be low. If an Impaired waterbody is present within the 100-foot project buffer (urban) or 200-foot project buffer (rural), then the degree of effect was assumed to be moderate.

Wetlands

The potential effect for the Wetlands category is based on the acreage of wetlands within the project's 100-foot buffer (urban) or 200-foot buffer (urban) as reported by the Wetlands 2004 dataset. The total wetland acreage reported by the dataset was used to assign a potentially low, moderate, or high effect.

Wildlife and Habitat

The potential effect for the Wildlife and Habitat category is highly dependent on proposed project type, habitats present, and mix of species potentially present. Datasets that were reviewed to assess the potential degree of effect include the following: Bald Eagle Nesting Territories, Black Bear Road Kills, FFWCC Management Areas, FFWCC Wildlife Observations, Florida Species Observations 2007, FNAI Bird Rookeries, Florida Forever BOT Projects, Florida Managed Areas, Florida Natural Areas Inventory Managed Lands, Florida State Parks, Public Land, Threatened or Endangered Species, and Water Management District Owned Lands.

Summary

The development of the Year 2035 Long Range Transportation Plan for the Gainesville Urbanized Area entailed an analytical and policy-based planning process that guided selection of transportation projects for future funding from a variety of federal, state and local sources. Transportation needs over a 25 year planning horizon can be defined in a number of ways, and it is important that the process reflect broad-based community input and the policy framework as reflected in adopted plans and established programs. It is also important that the planning process reflect an unbiased analytical component that provides the best information available about the projected transportation conditions in the future, and how those conditions may be influenced by potential transportation projects.

In developing the Year 2035 Needs Plan, the Metropolitan Transportation Planning Organization for the Gainesville Urbanized Area (MTPO) chose to create a plan that was constrained by established policies, environmental considerations and a desire to reduce the anticipated growth of vehicle miles of travel by creating more non-auto travel options.

The starting point for the Needs Plan was the adopted 2025 Long Range Transportation. The first technical step involved in defining the 2035 transportation needs in the community entailed an analysis of the projected congestion levels on the roadway network based on anticipated future growth and the existing plus committed transportation network as of 2014. Congestion levels defined the preliminary needs network. From that point, the process involved reducing the potential transportation projects based on definition of constrained roads or policies limiting roads to a maximum of four lanes. Other constraints included environmental factors and concerns about how certain capacity projects may exacerbate sprawl development patterns. Thus, a series of steps led to the development of a constrained Needs Plan that was presented to the MTPO for consideration and adoption in June 2010.

Finally, the constrained Needs Plan was then subjected to a prioritization and environmental screening process that helped inform the selection of projects for the Cost Feasible Plan. The prioritization process used criteria consistent with the vision, goals and objectives to guide development of the Cost Feasible Plan. The environmental screening identified potential red flags for projects with fatal flaws or high potential impacts, which also was a consideration in developing the plan. These steps are consistent with federal SAFETEA-LU requirements, and help ensure that the MTPO and its partners focus on transportation projects that serve the broader goals for growth and development in the Gainesville Urbanized Area.

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YEAR 2035
COST FEASIBLE PLAN

YEAR 2035 COST FEASIBLE PLAN

YEAR 2035 COST FEASIBLE PLAN

Introduction and Overview

Following adoption of the Year 2035 Needs Plan by the Metropolitan Transportation Planning Organization (MTPO) for the Gainesville Urbanized Area in August 2010, the MTPO staff and consultant team developed a recommended Cost Feasible Year 2035 Long Range Transportation Plan. This plan was presented to the MTPO's advisory committees for review and recommendations, and subsequently presented to the MTPO for official adoption at a public hearing. Following a meeting to discuss the cost feasible plan, the MTPO adopted the Year 2035 Long Range Transportation Plan on October 27, 2010, reflecting an estimate of project costs by year of expenditure and the anticipated revenues available from various sources to fund selected projects. The adopted Cost Feasible Plan builds upon the input from the public and the MTPO's advisory committees for a financially constrained list of transportation projects to be completed through the year 2035. This report describes the development of the Year 2035 Cost Feasible Transportation Plan.

The Cost Feasible Plan reflects projected transportation revenues available to the MTPO and local governments from federal, state and local sources that are anticipated to accumulate in five-year increments to the year 2035. Costs for all transportation projects were developed by year of expenditure for specific phases to reflect inflation and match the timing of projected revenues.

The Cost Feasible Plan includes several components: (1) Strategic Intermodal System (SIS) projects as defined by the Florida Department of Transportation's 2035 SIS Cost Feasible Plan; (2) Roadway capacity and operational projects in the Gainesville Urbanized Area funded with state/federal revenues; (3) Local transportation projects funded using transportation impact fees, gas taxes and developer mitigation; (4) non-roadway capacity projects using federal enhancement revenues; and (5) transit/multimodal corridor feasibility studies and funding toward development of a Bus Rapid Transit network and a new transit maintenance facility to accommodate needed growth in transit service. Due to the lack of defined local funding sources for transit service expansion, the adopted plan does not include any local bus service expansion or operating cost for the planned Bus Rapid Transit network.

Overall, the adopted plan entails a balanced approach to development of a fiscally constrained multimodal transportation system by combining funding sources to help achieve the MTPO's adopted vision, goals and objectives, as well as project priorities defined through the 2035 planning horizon.

Development of Project Costs

The total estimated cost for projects in the Year 2035 Needs Plan is $981.5 million. The estimates were developed with techniques that reflect anticipated inflation rates over time. Specifically, costs were developed according to federal and state guidance to metropolitan planning organizations that project cost estimates in the Long Range Transportation Plan to reflect the anticipated year of expenditure of funds associated with various project phases (Project Development and Environmental studies, right-of-way acquisition, preliminary engineering/design and construction).

Working with the Florida Department of Transportation, Alachua County and the City of Gainesville, the first step entailed development of current year 2010 project costs based on the project type, location and length. Where available, the 2010 cost estimate used a more refined project cost developed by FDOT or one of the local governments; otherwise, the cost estimates were developed from statewide average costs for various types of projects as reflected in the Long Range Estimates (LRE) for projects, produced by FDOT. The resulting costs were reviewed and refined as necessary by the MTPO's Technical Advisory Committee based on local information and costs developed for specific projects through local planning processes. Several local governments provided updated cost estimates for projects, and other costs were revised based on a review of existing plans, PD&E studies, and other project information. The current year 2010 project costs for all Needs Plan projects are shown in **Tables 60-62**, except for the bicycle and pedestrian projects, which were developed by MTPO staff for the cost feasible priorities only.

Table 60: Year 2035 Transit Needs Plan Project Costs

Facility/Location	From/To	Type	Length	Project Cost 2010 $'s (in millions)
Santa Fe to Airport (via Oaks Mall, Archer Road, Downtown)		Bus Rapid Transit (Dedicated Lane)	16.3	$ 110.5
Santa Fe to Newberry Road (NW 83rd St, NW 76th Blvd)		Bus Rapid Transit (Dedicated Lane)	3.7	$ 22.1
Newberry Road (NW 76th Blvd to NW 62nd Blvd		Bus Rapid Transit (Dedicated Lane)	0.9	$ 5.5
NW 62nd Blvd / SW 37th Blvd (Newberry Rd to Archer Rd)		Bus Rapid Transit (Dedicated Lane)	3.9	$ 23.2
Archer Rd (SW 37th Blvd to US 441)		Bus Rapid Transit (Dedicated Lane)	2.3	$ 13.6
Depot Ave / Waldo Rd (US 441 to Airport)		Bus Rapid Transit (Dedicated Lane)	5.5	$ 33.0
Haile Village Center to Butler Plaza Intermodal Center		Bus Rapid Transit (Dedicated Lane)	6.5	$52.0
Jonesville to Butler Plaza Intermodal Center (via Oaks Mall)		Bus Rapid Transit (Dedicated Lane)	14.2	$ 98.4
Northwood Village to UF/ 2nd Ave S (via 13th Street)		Bus Rapid Transit (Dedicated Lane)	5.3	$ 44.9
Eastside Activity Center (@ SE 43rd St) to Downtown RTS Transfer Center		Bus Rapid Transit (Dedicated Lane)		$ 13.0
Downtown/UF		Streetcar	5.4	$ 49.5
Urban Village/UF		Streetcar	7.1	$ 59.6
High Springs to US 441/Northwood Village Intermodal Center		Express Bus Route	13.2	$ 10.1
Archer to Butler Plaza Intermodal Center (via Archer Road)		Express Bus Route	7.2	$ 10.1
Newberry to Newberry Road Intermodal Center (via Newberry Road)		Express Bus Route	6.8	$ 10.1
Waldo to Airport Area Intermodal Center (via Waldo Road/US301)		Express Bus Route	10.2	$ 10.1
Hawthorne to Eastside Intermodal Center (via Hawthorne Road)		Express Bus Route	12.2	$ 10.1
Existing RTS Fixed Route Bus (increased frequency)		Fixed Route Bus	5 Routes	$ 21.1
Planned RTS Fixed Route Bus (new fixed		Fixed Route Bus	6 Routes	$ 23.9

Facility/Location	From/To	Type	Length	Project Cost 2010 $'s (in millions)
route service)				
Fixed Route Bus from Santa Fe to Airport on NW/NE 39th Ave		Fixed Route Bus		$ 3.9
I-75 and Newberry Road (Oaks Mall)		Park & Ride Lot		$ 0.2
Newberry Road and Ft. Clarke Boulevard		Park & Ride Lot		$ 0.2
US 441 and Williston Road		Park & Ride Lot		$ 0.2
SE Hawthorne Road and SE 24th Street/SE 8th Ave		Park & Ride Lot		$ 0.2
Newberry Road and CR 241 (Jonesville)		Intermodal Center/Park & Ride Lot		$ 0.4
Butler Plaza Area		Intermodal Center/Park & Ride Lot		$ 0.4
Archer Road and Tower Road (SW 75th Street)		Intermodal Center/Park & Ride Lot		$ 0.4
Eastside Activity Center (SE 43rd Street and SE Hawthorne Road)		Intermodal Center/Park & Ride Lot		$ 0.4
NW 34th Street and US 441 (Northwood Village)		Intermodal Center/Park & Ride Lot		$ 0.4
NW 39th Avenue and I-75 (Springhills Area)		Intermodal Center/Park & Ride Lot		$ 0.4
NE 39th Avenue and Waldo Road (Airport Area)		Intermodal Center/Park & Ride Lot		$ 0.4
Downtown Intermodal Center (RTS Transfer Center)		Intermodal Center/Park & Ride Lot		$ 0.4
RTS Maintenance Facility		Transit Maintenance Facility		$ 66.0
Multimodal Regional Transportation Center (Archer Rd/SW 16th Ave)		Multimodal Regional Transit Center		$ 3.4
Bus Replacement Program				$ 8.0
Total Transit Needs				$609.2

Table 61: Year 2035 Roadway Needs Plan Project Costs

Facility/Location	From/To	Type	Length	Project Cost 2010 $'s (in millions)
Airport Access Road	Waldo Rd to Airport	New 2 lane road	0.5	$ 2.4
Archer Road	West of I-75 to Archer (city limits)	Add 2 lanes (2 to 4)	7.0	$ 45.4
Hull Road Extension	SW 34th St to SW 43rd St Ext	New 2 lane road	1.1	$ 4.8
Radio Road Extension	SW 34th St. to Hull Rd Extension	New 2 lane road	1.0	$ 4.5
Springhills Boulevard	NW 83rd St Ext to NW 115th St	New 2 lane road	2.3	$ 20.6
Tower Road	SW 8th Avenue to Archer Road	Reconstruct (2 lane upgrade)	3.2	$ 13.4
University Avenue	NW 34th St to Waldo Rd	Multimodal Emphasis	3.7	$ 20.0
Waldo Road Multiway Boulevard	University Avenue to NE 39th Street	New 2 lane road	2.6	$ 15.9
Williston Road	West of I-75 to SW 62nd Ave	Add 2 lanes (2 to 4)	0.8	$ 5.0
NE 39th Avenue (SR 222)	Gainesville Regional Airport to NE 27th Ave	Add 2 lanes (2 to 4)	1.7	$ 10.8
NW 122nd Street Extension	NW 46th Ave to Newbery Rd	New 2 lane road	2.2	$ 9.8
NW 23rd Avenue	NW 55th St to NW 98th St	Add 2 lanes (2 to 4)	2.7	$ 17.6
NW 23rd Avenue Extension	NW 98th St to NW 143rd St (CR 241)	New 2 lane road	3.1	$ 24.1
NW 34th Street	NW 16th Ave to US 441	Add turn lanes	3.7	$ 6.0
NW 34th Street/SR121	NW 58th Ave to NW 67th Place	Add 2 lanes (2 to 4)	0.7	$ 4.5
NW 76th Boulevard Extension	NW 76th Blvd to Ft Clarke Blvd.	New 2 lane road	0.6	$ 2.8
NW 83rd Street Extension	NW 39th St to Millhopper Rd	New 2 lane road	1.5	$ 6.7
NW/SW 13th Street	SW 16th Ave to NW 23rd Ave	Multimodal Emphasis	2.6	$ 10.0
SE 4th Avenue	Depot Ave to Williston Rd	Reconstruct (2	0.7	$ 0.8

Facility/Location	From/To	Type	Length	Project Cost 2010 $'s (in millions)
		lane upgrade)		
SE 16th Avenue	Main St to Williston Rd	Add 2 lanes (2 to 4)	0.6	$ 12.5
SW 8th Avenue Extension	SW 122nd St to SW 143rd (CR 241)	New 2 lane road	1.4	$ 6.4
SW 20th Avenue	SW 34th Ave to SW 43rd St	Add turn lanes	1.0	$ 1.5
SW 20th Avenue	SW 43rd St to SW 62nd Blvd	Add 2 lanes (2 to 4)	0.6	$ 4.0
SW 23rd Terrace Extension to University of Florida campus	Hull Rd to Archer Rd	New 2 lane road	0.3	$ 1.1
SW 45th Street	Archer Rd to I-75	New 2 lane road	0.6	$ 2.7
SW 47th Street Extension	SW 47th St to SW 40th Place	New 2 lane road	0.45	$ 2.0
SW 57th Road	SW 75th Street to SW 63rd Boulevard	New 2 lane road	2.24	$ 10.1
SW 62nd Boulevard*	Newberry Rd to SW 20th Ave	Add 2 lanes (2 to 4)	1.7	$ 15.9
SW 62nd Boulevard Extension*	SW 20th Ave to Windmeadows Blvd	New 4 lane road	1.0	$ 75.1
SW 63rd/SW 67th Avenue	SW 24th Ave to Archer Road	New 2 lane road	1.9	$ 15.9
I-75 @ SR 222/39th Avenue		SIS Interchange Modification		$ 1.6
I-75 @ SR 24/Archer Road		SIS Interchange Modification		$ 1.6
I-75 @ SR 26/Newberry Road		SIS Interchange Modification		$ 1.6
I-75 @ SR 331/Williston Road		SIS Interchange Modification		$ 1.6
Total Roadway Needs				$ 372.3

Table 62: Year 2035 Bicycle and Pedestrian Needs Plan Projects

Braid	Segment/Description
ARCHER[2]	University of Florida Cross Campus Greenway Trail
	SW 34th Street Grade Separated Crossing[3]
	Hull Road Parking Area to SW 34th Street
	SW 38th Terrace (north of SW 20th Avenue to Hull Road Parking Area)
	Butler Plaza Planned Development
	Interstate 75 Grade Separated Crossing[3]
	Tower Road east to Interstate 75
	Tower Road north of Haile Boulevard
	Tower Road south of Haile Boulevard
	Enhance pedestrian crossing between Shands Hospital and Cancer Center
	Waldo Road Bicycle/Pedestrian Overpass at or near NE 8th Avenue
	SW 91st Street from Archer Road to Haile/SW 46th Boulevard
	Haile/SW 46th Boulevard from SW 91st Street to Tower Road[1]
	SW 41st Place from Tower Road to SW 63rd Boulevard
	Archer Braid Trail from SW 41st Place to SW 45th Street Bridge
	SW 45th Street Bridge from SW 45th Street to SW 42nd Street
ALACHUA	US 441 Bike Lanes (NW 23rd A venue to Archer Road)
UNIVERSITY	Enhance bike trail crossing at E. University/Waldo/Williston Road Intersection
HAWTHORNE	(Bicycle/pedestrian trail has been completed)
BIVENS	SW 23rd Street Trail from Archer Road to SW 23rd Terrace
WESTSIDE	Enhance pedestrian crossing at SW 34th Street and Archer Road
	Bike Lanes on NW 34th Street between NW 23rd A venue and SW 2nd A venue
MILLHOPPER	Bike Lanes & Sidewalks as part of NW 23rd Avenue 4-laning from NW 55th Street to NW 98th Street
	NW 83rd Street from NW 23rd Avenue to NW 39th Avenue
GLEN SPRINGS	Enhance pedestrian crossing at US 441 and NW 23rd Avenue

Braid	Segment/Description
INDIVIDUAL PROJECTS (NOT PART OF A BRAID)	Bike Lane/Shoulder on E. University A venue from NE 15th Street to State Road 26
	Bike lane/Shoulder on Kincaid Road from SE 22nd A venue to Hawthorne Road
	Bike Lane/Shoulder on Newberry Road from NW 115th Street to Tower Road/SW 75th Street
	Bike Lane/Shoulder on NW 16th/23rd Avenue from NW 43rd Street to NW 13th Street
	Bike Lane/Shoulder on NW 98th Street from Newberry Road to NW 23rd Avenue
	Bike Lane/Shoulder on SW 122nd Street from Archer Road to Diamond Sports Complex
	Multi-Use Path on Archer Road from SW 75th Terrace to SW 45th Street
	Multi-Use Path on Archer Road from State Road 45 to SW 91st Street
	Multi-Use Path on Downtown East Central Trail from Depot Avenue Rail/Trail to NE 39th Avenue
	Multi-Use Path on Fort Clarke Boulevard from Newberry Road to NW 23rd Avenue
	Multi-Use Path on NE 27th Avenue from NE 39th Boulevard to NE 55th Boulevard
	Multi-Use Path on NW 23rd/32nd Avenue from NW 143rd Street to NW 98th Street
	Multi-Use Path on NW 39th Avenue from NW 143rd Street to Interstate 75
	Multi-Use Path on NW 83rd Street from NW 39th Avenue to Millhopper Road
	Multi-Use Path on NW 98th Street from NW 23rd Avenue to NW 98th Street
	Multi-Use Path on SE 15th Street from SE 32nd Place to SE 22nd Avenue
	Multi-Use Path on SE 41st Avenue/27th Street from SE 15th Street to Hawthorne Road
	Multi-Use Path on SE 43rd Street from Hawthorne Road to E University Avenue
	Multi-Use Path on SW 8th Avenue from SW 143rd Street to SW 24th Avenue
	Multi-Use Path on SW 20th/24th Avenue from SW 91st Street to SW 34th

Braid	Segment/Description
	Street
	Multi-Use Path on SW 45th Street from Archer Road to SW 45th Street Bridge
	Multi-Use Path on SW 62nd Avenue/Williston Road from Archer Road to Interstate 75
	Multi-Use Path on SW 91st Street from SW 46th Boulevard to Newberry Road
	Multi-Use Path on Sweetwater Preserve from Williston Road to SE 15th Street
	Multi-Use Path on Tower Road/SW 75th Street from SW 41st Place to SW 8th Avenue
	Multi-Use Path on Tower Road/SW 75th Street from SW 57th Avenue to Archer Road
	Multi-Use Path on W 122nd Street from Diamond Sports Complex to NW 39th Avenue
	Multi-Use Path on W 143rd Street from SW 8th Avenue to NW 44th Avenue
	Sidewalk on SW 35th Place from SW 23rd Terrace to SW 34th Street
	Proposed 1-75 Crossing from NW 115th Terrace to NW 83rd St
	Trail corridor on east side of Interstate 75 from Newberry Road north to Millhopper Road

Notes

1 The Archer Braid from SW 91st Street to Tower Road is a committed project.

2 The Archer Braid from SW 24th Avenue to SW 20th Avenue is constructed.

3 Grade-separated crossing size and cost to be determined by Renaissance Planning Group.

**MTPO staff developed costs for priority Cost Feasible Plan projects only.*

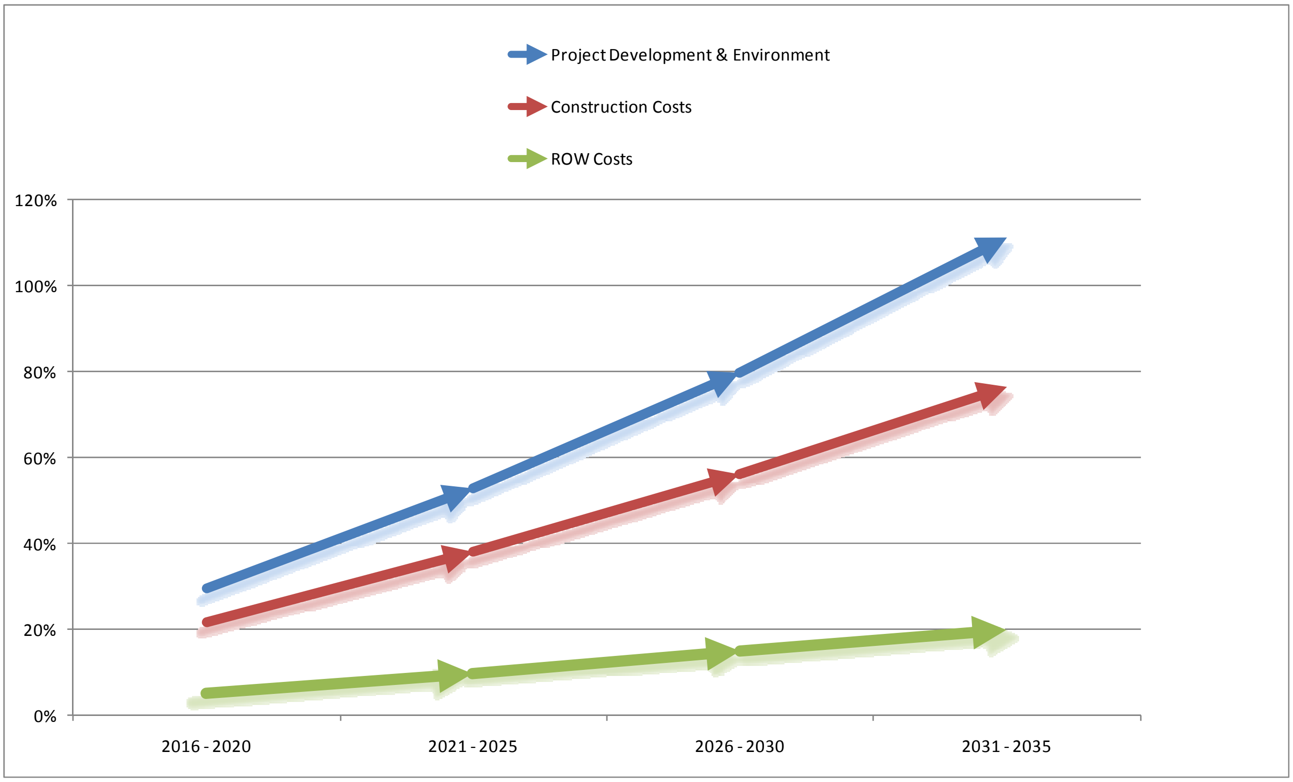
Developing costs for the planned Bus Rapid Transit (BRT) network proved to be somewhat of a challenge due to the uncertain nature of the planned service, portions of which would operate in mixed traffic with automobiles and trucks while other sections would have the buses operate within their own dedicated travel lane, or running way. In addition, the national experience with BRT entails a very wide range of costs, which vary considerably by type of BRT treatment, corridor conditions and the age of the system. Alachua County provided some basic cost estimates from their initial planning studies of a little over $2 million per mile, but the estimate seemed very low in comparison with the low end of BRT costs from projects completed elsewhere in the country. Based on research of other comparable systems, a per lane mile cost of $6 million was developed for the planned BRT network in the Gainesville Urbanized Area. This estimate seemed to be a reasonable amount for construction given the likely characteristics of the proposed network. However, the $2 million per mile figure was used in development of the costs based on right-of-way dedications provided by the developers along the planned network. Of course, more detailed project costs will be further defined through subsequent study.

For the bicycle and pedestrian projects defined in the Needs Plan, costs were initially developed from data contained in the Capital Improvements Element supporting the Alachua County Mobility Plan to derive per mile costs for bike lanes, sidewalks and shared use paths (multi-use trails). MTPO staff worked with the Bicycle/Pedestrian Advisory Board (BPAB) to develop cost estimates for the priority bicycle and pedestrian projects included in the Cost Feasible Plan, with the exception of the grade separated crossing of SW 34th Street at Hull Road, which was based on the County's Mobility Plan and compared with statewide average costs for similar projects.

Year of Expenditure Cost Estimates

As the Cost Feasible Plan was developed, inflation factors provided by the State of Florida for various project phases were used to calculate Year of Expenditure costs by phase (PD&E, PE, ROW, CST) for the expected time period during which the various project phases would occur. The chart shown in **Figure 7** illustrates the general change in project costs depending on Year of Expenditure, indicating that the MTPO and its agency partners should anticipate project costs to increase by as much as 70 percent over the planning horizon due to inflation. Projects that are scheduled to take many years, particularly if they are begun in the outer years of the plan, will cost more than projects that can be completed sooner. For example, the road construction cost for the Archer Road widening is estimated at $13 million in 2010 dollars, and with inflation it would grow to $20 million if built in 2031-2035. This escalation is important for consistency with revenues provided by the Florida Department of Transportation to the MTPO, which are also projected by future year through 2035.

Figure 7: Change in Project Costs over Time



Development of Transportation Revenues

This section documents the financial resources and revenues available for consideration in developing the fiscally constrained Year 2035 Long Range Transportation Plan. A separate Financial Resources chapter earlier in this report documents both committed and potential transportation revenues at the federal, state, and local level, including funding sources dedicated to existing maintenance and operations activities for various types of transportation facilities and services in the community. That information served as the basis for defining the revenues available for capital transportation projects to be included in the Cost Feasible Plan. As described above, to meet federal requirements of the Safe Efficient Accountable Transportation Equity Act –Legacy for Users (SAFETEA-LU), all revenues are expressed in year of expenditure (YOE) dollars to reflect the rate of inflation. The use of YOE dollars may present an appearance of a greater availability of funds, but this is not necessarily the case.

Based on information provided by FDOT, the Year 2035 LRTP's 22-year total for state and federal revenue sources is $139.6 million for highways and some transit projects (Flex, Highway, Enhancements), in inflation-adjusted revenues, plus an additional $74.7 million for only transit, for a total of $214.3 million. This total covers the years from 2014 to 2035. The breakdown by five-year period and revenue source is shown in **Table 63** and **Figure 8**. These sources are those that have historically been considered by the MTPO during preparation of the LRTP.

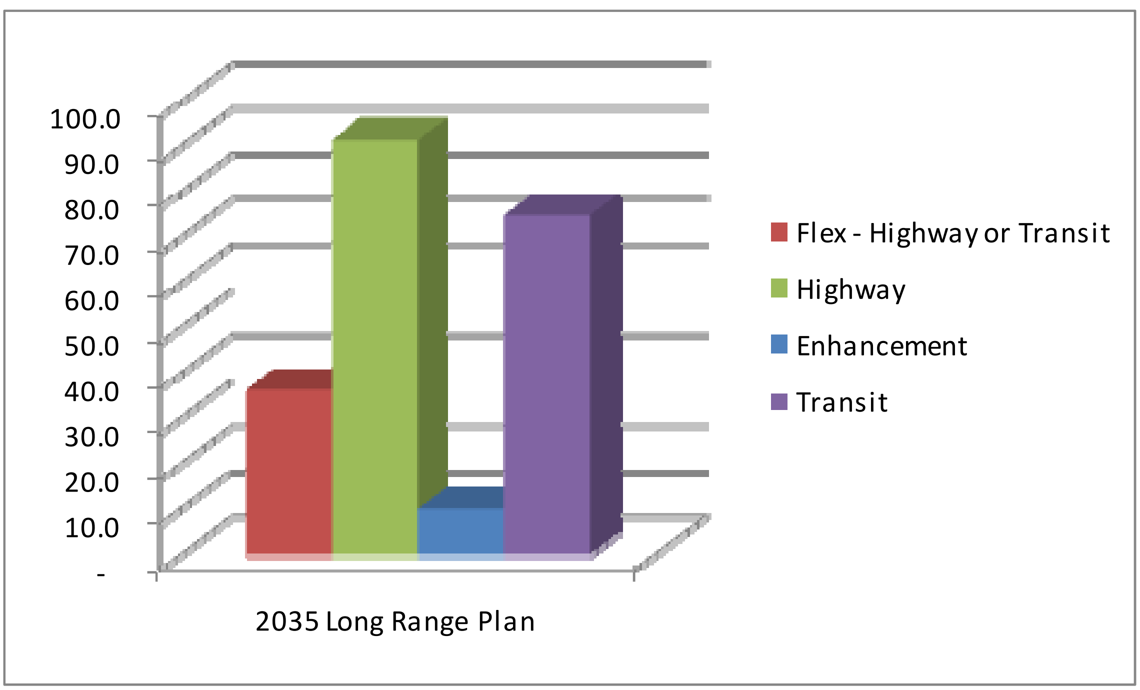
Table 63: State and Federal Program Revenues

(in millions, YOE)

Capacity Programs	FY 2014-2015 Subtotal	FY 2016-2020 Subtotal	FY 2021-2025 Subtotal	FY 2026-2030 Subtotal	FY 2031-2035 Subtotal	22 Year Total
Flex – Highway or Transit	2.3	7.1	8.1	8.8	9.8	36.1
Highway	6.0	18.5	20.8	22.4	24.3	92.0
Enhancement	0.9	2.5	2.6	2.7	2.7	11.5
Transit	5.6	14.5	16.4	18.3	19.9	74.7
Total	14.8	42.7	47.9	52.2	56.7	214.3

Source: Florida Department of Transportation (FDOT), 2009.

Figure 8: Total Revenues



Limitations on Use of Revenue

While the Gainesville Urbanized Area is projected to receive $74.7 million in federal transit operating assistance, the Gainesville Regional Transit System estimates that $71 million of that revenue will be needed to operate the existing bus network through the year 2035. The remaining amount of $3.7 million is available for minor service enhancements or transit capital expenses. This assumes that the Gainesville Urbanized Area will remain below the 200,000 population threshold that determines eligibility for this operating assistance. Future updates of the Long Range Transportation Plan will need to consider the continuation of this funding source as federal rules and the area's population changes.

In addition, one of the issues that arose in defining the Cost Feasible Year 2035 Transportation Plan was the use of some of the $92 million in state and federal highway funds for construction of Bus Rapid Transit running ways on federal aid-eligible highways. Alachua County is planning for BRT on several state roadways, such as Newberry Road (SR 26) and Archer Road (SR 24), along which the BRT may operate in mixed traffic or within exclusive transit lanes. Through discussions with FDOT during development of the Cost Feasible Plan about eligibility of these funds for BRT on these corridors, District 2 staff indicated that physically separated lanes for buses within an exclusive right-of-way would increase the cost of maintenance and constitute a non-standard feature. The Department's position is that non-standard features require the local government to accept maintenance responsibility. While this issue did not alter the basic intent of the MTPO to use state and federal highway funds for BRT along these and other eligible roadways, it will require further discussion through subsequent studies for the development of the BRT network. Before the Department agrees to fund, or permits the construction of a physically-separated BRT facility, additional discussions must occur to reach agreements related to maintenance.

Development of the Cost Feasible Plan

The process of developing the adopted Year 2035 Cost Feasible Plan began with an evaluation of Needs Plan projects using criteria developed to reflect the adopted vision statement, goals and objectives. This initial ranking was used to help distinguish among projects competing for limited funding. The ranking outcome is described in a separate section of the plan documentation. In addition, the MTPO held a public workshop on September 21, 2010 to obtain input from the public on Needs Plan project priorities as a basis for guiding the development of recommendations. At the workshop, the public was given the opportunity to review maps and tables of transportation projects contained in the Needs Plan, including estimated current year construction costs. After a presentation, the workshop exercise entailed having the participants determine their priorities for funding by allocating a limited number of dots toward various types of transportation projects based on available revenues by source. This exercise, along with written comments on the projects and their relative priority, helped to assess the degree of support for certain projects in the Needs Plan as a gauge of how participants would allocate limited revenues.

With that understanding, the MTPO staff developed a preliminary list of Cost Feasible projects in current year 2010 dollars. The starting point was to build upon highly ranked projects from the 2025 LRTP, such as the center turn lane and operational modifications to NW 34th Street, SW 20th Avenue, and the four-laning of a portion of SE 16th Avenue. Bicycle and pedestrian projects recommended for the Cost Feasible Plan were developed from priorities already established by the MTPO's Bicycle/Pedestrian Advisory Board, with cost estimates in year 2007 dollars.

The draft list of Cost Feasible projects also included City of Gainesville and Alachua County projects funded through the financially feasible Transportation Elements (aka Mobility Plan) and Capital Improvement Programs in addition to the highway, transit and bicycle/pedestrian projects eligible for state and federal funds. While the financially feasible planning horizon for these local governments is different than the LRTP, it is important that the plan include the full picture of projects that are likely to be funded for construction through the planning period.

The draft lists were reviewed and refined by the Technical and Citizens Advisory Committees, as well as the B/PAB. The MTPO staff and advisory committees developed joint recommendations for the list of financially feasible bicycle/pedestrian and roadway projects, with the CAC developing an alternative recommendation for funding of transit projects. These recommendations were submitted to the MTPO for consideration at its October 4, 2010 meeting. Alachua County staff also submitted a separate recommendation for roadway projects in reaction to the Year of Expenditure cost adjustments, preferring to spend money planning more projects than allocating limited funding toward a smaller number of capital construction projects. The MTPO took no action following extensive discussion regarding Bus Rapid Transit on state roadways, the RTS transit maintenance facility issue and the widening of Archer Road west of I-75. The public hearing and consideration of plan adoption were rescheduled for October 27, 2010.

The major issue to resolve for adoption of the Cost Feasible Plan entailed the challenge of keeping all of the priority projects recommended by the MTPO staff and advisory committees financially feasible when reflecting the lower amount of available funds with the escalation of costs with Year of Expenditure dollars. For example, lower priority projects, such as the widening of Archer Road from Tower Road to the SW 91st Street and Williston Road from SW 62nd Avenue to SW 35th Way would need to be dropped from the list.

In addition, there was considerable concern expressed about the lack of funding available to complete the new RTS maintenance facility, which is needed for additional bus service expansion, including the Bus Rapid Transit network that is the cornerstone of Alachua County's newly adopted Mobility Plan. This is a critical facility needed to maintain the existing bus fleet and serve future needs. Cost estimates for the new facility developed by RTS staff total $66 million allocated over three phases, with only a portion of that amount available.

Adopted Year 2035 Cost Feasible Plan

The Year 2035 Cost Feasible Long Range Transportation Plan was adopted by the MTPO on October 27, 2010. **Tables 64 through 66** and **Map 48** present the adopted Year 2035 Cost Feasible Plan. The map references the type of projects and studies funded by their primary funding source. Given the escalation of project costs over time due to inflation, the MTPO chose to prioritize full funding for some projects and allocate partial funding to others.

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Table 64: Year 2035 Bicycle/Pedestrian Cost Feasible Plan

Priority	Description	From/To	Length (In Miles)	Estimated Cost In Millions (In 2007 Dollars)
Surface Transportation Program (STP) Enhancements (Cost Feasible Plan Revenues = $11.5 million)				
1	Cross Campus Greenway	Archer Road to SW 34th Street	2.1	$1.9
2	Hull Road Parking Area	SW 34th Street to End of Hull Road Parking Area	0.2	$0.2
3	Hull Road Connector	Hull Road Parking Area/SW 20th Avenue	0.5	$0.5
4	Lake Kanapaha Trail	Tower Road west to Interstate 75	2.3	$2.1
5	SW 34th Street Grade Separated Crossing	SW 34th Street at Hull Road	0.2	$7.0
TOTAL STP ENHANCEMENT FUNDED PROJECTS				**$11.7**
LOCAL FUNDS Alachua County Projects (identified as Cost Feasible by Year 2020)				
NA	SW 8th Avenue multi-use offroad facility	SW 122nd Street to SW 91st Street	2.0	$0.4
NA	NW 98th Street multi-use offroad facility	NW 23rd Avenue to NW 39th Avenue	1.0	$0.3
TOTAL ALACHUA COUNTY PROJECTS				**$0.7**
LOCAL FUNDS City of Gainesville Projects (identified as Cost Feasible by Year 2015)				
NA	SW 35th Place sidewalk	SW 34th Street ot SW 23rd Terrace	1.1	$0.5
TOTAL CITY OF GAINESVILLE PROJECTS				**$0.5**
GRAND TOTAL BICYCLE/PEDESTRIAN PROJECTS				**$12.9**

NA – Not Applicable

Note – Priorities 1 through 5 are segments of the Archer Braid.

Table 65: Year 2035 Roadway Cost Feasible Plan

Priority	Description	From/To	Length (In Miles)	Estimated Cost In Millions (In 2010 Dollars)
STRATEGIC INTERMODAL SYSTEM (SIS) (Cost Feasible Plan Revenues = $6.4 Million)				
-	Interstate 75 Interchange Modifications	At Williston Road At Archer Road At Newberry Road At NW 39th Ave	-	$6.4
TOTAL STRATEGIC INTERMODAL SYSTEM				**$6.4**
STATE HIGHWAY SYSTEM (Cost Feasible Plan Revenues = $92.0 million year of expenditure dollars)				
1	State Road 226 (SE 16th Avenue) widen to four lanes	Main Street to Williston Road	0.6	$15.0
2	State Road 121 (NW 34th Street)-construction of turn lanes to improve safety and traffic flow	NW 16th Avenue to US 441	3.5	$6.0
3	State Road 26 (University Avenue) Multimodal Emphasis Corridor[a]	Gale Lemerand Drive to Waldo Road	1.5	$4.75
4	US 441 (W. 13th Street) Multimodal Emphasis Corridor Study [a]	NW 33rd Avenue to Archer Road	2.8	$4.75
5	Waldo Road Multiway Boulevard redesign to support bus rapid transit , multi-trail and corridor redevelopment study (PD&E) [b]	University Avenue to NE 39th Avenue	2.5	$3.0
6	Bus Rapid Transit (BRT) Corridor Infrastructure-Partial	Santa Fe Village to Gainesville Regional Airport	14.0	$28.0

Priority	Description	From/To	Length (In Miles)	Estimated Cost In Millions (In 2010 Dollars)
7	State Road 24 (Archer Road) BRT Dedicated Lane(s) design, additional roadway capacity and corridor management study (PD&E)	MTPO Boundary to SW 45th Street	3.5	$0.5
8	State Road 221 (Williston Road) additional roadway capacity and corridor management (PD&E)	SW 62nd Avenue to SW 35th Way	0.5	$0.5
TOTAL STATE HIGHWAY SYSTEM				**$62.5**
Alachua County Transit and Roadway Projects (local funds identified as Cost Feasible by the Year 2020)				
1	SW 20th Avenue, four laning and multi-use path	SW 52nd Blvd to SW 61st Blvd	0.5	$8.8
2	SW 8th Avenue-Phase 2, two lane roadway and multi-use path	SW 122nd Street to SW 143rd Street	0.7	$2.7
3	NW 23rd Avenue, four laning and resurfacing	NW 51st Street to NW 59th Terrace	0.7	$1.8
4	NW 23rd Avenue, four laning	NW 83rd Street to Ft. Clarke Blvd.	0.5	$12.0
5	SE 43rd Street, construction of two-way left turn lanes, multi-use path and signalization	SR 26 (University Avenue) to SR 20 (Hawthorne Road)	1.1	$0.9
6	SW 45th / 47th Street, new roadway with travel lanes, BRT Dedicated Transit Lanes and multi-use path	Archer Road to SW 30th Avenue	0.8	$4.5
7	SW 30th Avenue, new Interstate 75 overpass with travel lanes, BRT Dedicated Transit Lanes and the Archer Braid Trail	SW 43rd Street to SW 47th Street	0.5	$13.0

Priority	Description	From/To	Length (In Miles)	Estimated Cost In Millions (In 2010 Dollars)
8	NW 83rd Street, new roadway with travel lanes, BRT Dedicated Transit Lanes and the Millhopper Greenway	NW 46th Avenue to NW 39th Avenue (SR 222)	0.4	$2.5
9	NW 83rd Street, BRT Dedicated Transit Lanes	NW 23rd Avenue to NW 39th Avenue	1.0	$7.8
10	Ft. Clarke/NW 83rd Street Corridor, BRT Dedicated Transit Lanes & new multimodal only Interstate 75 overpass	NW 23rd Avenue to Newberry Road (SR 26)	1.0	$14.0
11	NW 46th Avenue, new roadway with travel lanes, BRT Dedicated Transit Lanes, multi-use path and new Interstate 75 overpass	NW 83rd Street to NW 98th Street	1.3	$15.5
TOTAL ALACHUA COUNTY TRANSIT AND ROADWAY SYSTEM				**$83.5**

Priority	Description	From/To	Length (In Miles)	Estimated Cost In Millions (In 2010 Dollars)
City of Gainesville Projects (local funds identified as Cost Feasible by the Year 2020)				
N/A	SE 4th Street- Phase 2 reconstruction	Williston Road to Depot Avenue	0.7	$2.3
N/A	SW 62nd Boulevard-four lanes plus two additional BRT lanes in the middle	Newberry Road to Archer Road	3.2	$111.0
TOTAL CITY OF GAINESVILLE ROADWAY SYSTEM				**$113.3**
GRAND TOTAL COMBINED ROADWAY SYSTEMS				**$265.7**

[a]Multimodal corridors are defined as major transportation facilities which accommodate automobile, truck, bus, bicycle and pedestrian travel and link different modes together, such as bikes on buses, car and walk and/or park and ride. These projects employ policies and design elements that ensure that the safety and convenience of all users of a transportation system are considered in all phases of project planning and development. Typical elements of a multimodal corridor include sidewalks, bicycle lanes (or wide, paved shoulders), shared-use bicycle and pedestrian paths, designated bus lanes, safe and accessible transit stops and frequent and safe crossings for pedestrians, including median islands, accessible pedestrian signals, and curb extensions.

[b]Waldo Road Multiway Boulevard includes the reconstruction of the Waldo Road Corridor to support commercial and residential redevelopment and enhanced pedestrian crossings to the proposed Waldo Road Bus Rapid Transit line.

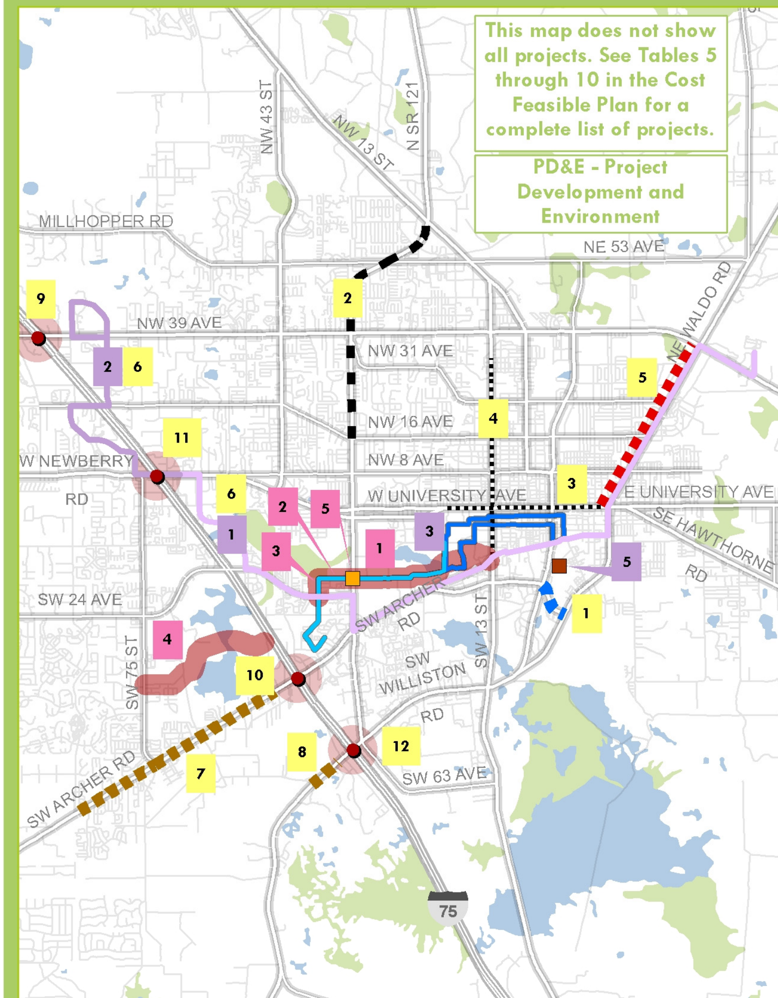
Note- Estimated costs are shown in Year 2010 dollars, except for the Strategic Intermodal System project that is shown in Year 2009 dollars.

Table 66: Year 2035 Transit Cost Feasible Plan

Priority	Description	From/To	Length (In Miles)	Estimated Cost In Millions (In 2010 Dollars)
Transit (Cost Feasible Plan Revenues = $3.7 million)				
1	Transit Maintenance Facility	Not Applicable (NA)	NA	$50.0
TOTAL				**$50.0**
Surface Transportation Program (Cost Feasible Plan Revenues = $36.1 million)				
1	Oaks Mall to Airport Bus Rapid Transit Alternatives Analysis	Oaks Mall to Airport (via Archer Road and Downtown)	NA	$0.4
2	Santa Fe to Oaks Mall Bus Rapid Transit Feasibility Study and Alternatives	Santa Fe to Oaks Mall	NA	$0.6
3	Streetcar Feasibility Study	Downtown to Butler Plaza via University of Florida	9.0 (One-way)	$1.0
4	Intermodal Center/Park and Ride Lot	(location to be determined)	NA	$1.4
5	Transit Maintenance	NA	NA	$50.0
TOTAL				**$53.4**

Map 48: Year 2035 Cost Feasible Plan

YEAR 2035 COST FEASIBLE PLAN



Year 2035 Long Range Transportation Plan Update

Metropolitan Transportation Planning Organization for the Gainesville Urbanized Area

Priority		Description	Project	From / To:
State Highway System				
1		State Road 226 (SE 16th Avenue)	Widen to four lanes	Main Street to Williston Road
2		State Road 121 (NW 34th Street)	Construction of turn lanes to improve safety and traffic flow	NW 16th Avenue to US 441
3		State Road 26 (University Ave)	Multimodal Emphasis Corridor	Gale Lemerand Drive to Waldo Road
4		US 441 (W. 13th Street)	Multimodal Emphasis Corridor	NW 33rd Avenue to Archer Road
5		Waldo Road Multiway Boulevard	Redesign to support Bus Rapid Transit (BRT) and corridor redevelopment study (PD&E)	University Avenue to NE 39th Avenue
6		Bus Rapid Transit (BRT)*	Corridor Infrastructure	Santa Fe Village to Gainesville Regional Airport
7		State Road 24 (Archer Road)	BRT dedicated lanes design, additional roadway capacity and corridor study (PD&E)	MTPO Boundary to SW 45th Street
8		State Road 121 (Williston Road)	Additional roadway capacity and corridor management study (PD&E)	SW 62nd Avenue to SW 35th Way
9		I-75 @ SR 222/39th Avenue	SIS Interchange Modification	--
10		I-75 @ SR 24/Archer Road	SIS Interchange Modification	--
11		I-75 @ SR 26/Newberry Road	SIS Interchange Modification	--
12		I-75 @ SR 331/Williston Road	SIS Interchange Modification	--
Surface Transportation Program				
1 *		Oaks Mall to Airport Bus Rapid Transit Alternatives Analysis	Alternatives Analysis	Oaks Mall to Airport (via Archer Road and Downtown)
2 *		Santa Fe to Oaks Mall Bus Rapid Transit Alternatives Analysis	Alternatives Analysis	Sante Fe to Oaks Mall
3		Streetcar Feasibility Study	Feasibility Study	Downtown to Butler Plaza via University of Florida
4		Intermodal Center / Park and Ride Lot	Park and Ride Lot	TBD (not shown on map)
5		Transit Maintenance Facility	Facility Expansion	--
Surface Transportation Program Enhancements				
1		Cross Campus Greenway	Bicycle/Pedestrian Trail	Archer Road to SW 34th Street
2		Hull Road Parking Area	Bicycle/Pedestrian Trail	SW 34th Street to End of Hull Road Parking Area
3		Hull Road Connector	Bicycle/Pedestrian Trail	Hull Road Parking Area/ SW 20th Avenue
4		Lake Kanapaha Trail	Bicycle/Pedestrian Trail	Tower Road west to Interstate 75
5		SW 34th Street Grade Separated Crossing	Bicycle/Pedestrian Trail	SW 34th Street at Hull Road

* Project alignment will be determined by feasibility studies and alternatives analysis.

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Tables 67 – 70 provide additional detail on the phasing and year of expenditure cost for these projects. The adopted Plan funds about 23 percent of Needs Plan projects, allocating $128 million in anticipated revenues from state and federal funding sources available to the MTPO. As shown in **Figure 9**, estimated year of expenditure project costs are aligned with projected revenues.

The policy direction of the MTPO in considering projects for financial feasibility focused on ensuring a multimodal approach to meeting the area's mobility needs. This policy is reflected in the Year 2035 LRTP as indicated in **Figures 10 and 11**. As shown in the first chart, there is an initial investment in roadway widening and operational modifications for priority projects, but the plan increasingly allocates future funding toward multimodal projects that support increasing transit service and bicycle/pedestrian connectivity. The plan assumes accumulation of funds over time to fund the RTS transit maintenance facility and the Bus Rapid Transit corridor infrastructure in the final five year planning period of the LRTP horizon. Funding sources for the RTS maintenance facility include a federal earmark, a grant from the Federal Transit Administration and use of the MTPO's allocation of Flex funds that can be spent on highway or transit projects. The second chart presents a summary of overall funding for roadway capacity and non-automobile projects, reflecting a nearly 4:1 ratio in favor of multimodal (non-auto) transportation projects.

The Strategic Intermodal System (SIS) projects included in the plan focus on interchange capacity projects along I-75 in the Gainesville Urbanized Area. These projects come from the I-75 Master Plan and have been identified in the state's adopted 2035 SIS Cost Feasible Plan, and are intended to help smooth the flow of traffic at the interchange ramps and reduce the potential for traffic to back up onto the I-75 mainline lanes.

Figure 9: Project Costs and Projected Revenues

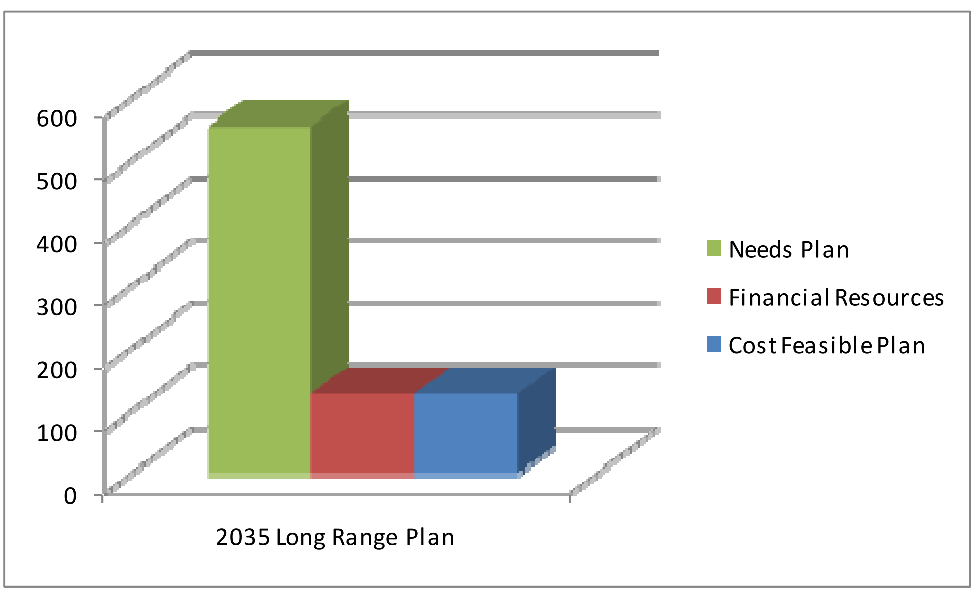


Figure 10: Allocation of Funds by Year of Expenditure

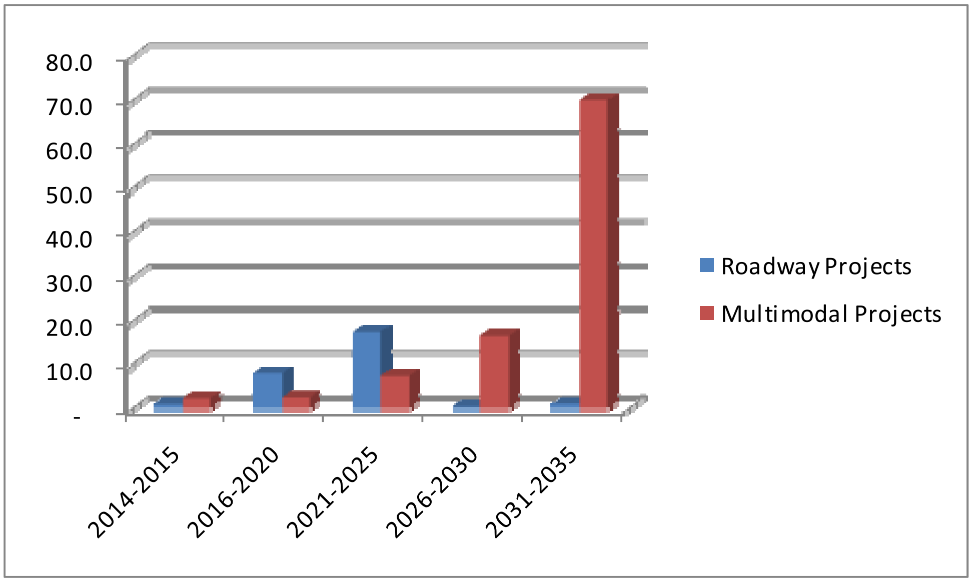
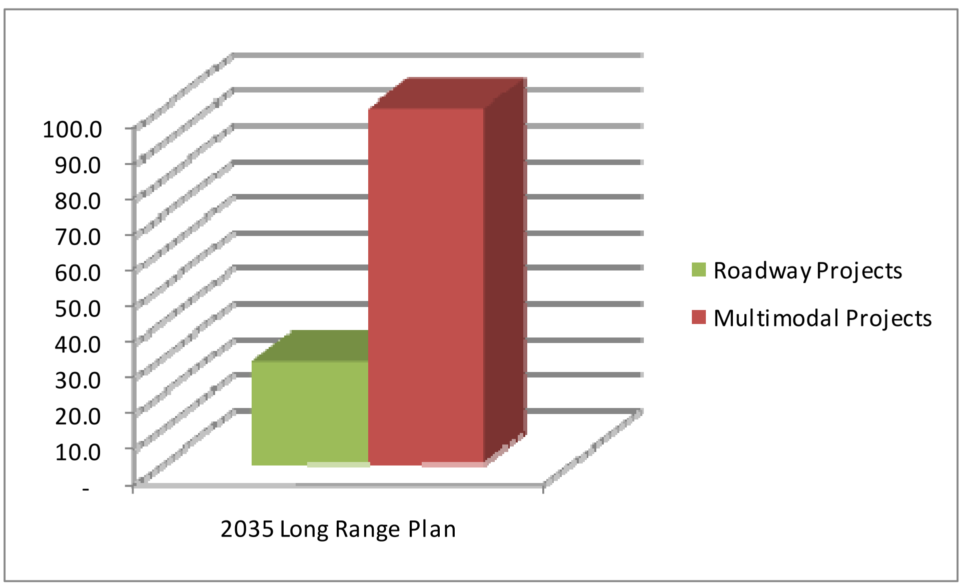


Figure 11: Overall Allocation of Funds



Priority projects using State Highway System funds entail long-standing priorities from the previously adopted Long Range Transportation Plan, including widening SE 16th Avenue from Main Street to Williston Road to support improved regional accessibility for freight and other traffic to connect with the SIS network, and operational enhancements through additional turn lanes on NW 34th Street, which has long been a source of congestion and travel delays. In addition, there is money allocated toward corridor infrastructure necessary to support Bus Rapid Transit service connecting Santa Fe College to the University of Florida, Downtown Gainesville and the Gainesville Regional Airport in East Gainesville. This so-called spine route for the BRT network is intended to operate in mixed traffic and within exclusive right of way. Details of its exact alignment and operating characteristics will be determined following additional study, but the funds allocated will support construction of such elements like the signals, running ways and platforms at stops that are critical to successful BRT service. Additional planning and design funds are allocated toward capacity and livability enhancements in the Waldo Road corridor and to enhance safety and mobility along Archer Road and Williston Road. The funding for those latter two projects is limited, and does not include sufficient amounts for full construction of the additional lanes. Aside from transit operating costs for additional service and construction of the downtown-UF-Butler Plaza streetcar network, other unfunded projects include substantial portions of the planned Bus Rapid Transit network. Partially funded projects represent the widening of Archer Road and Williston Road, which include money allocated for preliminary engineering and right-of-way, as well as some money for construction. In addition, the adopted Cost Feasible Plan includes funding for a feasibility study of the Downtown Gainesville-UF-Butler Plaza streetcar and alternatives analyses for the Bus Rapid Transit network. These projects are key components of the process required to secure federal and state funding support for transit capital projects, addressing critical issues such as cost effectiveness, supporting land use, and development of a sound financial plan.

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Table 67: Strategic Intermodal System Year 2035 Cost Feasible Plan

Facility/Location	Type	Total Cost
Interstate 75 Interchange Modifications	At Williston Road At Archer Road At Newberry Road At NW 39th Ave	$6.4

Table 68: State Highway System Year 2035 Cost Feasible Plan (by Year of Expenditure)

Priority	Description	Project	From/To:	Length (miles)	Project Cost (in 2010 dollars)	2014-2015		2016-2020		2021-2025		2026-2030		2031-2035		Total Cost (YOE dollars)
1	State Road 226 (SE 16th Avenue)	Widen to four lanes	Main Street to Williston Road	0.6	$15.0	$0.8	PD&E		PD&E		PD&E		PD&E		PD&E	$19.0
							PE	$ 1.9	PE		PE		PE		PE	
							ROW	$3.9	ROW		ROW		ROW		ROW	
							CST		CST	$2.4	CST		CST		CST	
2	State Road 121 (NW 34th Street)	Construction of turn lanes to improve safety and traffic flow	NW 16th Avenue to US 441	3.5	$6.0	$0.3	PD&E		PD&E		PD&E		PD&E		PD&E	$7.6
							PE	$0.8	PE		PE		PE		PE	
							ROW	$ 1.6	ROW		ROW		ROW		ROW	
							CST		CST	$ 5.0	CST		CST		CST	
3	State Road 26 (University Ave)	Multimodal Emphasis Corridor	Gale Lemerand Drive to Waldo Road	1.5	$4.8	$0.2	PD&E		PD&E		PD&E		PD&E		PD&E	$6.0
							PE	$0.6	PE		PE		PE		PE	
							ROW	$1.2	ROW		ROW		ROW		ROW	
							CST		CST	$3.9	CST		CST		CST	
4	US 441 (W. 13th Street)	Multimodal Emphasis Corridor	NW 33rd Avenue to Archer Road	2.8	$4.8		PD&E	$0.3	PD&E		PD&E		PD&E		PD&E	$7.4
							PE		PE	$ 0.7	PE		PE		PE	
							ROW		ROW		ROW	$ 1.4	ROW		ROW	
							CST		CST		CST		CST	$ 5.0	CST	
5	Waldo Road Multiway Boulevard	Redesign to support BRT , multi-trail and corridor redevelopment study (PD&E)	University Avenue to NE 39th Avenue	2.5	$3.0		PD&E	$ 0.2	PD&E		PD&E		PD&E		PD&E	$4.7
							PE		PE	$ 0.5	PE		PE		PE	
							ROW		ROW		ROW	$0.9	ROW		ROW	
							CST		CST		CST		CST	$ 3.2	CST	

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Priority	Description	Project	From/To:	Length (miles)	Project Cost (in 2010 dollars)	2014-2015		2016-2020		2021-2025		2026-2030		2031-2035		Total Cost (YOE dollars)
6	Bus Rapid Transit (BRT)	Corridor Infrastructure	Santa Fe Village to Gainesville Regional Airport	14	$ 28.0		PD&E		PD&E	$ 2.1	PD&E		PD&E		PD&E	$44.9
							PE		PE		PE	$ 5.0	PE		PE	
							ROW		ROW		ROW	$ 8.1	ROW		ROW	
							CST		CST		CST		CST	$29.7	CST	
7	State Road 24 (Archer Road)	BRT dedicated lanes design, additional roadway capacity and corridor management study (PD&E)	MTPO Boundary to SW 45th Street	3.5	$0.5		PD&E		PD&E	$0.0	PD&E		PD&E		PD&E	$0.8
							PE		PE		PE	$ 0.1	PE		PE	
							ROW		ROW		ROW	$ 0.1	ROW		ROW	
							CST		CST		CST		CST	$ 0.5	CST	
8	State Road 121 (Williston Road)	Additional roadway capacity and corridor management study (PD&E)	SW 62nd Avenue to SW 35th Way	0.5	$0.5		PD&E		PD&E	$0.0	PD&E		PD&E		PD&E	$0.8
							PE		PE		PE	$0.1	PE		PE	
							ROW		ROW		ROW	$0.1	ROW		ROW	
							CST		CST		CST		CST	$0.5	CST	

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Table 69: Surface Transportation Program Enhancements Year 2035 Cost Feasible Plan (by Year of Expenditure)

Priority	Description	Project	From / To:	Length (miles)	Project Cost (in 2010 dollars)	2014-2015		2016-2020		2021-2025		2026-2030		2031-2035		Total Cost (YOE dollars)
1	Cross Campus Greenway		Archer Road to SW 34th Street	2.1	$1.9	$ 0.1	PD&E		PD&E		PD&E		PD&E		PD&E	$2.6
							PE	$ 0.2	PE		PE		PE		PE	
							ROW		ROW	$ 0.5	ROW		ROW		ROW	
							CST		CST		CST	$ 1.8	CST		CST	
2	Hull Road Parking Area		SW 34th Street to End of Hull Road Parking Area	0.2	$0.2	$ 0.0	PD&E		PD&E		PD&E		PD&E		PD&E	$0.3
							PE	$ 0.0	PE		PE		PE		PE	
							ROW		ROW	$ 0.0	ROW		ROW		ROW	
							CST		CST		CST	$ 0.2	CST		CST	
3	Hull Road Connector		Hull Road Parking Area/ SW 20th Avenue	0.5	$0.5	$ 0.0	PD&E		PD&E		PD&E		PD&E		PD&E	$0.6
							PE	$ 0.1	PE		PE		PE		PE	
							ROW		ROW	$ 0.1	ROW		ROW		ROW	
							CST		CST		CST	$ 0.4	CST		CST	
4	Lake Kanapaha Trail		Tower Road west to Interstate 75	2.3	$2.1	$ 0.1	PD&E		PD&E		PD&E		PD&E		PD&E	$2.8
							PE	$ 0.3	PE		PE		PE		PE	
							ROW		ROW	$ 0.6	ROW		ROW		ROW	
							CST		CST		CST	$ 1.9	CST		CST	
5	SW 34th Street Grade Separated Crossing		SW 34th Street at Hull Road	0.2	$7.0		PD&E		PD&E	$ 0.5	PD&E		PD&E		PD&E	$3.6
							PE		PE		PE	$ 1.1	PE		PE	
							ROW		ROW		ROW		ROW	$ 2.0	ROW	
							CST		CST		CST		CST	7.4	CST*	

* Partially funded

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Table 70: Surface Transportation Program Year 2035 Cost Feasible Plan (by Year of Expenditure)

Priority	Description	Project	From / To:	Length (miles)	Project Cost (in 2010 dollars)	2014-2015		2016-2020		2021-2025		2026-2030		2031-2035		Total Cost (YOE dollars)
1	Oaks Mall to Airport Bus Rapid Transit Alternatives Analysis	Alternatives Analysis	Oaks Mall to Airport (via Archer Road and Downtown)	n/a	$0.4	$0.4	PD&E		PD&E		PD&E		PD&E		PD&E	$0.4
							PE		PE		PE		PE		PE	
							ROW		ROW		ROW		ROW		ROW	
							CST		CST		CST		CST		CST	
2	Santa Fe to Oaks Mall Bus Rapid Transit Alternatives Analysis	Alternatives Analysis	Sante Fe to Oaks Mall	n/a	$0.6	$0.6	PD&E		PD&E		PD&E		PD&E		PD&E	$0.6
							PE		PE		PE		PE		PE	
							ROW		ROW		ROW		ROW		ROW	
							CST		CST		CST		CST		CST	
3	Streetcar Feasibility Study	Feasibility Study	Downtown to Butler Plaza via University of Florida	9.0	$1.0	$1.0	PD&E		PD&E		PD&E		PD&E		PD&E	$1.0
							PE		PE		PE		PE		PE	
							ROW		ROW		ROW		ROW		ROW	
							CST		CST		CST		CST		CST	
4	Intermodal Center / Park and Ride Lot	Park and Ride Lot	TBD	n/a	$1.4	$0.1	PD&E		PD&E		PD&E		PD&E		PD&E	$1.9
							PE	$ 0.2	PE		PE		PE		PE	
							ROW		ROW	$ 0.4	ROW		ROW		ROW	
							CST		CST		CST	$ 1.3	CST		CST	
5	Transit Maintenance Facility		n/a	n/a	$50.0		PD&E		PD&E		PD&E		PD&E		PD&E	$32.2
							PE		PE		PE		PE		PE	
							ROW		ROW		ROW		ROW		ROW	
							CST		CST		CST		CST	$53.0	CST	

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West 13th Street (US 441) and University Avenue (SR 26) Multimodal Emphasis Corridors

The Year 2035 LRTP allocates a limited amount of funding for projects that support improved multimodal accessibility and mobility within segments of West 13th Street and University Avenue in the core part of the Gainesville Urbanized Area. There is nearly $5 million set aside in 2010 dollars ($7.4 million and $6 million in Year of Expenditure, respectively) for each roadway that would be allocated to roadway modifications to be determined that improve multimodal accessibility and mobility along these vital corridors. These "placeholder" funds may or may not fully fund the desired treatments for these two roadway segments, which will be determined following additional more detailed study and consultation with the Florida Department of Transportation.

The West 13th Street (US 441) and University Avenue (SR 26) Multimodal Emphasis Corridors are candidates for design elements that may include signage, pavement markings, medians, facility modifications or additions (including narrower or fewer lanes, wider sidewalks and bike lanes), operational strategies, curb extensions and other measures to enhance multimodal mobility and accessibility. At this time, the projects do not include lane reductions. In general, the intent for multimodal treatments on these major transportation facilities is to accommodate auto, bus, bicycle and pedestrian travel. These corridors provide for travel across town and connect with the regional transportation system. The objective is to support increased travel frequency of multiple modes and link land use destinations. In the future, these corridors will facilitate linking different modes together (i.e., bikes on buses, access to transit, walking or park and ride) by employing elements of "Complete Streets" policies and design elements that strive to accommodate the safety and convenience of all uses, including pedestrians, bicyclists, public transit users, children, older individuals, motorists and individuals with disabilities.

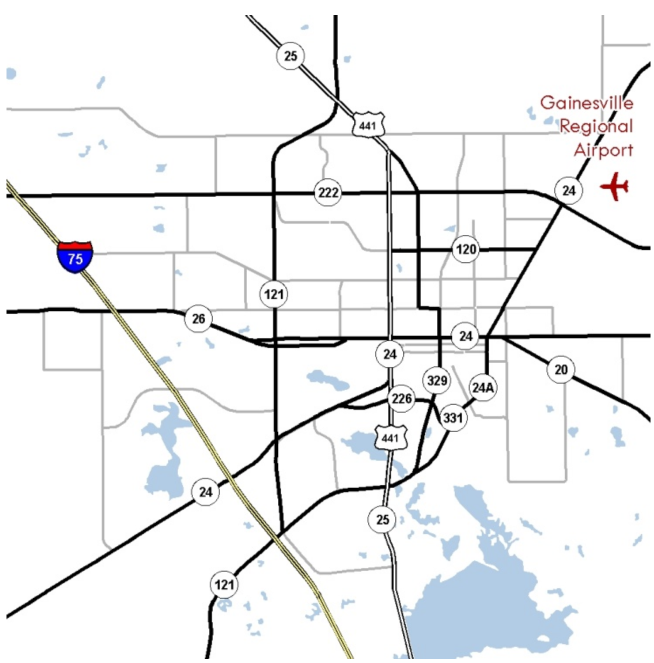
Intermodal Center/Park and Ride Lot

Working closely with the University of Florida, the MTPO has identified funding for a future intermodal center/park and ride lot that would help improve mobility and access to the University of Florida main campus via public transportation. The University's 2010-2020 Campus Master Plan included an analysis of park and ride lot opportunities to identify the best location for a future park and ride facility location. The analysis evaluated potential lot locations relative to residential locations of students, faculty and staff, and their travel time to campus. The analysis was not complete at the time of the public hearing adoption in October 2010, so a placeholder project was included in the Cost Feasible Plan with sufficient funding allocated to include both a park and ride lot and bus transfer facility for the interface of future Bus Rapid Transit networks and local fixed routes and/or express bus routes. Several priority locations emerged from the UF analysis, with a location at Newberry Road and Fort Clarke Boulevard ranking the highest, pending final approval by UF staff.

Gainesville Regional Airport and Freight/Goods Movement

The Gainesville Regional Airport is an important intermodal and economic development hub for the Gainesville Urbanized Area and the North Central Florida region. The airport includes daily commercial and general aviation flights, and has a City of Gainesville industrial park located on the northeast side of the airport property, with access to SR 24, Waldo Road. Other institutions are also located near the airport, including the University of Florida's new eastside operations facility and correctional institutions. As a centerpiece element of the Plan East Gainesville project, the airport and an adjacent site formerly used as the Alachua County Fairgrounds are being repurposed into an attractive gateway to the community, with supporting commercial development consisting of offices, restaurants and hotel land uses. As shown in Figure 6, the Gainesville Regional Airport enjoys outstanding regional highway access via SR 24, SR 26, SR 222 and SR 20, which is part of Florida's Strategic Intermodal System. These roadways provide access to I-75 (SR 24, SR 26, and SR 222) and US 301 (SR 24 and SR 20), both of which are major freight/goods movement corridors, from the airport. The adopted Year 2035 Long Range Transportation Plan also advances plans for a future Bus Rapid Transit network that will connect the airport with downtown, the University of Florida and commercial and institutional destinations on the west side of the urbanized area. The Year 2035 LRTP recognizes the strategic importance of the airport and its supportive land uses as vital elements of the region's economic prosperity, as well as regional and interstate accessibility.

Figure 12: Gainesville Regional Airport Access



Congestion Management Process

One of the important aspects of the comprehensive, continuing and coordinated metropolitan transportation planning process under the SAFETEA-LU federal transportation legislative framework is the integration of the MPO Long Range Transportation Plan with the Congestion Management Process (CMP), which focuses on near term, lower cost strategies for mobility management and corridor or intersection congestion mitigation. The MTPO has an established Congestion Management Process, which defines the data sources, tools and analysis methods to monitor congestion issues, trends and the effectiveness of strategies over time. This is reflected in the Annual MTPO Multimodal Level of Service Report and MTPO Mobility Plan Status Report that help inform the project priority process and support other transportation analysis needs. One of the keys to an effective metropolitan planning process is to give information to decision-makers and advisory groups on the on-going operations of the transportation system, and reporting conditions and trends that may influence policy or project solutions in the future. Therefore, the linkage between the LRTP and CMP is an important one, where the long range vision and project needs established through the LRTP can guide the development of the five year Transportation Improvement Program and annual priorities through the lens of the CMP.

In that spirit, the MTPO will continue to monitor the transportation network in close coordination with FDOT District 2, Alachua County and the City of Gainesville to identify near term, lower cost mobility and accessibility strategies that are consistent with the framework and vision established through the Year 2035 Long Range Transportation Plan. Of particular importance, the MTPO will monitor progress toward achieving the goals of enhanced multimodal mobility and accessibility in the Gainesville Urbanized Area, and providing feedback on that progress to the public, advisory committees and elected officials.

Bicycle/Pedestrian Advisory Board

The MTPO has an established Bicycle/Pedestrian Advisory Board to address and plan for bicycle and pedestrian facility and program improvements in the community. The BPAB addresses the “Six Es” of education, encouragement, enforcement, engineering, equity and evaluation, and functions in complementary fashion to the MTPO’s Citizens and Technical Advisory Committees on matters relating to bicycle, pedestrian and multimodal transportation mobility and access. The committee will continue to address both long term and short term bicycle and pedestrian needs and priorities, guiding implementation of priority projects consistent with the vision and direction of the MTPO’s Long Range Transportation Plan. These priority projects funded in the Cost Feasible Plan include segments of the Alachua Countywide Bicycle Master Plan - designated “Archer Braid” network of shared use pathways that better connect residential areas in the Southwest Gainesville area to the University of Florida main campus.

Intelligent Transportation System

The MTPO, in partnership with Alachua County, FDOT District 2 and the City of Gainesville has identified a number of Intelligent Transportation System (ITS) projects for future funding that are included in the Year 2035 Long Range Transportation Plan for reference. While not cost feasible, these projects build upon the already funded traffic signal system project designed to improve operating efficiency of the area's roadways. The MTPO and its partners can use the list of planned ITS strategies to identify opportunities to implement the projects as part of other maintenance and development activities, and to find funding through various potential sources. **Table 71** describes the ITS priorities in Alachua County as jointly recommended by the MTPO staff, TAC, CAC and B/PAB, and approved by the MTPO on October 27, 2010. Given that the projects are not cost feasible, estimated costs are shown in 2010 dollars only.

Table 71: Intelligent Transportation System Priorities in Alachua County

Project Priority	Project Name	Description	Estimated Cost (2010 Dollars)
1	**Interstate 75 Intelligent Transportation System Corridor** Marion County Line to Columbia County Line	**A**. Add Dynamic Message Signs (DMS) to alert motorists of traffic conditions and travel times. **B**. Add pan-tilt-zoom traffic surveillance cameras for active traffic management of the freeway. This will allow operators at the Gainesville Traffic Management Center (TMC) to alert motorists of existing conditions using the Dynamic Message Signs and the 511 information hotline. **C**. Add traffic detection technology so automated alerts can be sent to Gainesville Traffic Management Center (TMC) operators when highway speeds drop below a certain threshold as well as for highway traffic studies and travel time collection.	$9,900,000
2	**Regional Transportation System Bus Priority System** Adding signal priority to heavily used bus routes for University of Florida students will make those routes more reliable, thus resulting in higher passenger capacity and fewer vehicles on the road.	**A. Route #9** State Road 24 (Archer Road} from SW 23rd Terrace to SW 23rd Drive State Road 331 (Williston Road} from SW 25th Terrace to SW 23rd Street **B. Route #20** State Road 121 (SW 34th Street} from Hull Road to SW 20th Avenue **C. Route #21** State Road 121 (SW 34th Street) from Hull Road to SW 20th Avenue	$600,000
3	**Dynamic Message Signs on State Highways~ Arterials** Dynamic message on the arterials will alert drivers of existing traffic conditions, alternate routes, detour routes in the event Interstate 75 is shut down, and travel times.	**A**. State Road 121 (SW 34th Street) @ SW 20th Avenue (Southbound) **B**. State Road 121 (SW 34th Street) @ State Road 331 (Eastbound) **C**. State Road 25 (W 13th Street) @ State Road 26 (W University Avenue) **D.** State Road 25 (NW 13th Street) @ State Road 222 (NW 39th Avenue) (Westbound) **E.** Road 25 (NW 13th Street) @ State Road 222 (NW 39th Avenue) (Northbound) **F.** State Road 222 (NW 39th Avenue(@ State Road 93 (Eastbound)	$700,000

Project Priority	Project Name	Description	Estimated Cost (2010 Dollars)
4	**Expand Automated Arterial Travel Time System** Expanding the Arterial Travel Time System will provide motorists with more real time information via Google maps or Dynamic Message Signs for actual travel times to various spots in the urban area. Motorists may be able to make a different route choice based on the information they receive. The travel times can be also be used for traffic studies to measure development related impacts.	**A.** State Road 25 (NW 13th Avenue) **B.** State Road 222 (NW 39th Avenue) to State Road 331 (Williston Road) **C.** State Road 121 (SW 34th Street} NW 16th Avenue to State Road 93 (Interstate 75) Southbound Ramp	$600,000
5	**Travel Demand Management** Information technologies project that addresses travel demand strategies, such as high occupancy vehicle (HOV) lanes, high occupancy toll (HOT) lanes and other travel demand management technologies.	Gainesville Metropolitan Areawide	(to be determined)
Grand Total Intelligent Transportation System Projects			**$11,800,000**

Safety Element

SAFETEA-LU mandates that MPOs develop a Safety Element as part of their Long Range Transportation Plan to provide planning guidance on ways to improve safety in all aspects of transportation mobility. This legislation recognizes safety as a separate planning factor, and it is indeed a crucial ongoing issue affecting all modes and users. Statistics bear this out. The Florida Department of Transportation's Safety Office developed the Strategic Highway Safety Plan to improve the safety of Florida's surface transportation system for residents and visitors through focusing funding and other resources strategically on those problem areas where the opportunity for improvement is greatest, as measured by reductions in fatalities and serious injuries.

This Safety Element of the Year 2035 LRTP begins with a discussion of the policy framework provided by the State of Florida Strategic Highway Safety Plan (SHSP) followed by an assessment of how the Gainesville Urbanized Area has fared in comparison with other areas of the state and country regarding safety, based on the priority areas in the SHSP. Results show that crash rates in Alachua County are slightly lower than the majority of other counties nationwide, but safety (based on crash rates) is still a major concern, especially for vulnerable road users such as bicyclists, pedestrians, motorcyclists, and elderly users. The second section identifies safety goals and objectives adopted by the MTPO to guide how the agency intends to address safety in future years. The third section identifies the strategies the MTPO will use to monitor safety indicators, allocate resources most effectively to priority safety projects and programs, and coordinate with various agencies to improve overall safety on the Gainesville Urbanized Area's transportation network.

Safety Issues and Conditions

FDOT's Strategic Highway Safety Plan provides a framework for addressing local safety issues and identifying funding sources for implementation. The State Office of Safety continually reviews statewide crash statistics. This agency has identified four types of emphasis areas on which to focus efforts and resources, based on an analysis of safety problems and current resource allocation in Florida:

- Aggressive Driving
- Intersection Crashes
- Vulnerable Road Users (pedestrians, bicyclists, and motorcyclists)
- Lane Departure Crashes

Figure 13 below outlines main objectives under each of the four emphasis areas in the Florida Strategic Highway Safety Plan.

Figure 13: Florida's Traffic Safety Target Areas

FLORIDA STRATEGIC HIGHWAY SAFETY PLAN

Reducing the rate of fatalities and serious injuries.

1 Aggressive Driving

- Enhance and promote effective law enforcement programs to reduce aggressive driving.
- Increase education and training to address aggressive driving behaviors.
- Identify and mitigate roadway features that may cause aggressive driving.

2 Intersection Crashes

- Increase the safety of intersections for all users.
- Strengthen traffic enforcement at intersections.
- Increase educational efforts concerning intersection behavior, design, and engineering.

3 Vulnerable Road Users (pedestrians, bicyclists, and motorcyclists)

- Provide local and state agencies with data, skills, and tools to identify effective safety countermeasures for pedestrians, cyclists, and motorcyclists in the areas of engineering, education, enforcement, and emergency response.
- Establish consistent mobility strategies.

4 Lane Departure Crashes

- Improve public education, engineering, and law enforcement practices to reduce lane departure crashes on limited access and rural two-lane roadways.

The Alachua County Community Traffic Safety Team (CTST) maintains a list of safety issues in the County that forms the basis for the MTPO's annual priority lists for Safe Routes to Schools and other safety funding. Participants at community workshops for the Year 2035 LRTP were asked to identify safety concerns in the region. Most issues raised related to bicycle and pedestrian safety at specific locations, often focused on pedestrian crossings and high traffic speeds. This information will be provided to the Alachua County CTST for incorporation into its process for addressing safety issues.

National and Statewide Assessments

In addition to the data collected and summarized by the counties, the National Highway Traffic Safety Administration (NHTSA) summarizes traffic fatality data nationally using a number of measures. Information from the most recent NHTSA reports is summarized below in **Table 72**.

Generally, Alachua County compares favorably to other counties across the country in regards to the four emphasis areas identified by the State of Florida's Strategy Highway Safety Plan. The rankings place the County in the lower third of all US counties for overall fatal crash rates, aggressive driving and lane departure fatalities and the middle third for fatalities in intersection crashes and those involving vulnerable road users. **Table 72** shows the ranking of crash rates in Alachua County compared to nationwide rates.

Table 72: Alachua County Crash Rates Compared to all U.S. Counties

FSHSP TARGET AREA	NHTSA MEASURE	PLACEMENT WITHIN RANKINGS OF ALL US COUNTIES
Overall safety	Fatal crashes	Lower third
Aggressive driving	Fatalities in crashes involving speeding	Lower third
Intersection crashes	Fatalities in crashes involving intersections	Middle third
Vulnerable road users	Motorcyclist fatalities	Middle third
	Pedestrian fatalities	Middle third
	Pedalcyclist fatalities	Middle third
Lane departure crashes	Fatalities in crashes involving roadway departure	Lower third

Source; National Highway Traffic Safety Administration, http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/STSI/12_FL/2009/12_FL_2009.htm#MAPS_1

System Safety Objectives and Strategies

Increasing safety for mobility and accessibility in the Gainesville Urbanized Area is one of the MTPO's major goals for the LRTP. The key objectives to meet this goal are as follows:

- **Address existing and potential safety problems** on or adjacent to transportation corridors through an interagency planning and prioritization process.
- Implement techniques to **calm traffic** in residential, educational and commercial areas where walking and bicycling are common.
- Implement a comprehensive **Safe Routes to School Program** to increase the percentage of children walking or bicycling to school.
- Implement additional sidewalk, bike lanes and bike paths for vulnerable road users to improve safety in all aspects of transportation.
- **Increase safety for vulnerable road users**, including the elderly, children, pedestrians, bicyclists, motorcyclists and motorscooter riders.
- Implement techniques and **roadway design to reduce fatalities and serious injuries** from common intersection crashes, lane departure crashes, and aggressive driving.
- **Improve performance** through safety improvements and countermeasures.

- **Coordinate with the Florida Department of Transportation** to implement the Florida Strategic Highway Safety Plan.
- Incorporate safety-related strategies, plans and activities (including transit safety) in the Safety Element of the long range transportation plan.

These objectives are designed to help the MTPO target its safety programs and its funding priorities. Performance measures and targets for each objective are identified below to enable the MTPO to track progress on meeting these safety goals and objectives. They will be incorporated to guide MTPO annual priorities and work programs, as well as future updates of the LRTP.

System Safety Recommendations

Goals, Objectives, Performance Measures and Targets

The MTPO will rely on the following performance measures and targets to evaluate progress towards achieving its system safety objectives. To ensure consistency of measurements over time, the MTPO works with the Alachua County Community Traffic Safety Team to set a current baseline data point for each measurement and update the measures and track progress through development of its Priority Projects Lists and through updates to the LRTP.

System Safety Improvements

With its ability to direct state and federal transportation funding, the MTPO can directly influence how and where safety improvements are made in the Gainesville Urbanized Area. The MTPO has a range of funding available for safety projects each year from various sources. The MTPO works closely with the Alachua County Community Traffic Safety Team (CTST) to identify specific safety improvement needs, projects and programs for inclusion in the TIP. The Year 2035 LRTP reflects an increased emphasis on transforming the transportation network in the Gainesville Urbanized Area to a multimodal system, designating Multimodal Emphasis Corridors on University Avenue and 13th Street and allocating funds toward increased transit options (including Bus Rapid Transit and streetcar) and bicycle/pedestrian projects. Safety strategies are part and parcel of many complete street and multimodal projects, ranging from dedicated bike lanes and sidewalk/street buffers to access management strategies and enhanced pedestrian crossings. As part of the development of transportation projects, the MTPO and its partners will collect baseline data regarding safety issues and other travel information. This will allow for before-and-after comparisons of the benefits of the implemented transportation projects.

SELECTED SAFETY OBJECTIVES AND STRATEGIES

Objective: Address existing and potential safety issues.

- Physical modifications (sidewalks, clearance zones, narrowing roadways, etc.)
- Education programs to make travelers more aware of safety risks and rules (defensive driving, sharing the road, "slow down/move over," etc.)
- Education and enforcement programs to reduce risky behaviors (drunk driving, seat belt use, etc.)
- Coordinate with CTST to identify projects for funding from various safety programs

Objective: Increase safety, mobility, accessibility for vulnerable road users

- Construct new sidewalks, bicycle facilities, and trails
- Increase outreach and education with law enforcement, prosecutors, and judges for enforcing traffic laws relating to pedestrians, cyclists, and motorcyclists
- Adopt a Complete Streets policy to ensure the needs of all users are considered/met in roadway design

Objective: Implement techniques to calm traffic and improve performance

- Implement access management strategies to encourage trucks to use alternate routes
- Review preferred truck routes through the region

Objective: Improve pedestrian and bicyclist safety

- Implement a 6 Es (Engineering, Education, Enforcement, Encouragement, Evaluation & Planning, and Equity) approach to bicycle and pedestrian planning
- Provide education for both motorists and cyclists regarding rules of the road and reducing conflicts
- Support Safe Routes to Schools programs and projects to encourage children to walk to school

Policy and Coordination Recommendations

Alachua County has an active Community Traffic Safety Team, which includes individuals representing law enforcement, emergency management, transportation planning and traffic engineering, medical services and others. The CTST reviews safety concerns, promotes traffic safety programs, and maintains a list of safety concerns needing some sort of action. The CTST provides a forum for discussing safety issues and resolving them effectively through interagency coordination and/or funding resources from safety programs. The CTST also participates in the State CTST Coalition, which meets quarterly to share best practices among CTSTs.

Security Element

System Security Objectives and Strategies

Large scale terrorist attacks, such as the 9/11 attacks on New York and Washington, D.C. and natural disasters, such as Hurricane Katrina's flooding of New Orleans, have raised our awareness about the need to prevent, protect and recover from such calamities. Transportation systems and services are impacted directly and indirectly by such events, particularly terrorist attacks. NCHRP Report 525, c3, p13 highlights the following points:

Transportation infrastructure's vulnerability to terrorist acts can be attributed to several features. First, transportation infrastructure (stations, vehicles, and networks) serve high concentrations of people, thereby increasing the potential number of casualties. Second, transportation systems provide essential services to the public, thereby threatening their way of life. Third, transportation systems can be used as both the delivery and escape mechanisms of terrorists. These features make transportation infrastructure a target of choice for those wanting to spread fear to the widest segment of society. They also make transportation infrastructure harder to secure from terrorist actions.

Transportation security and safety are closely related. Safety-related plans, policies, programs, and projects generally focus upon protection from injuries and fatalities among the traveling public. Security-related plans, policies, programs, and projects address protection and recovery from manmade and natural disasters. Whatever the cause, disruption of the transportation system undermines the safe and energy-efficient movement of people and goods.

In recognition of the need to properly plan for the security of the nation's transportation systems for motorized and non-motorized travelers, the Federal Transportation Bill of 2005, SAFETEA-LU, specifies the following considerations that must be included in a long-range transportation planning process:

- Federal requirements for security planning for the transportation system;
- The MPO's role in local and regional security planning activities;
- Protection of, and recovery planning for, critical transportation infrastructures including airports, railroads, intermodal terminals, and transit facilities;
- Coordination of regional freight security planning policies and procedures with those of FDOT and the Federal Highway Administration; and

- Policies relevant to transportation security planning, coordination and communications; project programming and prioritization; and green transportation initiatives that support national security.

Goal Statement 4 of the Year 2035 LRTP states that that MTPO will improve the security and resilience of the transportation system. Key objectives for achieving this goal include the following:

- Increase the ability of the transportation network to accommodate variable and unexpected conditions without catastrophic failure.
- Compile existing plans and protocols into a transportation security plan that protects lives and coordinates the use of resources.
- Increase personal security of users by implementing appropriate design strategies, such as improved lighting and visibility measures, at appropriate locations such as transit stops and intermodal facilities where people are waiting.
- Review and update the Continuity of Operations Plan on a regular basis to ensure the continuity of essential office functions if a major event/emergency/disaster occurs.
- Support development of alternative fuel sources and infrastructure to provide continuing transportation services in the event of scarcity.
- Coordinate with appropriate agencies to protect the critical transportation infrastructure against disaster by identifying vulnerable assets and possible threats to these assets, developing prevention strategies, and planning for recovery and redevelopment after disaster (in coordination with the Local Mitigation Strategy).
- Incorporate security-related strategies, plans and activities (including transit security) in the Security Element of the long range transportation plan.

System Security Issues and Conditions

Based upon recommendations from national research on transportation safety and security planning, the assessment of issues and conditions in the Gainesville Urbanized Area incorporates the following steps:

- Step 1: Identify the high value transportation assets in the Gainesville Urbanized Area.
- Step 2: Consider security-related threats to these assets under the two most likely types of incidents: a terrorist attack or a hurricane/evacuation.
- Step 3: Identify the MTPO's potential role in mitigating the impacts of each scenario.

High-Value Transportation Assets

Key transportation assets in the Gainesville Urbanized Area that may be particularly vulnerable to security threats include the following facilities:

- **Gainesville Regional Airport:** Many airports are attractive targets for terrorists due to the access to freight and passengers within the airport grounds and on board aircraft served by this facility.
- **Transit System Facilities/Routes:** Key transit routes may be vulnerable to security risks, such as terrorist attacks or other situations that may disrupt public transportation services in the Gainesville Urbanized Area. The high-ridership routes serving the University of Florida campus, and facilities, such as the Gainesville Regional Transit System's Maintenance Facility and Rosa Parks RTS Downtown Station, would be of special concern.
- **University of Florida:** While not a transportation facility, the University of Florida (UF) serves as a key destination for both people and goods within the Gainesville Urbanized Area, and emergency situations could profoundly affect transportation access to and around the University.
- **I-75, SR 24 (Archer Road), US 441, SR 26 (Newberry Road), SR 20 (Hawthorne Road) and other major state roadways:** These major roadways handle a large majority of the freight and goods movement through and into the region making them attractive targets for terrorist attacks. In addition, these roads are the region's primary hurricane evacuation routes, and while not a coastal community, wind from hurricanes and other storms can cause major disruption to the transportation network, as seen in other inland counties. It is very important to ensure that plans and strategies are in place to manage and redirect traffic to other routes and/or travel modes in the event of disruptions or route closures along these corridors.
- **Hurricane Evacuation Routes:** State, regional and local emergency operations and management teams develop hurricane preparedness plans. As an inland county, Alachua County serves as a major destination and shelter location for persons evacuating from Florida's coast in the event of an impending hurricane. Therefore, hurricane evacuation is a particularly important factor in the Gainesville Urbanized Area's transportation system performance evaluation and planning. Key issues include providing adequate evacuation routes for traffic from the coastal areas travelling both through the County on I-75, SR 20, and SR 24 as well as those seeking to stay at area hotels and shelters. Application of Advanced Traffic Management System information on these and other regionally significant roadways is a key aspect for improving emergency evacuation.

Security Threat Scenarios

The primary large-scale security threats to the Gainesville Urbanized Area's transportation system are terrorist attacks and hurricane evacuation/storm-related issues. Key transportation-related strategies for these types of events include coordinating with state and local officials regarding quick and efficient evacuation, rerouting traffic away from impacted areas and corridors, and maintaining operations of critical facilities such as the transit system, the University, and the Airport. The development of scenarios reveals several key threats to major transportation assets in the Gainesville Urbanized Area. The County's Emergency Management Plans and Local Mitigation Strategy provide further detail on the hazards affecting the region's critical infrastructure, including transportation facilities.

System Security Recommendations

Goals, Objectives, Performance Measures and Targets

The MTPO will rely on the following performance measures and targets to evaluate progress towards achieving its system security objectives. To ensure consistency of measurements over time, the MTPO will begin by setting a current baseline data point for each measurement. Once that baseline is established, the MTPO will update the measures and track progress as part of its program evaluations and future LRTP updates.

System Security Improvements, Policies and Coordinating Strategies

Based upon guidance from the National Cooperative Highway Research Program, transportation system security plans should address the following issues and strategies:

- Prevention, including strategies such as surveillance (CCTV) and communication infrastructure technologies, and processes such as continual communication, coordination and planning;
- Protection, including physical access barriers and design features that limit access to a facility, such as blast-resistant fences and concrete pilings;
- Redundancy, which provides the ability to recover quickly in case of an attack or a hurricane event. Strategies include backup plans and infrastructure to ensure uninterrupted interagency communications, multiple transportation routes, and effective public information systems.
- Recovery, including plans and strategies that involve operational and communications technologies, as well as institutional coordination.

As noted earlier, security preparedness, response, and mitigation plans have been prepared for Alachua County and are incorporated into the Year 2035 LRTP by reference. Each of the plans addresses the threat responses listed above. The MTPO will stay apprised of those plans and any updates to them, and identify ways to supplement those plans through transportation-related modifications and strategies. In particular, the MTPO is in a key position to serve in a coordinating role both planning for and during recovery from a disaster based on its unique position of being an independent organization that crosses jurisdictional boundaries and works with staff and elected officials at various levels.

Operations and Maintenance of the Transportation System

The Year 2035 LRTP considered operating and maintenance costs for the transportation network in development of the plan. The Financial Resources chapter, included earlier in this report, addresses existing and future revenues needed to operate and maintain the Gainesville Urbanized Area's transportation system. For roadways, maintenance is not included as part of the revenue estimates provided by the Florida Department of Transportation, so costs for new projects only included the cost to plan, design, acquire right-of-way and construct roadway projects. The FDOT assumes that it will accommodate the maintenance needs of the state highway system using revenues from the state's Transportation Trust Fund. For non-state roadways, the financial resources analysis revealed that Alachua County and the City of Gainesville use all of their local gas tax revenue for maintenance of the existing roadway network, as well as construction and repair of sidewalks, intersection signal operations, signage and pavement markings.

For transit, the Cost Feasible LRTP addresses the future operating expenses needed to maintain and operate the existing RTS bus fleet. The revenue projections include $74.7 million in transit funding through 2035 that is mostly needed to cover operating costs. Only a very small portion of that funding – about $3.7 million – is available for non-operating costs for the existing bus fleet into the future. Other sources of existing and projected funding were identified and applied to cover the costs of the new RTS bus maintenance facility, which is necessary to maintain the current fleet and expand service into the future.

Effectiveness of the Year 2035 Cost Feasible Plan

The Year 2035 Cost Feasible LRTP is a financially constrained plan that does not achieve all of the identified transportation needs to support the goals and objectives identified for the Gainesville Urbanized Area. The principal limitation is the lack of financial support for an expansion of transit service to cover additional operating costs. The Year 2035 Needs Plan includes a spine Bus Rapid Transit corridor along with several feeder BRT routes and expanded local fixed route bus service to help meet the needs associated with future growth and support community redevelopment objectives. Most of these BRT projects are located along congested and constrained roadways, such as Newberry Road, NW 13th Street, Archer Road, NW 39th Avenue and parallel to SW 20th Avenue. While some of the capital and maintenance needs are being accomplished for this transit expansion through funding of the new RTS maintenance facility and acquisition of rights-of-way for the BRT through the County's policies, the major challenge is the operating cost of new service.

The project evaluation criteria developed for ranking of Needs Plan projects (and discussed earlier in this report) addressed the following factors: On or parallel to an existing or future congested roadway; extending existing transit service to high population and employment density areas; located in highly accessible area; connects two or more collector or arterial roads; and increases frequency of transit service to less than 30 minutes or expand operating hours. The Cost Feasible

Plan accomplishes many of those criteria by funding the initial phases of the BRT and streetcar network, a new park and ride lot, and improving operations along several congested corridors. In addition, locally funded projects, such as widening NW 23rd Avenue, support the criteria and help achieve the objectives of the Needs Plan. However, the lack of transit operating funds to add service along these corridors means the Cost Feasible Plan fails to fully provide the anticipated full array of viable travel choices along congested or constrained corridors that would better connect trip origins with key employment, educational and commercial destinations. In addition, by failing to fund the Archer Road widening project or viable express bus service, the Cost Feasible Plan does not resolve projected roadway capacity problems along this major commuting route. Without supplemental funding to support the initial transit service development efforts (including BRT, express bus and local fixed route service expansion), the primary impact of the financially constrained LRTP is to only marginally reduce anticipated travel delays by 2035 while not providing adequate transit alternatives to meet the expected demand. Long term, this funding situation must be addressed with additional revenues to make the vision of a highly transit accessible community a reality for the entire urbanized area.

Year 2035 Needs Plan Unfunded Projects

As stated above, full funding of the identified transit projects included in the Needs Plan is the major limitation of the Year 2035 Cost Feasible Plan in achieving the adopted vision, goals and objectives of the Livable Community Reinvestment Plan. The Cost Feasible Plan lays a strong foundation for achieving the adoption vision of the Year 2035 LRTP with funding of the RTS maintenance facility, and the initial steps toward development of the Bus Rapid Transit network; however, that foundation does not put transit service into operation. A lack of sufficient revenue sources to fund the construction of the BRT network by 2035, as well as the lack of defined revenue sources to fund the associated operating costs of BRT, streetcar, express bus and fixed route service, means that a central element of the plan is not achievable without new additional funding sources. The unfunded BRT network would connect the east and west areas of Gainesville, providing improved connectivity and an alternative within congested and constrained corridors.

There are a number of other unfunded transportation projects in the Needs Plan that failed to be included in the Cost Feasible Plan. Some of those include widening of SW 62nd Boulevard and Archer Road, which would help facilitate the BRT network as well as reduce congestion and delay on key east-west corridors on the west side of the community.

Securing Alternative Funding Sources

The Year 2035 LRTP considered potential additional revenue sources early in the planning process as part of the documentation of the revenue available for transportation projects in the Gainesville Urbanized Area. However, the adopted Cost Feasible Plan does not include any transportation projects that are assumed to be funded using new or alternative revenue sources. The plan assumes only those revenues identified from conventional state and federal sources that were provided to the MTPO by FDOT District Two for use in developing the LRTP. Therefore, it is not necessary to document steps toward ensuring the availability of alternative revenue sources for the MTPO's adopted Year 2035 Cost Feasible LRTP.

On the local government side, one of the alternative revenue sources listed in the financial resources documentation is a mobility fee. Authorized by the Florida Legislature in 2009, mobility fees provide a way to fund multimodal transportation projects identified as part of a local governments' mobility plan to address transportation concurrency needs. Alachua County has moved forward with the adoption of a mobility plan that is largely based on development of a Bus Rapid Transit network. A mobility fee was also under development to support the County's mobility plan at the time of the LRTP adoption in October 2010. The list of Alachua County Cost Feasible projects was taken from the adopted mobility plan, and is based on the assumption that the mobility fee would be in place.

A more significant issue is how the community will fund ongoing expansion of fixed route and premium bus service into the future. The adopted Year 2035 LRTP only shows enough transit revenue to pay for existing bus service, although there is a substantial amount of new bus service included in the Year 2035 Needs Plan. Due to the lack of revenues, this additional bus service was not included in the Cost Feasible Plan. The City of Gainesville and Alachua County, in partnership with the MTPO, will need to address future funding for expanded bus operations if additional service is to be implemented in the future. The financial resources document identified several potential sources of revenue for that purpose, such as a discretionary sales tax, a Charter County Transportation Surtax, or a Municipal Services Taxing Unit (MSTU). These and other options should be explored if the transit service adopted as part of the Year 2035 Needs Plan is to become financially feasible.

Coordinating Transportation Planning and Land Use/Economic Development

A major consideration in the Year 2035 LRTP is the influence of land use, urban form and economic development on the transportation network needs within the Gainesville Urbanized Area. In developing the draft Needs Plan for approval by the MTPO, a primary driver of the technical analysis entailed an evaluation of multimodal network accessibility relative to key destinations, such as centers of education, medical institutions and places of business and retail centers. The objective of the analysis was to demonstrate how the transportation plan can improve accessibility of both households and employment locations in the urbanized area from existing conditions to 2035. The analysis revealed that the trend, or status quo, shows an increasing number of households and jobs will be located in less accessible areas in the future unless specific transportation strategies are chosen to alter that trend. This analysis was also tied to the peak oil analysis that looked at the increasing scarcity and price volatility of oil supplies. These analysis steps provided a technical and policy basis for the MTPO and its local government partners to adopt the Year 2035 Needs and Cost Feasible Plans that improve accessibility and will support future economic growth and greater development intensity along core transit routes, including planned Bus Rapid Transit corridors.

Strategic Environmental Mitigation

As part of the Year 2035 LRTP, the MTPO worked with FDOT District 2 to perform an environmental screening of all projects included in the adopted Needs Plan. The planning level screen followed Florida's Efficient Decision Making Process (ETDM) to evaluate community, cultural and natural effects for 36 separate projects. A geographic information systems (GIS) analysis examined each project in terms of a 100', 200' and 300' buffer to determine whether potential socio-cultural and environmental effects would be significant. These results were converted into a numeric value (e.g. Low = 1; Moderate = 2; High = 3). The numeric values were added together to create a consolidated or "final" score for each Needs Plan project. Low scores indicate lower overall environmental impacts and less estimated costs associated with potential mitigation, and high scores indicate potentially greater environmental impacts and higher estimated costs associated with mitigation. These findings are documented in the Needs Plan narrative and in Appendices N and O.

As a result of that analysis, all Needs Plan projects scored low in terms of environmental effects, with the exception of the Bus Rapid Transit and streetcar projects, which scored in the moderate category. There were no projects that rated in the high category. This indicates that none of the projects in the Needs Plan identified major environmental issues or "red flags" that would require mitigation. For the transit needs plan projects with moderate environmental effects, each will go through a federal Alternatives Analysis process to help evaluate a preferred alignment and develop more detailed cost estimates, which will include any necessary environmental mitigation.

Development of the Coordinated Public Transit-Human Services Transportation Plan

During the development of the Year 2035 LRTP, one of the initial meetings involved a presentation and dialogue with the Alachua County Transportation Disadvantaged Coordinating Board (TDCB). The purpose of the meeting was to invite input from the public and the Board members on public transportation issues, opportunities and needs, including fixed route and paratransit, or demand-response, service in the community. The comments are summarized in the Public Involvement chapter of this report, and essentially addressed issues related to expanded fixed route bus service into certain areas of Alachua County, the need for additional park and ride lots with transit service, and the desire to shift more demand-response riders to the fixed route bus system at a lower cost per rider. In addition, there was discussion of improved service coordination to create gathering points, or hubs, for improved integration of public and human services transportation. Ultimately, the adopted Needs and Cost Feasible Plans included projects to expand public transportation service within the urbanized area, with funding focused on an expanded transit maintenance facility to support expanded service levels for all types of service in the future.

Projected Transportation Demand

The Year 2035 LRTP was based on population and employment projections to 2035 that show an additional 70,000 people and 50,000 jobs over current totals for all of Alachua County. This increase in population and employment, as well as the growth in surrounding counties, was used with the Alachua Countywide Travel Demand Model to project future traffic levels and areas of anticipated congestion. In addition, the model and associated socioeconomic data projections was used to estimate increases in Vehicle Miles of Travel and Vehicle Hours of Travel, two key performance measures associated with air pollution and sprawl development patterns. The analysis showed nearly 12 million VMT and 380,000 VHT by 2035, as reflected in some 300 congested lane miles of roadway. An accessibility analysis also evaluated the relative accessibility of housing and employment based on available transportation options and land development patterns. Various alternative networks were developed to reduce the VMT and VHT trends, and to increase the area's overall accessibility for both people and goods. Ultimately, the adopted Needs and Cost Feasible Plan networks included projects that result in a lowering of VMT and VHT, and help improve overall accessibility. Several projects, such as I-75 access ramp modifications and widening SE 16th Avenue, were specifically identified to improve goods movement in the region.

Operational and Management Strategies

The Gainesville Urbanized Area has a strong transportation policy framework in place that focuses efforts on development of multimodal transportation networks, primarily within existing rights of way, to reduce environmental effects, limit adverse impacts to established neighborhoods and provide for more travel options. Much of this policy framework stems from the desire to protect and revitalize the historic areas within the City of Gainesville and on the main campus of the University of Florida, but also from interests to create a more livable and sustainable community throughout the Urbanized Area, by fostering more compact development patterns, greater use of public transportation, and increasing accessibility, mobility and safety of non-motorized transportation modes.

The Year 2035 LRTP features operational and management strategies to improve the performance of the transportation system, help reduce congestion at critical points in the network, and increase safety and mobility. The following are examples of the types of operational and management strategies included in the adopted plan:

- Development of the RTS bus maintenance facility. Management of an expanded bus fleet to achieve higher levels of transit service requires an up-to-date facility to maintain vehicle and passenger safety. RTS has acquired the land for a new maintenance facility designed to accommodate future growth of the service, including Bus Rapid Transit, and the LRTP provides funding through 2035 to construct the maintenance facility in phases.

- Development of future BRT corridors through feasibility studies and dedication of rights-of-way as part of Alachua County's growth management strategy. Management of an efficient and effective transportation system requires forethought about possible corridor transformations and acquisition of rights-of-way early in the process to reduce costs and reach agreements from appropriate maintenance and operating entities, such as FDOT and RTS. The Year 2035 LRTP lays this foundation.
- Operational improvements along key corridors to reduce congestion, such as through turn lane additions on NW 34th Street, which has long experienced traffic congestion from left-turning vehicles during peak periods.
- Identification of Intelligent Transportation Systems (ITS) applications throughout the region that build upon the City of Gainesville's Advanced Traffic Management System (ATMS) and associated traffic signal system modifications to ensure a more adaptive and dynamic response to recurring and non-recurring congestion, such as delays caused by incidents. This will provide better and more timely information for travelers to avoid congestion, take alternative routes or use other travel modes to reach their destinations.
- Interchange ramp modifications along I-75 as part of the state's Strategic Intermodal System, which addresses key congestion hot spots in the Gainesville area. These access ramp modifications were identified initially in the I-75 Master Plan, and have been advanced through the Year 2035 LRTP to improve safety along the I-75 mainline, its ramps, and along the intersecting state arterial roadways.
- Development of a network of shared use paths for safe non-motorized access within one of the more congested corridors of the Gainesville Urbanized Area. The Year 2035 LRTP advances priority bicycle and pedestrian projects that help to create another travel option that gives users the ability to avoid higher speed congested roadways, cross major barriers like I-75 and NW 34th Street, and reach their destination without using gas or taking up a parking space. These network enhancements complement the on-road bicycle and pedestrian facilities by improving accessibility for users of all ages and abilities.

The measures of accessibility, defined in the Year 2035 Needs Plan chapter, should provide a good basis for guidance in the future about transportation management and operations to improve the overall efficiency and effectiveness. The MTPO and its partners should evaluate the relative accessibility of households and jobs based on the available transportation options and networks serving them. Along with measures of VMT and VHT, transit ridership and roadway level of service, accessibility provides a valid and operationally-focused basis for guiding decision-making on management and operations of the transportation system,

Regional Priorities and Needs: Capital Investment and Other Strategies to Preserve Infrastructure and Increase Multimodal Capacity

The entire Year 2035 LRTP addresses capital investments and a variety of other strategies to preserve existing infrastructure and increase multimodal capacity. The basic premise of the Year 2035 update of the Livable Community Reinvestment Plan is to focus on preservation of the existing roadway network and expand multimodal options to enhance quality of life and reduce negative effects of transportation, such as greenhouse gas emissions and environmental or community impacts. The planning analysis included land use and transportation strategies that address key factors like proximity and availability of travel options as ways to preserve existing infrastructure and increase overall system capacity by increasing the viability of non-auto modes. Chief among these strategies is the Bus Rapid Transit network, which largely would operate within the rights-of-way of existing roadways, sometimes in mixed traffic and in other times running on dedicated lanes. The BRT would expand multimodal capacity within existing roadway corridors, helping to reduce congestion and improve overall efficiency for transit and non-transit users.

Through adoption of the Cost Feasible Plan, the MTPO identified key priorities that will advance regional transportation needs and substantially preserve existing infrastructure and increase multimodal capacity. The RTS maintenance facility is a central component of this regional strategy, because it would enable a much broader expansion of bus service of all kinds throughout the Gainesville Urbanized Area. The plan also identifies funding needed to replace the existing transit stock, and develop multimodal strategies on two primary corridors – University Avenue and West 13th Street. The Archer Braid network of shared use paths and roadway crossings is included in the adopted plan to provide a critical east-west connection for non-motorized transportation in an increasingly congested area where additional growth is expected. In addition, projects like the SE 16th Avenue widening provide system continuity to connect east and west Gainesville with four lane roadways that will facilitate truck traffic between commercial and institutional areas west of downtown with the Strategic Intermodal System and the airport industrial area on the east side of the community. Finally, the plan identified a series of Intelligent Transportation System projects that, although not fully funded, will support the more efficient use of the existing transportation network.

Peak Oil Land Use and Transportation Mitigation Strategies

Potential Future Land Use and Transportation Scenarios to Mitigate Effects of Peak Oil

Introduction

According to various sources, peak oil theory states that any finite resource (including oil) will have a beginning, middle and an end of production, and at some point it will reach a level of maximum output. Oil production typically follows a bell shaped curve when charted on a graph, with the peak of production occurring when about half of the oil has been extracted. With some exceptions, this holds true for a single well, a whole field, an entire region, and presumably the world. In the US for example, oil production grew steadily until 1970 and declined thereafter, regardless of market price or improved technologies. World discovery of oil peaked in the 1960s, and has declined since then. If the 40 year cycle seen in the US holds true for world oil production, that puts global peak oil production right about now; after which oil becomes less available, and more expensive.

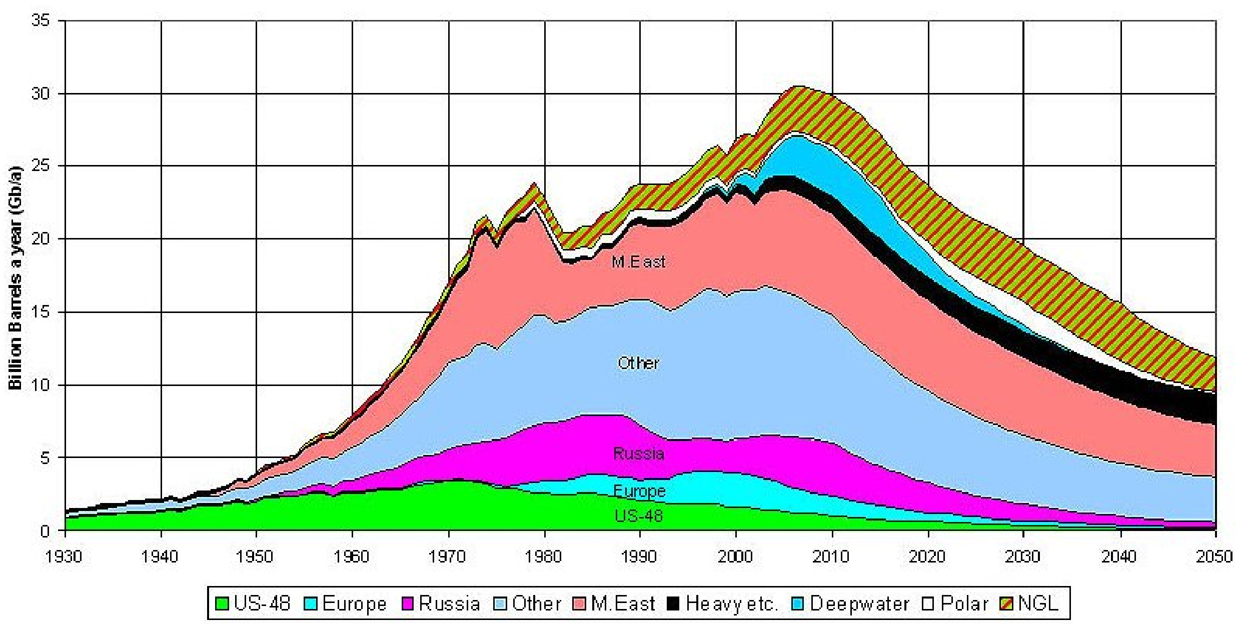


Figure 14: Bell-shaped curve of world's oil production

Numerous respected authorities, including the International Energy Agency, predict rising demand for oil as global industrialization occurs, particularly in rapidly developing countries like China. This increasing demand, combined with harder to reach oil production sites and declining production levels, has significant environmental and geo-political implications. This confluence of factors is already leading to rising costs and greater price volatility, which is predicted to increase sharply as the world economy rebounds. This is expected to result in a chain of events that threatens to dramatically affect how people live, work and reach their destinations. Fuel prices will spike, then fall, but will generally trend upward, making many activities we now take for granted cost prohibitive. From review of the literature, at a minimum, transportation impacts may include dramatic changes in personal mobility as private automobiles become too expensive for the average citizen, and changes in freight mobility as the economic advantages of mass production, consolidated processing and truck distribution evaporate. Land use impacts are likely to mean the urban footprint contracts, agricultural production requires increased human labor, and employment is more labor-intensive and focused in centers of economic activity.

While better technology and renewable energy sources are becoming increasingly important, many sources dismiss their ability to prevent major changes to industrial society. Hydroelectricity aside, renewable sources of energy provide only about one percent of world energy production. For instance, a report prepared for the US Department of Energy analyzed what would be needed to mitigate the effect of a peak in oil production and found that a crash program of renewable energy measures would need to be begun 20 years before the peak occurred. Instead, we may have arrived at the peak with only tentative steps toward effectively developing solar, wind and other alternative energy sources for mass worldwide production.

Peak Oil in the Year 2035 Long Range Transportation Plan

The MTPO's Year 2035 Long Range Transportation Plan is evaluating transportation and land use strategies associated with peak oil. The approach taken for the Plan is to test each of the transportation alternative networks under a "peak oil scenario" and then develop recommendations for incorporation into the plan. An accessibility analysis examined the availability of various land use and transportation factors that support use of non-auto travel modes, and indicated that the core area around downtown Gainesville and the University of Florida provided a relatively high level of accessibility. A moderate level of accessibility was observed generally consistent with the city limits and portions of the unincorporated area, primarily east of I-75 and south of NW 39th Avenue, and the smaller cities outside of the urbanized area. The remainder of Alachua County was classified as having low accessibility, including much of the rapidly growing western areas of the county.

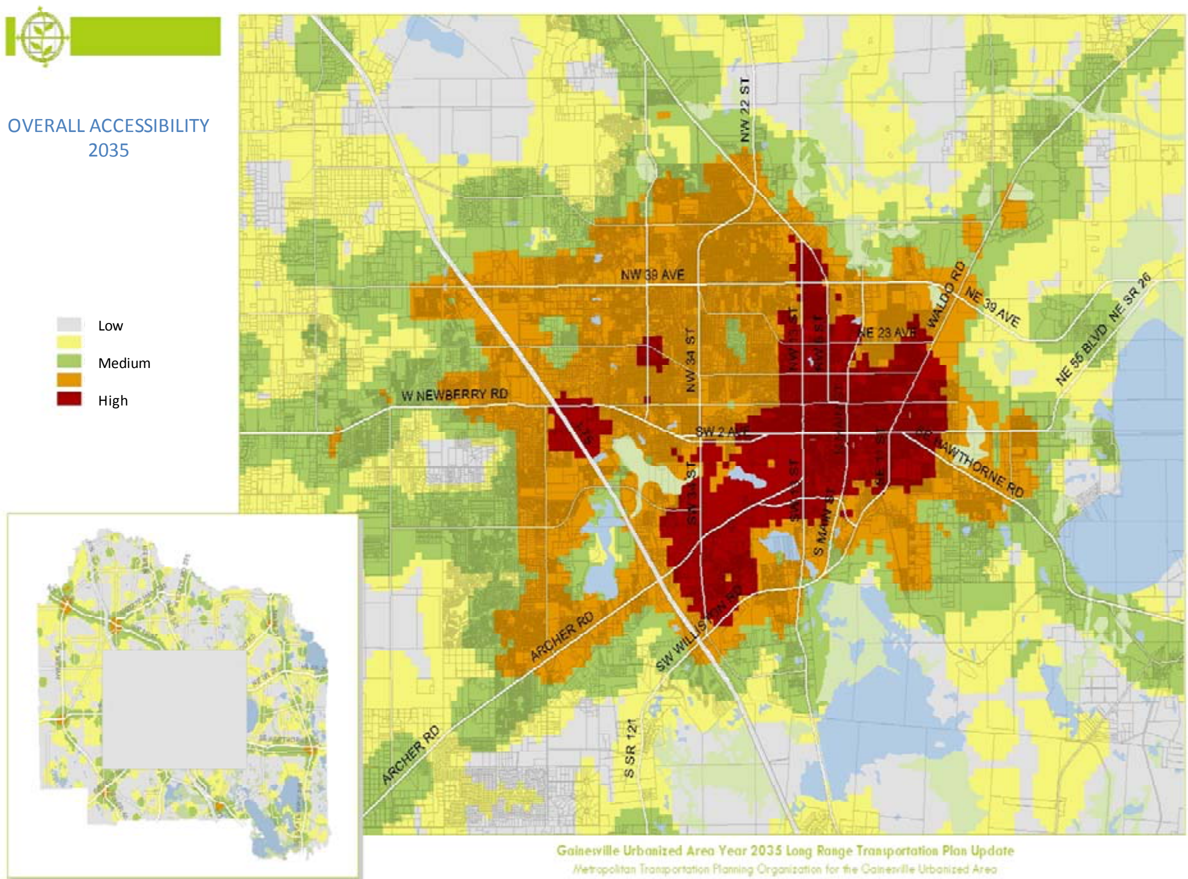


Figure 15: Results of Year 2035 LRTP Accessibility Analysis

An important statewide context for this analysis is HB 697, which the Florida Legislature passed in 2008 to reduce energy consumption and lower greenhouse gas emissions. Among other things, HB 697 requires local governments to adopt greenhouse gas emission reduction and energy conservation strategies in the land use and transportation elements of Comprehensive Plans. A similar bill was passed requiring MPOs to consider strategies to reduce greenhouse gas emissions in their Long Range Transportation Plans. HB 697 also commits the state to address energy demand and supply, develop new technologies and promote clean energy economic zones. Two pilot programs have been established in Miami and Sarasota.

Locally, the Alachua County Energy Conservation Strategies Commission (ECSC) addressed issues related to peak oil as part of a comprehensive report aimed at reducing energy consumption and saving money. In its report released last year, the ECSC identified transportation and land development imperatives to respond to the challenges of peak oil. For transportation, these strategies include maximizing modal choices available to people, emphasizing walkability, discouraging large-scale parking lots that create barriers for pedestrian and transit accessibility, and requiring Bus Rapid Transit or other forms of premium transit in developing or redeveloping corridors. From a land development perspective, the ECSC recommended encouraging infill development and redevelopment, oriented to transit facilities along corridors, restricting new development to areas served by rapid transit, and incorporating a variety of uses and densities to form walkable centers or transit villages.

The MTPO's Year 2035 Long Range Transportation Plan seeks to address these key issues and build on complementary statewide and local efforts with development of the Needs and Financially Feasible Plans, and a policy framework that reflects strategies outlined in this memo.

Peak Oil Scenarios

The peak oil analysis conducted for the MTPO network alternatives included adjustments to the travel demand model to estimate the impacts of rising fuel prices on travel demand. Each network alternative entailed a set of similar peak oil adjustment factors to determine effects on travel behavior and implications for future transportation investments. While this is just one of many aspects of how peak oil may influence life in the future, the results were notable.

Volatile and generally rising fuel prices are likely to curtail automobile use and ownership. It is expected that more carpooling and ridesharing will take place for essential trips, and people will shift to other modes where practical, particularly for shorter trips, and reduce their non-essential auto trips. Eventually, people will lower their automobile ownership. Highways become less congested as workers telecommute and people use other modes and reduce trip-making. This likely would free up roadway space for other purposes, such as dedicated bus lanes, bike paths and wider paths for smaller electric vehicles, similar to golf carts.

Testing peak oil adjustments for the Needs Plan evaluation in the development of the Year 2035 LRTP entailed two primary factors: 1) adjusting automobile ownership, and 2) increasing vehicle operating costs. The accessibility analysis completed in the first phase of the study was the basis for the automobile ownership adjustments. As described above, the accessibility analysis employed various modal and land use factors to identity the relative accessibility of the entire county, based on 10-acre grid cells. For auto ownership, in traffic analysis zones (TAZs) rated as High for accessibility, the scenario assumes an increase in 0- and 1-auto households (10 percent and 15 percent, respectively) and a reduction of similar magnitude in 2- and 3+- auto households (10 and 15 percent, respectively) in those same TAZs. This adjustment represents changes in travel habits of residents due to availability of multiple transportation options, jobs, housing, and retail/services. For Medium accessibility, the scenario adjusted these same percentages by three and seven percent (10 percent total). No adjustments were made to TAZs in the Low accessibility areas.

For vehicle operating costs, the peak oil analysis quadrupled these costs, with the basis of $2.50 per gallon fuel price to roughly approximate a $10 per gallon fuel price. While this may be low from a real-world perspective in 2035, this increase is a reasonable adjustment within the context of the 2007 validated model. The vehicle operating cost adjustments were made countywide, regardless of accessibility rating. There is little precedent regarding peak oil analyses for use as a guide for these adjustments. In the case of the auto ownership, the data used in the validated countywide travel demand model for the 2007 base year served as the basis for the percentage adjustments.

The results of the peak oil adjustment show substantial increases in transit ridership and significant decreases in the hours of travel and delay measures. Countywide, there were relatively modest changes in walking and bicycling, primarily due to how the pedestrian environment model is calibrated and the fact that the automobile ownership variable is primarily influencing transit propensity. On the whole, the peak oil adjustment shifts substantial trip-making from auto to transit, reflecting the more robust transit networks and limitations in auto availability (and operating cost) incorporated into the modeling. Congestion was essentially eliminated in the analysis, even for persistently congested corridors like Archer Road and Newberry Road.

Overall, the peak oil scenario reduces vehicle miles traveled by nearly 20 percent across all network alternatives, and reduces hours of travel by an even greater number, along with delay. In the corridors where premium transit investments are assumed, the peak oil adjustment has a significant impact on ridership and reduction in VMT. Within the Archer and Newberry corridors, for example, transit use increased by about 800 percent for the streetcar scenario (60 to 100% for the highway emphasis scenario) and bicycle/pedestrian travel increased by roughly 40 percent. There were substantial increases in mode share in other corridors, such as US 441 and East Gainesville.

Although they were not modeled, it is also expected that peak oil will have significant impacts on freight distribution, which could lead to substantial increases in price and reducing the availability of goods, as the manufacturing, shipping and agricultural industries pass along their rising costs to suppliers and consumers. This could mean a shift to rail freight from trucking, and could also isolate a community like Gainesville that is not closely located to a major port or rail facility, such as Jacksonville or Tampa. Recognizing these threats to their economic security, people will begin making decisions to change their behavior. Those who can will move into the urban core, where supplies are more available and travel is more convenient without automobiles. Those who cannot move will need to develop options for travel and access to goods and services.

Peak Oil Strategies

There are two primary ways to address transportation needs: through speed and proximity. Speed addresses the ability to cover relatively longer distances in a reasonable amount of time, reducing the cost of travel (time and money) to a point where the trip makes economic sense. Proximity enables shorter trips to occur that are less dependent on speed because the travel time, and the resulting cost, is less. Both are important parts of an urbanized area's transportation network, but under peak oil, proximity and the accessibility of destinations by more energy-efficient travel modes becomes an increasingly important factor. As the urban footprint contracts, speed is less critical to mobility. This is an important consideration in developing policies and strategies for a peak oil condition in the future.

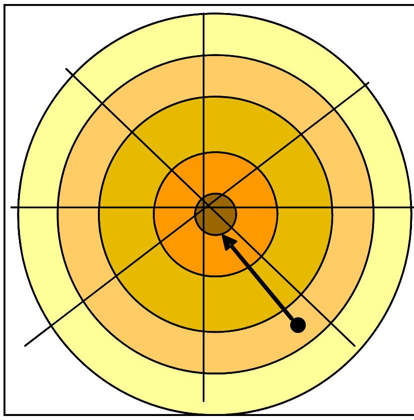
Land Use Strategies

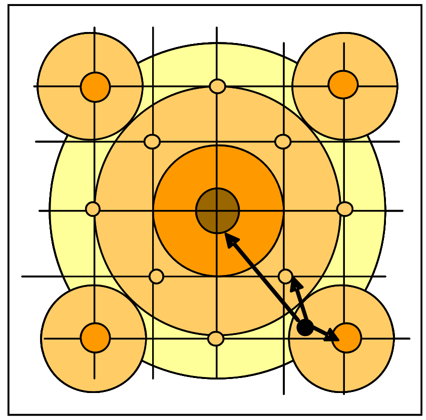
Land use strategies related to peak oil relate to location efficiency and modifying existing land use patterns to expand the types of uses that will be more in demand with higher energy prices and scarcity of supplies. *Location efficiency* means creating more affordable housing choices close to public facilities and services, establishing better linkages of housing, jobs and other destinations in close proximity, ensuring that community services and facilities are located along public transportation corridors, and that convenient transit, bicycle and pedestrian networks exist to serve new development. *Modifying land use patterns* means adaptive re-use of existing sites, such as automobile dealerships and other auto-oriented uses into higher density transit-supportive uses or clean energy uses, such as solar energy catchment and distribution areas. Similarly, these existing uses can be converted into urban agricultural gardens that would provide locally-grown fresh food products.

In the context of the Year 2035 Needs Plan and peak oil, the MTPO should consider the following strategies:

Compact Urban Form

Create clusters of mixed-use development focal points that provide a high level of transportation accessibility with relatively intense complementary land uses. These should be located strategically in the Gainesville and Alachua County region to reduce trip lengths from the surrounding areas they serve, such as development within a 1-3 mile radius, which would encourage bicycling and walking. As the graphic illustrates below, a hierarchy of mixed use centers that can capture a share of home-based work and non-work trips can reduce the overall average trip length substantially, reducing vehicle miles of travel and creating better opportunities for trips to be made through less energy-dependent modes like bicycling, walking and shuttles.





There are several ways that compact urban form can be accomplished, including substantial increases in density within the core area of Gainesville, East Gainesville, and areas surrounding the University of Florida where many services and a good transportation grid network exist. However, with numerous well-established residential areas and sensitive natural systems, this may pose some conflicts that may limit the amount of higher density development in these areas.

Transit Oriented Development

The planned Bus Rapid Transit and streetcar network in the Year 2035 LRTP depends on higher density station areas that support use of the system, and provide convenient intermodal connections and transfers between lines. Under the principles of Transit Oriented Development (TOD), the land within the first quarter mile of the station should provide the highest density land uses, ideally with a strong vertical and horizontal mix of land uses with an employment base, civic space, and complementary residential and retail land uses. The core depends on short block sizes (400'-600') to increase walkability, minimum densities and limited parking. The next quarter mile, ½ mile from the station, is generally less intensely developed than the core, but retains a high degree of mixed uses and network connectivity. Land uses shift toward diverse residential development at higher densities, with complementary office and retail uses. Each of the BRT station areas should have a TOD framework plan in place, with planned intermodal stations having relatively more intense mixed-use development activity. Components should include the transit station as the centerpiece of development, minimum densities, maximum parking limits and pedestrian-oriented design standards.

The local governments should consider development or expansion of a program for Transfer of Development Rights (TDR) that would incentivize future development toward public transit corridors and provide financial return for landowners in the rural and suburban areas in exchange for giving up development rights. So-called "sending zones" could be defined as areas more than ½ mile from an existing or planned transit corridor, park-and-ride location or station area. "Receiving zones" targeted for future higher density development would include land along the transit corridor (within ¼ to ½ mile distance), in mixed-use centers and transit station areas. The goal would be to capture 75 to 80 percent of Alachua County's future growth in designated transit corridors or places that are pedestrian-oriented.

Schools

Schools are important community focal points and a source of much trip-making. Peak oil is likely to auger a shift toward neighborhood schools that reduce reliance on automobile travel, enabling more elementary, middle and high school students to walk or bicycle to class. With changes in population patterns over time in response to energy demand, there may be fewer schools needed in suburban areas and more demand in the urban focal points. Schools should be sited in efficient locations with services and facilities in place. Strategies should support adaptive reuse of auto-oriented land uses for schools along transit lines and in targeted mixed-use areas, with the school forming a key activity destination at the core area with higher density residential land uses. Transportation networks supporting safe bicycle and pedestrian access should be developed to link schools with surrounding areas, reducing reliance on automobiles and school buses.

Urban and Suburban Agriculture

As peak oil threatens to affect the food supply due to shipping costs, it is important to preserve farmland and expand local food production to adequately serve the existing and future population of the area. Since American cities now import a substantial amount of food from long distances and the county is expected to add nearly 70,000 more people by 2035, Gainesville and Alachua County should create more agricultural land in proximity to development through the provision of community gardens and agricultural areas of varying sizes. Where practical, policies should enable the conversion of large surface parking lots or suburban auto-oriented land uses into larger farming tracts through a Transfer of Development Rights program working in a complementary manner with development of the BRT network.

Development in East Gainesville

East Gainesville already has a strong grid street network, and its proximity to downtown, the University and targeted development areas makes it a relatively accessible part of the county. The area also is in close proximity to agricultural lands and community gardens that already supply local produce for consumption. Under peak oil, East Gainesville is likely to become an even more attractive area for future growth, despite the likely impacts on the Gainesville Regional Airport and related industry. The mixed-use areas defined through the Plan East Gainesville process should be supported with investments in better multimodal transportation networks and greenways, which serve the dual purpose of improving connectivity while buffering more intense development from lower density areas and natural lands.

Create Alternative Energy Generation Systems in Rural Areas

Similar to the agricultural strategy, local governments and Gainesville Regional Utilities should use the TDR program defined above to establish economic value for rural and suburban area land for the development of solar and wind energy platforms that supply energy and tie to the electric grid. Existing parking areas that may not be needed in future may also be candidates for these modifications, as well as the rooftops of buildings in the urban area.

Transportation Strategies

There are a wide range of transportation strategies that would support efforts to respond to peak oil. In general, the transportation strategies are linked directly with land use strategies to reduce vehicle miles of travel and increase the ability of people to use human-powered transportation options for more of their trips. The following are suggested as ways to reduce energy demand and support both accessibility and mobility within the urbanized area and Alachua County.

Transit Priority Corridors

In conjunction with the planned Bus Rapid Transit network and rising prices of fuel, reduce the number of travel lanes for autos and provide dedicated lanes that make using transit more efficient on the major corridors serving the University of Florida, the Shands/VA medical district and downtown Gainesville. Establish park and ride spaces in garages in outlying mixed-use districts (e.g., smaller towns and in educational and commercial nodes).

Parking

Establish parking maximums for mixed-use and non-residential development areas, and substantially lower parking requirements for all other new development and redevelopment occurring within transit accessible areas (within ¼ mile of transit service). This would reduce on-site parking. Parking ratios for multi-family residential developments should be lowered to 1 or perhaps even .5 spaces per residential unit, and non-residential developments should have no more than 3 spaces per 1000 square feet. Structured parking with retail and residential components should be encouraged in mixed use districts to promote walkability. Additional parking should be discouraged and, as peak oil effects begin to occur, conversion of existing parking garages and lots should occur to reflect lower demand for auto travel and the need to adapt these uses for other needs (e.g., agriculture, housing, manufacturing).

Pricing

In preparation for peak oil changes, the MTPO and state and local agencies should consider some form of transportation pricing to induce shifts in travel behavior and generate revenue for the development of the BRT, streetcar and multi-use trail networks defined in the LRTP. There are various ways in which technology can be used to charge a fee for automobile travel on major corridors leading into the Gainesville urbanized areas, such as by time of day (peak period pricing), by occupancy or by simply crossing a cordon line. In the short-term, this would discourage single-occupant vehicle travel for discretionary trips and encourage use of non-auto or non-SOV modes. In the longer term, it could generate substantial local revenue to support improved public transportation services and redesign of facilities for walking and bicycling.

Complete Streets and Complete Corridors

Adapt existing roadways, where practical, to incorporate a full complement of pedestrian, bicycle and transit facilities to improve the accessibility, comfort, convenience and safety for people of all ages and abilities. This includes a range of strategies, such as wider sidewalks with adequate separation (buffer) from the travel way, clearly defined and marked crossing areas using pedestrian countdown signals and bicycle-actuated signals at intersections, lighting, bus shelters and various amenities to support use of these modes. Because not every street can or should undergo such a conversion due to cost and physical constraints, the concept of complete corridors is a way to make sure that good parallel and connecting networks for non-auto modes exist between logical origins and destinations. Complete corridors can take advantage of parallel local street networks, which are generally lower in speed and traffic volume, to strengthen the multimodal network.

Enable Alternative Fuel Vehicles

There are emerging technologies involving solar- and electric-powered vehicles that can help provide carbon-free connectivity within and to highly developed mixed use activity centers in the Gainesville Urbanized Area. Low Speed Vehicles (LSV) or Neighborhood Electric Vehicles (NEV) should be considered as modes in the multimodal transportation network. LSVs, with a speed of at least 20 but not more than 25 mph, are used primarily for short trips and recreational purposes, and have some safety equipment such as lights, reflectors, mirrors, parking brake, windshield, and safety belts. LSV operation should be included in complete street design.

Establish and encourage Solar Electric Trolley (SET) zones, where solar electric transporters, known as Micro Transit Vehicles (MTV), weighing more than 3000 pounds, would legally provide transportation in certain zones, such as downtown Gainesville, the University of Florida, and mixed-use districts, etc.

Establish preferred routes for LSV/NEV and MTV, including marking certain roads as LSV-friendly. Establish mapped routes in communities similar to bicycle routes. Begin with streets that have traffic calming already; the key is to provide continuous routes that are 35 mph or less for street legal vehicles. Design new and retrofit existing parking lots to provide LSV-size spaces and electric plug-in capabilities. Require or encourage at least one fast charger in parking lots of new developments.

Foothill Transit in California is about to debut a new ecology bus electric vehicle. Known as the "Ecoliner," it is the nation's first heavy-duty, electric-powered bus to operate in revenue service. It can carry 68 passengers, drive 30-miles without charging, and can recharge in less than 10 minutes at an in-route docking station. By using quick charging lithium ion batteries and light-weight fiberglass, the Ecoliner is the world's only vehicle that does not emit gas. Foothill Transit will begin testing the Ecoliner on routes in San Gabriel and Pomona. These preliminary tests will help the city decide whether to continue with the project. Each prototype costs around $1 million — twice the amount of a regular bus. According to the manufacturer, companies will save more than $400,000 per vehicle in fuel costs over a 12-year period, along with savings due to less maintenance.

Bicycle and Pedestrian Networks

The Year 2035 LRTP calls for development of a stronger off-road network of trails ("braids") to complement on-street networks that exist and are planned. Under peak oil, this network will need to be developed and expanded to reflect the increasing importance of human-powered transportation. Among the key strategies to consider is the completion of road diets along major corridors to accommodate both transit and a continuous network of bikeways and pedestrian facilities. These defined bikeways should include bike stations strategically located at network connecting points (trailheads or hubs), which offer services for maintenance, sustenance (food/beverage), changing clothes and storage.

Efforts should be made to better define the bicycle network for safety and visibility through use of brightly-hued bike lanes and establishment of bicycle boulevards, where efficient bicycle travel is given priority. In addition, efforts should be made to increase bicycle and pedestrian access through cul-de-sacs to connect adjacent residential areas to larger regional networks and mixed-use destinations. This could be part of the complete corridors program. Expansion of bike sharing programs should be considered that enables use of bicycles at different locations for various time periods through a credit card reservation system.

Performance Monitoring

One of the important things the MTPO can do in partnership with state and local government is link on-going transportation performance monitoring of transportation outcomes identified in the Long Range Transportation Plan with energy and pollution levels. Plans developed by other communities, such as Portland, OR and San Buenaventura, CA, establish goals for reducing oil and natural gas consumption (50% by 2032 per the City of Portland's plan). The MTPO should work with the Florida Department of Transportation, Alachua County, City of Gainesville, other municipalities, the University of Florida and other appropriate entities to establish goals to reduce non-renewable energy consumption by the transportation sector. In addition to tracking trends of transit ridership, bicycling and mode share, consideration should be given to the following performance measures as indicators of reduced energy demand:

- Vehicle miles of travel by corridor, sub-area (district) and overall
- Development activity occurring within ¼ mile of planned major transit corridors (BRT, streetcar) relative to development occurring elsewhere
- Development activity occurring within planned BRT station areas versus other development areas
- Miles of bicycle and pedestrian facilities established or retrofitted to enhance walking and cycling

Other performance measures and a monitoring program should be defined to reflect broadly defined goals and benchmarks (performance targets) that are consistent with local government comprehensive plans and the MTPO Long Range Transportation Plan.

Summary

The development of the Year 2035 Cost Feasible Plan occurred through a planning process that focused on a desired vision for how transportation access and mobility shapes development and quality of life. The MTPO chose to allocate available transportation revenues in two primary ways: funding long-standing project priorities and ensuring a long-term multimodal planning focus by investing in the RTS maintenance facility to enable service expansion and development of a network of Bus Rapid Transit routes within the Gainesville Urbanized Area. The outcome is a 4:1 ratio of spending on multimodal projects versus increased capacity for automobiles; however, it is ultimately a balanced transportation plan because several of the road capacity projects will support the BRT network or help divert regional traffic away from corridors with a stronger non-auto focus.

The 2035 Long Range Transportation Plan is fiscally constrained based on the projected revenues available to the MTPO, FDOT and local governments through the planning horizon. Project costs are shown by estimated year of expenditure, reflecting the anticipated timing of future revenues from state and federal funding sources. In developing the list of priority projects to receive funding, the MTPO relied on public input, the work of the MTPO's advisory committees and technical analysis to show how the projects can help reduce vehicle miles of travel and support compact, walkable, mixed-use developments with access to premium transit service. The MTPO's vision for transportation depends on the expansion of the RTS maintenance capacity and continued development of a multimodal network of transportation facilities and services that provide connectivity and access to economic destinations like the University of Florida, Downtown Gainesville, Santa Fe College and commercial uses along major corridors.

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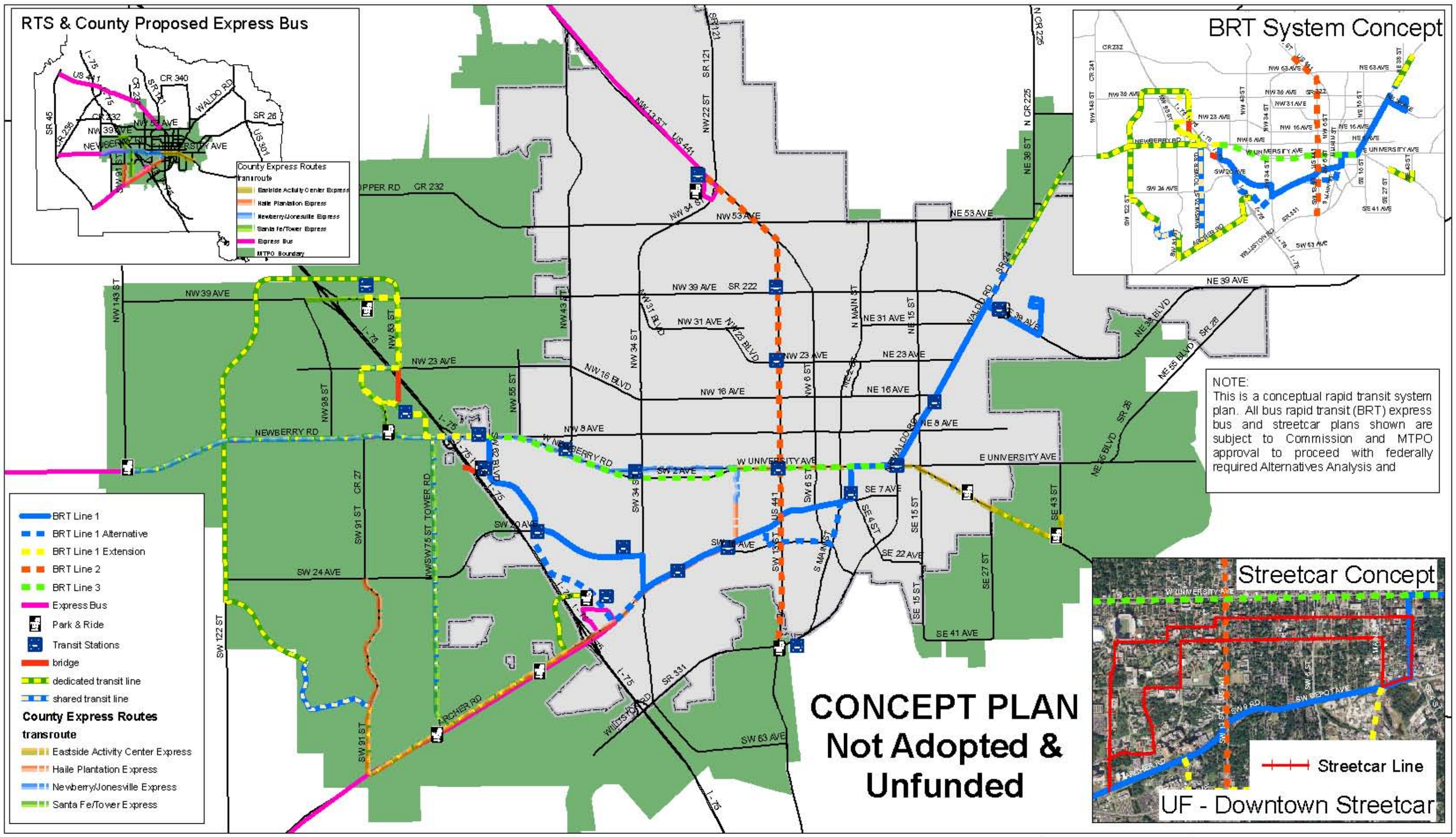

Conceptual Rapid Transit System Plan (Draft)

Prepared by:
Gainesville-RTS
March 2010

0 1.5 3 6 Miles

NORTH

Blue Line = 10 miles
Orange Line = 7.5 miles
Green Line = 6.0 miles
Streetcar = 5.4 miles

Proposed Transit Development Plan Bus Service Enhancements not included on map. See Planned Local Service Map.

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Appendix

APPENDIX A: PUBLIC INVOLVEMENT PLAN

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METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION FOR THE GAINESVILLE URBANIZED AREA

2035 LONG RANGE TRANSPORTATION PLAN

PUBLIC PARTICIPATION PLAN

DRAFT

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March 25, 2009

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I

INTRODUCTION

One of the foundational pieces of any long range transportation plan is to develop a Public Participation Plan (PPP) that provides ample opportunities for meaningful public involvement in the development, evaluation, refinement and adoption of the plan. This is the component of the plan that will define the overall schedule, goals, desired outcomes, techniques and tools to be used for engaging the public in the development of the Gainesville Area Metropolitan Transportation Planning Organization (MTPO) 2035 Long Range Transportation Plan (LRTP). The PPP must reflect and engage community groups and establish~~ed~~ public involvement procedures to the extent practical, and will be consistent with the federal requirements of SAFETEA-LU and Title VI of the Civil Rights Act for outreach and involvement of all population groups without discriminating.

This document presents the proposed approach for the Public Participation Plan for the MTPO's 2035 LRTP, subject to review comments by MTPO staff, and endorsement by the MTPO. The plan will be implemented by the MTPO's consultant, Renaissance Planning Group, concurrent with completion of the approved Scope of Services for the LRTP, over the course of the 24-month project. Logistical support for implementation of the Public Participation Plan will be provided by MTPO staff and the staff from local partner agencies, as appropriate. The consultant and MTPO staff comprise the study team.

II

PUBLIC PARTICIPATION REQUIREMENTS

SAFETEA-LU

The federal transportation law, officially titled a Safe, Accountable, Fair, Efficient, Transportation Equity Act: a Legacy for Users (SAFETEA-LU), elevates the importance of public participation in the development of transportation plans and programs at the state and metropolitan levels. The law adds safety and security as separate new planning factors that must be considered, and requires early consultation with environmental resource agencies on the development of the LRTP and other planning programs. The law also requires that public participation efforts, and how they influenced the development of the plan, are documented in a stand-alone report.

ENVIRONMENTAL JUSTICE

Title VI of the 1964 Civil Rights Act and the 1994 US Department of Transportation Order on Environmental Justice require that the metropolitan transportation planning process seeks to identify the needs of low-income and minority populations, and provide an analytical framework to address issues of service equity regarding the benefits and burdens of transportation system investments for different socioeconomic groups. The MTPO's public involvement process must have an identified strategy for engaging minority and low-income populations in transportation decision-making, and employ strategies to reduce participation barriers for such groups.

III

PUBLIC OUTREACH MECHANISMS

Several types of media and public venues will be used as part of the public participation process. The MTPO will develop a procedure for collecting race, color, religion, sex and national origin statistical data of participants in public involvement events [see 23 CFR 200.9 (b) (4)]. This will help assess the effectiveness of the public participation plan. In additon, it will also document the efforts that have been made to reach all segments of the community.

MEDIA

The MTPO has established a good working relationship with media in the Gainesville Metropolitan Area. This includes the following outreach mechanisms.

- Internet website
- newsletters
- newspaper display advertisements in the Gainesville Sun and Gainesville Guardian (minority publication)
- newspaper legal advertisements in the Gainesville Sun and Gainesville Guardian (minority publication)
- press releases
- radio and television announcements

Listed in the following section are specific publications and radio and television stations that will be contacted. This list identifies which ones are minority news media. The type and number of news media used to announce public participation opportunities is varied on occasions, so that communications are tailored to the particular community or population. This includes advertising in a local newspaper that primarily services minority and low-income areas- *The Guardian.*

NEWSPAPERS

- Alachua County Today
- High Springs Herald
- Florida Alligator
- Gainesville Sun
- Gainesville Sun- Guardian (Minority and Low-income News Media)

RADIO STATIONS

- Classic 89
- WRUF

- WSKY- WKTK

TELEVISION STATIONS

- WCJB TV 20
- NEWS 5

PUBLIC AUDIENCE

- General public, homeowners associations and/or groups representing the disabled
- Metropolitan Transportation Planning Organization (MTPO) and Advisory Committees and Boards
- Special interest groups such as the Chamber of Commerce, Homebuilders Association, Women for Wise Growth, Sustainable Alachua County, Sierra Club, etc.

MTPO ADVISORY COMMITTEES AND BOARDS

The following sections discuss MTPO Advisory Committees and Boards that review proposed transportation plans and projects. These Committees and Boards will play an important role by participating directly in the development of long range transportation plan.

CITIZENS ADVISORY COMMITTEE

The MTPO is required to have a Citizens Advisory Committee that reflects a broad cross-section of local residents. State law requires that this Committee include minorities, the elderly and the handicapped.

Currently, the Citizens Advisory Committee needs additional representation from minorities and the handicapped. To address this issue, the MTPO is currently publishing a special newspaper ad in a local newspaper that primarily services minority and low-income areas to advertise vacant positions on the Citizens Advisory Committee. In addition, the MTPO decided to ask its members to contact minorities in person and encourage them to seek appointment to this Committee.

To try and recruit members that are handicapped, the MTPO sends notices of vacant Committee positions to agencies that serve the handicapped, such as the Center for Independent Living. In addition, the MTPO will also notify the Alachua County Transportation Disadvantaged Coordinating Board of vacant positions on the Citizens Advisory Committee and encourage its members to inform handicapped individuals of these vacancies.

BICYCLE/PEDESTRIAN ADVISORY BOARD

The Bicycle/Pedestrian Advisory Board consists of citizen volunteers who have a special interest and expertise in bicycle and pedestrian issues. This Board reviews proposed transportation plans and projects and makes recommendations directly to the MTPO.

TECHNICAL ADVISORY COMMITTEE

The Technical Advisory Committee is made up of local regional and state agency representatives. This Committee reviews proposed transportation plans and projects from a technical perspective.

TRANSPORTATION DISADVANTAGED COORDINATING BOARD

The Alachua County Transportation Disadvantaged Coordinating Board provides advice and direction on the provision of transportation services for elderly individuals, low-income individuals, persons with disabilities and children at risk. This Board is composed of government, social service agency and citizen volunteers.

PUBLIC INFORMATION NETWORK (PIN)

As the project team begins introducing the project to various citizens, public officials and key staff throughout Alachua County, it will also begin compiling a Plan Information Network (PIN) contacts database to notify people and groups about LRTP activities, work products for review and upcoming briefings or workshops.

This master list of contacts will not simply serve as a generic data dump of names, but it will be maintained to allow for categorization of participants by interest area, affiliation and geography. By doing so, the study team can consistently fine tune and adjust outreach techniques to ensure diverse representation.

The Public Information Network will be the principal means of ensuring that opportunities to participate in the process are provided to a diverse socioeconomic constituency, consistent with federal Title VI and Environmental Justice provisions. Freight provides are included in the public information network.

MTPO LIMITED ENGLISH PROFICIENCY POLICY/GUIDANCE

This Section discusses the MTPO's plan for providing language assistance for persons with limited English proficiency. Limited English proficient (LEP) individuals are defined as people who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English.

FOUR-FACTOR ANALYSIS

The MTPO is required to take reasonable steps to ensure meaningful access to its programs and activities by limited English proficient individuals. This is accomplished by balancing the following four factors:

1. the number or proportion of limited English proficient individuals eligible to be served or likely to be encountered by a program, activity or service of the MTPO;

2. the frequency with which limited English proficient individuals come in contact with the program;

3. the nature and importance of the program, activity or service provided by the MTPO to people's lives; and

4. the resources available to the MTPO and costs.

LANGUAGE ASSISTANCE PLAN

The MTPO will implement the following Language Assistance Plan during the update of the long range transportation plan-

1. The MTPO will use a commercial telephonic interpretation service to obtain immediate interpreter services when the MTPO comes in contact with limited English proficient individuals.

2. The MTPO will provide both oral interpretation and written translation as needed and necessary. Oral interpretation will be provided using commercially available telephonic interpretation services. Written translation will be provided by translating entire documents (where needed and necessary) or by translating a short description of the document. Individual circumstances will determine what type of written translation is provided.

3. The MTPO will publish all display ads and public notices of meetings and public hearings with the following language-

Persons who require special accommodations under the Americans with Disabilities Act or persons who require translation services (free of charge) should contact Mr. Marlie Sanderson at (352) 955-2200, extension 103, at least seven (7) days before the public meeting.

Persons who require translation services (free of charge) should contact Mr. Marlie Sanderson at (352) 955-2200, extension 103, at least seven (7) days before the public meeting.

NON-DISCRIMINATION POLICY

The MTPO has adopted a non-discrimation policy. At all public workshops and public hearings that are held concerning the update of the long range transportation plan, the public will be informed of the right to file discrimination complaints, how to file complaints and what happens when they are filed.

COMPLAINT PROCEDURES

The following section discuss procedures that will be followed to file complaints.

1. Any person who believes that he or she, or any specific class of persons, has been subjected to discrimination or retaliation prohibited by the Title VI of the Civil Rights Act of 1964, as amended, and related statutes, may file a written complaint. All written complaints received by the MTPO shall be referred immediately by the MTPO Director of Transportation Planning to the FDOT's District Two Title VI Coordinator for processing in accordance with approved State procedures.

2. Verbal and non-written complaints received by the MTPO shall be resolved informally by the MTPO Director of Transportation Planning. If the issue has not been satisfactorily resolved through informal means, or if at any time the person(s) request(s) to file a formal written complaint, the MTPO Director of Transportation Planning shall refer the Complainant to the FDOT's District Two Title VI Coordinator for processing in accordance with approved State procedures.

3. The MTPO Director of Transportation Planning will advise the FDOT's District Two Title VI Coordinator within five (5) calendar days of receipt of the allegations. The following information will be included in every notification to the FDOT's District Two Title VI Coordinator.

   (a) Name, address, and phone number of the complainant.

   (b) Name(s) and address(es) of respondent.

   (c) Basis of complaint (i.e., race, color, national origin, sex, age, disability, religion, familial status or retaliation).

(d) Date of alleged discriminatory act(s).

(e) Date of complaint received by the MTPO.

(f) A statement of the complaint.

(g) Other agencies (state, local or Federal) where the complaint has been filed.

(h) An explanation of the actions the MTPO has taken or proposed to resolve the allegation(s) raised in the complaint.

4. Within ten (10) calendar days, the MTPO Director of Transportation Planning will acknowledge receipt of the allegation(s), inform the complainant of action taken or proposed action to process the allegation(s), and advise the complainant of other avenues of redress available, such as the FDOT's Equal Opportunity Office (EOO).

5. Within sixty (60) calendar days, the MTPO Director of Transportation Planning will conduct and complete a review of the verbal or non-written allegation(s) and based on the information obtained, will render a recommendation for action in a report of findings to the Chief Staff Official of the MTPO.

6. Within ninety (90) calendar days of the verbal or non-written allegation(s) receipt, the Chief Staff Official of the MTPO will notify the Complainant in writing of the final decision reached, including the proposed disposition of the matter. The notification will advise the Complainant of his/her right to file a formal complaint with the FDOT's EOO, if they are dissatisfied with the final decision rendered by the Chief Staff Official of the MTPO. The MTPO Director of Transportation Planning will also provide the FDOT's District Two Title VI Coordinator with a copy of this decision and summary of findings.

7. The MTPO Director of Transportation Planning will maintain a log of all verbal and non-written complaints received by the MTPO. The log will include the following information:

   a. Name of complainant.
   b. Name of respondent.
   c. Basis of complaint (i.e., race, color, national origin, sex, age, disability, religion, familial status or retaliation).
   d. Date verbal or non-written complaint was received by the MTPO.
   e. Date MTPO notified the FDOT's District Two Title VI Coordinator of the verbal or non-written complaint.
   f. Explanation of the actions the MTPO has taken or proposed to resolve the issue raised in the complaint.

PUBLIC VENUES

1. Metropolitan Transportation Planning Organization (MTPO) meetings
2. MTPO Technical Advisory Committee meetings
3. Bicycle/Pedestrian Advisory Board meetings
4. MTPO Citizen Advisory Committee meetings
5. Alachua County Transportation Disadvantaged Coordinating Board
6. Internet web survey and paper copies of the survey that will be made available to the public at libraries and workshops for those people that are not connected to the web
7. project briefings, including briefings held at the University of Florida
8. workshops

All workshops will feature interactive participation with citizens through break-out groups to define key issues and values. Accommodation for those with special needs are provided upon request, including Braille and large print; accommodations for the hearing impaired and alternative language translation services. The study team will prepare workshop summaries for distribution and posting on the project web site.

The project web site will feature an on-line survey that will change to coincide with each project phase. The on-line survey will use features that discourage multiple repeated entries by the same individual during one particular phase.

The project briefings will be used to supplement the workshop and web site by holding meetings with interested groups in the County.

UNIVERSITY OF FLORIDA

Through its coordination with the University of Florida Campus Master Plan Transportation Element, the MTPO will participate in several public meetings to share information and obtain input on the development of the long range transportation plan. The University of Florida Campus Master Plan includes ten public meetings focusing on transportation issues, needs and priorities to be held with students, faculty and staff, as well as standing campus committees dealing with transportation issues.

In addition, the University is holding three stakeholder briefings for a corridor alignment study that connects the on-campus transportation network with off-campus transportation facilities. Through these meetings, the MTPO will identify appropriate opportunities to share materials for the development of the Year 2035 long range transportation plan, and also to seek input on transportation needs, strategies and priorities.

MEETING LOCATIONS

The Metropolitan Transportation Planning Organization uses locations, facilities and meeting times that are convenient and accessible to a variety of the public, including low-income and minority communities. Meetings of the MTPO, the MTPO's Citizen Advisory Committee, and the Alachua County Transportation Disadvantaged Coordinating Board are located in close proximity to low-income and minority areas (see Illustration VIII). In addition, both the meeting locations and the low-income and minority areas are adequately served by the bus system (see Illustration VI)- the City of Gainesville Regional Transit System (RTS).

MEETING TIMES

The MTPO will schedule all public hearings for the update of the long range transportation plan at 6:00 p.m. or later. This will encourage greater public participation in the planning process from a variety of the public, including low-income and minority workers.

LIVE BROADCAST OF MTPO MEETINGS

Through the City of Gainesville's franchise agreement with Cox Communications, the MTPO conducts live broadcasts of all of its meetings on cable TV Channel 12. This allows people who do not have the ability or time to get to a public meeting in person, to be able to participate remotely by watching live broadcasts or taped meetings of the MTPO.

The electronic information broadcasts are replayed the following week on both the local public access channel and the rural television stations. The on-screen marquee encourages citizens to call with questions or comments about agenda items or MTPO discussion. During the initial broadcasts, the public can call-in live and make comments or leave questions to be asked.

The MTPO Chairperson announces at each televised meeting that citizens may call into the meeting to speak on particular agenda items. MTPO staff take the calls and record the comments. During the citizen comment portion of the meeting, MTPO staff forwards the comments directly to MTPO members and those in attendance. The MTPO retains a copy of the MTPO meeting videotape, which can be copied for a nominal charge or viewed at the MTPO offices at no charge.

MEETING NOTICES, FLYERS AND/OR POSTERS

To facilitate outreach to minority and low-income people for membership on the MTPO Advisory Committees and to inform affected minority and/or low-income communities of public hearings and community workshops concerning the update of the long range transportation plan, the MTPO distributes flyers and/or posters for display on RTS buses, information kiosks and paratransit vans.

Meetings notices, flyers and/or posters are placed on community service bulletin boards and information kiosks at:

- Community centers, recreation facilities and other public buildings located in lower income and minority neighborhoods, such as the:

    - Alachua County Administration Building
    - Alachua County One-Stop Centers
    - Alachua County Public Health Department
    - Alachua County Sheriff's Office
    - Gainesville City Hall
    - Gainesville Housing Authority
    - Gainesville Police Department
    - Gainesville Regional Utilities
    - Social Security Administration Offices
    - Regional Transit System's (RTS) Bethel Gas Station
    - Wilhemina Johnson Center

- Houses of worship and other private buildings that serve the public located in lower income and minority neighborhoods

- Public and private places serving special needs populations located within the Gainesville Metropolitan Area, such as:

    - adult congregate living facilities
    - assisted living facilities
    - Center for Independent Living
    - Division of Blind Services
    - Eldercare of Alachua County

- The University of Florida in places such as:

    - Housing Administrative Office and residence halls
    - Parking Services Administration
    - Reitz Union Office of Student Activities

IV

KEY ISSUES

For the purposes of developing the Year 2035 LRTP, the following key issues set the context for the outreach process:

* Informing and educating the public on the merits and challenges of potential mobility scenarios (e.g., highway, light rail, bus rapid transit, street connectivity, etc.), and the impact of peak oil on the long range transportation plan and land use considerations;

* Engaging a broad diversity of the public in the process that encourages participation from people who do not typically turn out for public workshops;

* Ensuring strong participation from traditionally underserved populations including the elderly, persons with disabilities, minorities, low-income communities and persons with limited English proficiency;

* Coordinating across jurisdictional, institutional and interdepartmental lines;

* Engaging stakeholders from various interest groups representing perspectives from the business, environmental, freight and goods movement, historic preservation, transit rider, bicycle and pedestrian, environmental groups, and academic (students, faculty and staff) communities; and

* Providing innovative techniques and tools aimed at soliciting meaningful and relevant public input that keeps people interested and apprised of study progress.

V

INTERGOVERNMENTAL COORDINATION

The development of the Year 2035 Long Range Transportation Plan (LRTP), entitled Year 2035 Livable Community Reinvestment Plan, will be coordinated with:

- Alachua County;
- City of Alachua;
- City of Archer;
- City of Gainesville;
- City of Hawthorne;
- City of High Springs;
- City of Newberry;
- City of Waldo;
- Florida Department of Transportation;
- Town of La Crosse;
- Town of Micanopy;
- University of Florida; and
- Santa Fe College.

The Alachua County League of Cities will be the forum for coordination with municipalities outside of the Gainesville Metropolitan Area. Coordination with the University of Florida, Florida Department of Transportation (FDOT), Alachua County and the City of Gainesville will primarily occur at the Technical Advisory Committee meetings. Staff representing the University of Florida, FDOT, Alachua County and the City of Gainesville are members of this Committee.

RESOURCE AND PERMITTING AGENCIES- STATE AND LOCAL

State and local resource and permitting agencies will be involved in the development of the update of the long range transportation plan primarily through the Technical Advisory Committee. This Committee reviews transportation plans and programs from a technical perspective and makes recommendations to the MTPO. The Technical Advisory Committee, or TAC, consists of the following local, regional and state agency representatives-

City of Gainesville Regional Transit System
Alachua County Growth Management
Bicycle/Pedestrian Advisory Board Staff, City of Gainesville
Alachua County Environmental Protection
Gainesville Regional Airport
University of Florida Facilities Planning & Construction
University of Florida Parking Services Administration
Alachua County School Board
North Central Florida Regional Planning Council

City of Gainesville Public Works
City of Gainesville Planning & Development Services
Alachua County Public Works
Gainesville Regional Utilities
Florida Department of Transportation
Florida Department of Environmental Protection
St. Johns River Water Management District

COORDINATION WITH CITY OF GAINESVILLE AND ALACHUA COUNTY EVALUATION AND APPRAISAL REPORTS (EAR)

It is imperative that the public participation activities be closely coordinated with Alachua County and the City of Gainesville. In particular, transportation is a major issue being addressed by Alachua County as part of its Evaluation and Appraisal Report (EAR) for the Comprehensive Plan, which must be adopted by September 1, 2009. Gainesville's EAR is due a year after Alachua County's, and has not yet begun its EAR process. However, transportation is likely to be a major issue for the City as well, and the LRTP can help set the context for the EAR.

COORDINATION WITH OTHER ON-GOING STUDIES

The update of the Year 2035 Long Range Transportation Plan (LRTP) will be coordinated with on-going studies that are currently underway. This includes the City of Gainesville's Bus Rapid Transit Feasibility Study and the update of the University of Florida Campus Master Plan 2010-2020 Transportation Element Data and Analysis.

VI

PHASES OF THE LONG RANGE TRANSPORTATION PLAN PROCESS

The major elements of the public participation plan are tailored to the following major milestones of the LRTP development process:

* Phase I– Project Initiation

* Phase II– Issues Identification and Setting the Policy Framework
  Evaluation and Appraisal Report process coordination
  Community Values documentation

* Phase III– Needs Plan Development, Peak Oil Scenarios & Tradeoffs Analysis

* Phase IV– Financial Feasibility and Project Priorities

During each phase, the study team will employ various techniques for outreach, engagement and information sharing, including public workshops, briefings, development and maintenance of a project web site, mailed newsletters and e-news distributed via e-mail. There will be a series of eight (8) interactive briefings to the MTPO's Technical and Citizens Advisory Committees to guide development of the plan. The Alachua County Transportation Disadvantaged Board will be invited to attend public workshops and briefings to the MTPO's Technical and Citizens Advisory Committees.

Throughout the plan development, photographic, narrative and quantitative summaries will be compiled documenting the entire public process. The approach is to integrate public participation with the technical work, so one informs the other at key steps in the process. The MTPO meetings are broadcast live on Channel 12- the local government station.

LONG RANGE TRANSPORTATION PLAN PUBLIC PARTICIPATION TIMELINE

ACTIVITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2009												
PHASE	I	I, II	I, II	II	II	II	II	II	II, III	III	III	III
NEWSLETTER			#1									
WORKSHOP			#1								#2	
TAC/CAC		X							X			
MTPO			X						X			
2010												
PHASE	III	III	III	III	III	IV	IV	IV	IV	IV	IV	IV
NEWSLETTER							#2					
WORKSHOP							#3					
TAC/CAC			X					X		X		
MTPO			X									
MTPO Public Hearing								X		X		

Note: Workshop, newsletter and MTPO and Advisory Committee meeting dates are tentative.

VII

IMPLEMENTATION

PHASE I – PROJECT INITIATION (DECEMBER 2008 THROUGH MARCH 2009)

During the project initiation phase, the consultant will conduct several briefings to the general public, one each to the advisory committees and MTPO, and one to the University of Florida's Parking and Transportation Advisory Committee to introduce the participants to the project scope, schedule and major milestones. These briefings will be primarily informational in nature to spur interest in the project, discuss key issues and set clear expectations early on for engaging the public.

At each briefing, participants will have an opportunity to identify issues and public participation elements they would like to see addressed. The public briefings will likely entail allotted time on the agenda for scheduled meetings of various groups, such as the Alachua County League of Cities, Women for Wise Growth, and other local community groups.

These briefings include two presentations that will be televised on Channel 12 giving an overview of the long range plan update process. One televised briefing will be at a joint meeting of the Alachua County Commission and the Alachua County Planning and Zoning Board at a workshop on the Alachua County Evaluation and Appraisal Report on March 12, 2009. The second televised briefing will be at a meeting of the MTPO on April 20, 2009.

During this phase, the consultant will also develop a project web site (with a direct link to the North Central Florida Regional Planning Council's website) which will serve as the major conduit for information sharing throughout the LRTP process. As the project team begins introducing the project to various citizens, public officials and key staff throughout Alachua County, it will also begin compiling a Plan Information Network (PIN) contacts database to notify people and groups about LRTP activities, work products for review and upcoming briefings or workshops. This master list of contacts will not simply serve as a generic data dump of names, but it will be maintained to allow for categorization of participants by interest area, affiliation and geography. By doing so, the study team can consistently fine tune and adjust outreach techniques to ensure diverse representation.

The PIN will be the principal means of ensuring that opportunities to participate in the process are provided to a diverse socioeconomic constituency, consistent with federal Title VI and Environmental Justice provisions. The study team will also send notices to the contacts list whenever the web site undergoes a significant update at a particular project milestone.

Phase I Outcome

Key public involvement outcomes for Phase I:

* Establish project web site

* Define initial Plan Information Network (to be maintained/enhanced throughout)

* Conduct four (4) kick-off presentations to the MTPO, its technical and citizens advisory committees, and the UF Parking and Transportation Advisory Committee

* Conduct two (2) project kick-off briefings to the general public

* Coordinate public involvement activities with local governments, the University of Florida and Santa Fe College

PHASE II – ISSUES IDENTIFICATION AND POLICY FRAMEWORK (FEBRUARY 2009 THROUGH SEPTEMBER 2009)

This phase of the public involvement program sets the policy framework for the plan. In this phase, the study team will focus its efforts on gaining public input about transportation key issues, values, policy preferences and project ideas for use in developing performance measures, goals and objectives and prioritization criteria for use in developing the 2035 Needs Plan and Cost Feasible Plan in subsequent steps.

Coordination with Alachua County Evaluation and Appraisal Report Process

The MTPO LRTP study team will begin by coordinating its activities with public workshops scheduled by Alachua County for its EAR in February and March 2009. Details and arrangements will be worked out through discussions with Alachua County staff. At a minimum, the MTPO study team will create and staff a display and provide materials for review and input from the public at the County's workshops. Hand-out materials will include an overview of the currently adopted LRTP, a survey questionnaire to gauge opinion in key transportation issues, and other relevant information about transportation and growth trends/projections. If possible, the MTPO study team will work with the County staff to make one of the March EAR meetings a joint LRTP/EAR workshop, in which the 2035 LRTP Update has equal billing and serves as the major public kick-off workshop for the plan update. The MTPO study team will assist with promotion and advertisement for the workshop(s).

Workshop #1

In the spring of 2009, the MTPO will schedule the first LRTP public workshop and hold two additional project briefings with the public to identify key issues, community values and goals. This initial outreach will provide the foundation for developing the goals, objectives and performance measures for the LRTP. At the end of this phase, the study team will craft a "working" vision based on public/stakeholder values input, initial data and analysis and plans reviewed. The working vision will be subject to refinement during the remainder of the planning process, particularly upon selection of the preferred transportation Needs and Financially Feasible Plan, but will be used to guide the development and evaluation of the different mobility scenarios, as well as appropriate peak oil strategies.

As described above, Workshop #1 will be coordinated with the Alachua County EAR workshops to the greatest extent feasible. Whether it is a stand-alone MTPO workshop or a joint workshop with the County, the MTPO will advertise the workshop through notices to the PIN, a newspaper advertisement, a media press release and promotion on the project and public agency web sites. The media contacts will include traditional and non-traditional media, including both print and electronic publications. To address the participation needs of students, low-income and minority populations, the study team will:

1. work with the Gainesville Regional Transit System to post displays about workshops

inside buses and at suitable locations based on demographics (consideration will be given to the need for providing *Limited English Proficiency* displays);

2. use PIN contacts to ensure distribution to community groups, neighborhoods, libraries and churches in key areas;

3. coordinate with the University of Florida and Santa Fe College to develop e-mail messages or other appropriate media announcing public involvement activities; and

4. continually work with PIN contacts to determine the best means to engage various socioeconomic groups in the process, such as through briefings within neighborhoods or at regular MTPO Committee and MTPO meetings, public workshops and public hearings. All workshops and hearings will be held at convenient times and at accessible locations.

The study team will draft goals, objectives and evaluation criteria that follow new SAFETEA-LU and state rules reflecting safety, security, goods movement and other planning factors. In addition, the draft goals, objectives and policies will take into consideration the City of Gainesville and Alachua County EAR and Comprehensive Plans, University of Florida Campus Master Plan, and the North Central Florida Strategic Regional Policy Plan, among other relevant planning documents.

Documenting Community Values

At the conclusion of the values assessment phase of the project, the study team will take the input from the web site survey, briefings and stakeholder interviews to prepare a concise summary of the community dialogue. This summary will highlight the relationship of transportation, land use, urban form, and economic consideration to the development of potential long range scenarios for the community. The key will be to operationalize the values expressed through this process into meaningful statements that can be translated into measures of effectiveness. The values summary and statements will be presented to staff, refined as needed, and distributed to the committees and MTPO.

Newsletter #1

During Phase II, the study team will produce and distribute the first project newsletter. It will highlight the issues/values assessment, initial data development and analysis, and draft goals, objectives and evaluation measures. The newsletter will be produced electronically (E-News) rather than a printed hard copy for widespread distribution, including providing printed copies to libraries. Printed copies will be made available upon request and at scheduled public meetings and workshops. In addition, printed copies will also be placed on Regional Transit System buses.

Phase II Outcome

Key public involvement outcomes for Phase II:

* Expand project web site to include a values assessment survey and completed work products per the Scope of Services

* Continue expanding the Plan Information Network and use it to connect with the public

* Participate in Alachua County EAR workshops

* Conduct public workshop #1 to begin defining key issues, values and needs

* Conduct two (2) additional project kick-off briefings

* Develop goals, objectives and evaluation measures

* Distribute the first project newsletter

PHASE III – NEEDS PLAN DEVELOPMENT, PEAK OIL SCENARIOS & TRADEOFFS ANALYSIS (SEPTEMBER 2009 THROUGH MAY 2010)

This phase represents public participation activities related to defining the Needs Plan, including development, refinement and review of the four transportation network scenarios to be tested, as well as land use and transportation strategies related to peak oil. Peak oil production and decline variables will be reviewed and tested so as to determine potential future transportation and land use scenarios necessary to mitigate local effects of peak oil production and decline. This effort will also include recommended alternatives to accomplish transportation and land use mitigation strategies.

There are a couple of key considerations when engaging in an alternative needs assessment scenario planning process. First, it should be understood that scenarios are not plans. They are essentially a storytelling tool that allows a community to explore "what if" questions about future growth, development form and mobility. Properly crafted scenarios allow communities to explore the trade-offs associated with different development policy decisions. A common mistake in scenario-based plans is to create scenarios that have limited differences, with marginal changes in transportation or land use patterns. The scenarios should be sufficiently broad and robust in scope to enable a clear differentiation and policy direction. Often the outcome is a hybrid of two or more scenarios, but the creation of the hybrid is dependent on how well the scenarios depict policy trade-offs.

The four major mobility scenarios have been defined in the Scope of Services and will be developed in detail through interaction with the public. These alternative mobility scenarios will be evaluated against the goals and objectives to see how they perform relative to one another. It is during this phase that an alternative peak oil scenario analysis will be conducted and presented at Workshop #2.

Workshop #2

The primary purpose of this workshop will be to engage participants in weighing the tradeoffs associated with each mobility scenario and considering each under a "peak oil condition." The second workshop will employ visualization techniques, interactive mapping and facilitated discussions aimed at informing and engaging the public in truly assessing the potential challenges and opportunities associated with each possible Needs Plan. The goal of this workshop will be to get participants to review/refine the four conceptual mobility scenarios and identify preferences for network development. Following briefings with the TAC and CAC, the study team will present the mobility scenarios to the MTPO for approval prior to testing and evaluation.

The second workshop will also help to specifically identify the desired location of multimodal facilities (station areas) for future transit service, such as light rail and bus rapid transit, for one or more mobility scenarios. Participants will be asked to identify potential locations based on accessibility, proximity to other uses and feasibility of development. The study team will assist in the exercise by excluding areas limited for development, such as by zoning or environmental restrictions. The results will be invaluable to the future development of regional and local transit service. The study team will summarize the workshop results and post them on the web site for review.

As the study enters the scenario evaluation step, a key activity will be to update the project web site to introduce the LRTP mobility scenarios and seek feedback on each. The site will also be used to present evaluation results and ask the public to vote for the preferred scenario. The LRTP study team will distribute notices via the Plan Information Network, press releases and other means to encourage the public to visit the web site, review the scenarios and vote their preferences. For those individuals not connected to the web, information will be obtained by encouraging individuals who attend the second workshop to vote for the preferred scenario while at the workshop.

Following evaluation of the mobility scenarios and incorporation of peak oil strategies, the study team will present the findings to the MTPO in a public hearing for review and approval of the Year 2035 Needs Plan.

Phase III Outcome

Key public involvement outcomes for Phase III:

* Conduct public workshop #2 to present and refine mobility/peak oil scenarios
* Update project web site to introduce scenarios and use a survey to allow the public to evaluate and rate each scenario in terms of preference
* Continue expanding the Plan Information Network and use it to connect with the public
* Conduct interactive briefings with TAC/CAC
* Consultation with environmental agencies on potential impacts of transportation projects identified in the Needs Plan
* Present draft scenarios to the MTPO for approval prior to evaluation
* Present scenario evaluation results and recommended Needs Plan to the MTPO for approval
* Conduct Needs Plan public hearing

PHASE IV – FINANCIAL FEASIBILITY AND PROJECT PRIORITIES (JUNE 2010 TO MARCH 2011)

Reflecting the input from the public and technical evaluation, the study team will create a package of preferred mobility strategies as the Year 2035 Needs Plan for final prioritization and cost feasibility analysis. Choosing a preferred mobility scenario will entail a combination of public participation and technical evaluation factors. It is through effective storytelling where the study team will translate the technical information into understandable and visually clear outcomes that tie back to the values expressed early in this process.

The project web site will be updated to present the quantitative and qualitative outcomes of the Needs Plan relative to the goals, objectives and evaluation criteria. The site will be expanded to introduce transportation project costs and revenue sources, both existing and potential, with a survey provided to gauge public reaction to possible funding strategies and including questions about priority project rankings.

Newsletter #2

The second project newsletter will convey the transportation choices facing the Gainesville area, along with estimated costs for mobility and network development strategies, anticipated and potential revenues revenue by source, and the evaluation of the Needs Plan scenario relative to the Trend and other options. Like the first newsletter, this will be posted to the web site and distributed electronically. Printed newsletters will be made available upon request and at scheduled public meetings and workshops. In addition, printed copies will also be placed on Regional Transit System buses and placed at area libraries.

Workshop #3

It is during this phase when the third and final public workshop will be held. Participants will review and evaluate the Needs Plan projects and funding scenarios, and vote to rank their preferences for strategies identified. The workshop will focus on possible alternative funding strategies in addition to defining project priorities.

Following this workshop, the study team will summarize and post the results on the project web site, and present them to the advisory committees and the MTPO. During this period, the web site will contain a survey to enable people to review the proposed Cost Feasible Plan, comment on it and indicate their preferences for how to allocate available project revenues.

Based on input from the public and the technical evaluation, the study team will develop the draft Cost Feasible Plan that defines mobility strategies by phase and funding source. The plan will clearly define how the financially feasible plan lays a foundation for the completion of the preferred scenario and long range vision for the region. Rather than a simple list of the projects by mode, the Cost Feasible Plan will convey a strategy for mobility development principles articulated in the preferred scenario.

The study team will schedule and conduct a presentation at a public hearing of the MTPO to adopt the Year 2035 Cost Feasible Plan.

Phase IV Outcome

Key public involvement outcomes for Phase IV:

* Conduct public Workshop #3 to present the Needs Plan costs, anticipated revenues and define a Cost Feasible Plan

* Distribute the second project newsletter

* Update project web site to introduce scenarios and use a survey to allow the public to identify how to spend available revenues on transportation projects in the Needs Plan

* Continue use of the Plan Information Network to connect with the public

* Conduct interactive briefings with TAC/CAC

* Present Needs Plan evaluation results and recommended Cost Feasible Plan to the MTPO for approval

* Conduct Cost Feasible Plan public hearing

VIII

PUBLIC PARTICIPATION PLAN DOCUMENTATION

The entire public involvement program, how it was implemented and how it influenced the development of the Needs and Cost Feasible Plans, will be documented in a stand-alone technical report. The report will summarize the web site survey results for each phase, the public workshop results and how various socioeconomic groups were approached or engaged in the study process. An appendix will include all relevant materials used in the outreach and engagement effort.

When significant written and oral comments on the draft long range transportation plan (including the financial plan), a summary, analysis and reports on the disposition of public comments will be prepared. This material will be included as part of the adopted Year 2035 Cost Feasible Plan.

In addition, a Year 2035 Plan poster will be prepared similar in design to the Year 2020 and Year 2025 MTPO Livable Community Reinvestment Plan posters.

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APPENDIX B: PUBLIC INVOLVEMENT MATERIALS

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Gainesville MTPO 2035 Long Range Transportation Plan

Community Workshop

You are invited to help shape the future of Transportation in the Gainesville area.

www.livabletransportation.org

Visit our new website and see what's in store for Gainesville's transportation future. Then, join us for a community workshop to start the plan off on the right foot!

This workshop will:

- Define issues for roadway, bicycle/pedestrian and transit system improvements within the region
- Define important transportation connections, barriers and opportunities
- Provide guidance on how mobility, livability and sustainability should inform the development of the transportation network
- Identify how to measure the effectiveness of the Gainesville Urbanized Area's transportation system

Refreshments will be provided.

April 23, 2009

5:30pm to 8:00pm

Gainesville Regional Utilities Multi-Purpose Room
301 SE4th Avenue • Gainesvelle FL 32601

For more information visit www.livabletransportation.org
or contact: Marlie Sanderson, Assistant Executive Director

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Gainesville Metropolitan Planning Organization
2035 Long Range Transportation Plan

COMMUNITY MEETING

Thursday, April 23, 2009
5:30 pm to 8:00 pm
Gainesville Regional Utilities, Multi-Purpose Room

Workshop Objectives

- Define important transportation connections, barriers and opportunities
- Provide guidance on how mobility, livability and sustainability should inform the development of the transportation network
- Identify how to measure the effectiveness of the Gainesville Urbanized Area's transportation system
- Provide input on the Gainesville Regional Transit System's Transit Development Plan and Alachua County's Comprehensive Plan update (separate tables will be set up for these efforts)

Workshop Agenda

1. Introductions and Materials Review

   5:30 pm – 6:00 pm

2. Overview Presentation

   6:00 pm – 6:30 pm

3. Group Planning Activities

   6:30 pm – 7:30 pm

   - Examine connectivity of transportation modes
   - Identify potential barriers/constraints

4. Summary and Wrap-Up

   7:30 – 8:00 pm

Gainesville Urbanized Area Metropolitan Transportation Planning Organization (MTPO)
2035 Long Range Transportation Plan
Workshop No. 1 – Transportation Network Gaps, Barriers and Opportunities

WHAT IS YOUR VISION FOR THE GAINESVILLE AREA'S TRANSPORTATION SYSTEM?

I live in… ☐ Gainesville ☐ Unincorporated Alachua County
☐ Other City in Alachua County ☐ Elsewhere ________________________

1. The following statement summarizes the MTPO's current long range transportation planning emphasis:

   "Integrate land use and transportation planning by making transportation investments that support community development objectives to create more balance in east-west Gainesville area growth by directing growth into existing infill and redevelopment areas and discouraging the development of inefficient, sprawling development between Gainesville and outlying municipalities"

Do you agree with that vision statement to guide the community's future transportation plans?

1 2 3 4 5
(1 – Strongly Disagree 3 - Not Sure 5 – Strongly Agree)

If you disagree, do you have other wording you would like to see guide the Plan?

____
____
____

2. How do you feel about the following issues that may be considered in the 2035 Long Range Transportation Plan? *(Circle one)*

   a) Alachua County and Gainesville need to invest in rapid transit service along major corridors serving destinations in the City of Gainesville.

   1 2 3 4 5
   (1 – Strongly Disagree 3 - Not Sure 5 – Strongly Agree)

   b) There should be more park-and-ride opportunities for people to take transit from outlying areas near where they live to destinations in Gainesville.

   1 2 3 4 5
   (1 – Strongly Disagree 3 - Not Sure 5 – Strongly Agree)

   c) Efforts should be made to create parallel transportation corridors rather than widen congested state roadways like Newberry Road, Archer Road and US 441.

   1 2 3 4 5
   (1 – Strongly Disagree 3 - Not Sure 5 – Strongly Agree)

   d) Existing bus service is sufficient to meet most of my daily needs.

   1 2 3 4 5
   (1 – Strongly Disagree 3 - Not Sure 5 – Strongly Agree)

e) More emphasis needs to be placed on improving bicycling and walking facilities to better connect places in the community.

1 2 3 4 5
(1 – Strongly Disagree 3 - Not Sure 5 – Strongly Agree)

f) Transportation plans should help preserve a greenbelt between urban development in the City of Gainesville and the other cities in Alachua County.

1 2 3 4 5
(1 – Strongly Disagree 3 - Not Sure 5 – Strongly Agree)

g) Declining oil resources and rising energy demands will fundamentally change how people live and travel by 2035.

1 2 3 4 5
(1 – Strongly Disagree 3 - Not Sure 5 – Strongly Agree)

h) More emphasis is needed to improve traffic flow & efficient operations on the existing roadway network.

1 2 3 4 5
(1 – Strongly Disagree 3 - Not Sure 5 – Strongly Agree)

i) Improving traffic safety – for all users of the transportation system – is more important than new roadway capacity projects or additional transit service in the Gainesville urbanized area.

1 2 3 4 5
(1 – Strongly Disagree 3 - Not Sure 5 – Strongly Agree)

j) I generally believe that the Gainesville area's transportation system is able to handle an emergency response or evacuation if warranted.

1 2 3 4 5
(1 – Strongly Disagree 3 - Not Sure 5 – Strongly Agree)

k) The transportation system in Alachua County is maintained at an acceptable level.

1 2 3 4 5
(1 – Strongly Disagree 3 - Not Sure 5 – Strongly Agree)

Please add any additional thoughts or comments:

2035 LONG RANGE TRANSPORTATION PLAN
PUBLIC WORKSHOP SUMMARY

Gainesville Urbanized Area MTPO
GRU Multi-purpose Room, Gainesville, April 24, 2009

INTRODUCTION

About 45 citizens of Gainesville and Alachua County attended the first scheduled public workshop for the 2035 Long Range Transportation Plan (LRTP), sponsored by the Metropolitan Transportation Planning Organization (MTPO) for the Gainesville Urbanized Area. The workshop, held at an accessible location in downtown Gainesville, was designed to allow participants to provide input to identify the area's transportation issues and needs, and to comment on the MTPO's existing vision and several transportation issues facing the community. Public involvement is very important to this planning process, as the LRTP will set transportation priorities and guide the use of federal, state, and local funding for transportation projects over the next 25 years.

The evening workshop agenda included an informal open house period to review maps, followed by a 20 minute presentation giving an overview of the LRTP process, major topics and schedule. After a short question/answer period, the participants were organized into four groups based on geographic parts of the Gainesville area. Each group was asked to spend about 30 minutes or so marking up maps using colored pens to show transportation issues, network gaps or barriers, along with opportunities for improving the transportation network for various travel modes.

In addition, flip charts, individual maps, surveys, and evaluation forms were used to collect both specific and general comments from participants about the Gainesville area's transportation system. A map series provided important context information about existing and planned transportation networks and study area features. Both the worksheet responses and the mapping exercise responses will guide the development of the scenarios, and will help identify projects that should be considered for analysis, and ultimately, funding priority. The mapping exercise also allowed participants to review a collection of maps and draw areas where they wanted improvements. Both exercises aim to identify transportation system needs.

SURVEY RESPONSES

Participants completed a survey that sought to gauge the level of support or resistance to certain transportation issues facing the area that will be addressed in this planning process.

A survey summary is posted to the LRTP website (www.livabletransportation.org). The following key points highlight the findings from that activity.

- A plurality – about 60 percent – agreed or strongly agreed with the current MTPO vision for transportation and land use decision-making, which has guided the last two long range transportation plans (adopted in 2000 and 2005)
- More than 90 percent agreed that the area needs to invest in rapid transit on major corridors serving destinations in the City of Gainesville (e.g., Newberry, Archer and Waldo Roads); more than 60 percent strongly agreed with the statement.
- A large majority would like to see more park and ride lots to support transit service connecting outlying areas into destinations.
- More than 70 percent strongly agree that it makes sense to create parallel transit corridors instead of widening the congested major state roadways into the University of Florida and Gainesville
- Only about 15 percent of workshop participants believe existing bus service is adequate to meet most of their daily travel needs; more than 60 percent disagreed.
- Nearly 80 percent believe more emphasis should be placed on improving bicycle and pedestrian facilities to connect people to places in the community
- Most participants (61 percent) would like to see a greenbelt buffer separating the Gainesville urban area and development occurring in the smaller cities of Alachua County.
- 65 percent of workshop attendees believe declining oil resources will "fundamentally" shift how people live, work and travel in the coming 25 years. About a quarter were unsure or had no opinion.
- Interestingly, about 85 percent of respondents believe more emphasis is needed to improve traffic flow and efficient operations on the existing roadway network
- Most workshop participants (36% strongly agree; 29% agree) believe improving traffic safety for all users is more important than adding road capacity or providing more transit service.
- Exactly half of all participants believe Gainesville's transportation system is capable of handling an emergency response or major evacuation, if warranted.

TRANSPORTATION MAP COMMENTS

As described above, participants broke into geographically-oriented groups to mark up maps and make comments on transportation issues, needs and opportunities. A composite map of the major comments has been created for use by the study team in preparing the plan. This section summarizes the written comments on the maps and flip charts for each group.

NORTH PLANNING SECTOR

- There is limited transit service to medium density areas
- Public transportation should be extended beyond Gainesville City Limits
- Transit service is needed to Santa Fe at night
- Newberry Road bypass needed
- Increase speed on 143rd Street near Jonesville
- Bus to Alachua and High Springs (GNV Shands)
- Homeless shelter at 53rd and 441 needs bus service – particularly to the hospital
- Consider adding a transit shelter at 16th and 441 (Old Guthrie's)

NORTHWEST PLANNING SECTOR

- Increase in transit coverage needed

CENTRAL PLANNING SECTOR

- BRT lines on major roadways
- Beef up 34th St transit corridor
- Difficulties crossing 34th St in wheel chair (up to 10 minutes)
- Difficulties crossing 13th St in wheelchair
- 34th St/35th Pl difficult to cross due to short pedestrian green cycle
- Later bus service needed – especially at apartments
- Transit connectivity to other cities and counties needed
- Bus routes end earlier when students are on break
- Aesthetic improvements for bike/ped facilities needed to improve use
- Bicycle connection needed to avoid 6th St and 13th St
- Need two-way bus service on 34th St (from University Ave to Williston Rd)
- Several bicycle and pedestrian barriers (noted on map)
- Bicycle/pedestrian opportunities on NW 23rd Ave and 16th Ave

EAST PLANNING SECTOR

- Lamplighter (neighborhood) is in GNV – transit routes should be provided
- Bus stop recommendation on Waldo Road
- Transit routes on major roads:

  University/SR 26

  Waldo Rd

  SR 20

SOUTHWEST PLANNING SECTOR

- Transportation barriers along I-75 (few adequate crossings for all users)
- Increase in transit routes on major roadways
- Bicycle access to Butler Plaza is needed
- Express transit route on Newberry Rd
- Road opportunities
- SW 122nd St: from Newberry Rd to 39th Ave
- 143rd St: From Newberry Rd to 232 (Millhopper Rd)
- Park and Ride at Newberry Rd to capture Gilchrist County traffic
- RTS facility downtown leaves passengers feeling unsafe

GENERAL COMMENTS ON SURVEY

Need additional service to Newberry possibly a BRT although I would like to see a dedicated us lane for buses only.

Activity centers and town centers should guide the MTPO Vision plan.

MTPO Vision Statement - Creating balances should not overlook the current need.

Suggested downtown parking fee hike before, so no vice.

The ecology of the Earth is rapidly changing - we're destroying the natural systems that sustain us. When ocean levels rise several inches within the next few decades thousands if not millions of people will be moving to the higher point or the spine of the states. Plan for it!!!!

MTPO Vision Statement - More buses, longer hours, transportation to Archer, Micanopy, High Springs/Alachua. More transportation on weekends.

Why is there less bus service on weekends when people would be more willing to ride the bus if there was bus service (so we could go to movies or bowling or out to eat and to go to theater or go shopping or church).

Could there be more bus stops - like a stop closer to 1st Presbyterian church on SW 2nd Ave.

Why do we have shorter service/less service just because the students are gone? There are those of us who aren't students who ride the bus a lot too.

MTPO Vision Statement - The west side has more roads over or near capacity - more transit from west of I-75 to employment centers. Low income people on east side need more transit services.

MTPO Vision Statement - I strongly agree with the statement, however, CONTRA the city, 53rd avenue should NOT be a redevelopment area. Pine Forest to concrete is not progress.

More emphasis on pedestrian safety is needed. More connections between roads are needed. Many bicyclists use unsafe roads because your "infill" developers are allowed to close streets and build cul-de-sacs. A net of streets responds to stress better than trunk and branch which can be easily shut down by a single incident.

MTPO Vision Statement - The statement is good but does not seem to be broad enough. Maybe it should be more comprehensive.

Current growth management rules drive development to the west. Due to the environmental sensitivity of eastern point of the county prohibits any growth in the area, thereby drastically reducing the infill capabilities.

NEXT STEPS

Based on the input from this workshop and other public involvement activities later in the year, the MTPO study team will begin developing goals, objectives and performance measures (measures of effectiveness), as well as assembling transportation alternatives that will be considered in the development of a recommended 2035 Needs Plan for the Gainesville area. These alternatives will consider factors such as climate change (greenhouse gas emissions), peak oil production and decline variables, accessibility to various modes of transportation and mixed use destinations, and the financial feasibility of various mobility strategies. These additional public involvement activities will occur in the fall of 2009.

Gainesville 2035 Long Range Transportation Plan
WORKSHOP EVALUATION SURVEY – HOW DID WE DO?
April 23, 2008

Please take a few moments to complete this survey and return to staff. Your comments will allow us to better serve your needs and address your concerns in the future.

1. On a scale of 1 to 5, where 1 = Strongly Disagree and 5 = Strongly Agree, please rate the following statements. (Circle One)

The meeting location for the public workshop was conveniently accessible and is a good place to hold future meetings.

1 2 3 4 5

Workshop materials and visual aids were clear and easy to understand.

1 2 3 4 5

There were ample opportunities to offer personal input.

1 2 3 4 5

The staff conducting the workshop was receptive to personal input given by the citizens attending.

1 2 3 4 5

The workshop exercises were valuable in helping to identify transportation system objectives and needs.

1 2 3 4 5

The workshop was enjoyable and informative.

1 2 3 4 5

2. How did you find out about the time and location of this workshop?

___ Television/Radio
___ Friend
___ Flyer
___ Email
___ Other: ____
___ Direct Contact by City/Consultant
___ Newspaper
___ Website

3. In the future, what could be done to make similar workshops a more effective tool for you?

The following questions are only used for statistical purposes to meet federal requirements. Your answers are confidential and will not be used for any other reasons.

4. What is your gender?
   a. M
   b. F
5. What is your age?
   a. Under age 18
   b. 18 to 29
   c. 30 to 39
   d. 40 to 49
   e. 50 or older
6. What is your race?
   a. White
   b. African-American
   c. Other
7. What is your marital status?
   a. Single
   b. Married
   c. Widowed
   d. Divorced or Separated
8. Is the United States your country of origin?
   a. Yes
   b. No
9. Is English a second language?
   a. Yes
   b. No
10. Do you own or have access to a vehicle?
    a. Yes
    b. No
11. Do you have a disability that limits your mobility?
    a. Yes
    b. No

For additional comments, please write on the back of the workshop evaluation survey. For more information, contact Marlie Sanderson at msanderson@ncfrpc.org . Thank you!

YEAR 2035 LONG RANGE TRANSPORTATION PLAN

PUBLIC WORKSHOP

TUESDAY, FEBRUARY 16

5:30 – 8:00 PM

(Presentation at 6:00 PM)

The Thomas Center, 302 NE 6th Avenue

We want to know what you think!

"How can we better connect people and destinations by car, bus, streetcar, biking, and walking?"

"What are the best ways to address greenhouse gases?"

"How will we know if our transportation plan is effective?"

For more information, please contact:

Mr. Marlie Sanderson, at (352) 955-2200, ext. 103

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METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION FOR THE GAINESVILLE URBANIZED AREA

MOBILITY NEWS

LIVABLE COMMUNITY REINVESTMENT PLAN WWW.LIVABLETRANSPORTATION.ORG VOL 1 2010

YEAR 2035 LONG RANGE TRANSPORTATION PLAN

WORKSHOP NOTICE

Please join us for a Public Workshop on the Year 2035 Livable Community Reinvestment Plan Update– your Transportation Plan for the Gainesville Metropolitan Area – as we begin to develop the Year 2035 Needs Plan.

Tuesday, February 16
5:30 – 8:00 PM
(Presentation at 6:00 PM)
The Thomas Center, Spanish Court
302 NE 6th Avenue, Gainesville, FL

We want to know what you think!

- How can we better connect people and destinations in the Gainesville area by car, bus/ bus rapid transit, streetcar, biking, and walking?
- What are the best ways to address the potential effects of peak oil production and greenhouse gases on our transportation network?
- How will we know if our transportation plan is effective? What should we measure?

This workshop is your opportunity to help shape the transportation network alternatives before the Metropolitan Transportation Planning Organization approves them for evaluation in March 2010. The Needs Plan will identify how to meet our community's transportation needs through the Year 2035 and will incorporate ideas, problems and solutions suggested at this workshop.

UPCOMING EVENTS

Public Workshop #2
Needs Plan and Network Alternatives
February 16, 2010 • 5:30 – 8:00 PM

Needs Plan Public Hearing
August 23, 2010

Public Workshop #3
Cost Feasible Plan
September 2010 (Date TBD)

Cost Feasible Plan Public Hearing
October 4, 2010

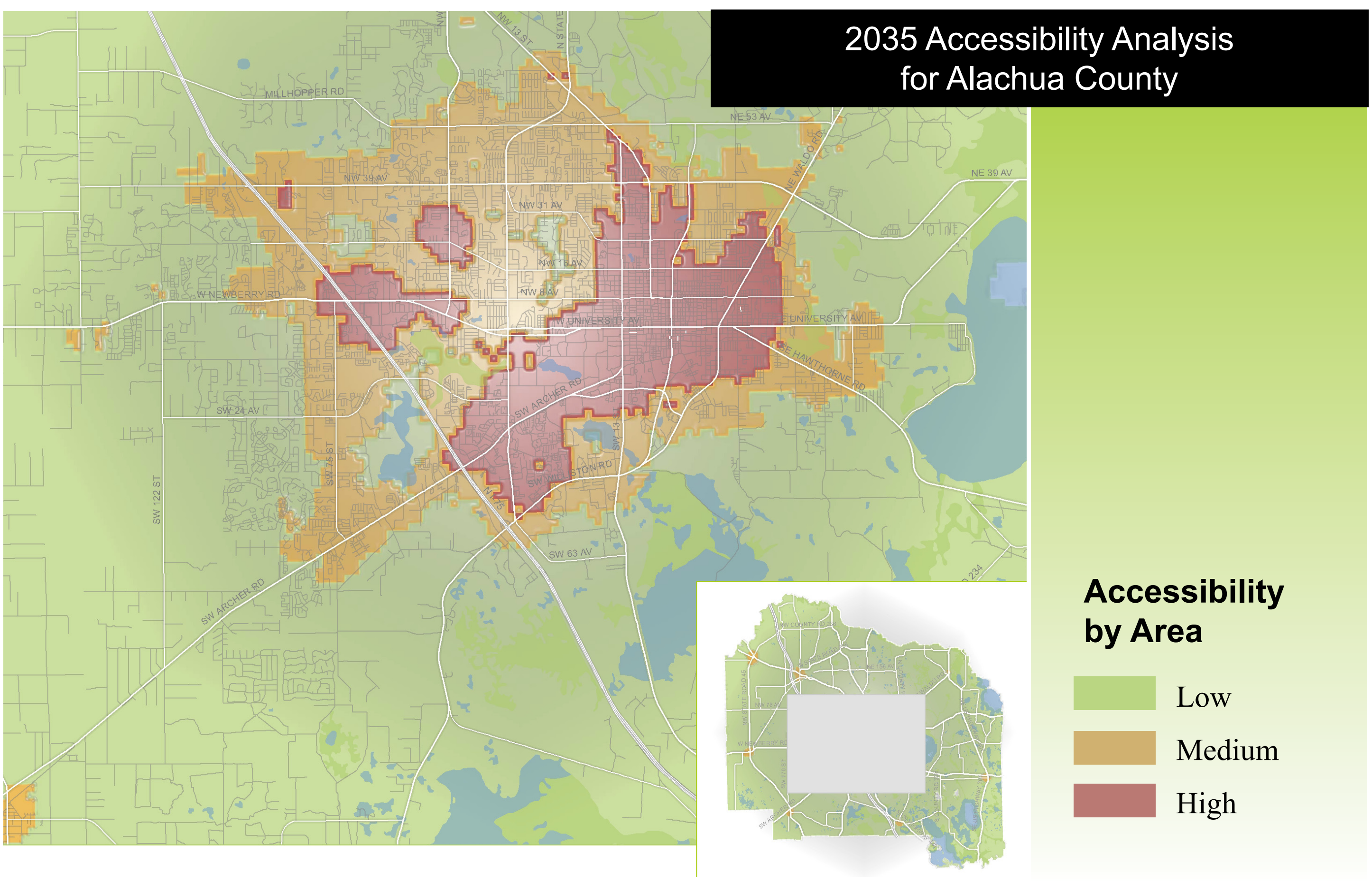
IN THIS ISSUE:

Accessibility Analysis To Guide Transportation Network Alternatives

Access – along with mobility – is one of the two primary considerations in transportation planning that is often overlooked in how we measure transportation performance. Accessibility refers to the ability to get from one place to another; it is measured in terms of land use-transportation linkages (such as access to jobs, a school or the grocery store) and proximity to various travel options people may have available to them. While access centers on connectivity, mobility tends to emphasize speed, or the efficiency of simply getting from Point A to Point B. We need to have both for a good transportation network. In some neighborhoods or on some kinds of roads, it makes sense to place priority of one over the other.

A central feature of the Year 2035 Long Range Transportation Plan is an "accessibility analysis" that examines all of Alachua County in terms of access to land use destinations and the variety of travel options. The map below depicts areas that have been rated in terms of low, medium or high accessibility based on projected Year 2035 population and employment, as defined in adopted county, city and university plans. The variables used to develop this map include intersection density (a measure of street connectivity and an indicator of safety and likelihood of people walking, riding bicycles or taking transit), bus route accessibility (including location of stops and frequency of service), bicycle facility locations and traffic speed, land use mix, and proximity to retail, civic and educational destinations.

Based on the analysis, less than 30 percent of Alachua County population and 55 percent of the jobs in the Year 2035 will be located in "high" accessibility areas. More than 40 percent of Alachua County residents and nearly a quarter of jobs will be in areas rated "low" for accessibility. As the MTPO considers new transportation alternatives, such as Bus Rapid Transit, or expansion of bike trails, new bus routes and park-and-ride lot locations, the accessibility measures will change to reflect those investments. Of course, the other side of the policy coin is encouraging more people and jobs to locate in areas that already have high accessibility, such as East Gainesville and the area to the north of downtown Gainesville. The accessibility analysis will be a factor in developing the final Year 2035 plan.



Developing the Needs Plan

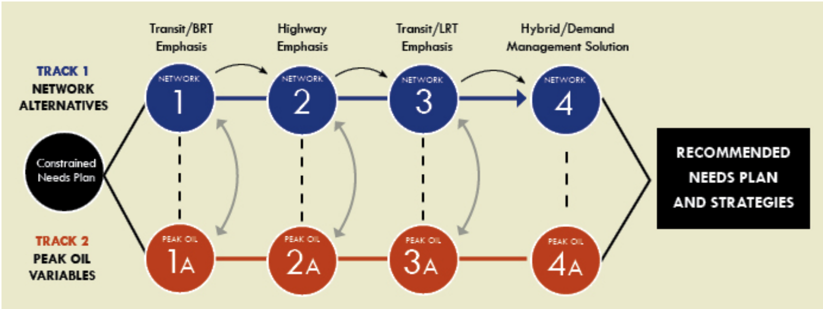
There are two primary components of the Year 2035 Transportation Plan: a Needs Plan and a Cost Feasible Plan. The Needs Plan will be adopted by the MTPO first – likely at its August meeting – and it provides the foundation for the Cost Feasible Transportation Plan, which will be approved in October or November 2010, based on estimated local, state and federal revenue for needed transportation projects over the next 25 years. The Needs Plan identifies the desired direction the community will take to meet mobility needs in the Gainesville Metropolitan Area, without limitations to available revenue. In essence, it is a wish list based on ideas, problems and solutions suggested from the public. But an effective Needs Plan must be realistic, have community support, and present a logical and attainable strategy to address improvements to both mobility and access, even if the money is not currently available for all of the projects.

The Year 2035 Needs Plan will be developed based on evaluation of four network alternatives and projected growth in households and jobs as defined in the adopted city and county comprehensive plans. The four alternative networks include: 1) a transit-focused alternative, primarily emphasizing a Bus Rapid Transit (BRT) system, express bus service with connections to park-and-ride locations; 2) a highway emphasis alternative, addressing new street connections and selected road widening projects; and 3) a streetcar or rail-focused alternative with complementary BRT and expanded bus service. The fourth alternative will entail a hybrid of the three alternatives, combining the best elements from each. At the February 16th workshop, the community will have an opportunity to shape these alternatives before the MTPO approves them for evaluation.

Over the next several months, the alternatives will be tested and recommendations developed based on how well they address traffic congestion, improve accessibility and mobility for people and goods, lower vehicle miles of travel, and support community livability.

Developing Strategies For Peak Oil

Two global issues have become key considerations in the Year 2035 Transportation Plan: the concept of "peak oil" and the issue of greenhouse gases. Respected international energy authorities have estimated that the world will likely reach its peak production of fossil fuels by 2020. As we reach this point, the price of oil is expected to become increasingly volatile. Recall the price shock of 2008 when gas prices rose to over $4 per gallon. Peak oil does not mean the end of oil production, but the end of cheap oil.



Thus, as oil production costs rise, so too will gas prices at the pump and the cost of manufacturing many goods and services. This is likely to have far-reaching impacts on where and how people live, how they travel and how they get their basic supplies. As a result of efforts by the Alachua County Energy Conservation Strategies Commission, the MTPO voted to ensure the Year 2035 Plan will include land use and transportation strategies related to the anticipated effects of peak oil production and decline. Along similar lines, greenhouse gas emissions (GHGs) from human sources are a source of concern. Research has shown that the transportation sector is responsible for as much as 30 percent of GHGs in the U.S., primarily from motor vehicles starting up and idling. The Federal Highway Administration and Florida Department of Transportation have asked all MPOs to incorporate analysis of GHGs and strategies to reduce emissions into their Long Range Transportation Plans. This is most commonly measured in terms of Vehicle Miles of Travel (VMT), which accounts for the number of vehicle trips and length of those trips. Reducing congestion, changing land use patterns to reduce travel distances for most trips, greater use of transit and ridesharing, and getting more people to walk or bicycle for their trips can all be part of a strategy to reduce VMT.

Both of these issues will be evaluated as part of the Year 2035 Plan by testing different factors related to VMT, including modifications to the transportation networks to improve accessibility for different ways to travel. The alternatives will be evaluated and recommendations developed for transportation projects and other strategies that will have the greatest impact on reducing VMT and energy consumption in the Gainesville/Alachua County region.

Year 2035 Transportation Plan Coordinated with UF Campus Master Plan

Because travel associated with the University of Florida has a profound influence on Gainesville/Alachua County travel patterns, the Year 2035 Transportation Plan is being coordinated with development of the University of Florida's Campus Master Plan Transportation Element. Consistency in data collection, sharing of data, and common planning assumptions are essential to creating complementary transportation plans for both the University and Gainesville/Alachua County. For that reason, data collection and modeling efforts have been conducted concurrently.

Data collected for the Campus Master Plan included a travel behavior survey to determine an estimate of campus mode share (how people get to campus) and identify some key characteristics of travel to and on campus. Based on the overall survey results, an estimated 39 percent travel to campus by transit, 24 percent drive alone, 19 percent walk or run, 10 percent ride a bicycle, 4.5 percent carpool, and three percent ride a motorcycle or scooter. Survey results showed a high use of carpooling, transit, and walking for students, while faculty and staff were more likely to drive alone or carpool than take the bus.

The Needs Plans for both the UF Campus Master Plan Transportation Element and the Year 2035 Transportation Plan will be developed over the next several months. Future transit service is a key issue for both plans, as can be seen by the high transit ridership among UF students. A large number of UF faculty and staff live within Gainesville and Alachua County, and the Bus Rapid Transit, streetcar, and park-and-ride facilities under consideration for enhanced transit service would provide them with more transportation options. Coordination of these two planning efforts will also improve timing and financial opportunities for needed transportation projects once the Cost Feasible Plan is adopted and available funds are allocated over the next several years.

Vision, Goals and Objectives Provide Basis for Plan Development

The Year 2035 Transportation Plan is guided by a vision for the future of transportation in the Gainesville Urbanized Area and a set of goals and objectives that provide further detail on how the vision shall be accomplished. The vision, goals and objectives for the Year 2035 plan are based on those written for the previous Transportation Plan and have been updated to address changing requirements relating to safety, security and greenhouse gas emissions, as well as key local priorities, such as peak oil production and energy conservation.

The vision articulates the community's desire for a multimodal transportation system based on integrated land use and transportation planning through community well-being and partnerships. The goals and objectives focus on key themes in creating the transportation network that achieves the Year 2035 vision: economic vitality and community livability, sustainable decision-making and preservation, safety for mobility and accessibility, security and resilience, and transportation network management and operations. The vision, goals, and objectives will guide development of the Needs and Cost Feasible Plans and will provide direction for benchmarks and targets that can be used to evaluate how well the plan is performing in achieving the desired transportation network. The vision, goals and objectives were adopted by the MTPO in December 2009, and a revised version will be considered for adoption in March 2010.

THE METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION

The MTPO includes elected officials from the City of Gainesville and Alachua County who work together to decide how to spend federal and state money to improve the Gainesville Metropolitan Area's transportation system.

For more information, please contact:
Mr. Marlie Sanderson, Assistant Executive Director
North Central Florida Regional Planning Council
2009 NW 67th Place
Gainesville, FL 32653-1603
(352) 955-2200, ext. 103

WWW.LIVABLETRANSPORTATION.ORG

Metropolitan Transportation Planning Organization
for the Gainesville Urbanized Area
Year 2035 Long Range Transportation Plan

PUBLIC WORKSHOP

Tuesday, February 16, 2010
5:30 pm to 8:00 pm
The Thomas Center, Spanish Court
302 NE 6th Avenue, Gainesville, FL

Workshop Objectives

- Identify how to better connect people and destinations in the Gainesville area by car, bus/bus rapid transit, streetcar, biking, and walking.
- Determine the best ways to address the potential effects of peak oil production and greenhouse gas emissions on the transportation network.
- Confirm how to know if the transportation plan is effective and what should be measured.
- Identify safety concerns and strategies to address them.

Workshop Agenda

5:30 pm – 6:00 pm	Introductions and Materials Review
6:00 pm – 6:30 pm	Overview Presentation
6:30 pm – 7:55 pm	Group Planning Activities
7:55 pm – 8:00 pm	Wrap-Up

Year 2035 Long Range Transportation Plan
Workshop #2: Needs Plan Alternatives, Peak Oil Factors, and Performance Measures
Survey

1) **Where do you live?** (Circle one)
   a) Gainesville
   b) Unincorporated Alachua County
   c) Other City in Alachua County
   d) Elsewhere

For each question below, circle the number to the right that best fits your opinion on the issues. Use the scale at the top to match your opinion.

Question	Not at all	Not very	No Opinion	Some-what	Extremely
2) Think back to 2008 when gas prices rose to over **$4/gallon**. If that were to happen again, how likely would you be to use a mode of transportation other than a single occupant vehicle to get around?	1	2	3	4	5
3) Now, imagine that gas prices have risen to **$10 per gallon**. How likely would you be to:					
a) use a mode of transportation other than a single occupant vehicle to get around?	1	2	3	4	5
b) move closer to your job or school to reduce the distance you have to travel each day?	1	2	3	4	5
4) How important is it for the community to establish the following **policies**:					
a) Direct funding to make areas west of I-75 more accessible to transportation options and destinations	1	2	3	4	5
b) Invest in areas that are already highly accessible to encourage people to live and work in those areas	1	2	3	4	5
c) Allow increased levels of traffic congestion to encourage more transit use	1	2	3	4	5
d) Improve accessibility to employment centers	1	2	3	4	5
e) Reserve rights-of-way for future transit facilities	1	2	3	4	5

Question					
	Not at all	**Not very**	**No Opinion**	**Some-what**	**Extremely**
5) How successful would you consider the future transportation network if the following statements were true?					
a) I live within 1/4 mile of a transit stop	1	2	3	4	5
b) I can get to multiple key destinations within 20 minutes by transit	1	2	3	4	5
c) My job or my home is located within ¼ mile of basic services (grocery, shopping, etc.)	1	2	3	4	5
d) I would have fewer delays on my commute to work each day.	1	2	3	4	5

6) What are some other ways the **success** of the transportation network could be evaluated?

____

____

7) For the **transit** network alternative, which would be the most appropriate strategy: (choose **one**)
   a) Better transit coverage to serve a larger area (e.g., park and ride lots, new routes) **or**
   b) Increase service within the existing service area (e.g., increased frequency, longer service hours, etc.).

8) For the **highway** network alternative, which would be the most appropriate strategy: (choose **one**)
   a) Develop more of a grid network in the western part of the county to relieve congestion on major corridors **or**
   b) Direct resources to improve efficiency by modifying traffic signals and intersections in the urban core.

9) For the **bicycle & pedestrian** network, which would be the most appropriate strategy: (choose **one**)
   a) Promote regional connectivity and networks in outer areas of the county **or**
   b) Focus on retrofits to existing roadways to improve conditions for biking and walking and access to transit

10) Please provide any other comments or suggestions you have about the transportation needs for the Gainesville Metropolitan Area.

____

____

Workshop Results

- Attendance: 49 persons
- Workshop evaluation forms: 19
- Surveys: 57 (33 from website)
- Activities
  - Presentation
  - Vision for corridors
  - Networks: transit, highway, bike-ped
  - Safety solutions

Workshop/Survey Comments

- Roads
  - Network of 4-lane roads
  - Expand road network to alleviate congestion
- Access/connectivity
  - More access to UF for cultural events
  - Connect campuses

Workshop/Survey Comments

- Safety
  - Many locations pointed out for specific safety issues/solutions
- Speeds
  - Don't reduce speeds on Archer Rd in front of Shands and VA Hospital
  - Reduce speeds along NW 8th Ave

Workshop/Survey Comments

- Transit
  - Concerns about BRT route through intersection of Archer Rd & 34th St
  - Increase bus service; free bus service
  - Add streetcar line to Butler Plaza
- Bicycle/Pedestrian
  - More on/off-road facilities in W. Gainesville area
  - Designated routes to specific places

Survey Results: Peak Oil

- Gas at $4/gallon?
  – 72% are likely to use a mode other than single occupant vehicle (SOV)
- Gas at $10/gallon?
  – 84% likely to switch from SOV
  – 43% likely to move closer to job or school

Survey Results: Policies

	Yes	No	No opinion
Direct funding to make areas west of I-75 more accessible?	60%	25%	15%
Invest in highly accessible areas?	71%	9%	20%
Allow increased congestion to encourage transit?	52%	35%	14%
Improve access to employment centers?	89%	0%	11%
Reserve ROW for future transit?	80%	9%	11%

Survey Results: Success

	Yes	No	No opinion
Live within ¼ mile of transit stop	91%	5%	4%
Get to multiple destinations within 20 minutes by transit	93%	5%	2%
My job or home is within ¼ mile of basic services	86%	12%	2%
I would have fewer delays on my commute	71%	16%	13%

Survey Results: Networks

– Transit
  - 45% -- Serve larger area
  - 55% -- Higher level of service in existing service area

– Highway
  - 42% -- More grid in western part of county
  - 58% -- Improve efficiency in urban core

– Bicycle-pedestrian
  - 20% -- Regional connectivity/networks in outer areas
  - 80% -- Retrofit existing roadways

YEAR 2035 LONG RANGE TRANSPORTATION COST FEASIBLE PLAN

PUBLIC WORKSHOP

TUESDAY, SEPTEMBER 21

5:30 – 8:00 PM

(Presentation at 6:00 PM)

GRU Multipurpose Room, 301 SE 4th Avenue

We want to know your transportation priorities!

How should transportation funds be spent? Roads? Transit? Trails?

What are the most important transportation projects?

How do we make sure we achieve our transportation goals?

For more information, please contact:

Mr. Marlie Sanderson, at (352) 955-2200, ext. 103

Metropolitan Transportation Planning Organization
for the Gainesville Urbanized Area
Year 2035 Long Range Transportation Plan

PUBLIC WORKSHOP

Tuesday, September 21, 2010
5:30 pm to 8:00 pm
Gainesville Regional Utilities (GRU), Multipurpose Room
301 SE 4th Avenue, Gainesville, FL

Workshop Objectives

- Choose your highest priority transportation projects.
- Identify how transportation dollars should allocated among roadway, transit, and trail projects.
- Weigh in on how your priorities would change in response to very high gas prices.
- What projects will help ensure we reach our transportation goals in the Gainesville area?

Workshop Agenda

5:30 pm – 6:00 pm	Introductions and Materials Review
6:00 pm – 6:30 pm	Overview Presentation
6:30 pm – 7:45 pm	Group Planning Activities
7:45 pm – 8:00 pm	Wrap-Up

Year 2035 Long Range Transportation Plan
Workshop #3: Cost Feasible Plan Worksheet (9/21/10)

1) Where do you live? (Circle one)

a) Gainesville

b) Unincorporated Alachua County

c) Other City in Alachua County

d) Elsewhere

2) The projects in the Needs Plan would cost much more to build than the transportation dollars available through the Year 2035. **RANK the following types of projects in priority order according to your opinion of how transportation dollars should be spent (1 = highest priority; 7 = lowest priority)**

Rank (1-7 in Priority Order)	Project Type
	Widen roads to relieve traffic congestion
	Build new roads to provide alternate routes
	Synchronize traffic signals
	Change roads to make them easier for people to ride a bike, walk, or take the bus (may mean fewer lanes)
	Expand current local bus service (more hours of service and/or bus comes more often)
	Add new types of transit service (streetcar or bus rapid transit) that would run to downtown and UF very often.
	Build paved trails for people to walk and bike

3) How would your priorities change if gas prices were $15 per gallon?

____

____

____

Please use the **BACK** of this sheet for any other comments. **THANK YOU!**

Gainesville MTPO Year 2035 Long Range Transportation Plan
WORKSHOP EVALUATION SURVEY – HOW DID WE DO?
September 21, 2010

Please take a few moments to complete this survey and return to staff. Your comments will allow us to better serve your needs and address your concerns in the future.

1. On a scale of 1 to 5, where 1 = Strongly Disagree and 5 = Strongly Agree, please rate the following statements. (Circle One)

   The meeting location for the public workshop was conveniently accessible and is a good place to hold future meetings.

   1 2 3 4 5

   Workshop materials and visual aids were clear and easy to understand.

   1 2 3 4 5

   There were ample opportunities to offer personal input.

   1 2 3 4 5

   The staff conducting the workshop was receptive to personal input given by the citizens attending.

   1 2 3 4 5

   The workshop exercises were valuable in helping to identify transportation system objectives and needs.

   1 2 3 4 5

   The workshop was enjoyable and informative.

   1 2 3 4 5

2. How did you find out about the time and location of this workshop?

   ___ Television/Radio
   ___ Friend
   ___ Flyer
   ___ Email
   ___ Other: ____
   ___ Direct Contact by Mail/Email
   ___ Newspaper
   ___ Website

3. In the future, what could be done to make similar workshops a more effective tool for you?

The following questions are only used for statistical purposes to meet federal requirements. Your answers are confidential and will not be used for any other reasons.

4. What is your gender?
   a. M
   b. F
5. What is your age?
   a. Under age 18
   b. 18 to 29
   c. 30 to 59
   d. 60 to 74
   e. 75 or older
6. What is your race?
   a. White
   b. African-American
   c. Other
7. Is the United States your country of origin?
   a. Yes
   b. No
8. Is English a second language?
   a. Yes
   b. No
9. Do you own or have access to a vehicle?
   a. Yes
   b. No
10. Do you have a disability that limits your mobility?
    a. Yes
    b. No

For additional comments, please write on the back of the workshop evaluation survey. For more information, contact Marlie Sanderson at msanderson@ncfrpc.org . Thank you!

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Gainesville Urbanized Area Metropolitan Transportation Planning Organization
2035 Long Range Transportation Plan

Environmental Issues Forum

You are invited to help shape the future of transportation in the Gainesville area.

www.livabletransportation.org

Please join us for an Environmental Issues Forum to discuss your ideas and concerns about the relationship between transportation and the environment. The Forum will be an Open House with a short presentation at 5:00 PM. Visit the website at www.livabletransportation.org for more information.

Take this opportunity to give your input on the following issues and more:

- Climate Change/Peak Oil
- Energy Conservation
- Air Quality
- Noise
- Water Quality
- Wetlands/Springs
- Wildlife and Habitat
- Environmentally Sensitive Lands

Light refreshments will be provided.

December 2, 2009
4:00pm to 6:00pm

Gainesville Regional Utilities Multi-Purpose Room
301 SE 4th Avenue • Gainesville, FL 32601

Public participation is solicited without regard to race, color, national origin, sex, age, disability, familial status, religious status, marital status, sexual orientation, or gender identity. Persons who require special accommodations under the Americans with Disabilities Act or persons who require translation services (free of charge) should contact Mr. Marlie Sanderson at (352) 955-2200, extension 103, at least seven (7) days before the workshop.

For more information contact:
Marlie Sanderson, Assistant Executive Director
(352) 955-2200, ext. 103 • sanderson@ncfrpc.org

The Gainesville Metropolitan Transportation Planning Organization (MTPO) includes elected officials from the City of Gainesville and Alachua County who work together to decide how to spend federal and state money to improve the Gainesville metropolitan area's transportation system.

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MINUTES
METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION (MTPO)
FOR THE GAINESVILLE URBANIZED AREA

Jack Durrance Auditorium	6:00 p.m.
Alachua County Administration Building	Monday
Gainesville, Florida	April 20, 2009

MEMBERS PRESENT	MEMBERS ABSENT	OTHERS PRESENT
Paula DeLaney, Vice Chair	Scherwin Henry, Chair	See Exhibit A
Mike Byerly	Cynthia Moore Chestnut	
Jack Donovan	Rodney Long	
Mayor Pegeen Hanrahan		STAFF PRESENT
Thomas Hawkins		
Bill Henderson/Charles Baldwin		Scott Koons
Craig Lowe		Marlie Sanderson
John Martin		Michael Escalante
Jeanna Mastrodicasa		
Lee Pinkoson		
Lauren Poe		
Ed Poppell		

CALL TO ORDER

Vice Chair Paula DeLaney called the meeting to order at 6:10 p.m. She noted that the MTPO did not have a quorum. She asked Mr. Marlie Sanderson, MTPO Director of Transportation Planning, if there were any non-action items ready for discussion.

Mr. Sanderson stated that agenda item V. Archer Road/SW 16th Avenue Project Development and Environment (PD&E) Study could be discussed.

V. ARCHER ROAD/SW 16TH AVENUE PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY

Mr. Sanderson stated that the City's consultant was present to provide an update on the Archer Road/ SW 16th Avenue Project Development and Environment (PD&E) Study.

Mr. Paul Cherry, Kimley-Horn Traffic Engineer, discussed the alternatives for the Archer Road/SW 16th Avenue PD&E Study and answered questions.

Mr. Ed Poppell, University of Florida Vice President for Business Affairs, discussed the Archer Road/SW 16th Avenue PD&E Study. He noted that Archer Road would have a campus feel from the fire station to SW 13th Street. He added that the SW 16th Avenue/SW 13th Street intersection modifications addressed Florida Department of Transportation concerns regarding capacity.

A member of the MTPO noted that some Archer Road businesses had contacted her and discussed their concerns about the project's impact on Archer Road businesses.

Mr. Don Hambidge, City of Gainesville Traffic Engineer, discussed the City's project review schedule.

Ms. Jane Berman Holton discussed her concerns regarding the project budget, scope, plans to address congestion and access/utility of Archer Road from the fire station to SW 13th Street. She noted she opposed the removal of the onstreet parking on SW 16th Avenue.

Mr. Cherry and Mr. Poppell responded to Ms. Holton's concerns.

A quorum of the MTPO was present. Vice Chair DeLaney said that the agendas could be approved.

I. APPROVAL OF THE MEETING AGENDA AND CONSENT AGENDA

Mr. Sanderson asked for approval of the consent agenda and remaining meeting agenda amended to delete agenda item II. SW 20th Avenue- Scoping Plans. He noted that there were not enough County Commissioners present to discuss agenda item II. SW 20th Avenue- Scoping Plans due to a Commissioner's conflict of interest.

A member of the MTPO asked why the sidewalks were not on the outside of the right-of-way in Alternative 3.

Mr. Sanderson stated that appropriate Florida Department of Transportation and Alachua County staff would be invited to the next MTPO meeting to discuss the location of the sidewalk.

ACTION: Commissioner Byerly moved to approve the Consent Agenda and the Meeting Agenda amended to delete agenda item II. SW 20th Avenue- Scoping Plans. Commissioner Pinkoson seconded; motion passed unanimously.

III. TRANSPORTATION IMPROVEMENT PROGRAM (TIP) AMENDMENT- SW 8TH AVENUE SIDEWALK

Mr. Sanderson stated that the SW 8th Avenue Sidewalk project has received funding under the Federal American Recovery & Reinvestment Act of 2009 (ARRA). He asked the MTPO to amend the Fiscal Years 2008/09 - 2012/13 TIP.

Mr. Dave Cerlanek, Alachua County Assistant Public Works Director, discussed the SW 8th Avenue Sidewalk project and answered questions. He noted that the project's limits would be from SW 75th Street to SW 67th Terrace.

ACTION: Commissioner Pinkoson moved to amend the Fiscal Years 2008/2009 - 2012/2013 TIP to include the SW 8th Avenue sidewalk project [FIN #4264051] from SW 75th Street to Interstate 75 in Fiscal Year 2008/2009. Mayor Hanrahan seconded. Mr. Sanderson conducted a show-of-hands vote. The motion passed unanimously.

IV. TRANSPORTATION IMPROVEMENT PROGRAM

Mr. Sanderson stated that the TIP is the most important document that is approved annually by the MTPO. He said that the TIP is a staged implementation program of transportation projects consistent, to the maximum extent feasible, with adopted comprehensive plans of Alachua County and the City of Gainesville. He added that, in order for Federal transportation funds to be spent in the Gainesville Metropolitan Area, they must be approved by the MTPO and included in this report. He noted that this year's document authorizes about $14 million in Federal funds for projects within the Gainesville Metropolitan Area over the next fiscal year.

ACTION: Commissioner Pinkoson moved to approve the draft Fiscal Years 2009/2010 - 2013/2014 TIP, as revised to address:

1. **Florida Department of Transportation review comments; and**

2. **any changes resulting from projects being American Recovery and Reinvestment Act-funded in the current Fiscal Years 2008/2009 - 2012/2013 TIP.**

Mayor Hanrahan seconded. Mr. Sanderson conducted a show-of-hands vote. The motion passed unanimously.

VI. YEAR 2035 LONG RANGE TRANSPORTATION PLAN UPDATE- PUBLIC PARTICIPATION PLAN

Mr. Sanderson stated that the MTPO's consultant has prepared a draft Public Participation Plan for the Year 2035 Long Range Transportation Plan (LRTP) Update.

Mr. Whit Blanton, Renaissance Planning Group (RPG) Vice President, discussed the status of the Year 2035 LRTP Update and the draft Public Participation Plan for the Year 2035 LRTP Update and answered questions. He announced the kick-off LRTP workshop on April 23rd at Gainesville Regional Utilities. He noted that the LRTP Update Internet website is as follows- www.livabletransportation.org.

Mr. John Martin, MTPO Rural Advisor, discussed the need for emphasis on maintenance of the existing transportation system.

A member of the MTPO discussed the Metropolitan Planning Organization Advisory Council (MPOAC) legislative agenda relationship to the LRTP update.

A member of the MTPO discussed the LRTP- Future Land Use Plan Map nexus, nodal densities and network design.

Commissioner DeLaney, Alachua County Transportation Disadvantaged Coordinating (TD) Board Chair, requested a LRTP presentation to the TD Board.

A member of the MTPO asked about the LRTP process.

Mr. Blanton discussed the elements of the LRTP Update process.

A member of the MTPO discussed the City's Evaluation and Appraisal Report (EAR) and the MTPO's Non-Discrimination Policy that extends beyond federal policy. She requested that LRTP Update display ads be placed in the Florida Independent Alligator.

ACTION: Commissioner Pinkoson moved to approve the Year 2035 Long Range Transportation Plan Update- Public Participation Plan as a completed document. Commissioner Lowe seconded; motion passed unanimously.

VII. NEXT MTPO MEETING

Mr. Sanderson recommended cancelling the May 26th MTPO meeting, since the MTPO did not have any agenda items that required action, and asked the MTPO to meet on June 8th.

It was a consensus of the MTPO to meet on June 8th.

VI. COMMENTS

A. MTPO MEMBERS

A member of the MTPO requested an update from the City on roadway jurisdiction status in the southwest annexation-affected areas. He said the update could be in writing.

Ms. Teresa Scott, Gainesville Public Works Director, stated that there was a Transition Team addressing jurisdictional transfers relative to the City's annexations. She said that she would see that an update would be provided.

Commissioner Martin congratulated the Gainesville City Commissioners that were re-elected.

A member of the MTPO noted that the new City of Newberry Mayor was in attendance.

Vice Chair Delaney welcomed Mayor Harry Nichols.

B. CITIZENS

There were no citizens comments.

C. CHAIRS REPORT

There were no MTPO Chair comments.

ADJOURNMENT

Vice Chair DeLaney adjourned the meeting at 7:55 p.m.

6/8/2009
Date

William Thomas Hawkins
William Thomas Hawkins, Secretary/Treasurer

EXHIBIT A

Interested Citizens	**Alachua County**	**City of Gainesville**	**Florida Department of Transportation**
Whit Blanton	Dave Cerlanek	Dekova Batey	Karen Taulbee
Paul Cherry	Michael Fay	Paul Folker	
Jane Berman Holton	Randall Reid	Jesus Gomez	
Harry Nichols	Dave Schwartz	Don Hambidge	
Jonathan Thigpen		Doug Robinson	
Ryan Thompson		Teresa Scott	
		Despina Veilleux	

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* By telephone
# Provided written comments

T:\Mike\em09\mtpo\minutes\apr20 wpd

North Central Florida
Regional Planning Council

2009 N.W. 67 PLACE, SUITE A, GAINESVILLE, FLORIDA 32653-1603
(352) 955-2200 SUNCOM 625-2200 FAX (352) 955-2209

CONSENT AGENDA
METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION
FOR THE GAINESVILLE URBANIZED AREA

Jack Durrance Auditorium
Alachua County Administration Building
Gainesville, Florida

Monday, 6:00 p.m.
April 20, 2009

STAFF RECOMMENDATION

Page #7 **CA. 1** **MTPO Minutes- March 2, 2009** **APPROVE MINUTES**

This set of MTPO minutes is ready for review

Page #13 **CA. 2** **MTPO Fiscal Year 2008 Audit Review Committee Report** **APPROVE COMMITTEE REPORT**

The MTPO Audit Review Committee has met and recommends that the MTPO accept the audit report and approve the invoice for payment

Page #37 **CA. 3** **Unified Planning Work Program (UPWP)- Revisions** **APPROVE REVISIONS**

Enclosed with this agenda item are UPWP pages that need to be approved for Fiscal Year 2009/10

Page #61 **CA. 4** **Joint Certification Statement** **AUTHORIZE CHAIR TO SIGN**

The Florida Department of Transportation (FDOT) is recommending that the MTPO planning process be certified

Page #65 **CA. 5** **Revised Transportation Planning Funds Joint Participation Agreement Form: 525-101-02** **APPROVE STAFF RECOMMENDATION**

FDOT is requiring the MTPO to include the language in Exhibit 2 as part of the current Transportation Planning Funds Joint Participation Agreement

Page #87 CA. 6 Continuity of Operations Plan- Revisions APPROVE REVISIONS

This Plan has been reviewed and revisions have been made to improve it

Page #103 CA. 7 Bus Rapid Transit Feasibility Study APPROVE SUBCOMMITTEE RECOMMENDATIONS

The Plan East Gainesville (PEG) Subcommittee and MTPO Advisory Committees received a Bus Rapid Transit Study status report presentation

Page #161 CA. 8 Plan East Gainesville Subcommittee NO ACTION REQUIRED

The Alachua County Commission has appointed Commissioner Pinkoson to replace Commissioner Chestnut on this Subcommittee

Page #163 CA. 9 Transportation Disadvantaged Program- Status Report NO ACTION REQUIRED

The MTPO has asked for regular status reports concerning this program

Page #173 CA. 10 U.S. Government Accountability Office (GAO)- Interview NO ACTION REQUIRED

The GAO interviewed MTPO staff about several issues, such as ways to improve regional transportation planning

Page #175 CA. 11 Regional Transit System Ridership NO ACTION REQUIRED

Enclosed is annual transit ridership information for 2008

Page #177 CA. 12 Florida Metropolitan Planning Organization Advisory Council- 2008 Legislative Policy Positions NO ACTION REQUIRED

Enclosed are copies of the 2009 MPOAC legislative policy positions

MINUTES
METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION (MTPO)
FOR THE GAINESVILLE URBANIZED AREA

Jack Durrance Auditorium
Alachua County Administration Building
Gainesville, Florida

5:00 p.m.
Monday
December 14, 2009

MEMBERS PRESENT	MEMBERS ABSENT	OTHERS PRESENT
Scherwin Henry, Chair	Paula DeLaney, Vice Chair	See Exhibit A
James Bennett/Lora Hollingsworth	Mayor Pegeen Hanrahan	
Mike Byerly	Rodney Long	
Cynthia Moore Chestnut	Jeanna Mastrodicasa	STAFF PRESENT
Jack Donovan	Larry Travis	
Thomas Hawkins		Scott Koons
Craig Lowe		Marlie Sanderson
Lee Pinkoson		Michael Escalante
Lauren Poe		
Ed Poppell		

CALL TO ORDER

Chair Scherwin Henry called the meeting to order at 5:05 p.m. He noted that a quorum was not present. He asked MTPO staff which agenda item had a presentation that could begin while the MTPO was waiting to obtain a quorum.

Mr. Marlie Sanderson, MTPO Director of Transportation Planning, suggested item III. SW 62nd Boulevard Connector- Interim Projects.

III. SW 62ND BOULEVARD CONNECTOR- INTERIM PROJECTS

Mr. Sanderson stated that Alachua County staff has submitted 60 percent SW 62nd Connector Interim Projects Design Plans for the: SW 40th Boulevard at Archer Road Intersection Modifications; SW 43rd Street at SW 20th Avenue Intersection Modifications; and Smart Bus Bay on SW 20th Avenue. He said that the County's consultant was present to discuss the 60 Percent SW 62nd Connector Design Plans.

Mr. Terry Shaw, HNTB Associate Vice President, discussed the 60 percent design plans and answered questions.

A quorum of the MTPO was present at this time.

I. APPROVAL OF THE MEETING AGENDA AND CONSENT AGENDA

Mr. Sanderson asked for approval of the consent agenda and meeting agenda.

ACTION: Commissioner Hawkins moved to approve the Consent Agenda and Meeting Agenda. Commissioner Pinkoson seconded; motion passed unanimously.

III. SW 62ND BOULEVARD CONNECTOR- INTERIM PROJECTS (Continued)

ACTION: Commissioner Pinkoson moved to approve the 60 Percent Design Plans for the:

1. **SW 40th Boulevard at Archer Road Intersection Modifications Project;**

2. **SW 43rd Street at SW 20th Avenue Intersection Modifications Project, with one revision to install raised medians on SW 20th Avenue west of the SW 43rd Street intersection; and**

3. **Smart Bus Bay on SW 20th Avenue Project, with two revisions to modify the:**

    A. **SW 20th Avenue typical section by widening the 4-foot bikelane to 5-foot with the foot being taken from the center turnlane; and**

    B. **bus shelter to include pedestrian safety railing at the back side.**

Commissioner Chestnut seconded; motion passed 7 to 1.

II. TRANSPORTATION IMPROVEMENT PROGRAM (TIP) AMENDMENTS

Mr. Sanderson stated that the Florida Department of Transportation (FDOT) is requesting five TIP amendments. He asked if the MTPO wanted to vote on them individually or as a batch.

Chair Henry requested batching the amendments for one vote.

A. FTA SECTION 5317 GRANT
B. SECTION 5316 JOB ACCESS REVERSE COMMUTE (JARC) GRANT
C. SAFE ROUTES TO SCHOOL PROGRAM- NE 15TH STREET SIDEWALK PROJECT
D. INTERSTATE 75 AT NEWBERRY ROAD (STATE ROAD 26) INTERCHANGE RIGHT-OF-WAY (ROW) PURCHASE PROJECT
E. AMERICAN RECOVERY AND REINVESTMENT ACT (ARRA) PURCHASE OF TRANSIT VEHICLES

Mr. Sanderson stated that the first TIP amendment was the awarding of a Federal Transit Administration (FTA) Section 5317 New Freedom Grant. He said that this Grant will be used to purchase additional paratransit trips for Section 5317-eligible clients.

Mr. Sanderson reported that the second TIP amendment was the awarding of an FTA Section 5317 JARC Grant. He said that this Grant would be used by RTS to purchase Mobile Data Terminal (MDT) software for MV Transportation.

Mr. Sanderson stated that the third TIP amendment was the awarding of a Safe Routes to School Grant for the NE 15th Street Sidewalk Project.

Mr. Sanderson reported that the fourth TIP amendment was the ROW Purchase Project at the Interstate 75 at Newberry Road/SR 26 NW Quadrant (Whataburger parcel).

Mr. Sanderson stated that the fifth TIP amendment was the redistribution of unallocated ARRA funding. He said that this project will purchase additional RTS transit vehicles. He asked the MTPO to amend the Fiscal Years 2009/2010 - 2013/2014 TIP for all five projects.

Ms. Karen Taulbee, FDOT District 2 Transportation Specialist, discussed the ROW project and answered questions. She noted that FDOT identified unobligated ROW funds. She added that, based on the MTPO's request for safety modifications at the Newberry Road interchange with regard to the Interstate 75 Master Plan Study, FDOT is funding this ROW purchase.

ACTION: Commissioner Lowe moved to amend the Fiscal Years 2009/2010 - 2013/2014 TIP in Fiscal Year 2009/2010 to:

A. increase the funding for the Section 5317 New Freedom Small Urban Operating/ Administrative Assistance Grant [FIN #4272891] by $36,100 and also $36,100 in local match;

B. add the Section 5316 Job Access Reverse Commute Grant [FIN #4282371] of $90,000 and $10,000 local match;

C. add the NE 15th Street from NE 39th Avenue [State Road (SR) 222] to the 4400 Block of NE 15th Street Sidewalk Construction Project [FIN #4273261];

D. add the Interstate 75 at Newberry Road Interchange ROW Purchase Project [FIN #4278251]; and

E. increase the funding for the Purchase of Transit Vehicles Project [FIN #4263201] by $335,418 in Fiscal Year 2009/2010.

Commissioner Chestnut seconded. Mr. Sanderson conducted a show-of-hands vote. The motion passed unanimously.

The TIP Amendment Log is attached as Exhibit 1.

Mr. Sanderson stated that item IV. Public Involvement Plan Update was advertised for discussion at 6:00 p.m. He suggested discussion of item VII. Florida Department of Transportation Tentative Five Year Work Program.

It was a consensus of the MTPO to discuss item VII. Florida Department of Transportation Tentative Five Year Work Program.

VII. FLORIDA DEPARTMENT OF TRANSPORTATION TENTATIVE FIVE YEAR WORK PROGRAM

Mr. Sanderson stated that FDOT has requested comments concerning its Tentative Five Year Work Program for Fiscal Years 2010/2011 to 2014/2015.

Ms. Taulbee discussed the Tentative Five Year Work Program and answered questions.

Mr. Jonathan Paul, Alachua County Impact Fee and Concurrency Manager, discussed County staff comments on the Tentative Work Program and answered questions.

Chair Henry asked whether any new ARRA funding could be used to address local street flooding in the Duval Heights neighborhood. Ms. Taulbee noted that the MTPO's List of Priority Projects (LOPP) was used by FDOT to identify projects to be considered in the Tentative Work Program.

Mr. James Bennett, FDOT District 2 Urban Area Transportation Development Engineer, noted that these were local roads that are off the State Highway System. He noted that these drainage projects may be eligible for County Incentive Grant Program (CIGP) funding. He said that there is a local match requirement. He discussed the ARRA and reported that there was no additional funding. He added that, if there was another Federal Stimulus bill, FDOT would follow the MTPO's priorities.

ACTION: Commissioner Poe moved to authorize the MTPO Chair to send a letter to the FDOT District 2 Secretary thanking her for the opportunity to review and comment on the Tentative Work Program. Commissioner Chestnut seconded; motion passed unanimously.

Mr. Sanderson reported that, due to delays on the turnpike, the MTPO's consultant has not arrived. He suggested that the MTPO discuss item IX. Design Team.

It was a consensus of the MTPO to discuss item IX. Design Team.

IX. DESIGN TEAM

Mr. Sanderson stated that the purpose of this agenda item is to discuss whether the Design Team:

1. should continue to meet as a separate MTPO Advisory Committee;

2. be sunsetted and assign its duties and responsibilities to the Technical Advisory Committee (TAC); or

3. be incorporated into the TAC.

He reported the MTPO Advisory Committee and Staff recommendations. He noted the City Beautification Board's request for participation in project design review. He also said that, since the formation of the Design Team, the City has established Project Teams and the County has established similar procedures to review design plans.

Mr. Paul noted that Alachua County staff concurred with the sunsetting of the Design Team.

ACTION: Commissioner Byerly moved to:

1. **sunset the Design Team;**
2. **have its duties and responsibilities assigned to the TAC; and**
3. **appoint an Arborist/Forester to the TAC as a voting member.**

Commissioner Donovan seconded; motion passed unanimously.

Mr. Sanderson noted that MTPO staff would make appropriate revisions to MTPO documents to reflect these changes.

IV. PUBLIC INVOLVEMENT PLAN UPDATE

Mr. Sanderson stated that the MTPO is required to review its Public Involvement Plan and revise it as needed. He discussed revisions to the plan and answered questions.

ACTION: Commissioner Chestnut moved to approve revisions to the Public Involvement Plan. Commissioner Donovan seconded; motion passed unanimously.

V. CITIZENS ADVISORY COMMITTEE (CAC)- VACANT POSITIONS

Mr. Sanderson stated that the MTPO needs to fill five vacant positions on its CAC. He said that the five positions have a term of office through December, 2012. He added that the MTPO will also be appointing up to three CAC Designate Members. He asked if there were any applicants present to speak concerning their candidacy.

The following persons spoke regarding their candidacy for the CAC:

Rod Gonzalez	Valerie Rosenkrantz	Chandler Otis	Holly Shema

Mr. Sanderson recommended that the MTPO, as it has in the past, vote for five of the 12 candidates, with the five highest vote recipients being appointed to the CAC for a term ending December 2012 and the next three highest vote recipients being CAC Designate Members. He conducted a rollcall vote. He reported the results of the CAC appointment vote.

ACTION: Commissioner Lowe moved to appoint Thomas Collett and Valerie Rosenkrantz and reappoint Harvey Budd, Blake Fletcher and Chandler Otis to the CAC for a term through December, 2012. Commissioner Chestnut seconded; motion passed unanimously.

According to the MTPO voting results, the three CAC Designate Members, appointed for a term through December, 2010, are Holly Blumenthal, Roderick Gonzalez and Laurie Newsom.

VI. BICYCLE/PEDESTRIAN ADVISORY BOARD (B/PAB)- VACANT POSITIONS

Mr. Sanderson stated that the MTPO needs to fill two vacancies on the B/PAB for a term ending in October, 2012. He asked if there were any applicants present to speak concerning their candidacy.

A member of the MTPO requested that information concerning the tenure of the B/PAB members be provided to the MTPO.

It was a consensus of the MTPO to include B/PAB tenure information for future B/PAB appointments.

Mr. Rajeeb Das and Mr. Kenneth Duffield spoke regarding their candidacy for the B/PAB.

Mr. Sanderson conducted a rollcall vote and reported the results.

ACTION: Commissioner Chestnut moved to reappoint Rajeeb Das and Kenneth Duffield for a term through October, 2012. Commissioner Lowe seconded; motion passed unanimously.

VIII. LONG RANGE TRANSPORTATION PLAN UPDATE- VISION STATEMENT, GOALS AND OBJECTIVES

Mr. Sanderson introduced Mr. Whit Blanton, Renaissance Planning Group Vice President, for his presentation on the Year 2035 Long Range Transportation Plan (LRTP) update.

Mr. Blanton provided a status report on the LRTP. He noted that LRTP Workshop #2 would be some time in February 2010. He discussed the draft LRTP Vision Statement, Goals and Objectives and answered questions.

A member of the MTPO discussed his comments concerning the draft Year 2035 LRTP Vision Statement, Goals and Objectives.

ACTION: Commissioner Byerly moved to:

A. approve the draft Year 2035 LRTP Vision Statement, Goals and Objectives in Exhibit 4; and

B. refer Commissioner Donovan's comments to MTPO staff for incorporation into the MTPO-approved draft document.

Commissioner Poe seconded; motion passed unanimously.

Mr. Paul noted that the vision statement is concerned with growth and land use issues. He suggested that the vision statement and goals be directed towards transportation issues, such as East Gainesville linkages to transportation and transportation connectivity. He said that Alachua County staff would prepare written comments and forward them to MTPO staff.

It was a consensus of the MTPO to reagenda the LRTP Update Vision Statement, Goals and Objectives for the next MTPO meeting in order to allow staff time to incorporate comments by Commissioner Donovan and Alachua County staff.

X. ELECTION OF OFFICERS

Mr. Sanderson stated that the MTPO needed to elect a Chair, Vice-Chair and Secretary/Treasurer for the coming year. He identified the current officers and noted that the MTPO Chair traditionally alternates between the City Commission and County Commission.

ACTION: Commissioner Pinkoson moved to elect Commissioner DeLaney as the MTPO Chair, Commissioner Hawkins as the MTPO Vice Chair and Commissioner Chestnut as MTPO Secretary/Treasurer. Commissioner Byerly seconded; motion passed unanimously.

Mr. Sanderson presented a plaque to Chair Henry for his service as the 2009 MTPO Chair.

XI. MTPO AUDIT REVIEW COMMITTEE

Mr. Sanderson requested that the MTPO appoint two members to an Audit Review Committee. He noted that the MTPO Secretary/Treasurer traditionally chairs this committee.

ACTION: Commissioner Pinkoson moved to appoint Commissioner Chestnut and Commissioner Poe to the MTPO Audit Review Committee and to have Commissioner Chestnut serve as Committee Chair. Commissioner Donovan seconded; motion passed unanimously.

XII. STATEWIDE ORGANIZATION OF METROPOLITAN PLANNING ORGANIZATIONS (MPOAC)

Mr. Sanderson asked the MTPO to appoint voting and alternate representatives to the Metropolitan Planning Organization Advisory Council (MPOAC) for calendar year 2010.

ACTION: Commissioner Poe moved to reappoint Commissioner DeLaney as the MPOAC voting representative and Commissioner Hawkins as the MPOAC alternate representative. Commissioner Chestnut seconded; motion passed unanimously.

XIII. NEXT MTPO MEETING

Mr. Sanderson announced that the next MTPO meeting is tentatively scheduled for February 8th at 3:00 p.m.

XIV. COMMENTS

A. MTPO MEMBERS

A member of the MTPO discussed his concern about the dead trees recently planted in the Williston Road medians that were identified in item CA. 5 Williston Road Median Oak Trees.

Ms. Taulbee discussed the status of the Williston Road trees and answered questions.

A member of the MTPO discussed the tree removal in the North Main Street project. She noted that County staff had additional information.

Mr. Dave Cerlanek, Alachua County Assistant Public Works Director, discussed the tree removal from the North Main Street project. He noted that he was mistaken in attributing the tree removal to FDOT at a previous County Commission meeting. He said that the trees were removed as part of the sidewalk widening. He added that the tree removal will be mitigated. He said that the Gainesville Sun would be notified to correct a previous article regarding the tree removal.

C. CHAIR'S REPORT

Chair Henry thanked MTPO staff for its service.

B. CITIZENS

Mr. Brian Harrington, Business Community Coalition (BCC) Chair, discussed the Coalition's interest in working with the MTPO and participating in the Year 2035 LRTP update process.

A member of the MTPO complimented FDOT's work on Main Street.

ADJOURNMENT

Chair Henry adjourned the meeting at 7:23 p.m.

3/24/10
Date

Cynthia Moore Chestnut, Secretary/Treasurer

EXHIBIT A

Interested Citizens	Alachua County	City of Gainesville	Florida Department of Transportation
Zack Andrews	Dave Cerlanek	Dekova Batey	Karen Taulbee
Whit Blanton	Ha Nguyen	Russ Blackburn	
Rajeeb Das	Jonathan Paul	Paul Folker	
Kenneth Duffield	Randall Reid	Millie Crawford	
Rod Gonzalez	David Schwartz	Jesus Gomez	
Brian Harrington		Debbie Leistner	
Mike Hotta		Doug Robinson	
Tom Oakland		Teresa Scott	
Chandler Otis			
Curtis Paris			
Jackie Paris			
Valerie Rosenkrantz			
Terry Shaw			
Holly Shema			

* By telephone
\# Provided written comments

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EXHIBIT 1

TIP AMENDMENT LOG

TIP AMENDMENT			PROJECT DESCRIPTION					
NUMBER	APPROVAL DATE	PURPOSE	TIP TABLE	PROJECT LOCATION (FiN NUMBER)	TYPE WORK	PROJECT YEAR	PROJECT FUNDING [thousands]	FUND CODE TABLE 3
09-1	08/10/09	Rollover	9	2129498	I-75 interchange modification [@Newberry Road (SR 26)]	09/10	$10 $24	DIH NHAC
			6	4262061	ARRA W 6th Street Bike/Ped Trail [SE 2nd Avenue to NW 16th Avenue]	09/10	$1,000 $9	FSSL SL
			14	4262071	ARRA NE 8th Avenue Resurfacing [Main Street to NE Boulevard]	09/10	$300 $3	FSSL SL
			12	4262081	ARRA NW 34th Street (SR 121) Sidewalk [NW 39th Avenue (SR 222) to US 441]	09/10	$1,000 $9	FSSL SL
			14	4262281	ARRA Main Street Resurfacing [N 8th Avenue to N 23th Avenue]	09/10	$1,100 $10 $1,273	FSSL SL LF
			12	4264051	ARRA SW 8th Avenue Sidewalk [Tower Road to end/I-75]	09/10	$110 $1	FSSE SE
			5	4068473	Section 5309 Transportation Hub [@Gainesville Regional Airport]	09/10	$298	FTA
			18	4242921	Section 5311 Rural Transit Funding-operating/administration assistance	09/10	$208 $208	DU LF
			17	4243901	Section 5307 Small Transit Incentive Cities Allocation- fixed route capital	09/10	$752 $188	FTA LF
			17	4263891	ARRA 5307 purchase of transit vehicles	09/10	$3,201	FTA
			17	4267571	RTS purchase of transit vehicles with HR 1105 High Priority Project funding	09/10	$475 $119	FTA LF
09-2	11/09/09	Rollover	18	4252901	Section 5317 New Freedom RTS Small Urban Operating/Administrative Assistance	09/10	$50 $50	DU LF
		Add	-	-	Appendix K to show ARRA-funded project completion dates	-	-	-
		Delete	12	4262081	ARRA NW 34th Street (SR 121) Sidewalk [NW 39th Avenue (SR 222) to US 441]	09/10	$1,000 $9	FSSL SL
		Add	12	4262082	ARRA NW 34th Street Sidewalk [NW 39th Avenue to NW 55th Boulevard]	09/10	$438 $4	FSSL DIH
		Add & Funding Increase	17	4263201	ARRA 5307 purchase of transit vehicles [additional $561,520 is flexed FSSL funds added to $692,000 funded in FY 2008/2009]	09/10	$562	FTA

EXHIBIT 1 (Continued)

TIP AMENDMENT LOG

TIP AMENDMENT			PROJECT DESCRIPTION					
NUMBER	APPROVAL DATE	PURPOSE	TIP TABLE	PROJECT LOCATION (FiN NUMBER)	TYPE WORK	PROJECT YEAR	PROJECT FUNDING [thousands]	FUND CODE TABLE 3
09-3	12/14/09	Funding Increase	18	4272891	Section 5317 New Freedom RTS Small Urban Operating/Administrative Assistance [additional $36,000 grant plus $36,000 local match added to $100,000 funded in TIP Amendment 09-2 project 4252901]	09/10	$36 $36	DU LF
		Add	18	4282371	Section 5316 Job Access Reverse Commute Grant to purchase Mobile Data Terminal software	09/10	$90 $10	DU LF
		Add	12	4273261	Safe Routes to School NE 15th Street Sidewalk [NE 39th Avenue (SR 222) to 4400 Block]	09/10	$405 $130 $70	SR2S SR2E SA
		Add	9	4278251	Purchase right-of-way in I-75 interchange NW quadrant [I-75 @ Newberry Road (SR 26)]	09/10	$592 $10	NHAC DIH
		Funding Increase	17	4263201	ARRA 5307 purchase of transit vehicles [additional $335,418 is redistributed flexed FSSL funds added to $692,000 funded in FY 2008/2009 and $562,000 funded in FY 2009/2010]	09/10	$562 $335	FTA FTA
09-4								

North Central Florida Regional Planning Council

2009 N.W. 67 PLACE, SUITE A, GAINESVILLE, FLORIDA 32653-1603
(352) 955-2200 SUNCOM 625-2200 FAX (352) 955-2209

CONSENT AGENDA
METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION FOR THE GAINESVILLE URBANIZED AREA

Jack Durrance Auditorium
Alachua County Administration Building
Gainesville, Florida

Monday, 5:00 p.m.
December 14, 2009

STAFF RECOMMENDATION

Page #9 CA. 1 MTPO Minutes- November 9, 2009 — **APPROVE MINUTES**

This set of MTPO minutes is ready for review

Page #21 CA. 2 Long Range Transportation Plan Update Technical Memorandum- Plan to Reduce Greenhouse Gases — **APPROVE STAFF RECOMMENDATION**

The Federal Highway Administration is recommending the MTPO to adopt targets and strategies to reduce greenhouse gases as part of the long range plan

Page #23 CA. 3 Alachua County Transportation Disadvantaged Coordinating Board Membership Certification — **AUTHORIZE CHAIR TO SIGN**

The MTPO needs to approve the enclosed procedures concerning how to file discrimination complaints

Page #27 CA. 4 NW 34th Street Sidewalk Project- NW 55th Boulevard to US 441 — **NO ACTION REQUIRED**

These modifications revise the payment schedule for consultant services to move $40,000 from Fiscal Year 2010/11 to Fiscal Year 2009/10

Page #29 CA. 5 Williston Road Median Oak Trees — **NO ACTION REQUIRED**

The MTPO needs to ratify MTPO staff action taken in August 2009 to send a letter of support for the City's Tiger Grant Application

Page #31 CA. 6 Transportation Disadvantaged Program Status Report — NO ACTION REQUIRED

The MTPO has asked for regular status reports concerning this program

Page #41 CA. 7 MPOAC Weekend Institute — NO ACTION REQUIRED

If any MTPO member wants to attend this institute, please contact MTPO staff

University of Florida Campus Master Plan, 2010-2020: Transportation Data and Analysis

Transit Planning Forum Minutes

March 16, 2010

Two public workshops to discuss transit issues for the Campus Master Plan update were held at the University of Florida on March 16, 2010 (1:30 and 5:00 PM). Workshop participants marked up maps of the UF area with their suggestions for transit service and completed discussion guides with additional questions on incentives and barriers for using transit to get to and around campus. A summary of comments provided at the workshops is provided below.

Transit Service Enhancements

Timing/Frequency

- Better frequency of service after 4:30 at commuter lot
- Route 10 -- not on time; not early enough buses; increase frequency
- Real time for campus buses online
- Faculty/staff: longer service hours and more service frequency in the peak hours. Many faculty don't ride because of buses ending service too early.

Additional Service Needed:

- NW of campus (north of NW 8th Avenue, east of NW 83rd Street, south of Millhopper Road, west of 441/34th Street)
- Duck Pond neighborhood (north of University Avenue, east of US 441/13th Street, west of Waldo Road, south of NE 23rd Avenue) NW 43rd Street from University Avenue to NW 62nd Avenue (north of Millhopper Road)
- NW 34th Street from University Avenue to US 441/Northwood Village
- US 441 from NW 8th Avenue south toward Williston Road
- Archer Road from US 441 to Butler Plaza
- SW 20th Avenue from SW 34th Street to SW 62nd Blvd
- University Avenue/Newberry Road from US 441 to I-75
- Main campus to Sorority Row
- Center Drive/Museum Road to US 441 via Center Drive, Shands, Archer Road
- Bring a few buses from campus to pick up people on west side (SW 20th Ave) when buses are full
- Full buses at peak hour at these locations: Newell Drive/Museum Road, Center Drive/Museum Road, along SW 20th Avenue west of SW 34th Street, SW 32nd Terrace (south of Archer)

New Service/Connections:

- More direct service and more service in general from The Hub to Fraternity Row
- Shuttle service from main campus to UF East Gainesville campus (on Waldo Road) (between human resources offices)
- Downtown to/from Hilton/conference center

- Sorority Row to/from law school
- Streetcar route should come down SW 5th Street to SW 8th Avenue
- New connections to connect buses (i.e., route 1 and 20/21)
- More similar connections closer to Reitz Union
- New service in employee residential areas
- Downtown/UF to Santa Fe College via US 441 to NW 16th Ave to NW 23rd Ave
- Consider BRT "student" off campus circulators
    - Around apartments on Gainesville Place and Enclave
    - SW 20th Ave (Cabana, Canopy, Lexington)
    - Use for peak hours, more so in morning service.

Transit Facilities

Proposed Transfer Centers:

- At Park and Ride Lot 2 (SW 34th St behind conference center)
- NE corner of University Avenue and US 441
- Newell Drive/south of University Avenue

Park and Ride Lots:

- I-75 and Archer Road
- SW 34th Street/Williston Road
- US 441 south of Williston Road near Florida Trail Association office
- South of Hull Road, east of SW 34th Street
- North of Hull Road, west of SW 34th Street
- Oaks Mall
- SE Hawthorne Road at SE 43rd Street
- University Ave at SE 43rd Street
- Gainesville Jobs Center /NE 54th Place – north of airport east of Waldo Road
- US 441 west of Northwood Village
- US 441 and NW 43rd Street
- US 441 south of SW 16th Avenue, north of Sorority Row

Shelters/Lighting Needed:

- US 441/13th Street between Inner Road and Stadium Road
- Route 10 – SW 4th Avenue and SW 12th Street
- No shelter/bad lighting at US 441 and SW 8th Avenue
- Use solar-powered LED lights at stops

Bus Stops:

- Bus stop at Reitz Union or Museum Road
- Two stops within 20 feet of each other on Stadium Road west of Gale Lemerand Drive

Connectivity Concerns

- Bad transfer location at Newberry Road/proposed BRT (west of I-75) route/express bus
- Problem areas: schools zones on NW 34th Street, US 441 adjacent to UF, SW 34th Street from Radio Road to Archer Road, north-south roads congested

Incentives to using transit

- Greater frequency for people further from campus, especially faculty
- Need reliable arrival times
- Amenities/WiFi on express bus and BRT for business-oriented passengers
- Rainy weather encourages riding the bus vs. riding bike

Barriers to using transit

- No lighting at stops

Policy Issues

- A lot of people will buy parking decals regardless of price because of culture – used to driving everywhere back "home"
- Amenities needed: water fountains, Starbucks at transfers, more bike racks, bus pullout on SR 20
- Park and ride lots needed
- Increase trips on high ridership routes
- Examine timing of campus parking lot decal restriction hours

Vision for Transit?

Have a secondary Campus Hub South of Reitz Union and Museum

MINUTES
METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION (MTPO)
FOR THE GAINESVILLE URBANIZED AREA

Jack Durrance Auditorium Alachua County Administration Building Gainesville, Florida	6:00 p.m. Monday March 15, 2010

MEMBERS PRESENT	MEMBERS ABSENT	OTHERS PRESENT
Paula DeLaney, Chair	Cynthia Moore Chestnut	See Exhibit A
James Bennett/Alan Mosely	Mayor Pegeen Hanrahan	
Mike Byerly	Scherwin Henry	
Jack Donovan	Rodney Long	STAFF PRESENT
Thomas Hawkins, Vice Chair	Jeanna Mastrodicasa	
Craig Lowe	Ed Poppell	Scott Koons
Lee Pinkoson		Marlie Sanderson
Lauren Poe		Michael Escalante
Larry Travis		

CALL TO ORDER

Chair Paula Delaney called the meeting to order at 6:10 p.m.

I. APPROVAL OF THE MEETING AGENDA AND CONSENT AGENDA

Mr. Marlie Sanderson, MTPO Director of Transportation Planning, asked for approval of the meeting agenda and consent agenda amended to add CA.7- Long Range Transportation Plan-Supplemental Agreement. He discussed the amendment and answered questions.

ACTION: Commissioner Donovan moved to approve the Meeting Agenda and Consent Agenda amended to add CA.7- Long Range Transportation Plan- Supplemental Agreement. Commissioner Lowe seconded; motion passed unanimously.

II. DR. KERMIT SIGMON CITIZEN PARTICIPATION AWARD- 2009

Mr. Sanderson stated that Ms. Sharon Hawkey was selected to receive the 2009 Dr. Kermit Sigmon Citizen Participation Award. He presented the award to Ms. Hawkey.

Ms. Hawkey discussed her participation and thanked the MTPO.

Several MTPO members thanked Ms. Hawkey for her participation on the Citizens Advisory Committee and her work related to other transportation planning issues.

III. GAINESVILLE REGIONAL TRANSIT SYSTEM RAPID TRANSIT FEASIBILITY STUDY

Mr. Sanderson stated that the Gainesville Regional Transit System Rapid Transit Feasibility Study has been completed.

Mr. Doug Robinson, Regional Transit System Chief Transit Planner, discussed the bus rapid transit (BRT) study process and introduced Mr. Bill Morris, Center for Urban Transportation Research (CUTR) Senior Research Associate.

Mr. Morris discussed the study and answered questions.

Mr. Robinson and Mr. Mike Fay, Alachua County Public Works Development Program Manager, discussed the coordination of the BRT Study with the County's Mobility Plan.

ACTION: Commissioner Lowe moved to approve the Gainesville Regional Transit System Rapid Transit Feasibility Study. Commissioner Donovan seconded; motion passed unanimously.

IV. PLANNING FOR PEAK OIL 2020

Mr. Sean McLendon, Alachua County Sustainability Program Manager, discussed peak oil issues. He also introduced Dr. Stephen Humphrey, University of Florida School of Natural Resources and Environment Director.

Dr. Humphrey gave a presentation on Sustainable Use and Depletion of Natural Resources: A Conceptual Framework and answered questions.

V. LONG RANGE TRANSPORTATION PLAN (LRTP) UPDATE

Mr. Sanderson introduced Mr. Whit Blanton, Renaissance Planning Group Vice President.

A. VISION STATEMENT, GOALS AND OBJECTIVES

Mr. Blanton discussed the draft LRTP Vision Statement, Goals and Objectives and answered questions.

ACTION: Commissioner Byerly moved to approve the Year 2035 Long Range Transportation Plan Vision Statement, Goals and Objectives. Commissioner Lowe seconded. Commissioner Pinkoson requested that the Vision Statement be separated from the Goals and Objectives for this action.

SPLIT ACTION-PART ONE:

Commissioner Byerly moved to approve the Year 2035 Long Range Transportation Plan Vision Statement. Commissioner Lowe seconded; motion passed 5 to 2.

SPLIT ACTION-PART TWO:

Commissioner Byerly moved to approve the Year 2035 Long Range Transportation Plan Goals and Objectives. Commissioner Lowe seconded; motion passed unanimously.

B. WORKSHOP OVERVIEW

Mr. Blanton gave an overview of the Year 2035 LRTP Workshop held on February 16, 2010.

C. THREE RECOMMENDED ALTERNATIVE NETWORKS

Mr. Blanton discussed Alternative Network One- Transit Emphasis, Alternative Network Two- Highway emphasis and Alternative network Three- Street Car-Bus Rapid Transit Emphasis and answered questions.

ACTION: Commissioner Lowe moved to approve Alternative Network One-Transit Emphasis, Alternative Network Two- Highway Emphasis and Alternative Network Three-Street Car/Bus Rapid Transit Emphasis for testing and evaluation. Commissioner Byerly seconded.

A member of the MTPO discussed his concerns regarding the modeling of transit service frequency and span-of-service.

Mr. Robinson discussed BRT service and frequencies.

FRIENDLY AMENDMENT:

Commissioner Lowe recommended the use of Federal Transit Administration (FTA) Section 5309 criteria for peak and off peak frequency and span-of-service for Bus Rapid Transit testing and evaluation. Commissioner Byerly agreed.

ACTION AS AMENDED:

Commissioner Lowe moved to approve Alternative Network One-Transit Emphasis, Alternative Network Two- Highway Emphasis and Alternative Network Three-Street Car/Bus Rapid Transit Emphasis for testing and evaluation with the use of Federal Transit Administration (FTA) Section 5309 criteria for peak and off peak frequency and span-of-service for Bus Rapid Transit. Commissioner Byerly seconded; motion passed unanimously.

VI. FDOT FLORIDA TRANSPORTATION PLAN HORIZON 2060

Mr. Sanderson asked if the MTPO would like to receive a presentation concerning the FDOT Florida Transportation Plan Horizon 2060.

ACTION: Commissioner Byerly moved to have the MTPO receive a presentation on the FDOT Florida Transportation Plan Horizon 2060. Commissioner Lowe seconded; motion passed unanimously.

VII. NEXT MTPO MEETING

Mr. Sanderson recommended that the MTPO meet on May 10 at 3:00 p.m.

It was a consensus of the MTPO meet on May 10 at 3:00 p.m.

VIII. COMMENTS

A. MTPO MEMBERS

A member of the MTPO discussed a revision to the Long Range Transportation Plan Vision Statement that was approved earlier in the meeting.

Mr. Sanderson said that MTPO staff would take a look at his suggestions and place any proposed modifications to the Vision Statement on the next meetings' Consent Agenda.

B. CITIZENS

Mr. Dave Bruderly, Wise Gas, Inc. Engineer, noted that the State of Florida awarded $3 million to build 11 natural gas vehicle fueling stations. He also said that there was more than $1 million Federal Stimulus funds still available. He discussed Wise Gas' interest with building a coalition with the City of Gainesville, Alachua County, Regional Transit System and any other interested parties on the establishment of a natural gas vehicle fueling station in Gainesville and answered questions.

A member of the MTPO asked Mr. Bruderly to send letters to the City Commission and County Commission so lthat they can refer them to their respective staffs.

A member of the MTPO noted that looking into a natural gas fueling station was already a referral from the City's Regional Utilities Committee to the City Commission. He suggested that Mr. Bruderly contact Gainesville Regional Utilities.

C. CHAIR'S REPORT

There was no Chair's Report.

ADJOURNMENT

Chair Delaney adjourned the meeting at 8:26 p.m.

5/17/10

Date

Cynthia Moore Chestnut, Secretary/Treasurer

EXHIBIT A

Interested Citizens	Alachua County	City of Gainesville	Florida Department of Transportation
Whit Blanton	Mike Fay	Russ Blackburn	Karen Taulbee
Dave Bruderly	Sean McLendon	Paul Folker	
David Coffey	Jonathan Paul	Debbie Leistner	
Sally Dickerson	Randall Reid	Doug Robinson	
Bill Gilbert	David Schwartz	Teresa Scott	
Rae Marie Gilbert			
Jim Hawkey			
Sharon Hawkey			
Stephen Humphrey			
Bill Morris			

* By telephone
# Provided written comments

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**North Central Florida
Regional Planning Council**

2009 NW 67 PLACE, SUITE A, GAINESVILLE, FLORIDA 32653-1603
(352)955-2200 SUNCOM 625-2200 FAX (352) 955-2209

**CONSENT AGENDA
METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION
FOR THE GAINESVILLE URBANIZED AREA**

**Jack Durrance Auditorium
Alachua County Administration Building
Gainesville, Florida**

**Monday, 6:00 p.m.
March 15, 2010**

STAFF RECOMMENDATION

Page #9 CA. 1 MTPO Minutes- December 14, 2009 — **APPROVE MINUTES**

This set of MTPO minutes is ready for review

Page #23 CA. 2 Certification Review — **AUTHORIZE CHAIR TO SIGN CERTIFICATION STATEMENT**

FDOT has conducted its annual certification review of the MTPO planning program and recommends that it be certified

Page #27 CA. 3 MTPO Audit — **APPROVE STAFF RECOMMENDATION**

The Regional Planning Council and MTPO jointly select an auditor to prepare a joint audit

Page #29 CA. 4 Transportation Disadvantaged Program- 2010-2011 Planning Grant Application — **APPROVE STAFF RECOMMENDATION**

This grant application will provide funds for MTPO staff to provide staff services to the Alachua County Coordinating Board

Page #37 CA. 5 Transportation Disadvantaged Board Member Appointments **APPOINT MEMBERS**

The MTPO is being asked to appoint three members to the Alachua County Transportation Disadvantaged Coordinating Board

Page #49 CA. 6 Transportation Disadvantaged Program Status Report **NO ACTION REQUIRED**

The MTPO has asked for regular status reports concerning this program

CA. 7 Long Range Transportation Plan- Supplemental Agreement **APPROVE UPWP REVISIONS & SUPPLEMENTAL AGREEMENT**

The MTPO needs to take these actions in order to receive an additional $50,000 to fund the Long Range Transportation Plan update

MINUTES
METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION (MTPO)
FOR THE GAINESVILLE URBANIZED AREA

Jack Durrance Auditorium
Alachua County Administration Building
Gainesville, Florida

1:00 p.m.
Monday
June 14, 2010

MEMBERS PRESENT
Paula DeLaney, Chair
Thomas Hawkins, Vice Chair
James Bennett/Alan Mosely
Mike Byerly
Jack Donovan
Scherwin Henry
Rodney Long
Craig Lowe
Jeanna Mastrodicasa
Lee Pinkoson
Lauren Poe
Ed Poppell
Larry Travis
Randy Wells

MEMBERS ABSENT
Cynthia Moore Chestnut

OTHERS PRESENT
See Exhibit A

STAFF PRESENT

Scott Koons
Marlie Sanderson
Michael Escalante

CALL TO ORDER

Chair Paula DeLaney called the meeting to order at 1:08 p.m. She noted that there wasn't a quorum.

Mr. Marlie Sanderson, MTPO Director of Transportation Planning, suggested that the MTPO's consultant could begin the presentation on the Long Range Transportation Plan Update.

It was a consensus of the MTPO to begin the presentation concerning agenda item III Long Range Transportation Plan (LRTP) Update- Testing and Evaluation of Alternatives.

III. LONG RANGE TRANSPORTATION PLAN (LRTP) UPDATE-
TESTING AND EVALUATION OF ALTERNATIVES

Mr. Sanderson stated that the MTPO's consultant has completed the alternatives testing for the LRTP update. He introduced Mr. Whit Blanton, Renaissance Planning Group Vice President.

Chair DeLaney recognized City of Gainesville Commissioner Randy Wells as a new MTPO member. She noted that he has already attended a Transportation Disadvantaged Board meeting.

Mr. Blanton discussed the Alternative 1- Transit Emphasis Network, Alternative 2- Highway Emphasis Network and the Alternative 3- Transit with Streetcar Network.

A quorum of the MTPO was now present.

I. APPROVAL OF THE MEETING AGENDA AND CONSENT AGENDA

Chair Delaney asked for approval of the meeting agenda and consent agenda.

A member of the MTPO asked whether xeriscaping could be used in the State Road 20 landscaping Project.

Ms. Karen Taulbee, Florida Department of Transportation (FDOT) Transportation Specialist, discussed the State Road 20 Landscaping Project and answered questions.

ACTION: Commissioner Lowe moved to approve the Meeting Agenda and Consent agenda. Commissioner Hawkins seconded; motion passed unanimously.

II. TRANSPORTATION IMPROVEMENT PROGRAM (TIP) AMENDMENTS BUS RAPID TRANSIT ALTERNATIVE ANALYSIS

Mr. Sanderson stated that the Florida Department of Transportation (FDOT) has provided $125,000 towards funding a Bus Rapid Transit (BRT) Alternative Analysis Study. He noted that this study was necessary in order for the Regional Transit System (RTS) to apply for Federal Transit Administration grants for BRT. He said that the TIP needs to be amended in order for RTS to receive this funding.

Chair Delaney asked for public comment. There was no public comment.

ACTION: Commissioner Pinkoson moved to amend the Fiscal Years 2009/2010 – 2013/2014 Transportation Improvement Program and Fiscal Years 2010/2011 – 2014/2015 Transportation Improvement Program to add the Bus Rapid Transit Alternative Analysis project (4285911). Commissioner Lowe seconded; motion passed unanimously by a hand counted vote- 10-0.

III. LONG RANGE TRANSPORTATION PLAN (LRTP) UPDATE- TESTING AND EVALUATION OF ALTERNATIVES (Continued)

Mr. Blanton continued his discussion of Alternative 1- Transit Emphasis Network, Alternative 2- Highway Emphasis Network and the Alternative 3- Transit with Streetcar Network.

Mr. Sean McLendon, Alachua County Sustainability Program Manager, discussed peak oil cost impacts on the economy.

Mr. Blanton discussed the Alternative 4- Hybrid Needs Network and Bike Needs Plan.

Mr. Mike Fay, Alachua County Public Works Development Program Manager, discussed the SW 61st Street Road Construction project and answered questions.

A member of the MTPO discussed his concerns regarding the extension of Bus Rapid Transit (BRT) service beyond the City of Gainesville limits. He suggested that Alternative 4 be modified so that the BRT service does not extend beyond the City of Gainesville limits.

A member of the MTPO discussed the impact of a grade separated interchange at the SW 34th Street at Archer Road intersection. He suggested that this project be deleted from Alternative 4.

Mr. Sanderson reported the MTPO Advisory Committee and Staff recommendations.

ACTION: Commissioner Byerly moved to:

1. **approve the Alternative 4- Hybrid Needs Network with one revision to delete the SW 34th Street at Archer Road interchange project (see Exhibit 1); and**

2. **request that MTPO staff work with the MTPO Consultant to test and evaluate a more intensive countywide transit alternative than the Alternative 1- Transit Emphasis Network that results in a 25 to 30 percent transit mode share.**

Commissioner Hawkins seconded.

FRIENDLY AMENDMENT:

Commissioner Donovan suggested limiting the extent of the Bus Rapid Transit evaluations to the City of Gainesville limits. Commissioner Byerly did not accept the amendment.

ACTION: Commissioner Byerly moved to:

1. **approve the Alternative 4- Hybrid Needs Network with one revision to delete the SW 34th Street at Archer Road interchange project (see Exhibit 1); and**

2. **request that MTPO staff work with the MTPO Consultant to test and evaluate a more intensive countywide transit alternative than the Alternative 1- Transit Emphasis Network that results in a 25 to 30 percent transit mode share.**

Commissioner Hawkins seconded; motion passed unanimously.

IV. NEXT MTPO MEETING

Mr. Sanderson stated that there was no business requiring the MTPO to meet in July. He said that the next MTPO meeting is scheduled for August 23rd at 5:00 p.m.

It was a consensus of the MTPO to meet on August 23rd beginning at 5:00 p.m.

V. COMMENTS

A. MTPO MEMBERS

Chair DeLaney requested an update concerning the Depot Avenue Project at the next MTPO meeting.

B. CITIZENS

There were no citizens comments

C. CHAIR'S REPORT

There was no Chair's Report.

ADJOURNMENT

Chair Delaney adjourned the meeting at 3:10 p.m.

8/31/10
Date

Cynthia Moore Chestnut
Cynthia Moore Chestnut, Secretary/Treasurer

EXHIBIT A

Interested Citizens	**Alachua County**	**City of Gainesville**	**Florida Department of Transportation**
Mary Anderson	Mike Fay	Paul Folker	Gina Buscher
Oswald Arnold	Jeff Hays	Doug Robinson	Karen Taulbee
Brian Kanely	Sean McLendon	Teresa Scott	Laurie Windham
Whit Blanton	Randall Reid	David Sowell	
	David Schwartz		

* By telephone
# Provided written comments

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North Central Florida Regional Planning Council

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CONSENT AGENDA
METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION FOR THE GAINESVILLE URBANIZED AREA

Jack Durrance Auditorium
Alachua County Administration Building
Gainesville, Florida

Monday, 1:00 p.m.
June 14, 2010

STAFF RECOMMENDATION

Page #7 **CA. 1** **MTPO Minutes- May 10, 2010** **APPROVE MINUTES**

This set of MTPO minutes is ready for review

Page #15 **CA. 2** **Professional Staff Services Contract** **APPROVE AGREEMENT**

The Federal Highway Administration and Florida Department of Transportation have requested that the MTPO update this 1978 agreement

Page #31 **CA. 3** **Unified Planning Work Program Amendments** **APPROVE STAFF RECOMMENDATIONS**

This document contains the MTPO budget and identifies work tasks for the next two years

Page #47 **CA. 4** **Travel Request Approval-** **APPROVE RESOLUTION**

In this Resolution, the MTPO is delegating the approval of travel request to the Executive Director of the Planning Council

Page #53 **CA. 5** **State Road 20 Landscaping-** **SEND LETTER OF SUPPORT**

FDOT has identified funds that can be used to landscape portions of Hawthorne Road- MTPO landscaping priority #3 last year and priority #6 this year

Page #61 CA. 6 Proposed NW 8th Avenue Mast Arm- APPROVE JOINT RECOMMENDATION

City staff is requesting an exception that will allow for vertical signal heads

Page #71 CA. 7 Transportation Disadvantaged Program Board member Appointments APPROVE STAFF RECOMMENDATION

The MTPO needs to fill vacant positions on this Board

Page #73 CA. 8 Transportation Disadvantaged Program Resolution of Appreciation APPROVE STAFF RECOMMENDATION

The City Commission has nominated Commissioner Wells to replace Commissioner Hawkins as Vice Chair of the TD Coordinating Board

Page #77 CA. 9 Transportation Disadvantaged Program Status Report NO ACTION REQUIRED

The MTPO has asked for regular status reports concerning this program

Page #87 CA. 10 Citizens Advisory Committee Designate Members NO ACTION REQUIRED

Ms. Holly Blumenthal and Mr. Roderick Gonzalez have filled vacant positions on this Committee

Page #89 CA. 11 Williston Road Trees NO ACTION REQUIRED

Enclosed is a letter from the City of Gainesville concerning the trees in the Williston Road median

MINUTES
METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION (MTPO)
FOR THE GAINESVILLE URBANIZED AREA

Jack Durrance Auditorium
Alachua County Administration Building
Gainesville, Florida

5:00 p.m.
Monday
August 23, 2010

MEMBERS PRESENT
Paula DeLaney, Chair
Thomas Hawkins, Vice Chair
Mike Byerly
Scherwin Henry
Rodney Long
Craig Lowe
Jeanna Mastrodicasa
Alan Mosely
Lauren Poe
Randy Wells

MEMBERS ABSENT
Cynthia Moore Chestnut
Jack Donovan
Lee Pinkoson
Ed Poppell
Larry Travis

OTHERS PRESENT
See Exhibit A

STAFF PRESENT

Scott Koons
Marlie Sanderson
Michael Escalante

CALL TO ORDER

Chair Paula DeLaney called the meeting to order at 5:05 p.m.

Mr. Marlie Sanderson, MTPO Director of Transportation Planning, introduced Mr. Alan Mosely, Florida Department of Transportation (FDOT) District 2 Secretary.

Chair DeLaney welcomed Secretary Mosely.

Secretary Mosely stated that he looked forward to working with the MTPO.

I. APPROVAL OF THE MEETING AGENDA AND CONSENT AGENDA

Mr. Sanderson suggested that agenda items V. Citizens Advisory Committee (CAC) Request-City of Gainesville Advisory Committee and VI. Depot Avenue Status Report could be deferred to the next MTPO meeting.

Chair DeLaney asked if there were any public comments on the consent agenda and amended meeting agenda. There was no public comment.

ACTION: Commissioner Lowe moved to approve the Consent agenda and Meeting Agenda amended to defer agenda items V. Citizens Advisory Committee (CAC) Request- City of Gainesville Advisory Committee and VI. Depot Avenue Status Report to the next MTPO meeting. Commissioner Poe seconded; motion passed unanimously.

II. TRANSPORTATION IMPROVEMENT PROGRAM (TIP) AMENDMENTS

Mr. Sanderson stated that the FDOT has requested amendments to the TIP to add the E. University Avenue Landscaping Project, provide redistributed monies for the American Recovery and Reinvestment Act (ARRA)-funded Transit Vehicle Purchase Project and to roll forward funding for several projects from Fiscal Year 2009/2010 to Fiscal Year 2010/2011 as described in Exhibits 1 and 2.

Several MTPO members discussed their concerns regarding the installation of non-native vegetation for the landscaping project.

Mr. James Bennett, FDOT Urban Transportation Development Engineer, discussed the E. University Avenue landscaping Project. He noted that the District Landscape Architect could look into using native vegetation in the project. He also reported the status on the Williston Road landscaping project mitigation.

Chair DeLaney asked for public comment. There was no public comment.

ACTION: Commissioner Byerly moved to:

1. **amend the Fiscal Years 2010/2011 – 2014/2015 Transportation Improvement Program for the projects shown in Exhibits 1 and 2; and**

2. **refer to staff to work with FDOT to use native trees instead of Chinese Elms for the E. University Avenue landscaping project.**

Commissioner Poe seconded; motion passed unanimously by a hand counted vote- 9-0.

III. YEAR 2035 NEEDS PLAN PUBLIC HEARING

Mr. Sanderson stated that the MTPO is required to update its long range transportation plan every five years.

A. WELCOME AND OPENING REMARKS

Chair DeLaney opened the public hearing and welcomed everyone.

B. TESTING AND EVALUATION OF ALTERNATIVE 4

Mr. Sanderson stated that the MTPO's consultant has completed the Alternative 4 testing for the LRTP update. He introduced Mr. Whit Blanton, Renaissance Planning Group (RPG) Vice President.

Mr. Blanton discussed the Alternative 4 evaluation and answered questions.

C. ALTERNATIVE 5- 30 PERCENT TRANSIT MODE SHARE

Mr. Sanderson stated that the MTPO requested an Alternative 5 test for 30 percent transit mode share.

Chair DeLaney requested that this agenda item be placed on a future MTPO agenda.

D. DRAFT NEEDS PLAN

Mr. Sanderson stated that RPG has completed the draft Needs Plan and that it was presented to the MTPO Advisory Committees.

Mr. Blanton discussed the draft Roadway Needs Plan and Transit Needs Plan projects and answered questions.

Mr. Sanderson discussed the draft Bicycle/Pedestrian Needs Plan projects and answered questions.

A member of the MTPO asked about the status of the Depot Avenue Rail/Trail-Waldo Road Greenway connection.

Mr. Sanderson reported that Depot Avenue Rail/Trail-Waldo Road Greenway connection issues have been discussed with the Bicycle/Pedestrian Advisory Board and Alachua County Traffic Safety Team.

Mr. Martin Gold, Florida Community Design Center Director, discussed the Waldo Road Multiway Project and answered questions.

Mr. Sanderson discussed the Archer Road 4-laning project and answered questions

Mr. Jeff Hays, Alachua County Senior Planner, discussed the NE 39th Avenue 4-laning project and answered questions

A member of the MTPO noted that the funding for the Airport Entrance Road requires a 50 percent local match.

Mr. Bennett discussed the status of the Airport Entrance Road and answered questions.

Ms. Teresa Scott, City of Gainesville Public Works Director, discussed the status of the SE 4th Street project and answered questions.

A member of the MTPO suggested placing a roundabout at the SE 15th Street and SE 4th Avenue intersection.

E. PUBLIC COMMENTS AND QUESTIONS

There were no comments from the public on the Year 2035 Needs Plan:

F. CLOSE PUBLIC HEARING

Chair DeLaney closed the public hearing.

IV. ADOPTION OF YEAR 2035 NEEDS PLAN

Mr. Sanderson stated that the MTPO needs to adopt the Year 2035 Needs Plan. He reported the MTPO Advisory Committees and Staff recommendations.

ACTION: Commissioner Byerly moved to approve the Year 2035 Bicycle/Pedestrian Projects Needs Plan, Year 2035 Transit Projects Needs Plan and Year 2035 Roadway Projects Needs Plan revised to delete the Archer Road 4-laning Project. Commissioner Lowe seconded.

A member of the MTPO suggested that the E. 27th Street Connector Project be added to the Needs Plan.

Mr. Blanton discussed the merits of including the E. 27th Street Connector Project in the Needs Plan.

FRIENDLY AMENDMENT:

Commissioner Long asked to amend the Year 2035 Roadway Projects Needs Plan to include the E. 27th Street Connector Project. Commissioner Byerly did not accept the amendment.

AMENDMENT: Commissioner Long moved to amend the Year 2035 Roadway Project Needs Plan to add the E. 27th Street Connector Project. Commissioner Henry seconded. Commissioner Long requested a roll call vote.

	CITY	COUNTY
Commissioner Henry	**Yes**	
Commissioner Long		**Yes**
Commissioner Lowe	**No**	
Commissioner Mastrodicasa	**No**	
Commissioner Poe	**No**	
Commissioner Wells	**No**	
Commissioner Byerly		**No**
Chair DeLaney		**No**

Amendment failed.

A member of the MTPO requested that the motion be divided.

Mr. Brian Harrington discussed his support for the Archer Road 4-laning Project.

SPLIT ACTION PART ONE:

Commissioner Byerly moved to delete the Archer Road 4-laning Project from the Year 2035 Roadway Projects Needs Plan. Commissioner Lowe seconded. Commissioner Long requested a roll call vote.

	CITY	COUNTY
Commissioner Henry	**No**	
Commissioner Long		**No**
Commissioner Lowe	**Yes**	
Commissioner Mastrodicasa	**No**	
Commissioner Poe	**No**	
Commissioner Wells	**Yes**	
Commissioner Byerly		**Yes**
Chair DeLaney		**No**

Motion failed.

A member of the MTPO requested that the original motion be divided.

SPLIT ORIGINAL ACTION PART ONE:

Commissioner Byerly moved to approve the Year 2035 Bicycle/Pedestrian Projects Needs Plan, Year 2035 Transit Projects Needs Plan Year 2035 and Year 2035 Roadway Projects Needs Plan excluding the Archer Road 4-laning Project. Commissioner Lowe seconded; motion passed by a hand counted vote of 8 to 0.

SPLIT ORIGINAL ACTION PART TWO RESTATED:

> **Chair DeLaney restated the motion as being to include the Archer Road 4-laning Project as part of the Year 2035 Roadway Projects Needs Plan. She requested a show-of-hands vote. Motion passed by a hand counted vote of 5 to 3.**

Chair DeLaney noted that the result of the MTPO's action was to approve the joint MTPO Technical Advisory Committee and Staff recommendations.

IV. NEXT MTPO MEETING

Mr. Sanderson stated that there was no business requiring the MTPO to meet in September. He said that the next MTPO meeting is scheduled for October 4th at 5:00 p.m.

It was a consensus of the MTPO to meet on October 4th beginning at 5:00 p.m.

V. COMMENTS

A. MTPO MEMBERS

A member of the MTPO encouraged people to get out and vote.

B. CITIZENS

There were no citizens comments

C. CHAIR'S REPORT

There was no Chair's Report.

ADJOURNMENT

Chair DeLaney adjourned the meeting at 6:47 p.m.

10/13/10
Date

Cynthia Moore Chestnut
Cynthia Moore Chestnut, Secretary/Treasurer

EXHIBIT A

Interested Citizens	**Alachua County**	**City of Gainesville**	**Florida Department of Transportation**
Whit Blanton	Mike Fay	Russ Blackburn	James Bennett
Jeff Cheek	Jeff Hays	Jesus Gomez	Karen Taulbee
Martin Gold	Sean McLendon	Debbie Leistner	
Brian Harrington	David Schwartz	Doug Robinson	
Helen Perez		Teresa Scott	
Jayson Spence		John Veilleux	

* By telephone
# Provided written comments

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EXHIBIT 1

Fiscal Years (FY) 2010/-2011 – 2014/2015 TIP Amendment #10-2 Additional Projects

PROJECT DESCRIPTION (FINANCE NUMBER)	MAP #	MILE	TYPE WORK	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FUND CODE Table 3	FED FUNDS
TABLE 10- LANDSCAPING PROJECTS										
University Avenue/ SR 26 FM: SE 15th Street TO: County Road 329B (2075893)	1	2.7	Landscaping	5 PE 16 CST 72 CST					DIH DIH DDR	NO
TABLE 17- TRANSIT- REGIONAL TRANSIT SYSTEM PROJECTS										
FIXED ROUTE CAPITAL ARRA Section 5307 (4263201)	-	-	Purchase Transit vehicles with ARRA funding	562 CAP 335 CAP 680 CAP	-	-	-	-	FTA FTA FTA	YES

EXHIBIT 2

Fiscal Years (FY) 2010/2011 – 2014/2015 TIP Amendment #10-2 Roll-Forward Projects

PROJECT DESCRIPTION (FINANCE NUMBER)	MAP #	MILE	TYPE WORK	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FUND CODE Table 3	FED FUNDS
TABLE 5- AIRPORT PROJECTS										
Airport Transit Improvement Section 5309 Earmark (4068473)	-	-	Expand passenger terminal parking lot	298 CAP	-	-	-	-	FTA	YES
TABLE 9- INTERSTATE / INTERCHANGE PROJECTS										
Interstate 75 AT: Newberry Road/SR 26 (4230712)	1		Operational improvement	1 PE	-	-	-	-	DIH	NO
Interstate 75 AT: Newberry Road/SR 26 (4244732)	1		Operational improvement @ NW quadrant	10 ROW 592 ROW	-	-	-	-	DIH NHAC	YES
TABLE 17- TRANSIT- REGIONAL TRANSIT SYSTEM PROJECTS										
Fixed Route System Capital Section 5307 (4040261)	-	-	Capital and Operating Grant	1,250 CAP 313 CAP	650 CAP 163 CAP	650 CAP 163 CAP	650 CAP 163 CAP	712 CAP 178 CAP	FTA	YES
Fixed Route System Capital Section 5307 (4044111)	-	-	AVL equipment hardware/software, radio system upgrade, furniture/office equipment, automatic passenger counters, computer equipment	600 CAP 150 CAP	215 CAP 54 CAP	215 CAP 54 CAP	215 CAP 54 CAP	200 CAP 50 CAP	FTA LF	YES
Fixed Route System Capital Section 5307 (4117581)	-	-	Shelters & passenger amenities, benches, shelters, signs & logos, shop equipment, signal preemption, preventative and associated capital maintenance	3,020 CAP 755 CAP	1,485 CAP 371 CAP	1,535 CAP 384 CAP	1,535 CAP 384 CAP	1,535 CAP 384 CAP	FTA LF	YES
Fixed Route System Capital Section 5309 (4068471)	-	-	Discretionary grants- purchase transit coaches neighborhood transfer center	4,165 CAP 1,041 CAP	4,500 CAP 1,125 CAP	4,773 CAP 1,193 CAP	5,059 CAP 1,265 CAP	-	FTA LF	YES
PTO Studies 5309 High Priority Project #213 (4068475)	-	-	RTS Rapid Transit Study	431 CAP 108 CAP	-	-	-	-	FTA LF	YES
Fixed Route System Capital Section 5307 (4117581)	-	-	Employee training, GFI/fare boxes, passenger information system	600 CAP 150 CAP	215 CAP 54 CAP	215 CAP 54 CAP	215 CAP 54 CAP	200 CAP 50 CAP	FTA LF	YES
Fixed Route System Capital Section 5309 (4117581)	-	-	Discretionary grants- purchase transit coaches neighborhood transfer center	2,928 CAP 732 CAP	1,260 CAP 315 CAP	1,323 CAP 331 CAP	1,639 CAP 410 CAP	2,000 CAP 500 CAP	FTA LF	YES
Fixed Route System Capital Section 5307 (4243901)	-	-	Small Transit Incentives Cities Allocation	752 CAP 188 CAP	752 CAP 188 CAP	752 CAP 188 CAP	752 CAP 188 CAP	752 CAP 188 CAP	FTA LF	YES
Fixed Route System Capital ARRA 5307 (4263891)	-	-	Purchase transit vehicles with ARRA funding	3,201 CAP	-	-	-	-	FTA	YES
Fixed Route System Capital HR1105 5309 (4267571)	-	-	RTS purchase transit vehicles with HR 1105 High Priority Project funding	475 CAP 119 CAP	-	-	-	-	FTA LF	YES
Fixed Route System Capital E2010-BUSP-057 Earmark 5309 (4286431)	-	-	RTS purchase buses with E2010-BUSP-057 Earmark 5309 funding	750 CAP 188 CAP	-	-	-	-	FTA LF	YES

North Central Florida Regional Planning Council

2009 NW 67 PLACE, SUITE A, GAINESVILLE, FLORIDA 32653-1603
(352)955-2200 SUNCOM 625-2200 FAX (352) 955-2209

CONSENT AGENDA
METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION FOR THE GAINESVILLE URBANIZED AREA

Jack Durrance Auditorium
Alachua County Administration Building
Gainesville, Florida

Monday, 5:00 p.m.
August 23, 2010

<u>STAFF RECOMMENDATION</u>

Page #9	CA. 1	**MTPO Minutes- June 14, 2010** <u>This set of MTPO minutes is ready for review</u>	**APPROVE MINUTES**
Page #17	CA. 2	**Proposed Amended Budget for FY 2009-2010 and Proposed Budgets for FY 2010-2011** <u>These budgets will allow staff to monitor MTPO expenditures and make appropriate adjustments as needed</u>	**APPROVE BUDGETS**
Page #23	CA. 3	**Transportation Improvement Program (TIP) Administrative Amendments Resolution** <u>This resolution authorizes the Executive Director to process administrative amendments to the TIP</u>	**APPROVE RESOLUTION NO. 10-8**
Page #29	CA. 4	**Long Range Transportation Plan (LRTP)-Supplemental Agreement** <u>This resolution authorizes the MTPO Chair to execute Supplement Agreement No. 2 to the LRTP Agreement</u>	**APPROVE RESOLUTION NO. 10-9**
Page #39	CA. 5	**Transportation Disadvantaged Program Resolution of Appreciation** <u>This Resolution of Appreciation is for Mr. Charles Robert Kridner for his service as the Veterans Representative on the Coordinating Board</u>	**APPROVE STAFF RECOMMENDATION**

Page #45 CA. 6 Transportation Disadvantaged Program Status Report NO ACTION REQUIRED

The MTPO has asked for regular status reports concerning this program

Page #57 CA. 7 East University Avenue Median Trees NO ACTION REQUIRED

The Florida Department of Transportation will be planting trees in the East University Avenue median

MINUTES
METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION (MTPO)
FOR THE GAINESVILLE URBANIZED AREA

Jack Durrance Auditorium	5:00 p.m.
Alachua County Administration Building	Monday
Gainesville, Florida	October 4, 2010

MEMBERS PRESENT	MEMBERS ABSENT	OTHERS PRESENT
Paula DeLaney, Chair	Thomas Hawkins, Vice Chair	See Exhibit A
James Bennett/Alan Mosely	Rodney Long	
Mike Byerly	Jeanna Mastrodicasa	
Cynthia Moore Chestnut	Larry Travis	STAFF PRESENT
Jack Donovan		Scott Koons
Scherwin Henry		Marlie Sanderson
Craig Lowe		Michael Escalante
Lee Pinkoson		Suwan Shen
Lauren Poe		
Ed Poppell		
Randy Wells		

CALL TO ORDER

Chair Paula DeLaney called the meeting to order at 5:05 p.m.

I. APPROVAL OF THE MEETING AGENDA AND CONSENT AGENDA

Mr. Marlie Sanderson, MTPO Director of Transportation Planning, asked the MTPO to approve the Meeting Agenda and Consent Agenda.

Chair DeLaney noted a Bicycle/Pedestrian Advisory Board (B/PAB) request to move agenda item VI. NW 16th Avenue/Boulevard/NW 23rd Avenue Bicycle/Pedestrian Advisory Board (B/PAB) Alternative Option in front of agenda item VI. Depot Avenue Status Report. She asked if there were any public comments on the consent agenda and amended meeting agenda. There was no public comment.

ACTION: Commissioner Byerly moved to approve the Consent agenda and Meeting Agenda amended to move agenda item VI. NW 16th Avenue/Boulevard/NW 23rd Avenue Bicycle/Pedestrian Advisory Board (B/PAB) Alternative Option in front of agenda item VI. Depot Avenue Status Report meeting. Commissioner Wells seconded; motion passed unanimously.

II. YEAR 2035 COST FEASIBLE PLAN PUBLIC HEARING

Mr. Sanderson stated that the MTPO is required to update its long range transportation plan every five years.

A. WELCOME AND OPENING REMARKS

Chair DeLaney opened the public hearing and welcomed everyone. She noted that some MTPO members needed to leave at 7:30 p.m.

Mr. Sanderson gave an overview of the long range transportation planning process.

B. ALTERNATIVE 5- 30 PERCENT TRANSIT MODE SHARE

Mr. Sanderson stated that the MTPO requested an Alternative 5 test for 30 percent transit mode share. He introduced Ms. Suwan Shen, MTPO Planning Intern. He noted that she developed the Alternative 5 model analysis. He discussed the results and answered questions.

A member of the MTPO commented on the real dollars versus nominal dollars used in the analysis.

A member of the MTPO discussed the fare-free presentation that the MTPO received several years ago. He suggested that the presentation be given again at a future MTPO meeting.

C. POTENTIAL FUTURE LAND USE AND TRANSPORTATION SCENARIOS TO MITIGATE EFFECTS OF PEAK OIL

Mr. Sanderson stated that the MTPO's consultant has completed the "Peak Oil" task for the LRTP update. He introduced Mr. Whit Blanton, Renaissance Planning Group (RPG) Vice President.

Mr. Blanton discussed potential future land use and transportation scenarios to mitigate effects of peak oil and answered questions.

D. DRAFT COST FEASIBLE PLAN

Mr. Sanderson presented an overview of the draft Cost Feasible Plan. He noted that the Advisory Committees' project priority recommendations were not in year of expenditure dollars.

Mr. Blanton discussed the year of expenditure dollar calculations and answered questions.

Mr. Sanderson discussed the draft Cost Feasible Plan Bicycle/Pedestrian Projects and Roadway Projects and answered questions.

Mr. Blanton discussed the proposed multimodal corridor projects and answered questions.

Mr. Sanderson and Mr. Blanton discussed the draft Cost Feasible Plan Transit Projects and answered questions.

Mr. Sanderson reported the MTPO Advisory Committee and Staff recommendations.

Ms. Debbie Leistner, City of Gainesville Transportation Planning Manager, discussed the City's plans for the W. 13th Street and University Avenue multimodal corridors and answered questions.

Chair DeLaney noted that the MTPO would lose its quorum at 7:50 p.m.

A member of the MTPO asked about the need to complete this agenda item this evening.

Mr. Sanderson noted that the next MTPO meeting was scheduled for November 1st, the day before the General Election. He said he hoped that the MTPO could take action this evening on the Year 2035 Cost Feasible Plan and not have to meet in November.

Mr. Jonathan Paul, Alachua County Concurrency & Impact Fee Manager, discussed the Alachua County staff roadway project recommendations and answered questions.

Mr. Sanderson discussed a FDOT policy regarding bus rapid transit (BRT) lanes on the State Highway System (SHS).

A member of the MTPO recommended adding FDOT's BRT policy to the next MTPO meeting agenda. She requested that the FDOT provide the MTPO with a written copy of this policy.

Mr. James Bennett, Florida Department of Transportation (FDOT) Urban Transportation Development Engineer, discussed the District 2 policy concerning BRT lanes in the State Highway System (SHS) right-of-way and the proposed Streetcar project and answered questions. He noted that separate BRT facilities on the SHS would not be maintained by FDOT. He also discussed his concern regarding the need for the transit maintenance facility expansion before any transit enhancements could be undertaken.

Mr. Doug Robinson, Regional Transit System (RTS) Chief Transit Planner, discussed the transit maintenance facility expansion, including its phasing and funding, and answered questions. He said that the facility would cost between $50 million and $66 million if done in phases. He reported that RTS had received a $4.3 million Earmark. He said that $850,000 was spent on the purchase of property adjacent to the existing RTS maintenance facility. He noted that this 230-bus facility expansion would accommodate the County's BRT plans. He announced that RTS was awarded $10.6 million for the transit maintenance facility expansion and bus purchases. He estimated that 75 percent of the grant would be allocated to the transit maintenance facility expansion.

A member of the MTPO stated that the MTPO needs to see a realistic funded plan for the transit maintenance facility expansion in order to develop its Cost Feasible Transit Plan.

Chair DeLaney noted that there was about six or seven minutes for a quorum.

Mr. Sanderson stated that MTPO staff could work with City and County staff for scheduling another MTPO meeting for later in October.

A member of the MTPO asked whether the Strategic Intermodal System (SIS) projects involved travel demand strategies such as high occupancy toll (HOT) lanes.

Ms. Karen Taulbee, FDOT Transportation Specialist, discussed the SIS projects and answered questions. She noted that the projects evolved from the Interstate 75 Master Plan.

Mr. Sanderson discussed the Archer Road and Williston Road 4-laning projects and answered questions.

Chair DeLaney noted that the MTPO lost its quorum.

Mr. Ed Poppell, University of Florida Vice President for Business Affairs, discussed the need to maintain funding for the current level of transit service.

Mr. Sanderson discussed funding for the transit maintenance facility expansion and answered questions.

Mr. Paul discussed Alachua County funding for the transit maintenance facility and answered questions. He noted that there was $71 million for transit service in the plan that could be used for the transit maintenance facility expansion. He added the MTPO would need to find funding for transit operations in order to use these funds for transit infrastructure.

Mr. Robinson noted that there was some Transportation Concurrency Exception Area (TCEA) mitigation funding for the transit maintenance facility. He discussed the Transit Development Plan projects and answered questions.

A member of the MTPO stated that the MTPO needs a funding plan in order to make a decision.

Mr. Sanderson stated that the Year 2035 Long Range Transportation Cost Feasible Plan public hearing will be readvertised.

Chair DeLaney offered an opportunity for public comment.

Mr. John Glanzer, Archer City Manager, and Mayor Roberta Lopez, City of Archer, stated that they would defer their comments until the rescheduled public hearing.

Mr. Sanderson noted that the MTPO would be found in non-compliance if it does not adopt a cost feasible plan by November 3, 2010.

Mayor Lopez requested that the Archer Road materials be saved for the next meeting.

Mr. Sanderson stated that MTPO staff would work with City and County staff for scheduling a new MTPO meeting date and that the public hearing would be advertized again.

VI. NW 16TH AVENUE/BOULEVARD/NW 23RD AVENUE BICYCLE/PEDESTRIAN ADVISORY BOARD (B/PAB) ALTERNATIVE OPTION

Mr. Jeff Wade, (B/PAB member) discussed the B/PAB's NW 16th Avenue/Boulevard/NW 23rd Avenue Alternative Option and answered questions. He recommended a joint City-County planning effort.

Mr. Robinson stated that RTS Route 10 serves NW 16th Avenue.

Mr. Mike Fay, Alachua County Development Program Manager, announced that the County's NW 16th Avenue/Boulevard/NW 23rd Avenue Project would be presented to the City on October 11th and to the County on October 12th.

Several MTPO members spoke in support of a joint City-County planning effort for the NW 16th Avenue/Boulevard/NW 23rd Avenue Project.

Ms. Julia Reiskind and Mr. Walter Baruch, B/PAB members, spoke in support of the B/PAB Alternative Option.

Chair DeLaney stated that the remaining agenda items would be discussed at a future MTPO meeting.

V. COMMENTS

A. MTPO MEMBERS

A member of the MTPO encouraged people to get out and vote.

B. CITIZENS

There were no citizens comments

C. CHAIR'S REPORT

There was no Chair's Report.

ADJOURNMENT

Chair DeLaney adjourned the meeting at 8:55 p.m.

11/9/10
Date

Cynthia Moore Chestnut
Cynthia Moore Chestnut, Secretary/Treasurer

EXHIBIT A

Interested Citizens	Alachua County	City of Gainesville	Florida Department of Transportation
Walter Baruch	Mike Fay	Russ Blackburn	Karen Taulbee
Whit Blanton	Jonathan Paul	Paul Folkes	
David Coffey	David Schwartz	Kelly Henderson	
Laurie Costello		Anthony Lyons	
Gerry Dedenbach		Debbie Leistner	
John Glanzer		Doug Robinson	
J. Glenn		John Veilleux	
Monique Heathcock			
Fletcher Hope			
Mary Hope			
Elizabeth Johnson			
Mayor Roberta Lopez			
Monte Marchant			
Terrence McDavid			
Bob Meliti			
Del Meliti			
S. Montemallin			
Yiqiang Ouyang			
Julia Reiskind			
Hermant Salokhe			
Jeff Wade			

* By telephone
\# Provided written comments

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North Central Florida Regional Planning Council

2009 NW 67 PLACE, SUITE A, GAINESVILLE, FLORIDA 32653-1603
(352)955-2200 SUNCOM 625-2200 FAX (352) 955-2209

CONSENT AGENDA
METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION FOR THE GAINESVILLE URBANIZED AREA

Jack Durrance Auditorium
Alachua County Administration Building
Gainesville, Florida

Monday, 5:00 p.m.
October 4, 2010

STAFF RECOMMENDATION

Page #9 CA. 1 MTPO Minutes- August 23, 2010 — **APPROVE MINUTES**

This set of MTPO minutes is ready for review

Page #25 CA. 2 Selection of Auditor for Fiscal Years 2009-10, 2010-11 and 2011-2012 — **APPROVE BUDGETS**

The Audit Committee of the Regional Planning Council is recommending an Auditor to conduct the next three MTPO audits

Page #27 CA. 3 Engagement Letter for Fiscal Year 2009-10 — **APPROVE RECOMMENDATION**

This year's MTPO Audit will be prepared by Powell and Jones, Certified Public Accountants

Page #37 CA. 4 Citizens Advisory Committee Request- City of Gainesville Advisory Committee — **FORWARD REQUEST TO CITY**

The Citizens Advisory Committee (CAC) is requesting that the City reinstate the CAC as an advisory committee to the City on transportation issues

Page #41 CA. 5 Transportation Disadvantaged Board Member Appointment — **APPOINT MEMBER**

The Central Florida Community Action Agency nominated Ms. Monique Harrison to serve as the alternate representative on the Coordinating Board

Page #47 CA. 6 Transportation Disadvantaged Program Status Report **NO ACTION REQUIRED**

The MTPO has asked for regular status reports concerning this program

Page #57 CA. 7 Citizens Advisory Committee (CAC) New Member **NO ACTION REQUIRED**

Ms. Laurie Newsom has filled a vacant position on this Committee

Page #59 CA. 8 East University Avenue Landscape Project **NO ACTION REQUIRED**

Enclosed is information from the Florida Department of Transportation concerning the type of trees that will be planted in the median

MINUTES
METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION (MTPO)
FOR THE GAINESVILLE URBANIZED AREA

Jack Durrance Auditorium
Alachua County Administration Building
Gainesville, Florida

6:00 p.m.
Wednesday
October 27, 2010

MEMBERS PRESENT	MEMBERS ABSENT	OTHERS PRESENT
Paula DeLaney, Chair	Scherwin Henry	See Exhibit A
Thomas Hawkins, Vice Chair	Larry Travis	
James Bennett/Alan Mosely		
Mike Byerly		STAFF PRESENT
Cynthia Moore Chestnut		Scott Koons
Jack Donovan		Marlie Sanderson
Rodney Long		Michael Escalante
Craig Lowe		
Jeanna Mastrodicasa		
Lee Pinkoson		
Lauren Poe		
Ed Poppell		
Randy Wells		

CALL TO ORDER

Chair Paula DeLaney called the meeting to order at 6:00 p.m.

I. APPROVAL OF THE MEETING AGENDA AND CONSENT AGENDA

Mr. Marlie Sanderson, MTPO Director of Transportation Planning, recommended approval of the meeting agenda and consent agenda.

Chair DeLaney asked if there were any public comments on the consent agenda and meeting agenda. There was no public comment.

MOTION: Commissioner Chestnut moved to approve the Consent agenda and Meeting Agenda. Commissioner Long seconded; motion passed unanimously.

II. YEAR 2035 COST FEASIBLE PLAN PUBLIC HEARING

Mr. Sanderson stated that the MTPO is required to update its long range transportation plan (LRTP) every five years.

A. WELCOME AND OPENING REMARKS

Chair DeLaney opened the public hearing and welcomed everyone.

B. DRAFT COST FEASIBLE PLAN

Mr. Sanderson stated that the draft Cost Feasible Plan consisted of the following categories of projects: 1. bicycle and pedestrian; 2. roadway; 3. transit; and 4. optional intelligent transportation system (ITS). He said that November 3rd was the deadline for adopting the LRTP. He presented the LRTP Vision Statement and reviewed the revenue forecast. He discussed the draft Bicycle/Pedestrian Cost Feasible Plan projects, reported the MTPO Advisory Committees and MTPO staff recommendations and answered questions.

Mr. Sanderson discussed the draft Roadway Cost Feasible Plan projects, reported the MTPO Advisory Committees, MTPO staff and Alachua County staff roadway cost feasible plan recommendations and answered questions.

Mr. Sanderson discussed the draft Transit Cost Feasible Plan projects, reported the MTPO Advisory Committees, MTPO staff and Alachua County staff transit cost feasible plan recommendations and answered questions. He also reviewed the transit maintenance facility expansion financing.

Mr. Jesus Gomez, Regional Transit System (RTS) Director, reported that most of the Section 5307 funds that RTS receives is used for transit operations. He noted that $400,000 of $3 million in transit funding is used for capital, such as parts and equipment. He added that the $1.8 million in gas tax revenues is used for operations.

Mr. Sanderson continued discussion of the Transit Cost Feasible Plan recommendations and answered questions.

Mr. Sanderson reported the MTPO Advisory Committees and MTPO staff ITS Cost Feasible Plan recommendations and answered questions.

Ms. Teresa Scott, City of Gainesville Public Works Director, discussed the City of Gainesville roadway plan recommendations (Exhibit 1). She also discussed the RTS Maintenance Facility needs and answered questions. She noted that Phase 1A could include four 42-foot bus bays and one 60-foot bus bay for articulated buses that would support bus rapid transit (BRT), at a cost of $13.7 million.

A member of the MTPO noted that he did not support extension of BRT to Santa Fe Village. (Donovan)

Mr. Jonathan Paul, Alachua County Concurrency & Impact Fee Manager, discussed the County's Mobility Plan. He noted that $70 to $80 million in the 20-year plan was for transit, which is funded in part by developer contributions.

Ms. Scott noted that City staff was not prepared to discuss the City's transit budget forecast.

Mr. Gomez discussed the Transit Development Plan budget and answered questions.

A member of the MTPO recommended discussion of the RTS maintenance Facility and its financing at a separate joint City-County meeting.

Mr. Ed Poppell, University of Florida Vice President for Business Affairs, discussed the need to maintain the existing transit service.

A member of the MTPO noted that the scheduling for the joint City-County meeting to discuss transit issues has not been set.

Ms. Scott stated that BRT would be most effective in areas where there is high ridership, especially on SW 20th Avenue. She discussed transit service to Santa Fe College.

Mr. Russ Blackburn, City of Gainesville Manager, discussed the MTPO-approved BRT Corridor and answered questions.

C. PUBLIC COMMENTS AND QUESTIONS

Chair DeLaney recognized Mr. David Coffey to speak at the public hearing. She asked if there were any others from the public that wanted to comment.

Mr. Sanderson reported that there were four citizens who have signed up to speak.

The following persons provided comments on the Year 2035 Cost Feasible Plan:

- Mr. David Coffey discussed an alternative roadway plan proposal (Exhibit 2) and answered questions.
- Ms. Karen Taulbee, Florida Department of Transportation (FDOT) District 2 Transportation Specialist, noted that as part of the public involvement process, that Mr. Coffey's proposal needed to be available to the public. (Copies were made and distributed to everyone present.)
- Mr. Naman Henderson, Eastside Redevelopment Advisory Board member, discussed the need for development where there was available capacity on the eastside, carbon targets and phasing of BRT beginning from the eastside.
- Mr. John Glanzer, City of Archer City Manager, discussed the need to address Archer Road. He noted that a lot of Gainesville-bound commuter traffic passes through the City of Archer.
- Mr. Brian Harrington, Business Community Coalition representative, supported BRT service for proposed developments.
- Mr. Paul stated that the County's recommendations included the study of capacity expansion of Archer Road and Williston Road, but did not include roadway construction. He noted that the term "roadway" should be inserted between "additional capacity" in the project descriptions.

D. CLOSE PUBLIC HEARING

Chair DeLaney closed the public hearing when it was determined there were no additional persons wanting to speak on the draft Cost Feasible Plan.

III. ADOPTION OF YEAR 2035 COST FEASIBLE PLAN

Mr. Sanderson stated that the MTPO needs to adopt the Year 2035 Cost Feasible Plan. He suggested starting with the Bicycle/Pedestrian Plan followed by the Transit Plan and ending with the Roadway plan.

A member of the MTPO stated that he would like to place a motion regarding the Roadway Plan. He noted that the other draft plans would be less difficult to do.

Chair DeLaney accepted the MTPO member's agenda change.

B. ROADWAY PLAN

MOTION: Commissioner Byerly moved to approve the City of Gainesville Staff recommendation for the Year 2035 Roadway Projects Cost Feasible Plan modified to reduce the Priority No. 6 funding from $28.5 million to $24.5 million and include the County's Priority No. 2 and Priority No. 3 projects (Exhibit 3). Commissioner Chestnut seconded.

A member of the MTPO discussed alternative funding recommendations for the Roadway Plan projects.

A member of the MTPO discussed his concerns regarding development permitting in the unincorporated area of Alachua County and supported express bus service to the City of Archer.

A member of the MTPO discussed his concerns regarding projects left off the list and, therefore, not able to access other funding sources for the projects.

Mr. Paul noted that Priority No. 9 and Priority No. 10 are not part of the BRT corridor.

Mr. James Bennett, FDOT District 2 Urban Transportation Development Engineer, recommended keeping roadway projects that are not geographically contiguous listed as separate projects. He stated that PD&E studies would not be completed and signed-off by the Federal Highway Administration (FHWA) for projects that funding sources for construction have not been identified. He noted that planning level studies could be done. He added that the LRTP would have to be amended in order for FHWA to fund any project, development and environmental (PD&E) study.

Mr. Paul stated that there are still options in terms of the County's Tax Increment Financing (TIF) Plan and Mobility Plan to identify funding sources for construction. He also discussed the project planning process, noting that studies would need to be completed before a project goes to construction.

FIRST SUBSTITUTE MOTION:

Commissioner Pinkoson moved to approve the Draft Year 2035 Roadway Projects Cost Feasible Plan (Exhibit 2) modified to fold Priority No. 7- State Road 24 (Archer Road) Bus Rapid Transit Dedicated Lane(s) design and corridor management study (PD&E) and Priority No. 8- State Road 24 (Archer Road) Bus Rapid Transit Dedicated Lane(s) design and corridor management study (PD&E) into Priority No. 6- Bus Rapid Transit Corridor Infrastructure- Partial. Commissioner Poe seconded.

FRIENDLY AMENDMENT:

Mayor Lowe recommended funding modifications to Priority No. 3 at $4.75 million, Priority No. 4 at $4.75 million, Priority No. 6 at $28 million and the new Priority No. 7 at $0.5 million. Commissioner Pinkoson and Commissioner Poe accepted the amendment.

Mr. Bennett noted that new priority No. 7 and new Priority No. 8 should include the term "additional roadway capacity" as suggested by Mr. Paul. He added that FDOT takes its guidance for funding projects from the MTPO's annual List of Priority Projects, not the long range transportation plan priority rankings. He said that the long range transportation plan would need to be amended to describe project details for the multimodal corridor projects in order for those projects to get funded.

A member of the MTPO noted that some studies have been done for the multimodal corridors.

Mr. Bennett stated that these studies on State Highways have not been reviewed by FDOT. He noted that there is a process to follow and that, if the process is not followed, then federal funds are placed at risk.

Mr. Sanderson stated that the MTPO could amend its LRTP as often as it desired, as long as it is properly publicly noticed.

Mr. Bennett cautioned the MTPO at amending its LRTP too often. He noted that LRTPs are updated on a 5-year cycle and should be a stable plan.

AMENDED FIRST SUBSTITUTE MOTION:

Commissioner Pinkoson moved to approve the Draft Year 2035 Roadway Projects Cost Feasible Plan (Exhibit 2) modified:

1. **to fold Priority No. 7- State Road 24 (Archer Road) Bus Rapid Transit Dedicated Lane(s) design and corridor management study (PD&E) and Priority No. 8- State Road 24 (Archer Road) Bus Rapid Transit Dedicated Lane(s) design and corridor management study (PD&E) into Priority No. 6- Bus Rapid Transit Corridor Infrastructure- Partial;**

2. **to fund Priority No. 3 at $4.75 million, Priority No. 4 at $4.75 million, Priority No. 6 at $28 million and the new Priority No. 7 at $0.5 million; and**

3. **to include "roadway" between the words "additional capacity" in the new Priority No. 7 and the new Priority No. 8.**

Commissioner Poe seconded.

Mr. Harrington discussed the proposed roadway plan and Mr. Bennett's comments.

SECOND SUBSTITUTE MOTION:

Commissioner Byerly moved to approve the Draft Year 2035 Roadway Projects Cost Feasible Plan (Exhibit 2) modified:

1. **to fold Priority No. 7- State Road 24 (Archer Road) Bus Rapid Transit Dedicated Lane(s) design and corridor management study (PD&E) and Priority No. 8- State Road 24 (Archer Road) Bus Rapid Transit Dedicated Lane(s) design and corridor management study (PD&E) into Priority No. 6- Bus Rapid Transit Corridor Infrastructure- Partial;**

2. **to fund Priority No. 3 at $4.75 million, Priority No. 4 at $4.75 million, Priority No. 6 at $28 million and the new Priority No. 7 at $0.5 million;**

3. **to include "roadway" between the words "additional capacity" in the new Priority No. 7 and the new Priority No. 8; and**

4. **to place Priority No. 3 and Priority No. 4 in front of Priority No. 1.**

Motion failed for lack of a second.

AMENDED FIRST SUBSTITUTE MOTION RESTATED:

Commissioner Pinkoson moved to approve the Draft Year 2035 Roadway Projects Cost Feasible Plan (Exhibit 2) modified:

1. **to fold Priority No. 7- State Road 24 (Archer Road) Bus Rapid Transit Dedicated Lane(s) design and corridor management study (PD&E) and Priority No. 8- State Road 24 (Archer Road) Bus Rapid Transit Dedicated Lane(s) design and corridor management study (PD&E) into Priority No. 6- Bus Rapid Transit Corridor Infrastructure- Partial;**

2. **to fund Priority No. 3 at $4.75 million, Priority No. 4 at $4.75 million, Priority No. 6 at $28 million and the new Priority No. 7 at $0.5 million; and**

3. **to include "roadway" between the words "additional capacity" in the new Priority No. 7 and the new Priority No. 8 (Exhibit 4).**

Commissioner Poe seconded. Mr. Sanderson conducted a rollcall vote.

	CITY	COUNTY
Commissioner Long		Yes
Mayor Lowe	Yes	
Commissioner Mastrodicasa	Yes	
Commissioner Pinkoson		Yes
Commissioner Poe	Yes	
Commissioner Wells	Yes	
Commissioner Byerly		No
Commissioner Chestnut		Yes
Commissioner Donovan	No	
Commissioner Hawkins	Yes	
Chair DeLaney		Yes

Motion passed 9 to 2.

Mr. Sanderson reported the joint recommendations for Alachua County and City of Gainesville projects for the roadway cost feasible plan that are locally-funded.

MOTION: Commissioner Pinkoson moved to include the locally-funded projects in Table 2 (Exhibit 5) in the adopted Cost Feasible Plan. Commissioner Hawkins seconded. Mr. Sanderson conducted a show-of-hands vote; motion passed unanimously.

Mr. Sanderson stated that the final list will be revised to year of expenditure dollars and that some projects may drop off of the Cost Feasible list.

MOTION: Commissioner Chestnut moved to approve the Year 2035 Roadway Projects Cost Feasible Plan (Exhibit 4) with the understanding that the final list will be revised to year of expenditure dollars and that some projects may drop off of the Cost Feasible list. Commissioner Wells seconded. Mr. Sanderson conducted a show- of-hands vote; motion passed unanimously.

A. BICYCLE/PEDESTRIAN PLAN

Mr. Sanderson reported the MTPO Advisory Committees and MTPO staff Bicycle/Pedestrian Cost Feasible Plan recommendations.

MOTION: Commissioner Wells moved to approve Table 1 Year 2035 Bicycle/Pedestrian Projects Cost Feasible Plan with the understanding that the final list will be revised to year of expenditure dollars and that some projects may drop off of the Cost Feasible list (Exhibit 6). Mayor Lowe seconded. Mr. Sanderson conducted a show of hands vote; motion passed unanimously.

C. TRANSIT PLAN

Mr. Sanderson reported the MTPO Advisory Committees and MTPO staff Transit Cost Feasible Plan recommendations.

MOTION: Commissioner Pinkoson moved to approve Table 3 Year 2035 Transit Projects Cost Feasible Plan with the understanding that the final list will be revised to year of expenditure dollars and that some projects may drop off of the Cost Feasible list (Exhibit 7). Commissioner Hawkins seconded. Mr. Sanderson conducted a show-of-hands vote; motion passed 10 to 1 (Commissioner Donovan in dissent).

D. INTELLIGENT TRANSPORTATION SYSTEM (ITS)

Mr. Sanderson reported the joint recommendations for Table 4 ITS Cost Feasible Plan projects.

A member of the MTPO discussed his interest in expanding the ITS project list to include travel demand management strategies, such as high occupancy vehicle (HOV) lanes and high occupancy toll (HOT) lanes.

MOTION: Commissioner Wells moved to approve Table 4 Year 2035 ITS Projects Cost Feasible Plan, amended to include, as Priority No. 5, a travel demand management information technologies project that addresses travel demand strategies, such as high occupancy vehicle (HOV) lanes, high occupancy toll (HOT) lanes and other travel demand management technologies (Exhibit 8). Commissioner Chestnut seconded. Mr. Sanderson conducted a show of hands vote; motion passed unanimously.

IV. NEXT MTPO MEETING

Mr. Sanderson stated that there was no business requiring the MTPO to meet in November. He said that the next MTPO meeting is scheduled for December 13th at 5:00 p.m.

It was a consensus of the MTPO to meet on December 13th beginning at 5:00 p.m.

V. COMMENTS

A. MTPO MEMBERS

There were no MTPO member comments.

B. CITIZENS

There were no citizens comments.

C. CHAIR'S REPORT

Chair DeLaney noted that she spent all day on the election canvassing board. She recommended watching the CNBC Executive Vision show on transportation. She and Mr. Sanderson thanked Mr. Whit Blanton, Renaissance Planning Group (RPG) Vice President, for RPG's work on the plan update.

ADJOURNMENT

Chair DeLaney adjourned the meeting at 8:42 p.m.

12/20/10
Date

MTPO Secretary/Treasurer

EXHIBIT A

Interested Citizens	**Alachua County**	**City of Gainesville**	**Florida Department of Transportation**
Whit Blanton	Mike Fay	Russ Blackburn	Karen Taulbee
David Coffey	Jonathan Paul	Jesus Gomez	
Bruce DeLaney	Randall Reid	Debbie Leistner	
Steve de MontMallin	David Schwartz	Doug Robinson	
John Glanzer# Exhibit 9		Teresa Scott	
Brian Harrington			
Naman Henderson			

* By telephone
\# Spoke and provided written comments

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North Central Florida Regional Planning Council

2009 NW 67 PLACE, SUITE A, GAINESVILLE, FLORIDA 32653-1603
(352)955-2200 SUNCOM 625-2200 FAX (352) 955-2209

CONSENT AGENDA
METROPOLITAN TRANSPORTATION PLANNING ORGANIZATION FOR THE GAINESVILLE URBANIZED AREA

Jack Durrance Auditorium
Alachua County Administration Building
Gainesville, Florida

Wednesday, 6:00 p.m.
October 27, 2010

STAFF RECOMMENDATION

Page #9	**CA. 1**	**MTPO Minutes- October 4, 2010**	**APPROVE MINUTES**
		This set of MTPO minutes is ready for review	
Page #15	**CA. 2**	**Transportation Disadvantaged Board Member Appointment**	**APPOINT MEMBER**
		The Alachua County Veterans Service Office nominated Mr. Kyle Morrison to serve as the alternate representative on the Coordinating Board	
Page #19	**CA. 3**	**Depot Avenue Status Report**	**FOR INFORMATION ONLY**
		This material is included in you meeting packet for information only	

EXHIBIT 1
City of Gainesville

ROADWAY COST FEASIBLE PLAN - RECOMMENDATIONS

	MTPO Staff		Alachua County		City Staff	
DESCRIPTION	*PRIORITY*	*COST*	*PRIORITY*	*COST*	*PRIORITY*	*COST*
SR 226 (SE 16 Ave) widen to 4 lanes	1	$15	9 11	$4 $11	1	$15
SR 121 (NW 34 St) add turn lanes	2	$6	7	$6	2	$6
SR 26 (University Ave) multimodal corridor	3	$5	4	$1	3	$5
US 441 (NW 13 St) multimodal corridor	4	$5	5	$1	4	$5
Waldo Rd Multiway Blvd support BRT & redevelopment	5	$3	1	$3	5	$3
BRT Infrastructure (Santa Fe Village to Gainesville Airport)	6	$10.5	10	$30	6	$28.5
SR 24 (Archer Rd) 4-laning	7	$13	-	-	-	-
SR 331 (Williston Rd) 4-laning	8	$5	8	$0.5	-	-
SR 24 (Archer Rd) BRT PD&E (US 441 to SW 37 Blvd)	-	-	2	$2	-	-
SR 26 (Newberry Rd) BRT PD&E	-	-	3	$2	-	-
SR 24 (Archer Rd) BRT PD&E (SW 45 St to MTPO bound.)	-	-	6	$2	-	-
Total		***$62.5***		***$62.5***		***$62.5***

EXHIBIT 2

TABLE 2- ROADWAY COST FEASIBLE PLAN

PRIORITY	DESCRIPTION	FROM/TO	LENGTH (IN MILES)	ESTIMATED COST IN MILLIONS (IN 2010 DOLLARS)
STRATEGIC INTERMODAL SYSTEM (SIS) *(Cost Feasible Plan Revenues = $6.4 million)*				
-	**Interstate 75 Interchange Modifications**	At Williston Road At Archer Road At Newberry Road At NW 39th Ave	-	$6.4
TOTAL STRATEGIC INTERMODAL SYSTEM				**$6.4**
STATE HIGHWAY SYSTEM *(Cost Feasible Plan Revenues = $92.0 million future year dollars)*				
1	**State Road 226 (SE 16th Avenue)** widen to four lanes	Main Street to Williston Road	0.6	$15.0
2	**State Road 121 (NW 34th Street)**-construction of turn lanes to improve safety and traffic flow	NW 16th Avenue to US 441	3.5	$6.0
3	**State Road 26 (University Avenue)** Multimodal Emphasis Corridor Study (see footnote[b])	Gale Lemerand Drive to Waldo Road	1.5	$3.5
4	**US 441 (W. 13th Street)** Multimodal Emphasis Corridor Study (see footnote[b])	NW 33rd Avenue to Archer Road	2.8	$3.5
5	**Waldo Road Multi-way Boulevard** redesign to support bus rapid transit, multi-use trail and corridor redevelopment Study (see footnote[a]) (PD&E)	University Avenue to NE 39th Avenue	2.5	$3
6	**Bus Rapid Transit (BRT) Corridor Infrastructure - Partial**	Santa Fe Village to Gainesville Regional Airport	14.0	$27.5
7	**State Road 26 (Newberry Road)** Bus Rapid Transit (BRT) Dedicated Lane(s) design and corridor management Study (PD&E)	SW 62nd Blvd to Ft. Clarke Blvd	1.5	$1.25
8	**State Road 24 (Archer Road)** Bus Rapid Transit (BRT) Dedicated Lane(s) design and corridor management Study (PD&E)	US 441 to SW 37th Boulevard	3.0	$1.25
9	**State Road 24 (Archer Road)** Bus Rapid Transit (BRT) Dedicated Lane(s) design, additional capacity and corridor management Study (PD&E)	SW 45th Street to MTPO boundary west of SW 91st Street	3.5	$1.25
10	**State Road 121 (Williston Road)** additional capacity & corridor management Study (PD&E)	SW 35th Way (west of I-75) to SW 62nd	.75	$.5
TOTAL STATE HIGHWAY SYSTEM				**$62.5**
TOTAL STATE HIGHWAY SYSTEM (Future Year Dollars)				**$92.0**

[a]Waldo Road Multiway Boulevard includes the reconstruction of the Waldo Road Corridor to support commercial and residential redevelopment and enhanced pedestrian crossings to the proposed Waldo Road Bus Rapid Transit line.

[b]Multi-modal corridors are defined as major transportation facilities which accommodate automobile, truck, bus, bicycle and pedestrian travel and link different modes together, such as bikes on buses, car and walk and/or park and ride. These projects employ policies and design elements that ensure that the safety and convenience of all users of a transportation system are considered in all phases of project planning and development. Typical elements of a multimodal corridor include sidewalks, bicycle lanes (or wide, paved shoulders), shared-use bicycle and pedestrian paths, designated bus lanes, safe and accessible transit stops and frequent and safe crossings for pedestrians, including median islands, accessible pedestrian signals, and curb extensions.

Note- Estimated costs are shown in Year 2010 dollars, except for the Strategic Intermodal System project that is shown in Year 2009 dollars.

Suggested Consensus Table For

Cost Feasible Plan for State Highway System Funds

	MTPO STAFF		ALACHUA COUNTY		CITY STAFF		SUGGESTED CONSENSUS	
Description	*Priority*	*Cost*	*Priority*	*Cost*	*Priority*	*Cost*	*Priority*	*Cost*
SR 226 (SE 16 Ave) widen to 4 lanes	1	$15	9 11	$4 $11	1	$15	1	$15
SR 121 (NW 34 St) add turn lanes	2	$6	7	$6	2	$6	2	$6
SR 26 (University Ave) multimodal corridor	3	$5	4	$1	3	$5	3	$3.5
US 441 (NW 13 St) multimodal corridor	4	$5	5	$1	4	$5	4	$3.5
Waldo Rd Multiway Blvd Support BRT & redevelopment	5	$3	1	$3	5	$3	5	$3
BRT Infrastructure (SantaFe Village to Gainesville Airport)	6	$10.5	10	$30	6	$28.5	6	$27.25
SR 24 (Archer Rd) 4-laning	7	$13	-	-	-	-	-	-
SR 331 (Williston Rd) 4-laning	8	$5	8	$0.5	-	-	10	$0.5
SR 24 (Archer Rd) BRT PD&E(US 441 to SW 37 Blvd)	-	-	2	$2	-	-	8	$1.25
SR 26 (Newberry Rd) BRT PD&E	-	-	3	$2	-	-	7	$1.25
SR 24 (Archer Rd) BRT PD&E (SW 45 St to MTPO Boundary)	-	-	6	$2	-	-	9	$1.25

EXHIBIT 3
Commissioner Mike Byerly

ROADWAY COST FEASIBLE PLAN - RECOMMENDATIONS

	MTPO Staff		Alachua County		City Staff		Commissioner Byerly	
DESCRIPTION	*PRIORITY*	*COST*	*PRIORITY*	*COST*	*PRIORITY*	*COST*	*PRIORITY*	*COST*
SR 226 (SE 16 Ave) widen to 4 lanes	1	$15	9 11	$4 $11	1	$15	**1**	**$15**
SR 121 (NW 34 St) add turn lanes	2	$6	7	$6	2	$6	**2**	**$6**
SR 26 (University Ave) multimodal corridor	3	$5	4	$1	3	$5	**3**	**$5**
US 441 (NW 13 St) multimodal corridor	4	$5	5	$1	4	$5	**4**	**$5**
Waldo Rd Multiway Blvd support BRT & redevelopment	5	$3	1	$3	5	$3	**5**	**$3**
BRT Infrastructure (Santa Fe Village to Gainesville Airport)	6	$10.5	10	$30	6	$28.5	**6**	**$24.5**
SR 24 (Archer Rd) 4-laning	7	$13	-	-	-	-	-	-
SR 331 (Williston Rd) 4-laning	8	$5	8	$0.5	-	-	-	-
SR 24 (Archer Rd) BRT PD&E (US 441 to SW 37 Blvd)	-	-	2	$2	-	-	**7**	**$2**
SR 26 (Newberry Rd) BRT PD&E	-	-	3	$2	-	-	**8**	**$2**
SR 24 (Archer Rd) BRT PD&E (SW 45 St to MTPO bound.)	-	-	6	$2	-	-	-	-
Total		*$62.5*		*$62.5*		*$62.5*		*$62.5*

EXHIBIT 4

TABLE 2

YEAR 2035 ROADWAY COST FEASIBLE PLAN

PRIORITY	DESCRIPTION	FROM/TO	LENGTH (IN MILES)	ESTIMATED COST IN MILLIONS (IN 2010 DOLLARS)
STRATEGIC INTERMODAL SYSTEM (SIS) *(Cost Feasible Plan Revenues = $6.4 million)*				
-	**Interstate 75 Interchange Modifications**	At Williston Road At Archer Road At Newberry Road At NW 39th Ave	-	$6.4
TOTAL STRATEGIC INTERMODAL SYSTEM				**$6.4**
STATE HIGHWAY SYSTEM *(Cost Feasible Plan Revenues = $92.0 million year of expenditure dollars)*				
1	**State Road 226 (SE 16th Avenue)** widen to four lanes	Main Street to Williston Road	0.6	$15.0
2	**State Road 121 (NW 34th Street)-** construction of turnlanes to improve safety and traffic flow	NW 16th Avenue to US 441	3.5	$6.0
3	**State Road 26 (University Avenue)** Multimodal Emphasis Corridor Study (see footnote[a])	Gale Lemerand Drive to Waldo Road	1.5	$4.75
4	**US 441 (W. 13th Street)** Multimodal Emphasis Corridor Study (see footnote[a])	NW 33rd Avenue to Archer Road	2.8	$4.75
5	**Waldo Road Multiway Boulevard** redesign to support bus rapid transit, multi-trail and corridor redevelopment study (PD&E) (see footnote[b])	University Avenue to NE 39th Avenue	2.5	$3.0
6	**Bus Rapid Transit (BRT) Corridor Infrastructure- Partial**	Santa Fe Village to Gainesville Regional Airport	14.0	$28.0
7	**State Road 24 (Archer Road)** BRT Dedicated Lane(s) design, additional roadway capacity and corridor management study (PD&E)	MTPO Boundary to SW 45th Street	3.5	$0.5
8	**State Road 121 (Williston Road)** additional roadway capacity and corridor management study (PD&E)	SW 62nd Avenue to SW 35th Way	0.5	$0.5
TOTAL STATE HIGHWAY SYSTEM				**$62.5**

TABLE 2 (Continued)

YEAR 2035 ROADWAY COST FEASIBLE PLAN

PRIORITY	DESCRIPTION	FROM/TO	LENGTH (IN MILES)	ESTIMATED COST (IN MILLIONS)
Alachua County Transit and Roadway Projects (local funds identified as Cost Feasible by the Year 2020)				
1	**SW 20th Avenue,** four laning and multi-use path	SW 52nd Blvd to SW 61st Blvd	0.5	$8.8
2	**SW 8th Avenue-Phase 2,** two lane roadway and multi-use path	SW 122nd Street to SW 143rd Street	0.7	$2.7
3	**NW 23rd Avenue,** four laning and resurfacing	NW 51st Street to NW 59th Terrace	0.7	$1.8
4	**NW 23rd Avenue,** four laning	NW 83rd Street to Ft. Clarke Blvd.	0.5	$12.0
5	**SE 43rd Street,** construction of two-way left turn lanes, multi-use path and signalization	SR 26 (University Avenue) to SR 20 (Hawthorne Road)	1.1	$0.9
6	**SW 45th / 47th Street,** new roadway with travel lanes, BRT Dedicated Transit Lanes and multi-use path	Archer Road to SW 30th Avenue	0.8	$4.5
7	**SW 30th Avenue,** new Interstate 75 overpass with travel lanes, BRT Dedicated Transit Lanes and the Archer Braid Trail	SW 43rd Street to SW 47th Street	0.5	$13.0
8	**NW 83rd Street,** new roadway with travel lanes, BRT Dedicated Transit Lanes and the Millhopper Greenway	NW 46th Avenue to NW 39th Avenue (SR 222)	0.4	$2.5
9	**NW 83rd Street,** BRT Dedicated Transit Lanes	NW 23rd Avenue to NW 39th Avenue	1.0	$7.8
10	**Ft. Clarke/NW 83rd Street Corridor,** BRT Dedicated Transit Lanes & new multi-modal only Interstate 75 overpass	NW 23rd Avenue to Newberry Road (SR 26)	1.0	$14.0

TABLE 2 (Continued)

YEAR 2035 ROADWAY COST FEASIBLE PLAN

PRIORITY	DESCRIPTION	FROM/TO	LENGTH (IN MILES)	ESTIMATED COST (IN MILLIONS)
11	**NW 46th Avenue ,** new roadway with travel lanes, BRT Dedicated Transit Lanes, multi-use path and new Interstate 75 overpass	NW 83rd Street to NW 98th Street	1.3	$15.5
TOTAL ALACHUA COUNTY TRANSIT AND ROADWAY SYSTEM				**$83.5**
City of Gainesville Projects (local funds identified as Cost Feasible by the Year 2020)				
N/A	**SE 4th Street- Phase 2** reconstruction	Williston Road to Depot Avenue	0.7	$2.3
N/A	**SW 62nd Boulevard**-four lanes plus two additional BRT lanes in the middle	Newberry Road to Archer Road	3.2	$111.0
TOTAL CITY OF GAINESVILLE ROADWAY SYSTEM				**$113.3**
GRAND TOTAL COMBINED ROADWAY SYSTEMS				**$265.7**

[a]Multimodal corridors are defined as major transportation facilities which accommodate automobile, truck, bus, bicycle and pedestrian travel and link different modes together, such as bikes on buses, car and walk and/or park and ride. These projects employ policies and design elements that ensure that the safety and convenience of all users of a transportation system are considered in all phases of project planning and development. Typical elements of a multimodal corridor include sidewalks, bicycle lanes (or wide, paved shoulders), shared-use bicycle and pedestrian paths, designated bus lanes, safe and accessible transit stops and frequent and safe crossings for pedestrians, including median islands, accessible pedestrian signals, and curb extensions. These projects do not include lane reductions.

[b]Waldo Road Multiway Boulevard includes the reconstruction of the Waldo Road Corridor to support commercial and residential redevelopment and enhanced pedestrian crossings to the proposed Waldo Road Bus Rapid Transit line.

Note- Estimated costs are shown in Year 2010 dollars, except for the Strategic Intermodal System project that is shown in Year 2009 dollars.

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EXHIBIT 6

TABLE 1

YEAR 2035 BICYCLE/PEDESTRIAN COST FEASIBLE PLAN

SEGMENT PRIORITY	DESCRIPTION	FROM/TO	LENGTH (IN MILES)	ESTIMATED COST IN MILLIONS (2007 DOLLARS)
Surface Transportation Program (STP) Enhancements ***(Cost Feasible Plan Revenues = $11.5 million)***				
1	Cross Campus Greenway	Archer Road to SW 34th Street	2.1	$1.9
2	Hull Road Parking Area	SW 34th Street to End of Hull Road Parking Area	0.2	$0.2
3	Hull Road Connector	Hull Road Parking Area/SW 20th Avenue	0.5	$0.5
4	Lake Kanapaha Trail	Tower Road west to Interstate 75	2.3	$2.1
5	SW 34th Street Grade Separated Crossing	SW 34th Street at Hull Road	0.2	$7.0
TOTAL STP ENHANCEMENT FUNDED PROJECTS				**$11.7**
LOCAL FUNDS **Alachua County Projects (identified as Cost Feasible by Year 2020)**				
NA	SW 8th Avenue multi-use offroad facility	SW 122nd Street to SW 91st Street	2.0	$0.4
NA	NW 98th Street multi-use offroad facility	NW 23rd Avenue to NW 39th Avenue	1.0	$0.3
TOTAL ALACHUA COUNTY PROJECTS				**$0.7**
LOCAL FUNDS **City of Gainesville Projects (identified as Cost Feasible by Year 2015)**				
NA	SW 35th Place sidewalk	SW 34th Street to SW 23rd Terrace	1.1	$0.5
TOTAL CITY OF GAINESVILLE PROJECTS				**$0.5**
GRAND TOTAL BICYCLE/PEDESTRIAN PROJECTS				**$12.9**

NA- Not applicable

EXHIBIT 7

TABLE 3

YEAR 2035 TRANSIT COST FEASIBLE PLAN

PROJECT PRIORITY	DESCRIPTION	FROM/TO	LENGTH (IN MILES)	ESTIMATED COST IN MILLIONS (2010 DOLLARS)
Transit *(Cost Feasible Plan Revenues = $3.7 million)*				
1	Transit Maintenance Facility	Not Applicable (NA)	NA	$50.0
TOTAL				**$50.0**

Surface Transportation Program *(Cost Feasible Plan Revenues = $36.1 million)*				
1	Oaks Mall to Airport Bus Rapid Transit Alternatives Analysis	Oaks Mall to Airport (via Archer Road and Downtown)	NA	$0.4
2	Santa Fe to Oaks Mall Bus Rapid Transit Feasibility Study and Alternatives Analysis	Santa Fe to Oaks Mall	NA	$0.6
3	Streetcar Feasibility Study	Downtown to Butler Plaza via University of Florida	9.0 (One-way)	$1.0
4	Intermodal Center/Park and Ride Lot	(location to be determined)	NA	$1.4
5	Transit Maintenance Facility	NA	NA	$50.0
TOTAL				**$53.4**

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EXHIBIT 8

YEAR 2035 COST FEASIBLE PLAN

INTELLIGENT TRANSPORTATION SYSTEM (ITS) APPENDIX

PROJECT PRIORITY	PROJECT NAME	DESCRIPTION	ESTIMATED COST (2010 DOLLARS)
1	**Interstate 75 Intelligent Transportation System Corridor** Marion County line to Columbia County Line	A. Add Dynamic Message Signs (DMS) to alert motorists of traffic conditions and travel times. B. Add pan-tilt-zoom traffic surveillance cameras for active traffic management of the freeway. This will allow operators at the Gainesville Traffic Management Center (TMC) to alert motorists of existing conditions using the Dynamic Message Signs and the 511 information hotline. C. Add traffic detection technology so automated alerts can be sent to Gainesville Traffic Management Center (TMC) operators when highway speeds drop below a certain threshold as well as for highway traffic studies and travel time collection.	$9,900,000
2	**Regional Transportation System Bus Priority System** Adding signal priority to heavily used bus routes for University of Florida students will make those routes more reliable, thus resulting in higher passenger capacity and fewer vehicles on the road.	***A. Route #9*** **State Road 24 (Archer Road)** from SW 23rd Terrace to SW 23rd Drive **State Road 331 (Williston Road)** from SW 25th Terrace to SW 23rd Street ***B. Route # 20*** **State Road 121 (SW 34th Street)** from Hull Road to SW 20th Avenue ***C. Route# 21*** **State Road 121 (SW 34th Street)** from Hull Road to SW 20th Avenue ***D. Route #35*** **State Road 24 (Archer Road)** from SW 23rd Terrace to State Road 226 (SW 2nd Avenue) **State Road 226 (SW 16th Avenue)** from State Road 24 (Archer Road) to Shealy Drive **State Road 12 (SW 34th Street)** from SW 35th Place to State Road 226 (SW 16th Avenue) **State Road 226 (SW 16th Avenue)** from State Road 121 (SW 34th Street) to SW 23rd Street	$600,000

YEAR 2035 COST FEASIBLE PLAN

INTELLIGENT TRANSPORTATION SYSTEM (ITS) APPENDIX

PROJECT PRIORITY	PROJECT NAME	DESCRIPTION	ESTIMATED COST (2010 DOLLARS)
3	**Dynamic Message Signs on State Highway Arterials** Dynamic message on the arterials will alert drivers of existing traffic conditions, alternate routes, detour routes in the event Interstate 75 is shut down, and travel times.	A. State Road 121 (SW 34th Street) @ SW 20th Avenue (Southbound) B. State Road 121 (SW 34th Street) @ State Road 331 (Eastbound) C. State Road 25 (W 13th Steet) @ State Road 26 (W University Avenue) D. State Road 25 (NW 13th Street) @ State Road 222 (NW 39th Avenue) (Westbound) E. State Road 25 (NW 13th Street) @ State Road 222 (NW 39th Avenue) (Northbound) F. State Road 222 (NW 39th Avenue) @ State Road 93 (Eastbound)	$700,000
4	**Expand Automated Arterial Travel Time System** Expanding the Arterial Travel Time System will provide motorists with more real time information via Google maps or Dynamic Message Signs for actual travel times to various spots in the urban area. Motorists may be able to make a different route choice based on the information they receive. The travel times can also be used for traffic studies to measure development related impacts.	**A. State Road 25 (NW 13th Avenue)** State Road 222 (NW 39th Avenue) to State Road 331 (Williston Road) **B. State Road 121 (SW 34th Street)** NW 16th Avenue to State Road 93 (Interstate 75) Southbound Ramp	$600,000
5	**Travel Demand Management** Information technologies project that addresses travel demand strategies, such as high occupancy vehicle (HOV) lanes, high occupancy toll (HOT) lanes and other travel demand management technologies.	Gainesville Metropolitan Areawide	(to be determined)
GRAND TOTAL INTELLIGENT TRANSPORTATION SYSTEM PROJECTS			**$11,800,000**

NA- Not applicable

EXHIBIT 9

PROJECT COMMENT FORM

YEAR 2035 LONG RANGE TRANSPORTATION PLAN
COST FEASIBLE PLAN
PUBLIC HEARING
OCTOBER 27, 2010
6:00 P.M.

The Metropolitan Transportation Planning Organization welcomes your comments on the proposed Year 2035 Long Range Transportation Plan update. In order for your comments to be addressed by the MTPO at the public hearing, they must be received at the MTPO office by noon on October 27, 2010.

1. Please share your concerns concerning the Year 2035 Long Range Transportation Plan update.

Please Approve Table 2B (PG 153) AS per MtPo staff recomendation. We feel that it is critical that the Archer Road project Gets on the Feasibility List. MTPO has a Responsibility To address Corridor issues along with Transit & Multi modal issues.

If additional space is needed for your comments, please use the back of this form.

2. Please provide your name and address below if you would like to receive future information regarding this project.

Name: JOHN GLANZER

Organization: City of Archer.

Address: P.O. Box 39 16870 SW 134th AVE Archer

Phone: 495-2880

Email: Citymanager@cityofArcher.Com.

For further information or comment, please contact the:
Metropolitan Transportation Planning Organization
Attention: Marlie Sanderson
2009 NW 67th Place
Gainesville, FL 32653
Phone: (352) 955-2200 Fax: (352) 955-2209

NORTH CENTRAL FLORIDA
RECEIVED
OCT 26 2010
REGIONAL PLANNING COUNCIL

Sustainable Transportation Work Group
Meeting Summary, December 9, 2009
1:30 PM-3:00 PM, UAA Conference Room, 260 Stadium

Attendance:

Members present:	Linda Dixon	Erik Lewis	Stephanie Sims
	Scott Fox	Sheri Munn	Dan Connaughton
	Ruth Steiner	Jeff Holcomb	Ron Fuller
	Bob Miller	Julie Frey	Jacob Kain
Members absent:	Allison Fischman	Jon Priest	Anna Prizzia
Guests:	Doug Robinson, RTS		

Welcome and introductions

Members and guests introduced themselves.

Review Meeting Summary – Deferred review of the Nov. 18th mtg. report

Old Business

1. **One Less Car 2009:** Anna Prizzia reported that an article is coming out in the next sustainability newsletter. She said there were some kinks with using the Greenride software this year, but they were very responsive and it worked out well.

2. **TAPS Parking Garage:** Scott Fox reported that the recent Florida Parking Association's conference theme was sustainability. UF's newest garage won an Excellence in Design award.

3. **Bus Rapid Transit:** Doug Robinson reported that the RTS BRT study is wrapping up. He distributed some alternative route maps and surveys, which can be returned to him.

New Business

1. **Campus Master Plan Data Collection Results (Survey and Counts):** Whit Blanton presented preliminary findings of the transportation data collection. Discussion included the following:

   a. Data in the auto-restricted zone should be looked at for the breakdown over time to see the effectiveness of the time restrictions.

   b. Scooters could trigger a count on the count tubes. Data should be evaluated to see if they can be screened out in the vehicle class readings.

   c. Auto occupancy data should be examined by location related to carpool decal locations.

d. Scott is interested in seeing the counts over time. Whit responded that they could produce peak and non-peak summary, and also comparisons with 2004-05 counts.

e. Linda offered that the mode counts at certain entry locations can serve as screenlines. Whit also noted that the MTPO bike/ped screenline counts were collected around campus at about the same time as the fall 2009 UF survey.

f. Ruth Steiner asked about comparing pedestrian count data to the 1994 Corridors to Campus study and Campus Evaluation study.

Other Business

1. Members discussed future agenda items. Other outstanding items include: ZipCar FastFleet, core campus auto-restriction management, carpool program (follow up to 11/09 mtg), bike lockers; bike showers; legal status of electric bikes; bike racks in parking garages; solar electric cars; bike rack standards (Peak Rack evaluation); campus master plan update; and bike registration/commuting.

2. Ruth Steiner reported that she has other students working on projects that may be of interest for future agenda items including covered bicycle parking suitability analysis and bike sharing programs.

Meeting Adjourned 2:40 pm

University of Florida Campus Master Plan, 2010-2020: Transportation Data and Analysis

Transit Planning Forum Minutes

March 16, 2010

Two public workshops to discuss transit issues for the Campus Master Plan update were held at the University of Florida on March 16, 2010 (1:30 and 5:00 PM). Workshop participants marked up maps of the UF area with their suggestions for transit service and completed discussion guides with additional questions on incentives and barriers for using transit to get to and around campus. A summary of comments provided at the workshops is provided below.

Transit Service Enhancements

Timing/Frequency
- Better frequency of service after 4:30 at commuter lot
- Route 10 -- not on time; not early enough buses; increase frequency
- Real time for campus buses online
- Faculty/staff: longer service hours and more service frequency in the peak hours. Many faculty don't ride because of buses ending service too early.

Additional Service Needed:
- NW of campus (north of NW 8th Avenue, east of NW 83rd Street, south of Millhopper Road, west of 441/34th Street)
- Duck Pond neighborhood (north of University Avenue, east of US 441/13th Street, west of Waldo Road, south of NE 23rd Avenue) NW 43rd Street from University Avenue to NW 62nd Avenue (north of Millhopper Road)
- NW 34th Street from University Avenue to US 441/Northwood Village
- US 441 from NW 8th Avenue south toward Williston Road
- Archer Road from US 441 to Butler Plaza
- SW 20th Avenue from SW 34th Street to SW 62nd Blvd
- University Avenue/Newberry Road from US 441 to I-75
- Main campus to Sorority Row
- Center Drive/Museum Road to US 441 via Center Drive, Shands, Archer Road
- Bring a few buses from campus to pick up people on west side (SW 20th Ave) when buses are full
- Full buses at peak hour at these locations: Newell Drive/Museum Road, Center Drive/Museum Road, along SW 20th Avenue west of SW 34th Street, SW 32nd Terrace (south of Archer)

New Service/Connections:
- More direct service and more service in general from The Hub to Fraternity Row
- Shuttle service from main campus to UF East Gainesville campus (on Waldo Road) (between human resources offices)
- Downtown to/from Hilton/conference center

- Sorority Row to/from law school
- Streetcar route should come down SW 5th Street to SW 8th Avenue
- New connections to connect buses (i.e., route 1 and 20/21)
- More similar connections closer to Reitz Union
- New service in employee residential areas
- Downtown/UF to Santa Fe College via US 441 to NW 16th Ave to NW 23rd Ave
- Consider BRT "student" off campus circulators
    - Around apartments on Gainesville Place and Enclave
    - SW 20th Ave (Cabana, Canopy, Lexington)
    - Use for peak hours, more so in morning service.

Transit Facilities

Proposed Transfer Centers:

- At Park and Ride Lot 2 (SW 34th St behind conference center)
- NE corner of University Avenue and US 441
- Newell Drive/south of University Avenue

Park and Ride Lots:

- I-75 and Archer Road
- SW 34th Street/Williston Road
- US 441 south of Williston Road near Florida Trail Association office
- South of Hull Road, east of SW 34th Street
- North of Hull Road, west of SW 34th Street
- Oaks Mall
- SE Hawthorne Road at SE 43rd Street
- University Ave at SE 43rd Street
- Gainesville Jobs Center /NE 54th Place – north of airport east of Waldo Road
- US 441 west of Northwood Village
- US 441 and NW 43rd Street
- US 441 south of SW 16th Avenue, north of Sorority Row

Shelters/Lighting Needed:

- US 441/13th Street between Inner Road and Stadium Road
- Route 10 – SW 4th Avenue and SW 12th Street
- No shelter/bad lighting at US 441 and SW 8th Avenue
- Use solar-powered LED lights at stops

Bus Stops:

- Bus stop at Reitz Union or Museum Road
- Two stops within 20 feet of each other on Stadium Road west of Gale Lemerand Drive

Connectivity Concerns

- Bad transfer location at Newberry Road/proposed BRT (west of I-75) route/express bus
- Problem areas: schools zones on NW 34th Street, US 441 adjacent to UF, SW 34th Street from Radio Road to Archer Road, north-south roads congested

Incentives to using transit

- Greater frequency for people further from campus, especially faculty
- Need reliable arrival times
- Amenities/WiFi on express bus and BRT for business-oriented passengers
- Rainy weather encourages riding the bus vs. riding bike

Barriers to using transit

- No lighting at stops

Policy Issues

- A lot of people will buy parking decals regardless of price because of culture – used to driving everywhere back "home"
- Amenities needed: water fountains, Starbucks at transfers, more bike racks, bus pullout on SR 20
- Park and ride lots needed
- Increase trips on high ridership routes
- Examine timing of campus parking lot decal restriction hours

Vision for Transit?

Have a secondary Campus Hub South of Reitz Union and Museum

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APPENDIX C: 2007 UNIVERSITY OF FLORIDA ZONAL DATA

2007 University of Florida Zonal Data

		2007							2035					
TAZ2000	TAZ2007	Employee Commuter O/B/DAR	Student Commuter G/AD	Commuter Parking Spaces	Visitor Parking Spaces	Residents	Employees	Student Seats	New Employees	Total Employees	New Residents	Total Residents	Notes	
59	312		0	0	0	0	0	0		0		0	Sorority Woods Parking lot	same as 2000 zone
74	305	268	0	268	0		363	1,736		363		0		same as 2000 zone
79	306		0	0	0	572	0	0		0		572		same as 2000 zone
83	378	507	0	507	0	0	1,912	5,292	50	1,962		0	NE corner	same as 2000 zone
85	380	33	0	33	0	0	288	3,434		288		0		
86	239	21	0	21	0	0	12	284		12		0		same as 2000 zone
90	294		0	0	0	0	108	0		108		0	PKY – 1,150 K-12 Students	same as 2000 zone
91	380	679	86	765	9	1,573	76	877		76		1,573		
97	379	107	0	107	0	0	771	3,619	50	821		0	Chemistry	
101	389	53	0	53	0	0	10,012	6,128	100	10,112		0	HSC & Shands	same as 2000 zone
104	385		0	0	0	0	51	92		51		0	Emerson Hall	same as 2000 zone
110	379	273	61	334	0	1,019	1,140	1,906	50	1,190		1,019	Stadium	
112	381	148	0	148	271	0	2,031	6,456		2,031		0		same as 2000 zone
122	474	673	335	1,008	0	0	1,079	2,391	100	1,179		0	New Engineering	same as 2000 zone
125	480	697	749	1,446	0	0	99	236		99		0		same as 2000 zone
126	478	90	32	122	0	2,153	8	0		8		2,153		same as 2000 zone
130	521	0	40	40	1	0	39	9		39		0		same as 2000 zone
141	552	0	0	0	0	442	0	0		0		442	Frat Row	same as 2000 zone
146	374	100	794	894	12	530	323	1,455		323	40	570	Law School	
149	392	190	389	579	1	0	544	482	300	844		0	Lake Alice & Fifield	same as 2000 zone
160	470		0	0	0	0	2	0		2		0	Bee Unit/SW 23 Terr	same as 2000 zone
166	393	108	435	543	0	0	259	0	50	309	670	670	PPD	same as 2000 zone
178	391	84	1,455	1,539	42	0	549	312	100	649		0	Cultural Plaza to Mehrhof	same as 2000 zone
433	240	262	564	826	35	0	765	776		765		0		same as 2000 zone
435	468		0	0	0	0	134	0		134		0		same as 2000 zone
437	242		0	0	0	0	0	0		0		0	VA	same as 2000 zone
440	394	0	0	0	6	607	0	0		0		607	Maguire & UV South	same as 2000 zone
441	395	0	206	206	0	528	40	0		40	200	728	Lakeside	same as 2000 zone
442	183	0	699	699	102	0	154	2	100	254		0	Ortho & Shands Surgical	same as 2000 zone
443	374	14	114	128	0	367	3	0		3	200	567	Corry Village	
444	369		0	0	0	0	0	0		0		0	Pres Res	same as 2000 zone
445	479	234	0	234	0	0	133	163		133		0		same as 2000 zone
446	471	19	49	68	14	0	397	202	300	697		0	SW Research Circle	same as 2000 zone
447	396	0	25	25	0	0	23	0		23		0	Energy Park	same as 2000 zone
449	472	0	1,166	1,166	0	608	5	80		5		608	Hume & Commuter Lot	same as 2000 zone
450	473	980	0	980	887	0	336	0		336		0	Shands Med Plaza	same as 2000 zone
451	523	1,412	330	1,742	0	0	3	0		3		0	Archer Garage	same as 2000 zone
452	522	521	79	600	0	0	452	15		452		0	Shands Admin	same as 2000 zone
453	475	158	0	158	0	0	504	650	100	604		0	Frazier Rogers	same as 2000 zone
454	477	177	0	177	2	1,642	136	0		136		1,642		same as 2000 zone
455	476	613	0	613	670	0	0	0		0		0	Garages 1 & 10	same as 2000 zone
456	372		0	0	0	0	20	0		20		0	Golf Course	same as 2000 zone
460	461		0	0	0	379	0	0		0		379	Tanglewood	same as 2000 zone
466	384	20	0	20	0	0	108	0		108		0	Foundation	same as 2000 zone
Total		**8,441**	**7,608**	**16,049**	**2,052**	**10,420**	**22,879**	**36,597**	**1,300**	**24,179**	**1,110**	**1,110**		

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APPENDIX D: YEAR 2035 ALACHUA COUNTY EXTERNAL MODEL GROWTH

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Alachua County External Traffic Counts by Location

		Gainesville 2007 CUBE								2035 I-75 MP																	
		ZDATA 4	eeTarget 2007			2007 Input	2007 Run 22	2007 Count (2-Way PSWADT)	2007 Volume-Over-Count	2035				2035 Input	2035 I-75 MP					Previous Alachua Model 2025					Count Pr		
Location	TAZ	Int-Ext	EEO	EED	Total EE Trips	Total	Loaded	Count	V-O-C Ratio	Int-Ext	EEO	EED	Total EE Trips	Total	Int-Ext	EEO	EED	Total EE Trips	Loaded	Int-Ext	EEO	EED	Total EE Trips	Loaded	Int-Ext	EEO	EED
I- 75 (North) @ Columbia Co Line	600	12,037	19,232	19,232	38,464	50,501	50,533	50,526	1.00	23,093	21,809	21,809	43,618	66,711	15,908	25,417	25,417	50,833	66,741	-	-	-	-	59,523	-	-	-
CR 241 (North) @ Union Co Line	601	823	194	194	388	1,211	1,219	1,221	1.00	2,275	578	578	1,156	3,431	-	-	-	-	3,453	1,849	451	451	2,751	2,769	-	-	-
SR 121 (North) @ Union Co Line	602	3,243	736	736	1,472	4,715	4,747	4,742	1.00	4,814	1,199	1,199	2,398	7,212	-	-	-	-	7,260	-	-	-	-	6,175	6,124	1,525	1,525
CR 237 (North) @ Bradford Co Line	603	160	13	13	26	186	187	187	1.00	963	26	26	52	1,015	-	-	-	-	1,026	-	-	-	-	136	685	18	18
SR 235 (North) @ Bradford Co Line	604	3,274	172	172	344	3,618	3,619	3,608	1.00	8,065	302	302	604	8,669	-	-	-	-	8,668	-	-	-	-	4,108	4,412	165	165
CR 1475 (North) @ Bradford Co Line	605	336	71	71	142	478	481	480	1.00	703	102	102	204	907	-	-	-	-	913	-	-	-	-	546	639	93	93
U.S. 301 (North) @ Bradford Co Line	606	9,709	7,482	7,482	14,964	24,673	24,676	24,664	1.00	10,525	11,904	11,904	23,808	34,333	-	-	-	-	34,336	-	-	-	-	18,633	10,698	12,099	12,099
CR 325 (North) @ Bradford Co Line	607	766	175	175	350	1,116	1,123	1,125	1.00	1,404	393	393	786	2,190	1,412	395	395	791	2,203	-	-	-	-	1,974	-	-	-
SR 26 (East) @ Putnam Co Line	608	4,254	2,151	2,151	4,302	8,556	8,607	8,557	1.01	6,912	3,450	3,450	6,900	13,812	-	-	-	-	13,743	-	-	-	-	12,275	5,469	2,730	2,730
CR 1474 (East) @ Putnam Co Line	609	248	69	69	138	386	388			500	99	99	198	698	504	100	100	199	703	-	-	-	-	546	-	-	-
SR 20 (East) @ Putnam Co Line	610	4,713	2,430	2,430	4,860	9,573	9,770	9,381	1.04	6,679	5,045	5,045	10,090	16,769	6,705	5,065	5,065	10,129	16,834	-	-	-	-	15,884	-	-	-
U.S. 301 (North) @ Marion Co Line	611	1,343	5,320	5,320	10,640	11,983	11,982	11,979	1.00	1,114	6,062	6,062	12,124	13,238	-	-	-	-	13,236	-	-	-	-	13,171	1,455	7,918	7,918
CR 225 (South) @ Marion Co Line	612	287	28	28	56	343	345			616	17	17	34	650	621	17	17	34	655	-	-	-	-	108	-	-	-
U.S. 441 (South) @ Marion Co Line	613	6,908	413	413	826	7,734	7,733	7,732	1.00	5,508	423	423	846	6,354	-	-	-	-	6,354	5,593	1,502	1,502	8,597	8,600	-	-	-
I- 75 (South) @ Marion Co Line	614	22,844	21,228	21,228	42,456	65,300	65,267	65,263	1.00	43,392	26,871	26,871	53,742	97,134	33,967	31,564	31,564	63,129	97,096	-	-	-	-	72,255	-	-	-
CR 234 (South) @ Marion Co Line	615	2,368	633	633	1,266	3,634	3,657	3,658	1.00	4,909	1,040	1,040	2,080	6,989	4,942	1,047	1,047	2,094	7,036	-	-	-	-	5,478	-	-	-
SR 121 (South) @ Levy Co Line	616	5,895	945	945	1,890	7,785	7,785	7,784	1.00	16,749	2,404	2,404	4,808	21,557	-	-	-	-	21,555	-	-	-	-	17,284	8,314	1,193	1,193
SR 45 (South) @ Levy Co Line	617	3,039	631	631	1,262	4,301	4,332	4,330	1.00	5,107	853	853	1,706	6,813	-	-	-	-	6,864	-	-	-	-	4,638	5,641	942	942
CR 241 (South) @ Levy Co Line	618	1,053	160	160	320	1,373	1,383	1,382	1.00	4,109	362	362	724	4,833	3,835	338	338	676	4,511	-	-	-	-	1,692	-	-	-
SR 24 (Southwest) @ Levy Co Line	619	5,688	1,149	1,149	2,298	7,986	8,043	8,041	1.00	9,094	2,912	2,912	5,824	14,918	-	-	-	-	15,010	-	-	-	-	14,122	8,421	2,697	2,697
CR 337 (South) @ Levy Co Line	620	943	185	185	370	1,313	1,322			2,023	244	244	488	2,511	2,040	246	246	492	2,532	-	-	-	-	1,342	-	-	-
SR 26 (West) @ Gilchrist Co Line	621	7,333	1,133	1,133	2,266	9,599	9,688	9,588	1.01	15,987	3,047	3,047	6,094	22,081	-	-	-	-	22,082	-	-	-	-	18,995	13,435	2,561	2,561
CR 232 (West) @ Gilchrist Co Line	622	1,568	305	305	610	2,178	2,194	2,186	1.00	6,693	1,043	1,043	2,086	8,779	-	-	-	-	8,847	3,515	847	847	5,209	5,244	-	-	-
NW 182 (West) @ Gilchrist Co Line	623	3,046	608	608	1,216	4,262	4,265	4,265	1.00	3,980	1,317	1,317	2,634	6,614	4,005	1,325	1,325	2,650	6,655	-	-	-	-	6,600	-	-	-
U.S. 27 (Northwest) @ Gilchrist Co Line	624	7,098	1,400	1,400	2,800	9,898	9,895	9,897	1.00	11,507	3,455	3,455	6,910	18,417	-	-	-	-	18,410	-	-	-	-	17,503	9,533	2,862	2,862
U.S. 441 (Northwest) @ Columbia Co Line	625	4,757	1,000	1,000	2,000	6,757	6,806	6,804	1.00	6,283	1,909	1,909	3,818	10,101	-	-	-	-	10,164	-	-	-	-	9,927	6,028	1,831	1,831

Alachua County AADT by Location

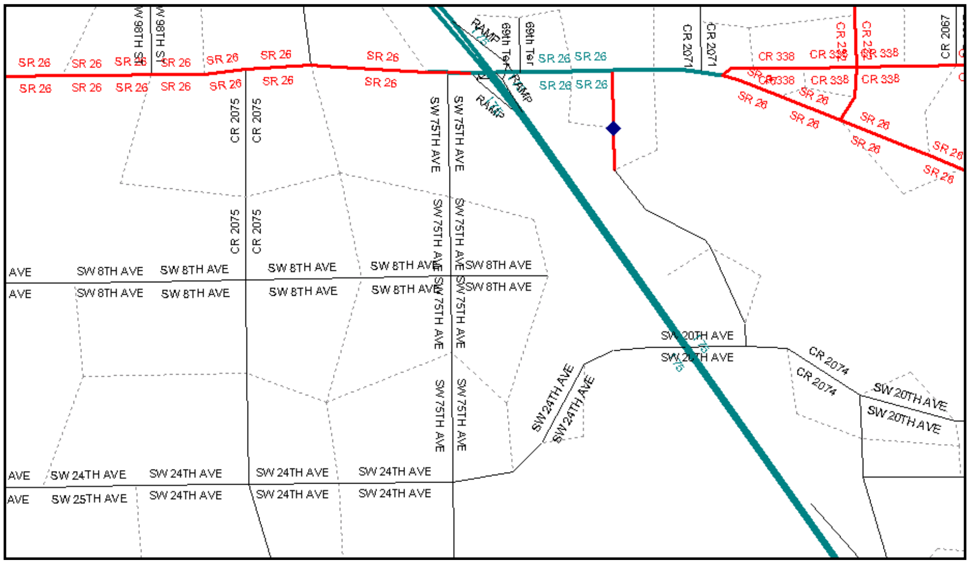
		FDOT 2007 Traffic Library CD								Corradino 2000 External Counts				Alachua County AADT				MOCF
Location	TAZ	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2007
I- 75 (North) @ Columbia County Line	600	29,000	33,000	33,000	33,000	29,500	32,000	38,500	37,000	37,000	38,500	42,000	43,500	43,500	47,000	48,000		0.95
CR 241 (North) @ Union County Line	601								1,201					1,162	1,173	1,184	1,173	0.97
SR 121 (North) @ Union County Line	602	3,400	3,600	4,100	4,500	4,300	4,300	3,900	4,500	4,900	4,600	4,700	5,800	5,100	5,900	4,600		0.97
CR 237 (North) @ Bradford County Line	603								100						185	181	176	0.97
SR 235 (North) @ Bradford County Line	604	2,800	3,200	3,100	3,000	3,200	3,200	3,400	3,300	3,300	3,700	3,500	3,500	3,400	3,300	3,500		0.97
CR 1475 (North) @ Bradford County Line	605								400						483	466	448	0.97
U.S. 301 (North) @ Bradford County Line	606	19,431	19,484	20,000	19,615	20,956	21,840	21,702	21,319	21,727	22,410	22,859	23,276	23,509	23,731	23,677		0.96
CR 325 (North) @ Bradford County Line	607								1,100					1,106		1,091		0.97
SR 26 (East) @ Putnam County Line	608	4,500	5,000	4,800	5,500	5,600	5,400	6,200	6,000	6,400	6,100	6,300	7,000	7,100	6,200	5,900		0.97
CR 1474 (East) @ Putnam County Line	609								401									0.97
SR 20 (East) @ Putnam County Line	610	7,300	7,700	8,300	8,100	8,900	7,700	8,700	8,500	8,400	8,300	9,500	8,200	8,700	7,800	9,100		0.97
U.S. 301 (North) @ Marion County Line	611	9,300	10,400	10,000	10,500	9,800	11,100	11,400	10,000	9,300	11,400	12,000	12,200	11,400	12,400	11,500		0.96
CR 225 (South) @ Marion County Line	612								100									0.97
U.S. 441 (South) @ Marion County Line	613			8,400	8,500	7,900	7,400	7,700	7,300	7,800	7,700	7,600	8,100	7,700	7,500	7,500		0.97
I- 75 (South) @ Marion County Line	614	46,000	46,000	47,000	44,000	41,500	41,000	43,500	43,000	48,500	50,500	51,000	60,000	62,000	59,000	62,000		0.95
CR 234 (South) @ Marion County Line	615								3,401					3,405		3,548		0.97
SR 121 (South) @ Levy County Line[a]	616	6,000	5,650	6,800	5,900	5,950	6,050	6,350	6,300	6,700	6,800	7,050	7,400	7,250	7,000	7,550		0.97
SR 45 (South) @ Levy County Line	617	2,500	3,000	2,400	2,500	2,500	2,500	2,600	2,600	2,800	2,900	2,900	4,300	3,500	4,200	4,200		0.97
CR 241 (South) @ Levy County Line	618								1,300					2,049		2,120		0.97
SR 24 (Southwest) @ Levy County Line	619	4,700	4,900	5,300	5,500	5,800	6,400	6,600	6,100	6,500	7,200	6,700	7,500	7,000	7,200	7,800		0.97
CR 337 (South) @ Levy County Line	620								1,001									0.97
SR 26 (West) @ Gilchrist County Line	621	5,300	7,000	8,400	7,900	8,400	7,900	8,900	9,500	9,600	9,300	9,100	12,000	10,000	9,600	9,300		0.97
CR 232 (West) @ Gilchrist County Line	622								2,701					2,049		2,120		0.97
NW 182 (West) @ Gilchrist County Line	623								3,400					4,106		4,173	4,153	0.97
U.S. 27 (Northwest) @ Gilchrist County Line	624	6,100	6,500	6,500	6,800	7,000	7,200	7,500	8,100	7,900	8,300	8,600	8,300	8,600	7,900	9,600		0.97
U.S. 441 (Northwest) @ Columbia County Line	625	5,000	4,900	5,300	4,800	4,700	4,900	5,300	5,100	5,600	5,400	5,600	6,100	6,100	6,100	6,600		0.97

Alachua County Peak Season Weekday Average Daily Traffic Volumes by Location

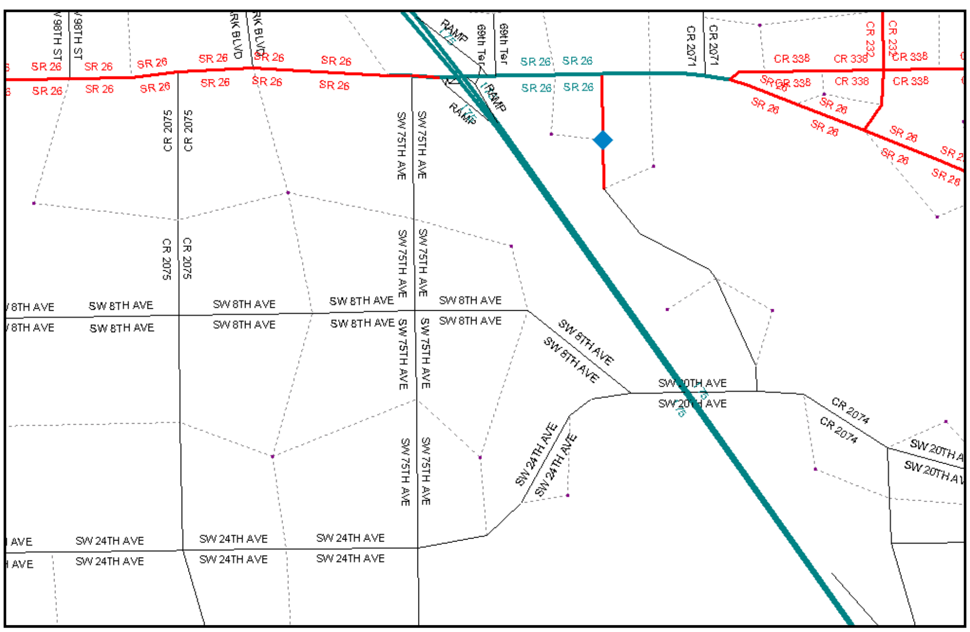
		FDOT 2007 Traffic Library CD								Corradino 2000 External Counts				Alachua County AADT			
Location	**TAZ**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
I- 75 (North) @ Columbia County Line	600	15,263	17,368	17,368	17,368	15,526	16,842	20,263	19,474	19,474	20,263	22,105	22,895	22,895	24,737	25,263	
CR 241 (North) @ Union County Line	601								619					599		610	
SR 121 (North) @ Union County Line	602	1,753	1,856	2,113	2,320	2,216	2,216	2,010	2,320	2,526	2,371	2,423	2,990	2,629	3,041	2,371	
CR 237 (North) @ Bradford County Line	603								52						95	93	91
SR 235 (North) @ Bradford County Line	604	1,443	1,649	1,598	1,546	1,649	1,649	1,753	1,701	1,701	1,907	1,804	1,804	1,753	1,701	1,804	
CR 1475 (North) @ Bradford County Line	605								206						249	240	231
U.S. 301 (North) @ Bradford County Line	606	10,016	10,043	10,309	10,111	10,802	11,258	11,187	10,989	11,199	11,552	11,783	11,998	12,118	12,232	12,205	
CR 325 (North) @ Bradford County Line	607								567					570		562	
SR 26 (East) @ Putnam County Line	608	2,320	2,577	2,474	2,835	2,887	2,784	3,196	3,093	3,299	3,144	3,247	3,608	3,660	3,196	3,041	
CR 1474 (East) @ Putnam County Line	609								207								
SR 20 (East) @ Putnam County Line	610	3,763	3,969	4,278	4,175	4,588	3,969	4,485	4,381	4,330	4,278	4,897	4,227	4,485	4,021	4,691	
U.S. 301 (North) @ Marion County Line	611	4,794	5,361	5,155	5,412	5,052	5,722	5,876	5,155	4,794	5,876	6,186	6,289	5,876	6,392	5,928	
CR 225 (South) @ Marion County Line	612								52								
U.S. 441 (South) @ Marion County Line	613			4,330	4,381	4,072	3,814	3,969	3,763	4,021	3,969	3,918	4,175	3,969	3,866	3,866	
I- 75 (South) @ Marion County Line	614	23,711	23,711	24,227	22,680	21,392	21,134	22,423	22,165	25,000	26,031	26,289	30,928	31,959	30,412	31,959	
CR 234 (South) @ Marion County Line	615								1,753					1,755		1,829	
SR 121 (South) @ Levy County Line	616	3,093	2,912	3,505	3,041	3,067	3,119	3,273	3,247	3,454	3,505	3,634	3,814	3,737	3,608	3,892	
SR 45 (South) @ Levy County Line	617	1,289	1,546	1,237	1,289	1,289	1,289	1,340	1,340	1,443	1,495	1,495	2,216	1,804	2,165	2,165	
CR 241 (South) @ Levy County Line	618								670					665		691	
SR 24 (Southwest) @ Levy County Line	619	2,423	2,526	2,732	2,835	2,990	3,299	3,402	3,144	3,351	3,711	3,454	3,866	3,608	3,711	4,021	
CR 337 (South) @ Levy County Line	620								516								
SR 26 (West) @ Gilchrist County Line	621	2,732	3,608	4,330	4,072	4,330	4,072	4,588	4,897	4,948	4,794	4,691	6,186	5,155	4,948	4,794	
CR 232 (West) @ Gilchrist County Line	622								1,392					1,056		1,093	
NW 182 (West) @ Gilchrist County Line	623								1,753					2,116		2,151	2,141
U.S. 27 (Northwest) @ Gilchrist County Line	624	3,144	3,351	3,351	3,505	3,608	3,711	3,866	4,175	4,072	4,278	4,433	4,278	4,433	4,072	4,948	
U.S. 441 (Northwest) @ Columbia County Line	625	2,577	2,526	2,732	2,474	2,423	2,526	2,732	2,629	2,887	2,784	2,887	3,144	3,144	3,144	3,402	

APPENDIX E: E+C NETWORK SCREEN CAPTURES

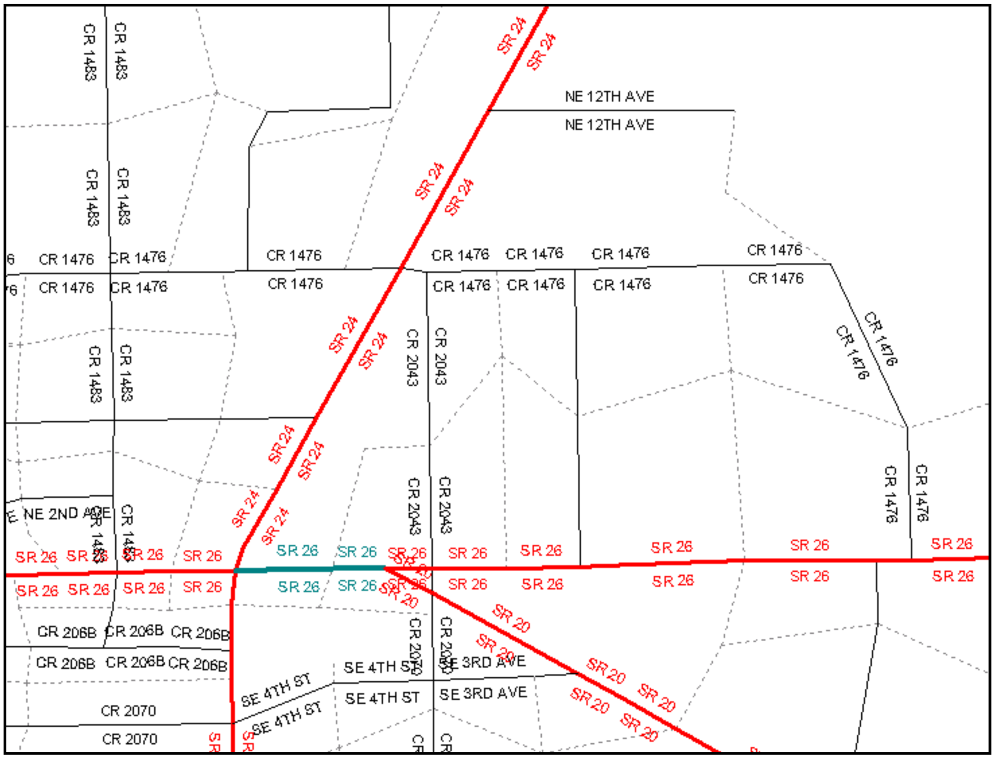
Edit 1 Before



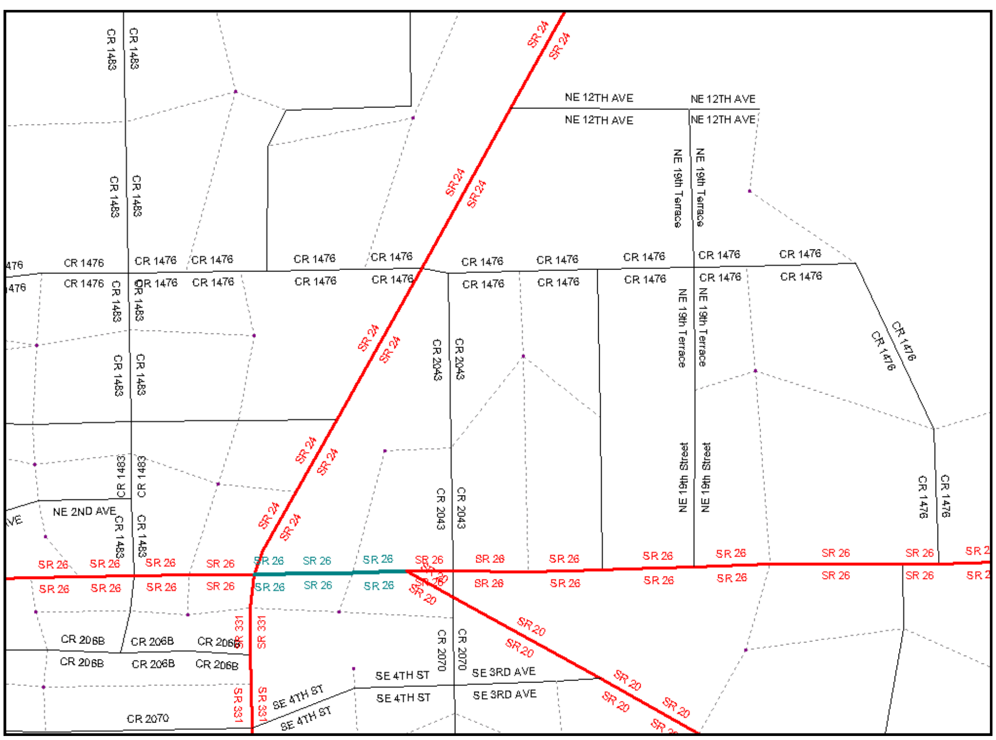
Edit 1 After



Edit 2 Before



Edit 2 After



APPENDIX F: SOCIOECONOMIC DATA FORMAT

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Socioeconomic Data Format

■ ZONEDATA{YEAR}.DBF

Notes: ZONEDATA{YEAR}.DBF in the Gainesville MTPO 2007 represents and combines the previous 2000 MTPO model input files of ZDATA1, ZDATA2, UF Data, PEV (Pedestrian Environment Variable) files.

Please also note that ZONEDATA{YEAR}.DBF is part of GIS TAZ data of ZONEDATA.SHP, together with ZONEDATA.SHX. <u>When editing this ZoneData file, Cube or GIS software must be used.</u>

Attribute List for Population and Household Data

TAZ_2007 – Traffic Analysis Zone (TAZ) number in the Gainesville MTPO 2007 model. Future year ZoneData35.DBF also uses this attribute for TAZs.

SFDU – Number of single-family dwellings units

SPOP – Population in single-family dwellings units

MFDU – Number of multifamily dwellings units (MFDUS)

MPOP – Population in MFDUS

TOTPOP07 – Total population for year 2007 (this attribute is not used by model scripts, instead SPOP and MPOP are used for base year and future year scenarios)

HMDU – Total hotel–motel units

HMPOP – Total population in occupied hotel-motel units

Attribute List for Employment Data(referred to as the ZDATA2 file in 2000 model)

OIEMP – Other industrial employment

MFGEMP – Manufacturing industrial employment

COMEMP – Commercial employment

SERVEMP – Service employment

TOTEMP – Total employment

SCHENR – School enrollment by school location (this excludes any UF or Santa Fe College enrollment)

Attribute List for University of Florida Data

UF_EMP – Number of UF place-of-work employees by TAZ (this variable also is used to reallocate service employment on UF Campus)

UF_DORM_ST – Number of on-campus UF student residents

UF_PARKING – UF commuting parking spaces, excluding on-campus student long-term not

used for commuting (this variable also is used to reallocate service employment on UF Campus)

CLASSROOMS – Number of UF classrooms (model scripts do not directly use this)

CLASSSQFT – Square feet of UF classrooms (model scripts do not directly use this)

SEATS – Number of UF classroom seats

UF-OC-ST – Number of UF off-campus student residents, estimated from student address records

provided by UF

SUB_AREA – Name of city or incorporated area or Alachua if a zone is within the unincorporated area

UFZONES – Identifier that indicates that a zone is on UF Campus when the value is one

Attribute List for Transit PEV (Pedestrian Environment Variable) Data

SIDEWALK – Sidewalk availability (values vary from 0 to 3)

CROSSING – Ease of street crossing (values vary from 0 to 3)

NONMTR_CNN – Nonmotorized connections (values vary from 0 to 3)

SETBACK – Building setbacks (values vary from 0 to 3)

SUM – Sum of four variable values above: SIDEWALK, CROSSING, NONMTR_CNN and SETBACK (SUM needs to be updated manually when any of four variables has been modified by model users)

COMPOSIT – composite PEV value (model scripts do not directly use this)

SELECTZONE – Identifier that indicates that a zone is selected for select zone analysis when the value is one (the model will load selected trips that end at the selected zones, and it will be reported in the attribute of SELZONE_MOTOR in final highway assignment output network of COMBINEDLOADED.NET)

HOTEL – Identifier used in the previous model (model scripts do not directly use this)

Attribute List for Parking Data (previously found in ZDATA2 file in 2000 model)

SHORTPARK – Short-term (3 hour) parking cost (cents)

LONGPARK – Long-term (8 hour) parking cost (cents)

STUDENTPAR – Student (8 hour) parking cost (cents) at UF

Attribute List for Population and Household Variable Data (previously found in ZDATA1 file in 2000 model)

SF_SEA – Percent SFDU not occupied by permanent residents

SF_0V – Percent households having no vehicles in SFDU occupied by permanent residents

SF_1V – Percent households having one vehicle in SFDU occupied by permanent residents

SF_2V – Percent households having two vehicles in SFDU occupied by permanent residents

SF_3V – Percent households having three or more vehicles in SFDU occupied by permanent residents

SF_VAC – Percent SFDU vacant

MF_SEA – Percent MFDU not occupied by permanent residents

MF_0V – Percent households having no vehicles in MFDU occupied by permanent residents

MF_1V – Percent households having one vehicle in MFDU occupied by permanent residents

MF_2V – Percent households having two vehicles in MFDU occupied by permanent residents

MF_3V – Percent households having three or more vehicles in MFDU occupied by permanent residents

MF_VAC – Percent MFDU vacant

HM_POC – Percent hotel-motel units occupied

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APPENDIX G: SPEED CAPACITY ADJUSTMENTS

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Speed Capacity Adjustments and VFACTORS

Table B.1 Speed Capacity Adjustments

LOW AREA TYPE	HIGH AREA TYPE	LOW FACILITY TYPE	HIGH FACILITY TYPE	LOW LANES	HIGH LANES	CAPACITY OPERATOR	CAPACITY	SPEED OPERATOR	SPEED
10	19	21	29	1	9		1	*	1.50
10	19	30	99	1	9		1	*	1.25
10	19	60	64	1	9		1	*	0.80
10	59	40	49	1	9		1	*	1.20
20	39	11	12	1	9		1	+	13.00
31	31	25	25	1	8		1	*	1.20
40	43	11	12	1	9		1	+	11.00
50	52	11	12	1	9		1	+	10.00

Table B.2 Variable Factors

FACILITY TYPE	**(UROAD)** PRACTICAL / ABSOLUTE CAPACITY RATIO	**(CONFAC)** PEAK-to-DAILY CAPACITY FACTOR	BPR (α) LEVEL-of-SERVICE VALUE	BPR (β) EXPONENT
10	0.68	0.1	0.15	6.5
11	0.68	0.09	0.15	6.5
12	0.68	0.09	0.15	6.5
13	1	0.1	0.15	6.5
14	1	0.1	0.15	6.5
15	0.68	0.1	0.15	6.5
16	0.68	0.1	0.15	6.5
17	0.68	0.1	0.15	6.5
18	1	0.1	0.15	6.5
19	0.68	0.1	0.15	6.5
20	0.92	0.1	0.15	5.5
21	0.73	0.1	0.15	5.5
22	0.73	0.1	0.15	5.5
23	0.81	0.1	0.15	5.5
24	0.95	0.1	0.15	5.5
25	0.96	0.1	0.15	5.5
26	1	0.1	0.15	5.5
27	1	0.1	0.15	5.5
28	1	0.1	0.15	5.5
29	1	0.1	0.15	5.5
30	0.92	0.1	0.15	4.5
31	0.68	0.1	0.15	4.5
32	0.81	0.1	0.15	4.5
33	0.95	0.1	0.15	4.5
34	0.88	0.1	0.15	4.5
35	0.68	0.1	0.15	4.5
36	0.81	0.1	0.15	4.5
37	0.95	0.1	0.15	4.5
38	0.96	0.1	0.15	4.5
39	1	0.1	0.15	4.5
40	0.86	0.1	0.15	4.5
41	0.92	0.1	0.15	4.5
42	0.92	0.1	0.15	4.5
43	0.92	0.1	0.15	4.5

44	0.86	0.1	0.15	4.5
45	0.86	0.1	0.15	4.5
46	0.86	0.1	0.15	4.5
47	0.86	0.1	0.15	4.5
48	0.86	0.1	0.15	4.5
49	1	0.1	0.15	4.5
50	1	0.1	0.15	4.5
51	1	0.1	0.15	4.5
52	1	0.1	0.15	4.5
53	1	0.1	0.15	4.5
54	1	0.1	0.15	4.5
55	1	0.1	0.15	4.5
56	1	0.1	0.15	4.5
57	1	0.1	0.15	4.5
58	1	0.1	0.15	4.5
59	1	0.1	0.15	4.5
60	0.96	0.1	0.15	4.5
61	0.68	0.1	0.15	4.5
62	0.81	0.1	0.15	4.5
63	0.95	0.1	0.15	4.5
64	0.96	0.1	0.15	4.5
65	0.68	0.1	0.15	4.5
66	0.81	0.1	0.15	4.5
67	0.95	0.1	0.15	4.5
68	0.96	0.1	0.15	4.5
69	1	0.1	0.15	4.5
70	0.68	0.1	0.15	6.5
71	0.51	0.1	0.15	6.5
72	0.92	0.1	0.15	6.5
73	0.51	0.1	0.15	6.5
74	0.92	0.1	0.15	6.5
75	0.51	0.1	0.15	6.5
76	0.92	0.1	0.15	6.5
77	0.51	0.1	0.15	6.5
78	0.92	0.1	0.15	6.5
79	0.68	0.09	0.15	6.5
80	0.68	0.1	0.3	8.5
81	0.68	0.1	0.3	8.5
82	0.68	0.1	0.3	8.5
83	0.68	0.1	0.3	8.5
84	0.68	0.1	0.3	8.5

85	0.68	0.1	0.3	8.5
86	0.68	0.1	0.3	8.5
87	0.68	0.1	0.3	8.5
88	0.68	0.1	0.3	8.5
89	0.68	0.1	0.3	8.5
90	0.68	0.1	0.15	6.5
91	0.68	0.1	0.15	6.5
92	0.68	0.1	0.15	6.5
93	0.68	0.1	0.15	6.5
94	0.68	0.1	0.15	5.5
95	0.68	0.1	0.15	4.5
96	1	0.1	0.15	6.5
97	0.51	0.1	0.15	6.5
98	0.51	0.1	0.15	6.5
99	1	0.1	0.15	6.5

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APPENDIX H: TURN PENALTIES

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Turn Penalties (TURN.PEN)

Origin Node A	Intersection Node B	Destination Node C	Penalty Set	Penalty Value *
1211	1207	1221	1	-1
1207	1211	1221	1	-1
1214	1211	1218	1	-1
1214	1211	1221	1	-1
1214	1218	1211	1	-1
1240	1239	1241	1	-1
1240	1241	1238	1	-1
1240	1241	1239	1	-1
1242	1241	1238	1	-1
1241	1242	1238	1	-1
1326	1320	1324	1	-1
1326	1324	1320	1	-1
1326	1324	1325	1	-1
1328	1324	1325	1	-1
1324	1328	1325	1	-1
1338	1333	1337	1	-1
1338	1337	1333	1	-1
1338	1337	1339	1	-1
1340	1337	1339	1	-1
1337	1340	1339	1	-1
1468	1467	1472	1	-1
1468	1467	1474	1	-1
1468	1467	5404	1	-1
1472	1467	1474	1	-1
1472	1467	5404	1	-1
1467	1472	1474	1	-1
1468	1472	1467	1	-1
1468	1472	1474	1	-1
1485	1484	1483	1	-1
1485	1484	1486	1	-1
1486	1484	1483	1	-1
1484	1486	1483	1	-1
1485	1486	1483	1	-1
1485	1486	1484	1	-1
1588	1581	1585	1	-1
1581	1588	1585	1	-1
1589	1588	1585	1	-1
1589	1588	1593	1	-1
1589	1593	1588	1	-1
1599	1597	1601	1	-1

1599	1601	1597	1	-1
1599	1601	1602	1	-1
1603	1601	1602	1	-1
1601	1603	1602	1	-1
1737	1733	1740	1	-1
1737	1733	1744	1	-1
1740	1733	1744	1	-1
1733	1740	1744	1	-1
1737	1740	1733	1	-1
1737	1740	1744	1	-1
1752	1750	1749	1	-1
1752	1750	1757	1	-1
1757	1750	1749	1	-1
1750	1757	1749	1	-1
1752	1757	1749	1	-1
1752	1757	1750	1	-1
1828	1825	1830	1	-1
1828	1830	1825	1	-1
1828	1830	1829	1	-1
1831	1830	1829	1	-1
1831	1835	1829	1	-1
1842	1841	1846	1	-1
1842	1846	1841	1	-1
1842	1846	1843	1	-1
1858	1846	1843	1	-1
1846	1858	1843	1	-1
2842	2841	2844	1	-1
2842	2841	2846	1	-1
2844	2841	2846	1	-1
2841	2844	2846	1	-1
2842	2844	2841	1	-1
2842	2844	2846	1	-1
2858	2856	2855	1	-1
2858	2856	2859	1	-1
2859	2856	2855	1	-1
2856	2859	2857	1	-1
2858	2859	2856	1	-1
2858	2859	2857	1	-1
1472	5356	5409	1	-1

*Penalty value of -1 indicates a movement that is prohibited.

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APPENDIX I: FRICTION FRACTORS

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Friction Factors

TIME	HBWFF	HBSHFF	HBSRFF	HBOFF	NHBFF	TK4FF	TKSGLFF	TKTRLRFF	SOVIEFF	HOVIEFF	TKLTIEFF	TKHTIEFF	HBUFF	HDORMUFF
1	25,208	12,6687	12,6687	12,6687	19,8262	9,231	9,048	9,704	222	222	222	222	126,687	126,687
2	21,983	47,324	47,324	47,324	71,259	8,521	8,187	9,418	333	333	333	333	47,324	47,324
3	19,282	25,585	25,585	25,585	37,571	7,866	7,408	9,139	444	444	444	444	25,585	25,585
4	16,953	16,092	16,092	16,092	23,174	7,261	6,703	8,869	555	555	555	555	16,092	16,092
5	14,924	10,997	10,997	10,997	15,577	6,703	6,065	8,607	666	666	666	666	10,997	10,997
6	13,149	7,919	7,919	7,919	11,056	6,188	5,488	8,353	777	777	777	777	7,919	7,919
7	11,591	5,913	5,913	5,913	8,147	5,712	4,966	8,106	888	888	888	888	5,913	5,913
8	10,222	4,534	4,534	4,534	6,170	5,273	4,493	7,866	1,333	1,333	1,333	1,333	4,534	4,534
9	9,018	3,548	3,548	3,548	4,773	4,868	4,066	7,634	1,666	1,666	1,666	1,666	3,548	3,548
10	7,957	2,820	2,820	2,820	3,753	4,493	3,679	7,408	3,333	3,333	3,333	3,333	2,820	2,820
11	7,023	2,271	2,271	2,271	2,991	4,148	3,329	7,189	6,666	6,666	6,666	6,666	2,271	2,271
12	6,199	1,849	1,849	1,849	2,410	3,829	3,012	6,977	7,777	7,777	7,777	7,777	1,849	1,849
13	5,473	1,519	1,519	1,519	1,960	3,535	2,725	6,771	8,888	8,888	8,888	8,888	1,519	1,519
14	4,833	1,257	1,257	1,257	1,607	3,263	2,466	6,570	9,999	9,999	9,999	9,999	1,257	1,257
15	4,267	1,047	1,047	1,047	1,326	3,012	2,231	6,376	9,999	9,999	9,999	9,999	1,047	1,047
16	3,769	877	877	877	1,101	2,780	2,019	6,188	9,999	9,999	9,999	9,999	877	877
17	3,328	739	739	739	919	2,567	1,827	6,005	9,999	9,999	9,999	9,999	739	739
18	2,940	625	625	625	771	2,369	1,653	5,827	9,999	9,999	9,999	9,999	625	625
19	2,597	531	531	531	649	2,187	1,496	5,655	9,999	9999	9,999	9,999	531	531
20	2,294	452	452	452	548	2,019	1,353	5,488	6,666	6,666	6,666	6,666	452	452
21	2,026	387	387	387	465	1,864	1,225	5,326	3,333	3,333	3,333	3,333	387	387
22	1,790	331	331	331	395	1,720	1,108	5,169	1,111	1,111	1,111	1,111	331	331
23	1,582	285	285	285	337	1,588	1,003	5,016	444	444	444	444	285	285
24	1,397	246	246	246	288	1,466	907	4,868	222	222	222	222	246	246
25	1,235	212	212	212	247	1,353	821	4,724	111	111	111	111	212	212
26	1,091	184	184	184	212	1,249	743	4,584	66	66	66	66	184	184
27	964	159	159	159	183	1,153	672	4,449	22	22	22	22	159	159
28	852	138	138	138	157	1,065	608	4,317	16	16	16	16	138	138
29	753	120	120	120	136	983	550	4,190	13	13	13	13	120	120
30	665	105	105	105	118	907	498	4,066	11	11	11	11	105	105
31	588	92	92	92	102	837	450	3,946	16	16	16	16	92	92

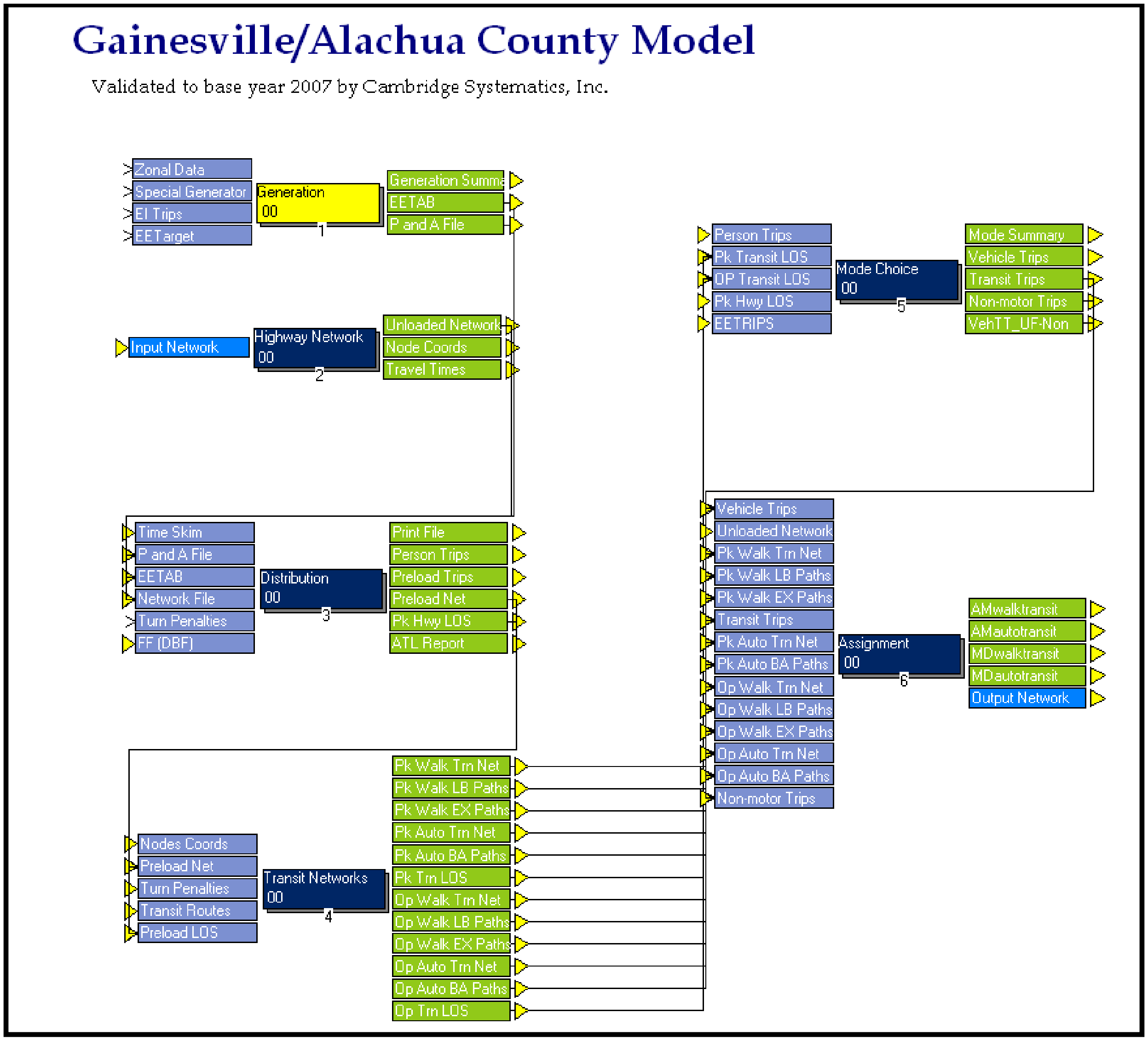
TIME	HBWFF	HBSHFF	HBSRFF	HBOFF	NHBFF	TK4FF	TKSGLFF	TKTRLRFF	SOVIEFF	HOVIEFF	TKLTIEFF	TKHTIEFF	HBUFF	HDORMUFF
32	519	80	80	80	88	773	408	3,829	3	3	3	3	80	80
33	459	70	70	70	77	714	369	3,716	1	1	1	1	70	70
34	406	61	61	61	67	659	334	3,606	1	1	1	1	61	61
35	358	54	54	54	58	608	302	3,499	1	1	1	1	54	54
36	317	47	47	47	51	561	273	3,396	1	1	1	1	47	47
37	280	41	41	41	44	518	247	3,296	1	1	1	1	41	41
38	247	36	36	36	39	478	224	3,198	1	1	1	1	36	36
39	219	32	32	32	34	442	202	3,104	1	1	1	1	32	32
40	193	28	28	28	29	408	183	3,012	1	1	1	1	28	28
41	171	25	25	25	26	376	166	2,923	1	1	1	1	25	25
42	151	22	22	22	23	347	150	2,837	1	1	1	1	22	22
43	133	19	19	19	20	321	136	2,753	1	1	1	1	19	19
44	118	17	17	17	17	296	123	2,671	1	1	1	1	17	17
45	104	15	15	15	15	273	111	2,592	1	1	1	1	15	15
46	92	13	13	13	13	252	101	2,516	1	1	1	1	13	13
47	81	12	12	12	12	233	91	2,441	1	1	1	1	12	12
48	72	11	11	11	10	215	82	2,369	1	1	1	1	11	11
49	64	9	9	9	9	198	74	2,299	1	1	1	1	9	9
50	56	8	8	8	8	183	67	2,231	1	1	1	1	8	8
51	50	7	7	7	7	169	61	2,165	1	1	1	1	7	7
52	44	7	7	7	6	156	55	2,101	1	1	1	1	7	7
53	39	6	6	6	6	144	50	2,039	1	1	1	1	6	6
54	34	5	5	5	5	133	45	1,979	1	1	1	1	5	5
55	30	5	5	5	4	123	41	1,920	1	1	1	1	5	5
56	27	4	4	4	4	113	37	1,864	1	1	1	1	4	4
57	24	4	4	4	3	105	33	1,809	1	1	1	1	4	4
58	21	3	3	3	3	97	30	1,755	1	1	1	1	3	3
59	19	3	3	3	3	89	27	1,703	1	1	1	1	3	3
60	16	3	3	3	2	82	25	1,653	1	1	1	1	3	3
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX J: MODEL FLOWCHART, SCRIPTS AND FILE LOCATIONS

Model Flowchart, Scripts and File Locations

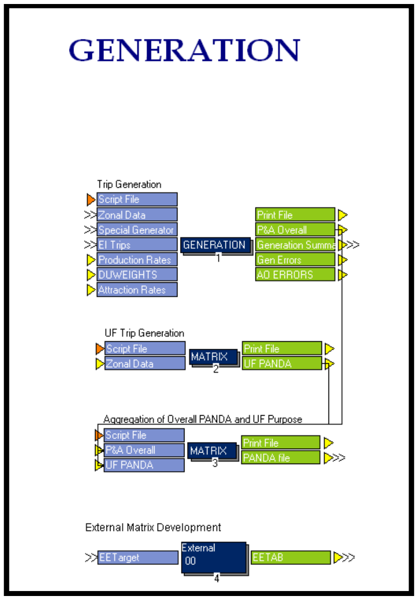
Gainesville 2007 Base Year Model Architecture
File Names, Locations, and Sources

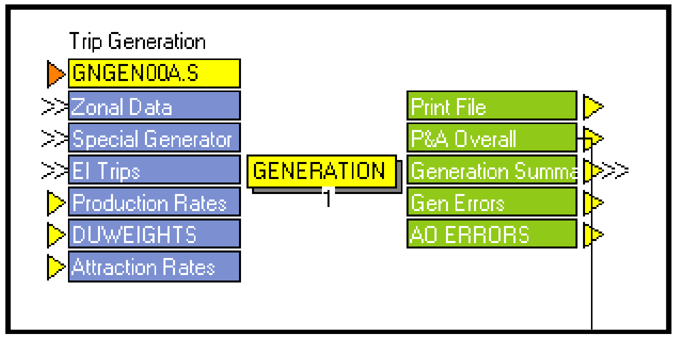
Model Step	File Name	File Format/ Extension	File Type	Folder Location	Initial Source
Trip Generation	ATTRRATES	DBF	Parameters	\Parameters	Olympus
	DUWEIGHTS	DBF	Parameters	\Parameters	Census 2000
	EETARGETS	DBF	Input	\Base\Input	I-75 Master Plan
	EETRIPS	DBF	Input	\Base\Input	I-75 Master Plan
	INTEXT	DBF	Input	\Base\Input	I-75 Master Plan
	PRODRATES	DBF	Parameters	\Parameters	Gainesville 2000
	SPECGEN	DBF	Input	\Base\Input	I-75 Master Plan
	UFData	DBF	Input	\Base\Input	Gainesville 2000
	ZONEDATA	DBF	Input	\Base\Input	MTPO staff
Highway Network	HNET	NET	Input	\Base\Input	I-75 Master Plan
	VFACTORS	CSV	Parameters	\Parameters	Olympus
	SPDCAP	DBF	Parameters	\Parameters	Olympus
	TURN	PEN	Input	\Base\Input	Gainesville 2000
Trip Distribution	FF	DBF	Parameters	\Parameters	Gainesville 2000
Transit Network	AMPNR	DBF	Parameters	\Parameters	Gainesville 2000
	TFACWKLB	FAC	Parameters	\Parameters	Gainesville 2000
	TFACWKPR	FAC	Parameters	\Parameters	Gainesville 2000
	TFACPNR	FAC	Parameters	\Parameters	Gainesville 2000
	TFARES	FAR	Input	\Base\Input	Gainesville 2000
	TRANSPD	DBF	Parameters	\Parameters	Olympus
	TROUTE	LIN	Input	\Base\Input	Gainesville 2000
	TSYS	PTS	Parameters	\Parameters	Gainesville 2000



Gainesville/Alachua County Model
Validated to base year 2007 by Cambridge Systematics, Inc.
Zonal Data
Special Generator
EI Trips
EETarget
Generation
00
1
Generation Summa
EETAB
P and A File
Input Network
Highway Network
00
2
Unloaded Network
Node Coords
Travel Times
Time Skim
P and A File
EETAB
Network File
Turn Penalties
FF (DBF)
Distribution
00
3
Print File
Person Trips
Preload Trips
Preload Net
Pk Hwy LOS
ATL Report
Nodes Coords
Preload Net
Turn Penalties
Transit Routes
Preload LOS
Transit Networks
00
4
Pk Walk Trn Net
Pk Walk LB Paths
Pk Walk EX Paths
Pk Auto Trn Net
Pk Auto BA Paths
Pk Trn LOS
Op Walk Trn Net
Op Walk LB Paths
Op Walk EX Paths
Op Auto Trn Net
Op Auto BA Paths
Op Trn LOS
Person Trips
Pk Transit LOS
OP Transit LOS
Pk Hwy LOS
EETRIPS
Mode Choice
00
5
Mode Summary
Vehicle Trips
Transit Trips
Non-motor Trips
VehTT_UF-Non
Vehicle Trips
Unloaded Network
Pk Walk Trn Net
Pk Walk LB Paths
Pk Walk EX Paths
Transit Trips
Pk Auto Trn Net
Pk Auto BA Paths
Op Walk Trn Net
Op Walk LB Paths
Op Walk EX Paths
Op Auto Trn Net
Op Auto BA Paths
Non-motor Trips
Assignment
00
6
AMwalktransit
AMautotransit
MDwalktransit
MDautotransit
Output Network

Trip Generation Step





GNGEN00A.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=GENERATION PRNFILE="{SCENARIO_DIR}\output\GNGEN00A.PRN" MSG='Trip
Generation'
FILEI LOOKUPI[3] = "{CATALOG_DIR}\parameters\ARATES.DBF"
FILEI LOOKUPI[2] = "{CATALOG_DIR}\parameters\DUWEIGHTS.DBF"
FILEO PRINTO[3] = "{SCENARIO_DIR}\output\AO_ERRORS.PRN"
FILEI LOOKUPI[1] = "{CATALOG_DIR}\parameters\GRATES.dbf"
FILEO PRINTO[2] = "{SCENARIO_DIR}\output\LUERRORS.PRN"
FILEO PRINTO[1] = "{SCENARIO_DIR}\output\GEN_SUM.PRN"
FILEO PAO[1] = "{SCENARIO_DIR}\output\PANDA_TEM.DBF",
 LIST=Z,P[1],P[2],P[3],P[4],P[5],P[6],P[7],P[8],P[9],P[10],P[11],P[12],

A[1],A[2],A[3],A[4],A[5],A[6],A[7],A[8],A[9],A[10],A[11],A[12],DBF=T
FILEI ZDATI[3] = "{SCENARIO_DIR}\input\EITRIPS_{Year}{alt}.DBF"
FILEI ZDATI[2] = "{SCENARIO_DIR}\input\SPGEN_{Year}{alt}.DBF"
FILEI ZDATI[1] = "{SCENARIO_DIR}\input\ZoneData{YEAR}.dbf",
Z=TAZ_2007

; ================================================================
; OVERALL PROGRAM CONTROLS
PARAMETERS ZONES={ZONESA}, ZONEMSG=100
ARRAY CAR=4 CELL=999 CELLT=999 SPFRAC=12
LOOKUP LOOKUPI=1,
       NAME=PRATE, ;TRIP PRODUCTION RATES
         LOOKUP[1]=PAD, RESULT=RATEHBW,
         LOOKUP[2]=PAD, RESULT=RATEHBSH,
         LOOKUP[3]=PAD, RESULT=RATEHBSR,
         LOOKUP[4]=PAD, RESULT=RATEHBO,
       FAIL[1]=0,FAIL[2]=0,FAIL[3]=0, INTERPOLATE=N

LOOKUP LOOKUPI=2,
```

```
        NAME=DUWEIGHT,
          LOOKUP[1]=SIZERANGE, RESULT=PCT1PER, ; %1 PERSON
          LOOKUP[2]=SIZERANGE, RESULT=PCT2PER, ; %2 PERSON
          LOOKUP[3]=SIZERANGE, RESULT=PCT3PER, ; %3 PERSON
          LOOKUP[4]=SIZERANGE, RESULT=PCT4PER, ; %4 PERSON
          LOOKUP[5]=SIZERANGE, RESULT=PCT5PER, ; %5+PERSON
        INTERPOLATE=N, LIST=N

LOOKUP LOOKUPI=3,
        NAME=ARATE, ;TRIP ATTRACTION RATES
        LOOKUP[1]=PURPOSE, RESULT=ARATEOIE,
        LOOKUP[2]=PURPOSE, RESULT=ARATEMFG,
        LOOKUP[3]=PURPOSE, RESULT=ARATECOM,
        LOOKUP[4]=PURPOSE, RESULT=ARATESVC,
        LOOKUP[5]=PURPOSE, RESULT=ARATETOTE,
        LOOKUP[6]=PURPOSE, RESULT=ARATEDUS,
        LOOKUP[7]=PURPOSE, RESULT=ARATESCH,
      FAIL[1]=0,FAIL[2]=0,FAIL[3]=0, INTERPOLATE=N, LIST=N


PROCESS PHASE=ILOOP
; ================================================================
; This is the main program loop to calculate initial production
; and attraction values for each zone for each trip purpose
; ================================================================
LOOP HHTYPE=1,3 ; ESTABLISH VARIABLES FOR EACH HOUSEHOLD CLASS
IF (HHTYPE=1) ; SINGLE-FAMILY
   UNITS=   ZI.1.SFDU
   VACRATE= ZI.1.SF_SEA
   ;VACRATE= ZI.1.SF_SEA+ZI.1.SF_VAC
   PERMVACRATE= ZI.1.SF_VAC
   POP=     ZI.1.SPOP
   CAR[1]=ZI.1.SF_0V/100,  CAR[2]=ZI.1.SF_1V/100,  CAR[3]=ZI.1.SF_2V/100,
CAR[4]=ZI.1.SF_3V/100
ELSEIF (HHTYPE=2); MULTI-FAMILY
   UNITS=   ZI.1.MFDU
   VACRATE= ZI.1.MF_SEA
   ;VACRATE= ZI.1.MF_SEA+ZI.1.MF_VAC
   PERMVACRATE= ZI.1.MF_VAC
   POP=     ZI.1.MFPOP
   CAR[1]=ZI.1.MF_0V/100,  CAR[2]=ZI.1.MF_1V/100,  CAR[3]=ZI.1.MF_2V/100,
CAR[4]=ZI.1.MF_3V/100
ELSEIF (HHTYPE=3) ; HOTEL/MOTEL
   UNITS=   ZI.1.HMDU
   VACRATE= 100-ZI.1.HM_POC
   PERMVACRATE= 100-ZI.1.HM_POC
   POP=     ZI.1.HMPOP
   CAR[1]=0, CAR[2]=1.0, CAR[3]=0, CAR[4]=0
ENDIF

; ================================================================
; From here down, the same equations get applied to each
; household size, auto ownership and dwelling unit type.
; Since it is being run in the HHTYPE loop, the same equations
; will be applied and running totals by zone will be accumulated.
; ================================================================
```

```
VAC=UNITS*(VACRATE/100),  OCC=UNITS-VAC,  GENVAC=UNITS*(PERMVACRATE/100), GENOCC=UNITS-GENVAC

IF (HHTYPE<>3) TOCC=TOCC+OCC ;Keep track of total permenantly occupied DUs
TGOCC=TGOCC+GENOCC ;Keep track of total occupied DUs

IF (OCC>0)
   POPDU=POP/OCC
ELSE
   POPDU=0
ENDIF

IF (POPDU<>0) PDUCNT=PDUCNT+1      ;Keep track of total zones with pop/du ratios
IF (POPDU<>0) PDUTOT=PDUTOT+POPDU  ;total pop/du ratios

IF (POPDU<=1.12) RANGE=1
IF (POPDU>1.12)  RANGE=2
IF (POPDU>1.37)  RANGE=3
IF (POPDU>1.62)  RANGE=4
IF (POPDU>1.87)  RANGE=5
IF (POPDU>2.12)  RANGE=6
IF (POPDU>2.37)  RANGE=7
IF (POPDU>2.62)  RANGE=8
IF (POPDU>2.87)  RANGE=9
IF (POPDU>3.12)  RANGE=10
IF (POPDU>3.37)  RANGE=11
IF (POPDU>3.62)  RANGE=12
IF (POPDU>3.87)  RANGE=13
IF (POPDU>4.12)  RANGE=14
IF (POPDU>4.37)  RANGE=15
IF (POPDU>4.62)  RANGE=16
IF (POPDU>5.99)  RANGE=17
if  (POPDU<1&OCC>0)  PRINT  LIST="POP/DU  ERROR,  HHTYPE=",HHTYPE(1.0)," Population=",POP(4.0C)," Occupied Units=",occ(4.0c), printo=2
  LOOP PR=1,5
   LOOP AU=1,4
         CL=100*PR+10*(AU-1)+HHTYPE
         CELL[CL]=GENOCC*DUWEIGHT(PR,RANGE)*CAR[AU]
         CELLT[CL]=CELLT[CL]+CELL[CL]
         LOOP PURP=1,4
            PRODRATE=PRATE(PURP,CL)
            P[PURP]=P[PURP]+PRATE(PURP,CL)*CELL[CL]
         ENDLOOP
   ENDLOOP
  ENDLOOP
ENDLOOP ; ON HHTYPE

;==========================================================================
;pre-process prior to attractions calculation
;minor employment adjustment using UF_EMP Data
;(1) Subtract UF employment from service employment if UF<Service
 COMEMP=ZI.1.COMEMP
 SERVEMP=ZI.1.SERVEMP
IF(ZI.1.SERVEMP>ZI.1.UF_EMP)
```

```
 SERVEMP=ZI.1.SERVEMP-ZI.1.UF_EMP
 IF(ZI.1.UF_EMP>0)
  PRINT LIST='EMPLOYMENT ZONE', I
 ENDIF
 IF(ZI.1.UF_PARKING>0)
  PRINT LIST='PARKING    ZONE', I
 ENDIF
ELSE
;(2)  Take  the  remaining  UF  service  employment  from  commercial  if
UF>Service
 COMEMP=ZI.1.COMEMP-ZI.1.UF_EMP+ZI.1.SERVEMP
 SERVEMP =  0
  IF (COMEMP<0)
  COMEMP=0
  ENDIF
ENDIF
;(3) Compute total UF parking and employment
; replaced hard-coded zone number below
UF_EMP1=0
UF_PRK1=0
LOOP II=1,{ZONESA}
 UF_EMP1=UF_EMP1+ZI.1.UF_EMP[II]
 UF_PRK1=UF_PRK1+ZI.1.UF_PARKING[II]
ENDLOOP
PRINT LIST=UF_EMP1, '    ', UF_PRK1
;(4)  Allocate  UF  employment  to  parking  TAZs  based  on  proportion  of
parking spaces
 SERVEMP= ZI.1.SERVEMP[I] + UF_EMP1*(ZI.1.UF_PARKING[I]/UF_PRK1)
 TOTALEMP=ZI.1.MFGEMP+ZI.1.OIEMP+COMEMP+SERVEMP
;========================================================================
======


; =================================================================
; Now process the trip purposes that are attraction-based
; =================================================================
; PURPOSE 1 = HBW
; PURPOSE 2 = HBSH
; PURPOSE 3 = HBSR
; PURPOSE 4 = HBO
; PURPOSE 5 = NHB
; PURPOSE 6 = 4 Tire Truck
; PURPOSE 7 = Single-Unit Truck
; PURPOSE 8 = Tractor-trailer

TOTALDUS=ZI.1.SFDU+ZI.1.MFDU

LOOP WPURP=1,8
   A[WPURP]=ARATE(1,WPURP)*ZI.1.MFGEMP+
            ARATE(2,WPURP)*ZI.1.OIEMP+
            ARATE(3,WPURP)*COMEMP+
            ARATE(4,WPURP)*SERVEMP+
            ARATE(5,WPURP)*TOTALEMP+
            ARATE(6,WPURP)*TOTALDUS+
            ARATE(7,WPURP)*ZI.1.SCHENR
ENDLOOP
P[5]=A[5]
```

```
P[6]=A[6]
P[7]=A[7]
P[8]=A[8]

;
.........................................................................
; For the next four purposes,
; Attractions are a function of the total attractions to a zone.
; Since totals aren't known until we finish the initial calculations,
; attractions for these purposes will be initially calculated in the
; ADJUST PHASE.
;
.........................................................................
; PURPOSE 9 = SOV EI
; PURPOSE 10 = HOV EI
; PURPOSE 11 = LDTK EI
; PURPOSE 12 = HDTK EI

; SOV EI
P[9]=ZI.3.TRIPS*(ZI.3.LOVPCT/100)
; HOV EI
P[10]=ZI.3.TRIPS*(ZI.3.HOVPCT/100)
; LDTK EI
P[11]=ZI.3.TRIPS*(ZI.3.LDTPCT/100)
; HDTK EI
P[12]=ZI.3.TRIPS*(ZI.3.HDTPCT/100)


; ================================================================
; NOW PROCESS SPECIAL GENERATORS
;
SPFRAC[1]=ZI.2.HBWP/100
SPFRAC[2]=ZI.2.HBSHP/100
SPFRAC[3]=ZI.2.HBSRP/100
SPFRAC[4]=ZI.2.HBOP/100
SPFRAC[5]=ZI.2.NHBP/100
SPFRAC[6]=ZI.2.TRK4P/100
SPFRAC[7]=ZI.2.TRKSUNITP/100
SPFRAC[8]=ZI.2.TRKCOMBOP/100
SPFRAC[9]=ZI.2.EILOVP/100
SPFRAC[10]=ZI.2.EIHOVP/100
SPFRAC[11]=ZI.2.EILDTP/100
SPFRAC[12]=ZI.2.EIHDTP/100

LOOP PRP=1,12
    IF (ZI.2.PROD='Y','y')
       IF (ZI.2.FUNCTIONP='+') P[PRP]=P[PRP]+VALUEP*SPFRAC[PRP]
       IF (ZI.2.FUNCTIONP='-') P[PRP]=P[PRP]-VALUEP*SPFRAC[PRP]
    ENDIF
ENDLOOP

SPFRAC[1]=ZI.2.HBWA/100
SPFRAC[2]=ZI.2.HBSHA/100
SPFRAC[3]=ZI.2.HBSRA/100
SPFRAC[4]=ZI.2.HBOA/100
SPFRAC[5]=ZI.2.NHBA/100
SPFRAC[6]=ZI.2.TRK4A/100
```

```
SPFRAC[7]=ZI.2.TRKSUNITA/100
SPFRAC[8]=ZI.2.TRKCOMBOA/100
SPFRAC[9]=ZI.2.EILOVA/100
SPFRAC[10]=ZI.2.EIHOVA/100
SPFRAC[11]=ZI.2.EILDTA/100
SPFRAC[12]=ZI.2.EIHDTA/100

LOOP PRP=1,12
    IF (ZI.2.ATTR='Y','y')
       IF (ZI.2.FUNCTIONA='+') A[PRP]=A[PRP]+VALUEA*SPFRAC[PRP]
       IF (ZI.2.FUNCTIONA='-') A[PRP]=A[PRP]-VALUEA*SPFRAC[PRP]
    ENDIF
ENDLOOP

;***********************************************************************
*******************************
;This portion of the script checks to see if any zones with populations
are lacking values for percent
;automobile ownership.  If so, the model crashes and reports the problem
zones so that the user can correct
;the problem.  All zones with populations should have values for percent
automobile ownership or the model
;will not generate Home-Based trips for those zones.

IF (I=1)
  PRINT LIST='\nAUTO OWNERSHIP ERRORS WHERE POPULATION EXISTS BUT AUTO
OWNERSHIP DOES NOT', PRINTO=3
  PRINT LIST='\nCHECK LISTED ZONES IN ZONEDATA{Year} FILES FOR AUTO
OWNERSHIP PERCENTAGES!!!', PRINTO=3
  PRINT LIST='\n', PRINTO=3
  SFAOERROR=0
  MFAOERROR=0
ENDIF
     SFAO=zi.1.SF_0V+zi.1.SF_1V+zi.1.SF_2V+zi.1.SF_3V
     MFAO=zi.1.MF_0V+zi.1.MF_1V+zi.1.MF_2V+zi.1.MF_3V

     IF ((zi.1.SPOP<>0 & SFAO=0)|(zi.1.MFPOP<>0 & MFAO=0))
        PRINT LIST='\n', PRINTO=3
     ENDIF

     IF (zi.1.SPOP<>0 & SFAO=0)
        SFAOERROR=SFAOERROR+1
        PRINT LIST='\nAUTO OWNERSHIP = 0 BUT SF POPULATION > 0 ERROR FOR
ZONE=',I(5.0),PRINTO=3
     ELSE
     ENDIF
     IF (zi.1.MFPOP<>0 & MFAO=0)
        MFAOERROR=MFAOERROR+1
        PRINT LIST='\nAUTO OWNERSHIP = 0 BUT MF POPULATION > 0 ERROR FOR
ZONE=',I(5.0),PRINTO=3
     ELSE
     ENDIF

IF (I={ZONESA})
  PRINT LIST='\n***********Error Report Summary************',
           '\nTOTAL AUTO OWNERSHIP ERRORS FOR SINGLE
FAMILY=',SFAOERROR(8.0C),
```

```
            '\nTOTAL   AUTO   OWNERSHIP   ERRORS   FOR   MULTI   FAMILY=
',MFAOERROR(8.0C), printo=3

IF (SFAOERROR=0 & MFAOERROR=0)  PRINT LIST='\n',
                                '\nTHERE  ARE  NO  AUTO  OWNERSHIP  =  0  BUT
POPULATION > 0 ERRORS', PRINTO=3

  if (SFAOERROR>1) abort
  if (MFAOERROR>1) abort
ENDIF

;**************************************************************************
********************************

; ================================================================

ENDPROCESS

PROCESS PHASE=ADJUST

LOOP PURP=1,12
 IF  (PURP=1)  PRINT  LIST="TRIP  PRODUCTION  AND  ATTRACTION  REPORT  BY
PURPOSE", PRINTO=1
 PRINT  LIST="   Purpose=",PURP(2.0),"   Productions=",P[PURP][0](12.0C),"
Unbalanced Attractions=",A[PURP][0](12.0C), PRINTO=1
ENDLOOP

 PRINT LIST=" ", PRINTO=1

; . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
. . . . . . . . . . . . . . . . . .
; Balancing attractions as similarly done in Olympus model.
BALANCE A2P=1-4
; . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
. . . . . . . . . . . . . . . . . .

TOTSTDATTR=A[1][0]+A[2][0]+A[3][0]+A[4][0]+A[5][0]
A[9]=P[9][0]*(A[1]+A[2]+A[3]+A[4]+A[5])/TOTSTDATTR
A[10]=P[10][0]*(A[1]+A[2]+A[3]+A[4]+A[5])/TOTSTDATTR
A[11]=P[11][0]*(A[7]/A[7][0])
A[12]=P[12][0]*(A[8]/A[8][0])
BALANCE A2P=9-12
LOOP PURP=1,12
 PRINT  LIST="   Purpose=",PURP(2.0),"   Productions=",P[PURP][0](12.0C),"
Balanced Attractions=",A[PURP][0](12.0C), PRINTO=1
ENDLOOP



PTOTAL=P[1][0]+P[2][0]+P[3][0]+P[4][0]+P[5][0]+P[6][0]+P[7][0]+P[8][0]+P[
9][0]+P[10][0]+P[11][0]+P[12][0]

ATOTAL=A[1][0]+A[2][0]+A[3][0]+A[4][0]+A[5][0]+A[6][0]+A[7][0]+A[8][0]+A[
9][0]+A[10][0]+A[11][0]+A[12][0]
```

```
PRINT LIST=" Total"," Productions=",PTOTAL(12.0C)," Attractions=",ATOTAL(12.0C), PRINTO=1
PRINT LIST=" ", PRINTO=1

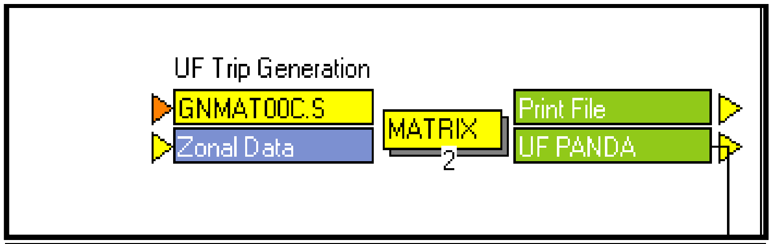
  POPTOT=ZI.1.SPOP[0]+ZI.1.MFPOP[0]
  ALLPOP=POPTOT+ZI.1.HMPOP[0]
  PDUAVG=(POPTOT/TOCC)
  ALPDAG=(ALLPOP/TGOCC)
  TOTSRV=ZI.1.SERVEMP[0]
  TOTCOM=ZI.1.COMEMP[0]
  TOTMFG=ZI.1.MFGEMP[0]
  TOTIND=ZI.1.OIEMP[0]
  TOTEMP=ZI.1.TOTEMP[0]
  EMPPOP=TOTEMP/POPTOT
  SRVRTE=TOTSRV/TOTEMP
  COMRTE=TOTCOM/TOTEMP
  MFGRTE=TOTMFG/TOTEMP
  INDRTE=TOTIND/TOTEMP
  IITRIP=P[1][0]+P[2][0]+P[3][0]+P[4][0]+P[5][0]+P[6][0]+P[7][0]+P[8][0]
  ITPPRM=IITRIP/TOCC
  ITPTOC=IITRIP/TGOCC
  ITPEMP=IITRIP/TOTEMP

PRINT LIST=" Permanent Population = ",POPTOT(12.0C), PRINTO=1
PRINT LIST=" Total Population = ",ALLPOP(12.0C), PRINTO=1
PRINT LIST=" Permanently Occupied Dwelling Units = ",TOCC(12.0C), PRINTO=1
PRINT LIST=" Transient and Permently Occupied Dwelling Units = ",TGOCC(12.0C), PRINTO=1
PRINT LIST=" Total Service Employment = ",TOTSRV(12.0C), PRINTO=1
PRINT LIST=" Total Commercial Employment = ",TOTCOM(12.0C), PRINTO=1
PRINT LIST=" Total Manufacturing Employment = ",TOTMFG(12.0C), PRINTO=1
PRINT LIST=" Total Other Industrial Employment = ",TOTIND(12.0C), PRINTO=1
PRINT LIST=" Total Employment = ",TOTEMP(12.0C), PRINTO=1
PRINT LIST=" Permanent Population per Permenantly Occupied Dwelling Unit =  ",PDUAVG(5.2C), PRINTO=1
PRINT LIST=" Total Population per Total Occupied Dwelling Unit = ",ALPDAG(5.3C), PRINTO=1
PRINT LIST=" Total Employment per Permanent Population = ",EMPPOP(5.3C), PRINTO=1
PRINT LIST=" Service to Total Employment = ",SRVRTE(5.3C), PRINTO=1
PRINT LIST=" Commercial to Total Employment = ",COMRTE(5.3C), PRINTO=1
PRINT LIST=" Manufacturing to Total Employment = ",MFGRTE(5.3C), PRINTO=1
PRINT LIST=" Other Industrial to Total Employment = ",INDRTE(5.3C), PRINTO=1
PRINT LIST=" Internal Person Trips per Permanently Occupied Dwelling Unit = ",ITPPRM(5.3C), PRINTO=1
```

```
PRINT LIST="  Internal Person Trips per Total Occupied Dwelling Units = ",ITPTOC(5.3C), PRINTO=1
PRINT LIST="      Internal Person Trips per Employee = ",ITPEMP(5.3C), PRINTO=1

ENDPROCESS

ENDRUN
```



GNMAT00C.S

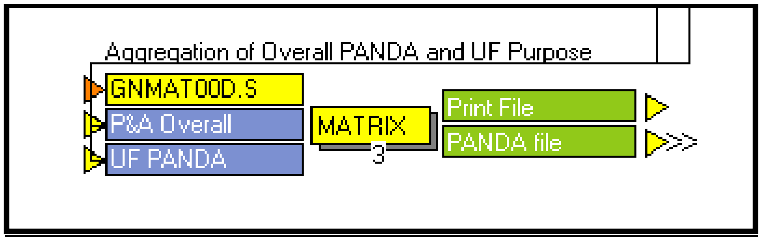
```
; Do not change filenames or add or remove FILEI/FILEO statements using an editor. Use Cube/Application Manager.
RUN PGM=MATRIX PRNFILE="{SCENARIO_DIR}\output\UFGEN.prn" MSG='UF Trip Generation'
FILEI ZDATI[1] = "{SCENARIO_DIR}\input\ZoneData{YEAR}.DBF",
Z=TAZ_2007
FILEO RECO[1] = "{SCENARIO_DIR}\output\UFPANDA.dbf",
               FIELDS=Z,HBUP,HBUA,HDORMUP,HDORMUA,STUPCT,nocarpct,wcarpct

PAR ZONES={ZONESA}

; Trip rates from HH survey
; Off-campus student trips
RO.HBUP = {RATE_HBUP}*ZI.1.UF_OC_ST*{HBO-TF}        ; home-based university PRODS from off-campus (students)
RO.HBUA = {RATE_HBUA}*ZI.1.UF_PARKING*{HBO-TF}      ; home-based university ATTRS from off-campus (parking spaces)
; Campus housing student trips
RO.HDORMUP = {RATE_HDORMUP} *ZI.1.UF_DORM_ST*{HBO-TF}   ; home-based university PRODS from Campus housing (students)
RO.HDORMUA = {RATE_HDORMUA} *ZI.1.SEATS*{HBO-TF}        ; home-based university ATTRS from classroom seats
ufpop = ZI.1.UF_OC_ST + ZI.1.UF_DORM_ST ; UF pop is equal to number of off-campus students plus dorm students
sfpop = ZI.1.SPOP
mfpop = ZI.1.MFPOP
tpop=sfpop+mfpop
sf0 = 0.01*ZI.1.SF_0V
mf0 = 0.01*ZI.1.MF_0V

;Student market share
if (tpop>0)
  RO.STUPCT=ufpop/tpop
  t0=(sf0*sfpop + mf0*mfpop)/tpop
else
  RO.STUPCT=0.0
  t0=0.0
endif
if (STUPCT>1.0) STUPCT=1.0     ; make sure fraction students not greater than 1.0
nocarpct= t0*(1.0-STUPCT)      ; fraction without autos
wcarpct = 1.0-nocarpct-STUPCT ; fraction with autos


WRITE RECO=1
ENDRUN
```



GNMAT00D.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN        PGM=MATRIX        PRNFILE="{SCENARIO_DIR}\output\GNMAT00B.PRN"
MSG='Aggregation of Overall PANDA and UF Purpose'
FILEI ZDATI[2] = "{SCENARIO_DIR}\output\UFPANDA.dbf"
FILEI ZDATI[1] = "{SCENARIO_DIR}\output\PANDA_TEM.DBF"

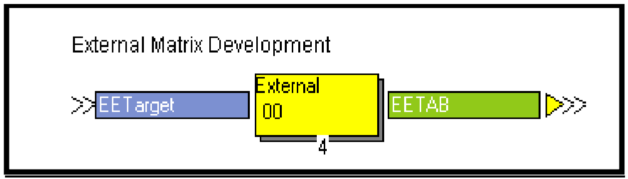
FILEO RECO[1] = "{SCENARIO_DIR}\output\PANDA.DBF",

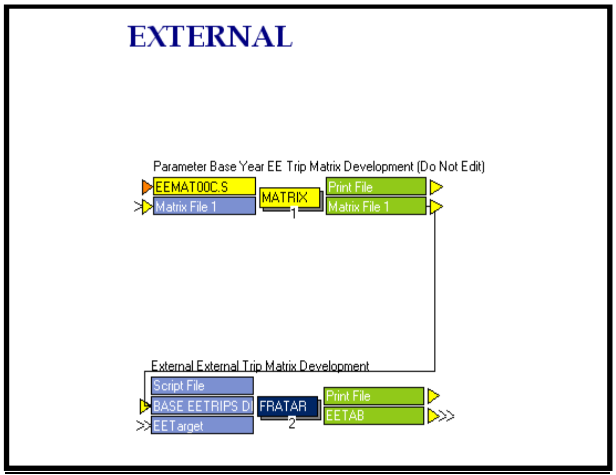
FIELDS=Z,HBWP,HBWA,HBSHP,HBSHA,HBSRP,HBSRA,HBOP,HBOA,NHBP,NHBA,TK4P,TK4A,

SGLUNITP,SGLUNITA,TRKTRLRP,TRKTRLRA,SOVIEP,SOVIEA,HOVIEP,HOVIEA,LDTKIEP,L
DTKIEA,HDTKIEP,HDTKIEA,
          HBUP,HBUA,HDORMUP,HDORMUA

PAR ZONES={ZONESA}

RO.HBWP=ZI.1.P1
RO.HBSHP=ZI.1.P2
RO.HBSRP=ZI.1.P3
RO.HBOP=ZI.1.P4
RO.NHBP=ZI.1.P5
RO.TK4P=ZI.1.P6
RO.SGLUNITP=ZI.1.P7
RO.TRKTRLRP=ZI.1.P8
RO.SOVIEP=ZI.1.P9
RO.HOVIEP=ZI.1.P10
RO.LDTKIEP=ZI.1.P11
RO.HDTKIEP=ZI.1.P12
RO.HBWA=ZI.1.A1
RO.HBSHA=ZI.1.A2
RO.HBSRA=ZI.1.A3
RO.HBOA=ZI.1.A4
RO.NHBA=ZI.1.A5
RO.TK4A=ZI.1.A6
RO.SGLUNITA=ZI.1.A7
RO.TRKTRLRA=ZI.1.A8
RO.SOVIEA=ZI.1.A9
RO.HOVIEA=ZI.1.A10
RO.LDTKIEA=ZI.1.A11
RO.HDTKIEA=ZI.1.A12
RO.HBUP=ZI.2.hbup
RO.HBUA=ZI.2.hbua
RO.HDORMUP=ZI.2.hdormup
RO.HDORMUA=ZI.2.hdormua
WRITE RECO=1
ENDRUN
```

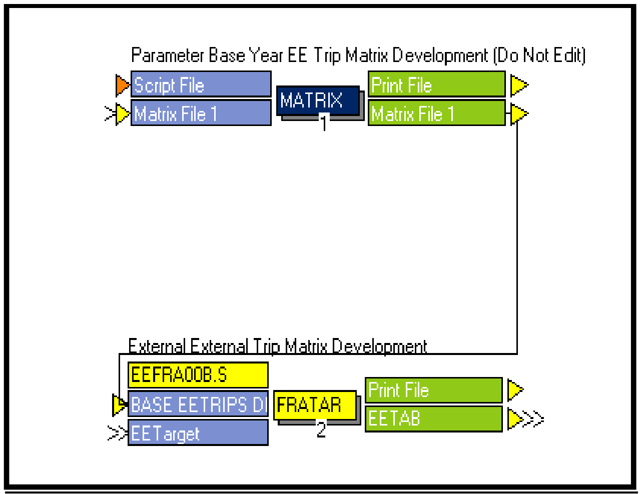




EEMAT00C.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN        PGM=MATRIX        PRNFILE="{SCENARIO_DIR}\output\EEMAT00c.PRN"
MSG='Parameter Base Year EE Trip Matrix Development (Do Not Edit)'
FILEO MATO[1] = "{CATALOG_DIR}\PARAMETERS\BASEYEAR_EETRIPS_DIST.MAT",
MO=1
FILEI MATI[1] = "{CATALOG_DIR}\PARAMETERS\BASEYEAR_EETRIPS_IJ.DBF",
 pattern=ijm:v, fields=orz,dsz,0,autotrips

PAR zones={ZONESA}
mw[1]=mi.1.1
ENDRUN
```



EEFRA00B.S

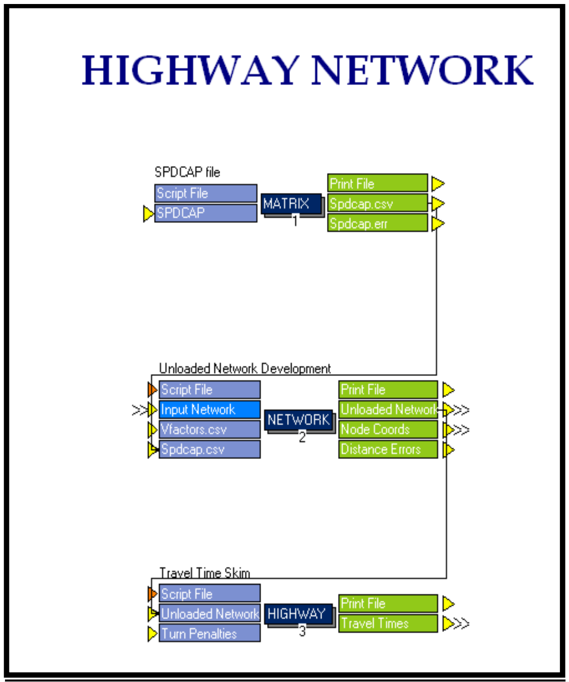
```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=FRATAR PRNFILE="{SCENARIO_DIR}\output\EEFRA00A.PRN" MSG='External
External Trip Matrix Development'
FILEI MATI[1] = "{CATALOG_DIR}\PARAMETERS\BASEYEAR_EETRIPS_DIST.MAT"
FILEO MATO[1] = "{SCENARIO_DIR}\output\EETAB.MAT",
MO=1, name=EETRIPS

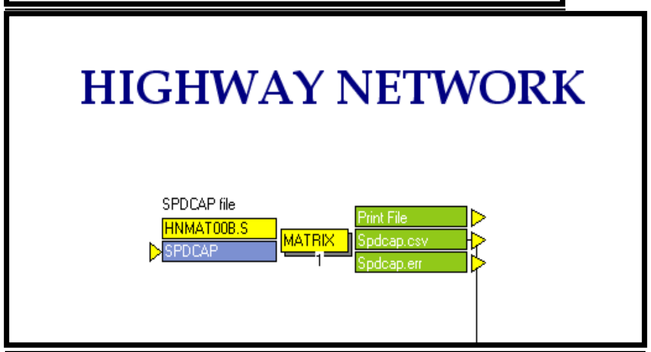
FILEI ZDATI[1] = "{SCENARIO_DIR}\INPUT\eeTARGET20{YEAR}.dbf"

MAXITERS=99
SETPA P[1]=ZI.1.EEO, A[1]=ZI.1.EED MW[1]=MI.1.1
ACOMP=1,PCOMP=1
MARGINS=1

ENDRUN
```

Highway Network Step





<u>HNMAT00B.S</u>

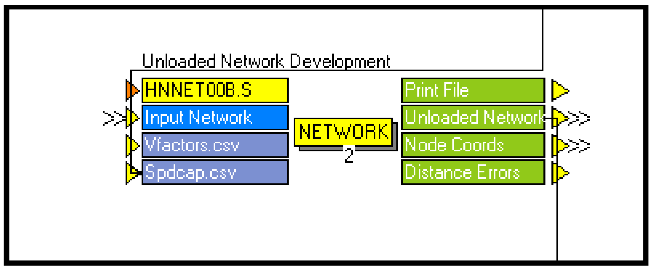
```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=MATRIX PRNFILE="{SCENARIO_DIR}\Output\SPDCAP.OUT" MSG='SPDCAP
file'
FILEO PRINTO[2] = "{SCENARIO_DIR}\OUTPUT\SPDCAP.ERR"
FILEO PRINTO[1] = "{SCENARIO_DIR}\output\SPDCAP.CSV"
FILEI RECI = "{CATALOG_DIR}\PARAMETERS\SPDCAP.DBF"

ARRAY SPDLOOKUP=999999 CAPLOOKUP=999999
    _LATVAL=RI.LOW_ATYPE
    _HATVAL=RI.HIGH_ATYPE
    _LFTVAL=RI.LOW_FTYPE
    _HFTVAL=RI.HIGH_FTYPE
    _LLNVAL=RI.LOW_LANES
    _HLNVAL=RI.HIGH_LANES
    _CAPVAL=RI.CAPACITY
    _SPDVAL=RI.SPEED
    _CAPFUNC=RI.CAP_OPERAN
```

```
    _SPDFUNC=RI.SPEED_OPER
; PLACE INITIAL CAPACITIES & SPEEDS INTO AN ARRAY
IF (_CAPFUNC=' ')
    LOOP ATYPE=_LATVAL,_HATVAL
      LOOP FTYPE=_LFTVAL,_HFTVAL
        LOOP LANES=_LLNVAL,_HLNVAL
        INDEXVAL=ATYPE*10000+FTYPE*100+LANES
        CAPLOOKUP[INDEXVAL]=_CAPVAL
        ENDLOOP
      ENDLOOP
    ENDLOOP
ENDIF
IF (_SPDFUNC=' ')
    LOOP ATYPE=_LATVAL,_HATVAL
      LOOP FTYPE=_LFTVAL,_HFTVAL
        LOOP LANES=_LLNVAL,_HLNVAL
        INDEXVAL=ATYPE*10000+FTYPE*100+LANES
        SPDLOOKUP[INDEXVAL]=_SPDVAL
        ENDLOOP
      ENDLOOP
    ENDLOOP
ENDIF
IF (_CAPFUNC='*')
    LOOP ATYPE=_LATVAL,_HATVAL
      LOOP FTYPE=_LFTVAL,_HFTVAL
        LOOP LANES=_LLNVAL,_HLNVAL
        INDEXVAL=ATYPE*10000+FTYPE*100+LANES
        CAPLOOKUP[INDEXVAL]=CAPLOOKUP[INDEXVAL]*_CAPVAL
        ENDLOOP
      ENDLOOP
    ENDLOOP
ENDIF
IF (_SPDFUNC='*'|_SPDFUNC='+'|_SPDFUNC='-')
    LOOP ATYPE=_LATVAL,_HATVAL
      LOOP FTYPE=_LFTVAL,_HFTVAL
        LOOP LANES=_LLNVAL,_HLNVAL
        INDEXVAL=ATYPE*10000+FTYPE*100+LANES
        IF (_SPDFUNC='*') SPDLOOKUP[INDEXVAL]=SPDLOOKUP[INDEXVAL]*_SPDVAL
        IF (_SPDFUNC='+') SPDLOOKUP[INDEXVAL]=SPDLOOKUP[INDEXVAL]+_SPDVAL
        IF (_SPDFUNC='-') SPDLOOKUP[INDEXVAL]=SPDLOOKUP[INDEXVAL]-_SPDVAL
        ENDLOOP
      ENDLOOP
    ENDLOOP
ENDIF


IF (I=0)
  PRINT LIST='SPEED OR CAPACITY ERRORS WHERE THE SPDCAP RESULT IS LESS
THAN ZERO', PRINTO=2
  LOOP IVAL=1,999999
     IF    (CAPLOOKUP[IVAL]>0|SPDLOOKUP[IVAL]>0)           PRINT    CSV=T,
LIST=IVAL(6.0),CAPLOOKUP[IVAL],SPDLOOKUP[IVAL],PRINTO=1
     IF (CAPLOOKUP[IVAL]<0)
        CAPERRCNT=CAPERRCNT+1
        PRINT   CSV=T,   LIST='SPDCAP   ERROR   FOR   ATFTLN=',IVAL(6.0),'
CAPACITY=',CAPLOOKUP[IVAL](9.2),PRINTO=2
     ENDIF
```

```
      IF (SPDLOOKUP[IVAL]<0)
         SPDERRCNT=SPDERRCNT+1
         PRINT   CSV=T,   LIST='SPDCAP   ERROR   FOR   ATFTLN=',IVAL(6.0),'
SPEED=',SPDLOOKUP[IVAL](9.2),PRINTO=2
      ENDIF
   ENDLOOP
   PRINT LIST='\n************Error Report Summary*************',
              '\nTOTAL LESS THAN ZERO CAPACITY ERRORS=',CAPERRCNT(8.0C),
              '\nTOTAL  LESS  THAN  ZERO  SPEED  ERRORS    =',SPDERRCNT(8.0C),
printo=2
ENDIF
ENDRUN
```



HNNET00B.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN        PGM=NETWORK        PRNFILE="{SCENARIO_DIR}\Output\HNNET00A.PRN"
MSG='Unloaded Network Development'
FILEI LOOKUPI[1] = "{CATALOG_DIR}\parameters\VFACTORS.CSV"
FILEO PRINTO[2] = "{SCENARIO_DIR}\OUTPUT\NETERRORS.PRN"
FILEI LINKI[1] = "{SCENARIO_DIR}\INPUT\HNET20{YEAR}.NET"
FILEI LOOKUPI[2] = "{SCENARIO_DIR}\output\SPDCAP.CSV"
FILEO PRINTO[1] = "{SCENARIO_DIR}\OUTPUT\NODECOOR.CSV"
FILEO NETO = "{SCENARIO_DIR}\OUTPUT\UNLOADED.NET",
 EXCLUDE=LINKCNT


PAR  LIST_ERRS=0 MAX_IP_ERRS=10000
ARRAY _ATCNT=99,_FTCNT=99
LOOKUP, NAME=VFACTORS,
    LOOKUP[1]=1, RESULT=2,
    LOOKUP[2]=1, RESULT=3,
    LOOKUP[3]=1, RESULT=4,
    LOOKUP[4]=1, RESULT=5,
    INTERPOLATE=N, LOOKUPI=1
LOOKUP, NAME=SPDCAP,
    LOOKUP[1]=1, RESULT=2,
    LOOKUP[2]=1, RESULT=3,
    INTERPOLATE=N, LOOKUPI=2

PROCESS  PHASE=INPUT
;Use this phase to modify data as it is read, such as recoding node
numbers.
ENDPROCESS

PROCESS  PHASE=NODEMERGE
   print csv=t list=N(6.0),X,Y, PRINTO=1
```

```
ENDPROCESS


PROCESS  PHASE=LINKMERGE

COMP FTYPE=LI.1.FTYPE
COMP FTYPE1=INT(LI.1.FTYPE/10)
COMP ATYPE=LI.1.ATYPE
COMP ATYPE1=INT(LI.1.ATYPE/10)
COMP LANES=LI.1.LANES


IF (DISTANCE<=0)

  DISTANCE=SQRT((A.X-B.X)^2+(A.Y-B.Y)^2)/{UNITS}
endif

 _MYDIST=SQRT((A.X-B.X)^2+(A.Y-B.Y)^2)/{UNITS}
 _err=(_MYDIST-DISTANCE)/DISTANCE
if(_err >0.01) print list=A,B,_MYDIST(8.4),DISTANCE(8.4) PRINTO=2


; PUT VFACTORS ON NETWORK
  linkcnt=1
  UROADFACTOR=VFACTORS(1,FTYPE)
  CONFAC=VFACTORS(2,FTYPE)
  BPRCOEFFICIENT=VFACTORS(3,FTYPE)
  BPREXPONENT=VFACTORS(4,FTYPE)
; PUT SPEEDS AND CAPACITIES ON NETWORK
  _INDEXVAL=10000*ATYPE+100*FTYPE+Lanes
  CAPACITY=SPDCAP(1,_INDEXVAL)*Lanes

  IF (CAPACITY=0)
     DAILYCAP=999999
  ELSE
      DAILYCAP=(CAPACITY/CONFAC)*UROADFACTOR
  ENDIF


  SPEED=SPDCAP(2,_INDEXVAL)
  IF (SPEED!=0)
    TIME=60*DISTANCE/SPEED
  ENDIF
  if (time<0.01) time=0.01
; PUT WALKTIME ON NETWORK
  WALKTIME=DISTANCE/2.5*60
  _ATCNT[ATYPE]=_ATCNT[ATYPE]+1
  _FTCNT[FTYPE]=_FTCNT[FTYPE]+1
; Put Bike Speed and Time on network
  _spd_red=0
  _ln_red=0
    if (SPEED>12)
       _spd_red=(SPEED-12)/18
    endif
    if (Lanes=2)
       _ln_red=1
    endif
```

```
    if (Lanes>=2)
       _ln_red=2
    endif
    BK_SPD=12 - _spd_red - _ln_red
    if (BK_LNS=1,3) BK_SPD=12
    if (BK_LNS=2) BK_SPD=MAX(BK_SPD,11)
    if (FTYPE1==5) BK_SPD=12
    BK_TIME=60*DISTANCE/BK_SPD



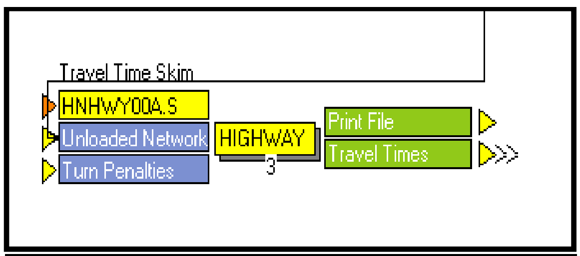
If (FTYPE1==0) DELETE


ENDPROCESS

PROCESS  PHASE=SUMMARY
; Use this phase for combining and reporting of working variables.

ENDPROCESS

ENDRUN
```



HNHWY00A.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=HIGHWAY PRNFILE="{SCENARIO_DIR}\Output\HNHWY00A.PRN" MSG='Travel
Time Skim'
FILEI NETI = "{SCENARIO_DIR}\OUTPUT\UNLOADED.NET"
FILEO MATO[1] = "{SCENARIO_DIR}\OUTPUT\FHSKIMS.{ALT}{YEAR}.MAT",
 MO=1-2,10,99,3     NAME=TIME,DISTANCE,TERMINALTIME,WALKDISTANCE,BIKETIME,
DEC=4*3
FILEI TURNPENI = "{SCENARIO_DIR}\INPUT\TCARDS.PEN"
ARRAY TERM=59 TERMTIME={ZONESA}
PAR ZONEMSG=100
TERM[1]={TERM10}
TERM[2]={TERM20}
TERM[3]={TERM30}
TERM[4]={TERM40}
TERM[5]={TERM50}

PROCESS PHASE=LINKREAD
   IF (A=1-{ZONESA}) TERMTIME[A]=TERM[LI.ATYPE1]
   IF (LI.FTYPE=10-19,49,70-99) ADDTOGROUP=1 ; no walk on freeways, etc.
ENDPROCESS
```

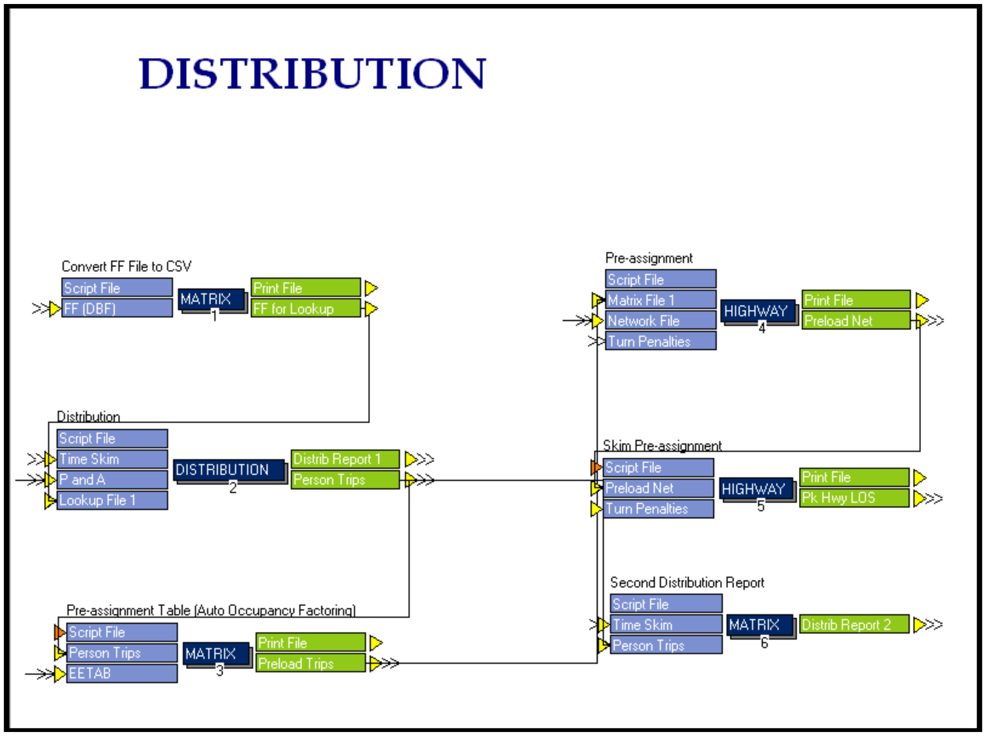
```
PROCESS PHASE=ILOOP
  PATHLOAD PATH=LI.TIME,
      MW[1]=PATHTRACE(LI.TIME,1),NOACCESS=99999,
      MW[2]=PATHTRACE(LI.DISTANCE),NOACCESS=99999, PENI=1
  PATHLOAD PATH=LI.BK_TIME,EXCLUDEGROUP=1,
      MW[3]=PATHTRACE(LI.BK_TIME),NOACCESS=99999
  MW[1][I]=LOWEST(1,2)/4 ; INTRAZONAL TIME = 1/2 THE AVERAGE OF THE TWO NEAREST ZONES
  MW[2][I]=LOWEST(2,2)/4 ; INTRAZONAL DISTANCE = 1/2 THE AVERAGE OF THE TWO NEAREST ZONES
  MW[3][I]=LOWEST(3,2)/4 ; INTRAZONAL BIKE TIME = 1/2 THE AVERAGE OF THE TWO NEAREST ZONES
  MW[10]=TERMTIME[I]+TERMTIME[J] ; BUILDS TERMINAL TIME MATRIX
  PATHLOAD PATH=LI.DISTANCE, MW[99]=PATHTRACE(LI.DISTANCE), EXCLUDEGROUP=1
  MW[99][I]=ROWMIN(99)/2
ENDPROCESS

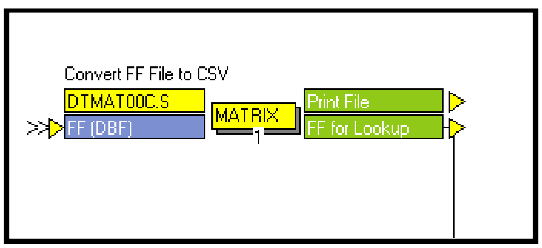

PROCESS PHASE=ADJUST


ENDPROCESS

ENDRUN
```

Trip Distribution Step





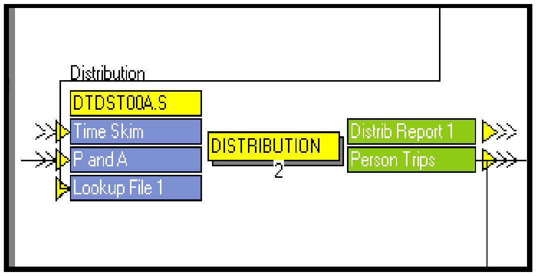
<u>**DTMAT00C.S**</u>

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN  PGM=MATRIX  PRNFILE="{SCENARIO_DIR}\Output\DTMAT00A.PRN"  MSG='Convert
FF File to CSV'
FILEO PRINTO[1] = "{SCENARIO_DIR}\OUTPUT\FF.CSV"
FILEI RECI = "{CATALOG_DIR}\PARAMETERS\FF.DBF"

print                                                                 csv=t,
list=ri.time,ri.hbwff,ri.hbshff,ri.hbsrff,ri.hboff,ri.nhbff,ri.tk4ff,ri.t
ksglff,ri.tktrlrff,

ri.sovieff,ri.hovieff,ri.tkltieff,ri.tkhtieff,ri.hbuff,ri.hdormuff,
printo=1

ENDRUN
```



DTDST00A.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN     PGM=DISTRIBUTION     PRNFILE="{SCENARIO_DIR}\output\DISTRIB.PRN"
MSG='Distribution'
FILEO MATO[1] = "{SCENARIO_DIR}\Output\PTRIPS.MAT",
 MO=1-14,
NAME=HBW,HBSH,HBSR,HBO,NHB,TRUCK4,TRUCKSU,TRUCKTRLR,SOVIE,HOVIE,TRUCKLDIE
,TRUCKHDIE,HBU,HDORMU
FILEI ZDATI[1] = "{SCENARIO_DIR}\output\PANDA.DBF"
FILEI MATI[1] = "{SCENARIO_DIR}\OUTPUT\FHSKIMS.{ALT}{YEAR}.MAT"
FILEI LOOKUPI[1] = "{SCENARIO_DIR}\OUTPUT\FF.CSV"

PAR ZONEMSG=100,  MAXRMSE=.001, MAXITERS=50

setpa p[1]=hbwp,a[1]=hbwa
setpa p[2]=hbshp,a[2]=hbsha
setpa p[3]=hbsrp,a[3]=hbsra
setpa p[4]=hbop,a[4]=hboa
setpa p[5]=nhbp,a[5]=nhba
setpa p[6]=tk4p,a[6]=tk4a
setpa p[7]=sglunitp,a[7]=sglunita
setpa p[8]=trktrlrp,a[8]=trktrlra
setpa p[9]=soviep,a[9]=soviea
setpa p[10]=hoviep,a[10]=hoviea
setpa p[11]=ldtkiep,a[11]=ldtkiea
setpa p[12]=hdtkiep,a[12]=hdtkiea
setpa p[13]=hbup,a[13]=hbua
setpa p[14]=hdormup,a[14]=hdormua

MW[50]=MI.1.TIME+MI.1.TERMINALTIME

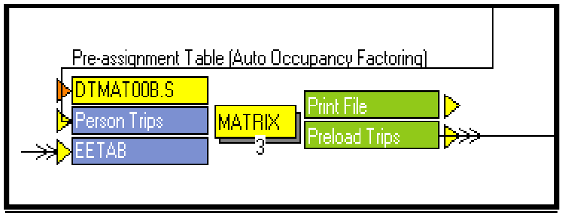
LOOKUP, NAME=FF,
   LOOKUP[1]=1, RESULT=2,
   LOOKUP[2]=1, RESULT=3,
   LOOKUP[3]=1, RESULT=4,
   LOOKUP[4]=1, RESULT=5,
   LOOKUP[5]=1, RESULT=6,
   LOOKUP[6]=1, RESULT=7,
   LOOKUP[7]=1, RESULT=8,
   LOOKUP[8]=1, RESULT=9,
   LOOKUP[9]=1, RESULT=10,
   LOOKUP[10]=1, RESULT=11,
   LOOKUP[11]=1, RESULT=12,
   LOOKUP[12]=1, RESULT=13,
```

```
   LOOKUP[13]=1, RESULT=14,
   LOOKUP[14]=1, RESULT=15,
   INTERPOLATE=Y, lookupi=1

GRAVITY LOS=MW[50], PURPOSE=1, FFACTORS=FF ; HBW
GRAVITY LOS=MW[50], PURPOSE=2, FFACTORS=FF ; HBSH
GRAVITY LOS=MW[50], PURPOSE=3, FFACTORS=FF ; HBSR
GRAVITY LOS=MW[50], PURPOSE=4, FFACTORS=FF ; HBO
GRAVITY LOS=MW[50], PURPOSE=5, FFACTORS=FF ; NHB
GRAVITY LOS=MW[50], PURPOSE=6, FFACTORS=FF ; TK4
GRAVITY LOS=MW[50], PURPOSE=7, FFACTORS=FF ; SGLUNIT
GRAVITY LOS=MW[50], PURPOSE=8, FFACTORS=FF ; TRKTLR
GRAVITY LOS=MW[50], PURPOSE=9, FFACTORS=FF ; SOVIE
GRAVITY LOS=MW[50], PURPOSE=10, FFACTORS=FF ; HOVIE
GRAVITY LOS=MW[50], PURPOSE=11, FFACTORS=FF ; LDTKIE
GRAVITY LOS=MW[50], PURPOSE=12, FFACTORS=FF ; HDTKIE
GRAVITY LOS=MW[50], PURPOSE=13, FFACTORS=FF ; HBU
GRAVITY LOS=MW[50], PURPOSE=14, FFACTORS=FF ; HDORMU

FREQUENCY BASEMW=50,VALUEMW= 1,RANGE=0-60-1.0, TITLE='HBW TLFD'
FREQUENCY BASEMW=50,VALUEMW= 2,RANGE=0-60-1.0, TITLE='HBSH TLFD'
FREQUENCY BASEMW=50,VALUEMW= 3,RANGE=0-60-1.0, TITLE='HBSR TLFD'
FREQUENCY BASEMW=50,VALUEMW= 4,RANGE=0-60-1.0, TITLE='HBO TLFD'
FREQUENCY BASEMW=50,VALUEMW= 5,RANGE=0-60-1.0, TITLE='NHB TLFD'
FREQUENCY BASEMW=50,VALUEMW= 6,RANGE=0-60-1.0, TITLE='TK4 TLFD'
FREQUENCY BASEMW=50,VALUEMW= 7,RANGE=0-60-1.0, TITLE='SGLUNIT TLFD'
FREQUENCY BASEMW=50,VALUEMW= 8,RANGE=0-60-1.0, TITLE='TRKTLR TLFD'
FREQUENCY BASEMW=50,VALUEMW= 9,RANGE=0-60-1.0, TITLE='SOVIE TLFD'
FREQUENCY BASEMW=50,VALUEMW=10,RANGE=0-60-1.0, TITLE='HOVIE TLFD'
FREQUENCY BASEMW=50,VALUEMW=11,RANGE=0-60-1.0, TITLE='LDTKIE TLFD'
FREQUENCY BASEMW=50,VALUEMW=12,RANGE=0-60-1.0, TITLE='HDTKIE TLFD'
FREQUENCY BASEMW=50,VALUEMW=13,RANGE=0-60-1.0, TITLE='HBU TLFD'
FREQUENCY BASEMW=50,VALUEMW=14,RANGE=0-60-1.0, TITLE='HDORMU TLFD'


ENDRUN
```

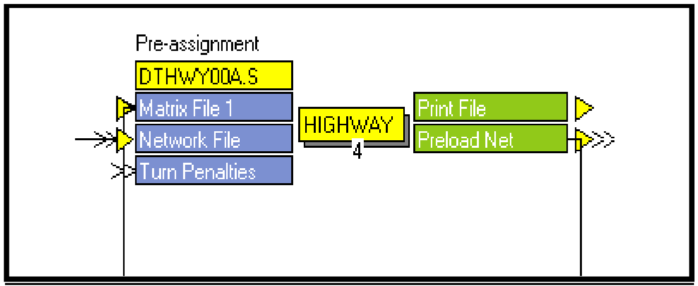


DTMAT00B.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=MATRIX PRNFILE="{SCENARIO_DIR}\Output\DTMAT00B.PRN" MSG='Pre-
assignment Table (Auto Occupancy Factoring)'
FILEI MATI[2] = "{SCENARIO_DIR}\output\EETAB.MAT"
FILEI MATI[1] = "{SCENARIO_DIR}\Output\PTRIPS.MAT"
FILEO MATO[1] = "{SCENARIO_DIR}\output\HTTAB.TEM.MAT",
 MO=1, NAME=PRELOADVEH

; The MATRIX module does not have any explicit phases.  The module does
run within an implied ILOOP
; where I is the origin zones.  All user statements in the module are
processed once for each origin.
; Matrix computation (MW[#]=) are solved for all values of J for each I.
Thus for a given origin zone I
; the values for all destination zones J are automatically computed.  The
user can control the computations
; at each J by using a JLOOP.
PAR ZONEMSG=100
MW[1]=(MI.1.1+MI.1.1.T)*0.5*{AOFAC1}+
(MI.1.2+MI.1.2.T)*0.5*{AOFAC2}+
(MI.1.3+MI.1.3.T)*0.5*{AOFAC3}+
(MI.1.4+MI.1.4.T)*0.5*{AOFAC4}+
(MI.1.5+MI.1.5.T)*0.5*{AOFAC1}+
(MI.1.6+MI.1.6.T)*0.5+
(MI.1.7+MI.1.7.T)*0.5+
(MI.1.8+MI.1.8.T)*0.5+
(MI.1.9+MI.1.9.T)*0.5+
(MI.1.10+MI.1.10.T)*0.5+
(MI.1.11+MI.1.11.T)*0.5+
(MI.1.12+MI.1.12.T)*0.5+
 mi.2.EETRIPS+
(MI.1.13+MI.1.13.T)*0.5*{AOFACU}  ; HBU
;(MI.1.14+MI.1.14.T)*0.5    ; HDORMU - don't include here because these
are mostly not auto.

ENDRUN
```



DTHWY00A.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN  PGM=HIGHWAY  PRNFILE="{SCENARIO_DIR}\Output\DTHWY00A.PRN"  MSG='Pre-
assignment'
FILEI NETI = "{SCENARIO_DIR}\OUTPUT\UNLOADED.NET"
FILEO NETO = "{SCENARIO_DIR}\OUTPUT\PRELOAD.NET"
FILEI TURNPENI = "{SCENARIO_DIR}\input\TCARDS.PEN"
FILEI MATI[1] = "{SCENARIO_DIR}\output\HTTAB.TEM.MAT"

PAR ZONEMSG=100,  MAXITERS=50

PROCESS PHASE=LINKREAD
; USE THE USER SUPPLIED ALPHA AND BETA FOR THE BPR CURVE
  IF (LI.BPRCOEFFICIENT=0)
     LW.BPRCOEFFICIENT=0.15
  ELSE
     LW.BPRCOEFFICIENT=LI.BPRCOEFFICIENT
  ENDIF
  IF (LI.BPREXPONENT=0)
     LW.BPREXPONENT=4.0
  ELSE
     LW.BPREXPONENT=LI.BPREXPONENT
  ENDIF
  IF (LI.CAPACITY=0)
     LW.DAILYCAP=999999
  ELSE
      LW.DAILYCAP=(LI.CAPACITY/li.confac)*li.uroadfactor
  ENDIF
  IF (LI.TIME=0)
     LW.FFTIME=0.00001
  ELSE
     LW.FFTIME=LI.TIME
  ENDIF
C=LW.DAILYCAP
T0=LW.FFTIME
IF (LI.FTYPE=49) ADDTOGROUP=1

ENDPROCESS

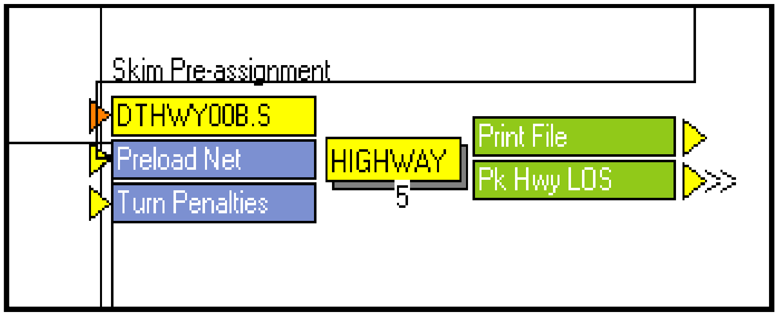


PROCESS PHASE=ILOOP
  MW[1]=MI.1.PRELOADVEH
  PATHLOAD PATH=TIME, VOL[1]=MW[1],EXCLUDEGROUP=1,PENI=1
```

```
ENDPROCESS


PROCESS PHASE=ADJUST
  FUNCTION         TC[1]=T0*(1+LW.BPRCOEFFICIENT*(V/C)^LW.BPREXPONENT)   ;
congested time equation, no toll model in place
ENDPROCESS

ENDRUN
```



DTHWY00B.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=HIGHWAY PRNFILE="{SCENARIO_DIR}\Output\DTHWY00B.PRN" MSG='Skim
Pre-assignment'
FILEI NETI = "{SCENARIO_DIR}\OUTPUT\PRELOAD.NET"
FILEO MATO[1] = "{SCENARIO_DIR}\OUTPUT\RHSKIMS.MAT",
 MO=1-2,10, NAME=TIME,DISTANCE,TERMINALTIME
FILEI TURNPENI = "{SCENARIO_DIR}\input\TCARDS.PEN"
ARRAY TERM=59 TERMTIME={ZONESA}
PAR ZONEMSG=100
TERM[1]={TERM10}
TERM[2]={TERM20}
TERM[3]={TERM30}
TERM[4]={TERM40}
TERM[5]={TERM50}

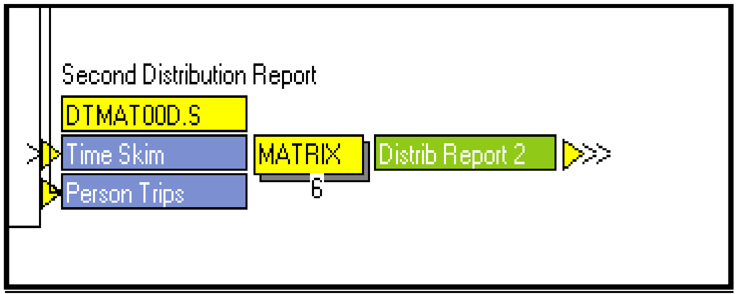
PROCESS PHASE=LINKREAD
   IF (A=1-{ZONESA}) TERMTIME[A]=TERM[LI.ATYPE1] ; BUILDS TERMINAL TIME
ARRAY (KDK fixed again)
ENDPROCESS


PROCESS PHASE=ILOOP
  PATHLOAD PATH=LI.TIME,
      MW[1]=PATHTRACE(LI.TIME_1,1),NOACCESS=99999,
      MW[2]=PATHTRACE(LI.DISTANCE),NOACCESS=99999, PENI=1
  MW[1][I]=LOWEST(1,2)/4 ; INTRAZONAL TIME = 1/2 THE AVERAGE OF THE TWO
NEAREST ZONES
  MW[2][I]=LOWEST(2,2)/4 ; INTRAZONAL DISTANCE = 1/2 THE AVERAGE OF THE
TWO NEAREST ZONES
  MW[10]=TERMTIME[I]+TERMTIME[J] ; BUILDS TERMINAL TIME MATRIX
ENDPROCESS


PROCESS PHASE=ADJUST


ENDPROCESS

ENDRUN
```



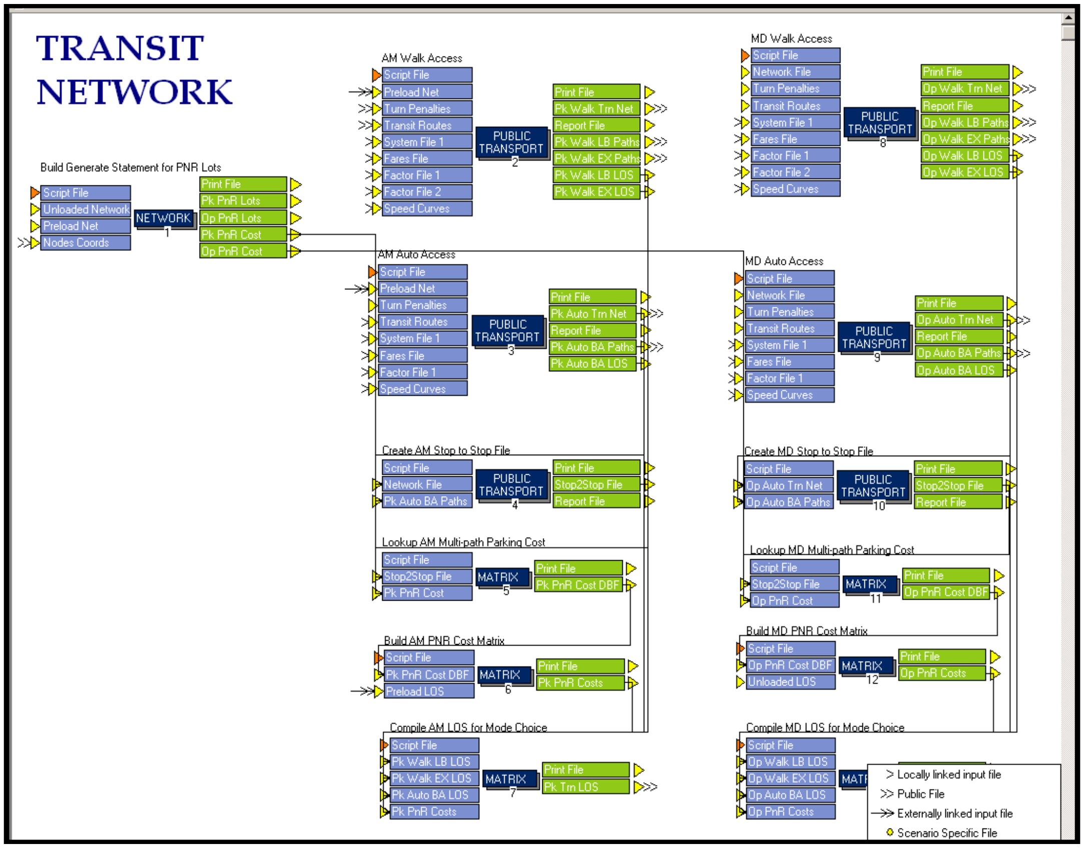
DTMAT00D.S

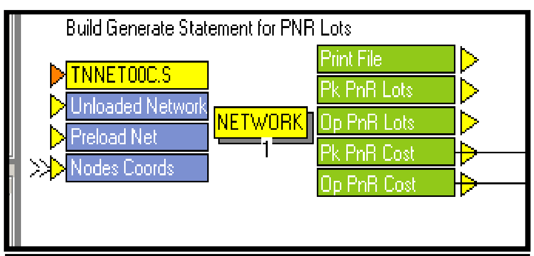
```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN  PGM=MATRIX  PRNFILE="{SCENARIO_DIR}\output\DISTRIB2.PRN"  MSG='Second
Distribution Report'
FILEI MATI[2] = "{SCENARIO_DIR}\Output\PTRIPS.MAT"
FILEI MATI[1] = "{SCENARIO_DIR}\OUTPUT\FHSKIMS.{ALT}{YEAR}.MAT"

MW[50]=MI.1.TIME+MI.1.TERMINALTIME
MW[1]  = MW[50]*MI.2.HBW
MW[2]  = MW[50]*MI.2.HBSH
MW[3]  = MW[50]*MI.2.HBSR
MW[4]  = MW[50]*MI.2.HBO
MW[5]  = MW[50]*MI.2.NHB
MW[6]  = MW[50]*MI.2.TRUCK4
MW[7]  = MW[50]*MI.2.TRUCKSU
MW[8]  = MW[50]*MI.2.TRUCKTRLR
MW[9]  = MW[50]*MI.2.SOVIE
MW[10]= MW[50]*MI.2.HOVIE
MW[11]= MW[50]*MI.2.TRUCKLDIE
MW[12]= MW[50]*MI.2.TRUCKHDIE
MW[13]= MW[50]*MI.2.HBU
MW[14]= MW[50]*MI.2.HDORMU


ENDRUN
```

Transit Network Step





TNNET00C.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN  PGM=NETWORK  PRNFILE="{SCENARIO_DIR}\output\TNNET00A.PRN"  MSG='Build
Generate Statement for PNR Lots'
FILEI LOOKUPI[1] = "{SCENARIO_DIR}\output\NODECOOR.csv"
FILEI LINKI[2]  = "{SCENARIO_DIR}\output\PRELOAD.NET"
FILEI LINKI[1]  = "{SCENARIO_DIR}\output\UNLOADED.NET"
FILEO PRINTO[4]  = "{SCENARIO_DIR}\output\OPPNRCOST.CSV"
FILEO PRINTO[3]  = "{SCENARIO_DIR}\output\PKPNRCOST.CSV"
FILEO PRINTO[2]  = "{SCENARIO_DIR}\output\MD_STATDATA.CSV"
FILEO PRINTO[1]  = "{SCENARIO_DIR}\output\AM_STATDATA.CSV"
ARRAY  STATSTOP=99999  STATNUMB=99999,  statspaces=99999,  PNRTERM=99999,
KNRTERM=99999, nrz=99999
```

```
; add in nearest centroid lookup for auto cost to stations HWYOPCOST

PROCESS PHASE=NODEMERGE
; put nodes, x and y coordinates into memory for lookup nearest TAZ
question
lookup  lookupi=1,name=netcoord,  lookup[1]=1,  result=2,  lookup[2]=1,
result=3, fail=0

; extract am station info from network for later calculations
IF (AMUSEFLAG=1)

workstat=N
workstatx=netcoord(1,workstat,0)
workstaty=netcoord(2,workstat,0)
mindist=999.99
loop _ww=1,{ZONESA}
  zx=netcoord(1,_ww,0)
  zy=netcoord(2,_ww,0)
  if (_ww!=workstat) dist=sqrt((workstatx-zx)^2+(workstaty-zy)^2)/{units}
  if (dist<mindist) mindist=dist, nearestzone=_ww
endloop

 PRINT
form=5.0,list="GENERATE,COST=(li.distance),MINCOST=12*1.0,MAXCOST=12*",pn
rsvcarea(5.2L),

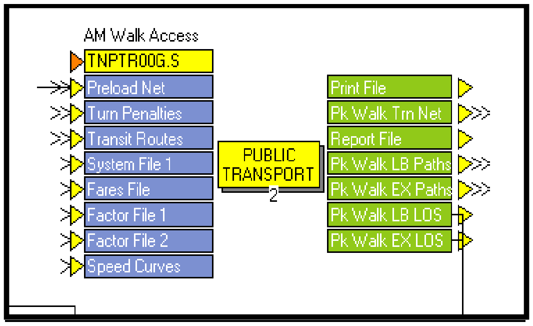
",EXTRACTCOST=(li.TIME_1),LIST=F,DIRECTION=1,NTLEGMODE=2,FROMNODE=1-
{ZONESA},TONODE=",N,PRINTO=1
 PRINT CSV=T, LIST=N(6.0),AMPNRCOST,NEARESTZONE(6.0) PRINTO=3
endif
; extract md station info from network for later calculations
IF (MDUSEFLAG=1)

workstat=N
workstatx=netcoord(1,workstat,0)
workstaty=netcoord(2,workstat,0)
mindist=999.99
loop _ww=1,{ZONESA}
  zx=netcoord(1,_ww,0)
  zy=netcoord(2,_ww,0)
  if (_ww!=workstat) dist=sqrt((workstatx-zx)^2+(workstaty-zy)^2)/{units}
  if (dist<mindist) mindist=dist, nearestzone=_ww
endloop


 PRINT
form=5.0,list="GENERATE,COST=(li.distance),MINCOST=12*1.0,MAXCOST=12*",pn
rsvcarea(5.2L),

",EXTRACTCOST=(li.TIME),LIST=F,DIRECTION=1,NTLEGMODE=2,FROMNODE=1-
{ZONESA},TONODE=",N,PRINTO=2
 PRINT CSV=T, LIST=N(6.0),MDPNRCOST,NEARESTZONE(6.0) PRINTO=4
endif

ENDPROCESS
ENDRUN
```



TNPTR00G.S

```
;     Script     for     program     PUBLIC     TRANSPORT     in     file
"C:\FSUTMS\DISTRICT2\ALACHUA\TNPTR00C.S"
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN   PGM=PUBLIC   TRANSPORT   PRNFILE="{SCENARIO_DIR}\output\TNPTR00D.PRN"
MSG='AM Walk Access'
FILEI NETI = "{SCENARIO_DIR}\OUTPUT\PRELOAD.NET"
FILEI LINEI[1] = "{SCENARIO_DIR}\input\troute20{YEAR}.lin"
FILEI TURNPENI = "{SCENARIO_DIR}\input\TCARDS.PEN"
FILEI LOOKUPI[1] = "{CATALOG_DIR}\PARAMETERS\SPDCRV.CSV"
FILEO MATO[2] = "{SCENARIO_DIR}\output\WALKPREMAM.MAT",
 MO=1-11,
NAME=TIME1M,TIME2M,TIME3M,TIME4M,TIME6M,TIME8M,IWAIT,XWAIT,IVTT,OVTT,FARE
FILEO MATO[1] = "{SCENARIO_DIR}\output\WALKAM.MAT",
 MO=1-11,
NAME=TIME1M,TIME2M,TIME3M,TIME4M,TIME6M,TIME8M,IWAIT,XWAIT,IVTT,OVTT,FARE
FILEO REPORTO = "{SCENARIO_DIR}\output\TNPTR00C.PRN"
FILEI FACTORI[2] = "{CATALOG_DIR}\Parameters\ALACHUAWKPREM.FAC"
FILEI FACTORI[1] = "{CATALOG_DIR}\PARAMETERS\ALACHUAWLB.FAC"
FILEI FAREI = "{CATALOG_DIR}\parameters\ALACHUA.FAR"
FILEO ROUTEO[2] = "{SCENARIO_DIR}\output\WALKPREMAM.RTE",
 REPORTI=1-{zonesa}, REPORTJ={cbdzone}
FILEO ROUTEO[1] = "{SCENARIO_DIR}\output\WALKLBAM.RTE",
 REPORTI=1-{zonesa}, REPORTJ={cbdzone}
FILEI SYSTEMI = "{CATALOG_DIR}\PARAMETERS\ALACHUA.PTS"
FILEO NETO = "{SCENARIO_DIR}\output\TNETWALKAM.NET"
PARAMETERS TRANTIME=(LI.TIME_1*1.5), ;GENERIC TRANSIT VS. AUTO RUN TIME
           TRANTIME[4]=LW.LBTIME,     ; MODE SPECIFIC TRANSIT VS. AUTO RUN
TIME
           TRANTIME[6]=LW.EBTIME,     ; CREATED THROUGH A LOOKUP FUNCTION
           TRANTIME[8]=LW.RLTIME,
           FARE=F, USERCLASSES=1-2,  HDWAYPERIOD=1  MAPSCALE={UNITS}

REPORT LINES=T

;PROCESS PHASE=NODEREAD
; loops over all nodes computes node based scalar and array variables
(Optional)


;ENDPROCESS
```

```
;
PROCESS PHASE=LINKREAD
   LW.WALKTIME=60*LI.DISTANCE/{walkspeed}
   IF (LI.TIME_1>0) LW.SPEED=60*LI.DISTANCE/LI.TIME_1
   LOOKUP,  NAME=CURVES,  LOOKUP[1]=1,  RESULT=2,  LOOKUP[2]=1,  RESULT=3,
LOOKUP[3]=1, RESULT=4,
           INTERPOLATE=Y, LOOKUPI=1
   IF (LI.FTYPE=10-19,80-99) ; FREE FLOW CONDITIONS FOR ALL
       LW.LBCURVE=1,LW.EBCURVE=1,LW.RLCURVE=1
   ELSEIF  (LI.FTYPE=20-79&LI.ATYPE=10-19)  ;  BUSSES  HITTING  RESISTANCE,
RAIL NO CONFLICTS (GRADE SEP)
       LW.LBCURVE=2,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF  (LI.FTYPE=20-79&LI.ATYPE=20-29)  ;  BUSSES  HITTING  RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=3,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF  (LI.FTYPE=20-79&LI.ATYPE=30-39)  ;  BUSSES  HITTING  RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=3,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF  (LI.FTYPE=20-79&LI.ATYPE=40-49)  ;  BUSSES  HITTING  RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=2,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF  (LI.FTYPE=20-79&LI.ATYPE=50-59)  ;  BUSSES  HITTING  RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=2,LW.EBCURVE=1,LW.RLCURVE=1
   ENDIF
       LW.LBSPEED=CURVES(LW.LBCURVE,LW.SPEED)
       LW.EBSPEED=CURVES(LW.EBCURVE,LW.SPEED)
       LW.RLSPEED=CURVES(LW.RLCURVE,LW.SPEED)
       LW.LBTIME=60*LI.DISTANCE/LW.LBSPEED
       LW.EBTIME=60*LI.DISTANCE/LW.EBSPEED
       LW.RLTIME=60*LI.DISTANCE/LW.RLSPEED
       TRANTIME[4]=LW.LBTIME
       TRANTIME[6]=LW.EBTIME
       TRANTIME[8]=LW.RLTIME

ENDPROCESS

PROCESS PHASE=DATAPREP
; WALK ACCESS
  GENERATE, COST=(LW.WALKTIME),MAXCOST=103*24.0,LIST=T,NTLEGMODE = 1,
            DIRECTION=1, FROMNODE=1-{zonesa}, TONODE=1000-99999
; WALK EGRESS
  GENERATE, COST=(LW.WALKTIME),MAXCOST=103*24.0,LIST=T,NTLEGMODE=101,
            DIRECTION=2, FROMNODE=1-{zonesa}, TONODE=1000-99999
; WALK CONNECTORS
  GENERATE,     COST=(LW.WALKTIME),MAXCOST=103*12,LIST=T,NTLEGMODE      =
3,DIRECTION=3,
            FROMNODE=1000-99999, TONODE=1000-99999


ENDPROCESS

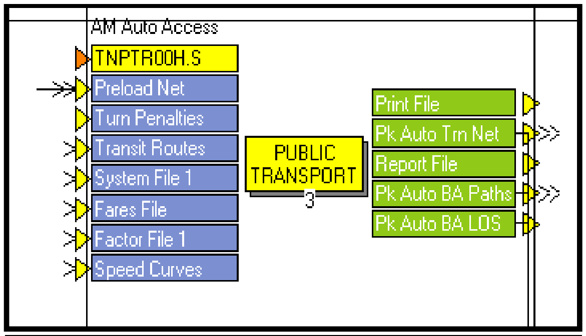

PROCESS PHASE=SKIMIJ
  MW[1]=TIMEA(0,1,101)
  MW[2]=TIMEA(0,2,102)
  MW[3]=TIMEA(0,3)
```

```
  MW[4]=TIMEA(0,4)
  MW[5]=TIMEA(0,6)
  MW[6]=TIMEA(0,8)
  MW[7]=IWAITA(0)
  MW[8]=XWAITA(0)
  MW[9]=TIMEA(0,TMODES)
  MW[10]=TIMEA(0,NTMODES)
  MW[11]=FAREA(0,ALLMODES)


;VARIOUS THINGS THAT CAN BE SKIMMED
/*
  COMPCOST(RouteSet)        Skims Composite Costs
  ValOfChoice(RouteSet)     Skims Value of Choice
  IWAITA(RouteSet)          Skims Initial Wait Times Actual
  XWAITA(RouteSet)          Skims Transfer Wait Times Actual
  IWAITP(RouteSet)          Skims Initial Wait Times Perceived
  XWAITP(RouteSet)          Skims Initial Transfer Times Perceived
  TIMEA(RouteSet, Mode)     Skims Travel Time Actual
  TIMEP(RouteSet, Mode)     Skims Travel Time Perceived
  XFERPENA(RouteSet, Mode)  Skims Transfer Penalty Actual
  XFERPENP(RouteSet, Mode)  Skims Transfer Penalty Actual
  DIST(RouteSet, Mode)      Skims Distance
  BRDINGS(RouteSet, Mode)   Skims Number of Boardings (xfers+1)
  BESTJRNY                  Skims Best Journey Times
  FAREA(RouteSet, Mode)     Skims Fares in Monetary units
  FAREP(RouteSet, Mode)     Skims Fares in Generalized Time units
*/

ENDPROCESS


ENDRUN
```



TNPTR00H.S

```
;     Script     for     program     PUBLIC     TRANSPORT     in     file
"C:\FSUTMS\DISTRICT2\ALACHUA\TNPTR00D.S"
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN   PGM=PUBLIC   TRANSPORT   PRNFILE="{SCENARIO_DIR}\output\TNPTR00G.PRN"
MSG='AM Auto Access'
FILEI NETI = "{SCENARIO_DIR}\OUTPUT\PRELOAD.NET"
FILEI LOOKUPI[1] = "{CATALOG_DIR}\PARAMETERS\SPDCRV.CSV"
FILEI TURNPENI = "{SCENARIO_DIR}\input\TCARDS.PEN"
FILEO REPORTO = "{SCENARIO_DIR}\output\TNPTR00F.PRN"
FILEO MATO[1] = "{SCENARIO_DIR}\output\AUTOAM.MAT",
 MO=1-11,
NAME=TIME1M,TIME2M,TIME3M,TIME4M,TIME6M,TIME8M,IWAIT,XWAIT,IVTT,OVTT,FARE
FILEI FACTORI[1] = "{CATALOG_DIR}\PARAMETERS\ALACHUAPNR.FAC"
FILEI FAREI = "{CATALOG_DIR}\parameters\ALACHUA.FAR"
FILEO ROUTEO[1] = "{SCENARIO_DIR}\output\AUTOALLAM.RTE",
 REPORTI=1-{zonesa}, REPORTJ={cbdzone}
FILEI SYSTEMI = "{CATALOG_DIR}\PARAMETERS\ALACHUA.PTS"
FILEO NETO = "{SCENARIO_DIR}\output\TNETAUTOAM.NET"
FILEI LINEI[1] = "{SCENARIO_DIR}\input\troute20{YEAR}.lin"
PARAMETERS TRANTIME=(LI.TIME_1*1.5), ;GENERIC TRANSIT VS. AUTO RUN TIME
           TRANTIME[4]=LW.LBTIME,     ; MODE SPECIFIC TRANSIT VS. AUTO RUN
TIME
           TRANTIME[6]=LW.EBTIME,     ; CREATED THROUGH A LOOKUP FUNCTION
           TRANTIME[8]=LW.RLTIME,
           FARE=F, USERCLASSES=1,     MAPSCALE={UNITS}

           HDWAYPERIOD=1

REPORT LINES=T

;PROCESS PHASE=NODEREAD
; loops over all nodes computes node based scalar and array variables
(Optional)


;ENDPROCESS
;
PROCESS PHASE=LINKREAD
   LW.WALKTIME=60*LI.DISTANCE/{walkspeed}
   IF (LI.TIME_1>0) LW.SPEED=60*LI.DISTANCE/LI.TIME_1
```

```
   LOOKUP,  NAME=CURVES,  LOOKUP[1]=1,  RESULT=2,  LOOKUP[2]=1,  RESULT=3,
LOOKUP[3]=1, RESULT=4,
           INTERPOLATE=Y, LOOKUPI=1
   IF (LI.FTYPE=10-19,80-99) ; FREE FLOW CONDITIONS FOR ALL
       LW.LBCURVE=1,LW.EBCURVE=1,LW.RLCURVE=1
   ELSEIF  (LI.FTYPE=20-79&LI.ATYPE=10-19)  ;  BUSSES  HITTING  RESISTANCE,
RAIL NO CONFLICTS (GRADE SEP)
       LW.LBCURVE=2,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF  (LI.FTYPE=20-79&LI.ATYPE=20-29)  ;  BUSSES  HITTING  RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=3,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF  (LI.FTYPE=20-79&LI.ATYPE=30-39)  ;  BUSSES  HITTING  RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=3,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF  (LI.FTYPE=20-79&LI.ATYPE=40-49)  ;  BUSSES  HITTING  RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=2,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF  (LI.FTYPE=20-79&LI.ATYPE=50-59)  ;  BUSSES  HITTING  RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=2,LW.EBCURVE=1,LW.RLCURVE=1
   ENDIF
       LW.LBSPEED=CURVES(LW.LBCURVE,LW.SPEED)
       LW.EBSPEED=CURVES(LW.EBCURVE,LW.SPEED)
       LW.RLSPEED=CURVES(LW.RLCURVE,LW.SPEED)
       LW.LBTIME=60*LI.DISTANCE/LW.LBSPEED
       LW.EBTIME=60*LI.DISTANCE/LW.EBSPEED
       LW.RLTIME=60*LI.DISTANCE/LW.RLSPEED
       TRANTIME[4]=LW.LBTIME
       TRANTIME[6]=LW.EBTIME
       TRANTIME[8]=LW.RLTIME

ENDPROCESS

PROCESS PHASE=DATAPREP
; AUTO ACCESS
READ,
 FILE = "{SCENARIO_DIR}\OUTPUT\AM_STATDATA.CSV"
; WALK EGRESS
  GENERATE, COST=(LW.WALKTIME),MAXCOST=103*24.0,LIST=T,NTLEGMODE=101,
            DIRECTION=2, FROMNODE=1-{zonesa}, TONODE=1000-99999
; WALK CONNECTORS
  GENERATE,     COST=(LW.WALKTIME),MAXCOST=103*12,LIST=T,NTLEGMODE     =
3,DIRECTION=3,
            FROMNODE=1000-99999, TONODE=1000-99999


ENDPROCESS

;PROCESS PHASE=MATI
; manipulates input and work matrices prior to processing each Origin
zone, I (Optional)


;ENDPROCESS

;PROCESS PHASE=SELECTIJ
```

```
; allows finer selection of zone pairs, IJ, for Route Evaluation, and the
setting
; or revising of trips for Loading (Optional)


;ENDPROCESS

PROCESS PHASE=SKIMIJ
  MW[1]=TIMEA(0,1,101)
  MW[2]=TIMEA(0,2,102)
  MW[3]=TIMEA(0,3)
  MW[4]=TIMEA(0,4)
  MW[5]=TIMEA(0,6)
  MW[6]=TIMEA(0,8)
  MW[7]=IWAITA(0)
  MW[8]=XWAITA(0)
  MW[9]=TIMEA(0,TMODES)
  MW[10]=TIMEA(0,NTMODES)
  MW[11]=FAREA(0,ALLMODES)


;VARIOUS THINGS THAT CAN BE SKIMMED
/*
  COMPCOST(RouteSet)        Skims Composite Costs
  ValOfChoice(RouteSet)     Skims Value of Choice
  IWAITA(RouteSet)          Skims Initial Wait Times Actual
  XWAITA(RouteSet)          Skims Transfer Wait Times Actual
  IWAITP(RouteSet)          Skims Initial Wait Times Perceived
  XWAITP(RouteSet)          Skims Initial Transfer Times Perceived
  TIMEA(RouteSet, Mode)     Skims Travel Time Actual
  TIMEP(RouteSet, Mode)     Skims Travel Time Perceived
  XFERPENA(RouteSet, Mode)  Skims Transfer Penalty Actual
  XFERPENP(RouteSet, Mode)  Skims Transfer Penalty Actual
  DIST(RouteSet, Mode)      Skims Distance
  BRDINGS(RouteSet, Mode)   Skims Number of Boardings (xfers+1)
  BESTJRNY                  Skims Best Journey Times
  FAREA(RouteSet, Mode)     Skims Fares in Monetary units
  FAREP(RouteSet, Mode)     Skims Fares in Generalized Time units

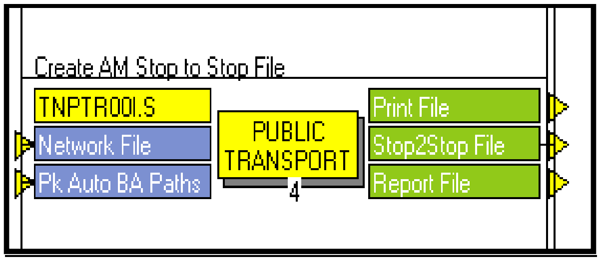
*/

ENDPROCESS

;PROCESS PHASE=MATO
; allows processing of work matrices prior to them being written to the
MATO files
; at the end of each Origin zone (Optional)


;ENDPROCESS

ENDRUN
```

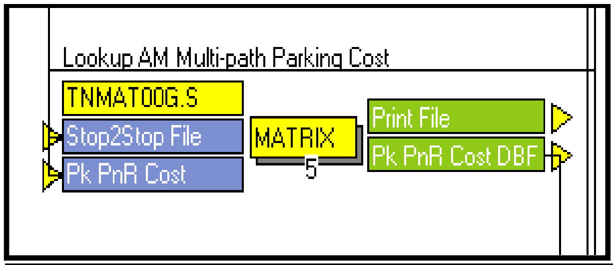


TNPTR00I.S

```
; Script for program PUBLIC TRANSPORT in file
"C:\FSUTMS\DISTRICT2\ALACHUA\TNPTR00E.S"
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=PUBLIC TRANSPORT PRNFILE="{SCENARIO_DIR}\output\TNPTR00I.PRN"
MSG='Create AM Stop to Stop File'
FILEO REPORTO = "{SCENARIO_DIR}\output\TNPTR00J.PRN"
FILEO STOP2STOPO = "{SCENARIO_DIR}\output\AMPNR.DBF",
 ACCUMULATE=FIRSTLAST, NODES=1-99999
FILEI NETI = "{SCENARIO_DIR}\output\TNETAUTOAM.NET"
FILEI ROUTEI[1] = "{SCENARIO_DIR}\output\AUTOALLAM.RTE"
PARAMETERS HDWAYPERIOD=1,
           TRIPSIJ[1]=100,
           NOROUTEERRS=999999999



ENDRUN
```



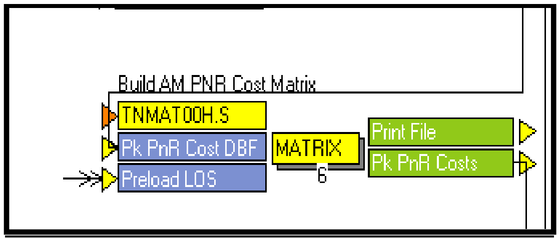
TNMAT00G.S

```
; Script for program MATRIX in file
"C:\FSUTMS\DISTRICT2\ALACHUA\TNMAT00E.S"
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=MATRIX PRNFILE="{SCENARIO_DIR}\output\TNMAT00E.PRN" MSG='Lookup
AM Multi-path Parking Cost'
FILEO RECO[1] = "{SCENARIO_DIR}\output\AMPCOST.DBF",
 FIELDS=ORZ,DSZ,MA,MEANCOST,MB,STNZONE,MC,CNT
FILEI RECI = "{SCENARIO_DIR}\output\AMPNR.DBF"
FILEI LOOKUPI[1] = "{SCENARIO_DIR}\output\PKPNRCOST.CSV"

LOOKUP, NAME=STATIONS, LOOKUP[1]=1, RESULT=2, LOOKUP[2]=1, RESULT=3,
INTERPOLATE=F, FAIL[1]=0, FAIL[2]=0, LOOKUPI=1
  RO.ORZ=RI.I
  RO.DSZ=RI.J
  statnode=ri.fromnode
  RO.MA=1
  RO.MB=2
  RO.MC=3
  RO.CNT=1
  PCOST=STATIONS(1,statnode)
  RO.STNZONE=STATIONS(2,STATNODE)
  meancost=PCOST*ri.vol/100

WRITE RECO=1

ENDRUN
```

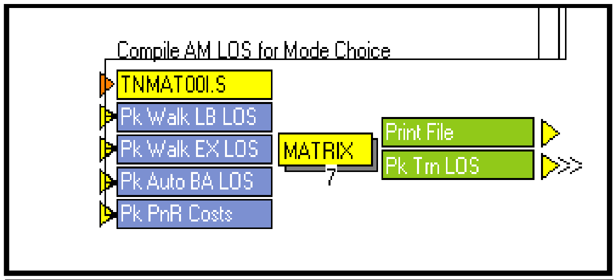


TNMAT00H.S

```
; Script for program MATRIX in file
"C:\FSUTMS\DISTRICT2\ALACHUA\TNMAT00C.S"
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=MATRIX PRNFILE="{SCENARIO_DIR}\output\TNMAT00C.PRN" MSG='Build AM
PNR Cost Matrix'
FILEI MATI[2] = "{SCENARIO_DIR}\OUTPUT\RHSKIMS.MAT"
FILEI MATI[1] = "{SCENARIO_DIR}\output\AMPCOST.DBF",
PATTERN=IJ:MV, FIELDS=ORZ,DSZ,MA,MEANCOST,MB,STNZONE,MC,CNT
FILEO MATO[1] = "{SCENARIO_DIR}\output\PKPNRCOST.MAT",
 MO=1-4,13,14 NAME=PKPNRCOST,STNZONE,STNTIME,STNDIST,FREQUENCY,TERMTIME

PAR ZONEMSG=100 ZONES={ZONESA}
MW[1]=MI.1.1 ; PNR COST
MW[2]=MI.1.2 ; STNZONE
MW[13]=MI.1.3 ; FREQENCY COUNT
MW[14]=MI.2.TERMINALTIME
MW[10]=MI.2.TIME
MW[11]=MI.2.DISTANCE
jloop
  IF (MW[13]>0)
     MW[2]=MW[2]/MW[13]
     STNZONE=MW[2]
     TIME=MW[10]
     DISTANCE=MW[11]
     MW[3]=TIME, MW[4]=DISTANCE
  ENDIF
endjloop


ENDRUN
```



TNMAT00I.S

```
; Script for program MATRIX in file "C:\FSUTMS\DISTRICT2\ALACHUA\TNMAT00A.S"
; Do not change filenames or add or remove FILEI/FILEO statements using an editor. Use Cube/Application Manager.
RUN PGM=MATRIX PRNFILE="{SCENARIO_DIR}\output\TNMAT00A.PRN" MSG='Compile AM LOS for Mode Choice'
FILEI MATI[4] = "{SCENARIO_DIR}\output\PKPNRCOST.MAT"
FILEO MATO[1] = "{SCENARIO_DIR}\output\PEAK TRN LOS.MAT",
MO=1-5,11-15,21-25,
NAME=PKWKTIMELB,PKWTTIMELB,PKIVTIMELB,PKPKCOSTLB,PKOPCOSTLB,
PKWKTIMEEX,PKWTTIMEEX,PKIVTIMEEX,PKPKCOSTEX,PKOPCOSTEX,
PKWKTIMEBA,PKWTTIMEBA,PKIVTIMEBA,PKPKCOSTBA,PKOPCOSTBA dec=15*d
FILEI MATI[3] = "{SCENARIO_DIR}\output\AUTOAM.MAT"
FILEI MATI[2] = "{SCENARIO_DIR}\output\WALKPREMAM.MAT"
FILEI MATI[1] = "{SCENARIO_DIR}\output\WALKAM.MAT"

par zonemsg=100

JLOOP

; FIRST PROCESS THE WALK TO LOCAL BUS
IF (MI.1.TIME6M=0&MI.1.TIME8M=0)
   MW[001]=mi.1.ovtt+mi.4.termtime
   MW[002]=mi.1.iwait+mi.1.xwait
   MW[003]=mi.1.ivtt
   MW[004]=0 ; no parking cost for walk modes
   MW[005]=mi.1.fare
ELSE
   MW[013]=999999
ENDIF

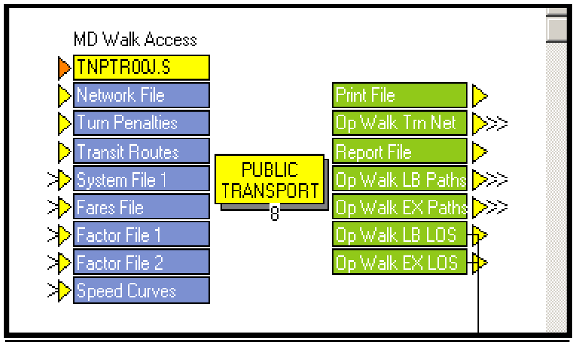
; NEXT PROCESS WALK TO EXPRESS SERVICE
IF (MI.1.TIME6M>0|MI.1.TIME8M>0)
   MW[011]=mi.2.ovtt+mi.4.termtime
   MW[012]=mi.2.iwait+mi.2.xwait
   MW[013]=mi.2.ivtt
   MW[014]=0 ; no parking cost for walk modes
   MW[015]=mi.1.fare
ELSE
   MW[013]=999999
ENDIF

; NEXT PROCESS DRIVE TO BEST AVAILABLE
IF (mi.3.ivtt>0)
```

```
   MW[021]=mi.3.ovtt+mi.4.termtime
   MW[022]=mi.3.iwait+mi.3.xwait
   MW[023]=mi.3.ivtt+mi.4.stntime
   MW[024]=mi.4.pkpnrcost+(mi.4.stndist*{hwyopcost})
   MW[025]=mi.3.fare
ELSE
   MW[023]=999999
ENDIF

ENDJLOOP

ENDRUN
```



TNPTR00J.S

```
; Script for program PUBLIC TRANSPORT in file "C:\FSUTMS\DISTRICT2\ALACHUA\TNPTR00A.S"
; Do not change filenames or add or remove FILEI/FILEO statements using an editor. Use Cube/Application Manager.
RUN PGM=PUBLIC TRANSPORT PRNFILE="{SCENARIO_DIR}\output\TNPTR00B.PRN" MSG='MD Walk Access'
FILEI NETI = "{SCENARIO_DIR}\output\UNLOADED.NET"
FILEI LOOKUPI[1] = "{CATALOG_DIR}\Parameters\SPDCRV.CSV"
FILEO MATO[2] = "{SCENARIO_DIR}\output\WALKPREMMD.MAT",
 MO=1-11,
NAME=TIME1M,TIME2M,TIME3M,TIME4M,TIME6M,TIME8M,IWAIT,XWAIT,IVTT,OVTT,FARE
FILEO MATO[1] = "{SCENARIO_DIR}\output\WALKMD.MAT",
 MO=1-11,
NAME=TIME1M,TIME2M,TIME3M,TIME4M,TIME6M,TIME8M,IWAIT,XWAIT,IVTT,OVTT,FARE
FILEI FACTORI[2] = "{CATALOG_DIR}\Parameters\ALACHUAWKPREM.FAC"
FILEI FACTORI[1] = "{CATALOG_DIR}\Parameters\ALACHUAWLB.FAC"
FILEI FAREI = "{CATALOG_DIR}\parameters\ALACHUA.FAR"
FILEO ROUTEO[2] = "{SCENARIO_DIR}\output\WALKPREMMD.RTE",
 REPORTI=1-{zonesa}, REPORTJ={cbdzone}
FILEO ROUTEO[1] = "{SCENARIO_DIR}\output\WALKLBMD.RTE",
 REPORTI=1-{zonesa}, REPORTJ={cbdzone}
FILEI SYSTEMI = "{CATALOG_DIR}\Parameters\ALACHUA.PTS"
FILEO REPORTO = "{SCENARIO_DIR}\output\TNPTR00A.PRN"
FILEO NETO = "{SCENARIO_DIR}\output\TNETWALKMD.NET"
FILEI LINEI[1] = "{SCENARIO_DIR}\input\troute20{YEAR}.lin"
FILEI TURNPENI = "{SCENARIO_DIR}\input\TCARDS.PEN"
PARAMETERS TRANTIME=(LI.TIME*1.5), ;GENERIC TRANSIT VS. AUTO RUN TIME
           TRANTIME[4]=LW.LBTIME,    ; MODE SPECIFIC TRANSIT VS. AUTO RUN TIME
           TRANTIME[6]=LW.EBTIME,    ; CREATED THROUGH A LOOKUP FUNCTION
           TRANTIME[8]=LW.RLTIME,
           FARE=F, USERCLASSES=1-2,  HDWAYPERIOD=2   MAPSCALE={UNITS}


REPORT LINES=T

;PROCESS PHASE=NODEREAD
; loops over all nodes computes node based scalar and array variables (Optional)
```

```
;ENDPROCESS
;
PROCESS PHASE=LINKREAD
   LW.WALKTIME=60*LI.DISTANCE/{walkspeed}
   IF (LI.TIME>0) LW.SPEED=60*LI.DISTANCE/LI.TIME
   LOOKUP,  NAME=CURVES,  LOOKUP[1]=1,  RESULT=2,  LOOKUP[2]=1,  RESULT=3,
LOOKUP[3]=1, RESULT=4,
           INTERPOLATE=Y, LOOKUPI=1
   IF (LI.FTYPE=10-19,80-99) ; FREE FLOW CONDITIONS FOR ALL
       LW.LBCURVE=1,LW.EBCURVE=1,LW.RLCURVE=1
   ELSEIF  (LI.FTYPE=20-79&LI.ATYPE=10-19)  ;  BUSSES  HITTING  RESISTANCE,
RAIL NO CONFLICTS (GRADE SEP)
       LW.LBCURVE=2,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF (LI.FTYPE=20-79&LI.ATYPE=20-29) ; BUSSES HITTING RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=3,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF (LI.FTYPE=20-79&LI.ATYPE=30-39) ; BUSSES HITTING RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=3,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF (LI.FTYPE=20-79&LI.ATYPE=40-49) ; BUSSES HITTING RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=2,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF (LI.FTYPE=20-79&LI.ATYPE=50-59) ; BUSSES HITTING RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=2,LW.EBCURVE=1,LW.RLCURVE=1
   ENDIF
       LW.LBSPEED=CURVES(LW.LBCURVE,LW.SPEED)
       LW.EBSPEED=CURVES(LW.EBCURVE,LW.SPEED)
       LW.RLSPEED=CURVES(LW.RLCURVE,LW.SPEED)
       LW.LBTIME=60*LI.DISTANCE/LW.LBSPEED
       LW.EBTIME=60*LI.DISTANCE/LW.EBSPEED
       LW.RLTIME=60*LI.DISTANCE/LW.RLSPEED
       TRANTIME[4]=LW.LBTIME
       TRANTIME[6]=LW.EBTIME
       TRANTIME[8]=LW.RLTIME

ENDPROCESS

PROCESS PHASE=DATAPREP
; WALK ACCESS
  GENERATE, COST=(LW.WALKTIME),MAXCOST=103*24.0,LIST=T,NTLEGMODE = 1,
            DIRECTION=1, FROMNODE=1-{zonesa}, TONODE=1000-99999
; WALK EGRESS
  GENERATE, COST=(LW.WALKTIME),MAXCOST=103*24.0,LIST=T,NTLEGMODE=101,
            DIRECTION=2, FROMNODE=1-{zonesa}, TONODE=1000-99999
; WALK CONNECTORS
  GENERATE,     COST=(LW.WALKTIME),MAXCOST=103*12,LIST=T,NTLEGMODE     =
3,DIRECTION=3,
            FROMNODE=1000-99999, TONODE=1000-99999


ENDPROCESS

;PROCESS PHASE=MATI
; manipulates input and work matrices prior to processing each Origin
zone, I (Optional)
```

```
;ENDPROCESS

;PROCESS PHASE=SELECTIJ
; allows finer selection of zone pairs, IJ, for Route Evaluation, and the setting
; or revising of trips for Loading (Optional)


;ENDPROCESS

PROCESS PHASE=SKIMIJ
  MW[1]=TIMEA(0,1,101)
  MW[2]=TIMEA(0,2,102)
  MW[3]=TIMEA(0,3)
  MW[4]=TIMEA(0,4)
  MW[5]=TIMEA(0,6)
  MW[6]=TIMEA(0,8)
  MW[7]=IWAITA(0)
  MW[8]=XWAITA(0)
  MW[9]=TIMEA(0,TMODES)
  MW[10]=TIMEA(0,NTMODES)
  MW[11]=FAREA(0,ALLMODES)


;VARIOUS THINGS THAT CAN BE SKIMMED
/*
  COMPCOST(RouteSet)        Skims Composite Costs
  ValOfChoice(RouteSet)     Skims Value of Choice
  IWAITA(RouteSet)          Skims Initial Wait Times Actual
  XWAITA(RouteSet)          Skims Transfer Wait Times Actual
  IWAITP(RouteSet)          Skims Initial Wait Times Perceived
  XWAITP(RouteSet)          Skims Initial Transfer Times Perceived
  TIMEA(RouteSet, Mode)     Skims Travel Time Actual
  TIMEP(RouteSet, Mode)     Skims Travel Time Perceived

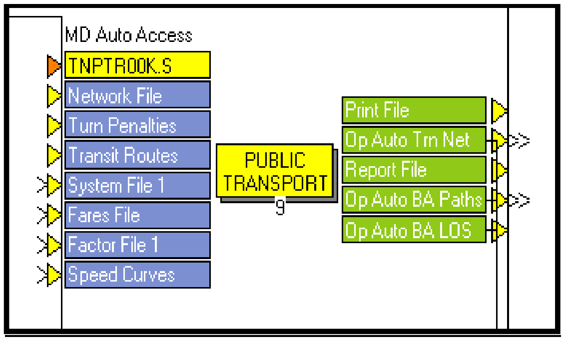
  XFERPENA(RouteSet, Mode) Skims Transfer Penalty Actual

  XFERPENP(RouteSet, Mode) Skims Transfer Penalty Actual
  DIST(RouteSet, Mode)      Skims Distance
  BRDINGS(RouteSet, Mode)   Skims Number of Boardings (xfers+1)
  BESTJRNY                  Skims Best Journey Times
  FAREA(RouteSet, Mode)     Skims Fares in Monetary units
  FAREP(RouteSet, Mode)     Skims Fares in Generalized Time units
*/

ENDPROCESS
;PROCESS PHASE=MATO
; allows processing of work matrices prior to them being written to the MATO files
; at the end of each Origin zone (Optional)


;ENDPROCESS


ENDRUN
```



<u>TNPTR00K.S</u>

```
;     Script     for     program     PUBLIC     TRANSPORT     in     file
"C:\FSUTMS\DISTRICT2\ALACHUA\TNPTR00B.S"
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN   PGM=PUBLIC   TRANSPORT   PRNFILE="{SCENARIO_DIR}\output\TNPTR00H.PRN"
MSG='MD Auto Access'
FILEI NETI = "{SCENARIO_DIR}\output\UNLOADED.NET"
FILEI LOOKUPI[1] = "{CATALOG_DIR}\Parameters\SPDCRV.CSV"
FILEO REPORTO = "{SCENARIO_DIR}\output\TNPTR00E.PRN"
FILEO MATO[1] = "{SCENARIO_DIR}\output\AUTOMD.MAT",
 MO=1-11,
NAME=TIME1M,TIME2M,TIME3M,TIME4M,TIME6M,TIME8M,IWAIT,XWAIT,IVTT,OVTT,FARE
FILEI FACTORI[1] = "{CATALOG_DIR}\Parameters\ALACHUAPNR.FAC"
FILEI FAREI = "{CATALOG_DIR}\parameters\ALACHUA.FAR"
FILEO ROUTEO[1] = "{SCENARIO_DIR}\output\AUTOALLMD.RTE",
 REPORTI=1-{zonesa}, REPORTJ={cbdzone}
FILEI SYSTEMI = "{CATALOG_DIR}\Parameters\ALACHUA.PTS"
FILEI LINEI[1] = "{SCENARIO_DIR}\input\troute20{YEAR}.lin"
FILEI TURNPENI = "{SCENARIO_DIR}\input\TCARDS.PEN"
FILEO NETO = "{SCENARIO_DIR}\output\TNETAUTOMD.NET"
PARAMETERS TRANTIME=(LI.TIME*1.5), ;GENERIC TRANSIT VS. AUTO RUN TIME
           TRANTIME[4]=LW.LBTIME,     ; MODE SPECIFIC TRANSIT VS. AUTO RUN
TIME
           TRANTIME[6]=LW.EBTIME,     ; CREATED THROUGH A LOOKUP FUNCTION
           TRANTIME[8]=LW.RLTIME,
           FARE=F, USERCLASSES=1,    MAPSCALE={UNITS}

           HDWAYPERIOD=2

REPORT LINES=T

;PROCESS PHASE=NODEREAD
; loops over all nodes computes node based scalar and array variables
(Optional)


;ENDPROCESS
;
PROCESS PHASE=LINKREAD
   LW.WALKTIME=60*LI.DISTANCE/{walkspeed}
   IF (LI.TIME>0) LW.SPEED=60*LI.DISTANCE/LI.TIME
```

```
   LOOKUP,  NAME=CURVES,  LOOKUP[1]=1,  RESULT=2,  LOOKUP[2]=1,  RESULT=3,
LOOKUP[3]=1, RESULT=4,
           INTERPOLATE=Y, LOOKUPI=1
   IF (LI.FTYPE=10-19,80-99) ; FREE FLOW CONDITIONS FOR ALL
       LW.LBCURVE=1,LW.EBCURVE=1,LW.RLCURVE=1
   ELSEIF  (LI.FTYPE=20-79&LI.ATYPE=10-19)  ;  BUSSES  HITTING  RESISTANCE,
RAIL NO CONFLICTS (GRADE SEP)
       LW.LBCURVE=2,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF (LI.FTYPE=20-79&LI.ATYPE=20-29) ; BUSSES HITTING RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=3,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF (LI.FTYPE=20-79&LI.ATYPE=30-39) ; BUSSES HITTING RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=3,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF (LI.FTYPE=20-79&LI.ATYPE=40-49) ; BUSSES HITTING RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=2,LW.EBCURVE=2,LW.RLCURVE=1
   ELSEIF (LI.FTYPE=20-79&LI.ATYPE=50-59) ; BUSSES HITTING RESISTANCE(LB
MORE), RAIL NO CONFLICTS
       LW.LBCURVE=2,LW.EBCURVE=1,LW.RLCURVE=1
   ENDIF
       LW.LBSPEED=CURVES(LW.LBCURVE,LW.SPEED)
       LW.EBSPEED=CURVES(LW.EBCURVE,LW.SPEED)
       LW.RLSPEED=CURVES(LW.RLCURVE,LW.SPEED)
       LW.LBTIME=60*LI.DISTANCE/LW.LBSPEED
       LW.EBTIME=60*LI.DISTANCE/LW.EBSPEED
       LW.RLTIME=60*LI.DISTANCE/LW.RLSPEED
       TRANTIME[4]=LW.LBTIME
       TRANTIME[6]=LW.EBTIME
       TRANTIME[8]=LW.RLTIME

ENDPROCESS

PROCESS PHASE=DATAPREP
; AUTO ACCESS
READ,
 FILE = "{SCENARIO_DIR}\OUTPUT\MD_STATDATA.CSV"
; WALK EGRESS
  GENERATE, COST=(LW.WALKTIME),MAXCOST=103*24.0,LIST=T,NTLEGMODE=101,
            DIRECTION=2, FROMNODE=1-{zonesa}, TONODE=1000-99999
; WALK CONNECTORS
  GENERATE,     COST=(LW.WALKTIME),MAXCOST=103*12,LIST=T,NTLEGMODE     =
3,DIRECTION=3,
            FROMNODE=1000-99999, TONODE=1000-99999


ENDPROCESS

;PROCESS PHASE=MATI
; manipulates input and work matrices prior to processing each Origin
zone, I (Optional)


;ENDPROCESS

;PROCESS PHASE=SELECTIJ
```

```
; allows finer selection of zone pairs, IJ, for Route Evaluation, and the
setting
; or revising of trips for Loading (Optional)


;ENDPROCESS

PROCESS PHASE=SKIMIJ
  MW[1]=TIMEA(0,1,101)
  MW[2]=TIMEA(0,2,102)
  MW[3]=TIMEA(0,3)
  MW[4]=TIMEA(0,4)
  MW[5]=TIMEA(0,6)
  MW[6]=TIMEA(0,8)
  MW[7]=IWAITA(0)
  MW[8]=XWAITA(0)
  MW[9]=TIMEA(0,TMODES)
  MW[10]=TIMEA(0,NTMODES)
  MW[11]=FAREA(0,ALLMODES)

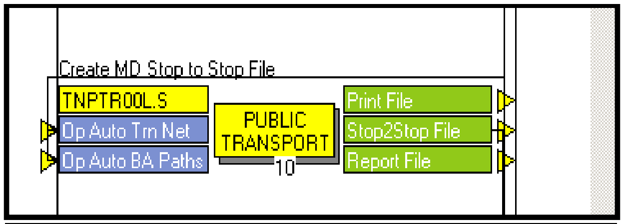

;VARIOUS THINGS THAT CAN BE SKIMMED
/*
  COMPCOST(RouteSet)        Skims Composite Costs
  ValOfChoice(RouteSet)     Skims Value of Choice
  IWAITA(RouteSet)          Skims Initial Wait Times Actual
  XWAITA(RouteSet)          Skims Transfer Wait Times Actual
  IWAITP(RouteSet)          Skims Initial Wait Times Perceived
  XWAITP(RouteSet)          Skims Initial Transfer Times Perceived
  TIMEA(RouteSet, Mode)     Skims Travel Time Actual
  TIMEP(RouteSet, Mode)     Skims Travel Time Perceived
  XFERPENA(RouteSet, Mode)  Skims Transfer Penalty Actual
  XFERPENP(RouteSet, Mode)  Skims Transfer Penalty Actual
  DIST(RouteSet, Mode)      Skims Distance
  BRDINGS(RouteSet, Mode)   Skims Number of Boardings (xfers+1)
  BESTJRNY                  Skims Best Journey Times

  FAREA(RouteSet, Mode)     Skims Fares in Monetary units
  FAREP(RouteSet, Mode)     Skims Fares in Generalized Time units
*/

ENDPROCESS
;PROCESS PHASE=MATO
; allows processing of work matrices prior to them being written to the
MATO files
; at the end of each Origin zone (Optional)


;ENDPROCESS

ENDRUN
```

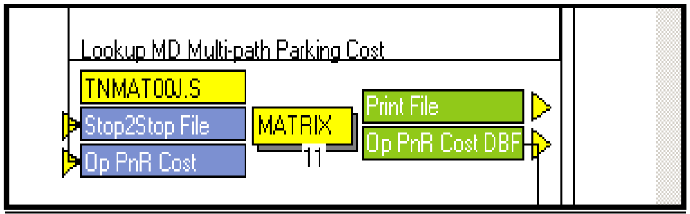


TNPTR00L.S

```
; Script for program PUBLIC TRANSPORT in file "C:\FSUTMS\DISTRICT2\ALACHUA\TNPTR00F.S"
; Do not change filenames or add or remove FILEI/FILEO statements using an editor. Use Cube/Application Manager.
RUN PGM=PUBLIC TRANSPORT PRNFILE="{SCENARIO_DIR}\output\TNPTR00K.PRN" MSG='Create MD Stop to Stop File'
FILEI ROUTEI[1] = "{SCENARIO_DIR}\output\AUTOALLMD.RTE"
FILEI NETI = "{SCENARIO_DIR}\output\TNETAUTOMD.NET"
FILEO REPORTO = "{SCENARIO_DIR}\output\TNPTR00L.PRN"
FILEO STOP2STOPO = "{SCENARIO_DIR}\output\TNPTR00C.DBF",
 ACCUMULATE=FIRSTLAST, NODES=1-99999
PARAMETERS HDWAYPERIOD=2,
           TRIPSIJ[1]=100,
           NOROUTEERRS=999999999



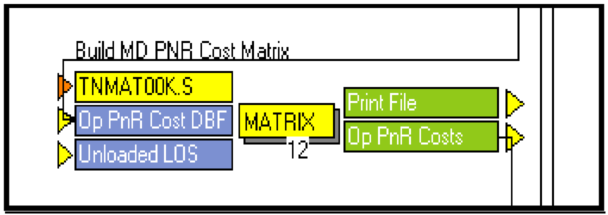
ENDRUN
```



TNMAT00J.S

```
; Script for program MATRIX in file "C:\FSUTMS\DISTRICT2\ALACHUA\TNMAT00D.S"
; Do not change filenames or add or remove FILEI/FILEO statements using an editor. Use Cube/Application Manager.
RUN PGM=MATRIX PRNFILE="{SCENARIO_DIR}\output\TNMAT00D.PRN" MSG='Lookup MD Multi-path Parking Cost'
FILEI RECI = "{SCENARIO_DIR}\output\TNPTR00C.DBF"
FILEO RECO[1] = "{SCENARIO_DIR}\output\MDPCOST.DBF",
 FIELDS=ORZ,DSZ,MA,MEANCOST,MB,STNZONE,MC,CNT
FILEI LOOKUPI[1] = "{SCENARIO_DIR}\output\OPPNRCOST.CSV"
LOOKUP, NAME=STATIONS, LOOKUP[1]=1, RESULT=2, LOOKUP[2]=1, RESULT=3, INTERPOLATE=F, FAIL[1]=0, FAIL[2]=0, LOOKUPI=1
  RO.ORZ=RI.I
  RO.DSZ=RI.J
  statnode=ri.fromnode
  RO.MA=1
  RO.MB=2
  RO.MC=3
  RO.CNT=1
  PCOST=STATIONS(1,statnode)
  RO.STNZONE=STATIONS(2,STATNODE)
  meancost=PCOST*ri.vol/100

WRITE RECO=1
ENDRUN
```



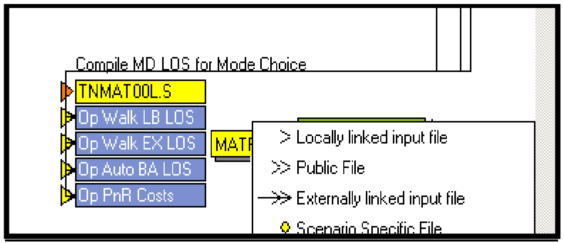
TNMAT00K.S

```
;        Script         for         program         MATRIX         in         file
"C:\FSUTMS\DISTRICT2\ALACHUA\TNMAT00F.S"
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=MATRIX PRNFILE="{SCENARIO_DIR}\output\TNMAT00F.PRN" MSG='Build MD
PNR Cost Matrix'
FILEI MATI[2] = "{SCENARIO_DIR}\Output\FHSKIMS.{ALT}{YEAR}.MAT"
FILEI MATI[1] = "{SCENARIO_DIR}\output\MDPCOST.DBF",
PATTERN=IJ:MV, FIELDS=ORZ,DSZ,MA,MEANCOST,MB,STNZONE,MC,CNT
FILEO MATO[1] = "{SCENARIO_DIR}\output\OPPNRCOST.MAT",
 MO=1-4,13,14 NAME=PKPNRCOST,STNZONE,STNTIME,STNDIST,FREQUENCY,TERMTIME

PAR ZONEMSG=100 ZONES={ZONESA}
MW[1]=MI.1.1 ; PNR COST
MW[2]=MI.1.2 ; STNZONE
MW[13]=MI.1.3 ; FREQENCY COUNT
MW[14]=MI.2.TERMINALTIME
MW[10]=MI.2.TIME
MW[11]=MI.2.DISTANCE
jloop
  IF (MW[13]>0)
     MW[2]=MW[2]/MW[13]
     STNZONE=MW[2]
     TIME=MW[10]
     DISTANCE=MW[11]
     MW[3]=TIME, MW[4]=DISTANCE
  ENDIF
endjloop

PAR ZONES={ZONESA}
MW[1]=MI.1.1

ENDRUN
```



TNMAT00L.S

```
;        Script        for        program        MATRIX        in        file
"C:\FSUTMS\DISTRICT2\ALACHUA\TNMAT00B.S"
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN  PGM=MATRIX  PRNFILE="{SCENARIO_DIR}\output\TNMAT00B.PRN"  MSG='Compile
MD LOS for Mode Choice'
FILEI MATI[4] = "{SCENARIO_DIR}\output\OPPNRCOST.MAT"
FILEI MATI[3] = "{SCENARIO_DIR}\output\AUTOMD.MAT"
FILEI MATI[2] = "{SCENARIO_DIR}\output\WALKPREMMD.MAT"
FILEI MATI[1] = "{SCENARIO_DIR}\output\WALKMD.MAT"
FILEO MATO[1] = "{SCENARIO_DIR}\output\OP TRN LOS.MAT",
MO=1-5,11-15,21-25,
NAME=OPWKTIMELB,OPWTTIMELB,OPIVTIMELB,OPPKCOSTLB,OPOPCOSTLB,
OPWKTIMEEX,OPWTTIMEEX,OPIVTIMEEX,OPPKCOSTEX,OPOPCOSTEX,
OPWKTIMEBA,OPWTTIMEBA,OPIVTIMEBA,OPPKCOSTBA,OPOPCOSTBA DEC=15*D

par zonemsg=100

JLOOP

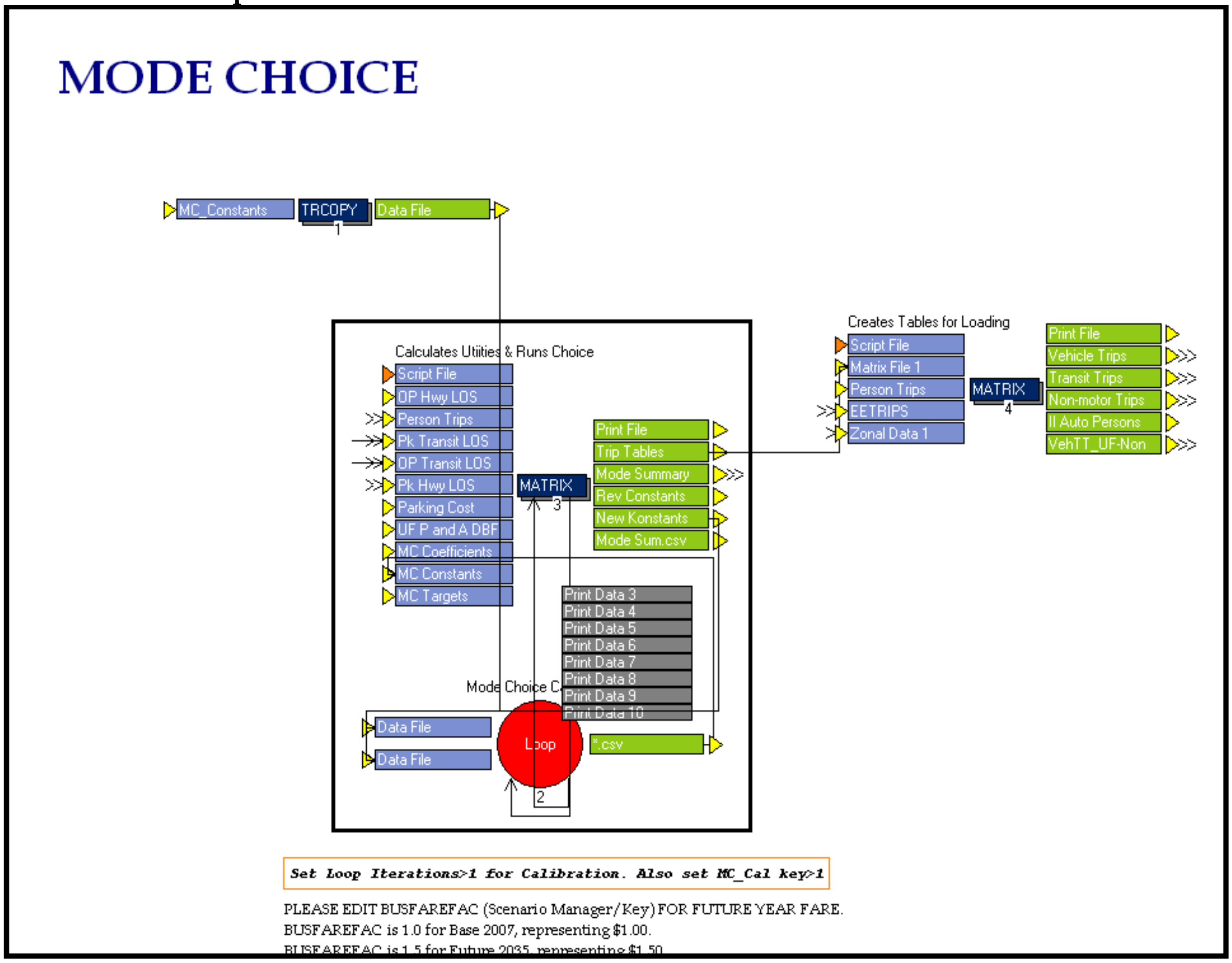
IF (MI.1.TIME6M=0&MI.1.TIME8M=0)
   MW[001]=mi.1.ovtt+mi.4.termtime
   MW[002]=mi.1.iwait+mi.1.xwait
   MW[003]=mi.1.ivtt
   MW[004]=0 ; no parking cost for walk modes
   MW[005]=mi.1.fare
ELSE
   MW[003]=999999
ENDIF

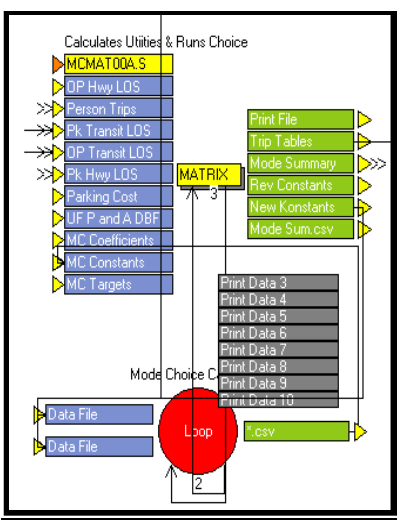
; NEXT PROCESS WALK TO EXPRESS SERVICE
IF (MI.1.TIME6M>0|MI.1.TIME8M>0)
   MW[011]=mi.2.ovtt+mi.4.termtime
   MW[012]=mi.2.iwait+mi.2.xwait
   MW[013]=mi.2.ivtt
   MW[014]=0 ; no parking cost for walk modes
   MW[015]=mi.1.fare
ELSE
   MW[013]=999999
ENDIF

; NEXT PROCESS DRIVE TO BEST AVAILABLE
IF (mi.3.ivtt>0)
   MW[021]=mi.3.ovtt+mi.4.termtime
   MW[022]=mi.3.iwait+mi.3.xwait
   MW[023]=mi.3.ivtt+mi.4.stntime
```

```
   MW[024]=mi.4.pkpnrcost+(mi.4.stndist*{hwyopcost})
   MW[025]=mi.3.fare
ELSE
   MW[023]=999999
ENDIF
ENDJLOOP
ENDRUN
```

Mode Choice Step





MCMAT00A.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN        PGM=MATRIX        PRNFILE="{SCENARIO_DIR}\output\MCMAT00A.PRN"
MSG='Calculates Utiities & Runs Choice'
FILEI MATI[1] = "{SCENARIO_DIR}\output\FHSKIMS.{ALT}{YEAR}.MAT"
FILEI ZDATI[3] = "{SCENARIO_DIR}\output\UFPANDA.DBF"
FILEI MATI[5] = "{SCENARIO_DIR}\output\RHSKIMS.MAT"
FILEI MATI[4] = "{SCENARIO_DIR}\output\OP TRN LOS.MAT"
FILEI MATI[3] = "{SCENARIO_DIR}\output\PEAK TRN LOS.MAT"
FILEI MATI[2] = "{SCENARIO_DIR}\output\PTRIPS.MAT"
FILEO PRINTO[4] = "{SCENARIO_DIR}\output\MODE SUM.CSV"
FILEI ZDATI[1] = "{SCENARIO_DIR}\input\ZoneData{YEAR}.DBF",
Z=TAZ_2007
FILEI LOOKUPI[2] = "{SCENARIO_DIR}\output\MCLOO00C.CSV"
FILEO PRINTO[3] = "{SCENARIO_DIR}\output\NEWK.CSV"
FILEI LOOKUPI[3] = "{CATALOG_DIR}\parameters\MC_TARGETS.CSV"
FILEO PRINTO[2] = "{SCENARIO_DIR}\output\REV_MODE_CONST.CSV"
FILEO PRINTO[1] = "{SCENARIO_DIR}\output\MODE SUMMARY.PRN"
FILEO MATO[2] = "{SCENARIO_DIR}\output\MODEOUT.MAT",
mo=151-158,161-168,171-178,181-188,191-193,
 name=HBWDA,HBWCP,HBWCX,HBWWB,HBWWX,HBWBA,HBWWK,HBWBK,
      HBODA,HBOCP,HBOCX,HBOWB,HBOWX,HBOBA,HBOWK,HBOBK,
      NHBDA,NHBCP,NHBCX,NHBWB,NHBWX,NHBBA,NHBWK,NHBBK,
      HBUDA,HBUCP,HBUCX,HBUWB,HBUWX,HBUBA,HBUWK,HBUBK,
      HDORMUWB,HDORMUWK,HDORMUBK, DEC=24*S
FILEI LOOKUPI[1] = "{CATALOG_DIR}\parameters\MC_COEFFICIENTS.CSV"
par zonemsg=100

; THE JOB OF THIS SCRIPT IS TO TURN THE COMPONENTS OF UTILITY FOR EACH
MODE IN THE MODE CHOICE
; MODEL INTO A COMPOSITE UTILITY.  BECAUSE THE MODEL IS NESTED, WITH
NESTING COEFFICIENTS APPLIED
; IN THE MODE CHOICE MODE, THE INPUT UTILITIES SHOULD BE DIVIDED BY THE
PRODUCT OF THE NESTING COEFFICIENTS.

; MARKET SEGMENTS ARE:
; 0 CAR HOUSEHOLDS
; 1 OR MORE CAR HOUSEHOLDS
; UNIVERSITY STUDENTS

; TRIP PURPOSES ARE:
; 1 HBW (AM PEAK LOS MATRICES)
; 2 HBO (MD OFF-PEAK LOS)
; 3 NHB (MD OFF-PEAK LOS)
; 4 HBU (MD OFF-PEAK LOS)
; 5 HDORMU (choice set: walk, bike, MD walk-local BUS)
  MW[1]=MI.2.HBW
  MW[2]=MI.2.HBSH+MI.2.HBSR+MI.2.HBO
  MW[3]=MI.2.NHB
  MW[4]=MI.2.HBU
  MW[5]=MI.2.HDORMU

; THE AUTO DIVISOR IS NESTCMOTOR*NESTCAUTO
  NESTMOTOR={NESTCMOTOR}*{NESTCAUTO}
; THE TRANSIT DIVISOR IS NESTCMOTOR*NESTCTRANSIT
```

```
  NESTTRANSIT={NESTCMOTOR}*{NESTCTRANSIT}
  NESTNONMOTOR={NESTCNONMOTOR}

;Coefficients
lookup, name=coefficients,
lookup[1]=1,  result=2,  lookup[2]=1,  result=3,  lookup[3]=1,  result=4,
lookup[4]=1, result=5,
interpolate=n, LIST=Y, lookupi=1
; civt-IN VEHICLE TIME COEFFICIENT
HBWCIVT=COEFFICIENTS(1,1),                      HBOCIVT=COEFFICIENTS(2,1),
NHBCIVT=COEFFICIENTS(3,1), UNICIVT=COEFFICIENTS(4,1)
; covt-OUT OF VEHICLE TIME COEFFICIENT
HBWCOVT=COEFFICIENTS(1,2),                      HBOCOVT=COEFFICIENTS(2,2),
NHBCOVT=COEFFICIENTS(3,2), UNICOVT=COEFFICIENTS(4,2)
; ccst-COST COEFFICIENT (cents)
HBWCCST=COEFFICIENTS(1,3),                      HBOCCST=COEFFICIENTS(2,3),
NHBCCST=COEFFICIENTS(3,3), UNICCST=COEFFICIENTS(4,3)
; cwt-WALK ONLY COEFFICIENT
HBWCWT=COEFFICIENTS(1,4),                        HBOCWT=COEFFICIENTS(2,4),
NHBCWT=COEFFICIENTS(3,4),  UNICWT=COEFFICIENTS(4,4)
; cbt-BIKE ONLY COEFFICIENT
HBWCBT=COEFFICIENTS(1,5),                        HBOCBT=COEFFICIENTS(2,5),
NHBCBT=COEFFICIENTS(3,5),  UNICBT=COEFFICIENTS(4,5)
; pti-Walk to transit PEV i
HBWPTI=COEFFICIENTS(1,6),                        HBOPTI=COEFFICIENTS(2,6),
NHBPTI=COEFFICIENTS(3,6),  UNIPTI=COEFFICIENTS(4,6)
; pwi-Walk PEV i
HBWPWI=COEFFICIENTS(1,7),                        HBOPWI=COEFFICIENTS(2,7),
NHBPWI=COEFFICIENTS(3,7),  UNIPWI=COEFFICIENTS(4,7)
; pwi-Walk PEV J
HBWPWJ=COEFFICIENTS(1,8),                        HBOPWJ=COEFFICIENTS(2,8),
NHBPWJ=COEFFICIENTS(3,8),  UNIPWJ=COEFFICIENTS(4,8)
; pbi-BIKE PEV i
HBWPBI=COEFFICIENTS(1,9),                        HBOPBI=COEFFICIENTS(2,9),
NHBPBI=COEFFICIENTS(3,9),  UNIPBI=COEFFICIENTS(4,9)
; pbi-BIKE PEV J
HBWPBJ=COEFFICIENTS(1,10),                      HBOPBJ=COEFFICIENTS(2,10),
NHBPBJ=COEFFICIENTS(3,10), UNIPBJ=COEFFICIENTS(4,10)

;Constants
;3*HBW,HBO,NHB,Constants    for    0    car,    1+car    and    student,
rows=mode=da,cp,cx,wl,wx,ab,wk,bk
lookup, name=constants,
lookup[1]=1, result=2, lookup[2]=1, result=3, lookup[3]=1, result=4,
lookup[4]=1, result=5, lookup[5]=1, result=6, lookup[6]=1, result=7,
lookup[7]=1, result=8,lookup[8]=1, result=9,lookup[9]=1, result=10,
interpolate=n, , LIST=Y, lookupi=2
;K=CONSTANT, FOLLOWED BY TRIP PURPOSE FOLLOWED BY MODE
;  DRIVE ALONE
K1_NC_DA=CONSTANTS(1,1),                          K2_NC_DA=CONSTANTS(4,1),
K3_NC_DA=CONSTANTS(7,1), K4_NC_DA=CONSTANTS(8,1)
K1_WC_DA=CONSTANTS(2,1),                           K2_WC_DA=CONSTANTS(5,1)
, K5_NC_DA=CONSTANTS(9,1)
K1_ST_DA=CONSTANTS(3,1), K2_ST_DA=CONSTANTS(6,1)
;  2  CARPOOL
K1_NC_CP=CONSTANTS(1,2),                          K2_NC_CP=CONSTANTS(4,2),
K3_NC_CP=CONSTANTS(7,2), K4_NC_CP=CONSTANTS(8,2)
```

```
K1_WC_CP=CONSTANTS(2,2),                              K2_WC_CP=CONSTANTS(5,2)
, K5_NC_CP=CONSTANTS(9,2)

K1_ST_CP=CONSTANTS(3,2), K2_ST_CP=CONSTANTS(6,2)
;  3+ CARPOOL
K1_NC_CX=CONSTANTS(1,3),                             K2_NC_CX=CONSTANTS(4,3),
K3_NC_CX=CONSTANTS(7,3), K4_NC_CX=CONSTANTS(8,3)
K1_WC_CX=CONSTANTS(2,3),                              K2_WC_CX=CONSTANTS(5,3)
, K5_NC_CX=CONSTANTS(9,3)
K1_ST_CX=CONSTANTS(3,3), K2_ST_CX=CONSTANTS(6,3)
;  WALK TO BUS
K1_NC_WB=CONSTANTS(1,4),                             K2_NC_WB=CONSTANTS(4,4),
K3_NC_WB=CONSTANTS(7,4), K4_NC_WB=CONSTANTS(8,4)
K1_WC_WB=CONSTANTS(2,4),                              K2_WC_WB=CONSTANTS(5,4)
, K5_NC_WB=CONSTANTS(9,4)
K1_ST_WB=CONSTANTS(3,4), K2_ST_WB=CONSTANTS(6,4)
;  WALK TO PREMIUM TRANSIT
K1_NC_WX=CONSTANTS(1,5),                             K2_NC_WX=CONSTANTS(4,5),
K3_NC_WX=CONSTANTS(7,5), K4_NC_WX=CONSTANTS(8,5)
K1_WC_WX=CONSTANTS(2,5),                              K2_WC_WX=CONSTANTS(5,5)
, K5_NC_WX=CONSTANTS(9,5)
K1_ST_WX=CONSTANTS(3,5), K2_ST_WX=CONSTANTS(6,5)
;  AUTO TO TRANSIT
K1_NC_BA=CONSTANTS(1,6),                             K2_NC_BA=CONSTANTS(4,6),
K3_NC_BA=CONSTANTS(7,6), K4_NC_BA=CONSTANTS(8,6)
K1_WC_BA=CONSTANTS(2,6),                              K2_WC_BA=CONSTANTS(5,6)
, K5_NC_BA=CONSTANTS(9,6)
K1_ST_BA=CONSTANTS(3,6), K2_ST_BA=CONSTANTS(6,6)
;  WALK ONLY
K1_NC_WK=CONSTANTS(1,7),                             K2_NC_WK=CONSTANTS(4,7),
K3_NC_WK=CONSTANTS(7,7), K4_NC_WK=CONSTANTS(8,7)
K1_WC_WK=CONSTANTS(2,7),                              K2_WC_WK=CONSTANTS(5,7)
, K5_NC_WK=CONSTANTS(9,7)
K1_ST_WK=CONSTANTS(3,7), K2_ST_WK=CONSTANTS(6,7)
;  BIKE ONLY
K1_NC_BK=CONSTANTS(1,8),                             K2_NC_BK=CONSTANTS(4,8),
K3_NC_BK=CONSTANTS(7,8), K4_NC_BK=CONSTANTS(8,8)
K1_WC_BK=CONSTANTS(2,8),                              K2_WC_BK=CONSTANTS(5,8)
, K5_NC_BK=CONSTANTS(9,8)
K1_ST_BK=CONSTANTS(3,8), K2_ST_BK=CONSTANTS(6,8)

;TARGETS
;3*HBW,HBO,NHB,Targets    for    0    car,    1+car    and    student,
rows=mode=da,cp,cx,wl,wx,ab,wk,bk
lookup, name=targ,
lookup[1]=1, result=2, lookup[2]=1, result=3, lookup[3]=1, result=4,
lookup[4]=1, result=5, lookup[5]=1, result=6, lookup[6]=1, result=7,
lookup[7]=1, result=8,lookup[8]=1, result=9,lookup[9]=1, result=10,
interpolate=n, , LIST=Y, lookupi=3
;t=Target, FOLLOWED BY TRIP PURPOSE FOLLOWED BY MODE
;  DRIVE ALONE
t1_NC_DA=targ(1,1),        t2_NC_DA=targ(4,1),        t3_NC_DA=targ(7,1),
t4_NC_DA=targ(8,1)
t1_WC_DA=targ(2,1),  t2_WC_DA=targ(5,1)                                   ,
t5_NC_DA=targ(9,1)
t1_ST_DA=targ(3,1), t2_ST_DA=targ(6,1)
;  2  CARPOOL
```

```
t1_NC_CP=targ(1,2),        t2_NC_CP=targ(4,2),        t3_NC_CP=targ(7,2),
t4_NC_CP=targ(8,2)
t1_WC_CP=targ(2,2),  t2_WC_CP=targ(5,2)                                 ,
t5_NC_CP=targ(9,2)
t1_ST_CP=targ(3,2), t2_ST_CP=targ(6,2)
;  3+ CARPOOL
t1_NC_CX=targ(1,3),        t2_NC_CX=targ(4,3),        t3_NC_CX=targ(7,3),
t4_NC_CX=targ(8,3)
t1_WC_CX=targ(2,3),  t2_WC_CX=targ(5,3)                                 ,
t5_NC_CX=targ(9,3)
t1_ST_CX=targ(3,3), t2_ST_CX=targ(6,3)
;  WALK TO BUS
t1_NC_WB=targ(1,4),        t2_NC_WB=targ(4,4),        t3_NC_WB=targ(7,4),
t4_NC_WB=targ(8,4)
t1_WC_WB=targ(2,4),  t2_WC_WB=targ(5,4)                                 ,
t5_NC_WB=targ(9,4)
t1_ST_WB=targ(3,4), t2_ST_WB=targ(6,4)
;  WALK TO PREMIUM TRANSIT
t1_NC_WX=targ(1,5),        t2_NC_WX=targ(4,5),        t3_NC_WX=targ(7,5),
t4_NC_WX=targ(8,5)
t1_WC_WX=targ(2,5),  t2_WC_WX=targ(5,5)                                 ,
t5_NC_WX=targ(9,5)
t1_ST_WX=targ(3,5), t2_ST_WX=targ(6,5)
;  AUTO TO TRANSIT
t1_NC_BA=targ(1,6),        t2_NC_BA=targ(4,6),        t3_NC_BA=targ(7,6),
t4_NC_BA=targ(8,6)
t1_WC_BA=targ(2,6),  t2_WC_BA=targ(5,6)                                 ,
t5_NC_BA=targ(9,6)
t1_ST_BA=targ(3,6), t2_ST_BA=targ(6,6)
;  WALK ONLY
t1_NC_WK=targ(1,7),        t2_NC_WK=targ(4,7),        t3_NC_WK=targ(7,7),
t4_NC_WK=targ(8,7)
t1_WC_WK=targ(2,7),  t2_WC_WK=targ(5,7)                                 ,
t5_NC_WK=targ(9,7)
t1_ST_WK=targ(3,7), t2_ST_WK=targ(6,7)
;  BIKE ONLY
t1_NC_BK=targ(1,8),        t2_NC_BK=targ(4,8),        t3_NC_BK=targ(7,8),
t4_NC_BK=targ(8,8)
t1_WC_BK=targ(2,8),  t2_WC_BK=targ(5,8)                                 ,
t5_NC_BK=targ(9,8)
t1_ST_BK=targ(3,8), t2_ST_BK=targ(6,8)

; COST UNITS
; assume parking costs are in cents, both for auto and PnR lots
; assume fares are in dollars, so multiply by 100.
; assume auto operating costs are in dollars, so multiply by 100.

; Bus fare factor
; Difference of bus fare factors between year 2007 (1.0) and
; future scenarios (1.5) will be reduced to 10% of actual difference amount
; due to significant impact from this bus fare increase since year 2007 ($1.00 to $1.50).
busfarefac=1+(({BUSFAREFAC}-1)*0.10)

    JLOOP
```

```
;
================================================================================
==========
; HBW (PEAK) TRIP PURPOSE
;
================================================================================
==========

  ;   PEAK PERIOD DRIVE ALONE ELEMENTS OF UTILITY ARE:
  ;   WALK TIME
      MW[11]=(MI.5.TERMINALTIME)*HBWCOVT
  ;   WAIT TIME
      ;MW[12]=(0)*HBWCOVT
  ;   IVTT
      MW[13]=(MI.5.TIME)*HBWCIVT
  ;   PARKING COST - ONLY AT DESTINATION (J), HALF IN EACH DIRECTION
      MW[14]=0.5 * ZI.1.LONGPARK[J] * HBWCCST
  ;   OTHER COST
      MW[15]=MI.5.DISTANCE * {HWYOPCOST} * 100 * HBWCCST
  ;   COMPOSITE UTILITY
      ;MW[021]=(MW[11]+ MW[13]+MW[14]+MW[15]+K1_NC_DA)/NESTMOTOR
      MW[031]=(MW[11]+ MW[13]+MW[14]+MW[15]+K1_WC_DA)/NESTMOTOR
      MW[041]=(MW[11]+ MW[13]+MW[14]+MW[15]+K1_ST_DA)/NESTMOTOR


  ;   PEAK PERIOD CARPOOL2 ELEMENTS OF UTILITY ARE:
  ;   WALK TIME
      MW[11]=(MI.5.TERMINALTIME)*HBWCOVT
  ;   WAIT TIME
      ;MW[12]=(0)*HBWCOVT
  ;   IVTT
      MW[13]=(MI.5.TIME)*HBWCIVT
  ;    PARKING COST - ONLY AT DESTINATION (J), HALF IN EACH DIRECTION,
SHARED BY 2 = 0.25
      MW[14]=0.25 * ZI.1.LONGPARK[J] * HBWCCST
  ;   OTHER COST
      MW[15]= 0.50 * MI.5.DISTANCE * {HWYOPCOST} * 100 * HBWCCST
  ;   COMPOSITE UTILITY
      MW[022]=(MW[11]+ MW[13]+MW[14]+MW[15]+K1_NC_CP)/NESTMOTOR
      MW[032]=(MW[11]+ MW[13]+MW[14]+MW[15]+K1_WC_CP)/NESTMOTOR
      MW[042]=(MW[11]+ MW[13]+MW[14]+MW[15]+K1_ST_CP)/NESTMOTOR


  ;   PEAK PERIOD CARPOOL3 ALONE ELEMENTS OF UTILITY ARE:
  ;   WALK TIME
      MW[11]=(MI.5.TERMINALTIME)*HBWCOVT
  ;   WAIT TIME
      ;MW[12]=(0)*HBWCOVT
  ;   IVTT
      MW[13]=(MI.5.TIME)*HBWCIVT
  ;    PARKING COST - ONLY AT DESTINATION (J), HALF IN EACH DIRECTION,
SHARED BY {hbw3p}
      MW[14]=0.5 * ZI.1.LONGPARK[J] * HBWCCST/{hbw3p}
  ;   OTHER COST
      MW[15]=MI.5.DISTANCE*{HWYOPCOST} * 100 *HBWCCST/{hbw3p}
  ;   COMPOSITE UTILITY
      MW[023]=(MW[11]+ MW[13]+MW[14]+MW[15]+K1_NC_CX)/NESTMOTOR
```

```
      MW[033]=(MW[11]+ MW[13]+MW[14]+MW[15]+K1_WC_CX)/NESTMOTOR
      MW[043]=(MW[11]+ MW[13]+MW[14]+MW[15]+K1_ST_CX)/NESTMOTOR

  ;   PEAK PERIOD WALK TO LOCAL BUS ELEMENTS OF UTILITY ARE:
  ;   WALK TIME
      MW[11]=(mi.3.pkwktimelb)*HBWCOVT
  ;   WAIT TIME
      MW[12]=(mi.3.pkwttimelb)*HBWCOVT
  ;   IVTT
      MW[13]=(mi.3.pkivtimelb)*HBWCIVT
      if (mw[13]=0) mw[13]=-9999
  ;   PARKING COST
      MW[14]=(mi.3.pkpkcostlb)*HBWCCST
  ;   OTHER COST - t
      MW[15]=(mi.3.pkopcostlb*100*0.25*busfarefac)*HBWCCST
                                                      ;   CS   applied   25%
(discounted) bus fare
                                                      ; due to employee pass
program
  ;   PEDESTRIAN ENVIRONMENT
      MW[16]=HBWPTI * ZI.1.SUM[I]*0.25
  ;   COMPOSITE UTILITY

MW[024]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K1_NC_WB)/NESTTRANSIT

MW[034]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K1_WC_WB)/NESTTRANSIT

MW[044]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K1_ST_WB)/NESTTRANSIT

  ;   PEAK PERIOD WALK TO PREMIUM TRANSIT ELEMENTS OF UTILITY ARE:
  ;   WALK TIME
      MW[11]=(mi.3.pkwktimeex)*HBWCOVT
  ;   WAIT TIME
      MW[12]=(mi.3.pkwttimeex)*HBWCOVT
  ;   IVTT
      MW[13]=(mi.3.pkivtimeex)*HBWCIVT
      if (mw[13]=0) mw[13]=-9999
  ;   PARKING COST
      MW[14]=(mi.3.pkpkcostex)*HBWCCST
  ;   OTHER COST - FARE
      MW[15]=(mi.3.pkopcostex * 100)*HBWCCST
  ;   PEDESTRIAN ENVIRONMENT
      MW[16]=HBWPTI * ZI.1.SUM[I]*0.25
  ;   COMPOSITE UTILITY

MW[025]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K1_NC_WX)/NESTTRANSIT

MW[035]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K1_WC_WX)/NESTTRANSIT

MW[045]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K1_ST_WX)/NESTTRANSIT

  ;   PEAK PERIOD AUTO TO BEST AVAILABLE TRANSIT ELEMENTS OF UTILITY ARE:
  ;   WALK TIME
      MW[11]=(mi.3.pkwktimeba)*HBWCOVT
  ;   WAIT TIME
      MW[12]=(mi.3.pkwttimeba)*HBWCOVT
  ;   IVTT
```

```
      MW[13]=(mi.3.pkivtimeba)*HBWCIVT
      if (mw[13]=0) mw[13]=-9999
  ;   PARKING COST
      MW[14]=(mi.3.pkpkcostba)*HBWCCST
  ;   OTHER COST - FARE
      MW[15]=(mi.3.pkopcostba * 100)*HBWCCST
  ;   COMPOSITE UTILITY
      MW[026]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+K1_NC_BA)/NESTTRANSIT
      MW[036]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+K1_WC_BA)/NESTTRANSIT
      MW[046]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+K1_ST_BA)/NESTTRANSIT

;
=========================================================================
==========
; HBO, NHB, HBU AND HDORMU (OFF-PEAK) TRIP PURPOSES
;
=========================================================================
==========
  ;   OFF-PEAK PERIOD DRIVE ALONE ELEMENTS OF UTILITY ARE:
  ;   -- HBO --
  ;   WALK TIME
      MW[11]=(MI.5.TERMINALTIME)*HBOCOVT
  ;   WAIT TIME
      ;MW[12]=(0)*HBOCOVT
  ;   IVTT
      MW[13]=(MI.1.TIME)*HBOCIVT
  ;   PARKING COST - ONLY AT DESTINATION (J), HALF IN EACH DIRECTION
      MW[14]=0.5 * ZI.1.SHORTPARK[J] * HBOCCST
  ;   OTHER COST
      MW[15]=MI.1.DISTANCE * {HWYOPCOST} * 100 * HBOCCST
  ;   COMPOSITE UTILITY
      ;MW[051]=(MW[11]+MW[13]+MW[14]+MW[15]+K2_NC_DA)/NESTMOTOR
      MW[061]=(MW[11]+MW[13]+MW[14]+MW[15]+K2_WC_DA)/NESTMOTOR
      MW[071]=(MW[11]+MW[13]+MW[14]+MW[15]+K2_ST_DA)/NESTMOTOR

  ;   -- NHB --
  ;   WALK TIME
      MW[11]=(MI.5.TERMINALTIME)*NHBCOVT
  ;   WAIT TIME
      ;MW[12]=(0)*NHBCOVT
  ;   IVTT
      MW[13]=(MI.1.TIME)*NHBCIVT
  ;   PARKING COST - AVG ORIGIN AND DESTINATION
      MW[14]=0.5 * (ZI.1.SHORTPARK[I]+ZI.1.SHORTPARK[J]) * NHBCCST
  ;   OTHER COST
      MW[15]=MI.1.DISTANCE * {HWYOPCOST} * 100 * NHBCCST
  ;   COMPOSITE UTILITY
      MW[081]=(MW[11]+MW[13]+MW[14]+MW[15]+K3_NC_DA)/NESTMOTOR

  ;   -- HBU --
  ;   WALK TIME
      MW[11]=(MI.5.TERMINALTIME)*UNICOVT
  ;   WAIT TIME
      ;MW[12]=(0)*UNICOVT
  ;   IVTT
      MW[13]=(MI.1.TIME)*UNICIVT
  ;   PARKING COST - ONLY AT DESTINATION (J), HALF IN EACH DIRECTION
```

```
     MW[14]=0.5 * ZI.1.STUDENTPAR[J] * UNICCST ; university gets long term cost
  ;  OTHER COST
     MW[15]=MI.1.DISTANCE * {HWYOPCOST} * 100 * UNICCST
  ;  COMPOSITE UTILITY
     MW[101]=(MW[11]+MW[13]+MW[14]+MW[15]+K4_NC_DA)/NESTMOTOR

  ;  OFF-PEAK PERIOD CARPOOL2 ELEMENTS OF UTILITY ARE:
  ;  -- HBO --
  ;  WALK TIME
     MW[11]=(MI.5.TERMINALTIME)*HBOCOVT
  ;  WAIT TIME

     ;MW[12]=(0)*HBOCOVT
  ;  IVTT
     MW[13]=(MI.1.TIME)*HBOCIVT
  ;  PARKING COST - ONLY AT DESTINATION (J), HALF IN EACH DIRECTION

     MW[14]=0.25 * ZI.1.SHORTPARK[J] * HBOCCST
  ;  OTHER COST
     MW[15]=0.5 * MI.1.DISTANCE * {HWYOPCOST} * 100 * HBOCCST
  ;  COMPOSITE UTILITY
     MW[052]=(MW[11]+MW[13]+MW[14]+MW[15]+K2_NC_CP)/NESTMOTOR
     MW[062]=(MW[11]+MW[13]+MW[14]+MW[15]+K2_WC_CP)/NESTMOTOR
     MW[072]=(MW[11]+MW[13]+MW[14]+MW[15]+K2_ST_CP)/NESTMOTOR

  ;  -- NHB --
  ;  WALK TIME
     MW[11]=(MI.5.TERMINALTIME)*NHBCOVT
  ;  WAIT TIME
     ;MW[12]=(0)*NHBCOVT
  ;  IVTT
     MW[13]=(MI.1.TIME)*NHBCIVT
  ;  PARKING COST - ONLY AT DESTINATION (J), HALF IN EACH DIRECTION
     MW[14]=0.25 * (ZI.1.SHORTPARK[I]+ZI.1.SHORTPARK[J]) * NHBCCST
  ;  OTHER COST
     MW[15]=0.5 * MI.1.DISTANCE * {HWYOPCOST} * 100 * NHBCCST
  ;  COMPOSITE UTILITY
     MW[082]=(MW[11]+MW[13]+MW[14]+MW[15]+K3_NC_CP)/NESTMOTOR

  ;  -- HBU --
  ;  WALK TIME
     MW[11]=(MI.5.TERMINALTIME)*UNICOVT
  ;  WAIT TIME
     ;MW[12]=(0)*UNICOVT
  ;  IVTT
     MW[13]=(MI.1.TIME)*UNICIVT
  ;  PARKING COST - ONLY AT DESTINATION (J), HALF IN EACH DIRECTION
     MW[14]=0.25 * ZI.1.STUDENTPAR[J] * UNICCST ; university gets long term cost
  ;  OTHER COST
     MW[15]=0.5 * MI.1.DISTANCE * {HWYOPCOST} * 100 * UNICCST
  ;  COMPOSITE UTILITY
     MW[102]=(MW[11]+MW[13]+MW[14]+MW[15]+K4_NC_CP)/NESTMOTOR

  ;  OFF-PEAK PERIOD CARPOOL3 ELEMENTS OF UTILITY ARE:
  ;  -- HBO --
```

```
;   WALK TIME
    MW[11]=(MI.5.TERMINALTIME)*HBOCOVT
;   WAIT TIME
    ;MW[12]=(0)*HBOCOVT
;   IVTT
    MW[13]=(MI.1.TIME)*HBOCIVT
;   PARKING COST
    MW[14]=0.50 * ZI.1.SHORTPARK[J] * HBOCCST/{hbo3p}
;   OTHER COST
    MW[15]=(MI.1.DISTANCE*{HWYOPCOST} * 100)*HBOCCST/{hbo3p}
;   COMPOSITE UTILITY
    MW[053]=(MW[11]+MW[13]+MW[14]+MW[15]+K2_NC_CX)/NESTMOTOR
    MW[063]=(MW[11]+MW[13]+MW[14]+MW[15]+K2_WC_CX)/NESTMOTOR
    MW[073]=(MW[11]+MW[13]+MW[14]+MW[15]+K2_ST_CX)/NESTMOTOR

;   -- NHB --
;   WALK TIME
    MW[11]=(MI.5.TERMINALTIME)*NHBCOVT
;   WAIT TIME
    ;MW[12]=(0)*NHBCOVT
;   IVTT
    MW[13]=(MI.1.TIME)*NHBCIVT
;   PARKING COST
    MW[14]=0.50      *      (ZI.1.SHORTPARK[I]+ZI.1.SHORTPARK[J])      *
NHBCCST/{NHB3P}
;   OTHER COST
    MW[15]=(MI.1.DISTANCE*{HWYOPCOST} * 100)*NHBCCST/{NHB3P}
;   COMPOSITE UTILITY
    MW[083]=(MW[11]+MW[13]+MW[14]+MW[15]+K3_NC_CX)/NESTMOTOR

;   -- HBU --
;   WALK TIME
    MW[11]=(MI.5.TERMINALTIME)*UNICOVT
;   WAIT TIME
    ;MW[12]=(0)*UNICOVT
;   IVTT
    MW[13]=(MI.1.TIME)*UNICIVT
;   PARKING COST
    MW[14]=0.50 * ZI.1.STUDENTPAR[J] * UNICCST/{hbw3p} ; assume 3+ occ
like work & Long park cost
;   OTHER COST
    MW[15]=(MI.1.DISTANCE*{HWYOPCOST}  *  100)*UNICCST/{hbw3p}  ;  assume
3+ occ like work
;   COMPOSITE UTILITY
    MW[103]=(MW[11]+MW[13]+MW[14]+MW[15]+K4_NC_CX)/NESTMOTOR

;   OFF-PEAK PERIOD WALK TO LOCAL BUS ELEMENTS OF UTILITY ARE:
;   -- HBO --
;   WALK TIME
    MW[11]=(mi.4.opwktimelb)*HBOCOVT
;   WAIT TIME
    MW[12]=(mi.4.opwttimelb)*HBOCOVT
;   IVTT
    MW[13]=(mi.4.opivtimelb)*HBOCIVT
    if (mw[13]=0) mw[13]=-9999
;   PARKING COST
    MW[14]=(mi.4.oppkcostlb)*HBOCCST
```

```
   ;   OTHER COST - FARE
       MW[15]=(mi.4.opopcostlb * 100 * busfarefac)*HBOCCST
   ;   PEDESTRIAN ENVIRONMENT
       MW[16]=HBOPTI * ZI.1.SUM[I]*0.25
   ;   COMPOSITE UTILITY

MW[054]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K2_NC_WB)/NESTTRANSIT

MW[064]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K2_WC_WB)/NESTTRANSIT

MW[074]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K2_ST_WB)/NESTTRANSIT

   ;   -- NHB --
   ;   WALK TIME
       MW[11]=(mi.4.opwktimelb)*NHBCOVT
   ;   WAIT TIME
       MW[12]=(mi.4.opwttimelb)*NHBCOVT
   ;   IVTT
       MW[13]=(mi.4.opivtimelb)*NHBCIVT
       if (mw[13]=0) mw[13]=-9999
   ;   PARKING COST
       MW[14]=(mi.4.oppkcostlb)*NHBCCST
   ;   OTHER COST - FARE
       MW[15]=(mi.4.opopcostlb * 100 * busfarefac)*NHBCCST
   ;   PEDESTRIAN ENVIRONMENT
       MW[16]=NHBPTI * ZI.1.SUM[I]*0.25
   ;   COMPOSITE UTILITY

MW[084]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K3_NC_WB)/NESTTRANSIT

   ;   -- HBU --
   ;   WALK TIME
       MW[11]=(mi.4.opwktimelb)*UNICOVT
   ;   WAIT TIME
       MW[12]=(mi.4.opwttimelb)*UNICOVT
   ;   IVTT
       MW[13]=(mi.4.opivtimelb)*UNICIVT
       if (mw[13]=0) mw[13]=-9999
   ;   PARKING COST
       MW[14]=(mi.4.oppkcostlb)*UNICCST
   ;   OTHER COST - FARE
       MW[15]=(mi.4.opopcostlb * 100 * 0.10*busfarefac)*UNICCST
                                                    ;   CS   applied   10%
(discounted) bus fare
                                                    ; due  to  transit  fare
payed in tuition
;      MW[15]=0 ; UF fare free - previous model
   ;   PEDESTRIAN ENVIRONMENT
       MW[16]=UNIPTI * ZI.1.SUM[I]*0.25
   ;   COMPOSITE UTILITY

MW[104]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K4_NC_WB)/NESTTRANSIT

   ;   -- HDORMU --
   ;   WALK TIME
       MW[11]=(mi.4.opwktimelb)*UNICOVT
   ;   WAIT TIME
```

```
      MW[12]=(mi.4.opwttimelb)*UNICOVT
  ;   IVTT
      MW[13]=(mi.4.opivtimelb)*UNICIVT
      if (mw[13]=0) mw[13]=-9999
  ;   PARKING COST
      MW[14]=(mi.4.oppkcostlb)*UNICCST
  ;   OTHER COST - FARE
      MW[15]=(mi.4.opopcostlb * 100 * 0.10*busfarefac)*UNICCST
                                                     ;   CS   applied   10%
(discounted) bus fare
                                                     ; due  to  transit  fare
payed in tuition
      ;MW[15]=0 ; UF fare free - previous model
  ;   PEDESTRIAN ENVIRONMENT
      MW[16]=UNIPTI * ZI.1.SUM[I]*0.25
  ;   COMPOSITE UTILITY

MW[110]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K5_NC_WB);/{NESTCTRANS
IT}

  ;   OFF-PEAK PERIOD WALK TO PREMIUM TRANSIT ELEMENTS OF UTILITY ARE:

  ;   -- HBO --
  ;   WALK TIME
      MW[11]=(mi.4.opwktimeex)*HBOCOVT
  ;   WAIT TIME
      MW[12]=(mi.4.opwttimeex)*HBOCOVT
  ;   IVTT
      MW[13]=(mi.4.opivtimeex)*HBOCIVT
      if (mw[13]=0) mw[13]=-9999
  ;   PARKING COST
      MW[14]=(mi.4.oppkcostex)*HBOCCST
  ;   OTHER COST
      MW[15]=(mi.4.opopcostex)*HBOCCST
  ;   PEDESTRIAN ENVIRONMENT
      MW[16]=HBOPTI * ZI.1.SUM[I]*0.25
  ;   COMPOSITE UTILITY

MW[055]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K2_NC_WX)/NESTTRANSIT

MW[065]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K2_WC_WX)/NESTTRANSIT

MW[075]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K2_ST_WX)/NESTTRANSIT

  ;   -- NHB --
  ;   WALK TIME
      MW[11]=(mi.4.opwktimeex)*NHBCOVT
  ;   WAIT TIME
      MW[12]=(mi.4.opwttimeex)*NHBCOVT
  ;   IVTT
      MW[13]=(mi.4.opivtimeex)*NHBCIVT
      if (mw[13]=0) mw[13]=-9999
  ;   PARKING COST
      MW[14]=(mi.4.oppkcostex)*NHBCCST
  ;   OTHER COST
      MW[15]=(mi.4.opopcostex)*NHBCCST
  ;   PEDESTRIAN ENVIRONMENT
```

```
     MW[16]=NHBPTI * ZI.1.SUM[I]*0.25
  ;  COMPOSITE UTILITY

MW[085]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K3_NC_WX)/NESTTRANSIT

  ;  -- HBU --
  ;  WALK TIME
     MW[11]=(mi.4.opwktimeex)*UNICOVT
  ;  WAIT TIME
     MW[12]=(mi.4.opwttimeex)*UNICOVT
  ;  IVTT
     MW[13]=(mi.4.opivtimeex)*UNICIVT
     if (mw[13]=0) mw[13]=-9999
  ;  PARKING COST
     MW[14]=(mi.4.oppkcostex)*UNICCST
  ;  OTHER COST
     ;MW[15]=(mi.4.opopcostex)*UNICCST
     MW[15]=0 ; UF fare free
  ;  PEDESTRIAN ENVIRONMENT
     MW[16]=UNIPTI * ZI.1.SUM[I]*0.25
  ;  COMPOSITE UTILITY

MW[105]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+MW[16]+K4_NC_WX)/NESTTRANSIT

  ;   OFF-PEAK PERIOD AUTO TO BEST AVAILABLE TRANSIT ELEMENTS OF UTILITY
ARE:
  ;  -- HBO --
  ;  WALK TIME
     MW[11]=(mi.4.opwktimeba)*HBOCOVT
  ;  WAIT TIME
     MW[12]=(mi.4.opwttimeba)*HBOCOVT
  ;  IVTT
     MW[13]=(mi.4.opivtimeba)*HBOCIVT
     if (mw[13]=0) mw[13]=-9999
  ;  PARKING COST
     MW[14]=(mi.4.oppkcostba)*HBOCCST
  ;  OTHER COST
     ;MW[15]=(mi.4.opopcostba)*HBOCCST
     MW[15]=0 ; UF fare free
  ;  COMPOSITE UTILITY
     MW[056]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+K2_NC_BA)/NESTTRANSIT
     MW[066]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+K2_WC_BA)/NESTTRANSIT
     MW[076]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+K2_ST_BA)/NESTTRANSIT

  ;  -- NHB --
  ;  WALK TIME
     MW[11]=(mi.4.opwktimeba)*NHBCOVT
  ;  WAIT TIME
     MW[12]=(mi.4.opwttimeba)*NHBCOVT
  ;  IVTT
     MW[13]=(mi.4.opivtimeba)*NHBCIVT
     if (mw[13]=0) mw[13]=-9999
  ;  PARKING COST
     MW[14]=(mi.4.oppkcostba)*NHBCCST
  ;  OTHER COST
     MW[15]=(mi.4.opopcostba)*NHBCCST
  ;  COMPOSITE UTILITY
```

```
      MW[086]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+K3_NC_BA)/NESTTRANSIT

  ;   -- HBU --
  ;   WALK TIME
      MW[11]=(mi.4.opwktimeba)*UNICOVT
  ;   WAIT TIME
      MW[12]=(mi.4.opwttimeba)*UNICOVT
  ;   IVTT
      MW[13]=(mi.4.opivtimeba)*UNICIVT
      if (mw[13]=0) mw[13]=-9999
  ;   PARKING COST
      MW[14]=(mi.4.oppkcostba)*UNICCST
  ;   OTHER COST
      ;MW[15]=(mi.4.opopcostba)*UNICCST
      MW[15]=0 ; UF fare free
  ;   COMPOSITE UTILITY
      MW[106]=(MW[11]+MW[12]+MW[13]+MW[14]+MW[15]+K4_NC_BA)/NESTTRANSIT

; ---------- END MOTORIZED UTILITIES --------------------

; WALK ONLY (NON-MOTORIZED) ELEMENTS OF UTILITY ARE:
; WALK AND BIKE TIMES
      mw[8]=60*MI.1.WALKDISTANCE/{WALKSPEED} ;all walk
      mw[9]=MI.1.BIKETIME ;all bike

;HBW
  ;   WALK TIME
      MW[11]=mw[8]*HBWCWT
  ;   PEDESTRIAN ENVIRONMENT
      MW[12]= 0.25*(ZI.1.SUM[I]*HBWPWI + ZI.1.SUM[J]*HBWPWJ)
      ; 0.25 because we are using sum, not composite
  ;   UTILITIES
      MW[027]=(MW[11]+MW[12]+K1_NC_WK)/{NESTCNONMOTOR}
      MW[037]=(MW[11]+MW[12]+K1_WC_WK)/{NESTCNONMOTOR}
      MW[047]=(MW[11]+MW[12]+K1_ST_WK)/{NESTCNONMOTOR}
;HBO
  ;   WALK TIME
      MW[11]=mw[8]*HBOCWT
  ;   PEDESTRIAN ENVIRONMENT
      MW[12]= 0.25*(ZI.1.SUM[I]*HBOPWI + ZI.1.SUM[J]*HBOPWJ)
  ;   UTILITIES
      MW[057]=(MW[11]+MW[12]+K2_NC_WK)/{NESTCNONMOTOR}
      MW[067]=(MW[11]+MW[12]+K2_WC_WK)/{NESTCNONMOTOR}
      MW[077]=(MW[11]+MW[12]+K2_ST_WK)/{NESTCNONMOTOR}
;NHB
  ;   WALK TIME
      MW[11]=mw[8]*NHBCWT
  ;   PEDESTRIAN ENVIRONMENT
      MW[12]= 0.25*(ZI.1.SUM[I]*NHBPWI + ZI.1.SUM[J]*NHBPWJ)
  ;   UTILITIES
      MW[087]=(MW[11]+MW[12]+K3_NC_WK)/{NESTCNONMOTOR}
;UNIVERSITY
  ;   WALK TIME
      MW[11]=mw[8]*UNICWT
  ;   PEDESTRIAN ENVIRONMENT
      MW[12]= 0.25*(ZI.1.SUM[I]*UNIPWI + ZI.1.SUM[J]*UNIPWJ)
  ;   UTILITIES
```

```
      MW[089]=(MW[11]+MW[12]+K4_NC_WK)/{NESTCNONMOTOR}
      MW[090]=(MW[11]+MW[12]+K5_NC_WK);/{NESTCNONMOTOR}

; BIKE ONLY (NON-MOTORIZED) ELEMENTS OF UTILITY ARE:

;HBW
  ;   BIKE TIME
      MW[11]=mw[9]*HBWCBT
  ;   PEDESTRIAN ENVIRONMENT
      MW[12]=0.25*(ZI.1.SUM[I]*HBWPBI + ZI.1.SUM[J]*HBWPBJ)
  ;   UTILITIES
      MW[028]=(MW[11]+MW[12]+K1_NC_BK)/{NESTCNONMOTOR}
      MW[038]=(MW[11]+MW[12]+K1_WC_BK)/{NESTCNONMOTOR}
      MW[048]=(MW[11]+MW[12]+K1_ST_BK)/{NESTCNONMOTOR}
;HBO
  ;   BIKE TIME
      MW[11]=mw[9]*HBOCBT
  ;   PEDESTRIAN ENVIRONMENT
      MW[12]=0.25*(ZI.1.SUM[I]*HBOPBI + ZI.1.SUM[J]*HBOPBJ)
  ;   UTILITIES
      MW[058]=(MW[11]+MW[12]+K2_NC_BK)/{NESTCNONMOTOR}
      MW[068]=(MW[11]+MW[12]+K2_WC_BK)/{NESTCNONMOTOR}
      MW[078]=(MW[11]+MW[12]+K2_ST_BK)/{NESTCNONMOTOR}
;NHB
  ;   BIKE TIME
      MW[11]=mw[9]*NHBCBT
  ;   PEDESTRIAN ENVIRONMENT
      MW[12]=0.25*(ZI.1.SUM[I]*NHBPBI + ZI.1.SUM[J]*NHBPBJ)
  ;   UTILITIES
      MW[088]=(MW[11]+MW[12]+K3_NC_BK)/{NESTCNONMOTOR}
;UNIVERSITY
  ;   BIKE TIME
      MW[11]=mw[9]*UNICBT
  ;   PEDESTRIAN ENVIRONMENT
      MW[12]=0.25*(ZI.1.SUM[I]*UNIPBI + ZI.1.SUM[J]*UNIPBJ)
  ;   UTILITIES
      MW[091]=(MW[11]+MW[12]+K4_NC_BK)/{NESTCNONMOTOR}
      MW[092]=(MW[11]+MW[12]+K5_NC_BK);/{NESTCNONMOTOR}

    endjloop


; MARKET SEGMENTATION: car, no car student
     MW[301]=MW[1]*ZI.3.NOCARPCT ; 0 car
     MW[302]=MW[1]*ZI.3.WCARPCT  ; with car
     MW[303]=MW[1]*ZI.3.STUPCT   ; students
     MW[304]=MW[2]*ZI.3.NOCARPCT ; 0 car
     MW[305]=MW[2]*ZI.3.WCARPCT  ; with car
     MW[306]=MW[2]*ZI.3.STUPCT   ; students

; HBW (USE 0 CAR)
; DA, BA not in market
   CHOICE ALTERNATIVES=CP,CX,WB,WX,WK,BK,
      DEMAND=MW[301],
      UTILITIES=MW[022],MW[023],MW[024],MW[025],MW[027],MW[028],
      ODEMAND=402,403,404,405,407,408,
      STARTMW=500,
```

```
      SPLIT=TOTAL,    {NESTCNONMOTOR} NONMOTOR, {NESTCMOTOR} MOTOR,
      SPLIT=MOTOR,    {NESTCAUTO} AUTO,     {NESTCTRANSIT} TRANSIT,
      SPLIT=NONMOTOR, 1.0 WK, 1.0 BK,
      SPLIT=AUTO,     1.0 CP, 1.0 CX,
      SPLIT=TRANSIT,  1.0 WB, 1.0 WX

  MW[401]=0; no drive alone
  MW[406]=0; no auto access

; HBW (USE 1+ CAR)
   CHOICE ALTERNATIVES=DA,CP,CX,WB,WX,BA,WK,BK,
      DEMAND=MW[302],

UTILITIES=MW[031],MW[032],MW[033],MW[034],MW[035],MW[036],MW[037],MW[038]
,
      ODEMAND=411,412,413,414,415,416,417,418,
      STARTMW=500,
      SPLIT=TOTAL,    {NESTCNONMOTOR} NONMOTOR, {NESTCMOTOR} MOTOR,
      SPLIT=MOTOR,    {NESTCAUTO} AUTO,     {NESTCTRANSIT} TRANSIT,
      SPLIT=NONMOTOR, 1.0 WK, 1.0 BK,
      SPLIT=AUTO,     1.0 DA, 1.0 CP, 1.0 CX,
      SPLIT=TRANSIT,  1.0 WB, 1.0 WX, 1.0 BA
; HBW (USE STUDENT)
   CHOICE ALTERNATIVES=DA,CP,CX,WB,WX,BA,WK,BK,
      DEMAND=MW[303],

UTILITIES=MW[041],MW[042],MW[043],MW[044],MW[045],MW[046],MW[047],MW[048]
,
      ODEMAND=421,422,423,424,425,426,427,428,
      STARTMW=500,
      SPLIT=TOTAL,    {NESTCNONMOTOR} NONMOTOR, {NESTCMOTOR} MOTOR,
      SPLIT=MOTOR,    {NESTCAUTO} AUTO,     {NESTCTRANSIT} TRANSIT,
      SPLIT=NONMOTOR, 1.0 WK, 1.0 BK,
      SPLIT=AUTO,     1.0 DA, 1.0 CP, 1.0 CX,
      SPLIT=TRANSIT,  1.0 WB, 1.0 WX, 1.0 BA
MW[151]=MW[401]+MW[411]+MW[421]
MW[152]=MW[402]+MW[412]+MW[422]
MW[153]=MW[403]+MW[413]+MW[423]
MW[154]=MW[404]+MW[414]+MW[424]
MW[155]=MW[405]+MW[415]+MW[425]
MW[156]=MW[406]+MW[416]+MW[426]
MW[157]=MW[407]+MW[417]+MW[427]
MW[158]=MW[408]+MW[418]+MW[428]


; HBO (USE 0 CAR)
; DA, BA not in market
   CHOICE ALTERNATIVES=CP,CX,WB,WX,WK,BK,
      DEMAND=MW[304],
      UTILITIES=MW[052],MW[053],MW[054],MW[055],MW[057],MW[058],
      ODEMAND=432,433,434,435,437,438,
      STARTMW=500,
      SPLIT=TOTAL,    {NESTCNONMOTOR} NONMOTOR, {NESTCMOTOR} MOTOR,
      SPLIT=MOTOR,    {NESTCAUTO} AUTO,     {NESTCTRANSIT} TRANSIT,
      SPLIT=NONMOTOR, 1.0 WK, 1.0 BK,
      SPLIT=AUTO,     1.0 CP, 1.0 CX,
      SPLIT=TRANSIT,  1.0 WB, 1.0 WX
```

```
  MW[431]=0; no drive alone
  MW[436]=0; no auto access

; HBO (USE 1+ CAR)
   CHOICE ALTERNATIVES=DA,CP,CX,WB,WX,BA,WK,BK,
      DEMAND=MW[305],

UTILITIES=MW[061],MW[062],MW[063],MW[064],MW[065],MW[066],MW[067],MW[068]
,
      ODEMAND=441,442,443,444,445,446,447,448,
      STARTMW=500,
      SPLIT=TOTAL,    {NESTCNONMOTOR} NONMOTOR, {NESTCMOTOR} MOTOR,
      SPLIT=MOTOR,    {NESTCAUTO} AUTO,     {NESTCTRANSIT} TRANSIT,
      SPLIT=NONMOTOR, 1.0 WK, 1.0 BK,
      SPLIT=AUTO,     1.0 DA, 1.0 CP, 1.0 CX,
      SPLIT=TRANSIT,  1.0 WB, 1.0 WX, 1.0 BA
; HBO (USE STUDENT)
   CHOICE ALTERNATIVES=DA,CP,CX,WB,WX,BA,WK,BK,
      DEMAND=MW[306],

UTILITIES=MW[071],MW[072],MW[073],MW[074],MW[075],MW[076],MW[077],MW[078]
,
      ODEMAND=451,452,453,454,455,456,457,458,
      STARTMW=500,
      SPLIT=TOTAL,    {NESTCNONMOTOR} NONMOTOR, {NESTCMOTOR} MOTOR,
      SPLIT=MOTOR,    {NESTCAUTO} AUTO,     {NESTCTRANSIT} TRANSIT,
      SPLIT=NONMOTOR, 1.0 WK, 1.0 BK,
      SPLIT=AUTO,     1.0 DA, 1.0 CP, 1.0 CX,
      SPLIT=TRANSIT,  1.0 WB, 1.0 WX, 1.0 BA
MW[161]=MW[431]+MW[441]+MW[451]
MW[162]=MW[432]+MW[442]+MW[452]
MW[163]=MW[433]+MW[443]+MW[453]
MW[164]=MW[434]+MW[444]+MW[454]
MW[165]=MW[435]+MW[445]+MW[455]
MW[166]=MW[436]+MW[446]+MW[456]
MW[167]=MW[437]+MW[447]+MW[457]
MW[168]=MW[438]+MW[448]+MW[458]



; NHB (USE 0 CAR CONSTANTS, NO MARKET SEGMENTATION IS NEEDED FOR THIS
TRIP PURPOSE)
   CHOICE ALTERNATIVES=DA,CP,CX,WB,WX,BA,WK,BK,
      DEMAND=MW[003],

UTILITIES=MW[081],MW[082],MW[083],MW[084],MW[085],MW[086],MW[087],MW[088]
,
      ODEMAND=171,172,173,174,175,176,177,178,
      STARTMW=500,
      SPLIT=TOTAL,    {NESTCNONMOTOR} NONMOTOR, {NESTCMOTOR} MOTOR,
      SPLIT=MOTOR,    {NESTCAUTO} AUTO,     {NESTCTRANSIT} TRANSIT,
      SPLIT=NONMOTOR, 1.0 WK, 1.0 BK,
      SPLIT=AUTO,     1.0 DA, 1.0 CP, 1.0 CX,
      SPLIT=TRANSIT,  1.0 WB, 1.0 WX, 1.0 BA

; HBU (FULL CHOICE SET)
```

```
   CHOICE ALTERNATIVES=DA,CP,CX,WB,WX,BA,WK,BK,
      DEMAND=MW[004],

UTILITIES=MW[101],MW[102],MW[103],MW[104],MW[105],MW[106],MW[089],MW[091]
,
      ODEMAND=181,182,183,184,185,186,187,188,
      STARTMW=500,
      SPLIT=TOTAL,    {NESTCNONMOTOR} NONMOTOR, {NESTCMOTOR} MOTOR,


      SPLIT=MOTOR,    {NESTCAUTO} AUTO,     {NESTCTRANSIT} TRANSIT,
      SPLIT=NONMOTOR, 1.0 WK, 1.0 BK,
      SPLIT=AUTO,     1.0 DA, 1.0 CP, 1.0 CX,
      SPLIT=TRANSIT,  1.0 WB, 1.0 WX, 1.0 BA

; CAMPUS HOUSING -HDORMU- (PARTIAL CHOICE SET)
   CHOICE ALTERNATIVES=WB,WK,BK,
      DEMAND=MW[5],
      UTILITIES=MW[110],MW[090],MW[092],
      ODEMAND=191,192,193,
      STARTMW=600,
      SPLIT=TOTAL,    1.0 WB, 1.0 WK, 1.0 BK

JLOOP
;
HBWDA=HBWDA+MW[151]
HBWCP=HBWCP+MW[152]
HBWCX=HBWCX+MW[153]
HBWWB=HBWWB+MW[154]
HBWWX=HBWWX+MW[155]
HBWBA=HBWBA+MW[156]
HBWWK=HBWWK+MW[157]
HBWBK=HBWBK+MW[158]

HBODA=HBODA+MW[161]
HBOCP=HBOCP+MW[162]
HBOCX=HBOCX+MW[163]
HBOWB=HBOWB+MW[164]
HBOWX=HBOWX+MW[165]
HBOBA=HBOBA+MW[166]
HBOWK=HBOWK+MW[167]
HBOBK=HBOBK+MW[168]

NHBDA=NHBDA+MW[171]
NHBCP=NHBCP+MW[172]
NHBCX=NHBCX+MW[173]
NHBWB=NHBWB+MW[174]
NHBWX=NHBWX+MW[175]
NHBBA=NHBBA+MW[176]
NHBWK=NHBWK+MW[177]
NHBBK=NHBBK+MW[178]

HBUDA=HBUDA+MW[181]
HBUCP=HBUCP+MW[182]
HBUCX=HBUCX+MW[183]
HBUWB=HBUWB+MW[184]
HBUWX=HBUWX+MW[185]
```

```
HBUBA=HBUBA+MW[186]
HBUWK=HBUWK+MW[187]
HBUBK=HBUBK+MW[188]

UNIWB=UNIWB+MW[191]
UNIWK=UNIWK+MW[192]
UNIBK=UNIBK+MW[193]

MW401=MW401+MW[401]
MW411=MW411+MW[411]
MW421=MW421+MW[421]
MW431=MW431+MW[431]
MW441=MW441+MW[441]
MW451=MW451+MW[451]
MW171=MW171+MW[171]
MW181=MW181+MW[181]
MW402=MW402+MW[402]
MW412=MW412+MW[412]
MW422=MW422+MW[422]
MW432=MW432+MW[432]
MW442=MW442+MW[442]
MW452=MW452+MW[452]
MW172=MW172+MW[172]
MW182=MW182+MW[182]
MW403=MW403+MW[403]
MW413=MW413+MW[413]
MW423=MW423+MW[423]
MW433=MW433+MW[433]
MW443=MW443+MW[443]
MW453=MW453+MW[453]
MW173=MW173+MW[173]
MW183=MW183+MW[183]
MW404=MW404+MW[404]
MW414=MW414+MW[414]
MW424=MW424+MW[424]
MW434=MW434+MW[434]
MW444=MW444+MW[444]
MW454=MW454+MW[454]
MW174=MW174+MW[174]
MW184=MW184+MW[184]
MW191=MW191+MW[191]
MW405=MW405+MW[405]
MW415=MW415+MW[415]
MW425=MW425+MW[425]
MW435=MW435+MW[435]
MW445=MW445+MW[445]
MW455=MW455+MW[455]
MW175=MW175+MW[175]
MW185=MW185+MW[185]
MW406=MW406+MW[406]
MW416=MW416+MW[416]
MW426=MW426+MW[426]
MW436=MW436+MW[436]
MW446=MW446+MW[446]
MW456=MW456+MW[456]
MW176=MW176+MW[176]
MW186=MW186+MW[186]
```

```
MW407=MW407+MW[407]
MW417=MW417+MW[417]
MW427=MW427+MW[427]
MW437=MW437+MW[437]
MW447=MW447+MW[447]
MW457=MW457+MW[457]
MW177=MW177+MW[177]
MW187=MW187+MW[187]
MW192=MW192+MW[192]
MW408=MW408+MW[408]
MW418=MW418+MW[418]
MW428=MW428+MW[428]
MW438=MW438+MW[438]
MW448=MW448+MW[448]
MW458=MW458+MW[458]
MW178=MW178+MW[178]
MW188=MW188+MW[188]
MW193=MW193+MW[193]

ENDJLOOP

if (i=_zones)


SUMHBW=HBWDA+HBWCP+HBWCX+HBWWB+HBWWX+HBWBA+HBWWK+HBWBK

SUMHBO=HBODA+HBOCP+HBOCX+HBOWB+HBOWX+HBOBA+HBOWK+HBOBK
SUMNHB=NHBDA+NHBCP+NHBCX+NHBWB+NHBWX+NHBBA+NHBWK+NHBBK
SUMHBU=HBUDA+HBUCP+HBUCX+HBUWB+HBUWX+HBUBA+HBUWK+HBUBK
SUMUNI=UNIWB+UNIWK+UNIBK
;Total trips by purpose
mx1=MW401+MW402+MW403+MW404+MW405+MW406+MW407+MW408
mx2=MW411+MW412+MW413+MW414+MW415+MW416+MW417+MW418
mx3=MW421+MW422+MW423+MW424+MW425+MW426+MW427+MW428
mx4=MW431+MW432+MW433+MW434+MW435+MW436+MW437+MW438
mx5=MW441+MW442+MW443+MW444+MW445+MW446+MW447+MW448
mx6=MW451+MW452+MW453+MW454+MW455+MW456+MW457+MW458
mx7=MW171+MW172+MW173+MW174+MW175+MW176+MW177+MW178
mx8=MW181+MW182+MW183+MW184+MW185+MW186+MW187+MW188
mx9=MW191+MW192+MW193
;mode shares
MW401=MW401/mx1
MW402=MW402/mx1
MW403=MW403/mx1
MW404=MW404/mx1
MW405=MW405/mx1
MW406=MW406/mx1
MW407=MW407/mx1
MW408=MW408/mx1
MW411=MW411/mx2
MW412=MW412/mx2
MW413=MW413/mx2
MW414=MW414/mx2
MW415=MW415/mx2
MW416=MW416/mx2
MW417=MW417/mx2
MW418=MW418/mx2
```

```
MW421=MW421/mx3
MW422=MW422/mx3
MW423=MW423/mx3
MW424=MW424/mx3
MW425=MW425/mx3
MW426=MW426/mx3
MW427=MW427/mx3
MW428=MW428/mx3
MW431=MW431/mx4
MW432=MW432/mx4
MW433=MW433/mx4
MW434=MW434/mx4
MW435=MW435/mx4
MW436=MW436/mx4
MW437=MW437/mx4
MW438=MW438/mx4
MW441=MW441/mx5
MW442=MW442/mx5
MW443=MW443/mx5

MW444=MW444/mx5
MW445=MW445/mx5

MW446=MW446/mx5
MW447=MW447/mx5
MW448=MW448/mx5
MW451=MW451/mx6
MW452=MW452/mx6
MW453=MW453/mx6
MW454=MW454/mx6
MW455=MW455/mx6


MW456=MW456/mx6
MW457=MW457/mx6
MW458=MW458/mx6
MW171=MW171/mx7
MW172=MW172/mx7
MW173=MW173/mx7
MW174=MW174/mx7
MW175=MW175/mx7
MW176=MW176/mx7
MW177=MW177/mx7
MW178=MW178/mx7
MW181=MW181/mx8
MW182=MW182/mx8
MW183=MW183/mx8
MW184=MW184/mx8
MW185=MW185/mx8
MW186=MW186/mx8
MW187=MW187/mx8
MW188=MW188/mx8
MW191=MW191/mx9
MW192=MW192/mx9
MW193=MW193/mx9
```

```
PRINT LIST="\n +++++ MODE CHOICE SUMMARY +++++\n" PRINTO=1
PRINT LIST="{DESC}" PRINTO=1
PRINT LIST="{SCENARIO_SHORTNAME}\n" PRINTO=1

PRINT FORM=8.OC, LIST='HOME-BASED WORK MODE CHOICE RESULTS',
'\nHBW TOTAL                    =',SUMHBW,'  ',1.0(5.4),
'\nDRIVE ALONE                  =',HBWDA,'  ',HBWDA/SUMHBW(5.4),
'\nCARPOOL 2                    =',HBWCP,'  ',HBWCP/SUMHBW(5.4),
'\nCARPOOL 3+                   =',HBWCX,'  ',HBWCX/SUMHBW(5.4),
'\nWALK TO LOCAL TRANSIT        =',HBWWB,'  ',HBWWB/SUMHBW(5.4),
'\nWALK TO PREMIUM TRANSIT      =',HBWWX,'  ',HBWWX/SUMHBW(5.4),
'\nDRIVE TO BEST AVAILABLE TRANSIT=',HBWBA,'  ',HBWBA/SUMHBW(5.4),
'\nNON-MOTORIZED WALK           =',HBWWK,'  ',HBWWK/SUMHBW(5.4),
'\nNON-MOTORIZED BICYCLE        =',HBWBK,'  ',HBWBK/SUMHBW(5.4),
'\n                              Average          Auto          Occupancy
=',(HBWDA+HBWCP+HBWCX)/(HBWDA+HBWCP/2+HBWCX/{HBW3P})(4.3),PRINTO=1

PRINT FORM=8.OC, LIST='\n ','\nHOME-BASED OTHER MODE CHOICE RESULTS',
'\nHBO TOTAL                    =',SUMHBO,'  ',1.0(5.4),
'\nDRIVE ALONE                  =',HBODA,'  ',HBODA/SUMHBO(5.4),
'\nCARPOOL 2                    =',HBOCP,'  ',HBOCP/SUMHBO(5.4),
'\nCARPOOL 3+                   =',HBOCX,'  ',HBOCX/SUMHBO(5.4),
'\nWALK TO LOCAL TRANSIT        =',HBOWB,'  ',HBOWB/SUMHBO(5.4),
'\nWALK TO PREMIUM TRANSIT      =',HBOWX,'  ',HBOWX/SUMHBO(5.4),
'\nDRIVE TO BEST AVAILABLE TRANSIT=',HBOBA,'  ',HBOBA/SUMHBO(5.4),
'\nNON-MOTORIZED WALK           =',HBOWK,'  ',HBOWK/SUMHBO(5.4),
'\nNON-MOTORIZED BICYCLE        =',HBOBK,'  ',HBOBK/SUMHBO(5.4),
'\n                              Average          Auto          Occupancy
=',(HBODA+HBOCP+HBOCX)/(HBODA+HBOCP/2+HBOCX/{HBO3P})(4.3),PRINTO=1

PRINT FORM=8.OC, LIST='\n ','\nNON-HOME BASED MODE CHOICE RESULTS',
'\nNHB TOTAL                    =',SUMNHB,'  ',1.0(5.4),
'\nDRIVE ALONE                  =',NHBDA,'  ',NHBDA/SUMNHB(5.4),
'\nCARPOOL 2                    =',NHBCP,'  ',NHBCP/SUMNHB(5.4),
'\nCARPOOL 3+                   =',NHBCX,'  ',NHBCX/SUMNHB(5.4),
'\nWALK TO LOCAL TRANSIT        =',NHBWB,'  ',NHBWB/SUMNHB(5.4),
'\nWALK TO PREMIUM TRANIST      =',NHBWX,'  ',NHBWX/SUMNHB(5.4),
'\nDRIVE TO BEST AVAILABLE TRANSIT=',NHBBA,'  ',NHBBA/SUMNHB(5.4),
'\nNON-MOTORIZED WALK           =',NHBWK,'  ',NHBWK/SUMNHB(5.4),
'\nNON-MOTORIZED BICYCLE        =',NHBBK,'  ',NHBBK/SUMNHB(5.4),
'\n                              Average          Auto          Occupancy
=',(NHBDA+NHBCP+NHBCX)/(NHBDA+NHBCP/2+NHBCX/{NHB3P})(4.3),PRINTO=1

PRINT   FORM=8.OC,   LIST='\n   ','\nHOME   BASED   UNIVERSITY   MODE   CHOICE
RESULTS',
'\nHBU TOTAL                    =',SUMHBU,'  ',1.0(5.4),
'\nDRIVE ALONE                  =',HBUDA,'  ',HBUDA/SUMHBU(5.4),
'\nCARPOOL 2                    =',HBUCP,'  ',HBUCP/SUMHBU(5.4),
'\nCARPOOL 3+                   =',HBUCX,'  ',HBUCX/SUMHBU(5.4),
'\nWALK TO LOCAL TRANSIT        =',HBUWB,'  ',HBUWB/SUMHBU(5.4),
'\nWALK TO PREMIUM TRANSIT      =',HBUWX,'  ',HBUWX/SUMHBU(5.4),

'\nDRIVE TO BEST AVAILABLE TRANSIT=',HBUBA,'  ',HBUBA/SUMHBU(5.4),
'\nNON-MOTORIZED WALK           =',HBUWK,'  ',HBUWK/SUMHBU(5.4),
'\nNON-MOTORIZED BICYCLE        =',HBUBK,'  ',HBUBK/SUMHBU(5.4),
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'\n                              Average          Auto          Occupancy
=',(HBUDA+HBUCP+HBUCX)/(HBUDA+HBUCP/2+HBUCX/{HBW3P})(4.3),PRINTO=1

PRINT FORM=8.OC, LIST='\n ','\nCAMPUS UNIVERSITY MODE CHOICE RESULTS',
'\nCAMPUS HOUSING TOTAL          =',SUMUNI,'  ',1.0(5.4),
'\nWALK TO LOCAL TRANSIT         =',UNIWB,'  ',UNIWB/SUMUNI(5.4),
'\nNON-MOTORIZED WALK            =',UNIWK,'  ',UNIWK/SUMUNI(5.4),
'\nNON-MOTORIZED   BICYCLE                                =',UNIBK,'
',UNIBK/SUMUNI(5.4),PRINTO=1

; MODE SUMMARY TABLE AS CSV
PRINT                            CSV=T,                            LIST=
'PURPOSE','TOTAL','DA','SR2','SR3+','WALKBUS','WALKPREM','DRIVETRN','WALK
','BIKE', PRINTO=4
PRINT                            CSV=T,                            LIST=
'HBW',SUMHBW,HBWDA,HBWCP,HBWCX,HBWWB,HBWWX,HBWBA,HBWWK,HBWBK,PRINTO=4
PRINT                            CSV=T,                            LIST=
'HBO',SUMHBO,HBODA,HBOCP,HBOCX,HBOWB,HBOWX,HBOBA,HBOWK,HBOBK,PRINTO=4
PRINT                            CSV=T,                            LIST=
'NHB',SUMNHB,NHBDA,NHBCP,NHBCX,NHBWB,NHBWX,NHBBA,NHBWK,NHBBK,PRINTO=4
PRINT                            CSV=T,                            LIST=
'HBU',SUMHBU,HBUDA,HBUCP,HBUCX,HBUWB,HBUWX,HBUBA,HBUWK,HBUBK,PRINTO=4
PRINT CSV=T, LIST= 'DORM',SUMUNI,0,0,0,UNIWB,0,0,UNIWK,UNIBK,PRINTO=4

; Targets
PRINT CSV=T, LIST= 'TARGETS', PRINTO=2
PRINT                            CSV=T,                            LIST=
1,t1_NC_DA(7.5),t1_WC_DA(7.5),t1_ST_DA(7.5),t2_NC_DA(7.5),t2_WC_DA(7.5),t
2_ST_DA(7.5),t3_NC_DA(7.5),t4_NC_DA(7.5),t5_NC_DA(7.5), PRINTO=2
PRINT                            CSV=T,                            LIST=
2,t1_NC_CP(7.5),t1_WC_CP(7.5),t1_ST_CP(7.5),t2_NC_CP(7.5),t2_WC_CP(7.5),t
2_ST_CP(7.5),t3_NC_CP(7.5),t4_NC_CP(7.5),t5_NC_CP(7.5), PRINTO=2
PRINT                            CSV=T,                            LIST=
3,t1_NC_CX(7.5),t1_WC_CX(7.5),t1_ST_CX(7.5),t2_NC_CX(7.5),t2_WC_CX(7.5),t
2_ST_CX(7.5),t3_NC_CX(7.5),t4_NC_CX(7.5),t5_NC_CX(7.5), PRINTO=2
PRINT                            CSV=T,                            LIST=
4,t1_NC_WB(7.5),t1_WC_WB(7.5),t1_ST_WB(7.5),t2_NC_WB(7.5),t2_WC_WB(7.5),t
2_ST_WB(7.5),t3_NC_WB(7.5),t4_NC_WB(7.5),t5_NC_WB(7.5), PRINTO=2
PRINT                            CSV=T,                            LIST=
5,t1_NC_WX(7.5),t1_WC_WX(7.5),t1_ST_WX(7.5),t2_NC_WX(7.5),t2_WC_WX(7.5),t
2_ST_WX(7.5),t3_NC_WX(7.5),t4_NC_WX(7.5),t5_NC_WX(7.5), PRINTO=2
PRINT                            CSV=T,                            LIST=
6,t1_NC_BA(7.5),t1_WC_BA(7.5),t1_ST_BA(7.5),t2_NC_BA(7.5),t2_WC_BA(7.5),t
2_ST_BA(7.5),t3_NC_BA(7.5),t4_NC_BA(7.5),t5_NC_BA(7.5), PRINTO=2
PRINT                            CSV=T,                            LIST=
7,t1_NC_WK(7.5),t1_WC_WK(7.5),t1_ST_WK(7.5),t2_NC_WK(7.5),t2_WC_WK(7.5),t
2_ST_WK(7.5),t3_NC_WK(7.5),t4_NC_WK(7.5),t5_NC_WK(7.5), PRINTO=2
PRINT                            CSV=T,                            LIST=
8,t1_NC_BK(7.5),t1_WC_BK(7.5),t1_ST_BK(7.5),t2_NC_BK(7.5),t2_WC_BK(7.5),t
2_ST_BK(7.5),t3_NC_BK(7.5),t4_NC_BK(7.5),t5_NC_BK(7.5), PRINTO=2

; Shares
PRINT CSV=T, LIST= 'MODAL SHARES', PRINTO=2
PRINT                            CSV=T,                            LIST=
1,MW401(7.5),MW411(7.5),MW421(7.5),MW431(7.5),MW441(7.5),MW451(7.5),MW171
(7.5),MW181(7.5),0(7.5)      , PRINTO=2
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PRINT                                CSV=T,                              LIST=
2,MW402(7.5),MW412(7.5),MW422(7.5),MW432(7.5),MW442(7.5),MW452(7.5),MW172
(7.5),MW182(7.5),0(7.5)       , PRINTO=2
PRINT                                CSV=T,                              LIST=
3,MW403(7.5),MW413(7.5),MW423(7.5),MW433(7.5),MW443(7.5),MW453(7.5),MW173
(7.5),MW183(7.5),0(7.5)       , PRINTO=2
PRINT                                CSV=T,                              LIST=
4,MW404(7.5),MW414(7.5),MW424(7.5),MW434(7.5),MW444(7.5),MW454(7.5),MW174
(7.5),MW184(7.5),MW191(7.5)   , PRINTO=2
PRINT                                CSV=T,                              LIST=
5,MW405(7.5),MW415(7.5),MW425(7.5),MW435(7.5),MW445(7.5),MW455(7.5),MW175
(7.5),MW185(7.5),0(7.5)       , PRINTO=2
PRINT                                CSV=T,                              LIST=
6,MW406(7.5),MW416(7.5),MW426(7.5),MW436(7.5),MW446(7.5),MW456(7.5),MW176
(7.5),MW186(7.5),0(7.5)       , PRINTO=2
PRINT                                CSV=T,                              LIST=
7,MW407(7.5),MW417(7.5),MW427(7.5),MW437(7.5),MW447(7.5),MW457(7.5),MW177
(7.5),MW187(7.5),MW192(7.5)   , PRINTO=2
PRINT                                CSV=T,                              LIST=
8,MW408(7.5),MW418(7.5),MW428(7.5),MW438(7.5),MW448(7.5),MW458(7.5),MW178
(7.5),MW188(7.5),MW193(7.5)   , PRINTO=2
PRINT CSV=T, LIST= 'T',mx1,mx2,mx3,mx4,mx5,mx6,mx7,mx8,mx9  , PRINTO=2

; print INPUT modal constants
PRINT CSV=T, LIST= 'INPUT CONSTANTS', PRINTO=2
PRINT                                CSV=T,                              LIST=
1.0,K1_NC_DA,K1_WC_DA,K1_ST_DA,K2_NC_DA,K2_WC_DA,K2_ST_DA,K3_NC_DA,K4_NC_
DA,K5_NC_DA, PRINTO=2
PRINT                                CSV=T,                              LIST=
2.0,K1_NC_CP,K1_WC_CP,K1_ST_CP,K2_NC_CP,K2_WC_CP,K2_ST_CP,K3_NC_CP,K4_NC_
CP,K5_NC_CP, PRINTO=2
PRINT                                CSV=T,                              LIST=
3.0,K1_NC_CX,K1_WC_CX,K1_ST_CX,K2_NC_CX,K2_WC_CX,K2_ST_CX,K3_NC_CX,K4_NC_
CX,K5_NC_CX, PRINTO=2
PRINT                                CSV=T,                              LIST=
4.0,K1_NC_WB,K1_WC_WB,K1_ST_WB,K2_NC_WB,K2_WC_WB,K2_ST_WB,K3_NC_WB,K4_NC_
WB,K5_NC_WB, PRINTO=2
PRINT                                CSV=T,                              LIST=
5.0,K1_NC_WX,K1_WC_WX,K1_ST_WX,K2_NC_WX,K2_WC_WX,K2_ST_WX,K3_NC_WX,K4_NC_
WX,K5_NC_WX, PRINTO=2
PRINT                                CSV=T,                              LIST=
6.0,K1_NC_BA,K1_WC_BA,K1_ST_BA,K2_NC_BA,K2_WC_BA,K2_ST_BA,K3_NC_BA,K4_NC_
BA,K5_NC_BA, PRINTO=2
PRINT                                CSV=T,                              LIST=
7.0,K1_NC_WK,K1_WC_WK,K1_ST_WK,K2_NC_WK,K2_WC_WK,K2_ST_WK,K3_NC_WK,K4_NC_
WK,K5_NC_WK, PRINTO=2
PRINT                                CSV=T,                              LIST=
8.0,K1_NC_BK,K1_WC_BK,K1_ST_BK,K2_NC_BK,K2_WC_BK,K2_ST_BK,K3_NC_BK,K4_NC_
BK,K5_NC_BK, PRINTO=2

if ({MC_Cal}>1) ; Calibrate?
; -- Revised constants
D=+1.0    ; Dampening factor
; HBW No+Car: DA(1) and BA(6) not in set, No WX present so omit from
calibration
R1_NC_DA=0
/*
```

```
NESTMOTOR    = 1.0
NESTTRANSIT  = 1.0
NESTNONMOTOR = 1.0
*/
LCP=Ln(MW402/t1_NC_CP)*NESTMOTOR
LCX=Ln(MW403/t1_NC_CX)*NESTMOTOR
LWB=Ln(MW404/t1_NC_WB)*NESTTRANSIT
LWK=Ln(MW407/t1_NC_WK)*NESTNONMOTOR
LBK=Ln(MW408/t1_NC_BK)*NESTNONMOTOR

R1_NC_CP=K1_NC_CP
R1_NC_CX=K1_NC_CX+D*(+LCP-LCX)
R1_NC_WB=K1_NC_WB+D*(+LCP-LWB)
R1_NC_WX=R1_NC_WB ;  express same as local
R1_NC_BA=K1_NC_BA
R1_NC_WK=K1_NC_WK+D*(+LCP-LWK)
R1_NC_BK=K1_NC_BK+D*(+LCP-LBK)

; HBW With+Car: No WX present so omit from calibration
;R1_WC_DA=K1_WC_DA+D*(-
Ln(MW411/t1_WC_DA)+Ln(MW412/t1_WC_CP)+Ln(MW413/t1_WC_CX)+Ln(MW414/t1_WC_W
B)+Ln(MW416/t1_WC_BA)+Ln(MW417/t1_WC_WK)+Ln(MW418/t1_WC_BK)
R1_WC_DA=0


LDA=Ln(MW411/t1_WC_DA)*NESTMOTOR
LCP=Ln(MW412/t1_WC_CP)*NESTMOTOR
LCX=Ln(MW413/t1_WC_CX)*NESTMOTOR
LWB=Ln(MW414/t1_WC_WB)*NESTTRANSIT
LBA=Ln(MW416/t1_WC_BA)*NESTTRANSIT
LWK=Ln(MW417/t1_WC_WK)*NESTNONMOTOR
LBK=Ln(MW418/t1_WC_BK)*NESTNONMOTOR

R1_WC_CP=K1_WC_CP+D*(+LDA-LCP)
R1_WC_CX=K1_WC_CX+D*(+LDA-LCX)
R1_WC_WB=K1_WC_WB+D*(+LDA-LWB)
R1_WC_WX=R1_WC_WB ;  express same as local
R1_WC_BA=K1_WC_BA+D*(+LDA-LBA)
R1_WC_WK=K1_WC_WK+D*(+LDA-LWK)
R1_WC_BK=K1_WC_BK+D*(+LDA-LBK)

; HBW Student: No WX present so omit from calibration
;R1_ST_DA=K1_ST_DA+D*(-
Ln(MW421/t1_ST_DA)+Ln(MW422/t1_ST_CP)+Ln(MW423/t1_ST_CX)+Ln(MW424/t1_ST_W
B)+Ln(MW426/t1_ST_BA)+Ln(MW427/t1_ST_WK)+Ln(MW428/t1_ST_BK)
R1_ST_DA=0
LDA=Ln(MW421/t1_ST_DA)*NESTMOTOR
LCP=Ln(MW422/t1_ST_CP)*NESTMOTOR
LCX=Ln(MW423/t1_ST_CX)*NESTMOTOR
LWB=Ln(MW424/t1_ST_WB)*NESTTRANSIT
LBA=Ln(MW426/t1_ST_BA)*NESTTRANSIT
LWK=Ln(MW427/t1_ST_WK)*NESTNONMOTOR
LBK=Ln(MW428/t1_ST_BK)*NESTNONMOTOR

R1_ST_CP=K1_ST_CP+D*(+LDA-LCP)
R1_ST_CX=K1_ST_CX+D*(+LDA-LCX)
R1_ST_WB=K1_ST_WB+D*(+LDA-LWB)
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```
R1_ST_WX=R1_ST_WB ;  express same as local
R1_ST_BA=K1_ST_BA+D*(+LDA-LBA)
R1_ST_WK=K1_ST_WK+D*(+LDA-LWK)
R1_ST_BK=K1_ST_BK+D*(+LDA-LBK)

; HBO No+Car: DA(1) and BA(6) not in set, No WX present so omit from calibration
;R2_NC_DA=K2_NC_DA
R2_NC_DA=0

LCP=Ln(MW432/t2_NC_CP)*NESTMOTOR
LCX=Ln(MW433/t2_NC_CX)*NESTMOTOR
LWB=Ln(MW434/t2_NC_WB)*NESTTRANSIT
LWK=Ln(MW437/t2_NC_WK)*NESTNONMOTOR
LBK=Ln(MW438/t2_NC_BK)*NESTNONMOTOR

R2_NC_CP=K2_NC_CP
R2_NC_CX=K2_NC_CX+D*(+LCP-LCX)
R2_NC_WB=K2_NC_WB+D*(+LCP-LWB)

R2_NC_WX=R2_NC_WB ;  express same as local
R2_NC_BA=K2_NC_BA
R2_NC_WK=K2_NC_WK+D*(+LCP-LWK)
R2_NC_BK=K2_NC_BK+D*(+LCP-LBK)

; HBO With+Car: No WX present so omit from calibration
;R2_WC_DA=K2_WC_DA-
Ln(MW441/t2_WC_DA)+Ln(MW442/t2_WC_CP)+Ln(MW443/t2_WC_CX)+Ln(MW444/t2_WC_W
B)+Ln(MW446/t2_WC_BA)+Ln(MW447/t2_WC_WK)+Ln(MW448/t2_WC_BK)
R2_WC_DA=0
LDA=Ln(MW441/t2_WC_DA)*NESTMOTOR
LCP=Ln(MW442/t2_WC_CP)*NESTMOTOR
LCX=Ln(MW443/t2_WC_CX)*NESTMOTOR
LWB=Ln(MW444/t2_WC_WB)*NESTTRANSIT
LBA=Ln(MW446/t2_WC_BA)*NESTTRANSIT
LWK=Ln(MW447/t2_WC_WK)*NESTNONMOTOR
LBK=Ln(MW448/t2_WC_BK)*NESTNONMOTOR

R2_WC_CP=K2_WC_CP+D*(+LDA-LCP)
R2_WC_CX=K2_WC_CX+D*(+LDA-LCX)
R2_WC_WB=K2_WC_WB+D*(+LDA-LWB)
R2_WC_WX=R2_WC_WB ;  express same as local
R2_WC_BA=K2_WC_BA+D*(+LDA-LBA)
R2_WC_WK=K2_WC_WK+D*(+LDA-LWK)
R2_WC_BK=K2_WC_BK+D*(+LDA-LBK)

; HBO Student: No WX present so omit from calibration
;R2_ST_DA=K2_ST_DA-
Ln(MW451/t2_ST_DA)+Ln(MW452/t2_ST_CP)+Ln(MW453/t2_ST_CX)+Ln(MW454/t2_ST_W
B)+Ln(MW456/t2_ST_BA)+Ln(MW457/t2_ST_WK)+Ln(MW458/t2_ST_BK)
R2_ST_DA=0
LDA=Ln(MW451/t2_ST_DA)*NESTMOTOR
LCP=Ln(MW452/t2_ST_CP)*NESTMOTOR
LCX=Ln(MW453/t2_ST_CX)*NESTMOTOR
LWB=Ln(MW454/t2_ST_WB)*NESTTRANSIT
LBA=Ln(MW456/t2_ST_BA)*NESTTRANSIT
LWK=Ln(MW457/t2_ST_WK)*NESTNONMOTOR
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LBK=Ln(MW458/t2_ST_BK)*NESTNONMOTOR

R2_ST_CP=K2_ST_CP+D*(+LDA-LCP)
R2_ST_CX=K2_ST_CX+D*(+LDA-LCX)
R2_ST_WB=K2_ST_WB+D*(+LDA-LWB)
R2_ST_WX=R2_ST_WB ;  express same as local
R2_ST_BA=K2_ST_BA+D*(+LDA-LBA)
R2_ST_WK=K2_ST_WK+D*(+LDA-LWK)
R2_ST_BK=K2_ST_BK+D*(+LDA-LBK)

; NHB: No WX present so omit from calibration
;R3_NC_DA=K3_NC_DA-
Ln(MW171/t3_NC_DA)+Ln(MW172/t3_NC_CP)+Ln(MW173/t3_NC_CX)+Ln(MW174/t3_NC_W
B)+Ln(MW176/t3_NC_BA)+Ln(MW177/t3_NC_WK)+Ln(MW178/t3_NC_BK)
R3_NC_DA=0
LDA=Ln(MW171/t3_NC_DA)*NESTMOTOR
LCP=Ln(MW172/t3_NC_CP)*NESTMOTOR
LCX=Ln(MW173/t3_NC_CX)*NESTMOTOR
LWB=Ln(MW174/t3_NC_WB)*NESTTRANSIT
LBA=Ln(MW176/t3_NC_BA)*NESTTRANSIT
LWK=Ln(MW177/t3_NC_WK)*NESTNONMOTOR
LBK=Ln(MW178/t3_NC_BK)*NESTNONMOTOR

R3_NC_CP=K3_NC_CP+D*(+LDA-LCP)
R3_NC_CX=K3_NC_CX+D*(+LDA-LCX)
R3_NC_WB=K3_NC_WB+D*(+LDA-LWB)
R3_NC_WX=R3_NC_WB ;  express same as local
R3_NC_BA=K3_NC_BA+D*(+LDA-LBA)
R3_NC_WK=K3_NC_WK+D*(+LDA-LWK)
R3_NC_BK=K3_NC_BK+D*(+LDA-LBK)

; HBU: No WX present so omit from calibration
;R4_NC_DA=K4_NC_DA-
Ln(MW181/t4_NC_DA)+Ln(MW182/t4_NC_CP)+Ln(MW183/t4_NC_CX)+Ln(MW184/t4_NC_W
B)+Ln(MW186/t4_NC_BA)+Ln(MW187/t4_NC_WK)+Ln(MW188/t4_NC_BK)
R4_NC_DA=0
LDA=Ln(MW181/t4_NC_DA)*NESTMOTOR
LCP=Ln(MW182/t4_NC_CP)*NESTMOTOR
LCX=Ln(MW183/t4_NC_CX)*NESTMOTOR
LWB=Ln(MW184/t4_NC_WB)*NESTTRANSIT
LBA=Ln(MW186/t4_NC_BA)*NESTTRANSIT
LWK=Ln(MW187/t4_NC_WK)*NESTNONMOTOR
LBK=Ln(MW188/t4_NC_BK)*NESTNONMOTOR

R4_NC_CP=K4_NC_CP+D*(+LDA-LCP)
R4_NC_CX=K4_NC_CX+D*(+LDA-LCX)
R4_NC_WB=K4_NC_WB+D*(+LDA-LWB)
R4_NC_WX=R4_NC_WB ;  express same as local
R4_NC_BA=K4_NC_BA+D*(+LDA-LBA)
R4_NC_WK=K4_NC_WK+D*(+LDA-LWK)
R4_NC_BK=K4_NC_BK+D*(+LDA-LBK)

; DORM: AUTO, PNR and WX NOT IN CHOICE SET. No WX present so omit from
calibration
R5_NC_DA=0
LWB=Ln(MW191/t5_NC_WB)*NESTTRANSIT
LWK=Ln(MW192/t5_NC_WK)*NESTNONMOTOR
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LBK=Ln(MW193/t5_NC_BK)*NESTNONMOTOR

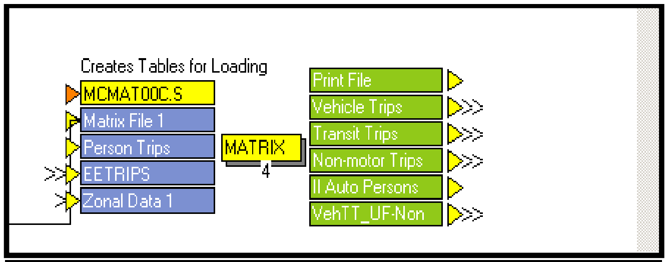
R5_NC_CP=0
R5_NC_CX=0
R5_NC_WB=K5_NC_WB
R5_NC_WX=0
R5_NC_BA=0
R5_NC_WK=K5_NC_WK+D*(+LWB-LWK)
R5_NC_BK=K5_NC_BK+D*(+LWB-LBK)

; print REVISED modal constants
PRINT CSV=T, LIST= 'REVISED CONSTANTS', PRINTO=2
PRINT                             CSV=T,                              LIST=
1.0,R1_NC_DA(10.5),R1_WC_DA(10.5),R1_ST_DA(10.5),R2_NC_DA(10.5),R2_WC_DA(
10.5),R2_ST_DA(10.5),R3_NC_DA(10.5),R4_NC_DA(10.5),R5_NC_DA(10.5),
PRINTO=2
PRINT                             CSV=T,                              LIST=
2.0,R1_NC_CP(10.5),R1_WC_CP(10.5),R1_ST_CP(10.5),R2_NC_CP(10.5),R2_WC_CP(
10.5),R2_ST_CP(10.5),R3_NC_CP(10.5),R4_NC_CP(10.5),R5_NC_CP(10.5),
PRINTO=2
PRINT                             CSV=T,                              LIST=
3.0,R1_NC_CX(10.5),R1_WC_CX(10.5),R1_ST_CX(10.5),R2_NC_CX(10.5),R2_WC_CX(
10.5),R2_ST_CX(10.5),R3_NC_CX(10.5),R4_NC_CX(10.5),R5_NC_CX(10.5),
PRINTO=2
PRINT                             CSV=T,                              LIST=
4.0,R1_NC_WB(10.5),R1_WC_WB(10.5),R1_ST_WB(10.5),R2_NC_WB(10.5),R2_WC_WB(
10.5),R2_ST_WB(10.5),R3_NC_WB(10.5),R4_NC_WB(10.5),R5_NC_WB(10.5),
PRINTO=2
PRINT                             CSV=T,                              LIST=
5.0,R1_NC_WX(10.5),R1_WC_WX(10.5),R1_ST_WX(10.5),R2_NC_WX(10.5),R2_WC_WX(
10.5),R2_ST_WX(10.5),R3_NC_WX(10.5),R4_NC_WX(10.5),R5_NC_WX(10.5),
PRINTO=2
PRINT                             CSV=T,                              LIST=
6.0,R1_NC_BA(10.5),R1_WC_BA(10.5),R1_ST_BA(10.5),R2_NC_BA(10.5),R2_WC_BA(
10.5),R2_ST_BA(10.5),R3_NC_BA(10.5),R4_NC_BA(10.5),R5_NC_BA(10.5),
PRINTO=2
PRINT                             CSV=T,                              LIST=
7.0,R1_NC_WK(10.5),R1_WC_WK(10.5),R1_ST_WK(10.5),R2_NC_WK(10.5),R2_WC_WK(
10.5),R2_ST_WK(10.5),R3_NC_WK(10.5),R4_NC_WK(10.5),R5_NC_WK(10.5),
PRINTO=2
PRINT                             CSV=T,                              LIST=
8.0,R1_NC_BK(10.5),R1_WC_BK(10.5),R1_ST_BK(10.5),R2_NC_BK(10.5),R2_WC_BK(
10.5),R2_ST_BK(10.5),R3_NC_BK(10.5),R4_NC_BK(10.5),R5_NC_BK(10.5),
PRINTO=2

; print REVISED modal constants
PRINT                             CSV=T,                              LIST=
1.0,R1_NC_DA(10.5),R1_WC_DA(10.5),R1_ST_DA(10.5),R2_NC_DA(10.5),R2_WC_DA(
10.5),R2_ST_DA(10.5),R3_NC_DA(10.5),R4_NC_DA(10.5),R5_NC_DA(10.5),
PRINTO=3
PRINT                             CSV=T,                              LIST=
2.0,R1_NC_CP(10.5),R1_WC_CP(10.5),R1_ST_CP(10.5),R2_NC_CP(10.5),R2_WC_CP(
10.5),R2_ST_CP(10.5),R3_NC_CP(10.5),R4_NC_CP(10.5),R5_NC_CP(10.5),
PRINTO=3
PRINT                             CSV=T,                              LIST=
3.0,R1_NC_CX(10.5),R1_WC_CX(10.5),R1_ST_CX(10.5),R2_NC_CX(10.5),R2_WC_CX(
```

```
10.5),R2_ST_CX(10.5),R3_NC_CX(10.5),R4_NC_CX(10.5),R5_NC_CX(10.5),
PRINTO=3
PRINT                          CSV=T,                          LIST=
4.0,R1_NC_WB(10.5),R1_WC_WB(10.5),R1_ST_WB(10.5),R2_NC_WB(10.5),R2_WC_WB(
10.5),R2_ST_WB(10.5),R3_NC_WB(10.5),R4_NC_WB(10.5),R5_NC_WB(10.5),
PRINTO=3
PRINT                          CSV=T,                          LIST=
5.0,R1_NC_WX(10.5),R1_WC_WX(10.5),R1_ST_WX(10.5),R2_NC_WX(10.5),R2_WC_WX(
10.5),R2_ST_WX(10.5),R3_NC_WX(10.5),R4_NC_WX(10.5),R5_NC_WX(10.5),
PRINTO=3
PRINT                          CSV=T,                          LIST=
6.0,R1_NC_BA(10.5),R1_WC_BA(10.5),R1_ST_BA(10.5),R2_NC_BA(10.5),R2_WC_BA(
10.5),R2_ST_BA(10.5),R3_NC_BA(10.5),R4_NC_BA(10.5),R5_NC_BA(10.5),
PRINTO=3
PRINT                          CSV=T,                          LIST=
7.0,R1_NC_WK(10.5),R1_WC_WK(10.5),R1_ST_WK(10.5),R2_NC_WK(10.5),R2_WC_WK(
10.5),R2_ST_WK(10.5),R3_NC_WK(10.5),R4_NC_WK(10.5),R5_NC_WK(10.5),
PRINTO=3
PRINT                          CSV=T,                          LIST=
8.0,R1_NC_BK(10.5),R1_WC_BK(10.5),R1_ST_BK(10.5),R2_NC_BK(10.5),R2_WC_BK(
10.5),R2_ST_BK(10.5),R3_NC_BK(10.5),R4_NC_BK(10.5),R5_NC_BK(10.5),
PRINTO=3

endif ; MC_Cal
ENDIF
ENDRUN
```



MCMAT00C.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN      PGM=MATRIX      PRNFILE="{SCENARIO_DIR}\output\FINALTABLES.PRN"
MSG='Creates Tables for Loading'
FILEI MATI[3] = "{SCENARIO_DIR}\output\EETAB.MAT"
FILEI MATI[2] = "{SCENARIO_DIR}\output\PTRIPS.MAT"
FILEO MATO[5] = "{SCENARIO_DIR}\output\VEHSBYUF_NON.MAT",
MO=41,42,51,52,61,62,

NAME=UF_light,UF_heavy,Non_light,Non_heavy,SelZones_light,SelZones_heavy,
DEC=6*S
FILEI ZDATI[1] = "{SCENARIO_DIR}\input\ZoneData{YEAR}.DBF",
Z=TAZ_2007
FILEO MATO[4] = "{SCENARIO_DIR}\output\IIAUTOPERSONS.MAT",
 MO=31, NAME=iiAutoPersons, DEC=5*S
FILEO MATO[3] = "{SCENARIO_DIR}\output\NONMOTOR.MAT",
 MO=21-22, NAME=WALK,BIKE, DEC=2*S
FILEO MATO[2] = "{SCENARIO_DIR}\output\TRANSIT.MAT",
 MO=11-16,
NAME=PKWALKLOCAL,PKWALKPREM,PKAUTOBA,OPWALKLOCAL,OPWALKPREM,OPAUTOBA,
DEC=6*S
FILEO MATO[1] = "{SCENARIO_DIR}\output\VEHICLES.MAT",
MO=1-5,
 NAME=DRIVEALONE,CARPOOL,LIGHTTRUCK,HEAVYTRUCK,EETRIPS, DEC=5*S
FILEI MATI[1] = "{SCENARIO_DIR}\output\MODEOUT.MAT"
PARAMETERS ZONEMSG=100
; DRIVE ALONE
MW[1]=((MI.1.HBWDA+MI.1.HBWDA.T)/1.0+
       (MI.1.HBODA+MI.1.HBODA.T)/1.0+
       (MI.1.NHBDA+MI.1.NHBDA.T)/1.0+
       (MI.1.HBUDA+MI.1.HBUDA.T)/1.0+
       (MI.2.SOVIE+MI.2.SOVIE.T)/1.0)*0.50
; CARPOOL
MW[2]=((MI.1.HBWCP+MI.1.HBWCP.T)/2.0+
       (MI.1.HBOCP+MI.1.HBOCP.T)/2.0+
       (MI.1.NHBCP+MI.1.NHBCP.T)/2.0+
       (MI.1.HBUCP+MI.1.HBUCP.T)/2.0+
       (MI.1.HBWCX+MI.1.HBWCX.T)/{HBW3P}+
       (MI.1.HBOCX+MI.1.HBOCX.T)/{HBO3P}+
       (MI.1.NHBCX+MI.1.NHBCX.T)/{NHB3P}+
       (MI.1.HBUCX+MI.1.HBUCX.T)/{HBW3P}+ ; ASSUME 3+ occ same as work
       (MI.2.HOVIE+MI.2.HOVIE.T)/1.0)*0.50
; LIGHT DUTY TRUCKS
```

```
MW[3]=((MI.2.TRUCK4+MI.2.TRUCK4.T)+(MI.2.TRUCKLDIE+MI.2.TRUCKLDIE.T)+(MI.
2.TRUCKSU+MI.2.TRUCKSU.T))*0.50
; HEAVY DUTY TRUCKS
MW[4]=((MI.2.TRUCKTRLR+MI.2.TRUCKTRLR.T)+(MI.2.TRUCKHDIE+MI.2.TRUCKHDIE.T
))*0.50 ; 0.5 added by KDK
; EETRIPS
MW[5]=MI.3.1
; TRANSIT, PEAK PERIOD
MW[011]=MI.1.HBWWB
MW[012]=MI.1.HBWWX
MW[013]=MI.1.HBWBA
; TRANSIT, OFF-PEAK PERIOD
MW[014]=MI.1.HBOWB+MI.1.NHBWB+MI.1.HBUWB+MI.1.HDORMUWB
MW[015]=MI.1.HBOWX+MI.1.NHBWX+MI.1.HBUWX
MW[016]=MI.1.HBOBA+MI.1.NHBBA+MI.1.HBUBA
; NON-MOTORIZED
MW[021]=MI.1.HBWWK+MI.1.HBOWK+MI.1.NHBWK+MI.1.HBUWK+MI.1.HDORMUWK
MW[022]=MI.1.HBWBK+MI.1.HBOBK+MI.1.NHBBK+MI.1.HBUBK+MI.1.HDORMUBK
; Internal Auto Persons
MW[31]= MI.1.HBWDA+       MI.1.HBODA+       MI.1.NHBDA+
        MI.1.HBUDA+       MI.1.HBWCP+       MI.1.HBOCP+
        MI.1.NHBCP+       MI.1.HBUCP+       MI.1.HBWCX+
        MI.1.HBOCX+       MI.1.NHBCX+       MI.1.HBUCX

; Select Zone Vehicle Trips

  JLOOP
   if(i=1 & j=1) MW[011]=MW[011]+0.01
   if(i=1 & j=1) MW[012]=MW[012]+0.01
   if(i=1 & j=1) MW[013]=MW[013]+0.01
   if(i=1 & j=1) MW[014]=MW[014]+0.01
   if(i=1 & j=1) MW[015]=MW[015]+0.01
   if(i=1 & j=1) MW[016]=MW[016]+0.01

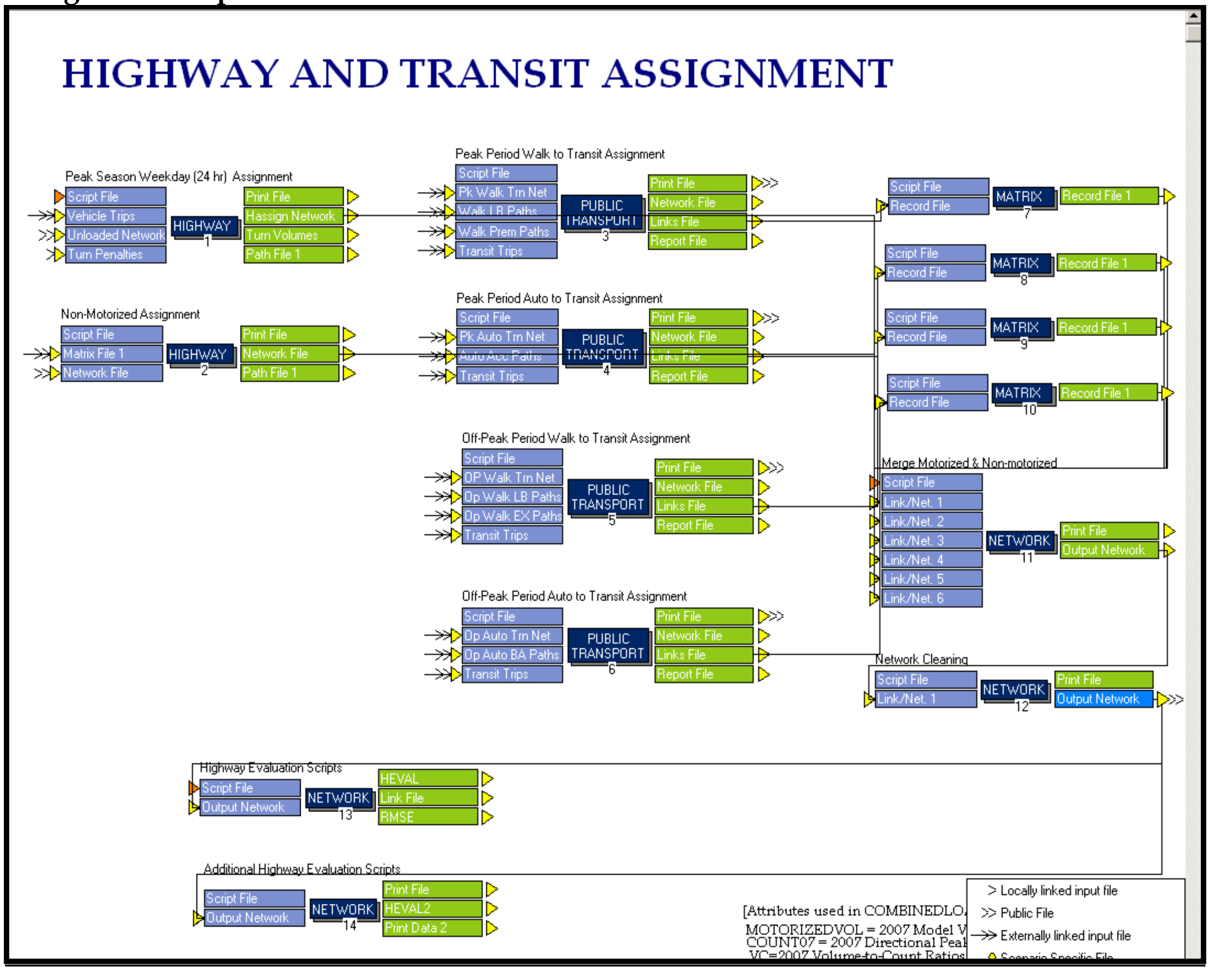
   if((ZI.1.SELECTZONE[J]=1) || (ZI.1.SELECTZONE[I]=1)) ; Select Zones
     mw[61] = mw[1] + mw[2] + mw[3] +mw[5] ; Select Zones light Vehicles
     mw[62] = mw[4]                        ; Select Zones heavy vehicles
   endif

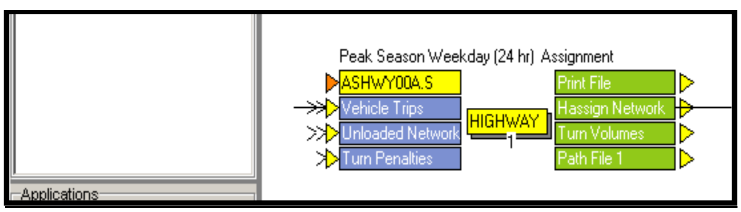

; UF vs Non-UF Vehicle Trips
   if((ZI.1.UFZONES[J]=1) || (ZI.1.UFZONES[I]=1)) ; UF related

     mw[41] = mw[1] + mw[2] + mw[3] +mw[5] ; UF light Vehicles
     mw[42] = mw[4]                        ; UF heavy vehicles
   else
     mw[51] = mw[1] + mw[2] + mw[3] +mw[5] ; non-UF light Vehicles
     mw[52] = mw[4]                        ; non-UF heavy vehicles
   endif
  ENDJLOOP


ENDRUN
```

Assignment Step





ASHWY00A.S

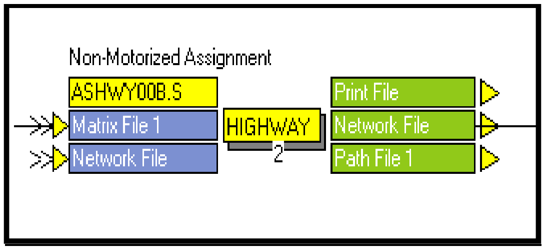
```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN   PGM=HIGHWAY   PRNFILE="{SCENARIO_DIR}\output\HASSIGN.PRN"   MSG='Peak
Season Weekday (24 hr)  Assignment'
FILEI NETI = "{SCENARIO_DIR}\output\UNLOADED.NET"
FILEO TURNVOLO = "{SCENARIO_DIR}\output\TURNVOL.BIN",
FORMAT=DBF
TURNS N=1-999999, T=TURN[1] + TURN[2] +TURN[3] +TURN[4]
FILEI MATI[1] = "{SCENARIO_DIR}\output\VEHSBYUF_NON.MAT"
FILEO NETO = "{SCENARIO_DIR}\output\HASSIGN.NET"
FILEO PATHO[1] = "{SCENARIO_DIR}\output\AUTOS.PTH"
FILEI TURNPENI = "{SCENARIO_DIR}\input\TCARDS.PEN"
parameters zonemsg=100
PROCESS PHASE=LINKREAD
```

```
; USE THE USER SUPPLIED ALPHA AND BETA FOR THE BPR CURVE
  IF (LI.BPRCOEFFICIENT=0)
     LW.BPRCOEFFICIENT=0.15
  ELSE
     LW.BPRCOEFFICIENT=LI.BPRCOEFFICIENT
  ENDIF
  IF (LI.BPREXPONENT=0)
     LW.BPREXPONENT=4.0
  ELSE
     LW.BPREXPONENT=LI.BPREXPONENT
  ENDIF
  IF (LI.CAPACITY=0)
     LW.DAILYCAP=999999
  ELSE
      LW.DAILYCAP=(LI.CAPACITY/li.confac)*li.uroadfactor
  ENDIF
  IF (LI.TIME=0)
     LW.FFTIME=0.00001
  ELSE
     LW.FFTIME=LI.TIME
  ENDIF
C=LW.DAILYCAP
T0=LW.FFTIME
IF (LI.FTYPE=49) ADDTOGROUP=1
ENDPROCESS

PROCESS PHASE=ILOOP
  MW[1]=MI.1.UF_light
  MW[2]=MI.1.UF_heavy*{PCE_HT}
  MW[3]=MI.1.Non_light
  MW[4]=MI.1.Non_heavy*{PCE_HT}
  MW[5]=MI.1.SelZones_light
  MW[6]=MI.1.SelZones_heavy*{PCE_HT}
  PATHLOAD                                                     PATH=TIME,
VOL[1]=MW[1],VOL[2]=MW[2],VOL[3]=MW[3],VOL[4]=MW[4],VOL[5]=MW[5],VOL[6]=M
W[6], PENI=1, EXCLUDEGROUP=1,
  PATHO=1, ALLJ=T, INCLUDECOST=F, NAME=ALLTRIPS
ENDPROCESS


PROCESS PHASE=ADJUST
  V = VOL[1] + VOL[2]+ VOL[3] + VOL[4]
  FUNCTION         TC[1]=T0*(1+LW.BPRCOEFFICIENT*(V/C)^LW.BPREXPONENT)    ;
congested time equation, no toll model in place
ENDPROCESS

ENDRUN
```



ASHWY00B.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=HIGHWAY PRNFILE="{SCENARIO_DIR}\output\ASHWY00A.PRN" MSG='Non-
Motorized Assignment'
FILEI NETI = "{SCENARIO_DIR}\output\UNLOADED.NET"
FILEO PATHO[1] = "{SCENARIO_DIR}\output\NONMOTOR.PTH"
FILEO NETO = "{SCENARIO_DIR}\output\NONMOTOR.NET"
FILEI MATI[1] = "{SCENARIO_DIR}\output\NONMOTOR.MAT"

PARAMETERS MAXITERS=1

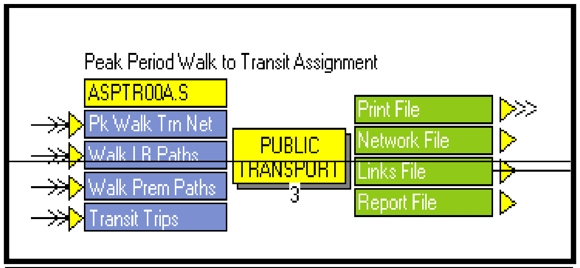
PROCESS PHASE=LINKREAD
IF (LI.FTYPE=10-19,70-99) ADDTOGROUP=1

ENDPROCESS

PROCESS PHASE=ILOOP
 PATHLOAD    PATH=LI.DISTANCE,    VOL[1]=MI.1.WALK,    VOL[2]=MI.1.BIKE,
EXCLUDEGROUP=1,
    PATHO=1,NAME='NONMOTOR',ALLJ=T,INCLUDECOSTS=F

ENDPROCESS

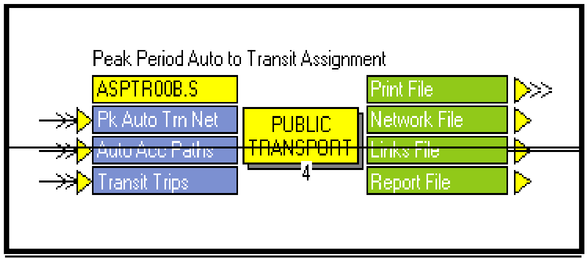
ENDRUN
```



ASPTR00A.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=PUBLIC TRANSPORT
PRNFILE="{SCENARIO_DIR}\output\TRANSIT_AMWALK.PRN" MSG='Peak Period Walk
to Transit Assignment'
FILEI ROUTEI[2] = "{SCENARIO_DIR}\output\WALKPREMAM.RTE"
FILEI ROUTEI[1] = "{SCENARIO_DIR}\output\WALKLBAM.RTE"
FILEI NETI = "{SCENARIO_DIR}\output\TNETWALKAM.NET"
FILEO LINKO = "{SCENARIO_DIR}\output\TLOD1.DBF",
SKIP0=Y,NTLEGS=F
FILEI MATI[1] = "{SCENARIO_DIR}\output\TRANSIT.MAT"
FILEO REPORTO = "{SCENARIO_DIR}\output\ASPTR00B.PRN"
FILEO NETO = "{SCENARIO_DIR}\output\TLOADAM1.NET"
PARAMETERS USERCLASSES=1,2,
           TRIPSIJ[1]=(MI.1.PKWALKLOCAL),
           TRIPSIJ[2]=(MI.1.PKWALKPREM),
           NOROUTEERRS=9999999,
           NOROUTEMSGS=0
;Selection of Loading Reports
REPORT LINES=T; LINEVOLS=T STOPSONLY=T
PAGEHEIGHT=32767

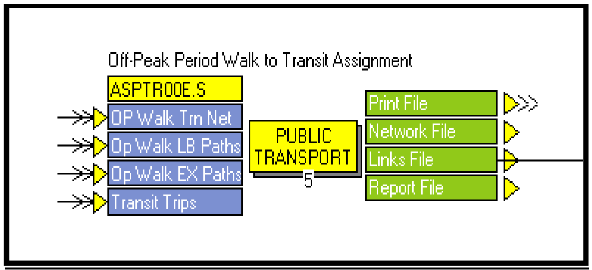
ENDRUN
```



ASPTR00B.S

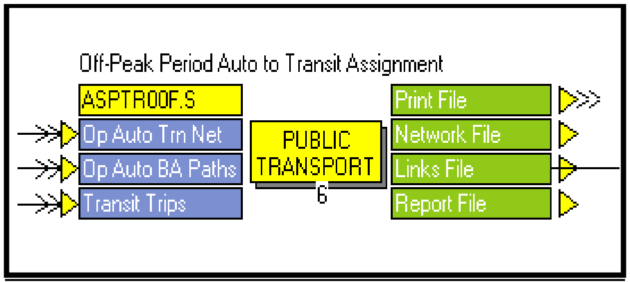
```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=PUBLIC TRANSPORT
PRNFILE="{SCENARIO_DIR}\output\TRANSIT_AMAUTO.PRN" MSG='Peak Period Auto
to Transit Assignment'
FILEI NETI = "{SCENARIO_DIR}\output\TNETAUTOAM.NET"
FILEO LINKO = "{SCENARIO_DIR}\output\TLOD2.DBF",
SKIP0=Y,NTLEGS=F
FILEO REPORTO = "{SCENARIO_DIR}\output\ASPTR00D.PRN"
FILEO NETO = "{SCENARIO_DIR}\output\TLOADAM2.NET"
FILEI MATI[1] = "{SCENARIO_DIR}\output\TRANSIT.MAT"
FILEI ROUTEI[1] = "{SCENARIO_DIR}\output\AUTOALLAM.RTE"
PARAMETERS USERCLASSES=1,
           TRIPSIJ=(MI.1.PKAUTOBA),
           NOROUTEERRS=999999,
           NOROUTEMSGS=0
REPORT LINES=T ;LINEVOLS=T
PAGEHEIGHT=32767

ENDRUN
```



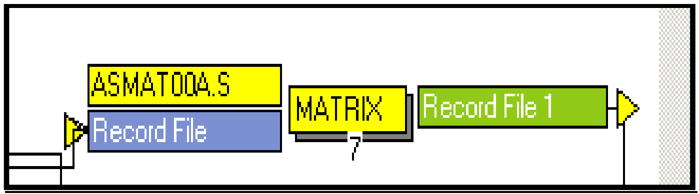
ASPTR00E.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=PUBLIC TRANSPORT
PRNFILE="{SCENARIO_DIR}\output\TRANSIT_MDWALK.PRN" MSG='Off-Peak Period
Walk to Transit Assignment'
FILEI ROUTEI[2] = "{SCENARIO_DIR}\output\WALKPREMMD.RTE"
FILEI NETI = "{SCENARIO_DIR}\output\TNETWALKMD.NET"
FILEO LINKO = "{SCENARIO_DIR}\output\TLOD3.DBF",
SKIP0=Y,NTLEGS=F
FILEI ROUTEI[1] = "{SCENARIO_DIR}\output\WALKLBMD.RTE"
FILEI MATI[1] = "{SCENARIO_DIR}\output\TRANSIT.MAT"
FILEO REPORTO = "{SCENARIO_DIR}\output\ASPTR00F.PRN"
FILEO NETO = "{SCENARIO_DIR}\output\TLOADMD1.NET"
PARAMETERS USERCLASSES=1,2,
           TRIPSIJ[1]=(MI.1.OPWALKLOCAL),
           TRIPSIJ[2]=(MI.1.OPWALKPREM)
           NOROUTEERRS=9999999,
           NOROUTEMSGS=0, HDWAYPERIOD=2
REPORT LINES=T ; LINEVOLS=T
PAGEHEIGHT=32767
ENDRUN
```



ASPTR00F.S

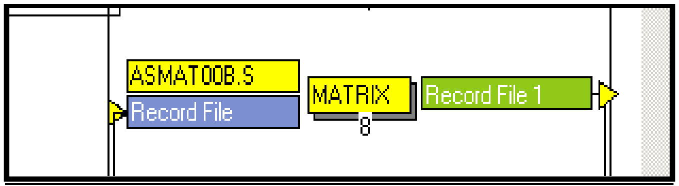
```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=PUBLIC TRANSPORT
PRNFILE="{SCENARIO_DIR}\output\TRANSIT_MDAUTO.PRN" MSG='Off-Peak Period
Auto to Transit Assignment'
FILEI ROUTEI[1] = "{SCENARIO_DIR}\output\AUTOALLMD.RTE"
FILEO LINKO = "{SCENARIO_DIR}\output\TLOD4.DBF",
SKIP0=Y,NTLEGS=F
FILEI NETI = "{SCENARIO_DIR}\output\TNETAUTOMD.NET"
FILEI MATI[1] = "{SCENARIO_DIR}\output\TRANSIT.MAT"
FILEO REPORTO = "{SCENARIO_DIR}\output\ASPTR00H.PRN"
FILEO NETO = "{SCENARIO_DIR}\output\TLOADMD2.NET"
PARAMETERS USERCLASSES=1,
           TRIPSIJ=(MI.1.OPAUTOBA),
           NOROUTEERRS=999999,
           NOROUTEMSGS=0, HDWAYPERIOD=2
REPORT LINES=T ;LINEVOLS=T
PAGEHEIGHT=32767
ENDRUN
```



ASMAT00A.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=MATRIX
FILEO RECO[1] = "{SCENARIO_DIR}\output\LL1.DBF",
  FIELDS=A,B,MODE,NAME,DIST,TIME,SEQ,CNT,HEADWAY_1,VOL
FILEI RECI = "{SCENARIO_DIR}\output\TLOD1.DBF"
vtot=vtot+ri.VOL
if (ri.SEQ==ri.CNT)
  A      = ri.A
  B      = ri.B
  MODE   = ri.MODE
  NAME   = 'COMBINED'
  DIST   = ri.DIST
  TIME   = ri.TIME
  SEQ    = 1
  CNT    = 1
  HEADWAY= ri.HEADWAY_1
  VOL    = vtot
  vtot   = 0.0
  WRITE RECO=1
endif

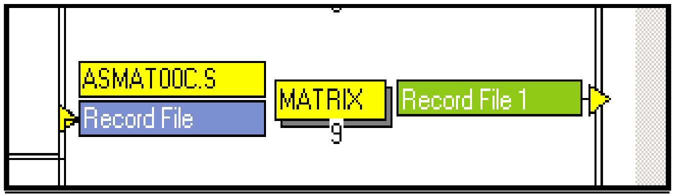

ENDRUN
```



ASMAT00B.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=MATRIX
FILEI RECI = "{SCENARIO_DIR}\output\TLOD2.DBF"
FILEO RECO[1] = "{SCENARIO_DIR}\output\LL2.DBF",
  FIELDS=A,B,MODE,NAME,DIST,TIME,SEQ,CNT,HEADWAY_1,VOL
vtot=vtot+ri.VOL
if (ri.SEQ==ri.CNT)
  RO.A       = ri.A
  RO.B       = ri.B
  RO.MODE    = ri.MODE
  RO.NAME    = 'COMBINED'
  RO.DIST    = ri.DIST
  RO.TIME    = ri.TIME
  RO.SEQ     = 1
  RO.CNT     = 1
  RO.HEADWAY= ri.HEADWAY_1
  RO.VOL     = vtot
  vtot   = 0.0
  WRITE RECO=1
endif

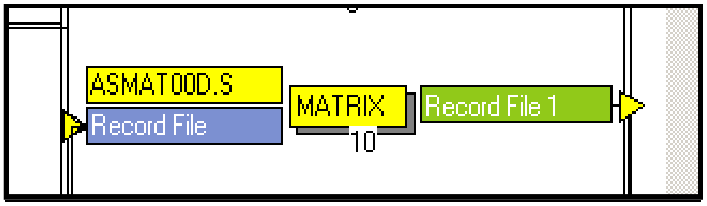

ENDRUN
```



ASMAT00C.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=MATRIX
FILEI RECI = "{SCENARIO_DIR}\output\TLOD3.DBF"
FILEO RECO[1] = "{SCENARIO_DIR}\output\LL3.DBF",
  FIELDS=A,B,MODE,NAME,DIST,TIME,SEQ,CNT,HEADWAY_2,VOL
vtot=vtot+ri.VOL
if (ri.SEQ==ri.CNT)
  RO.A       = ri.A
  RO.B       = ri.B
  RO.MODE    = ri.MODE
  RO.NAME    = 'COMBINED'
  RO.DIST    = ri.DIST
  RO.TIME    = ri.TIME
  RO.SEQ     = 1
  RO.CNT     = 1
  RO.HEADWAY= "ri.HEADWAY_2"
  RO.VOL     = vtot
  vtot   = 0.0
  WRITE RECO=1
endif

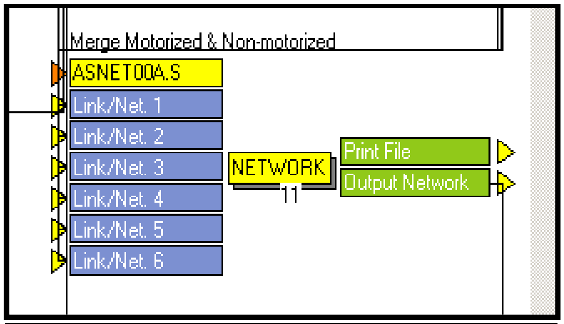

ENDRUN
```



ASMAT00D.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=MATRIX
FILEI RECI = "{SCENARIO_DIR}\output\TLOD4.DBF"
FILEO RECO[1] = "{SCENARIO_DIR}\output\LL4.DBF",
  FIELDS=A,B,MODE,NAME,DIST,TIME,SEQ,CNT,HEADWAY_2,VOL
vtot=vtot+ri.VOL
if (ri.SEQ==ri.CNT)
  RO.A       = ri.A
  RO.B       = ri.B
  RO.MODE    = ri.MODE
  RO.NAME    = 'COMBINED'
  RO.DIST    = ri.DIST
  RO.TIME    = ri.TIME
  RO.SEQ     = 1
  RO.CNT     = 1
  RO.HEADWAY= "ri.HEADWAY_2"
  RO.VOL     = vtot
  vtot    = 0.0
  WRITE RECO=1
endif


ENDRUN
```



ASNET00A.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN PGM=NETWORK PRNFILE="{SCENARIO_DIR}\output\ASNET00A.PRN" MSG='Merge
Motorized & Non-motorized'
FILEO NETO = "{SCENARIO_DIR}\output\COMB_TEMP.NET"
;FILEO PRINTO[1] = "{SCENARIO_DIR}\output\UFOUCH.PRN"
FILEI LINKI[6] = "{SCENARIO_DIR}\output\LL4.DBF"
FILEI LINKI[5] = "{SCENARIO_DIR}\output\LL3.DBF"
FILEI LINKI[4] = "{SCENARIO_DIR}\output\LL2.DBF"
FILEI LINKI[3] = "{SCENARIO_DIR}\output\LL1.DBF"
FILEI LINKI[2] = "{SCENARIO_DIR}\output\NONMOTOR.NET"
FILEI LINKI[1] = "{SCENARIO_DIR}\output\HASSIGN.NET"

PROCESS PHASE=LINKMERGE

  NONMOTORVOL=LI.2.V_1
  CGSPEED=LI.1.CSPD_1
  CGTIME=LI.1.TIME_1
  _UF_LIGHT=LI.1.V1_1
  _UF_HEAVY=LI.1.V2_1/{PCE_HT}
  _NON_LIGHT=LI.1.V3_1
  _NON_HEAVY=LI.1.V4_1/{PCE_HT}
  _SELZONE_LIGHT=LI.1.V5_1
  _SELZONE_HEAVY=LI.1.V6_1/{PCE_HT}
  SELZONE_MOTOR=_SELZONE_LIGHT+_SELZONE_HEAVY
  UF_MOTOR=_UF_LIGHT+_UF_HEAVY
  LIGHTVEHICLES=_UF_LIGHT+_NON_LIGHT
  HEAVYTRUCKS=_UF_HEAVY+_NON_HEAVY
  MOTORIZEDVOL=LIGHTVEHICLES+HEAVYTRUCKS
  if (MOTORIZEDVOL>0.0)
     UFPCT=100*UF_MOTOR/MOTORIZEDVOL
  endif
  VMT=MOTORIZEDVOL*DISTANCE
  VHT=MOTORIZEDVOL*CGTIME/60.
  PEDESTRIANS=LI.2.V1_1
  BICYCLISTS=LI.2.V2_1
  VOL_CAP=MOTORIZEDVOL/DAILYCAP

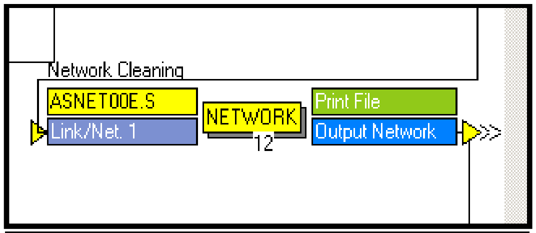
  IF (CAPACITY=0)
     DAILYCAPE=999999
  ELSE
      DAILYCAPE= 10.0*CAPACITY
  ENDIF
```

```
  VOL_CAPE=MOTORIZEDVOL/DAILYCAPE
  TranVol=li.3.vol+li.4.vol+li.5.vol+li.6.vol

if(COUNT07 > 0)
  VC=MOTORIZEDVOL/COUNT07
endif

ENDPROCESS

ENDRUN
```



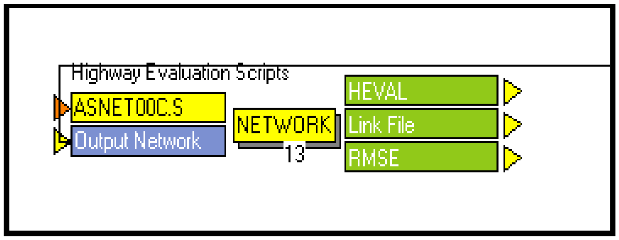
ASNET00E.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN                                                           PGM=NETWORK
PRNFILE="D:\FSUTMS\D2\GAINESVILLE_2007_2035\APPLICATIONS\ASNET00C.PRN"
MSG='Network Cleaning'
FILEO NETO = "{SCENARIO_DIR}\output\COMBINEDLOADED.NET",
   EXCLUDE=VOL,MODE,DIST,TIME,SEQ,CNT,HEADWAY_1,HEADWAY_2,SECNUM,TWOWAY,
FTYPE1,DIR,ATYPE1,BPRCOEFFICIENT,V_1,VC_1,CSPD_1,VDT_1,VHT_1,V1_1,V2_1,VT
_1,V1T_1,
V2T_1,V3_1,V4_1,V5_1,
V6_1,V3T_1,V4T_1,V5T_1,V6T_1,FTYPE1,ATYPE1,TIME_1,UROADFACTOR,
BPRCOEFFICIENT,BPREXPONENT

FILEI LINKI[1] = "{SCENARIO_DIR}\output\COMB_TEMP.NET"



ENDRUN
```



ASNET00C.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN       PGM=NETWORK       PRNFILE="{SCENARIO_DIR}\output\HEVAl_Daily.PRN"
MSG='Highway Evaluation Scripts'
FILEO LINKO = "{SCENARIO_DIR}\output\Daily_Links.DBF"
FILEI LINKI[1] = "{SCENARIO_DIR}\output\COMBINEDLOADED.NET"
FILEO PRINTO[1] = "{SCENARIO_DIR}\output\RMSE.PRN"

; ==========================================================
; LINKMERGE PHASE
; ==========================================================
PHASE=LINKMERGE

; DUMMY VARIABLES FOR HEVALDBF
ZONE        =1
USECODE     =1
LOCATION    =1
LANDUSE     =1
CCODE       =1
TOTCNT      =li.1.COUNT07
CAP         =LI.1.CAPACITY*LI.1.LANES/LI.1.CONFAC


;

   ft=int(li.1.FTYPE/10)
   at=int(li.1.ATYPE/10)
   LNS=li.1.LANES
   TOTAL_VOL=ROUND(li.1.MOTORIZEDVOL)
;
; initialize arrays and variables
   ARRAY _err=13, _cns=13, _cnt=13, _RGP=13, _volbyft=100, _cntbyft=100
   ARRAY _volbyat=100, _cntbyat=100, _lnkbyft=100, _lnkbyat=100
   ARRAY _capbyft=100, _capbyat=100
   _group=(0.0*FT)
   _RGP[1]=1,  _RGP[2]=5000,  _RGP[3]=10000,  _RGP[4]=20000,  _RGP[5]=30000,
_RGP[6]=40000, _RGP[7]=50000,
   _RGP[8]=60000,     _RGP[9]=70000,     _RGP[10]=80000,     _RGP[11]=90000,
_RGP[12]=100000, _RGP[13]=500000
   IF (A=1)
     LOOP _iter=1,13
           _err[_iter]=0,_cnt[_iter]=0,_cns[_iter]=0
     ENDLOOP
     LOOP _iter=1,99
           _volbyft[_iter]=0,     _cntbyft[_iter]=0,     _lnkbyft[_iter]=0,
_capbyft[_iter]=0
```

```
          _volbyat[_iter]=0,    _cntbyat[_iter]=0,    _lnkbyat[_iter]=0,
_capbyat[_iter]=0
     ENDLOOP
   ENDIF

   links=1
   lanemiles=lns*li.1.distance
; calculate and compartmentalize
 if (ft<>8)
   IF(TOTCNT>0)     VOLCNT=TOTAL_VOL/TOTCNT,     NETDIFF=TOTAL_VOL-TOTCNT,
ABSDIFF=ABS(NETDIFF),    ERRORSQ=NETDIFF^2,    PCTDIFF=100*NETDIFF/TOTCNT
_group=1
   IF (TOTCNT>5000) _group=2
   IF (TOTCNT>10000) _group=3
   IF (TOTCNT>20000) _group=4
   IF (TOTCNT>30000) _group=5
   IF (TOTCNT>40000) _group=6
   IF (TOTCNT>50000) _group=7
   IF (TOTCNT>60000) _group=8
   IF (TOTCNT>70000) _group=9
   IF (TOTCNT>80000) _group=10
   IF (TOTCNT>90000) _group=11
   IF (TOTCNT>100000) _group=12
   IF (TOTCNT>0)
   _ERR[_group]=ERRORSQ+_ERR[_group],    _CNS[_group]=TOTCNT+_CNS[_group],
_CNT[_group]=_CNT[_group]+1
   _ERR[13]=ERRORSQ+_ERR[13],                    _CNS[13]=TOTCNT+_CNS[13],
_CNT[13]=_CNT[13]+1
   ENDIF
  endif
IF (TOTCNT>0)
   _volbyft[ft]=_volbyft[ft]+TOTAL_VOL
   _cntbyft[ft]=_cntbyft[ft]+TOTCNT
   _lnkbyft[ft]=_lnkbyft[ft]+1
   _capbyft[ft]=_capbyft[ft]+CAP
   _volbyat[at]=_volbyat[at]+TOTAL_VOL
   _cntbyat[at]=_cntbyat[at]+TOTCNT
   _lnkbyat[at]=_lnkbyat[at]+1
   _capbyat[at]=_capbyat[at]+CAP
   _volbyft[100]=_volbyft[100]+TOTAL_VOL
   _cntbyft[100]=_cntbyft[100]+TOTCNT
   _lnkbyft[100]=_lnkbyft[100]+1
   _volbyat[100]=_volbyat[100]+TOTAL_VOL
   _cntbyat[100]=_cntbyat[100]+TOTCNT
   _lnkbyat[100]=_lnkbyat[100]+1
endif

CROSSTAB  VAR= LINKS LANEMILES, form=14.0c,
    col=FT, range=1-9-1,1-9,
    row=LANES, range=1-9-1,1-9
IF (TOTCNT>0)
    _C_VMT=DISTANCE*TOTCNT
    _A_VMT=DISTANCE*TOTAL_VOL
    _C_VHT=TOTCNT*CGTIME/60.
    _A_VHT=TOTAL_VOL*CGTIME/60.
    _A_VOL=TOTAL_VOL
    _C_VOL=TOTCNT
```

```
    _C_CAP=CAP
CROSSTAB        VAR=    _A_VOL,_C_VOL,_C_VMT,_A_VMT,_C_VHT,_A_VHT,_C_CAP,
form=14.0c,
    col=FT, range=1-4-1,6-9-1,1-9,
    row=AT, range=1-5-1,1-9,
    comp=_A_VOL/_C_VOL,form=8.3,
    comp=_A_VMT/_C_VMT,form=8.3,
    comp=_A_VHT/_C_VHT,form=8.3,
    comp=_A_VOL/_C_CAP,form=8.3
CROSSTAB  VAR= _A_VOL,_C_VOL, form=14.0c,
    col=FT, range=1-4-1,6-9-1,1-9,
    row=LANES, range=1-9-1,1-6

;CROSSTAB        VAR=    _A_VOL,_C_VOL,_C_VMT,_A_VMT,_C_VHT,_A_VHT,_C_CAP,
form=14.0c,
;    col=FT, range=1-4-1,6-9-1,1-9,
;    row=LOCATION, range=1-7-1,1-7,
;    comp=_A_VOL/_C_VOL,form=8.3,
;    comp=_A_VMT/_C_VMT,form=8.3,
;    comp=_A_VHT/_C_VHT,form=8.3,
;    comp=_A_VOL/_C_CAP,form=8.3
ENDIF
IF (TOTCNT>0 & SCRN<>0)
    _sVOL=TOTAL_VOL
    _sCNT=TOTCNT
CROSSTAB  VAR= _sVOL,_sCNT, form=9.0c,
    col=FT, range=1-9,
    row=SCRN, range=1-20-1,1-20,
    comp=_sVOL/_sCNT,form=8.3
ENDIF

    _A_VMT_ALL=DISTANCE*TOTAL_VOL
CROSSTAB  VAR= _A_VMT_ALL, form=14.0c,
    col=FT, range=1-4-1,6-9-1,1-9,
    row=AT, range=1-5-1,1-9


;********************PERCENT      ERROR      BY      VOLUME      GROUPS
CALCULATION************

ARRAY _PCT_ERR_VOLGRP=7
ARRAY _LINKS_VOLGRP=7

IF (_C_VOL<>0)

  IF (_A_VOL >= 1 & _A_VOL< 5000)
  _PCT_ERR_VOLGRP[1]= _PCT_ERR_VOLGRP[1] + ((_A_VOL-_C_VOL)/_C_VOL)*100
  _LINKS_VOLGRP[1]= _LINKS_VOLGRP[1] + 1
  ENDIF

  IF (_A_VOL >= 5000 & _A_VOL< 10000)
  _PCT_ERR_VOLGRP[2]= _PCT_ERR_VOLGRP[2] +  ((_A_VOL-_C_VOL)/_C_VOL)*100
  _LINKS_VOLGRP[2]= _LINKS_VOLGRP[2] + 1
  ENDIF

  IF (_A_VOL >= 10000 & _A_VOL< 20000)
  _PCT_ERR_VOLGRP[3]= _PCT_ERR_VOLGRP[3] +  ((_A_VOL-_C_VOL)/_C_VOL)*100
```

```
  _LINKS_VOLGRP[3]= _LINKS_VOLGRP[3] + 1
  ENDIF

  IF (_A_VOL >= 20000 & _A_VOL< 30000)
  _PCT_ERR_VOLGRP[4]= _PCT_ERR_VOLGRP[4] +  ((_A_VOL-_C_VOL)/_C_VOL)*100
  _LINKS_VOLGRP[4]= _LINKS_VOLGRP[4] + 1
  ENDIF

  IF (_A_VOL >= 30000 & _A_VOL< 40000)
  _PCT_ERR_VOLGRP[5]= _PCT_ERR_VOLGRP[5] +  ((_A_VOL-_C_VOL)/_C_VOL)*100
  _LINKS_VOLGRP[5]= _LINKS_VOLGRP[5] + 1
  ENDIF

  IF (_A_VOL >= 40000 & _A_VOL< 50000)
  _PCT_ERR_VOLGRP[6]= _PCT_ERR_VOLGRP[6] +  ((_A_VOL-_C_VOL)/_C_VOL)*100
  _LINKS_VOLGRP[6]= _LINKS_VOLGRP[6] + 1
  ENDIF

  IF (_A_VOL >= 1 & _A_VOL< 500000)
  _PCT_ERR_VOLGRP[7]= _PCT_ERR_VOLGRP[7] +  ((_A_VOL-_C_VOL)/_C_VOL)*100
  _LINKS_VOLGRP[7]= _LINKS_VOLGRP[7] + 1
  ENDIF

ENDIF


ENDPHASE

; ==========================================================
; SUMMARY REPORTING
; ==========================================================
PHASE=SUMMARY
PRINT LIST="Scenario = {SCENARIO_SHORTNAME}\n" PRINTO=1
; a little loop to write out the Percent Root Mean Square Error

print list="**************** ALL COUNT ROOT MEAN SQUARE ERROR SUMMARY
(exclude HOV) ****************", printo=1
print list=" Group   Volume Range    % RMSE   Target %   Obs", PRINTO=1

LOOP _iter=1,12

  if (_iter=1) _limit='45 - 55'
  if (_iter=2) _limit='35 - 45'
  if (_iter=3) _limit='27 - 35'
  if (_iter=4) _limit='24 - 27'
  if (_iter=5) _limit='22 - 24'
  if (_iter=6) _limit='20 - 22'
  if (_iter=7) _limit='18 - 20'
  if (_iter=8) _limit='17 - 18'
  if (_iter=9) _limit='16 - 17'
  if (_iter=10) _limit='15 - 16'
  if (_iter=11) _limit='14 - 15'
  if (_iter=12) _limit='LT 14  '

 if (_cnt[_iter]>0)
 _RMSE=sqrt(_err[_iter]/(_cnt[_iter]-1))/(_cns[_iter]/_cnt[_iter])*100
 print,
```

```
 list=_iter(6.0c),"          ",_RGP[_iter](7.0c),"-",_RGP[_iter+1](7.0c),"
",_RMSE(7.1),"%", "  ", _limit,"    ",_cnt[_iter](5.0), PRINTO=1
 endif
ENDLOOP
 _iter=13
 _RMSE=sqrt(_err[_iter]/(_cnt[_iter]-1))/(_cns[_iter]/_cnt[_iter])*100
 _limit='32 - 39'
 list=_iter(6.0c),"                ",_RGP[1](7.0c),"-",_RGP[_iter](7.0c),"
",_RMSE(7.1),"%", "  ", _limit,"    ",_cnt[_iter](5.0), PRINTO=1

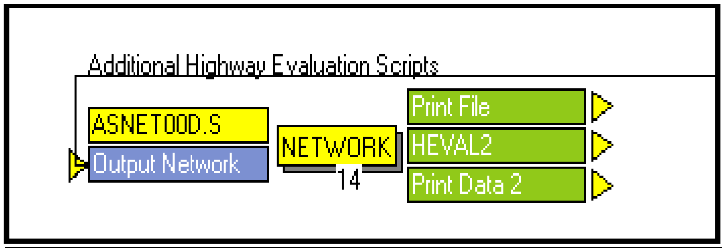
; one for Vol/Cnt by FT
_iter=0
LOOP _iter=1,100
  if  (_iter=1)  print  list="\n","\n  *********************  VOLUME  AND
COUNT SUMMARY BY FACILITY TYPE *********************", PRINTO=1
if (_cntbyft[_iter]>0) print,
 list="Facility Type Summary for FT=",_iter(3.0c),
 " VOL=",_volbyft[_iter](11.0c),
 " CNT=",_cntbyft[_iter](11.0c),
 " VOL/CNT=",(_volbyft[_iter]/_cntbyft[_iter])(5.2c),
 "   N=",_lnkbyft[_iter](5.0c), PRINTO=1
ENDLOOP

; one for Vol/Cnt by AT
_iter=0
LOOP _iter=1,100
  if  (_iter=1)  print  list="\n","\n  ************************  VOLUME  AND
COUNT SUMMARY BY AREA TYPE ************************", PRINTO=1
if (_cntbyat[_iter]>0) print,
 list="    Area Type Summary for AT=",_iter(3.0c),
 " VOL=",_volbyat[_iter](11.0c),
 " CNT=",_cntbyat[_iter](11.0c),
 " VOL/CNT=",(_volbyat[_iter]/_cntbyat[_iter])(5.2c),
 "   N=",_lnkbyat[_iter](5.0c), PRINTO=1
ENDLOOP


_iter=0
LOOP _iter= 1,7
  if  (_iter=1)  print  list="\n","\n  ************************  PERCENT
ERROR SUMMARY BY VOLUME GROUP ************************", PRINTO=1
PERCENT_ERROR= _PCT_ERR_VOLGRP[_iter]/_LINKS_VOLGRP[_iter]
PRINT,
 LIST="   VOLUME GROUP=", _iter(3.0c), "   ",
 "   GROUP TOTAL PERCENT ERROR=", _PCT_ERR_VOLGRP[_iter](13.0c),
 "   PERCENT_ERROR=", PERCENT_ERROR(6.2c),
 "   N=", _LINKS_VOLGRP[_iter](11.0c), PRINTO=1
ENDLOOP

ENDPHASE


ENDRUN
```



ASNET00D.S

```
; Do not change filenames or add or remove FILEI/FILEO statements using
an editor. Use Cube/Application Manager.
RUN         PGM=NETWORK        PRNFILE="{SCENARIO_DIR}\output\HASSIGN2.PRN"
MSG='Additional Highway Evaluation Scripts'
FILEO PRINTO[2] = "{SCENARIO_DIR}\output\OverallSummary.PRN"
FILEO PRINTO[1] = "{SCENARIO_DIR}\output\HEVAL_Daily2.PRN"
FILEI LINKI[1] = "{SCENARIO_DIR}\output\COMBINEDLOADED.NET"


;===================================================================
;  LINKMERGE BEGINS
;===================================================================

PROCESS PHASE=LINKMERGE

;Calculate working link variables for highway analysis calculations
;~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
_FT2=li.1.FTYPE                    ;2-digit Facility Type
_AT2=li.1.ATYPE                        ;2-digit Area Type
_FT1=int(_FT2/10)                          ;1-digit Facility Type
_AT1=int(_AT2/10)                          ;1-digit Area Type
_LNS=li.1.LANES                            ;Number of Lanes

_SL=li.1.SCRN                              ;Screenline

_CNT=li.1.COUNT07                          ;Traffic Count
_CAP=li.1.CAPACITY*li.1.LANES/li.1.CONFAC  ;Daily Directional Capacity
_VOL=ROUND(li.1.MOTORIZEDVOL)              ;Estimated Volume

_LNKCNTR=1                                 ;Link Counter
if (_CNT>0) _LNK_w_CNT=1                   ;Counter for links w/counts

_MLS=li.1.DISTANCE                         ;Directional System Miles
_LMLS=_LNS*_MLS                            ;Lane Miles
_CGT=li.1.CGTIME                       ;Congested Time
_CGS=li.1.CGSPEED                      ;Congested Speed
_SPD=li.1.SPEED                            ;Free Flow Speed
_WCGS=_CGS*_MLS                            ;Weighted Congested Speed
_WSPD=_SPD*_MLS                            ;Weighted Free Flow Speed

_VMT=_VOL*_MLS                             ;Vehicle Miles Traveled
_CVMT=_CNT*_MLS                              ;Vehicle Miles Traveled using
counts
_VHT=_VOL*(_CGT/60)                        ;Vehicle Hours Traveled
```

```
_CVHT=_CNT*(_CGT/60)                           ;Vehicle Hours Traveled using
counts

if (_CNT>0) _VCNT=_VOL/_CNT                   ;Volume over Count
_VCAP=li.1.VOL_CAP                             ;Volume over Capacity

_LIND2=(_AT2*10000)+(_FT2*100 )+(_LNS)        ;2-digit index


;initialize arrays and variables
  ARRAY _err=13, _cns=13, _count=13, _RGP=13
  ARRAY _volby=999999, _cntby=999999, _vcntby=999999, _volall=999999
  ARRAY _lwctot=999999, _lnktot=999999
  ARRAY _lmiles=999999, _dmiles=999999, _wcgspd=999999, _wffspd=999999
  ARRAY     _volvmtval=999999,    _cntvmtval=999999,    _volvhtval=999999,
_cntvhtval=999999
  ARRAY _vmtall=999999, _vhtall=999999
  ARRAY _slvol=99, _slcnt=99

   _lnktot[_LIND2]=_lnktot[_LIND2]+_LNKCNTR
   _lmiles[_LIND2]=_lmiles[_LIND2]+_LMLS
   _dmiles[_LIND2]=_dmiles[_LIND2]+_MLS
   _volall[_LIND2]=_volall[_LIND2]+_VOL
   _wcgspd[_LIND2]=_wcgspd[_LIND2]+_WCGS
   _wffspd[_LIND2]=_wffspd[_LIND2]+_WSPD
   _vmtall[_LIND2]=_vmtall[_LIND2]+_VMT
   _vhtall[_LIND2]=_vhtall[_LIND2]+_VHT

IF (_CNT>0)                                          ;Variables only for link
with counts
   _volby[_LIND2]=_volby[_LIND2]+_VOL
   _cntby[_LIND2]=_cntby[_LIND2]+_CNT
   _vcntby[_LIND2]=_vcntby[_LIND2]+_VCNT
   _lwctot[_LIND2]=_lwctot[_LIND2]+_LNK_w_CNT
   _volvmtval[_LIND2]=_volvmtval[_LIND2]+_VMT
   _cntvmtval[_LIND2]=_cntvmtval[_LIND2]+_CVMT
   _volvhtval[_LIND2]=_volvhtval[_LIND2]+_VHT
   _cntvhtval[_LIND2]=_cntvhtval[_LIND2]+_CVHT
   _slvol[_SL]=_slvol[_SL]+_VOL
   _slcnt[_SL]=_slcnt[_SL]+_CNT
ENDIF


ENDPROCESS

;~~~~~~~~~~~~~~~~BEGIN           REPORTING           PORTION           OF
SCRIPT~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

PROCESS PHASE=SUMMARY

;**************PLACE HOLDER FOR VALIDATE/ANALYSIS SWITCH************

;-------------------------------------------------------------------
; VALIDATION VERSION OF HIGHWAY ANALYSIS BEGINS HERE
;-------------------------------------------------------------------
print list= "Highway Analysis and Evaluation Report---Alpha Version 0.1",
PRINTO=1
```

```
print list= '@date.rundate@', printo=1
print list= '@time.runtime@', PRINTO=1
;print list= 'Date: ',@date.rundate@, printo=1
;print list= 'Time: ',@time.runtime@, PRINTO=1
;print list= "\n","\n","\n", PRINTO=1
;print list= " ", PRINTO=1
;print list= " ", PRINTO=1
;print list= "Facility Types",
;       " ",
;       "\n", "10    Generic Freeway",
;       "\n", "11    Urban Freeway Group 1",
;       "\n", "12    Other Freeway not in Group 1",
;       "\n", "15    Collector/Distributor Lanes",
;       "\n", "16    Controlled Access Expressway",
;       "\n", "17    Controlled Access Parkway",
;       "\n", "20    Generic Divided Arterial",
;       "\n", "21    Divided Arterial Unsignalized (55 mph)",
;       "\n", "22    Divided Arterial Unsignalized (45 mph)",
;       "\n", "23    Divided Arterial Class Ia",
;       "\n", "24    Divided Arterial Class Ib",
;       "\n", "25    Divided Arterial Class II/III",
;       "\n", "30    Generic Undivided Arterial",
;       "\n", "31    Undivided Arterial Unsignalized with Turn Bays",
;       "\n", "32    Undivided Arterial Class Ia with Turn Bays",
;       "\n", "33    Undivided Arterial Class Ib with Turn Bays",
;       "\n", "34    Undivided Arterial Class II/III with Turn Bays",
;       "\n", "35    Undivided Arterial Unsignalized without Turn Bays",
;       "\n", "36    Undivided Arterial Class Ia without Turn Bays",
;       "\n", "37    Undivided Arterial Class Ib without Turn Bays",
;       "\n", "38    Undivided Arterial Class II/III without Turn Bays",
;       "\n", "40    Generic Collector",
;       "\n", "41    Major Local Divided Roadway",
;       "\n", "42    Major Local Undivided Roadway with Turn Bays",
;       "\n", "43    Major Local Undivided Roadway without Turn Bays",
;       "\n", "44    Other Local Divided Roadway",
;       "\n", "45    Other Local Undivided Roadway with Turn Bays",
;       "\n", "46    Other Local Undivided Roadway without Turn Bays",
;       "\n", "47    Low Speed Local Collector",
;       "\n", "48    Very Low Speed Local Collector",
;       "\n", "50    Generic Centroid Connector",
;       "\n", "51    Basic Centroid Connector",
;       "\n", "52    External Station Centroid Connector",
;       "\n", "60    Generic One-Way",
;       "\n", "61    One-Way Facility Unsignalized",
;       "\n", "62    One-Way Facility Class Ia",
;       "\n", "63    One-Way Facility Class Ib",
;       "\n", "64    One-Way Facility Class II/III",
;       "\n", "65    Frontage Road Unsignalized",
;       "\n", "66    Frontage Road Class Ia",
;       "\n", "67    Frontage Road Class Ib",
;       "\n", "68    Frontage Road Class II/III",
;       "\n", "70    Generic Ramp",
;       "\n", "71    Freeway On-Ramp",
;       "\n", "72    Freeway Loop On-Ramp",
;       "\n", "73    Other On-Ramp",
;       "\n", "74    Other Loop On-Ramp",
;       "\n", "75    Freeway Off-Ramp",
```

```
;       "\n", "76    Freeway Loop Off-Ramp",
;       "\n", "77    Other Off-Ramp",
;       "\n", "78    Other Loop Off-Ramp",
;       "\n", "79    Freeway-Freeway High-Speed Ramp",
;  PRINTO=1


;==========================================================================
==============
; BEGIN NUMBER OF LINKS REPORT ------------- X = NUMBER OF LINKS
;==========================================================================
==============
Print list=" ", PRINTO=1
Print
list="*******************************************************************
**************************************************************", PRINTO=1
Print                                                              list="*
*", PRINTO=1
Print list="*                                 Number of Directional Links
(Centroid Connectors Excluded)                                          *",
PRINTO=1
Print                                                              list="*
*", PRINTO=1
Print
list="*******************************************************************
**************************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------

LOOP _a1iter=100000,599999,100000                         ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                 ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
           "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                        ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                         ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                                ;^Initialize
ATYPE X checking variable.

    LOOP _achkiter=_aiter,599999,1                        ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                      ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_lnktot[_achkiter]
    ENDLOOP                                                ;^End Loop 3.

    if (_avcheck>0)                                                ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                           ;    has    X>0
continue to report X. Else skip ATYPE.
```

```
      _supertotal=0                                              ;^Initialize
ATYPE total X.

      Print list= "Area Type ",_aat2(2.0), PRINTO=1       ;^Header
      Print                            list=                             "
Number             of            Lanes            per             Direction
", PRINTO=1
      Print list= "FType          1            2            3            4
5          6           7           8           9       Totals", PRINTO=1
      Print  list=  "--------------------------------------------------------
-------------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                              ;^Begin Loop 4:
Cycles through FTYPE
                                                            ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                                 ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                    ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_lnktot[_aiter+_fiter+_liter]       ;  FTYPE  in
Loop 4 and totals X checking variable.
       ENDLOOP                                              ;^End Loop 5.

        if  (_vcheck>0  &  (_fiter<5000  |  _fiter>5999))          ;^Begin
Condition 2: If current FTYPE in Loop 4
           _fft2=int(_fiter/100)                                 ; has X>0
continue to report X. Else skip FTYPE.
           print list= _fft2(2.0),"    ", PRINTO=1
           _totvols=0                                            ;^Initialize
FTYPE total X.

           LOOP _liter2=1,9,1                               ;^Begin Loop 6:
Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             print  list="\\","  ",_lnktot[_aiter+_fiter+_liter2](10.0C),"
", PRINTO=1
             _totvols=_totvols+_lnktot[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_lnktot[_aiter+_fiter+_liter2]
           ENDLOOP                                          ;^End Loop 6.

             print list="\\"," ",_totvols(10.0C), PRINTO=1
        endif                                               ;^End Condition
2.

      ENDLOOP                                               ;^End Loop 4.

      Print  list=  "--------------------------------------------------------
-------------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                    ;^Begin Loop 7:
Cycles through Lanes for
                                                            ;  current  ATYPE
in Loop 2.
```

```
        _lntotals=0                                              ;^Initialize
Lane total X.

        LOOP _aiter2=_aiter,599999,100                         ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                        ; in Loop 2 to
generate Lane total X.
          if (_aiter2<_aiter+5000 | _aiter2>_aiter+5999)
            _lntotiter=_aiter2+_liter3
            _lntotals=_lntotals+_lnktot[_lntotiter]
          endif
        ENDLOOP                                                ;^End Loop 8

        print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
      ENDLOOP                                                  ;^End Loop 7

      print list="\\"," ",_supertotal(10.0C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                       ;^End Condition
1.

  ENDLOOP                                                      ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                        ;^End Loop 1.

;-----------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                      ;^Header
Print list= "                                                        Number of
Lanes per Direction                                                          ",
PRINTO=1
Print list= "FType          1             2             3             4
5           6           7           8           9       Totals", PRINTO=1
Print list= "-------------------------------------------------------------
-------------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                       ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                            ; two-digit
FTYPE.

  _tafvcheck=0                                                   ;^Initialize
FTYPE X checking variable.
 if (_fft2<50 | _fft2>59)
  LOOP _liter5=1,9,1                                             ;^Begin Loop
10: Cycles through Lanes for current
                                                              ; FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                            ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_lnktot[_aiter4+_fiter2+_liter5]   ;   current
Lanes and FTYPE in order to total X checking variable.
    ENDLOOP                                                        ;^End Loop
11.
```

```
  ENDLOOP                                                 ;^End Loop 10.

  if (_tafvcheck>0)                                                ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                    ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                      ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                          ; in Loop 9.
        _totftat=0                                           ;^Initialize
FTYPE total X for all ATYPE.

      LOOP _aiter3= 100000,599999,10000                      ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_lnktot[_aiter3+_fiter2+_liter4]  ; in order to
generate total X for FTYPE by Lane for all ATYPE.
      ENDLOOP                                             ;^End Loop 13.

      print list="\\"," ",_totftat(10.0C)," ", PRINTO=1
    ENDLOOP                                               ;^End Loop 12.

    print list="\\"," ",_tafvcheck(10.0C), PRINTO=1
  endif                                                   ;^End Condition
3.
 endif
ENDLOOP                                                   ;^End Loop 9.

Print list= "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                ;^Initialize
all ATYPE total X.

LOOP _liter6=1,9,1                                           ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                                ;^Initialize
total X for Lanes.

  LOOP _aiter5=100000,599999,100                             ;^Begin Loop
15: Cycles through ATYPE and
    if ((_aiter5<105000 | _aiter5>105999) &
        (_aiter5<115000 | _aiter5>115999) &
        (_aiter5<125000 | _aiter5>125999) &
        (_aiter5<135000 | _aiter5>135999) &
        (_aiter5<145000 | _aiter5>145999) &
        (_aiter5<155000 | _aiter5>155999) &
        (_aiter5<165000 | _aiter5>165999) &
        (_aiter5<175000 | _aiter5>175999) &
        (_aiter5<185000 | _aiter5>185999) &
        (_aiter5<195000 | _aiter5>195999) &
        (_aiter5<205000 | _aiter5>205999) &
        (_aiter5<215000 | _aiter5>215999) &
```

```
        (_aiter5<225000 | _aiter5>225999) &
        (_aiter5<235000 | _aiter5>235999) &
        (_aiter5<245000 | _aiter5>245999) &
        (_aiter5<255000 | _aiter5>255999) &
        (_aiter5<265000 | _aiter5>265999) &
        (_aiter5<275000 | _aiter5>275999) &
        (_aiter5<285000 | _aiter5>285999) &
        (_aiter5<295000 | _aiter5>295999) &
        (_aiter5<305000 | _aiter5>305999) &
        (_aiter5<315000 | _aiter5>315999) &
        (_aiter5<325000 | _aiter5>325999) &
        (_aiter5<335000 | _aiter5>335999) &
        (_aiter5<345000 | _aiter5>345999) &
        (_aiter5<355000 | _aiter5>355999) &
        (_aiter5<365000 | _aiter5>365999) &
        (_aiter5<375000 | _aiter5>375999) &
        (_aiter5<385000 | _aiter5>385999) &
        (_aiter5<395000 | _aiter5>395999) &
        (_aiter5<405000 | _aiter5>405999) &
        (_aiter5<415000 | _aiter5>415999) &
        (_aiter5<425000 | _aiter5>425999) &
        (_aiter5<435000 | _aiter5>435999) &
        (_aiter5<445000 | _aiter5>445999) &
        (_aiter5<455000 | _aiter5>455999) &
        (_aiter5<465000 | _aiter5>465999) &
        (_aiter5<475000 | _aiter5>475999) &
        (_aiter5<485000 | _aiter5>485999) &
        (_aiter5<495000 | _aiter5>495999) &
        (_aiter5<505000 | _aiter5>505999) &
        (_aiter5<515000 | _aiter5>515999) &
        (_aiter5<525000 | _aiter5>525999) &
        (_aiter5<535000 | _aiter5>535999) &
        (_aiter5<545000 | _aiter5>545999) &
        (_aiter5<555000 | _aiter5>555999) &
        (_aiter5<565000 | _aiter5>565999) &
        (_aiter5<575000 | _aiter5>575999) &
        (_aiter5<585000 | _aiter5>585999) &
        (_aiter5<595000 | _aiter5>595999))

      _lntotiter=_aiter5+_liter6                               ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_lnktot[_lntotiter]              ; Lanes.

    endif
  ENDLOOP                                                  ;^End Loop 15.

  print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                        ;^Generate
total X for all ATYPE.

ENDLOOP                                                    ;^End Loop 14.
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------
```

```
Print  list=  "Total  Summary  Area  Types  by  Facility  Types  ",  PRINTO=1
;^Header
Print list= "                                                        Single
Digit Facility Types                                                      ",
PRINTO=1
Print  list= "AType           1x             2x             3x             4x
5x           6x           7x           8x           9x      Totals", PRINTO=1
Print  list= "-------------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                           ;^Begin Loop
16: Cycles through ATYPE by 10 to
  _aat1=int(_a1iter2/100000)                                  ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                                  ;^Initialize
total X for all ATYPE

    LOOP _f1iter=1000,9900,1000                              ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                           ;   get   single
digit FTYPE.
      _totftlns=0                                             ;^Initialize
total X for all FTYPE by all Lanes.
      if (_f1iter<5000 | _f1iter>5999)
      LOOP _fiter3=_f1iter,9900,100                          ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                       ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000                   ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK                  ; for current
single digit ATYPE in Loop 16.

            LOOP                                             _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_lnktot[_aiter6+_fiter3+_liter7]    ; in
order to generate total X for FTYPE by ATYPE.
            ENDLOOP                                                  ;^End
Loop 20.

        ENDLOOP                                              ;^End Loop 19.

      ENDLOOP                                                ;^End Loop 18.
      endif
      _fttotal=_fttotal+_totftlns                               ;^Generate
total X for ATYPE.

      print list="\\"," ",_totftlns(10.0C)," ", PRINTO=1
    ENDLOOP                                                  ;^End Loop 17.

  print list="\\"," ",_fttotal(10.0c), PRINTO=1
ENDLOOP                                                      ;^End Loop 16.
```

```
Print  list= "------------------------------------------------------------
----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                ;^Initialize
overall total X.

LOOP _f1iter2=1000,9900,1000                                 ;^Begin Loop
21: Cycles through FTYPE by 10
                                                             ; to get single
digit FTYPE.
  _ftotals=0                                                 ;^Initialize
total X by FTYPE

  LOOP _fiter4=_f1iter2,9900,100                             ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                          ; get all two-
digit FTYPE for current FTYPE in
    if            (_f1iter2<5000            |            _f1iter2>5999)
; Loop 21.
    LOOP _liter8=1,9,1                                       ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                       ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                    ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_lnktot[_ftotiter]
      ENDLOOP                                                ;^End Loop 24.

    ENDLOOP                                                  ;^End Loop 23.
    endif
  ENDLOOP                                                    ;^End Loop 22.
  _supertotal=_supertotal+_ftotals                           ;^Generate
overall total for all single digit ATYPE
                                                             ; by all single
digit FTYPE.
  print list="\\"," ",_ftotals(10.0C)," ", PRINTO=1
ENDLOOP                                                      ;^End Loop 21.
_numlinks=_supertotal
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ", PRINTO=1
;*************************************************************************
; END NUMBER OF LINKS REPORT
;*************************************************************************

;========================================================================
==============
; BEGIN DIRECTIONAL MILES REPORT ------------- X = DIRECTIONAL MILES
;========================================================================
==============
Print list=" ", PRINTO=1
Print
list="*************************************************************************
*************************************************************", PRINTO=1
```

```
Print                                                             list="*
*", PRINTO=1
Print list="*                                              Directional Miles
(Centroid                    Connectors                           Excluded)
*", PRINTO=1
Print                                                             list="*
*", PRINTO=1
Print
list="**************************************************************
****************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------

LOOP _a1iter=100000,599999,100000                           ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                   ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
           "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                          ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                           ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                                  ;^Initialize
ATYPE X checking variable.

    LOOP _achkiter=_aiter,599999,1                          ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                        ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_dmiles[_achkiter]
    ENDLOOP                                                 ;^End Loop 3.

    if (_avcheck>0)                                                 ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                            ;     has    X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                             ;^Initialize
ATYPE total X.

      Print list= "Area Type ",_aat2(2.0), PRINTO=1       ;^Header
      Print                       list=                                    "
Number            of            Lanes            per             Direction
", PRINTO=1
      Print list= "FType         1           2           3           4
5           6           7           8           9      Totals", PRINTO=1
      Print list= "---------------------------------------------------------
----------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                              ;^Begin Loop 4:
Cycles through FTYPE
```

```
                                                          ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                             ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                    ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_dmiles[_aiter+_fiter+_liter]       ;  FTYPE  in
Loop 4 and totals X checking variable.
       ENDLOOP                                              ;^End Loop 5.

        if  (_vcheck>0  &  (_fiter<5000  |  _fiter>5999))          ;^Begin
Condition 2: If current FTYPE in Loop 4
           _fft2=int(_fiter/100)                               ; has X>0
continue to report X. Else skip FTYPE.
           print list= _fft2(2.0),"    ", PRINTO=1
           _totvols=0                                        ;^Initialize
FTYPE total X.

           LOOP _liter2=1,9,1                               ;^Begin Loop 6:
Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             print  list="\\","  ",_dmiles[_aiter+_fiter+_liter2](10.2C),"
", PRINTO=1
             _totvols=_totvols+_dmiles[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_dmiles[_aiter+_fiter+_liter2]
           ENDLOOP                                          ;^End Loop 6.

             print list="\\"," ",_totvols(10.2C), PRINTO=1
        endif                                               ;^End Condition
2.

      ENDLOOP                                               ;^End Loop 4.

      Print  list= "-----------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                    ;^Begin Loop 7:
Cycles through Lanes for
                                                          ;  current  ATYPE
in Loop 2.
        _lntotals=0                                          ;^Initialize
Lane total X.

        LOOP _aiter2=_aiter,599999,100                      ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                     ; in Loop 2 to
generate Lane total X.
          if (_aiter2<_aiter+5000 | _aiter2>_aiter+5999)
            _lntotiter=_aiter2+_liter3
            _lntotals=_lntotals+_dmiles[_lntotiter]
          endif
        ENDLOOP                                             ;^End Loop 8

        print list="\\"," ",_lntotals(10.2C)," ", PRINTO=1
      ENDLOOP                                               ;^End Loop 7
```

```
      print list="\\"," ",_supertotal(10.2C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                    ;^End Condition
1.

  ENDLOOP                                                   ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                     ;^End Loop 1.

;-----------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                   ;^Header
Print list= "                                                      Number of
Lanes per Direction                                                      ",
PRINTO=1
Print list= "FType          1             2             3             4
5          6           7           8           9       Totals", PRINTO=1
Print list= "------------------------------------------------------------
---------------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                    ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                        ; two-digit
FTYPE.

  _tafvcheck=0                                                ;^Initialize
FTYPE X checking variable.
 if (_fft2<50 | _fft2>59)
  LOOP _liter5=1,9,1                                          ;^Begin Loop
10: Cycles through Lanes for current
                                                            ; FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                         ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_dmiles[_aiter4+_fiter2+_liter5]   ;   current
Lanes and FTYPE in order to total X checking variable.
    ENDLOOP                                                     ;^End Loop
11.

  ENDLOOP                                                   ;^End Loop 10.

  if (_tafvcheck>0)                                                ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                    ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                       ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                            ; in Loop 9.
        _totftat=0                                            ;^Initialize
FTYPE total X for all ATYPE.
```

```
      LOOP _aiter3= 100000,599999,10000                      ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_dmiles[_aiter3+_fiter2+_liter4]  ; in order to
generate total X for FTYPE by Lane for all ATYPE.
      ENDLOOP                                               ;^End Loop 13.

      print list="\\"," ",_totftat(10.2C)," ", PRINTO=1
    ENDLOOP                                                 ;^End Loop 12.

    print list="\\"," ",_tafvcheck(10.2C), PRINTO=1
  endif                                                     ;^End Condition
3.
 endif
ENDLOOP                                                     ;^End Loop 9.

Print  list= "-----------------------------------------------------------
----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                ;^Initialize
all ATYPE total X.

LOOP _liter6=1,9,1                                           ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                                ;^Initialize
total X for Lanes.

  LOOP _aiter5=100000,599999,100                             ;^Begin Loop
15: Cycles through ATYPE and
    if ((_aiter5<105000 | _aiter5>105999) &
        (_aiter5<115000 | _aiter5>115999) &
        (_aiter5<125000 | _aiter5>125999) &
        (_aiter5<135000 | _aiter5>135999) &
        (_aiter5<145000 | _aiter5>145999) &
        (_aiter5<155000 | _aiter5>155999) &
        (_aiter5<165000 | _aiter5>165999) &
        (_aiter5<175000 | _aiter5>175999) &
        (_aiter5<185000 | _aiter5>185999) &
        (_aiter5<195000 | _aiter5>195999) &
        (_aiter5<205000 | _aiter5>205999) &
        (_aiter5<215000 | _aiter5>215999) &
        (_aiter5<225000 | _aiter5>225999) &
        (_aiter5<235000 | _aiter5>235999) &
        (_aiter5<245000 | _aiter5>245999) &
        (_aiter5<255000 | _aiter5>255999) &
        (_aiter5<265000 | _aiter5>265999) &
        (_aiter5<275000 | _aiter5>275999) &
        (_aiter5<285000 | _aiter5>285999) &
        (_aiter5<295000 | _aiter5>295999) &
        (_aiter5<305000 | _aiter5>305999) &
        (_aiter5<315000 | _aiter5>315999) &
        (_aiter5<325000 | _aiter5>325999) &
        (_aiter5<335000 | _aiter5>335999) &
        (_aiter5<345000 | _aiter5>345999) &
        (_aiter5<355000 | _aiter5>355999) &
```

```
        (_aiter5<365000 | _aiter5>365999) &
        (_aiter5<375000 | _aiter5>375999) &
        (_aiter5<385000 | _aiter5>385999) &
        (_aiter5<395000 | _aiter5>395999) &
        (_aiter5<405000 | _aiter5>405999) &
        (_aiter5<415000 | _aiter5>415999) &
        (_aiter5<425000 | _aiter5>425999) &
        (_aiter5<435000 | _aiter5>435999) &
        (_aiter5<445000 | _aiter5>445999) &
        (_aiter5<455000 | _aiter5>455999) &
        (_aiter5<465000 | _aiter5>465999) &
        (_aiter5<475000 | _aiter5>475999) &
        (_aiter5<485000 | _aiter5>485999) &
        (_aiter5<495000 | _aiter5>495999) &
        (_aiter5<505000 | _aiter5>505999) &
        (_aiter5<515000 | _aiter5>515999) &
        (_aiter5<525000 | _aiter5>525999) &
        (_aiter5<535000 | _aiter5>535999) &
        (_aiter5<545000 | _aiter5>545999) &
        (_aiter5<555000 | _aiter5>555999) &
        (_aiter5<565000 | _aiter5>565999) &
        (_aiter5<575000 | _aiter5>575999) &
        (_aiter5<585000 | _aiter5>585999) &
        (_aiter5<595000 | _aiter5>595999))

      _lntotiter=_aiter5+_liter6                               ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_dmiles[_lntotiter]              ; Lanes.

    endif
  ENDLOOP                                                ;^End Loop 15.

  print list="\\"," ",_lntotals(10.2C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                         ;^Generate
total X for all ATYPE.

ENDLOOP                                                  ;^End Loop 14.
print list="\\"," ",_supertotal(10.2C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------

Print  list=  "Total  Summary  Area  Types  by  Facility  Types  ",  PRINTO=1
;^Header
Print list= "                                                          Single
Digit Facility Types                                                   ",
PRINTO=1
Print  list= "AType           1x            2x            3x            4x
5x          6x          7x          8x          9x      Totals", PRINTO=1
Print  list=  "--------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                          ;^Begin Loop
16: Cycles through ATYPE by 10 to
```

```
  _aat1=int(_a1iter2/100000)                          ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                          ;^Initialize
total X for all ATYPE

    LOOP _f1iter=1000,9900,1000                       ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                    ;   get   single
digit FTYPE.
      _totftlns=0                                     ;^Initialize
total X for all FTYPE by all Lanes.
      if (_f1iter<5000 | _f1iter>5999)
      LOOP _fiter3=_f1iter,9900,100                   ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK               ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000            ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK          ; for current
single digit ATYPE in Loop 16.

            LOOP                                     _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_dmiles[_aiter6+_fiter3+_liter7]    ; in
order to generate total X for FTYPE by ATYPE.
            ENDLOOP                                          ;^End
Loop 20.

        ENDLOOP                                     ;^End Loop 19.

      ENDLOOP                                       ;^End Loop 18.
      endif
      _fttotal=_fttotal+_totftlns                         ;^Generate
total X for ATYPE.

      print list="\\"," ",_totftlns(10.2C)," ", PRINTO=1
    ENDLOOP                                         ;^End Loop 17.

  print list="\\"," ",_fttotal(10.2c), PRINTO=1
ENDLOOP                                             ;^End Loop 16.

Print  list=  "------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                         ;^Initialize
overall total X.

LOOP _f1iter2=1000,9900,1000                          ;^Begin Loop
21: Cycles through FTYPE by 10
                                                    ; to get single
digit FTYPE.
```

```
  _ftotals=0                                                  ;^Initialize
total X by FTYPE

  LOOP _fiter4=_f1iter2,9900,100                              ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                         ; get all two-
digit FTYPE for current FTYPE in
    if            (_f1iter2<5000            |             _f1iter2>5999)
; Loop 21.
    LOOP _liter8=1,9,1                                        ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                        ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                    ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_dmiles[_ftotiter]
      ENDLOOP                                              ;^End Loop 24.

    ENDLOOP                                                ;^End Loop 23.
    endif
  ENDLOOP                                                  ;^End Loop 22.
  _supertotal=_supertotal+_ftotals                              ;^Generate
overall total for all single digit ATYPE
                                                           ; by all single
digit FTYPE.
  print list="\\"," ",_ftotals(10.2C)," ", PRINTO=1
ENDLOOP                                                    ;^End Loop 21.
_dirmiles=_supertotal
print list="\\"," ",_supertotal(10.2C), PRINTO=1
print list=" ", PRINTO=1
;*************************************************************************
; END DIRECTIONAL MILES REPORT
;*************************************************************************

;========================================================================
==============
; BEGIN LANE MILES REPORT ------------- X = LANE MILES
;========================================================================
==============
Print list=" ", PRINTO=1
Print
list="*******************************************************************
***********************************************************", PRINTO=1
Print                                                            list="*
*", PRINTO=1
Print list="*                                                 Lane Miles
(Centroid                 Connectors                           Excluded)
*", PRINTO=1
Print                                                            list="*
*", PRINTO=1
Print
list="*******************************************************************
***********************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------
```

```
LOOP _a1iter=100000,599999,100000                         ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                 ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
           "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                        ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                         ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                                ;^Initialize
ATYPE X checking variable.

    LOOP _achkiter=_aiter,599999,1                        ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                      ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_lmiles[_achkiter]
    ENDLOOP                                                ;^End Loop 3.

    if (_avcheck>0)                                               ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                           ;     has     X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                           ;^Initialize
ATYPE total X.

      Print list= "Area Type ",_aat2(2.0), PRINTO=1        ;^Header
      Print                            list=                             "
Number            of            Lanes            per            Direction
", PRINTO=1
      Print list= "FType          1            2            3            4
5           6           7           8           9       Totals", PRINTO=1
      Print  list= "-------------------------------------------------------
----------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                            ;^Begin Loop 4:
Cycles through FTYPE
                                                           ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                              ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                  ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_lmiles[_aiter+_fiter+_liter]       ;  FTYPE  in
Loop 4 and totals X checking variable.
       ENDLOOP                                             ;^End Loop 5.

        if  (_vcheck>0  &  (_fiter<5000  |  _fiter>5999))          ;^Begin
Condition 2: If current FTYPE in Loop 4
```

```
           _fft2=int(_fiter/100)                                ; has X>0
continue to report X. Else skip FTYPE.
           print list= _fft2(2.0),"    ", PRINTO=1
           _totvols=0                                         ;^Initialize
FTYPE total X.

           LOOP _liter2=1,9,1                                 ;^Begin Loop 6:
Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             print  list="\\","  ",_lmiles[_aiter+_fiter+_liter2](10.2C),"
", PRINTO=1
             _totvols=_totvols+_lmiles[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_lmiles[_aiter+_fiter+_liter2]
           ENDLOOP                                            ;^End Loop 6.

             print list="\\"," ",_totvols(10.2C), PRINTO=1
        endif                                                 ;^End Condition
2.

      ENDLOOP                                                 ;^End Loop 4.

      Print  list= "-------------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                      ;^Begin Loop 7:
Cycles through Lanes for
                                                              ;  current ATYPE
in Loop 2.
        _lntotals=0                                           ;^Initialize
Lane total X.

        LOOP _aiter2=_aiter,599999,100                        ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                      ; in Loop 2 to
generate Lane total X.
          if (_aiter2<_aiter+5000 | _aiter2>_aiter+5999)
            _lntotiter=_aiter2+_liter3
            _lntotals=_lntotals+_lmiles[_lntotiter]
          endif
        ENDLOOP                                               ;^End Loop 8

        print list="\\"," ",_lntotals(10.2C)," ", PRINTO=1
      ENDLOOP                                                 ;^End Loop 7

      print list="\\"," ",_supertotal(10.2C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                     ;^End Condition
1.

  ENDLOOP                                                     ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                       ;^End Loop 1.

;-----------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------
```

```
Print list= "Total Area Types ", PRINTO=1                    ;^Header
Print list= "                                                        Number of
Lanes per Direction                                                    ",
PRINTO=1
Print  list=  "FType          1             2             3             4
5          6          7          8          9       Totals", PRINTO=1
Print  list=  "-----------------------------------------------------------
-----------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                              ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                   ; two-digit
FTYPE.

  _tafvcheck=0                                            ;^Initialize
FTYPE X checking variable.
 if (_fft2<50 | _fft2>59)
  LOOP _liter5=1,9,1                                      ;^Begin Loop
10: Cycles through Lanes for current
                                                        ; FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                     ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_lmiles[_aiter4+_fiter2+_liter5]   ;   current
Lanes and FTYPE in order to total X checking variable.
    ENDLOOP                                                 ;^End Loop
11.

  ENDLOOP                                               ;^End Loop 10.

  if (_tafvcheck>0)                                           ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                   ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                        ; in Loop 9.
        _totftat=0                                        ;^Initialize
FTYPE total X for all ATYPE.

      LOOP _aiter3= 100000,599999,10000                   ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_lmiles[_aiter3+_fiter2+_liter4] ; in order to
generate total X for FTYPE by Lane for all ATYPE.
      ENDLOOP                                           ;^End Loop 13.

      print list="\\"," ",_totftat(10.2C)," ", PRINTO=1
    ENDLOOP                                             ;^End Loop 12.

    print list="\\"," ",_tafvcheck(10.2C), PRINTO=1
  endif                                                 ;^End Condition
3.
 endif
ENDLOOP                                                 ;^End Loop 9.
```

```
Print list= "-------------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                ;^Initialize
all ATYPE total X.

LOOP _liter6=1,9,1                                           ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                                ;^Initialize
total X for Lanes.

  LOOP _aiter5=100000,599999,100                             ;^Begin Loop
15: Cycles through ATYPE and
    if ((_aiter5<105000 | _aiter5>105999) &
        (_aiter5<115000 | _aiter5>115999) &
        (_aiter5<125000 | _aiter5>125999) &
        (_aiter5<135000 | _aiter5>135999) &
        (_aiter5<145000 | _aiter5>145999) &
        (_aiter5<155000 | _aiter5>155999) &
        (_aiter5<165000 | _aiter5>165999) &
        (_aiter5<175000 | _aiter5>175999) &
        (_aiter5<185000 | _aiter5>185999) &
        (_aiter5<195000 | _aiter5>195999) &
        (_aiter5<205000 | _aiter5>205999) &
        (_aiter5<215000 | _aiter5>215999) &
        (_aiter5<225000 | _aiter5>225999) &
        (_aiter5<235000 | _aiter5>235999) &
        (_aiter5<245000 | _aiter5>245999) &
        (_aiter5<255000 | _aiter5>255999) &
        (_aiter5<265000 | _aiter5>265999) &
        (_aiter5<275000 | _aiter5>275999) &
        (_aiter5<285000 | _aiter5>285999) &
        (_aiter5<295000 | _aiter5>295999) &
        (_aiter5<305000 | _aiter5>305999) &
        (_aiter5<315000 | _aiter5>315999) &
        (_aiter5<325000 | _aiter5>325999) &
        (_aiter5<335000 | _aiter5>335999) &
        (_aiter5<345000 | _aiter5>345999) &
        (_aiter5<355000 | _aiter5>355999) &
        (_aiter5<365000 | _aiter5>365999) &
        (_aiter5<375000 | _aiter5>375999) &
        (_aiter5<385000 | _aiter5>385999) &
        (_aiter5<395000 | _aiter5>395999) &
        (_aiter5<405000 | _aiter5>405999) &
        (_aiter5<415000 | _aiter5>415999) &
        (_aiter5<425000 | _aiter5>425999) &
        (_aiter5<435000 | _aiter5>435999) &
        (_aiter5<445000 | _aiter5>445999) &
        (_aiter5<455000 | _aiter5>455999) &
        (_aiter5<465000 | _aiter5>465999) &
        (_aiter5<475000 | _aiter5>475999) &
        (_aiter5<485000 | _aiter5>485999) &
        (_aiter5<495000 | _aiter5>495999) &
```

```
        (_aiter5<505000 | _aiter5>505999) &
        (_aiter5<515000 | _aiter5>515999) &
        (_aiter5<525000 | _aiter5>525999) &
        (_aiter5<535000 | _aiter5>535999) &
        (_aiter5<545000 | _aiter5>545999) &
        (_aiter5<555000 | _aiter5>555999) &
        (_aiter5<565000 | _aiter5>565999) &
        (_aiter5<575000 | _aiter5>575999) &
        (_aiter5<585000 | _aiter5>585999) &
        (_aiter5<595000 | _aiter5>595999))

      _lntotiter=_aiter5+_liter6                               ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_lmiles[_lntotiter]              ; Lanes.

    endif
  ENDLOOP                                                 ;^End Loop 15.

  print list="\\"," ",_lntotals(10.2C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                         ;^Generate
total X for all ATYPE.

ENDLOOP                                                   ;^End Loop 14.
print list="\\"," ",_supertotal(10.2C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------

Print  list=  "Total  Summary  Area  Types  by  Facility  Types  ",  PRINTO=1
;^Header
Print list= "                                                          Single
Digit Facility Types                                                      ",
PRINTO=1
Print  list= "AType          1x            2x            3x            4x
5x         6x          7x          8x          9x      Totals", PRINTO=1
Print  list=  "-------------------------------------------------------------
-----------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                           ;^Begin Loop
16: Cycles through ATYPE by 10 to
  _aat1=int(_a1iter2/100000)                                 ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                                 ;^Initialize
total X for all ATYPE

    LOOP _f1iter=1000,9900,1000                              ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                         ;   get   single
digit FTYPE.
      _totftlns=0                                            ;^Initialize
total X for all FTYPE by all Lanes.
      if (_f1iter<5000 | _f1iter>5999)
```

```
      LOOP _fiter3=_f1iter,9900,100                          ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                      ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000                   ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK                 ; for current
single digit ATYPE in Loop 16.

            LOOP                                                _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_lmiles[_aiter6+_fiter3+_liter7]    ; in
order to generate total X for FTYPE by ATYPE.
            ENDLOOP                                                    ;^End
Loop 20.

        ENDLOOP                                          ;^End Loop 19.

      ENDLOOP                                            ;^End Loop 18.
      endif
      _fttotal=_fttotal+_totftlns                                ;^Generate
total X for ATYPE.

      print list="\\"," ",_totftlns(10.2C)," ", PRINTO=1
    ENDLOOP                                              ;^End Loop 17.

  print list="\\"," ",_fttotal(10.2c), PRINTO=1
ENDLOOP                                                  ;^End Loop 16.

Print list= "-------------------------------------------------------------
------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                              ;^Initialize
overall total X.

LOOP _f1iter2=1000,9900,1000                               ;^Begin Loop
21: Cycles through FTYPE by 10
                                                         ; to get single
digit FTYPE.
  _ftotals=0                                               ;^Initialize
total X by FTYPE

  LOOP _fiter4=_f1iter2,9900,100                           ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                       ; get all two-
digit FTYPE for current FTYPE in
    if          (_f1iter2<5000          |           _f1iter2>5999)
; Loop 21.
    LOOP _liter8=1,9,1                                     ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                     ;^Begin Loop
24: Cycles through ATYPE in order
```

```
        _ftotiter=_aiter7+_fiter4+_liter8                   ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_lmiles[_ftotiter]
      ENDLOOP                                              ;^End Loop 24.

    ENDLOOP                                                ;^End Loop 23.
    endif
  ENDLOOP                                                  ;^End Loop 22.
  _supertotal=_supertotal+_ftotals                              ;^Generate
overall total for all single digit ATYPE
                                                           ; by all single
digit FTYPE.
  print list="\\"," ",_ftotals(10.2C)," ", PRINTO=1
ENDLOOP                                                    ;^End Loop 21.
_lanemiles=_supertotal
print list="\\"," ",_supertotal(10.2C), PRINTO=1
print list=" ", PRINTO=1
;*************************************************************************
; END LANE MILES REPORT
;*************************************************************************

;=========================================================================
==============
; BEGIN VMT VAL REPORT ------------- X = VMT on Links w/ Counts
;=========================================================================
==============
Print list=" ", PRINTO=1
Print
list="*******************************************************************
*************************************************************", PRINTO=1
Print                                                             list="*
*", PRINTO=1
Print list="*                                Vehicle Miles Traveled (VMT)
using Volumes on Links with Counts                                     *",
PRINTO=1
Print                                                             list="*
*", PRINTO=1
Print
list="*******************************************************************
*************************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------

LOOP _a1iter=100000,599999,100000                          ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                   ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
          "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                          ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                           ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)
```

```
    _avcheck=0                                              ;^Initialize
ATYPE X checking variable.

    LOOP _achkiter=_aiter,599999,1                        ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                      ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_volvmtval[_achkiter]
    ENDLOOP                                              ;^End Loop 3.

    if (_avcheck>0)                                               ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                         ;     has    X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                         ;^Initialize
ATYPE total X.

      Print list= "Area Type ",_aat2(2.0), PRINTO=1       ;^Header
      Print                            list=                            "
Number            of            Lanes            per            Direction
", PRINTO=1
      Print list= "FType         1            2            3            4
5           6           7           8           9       Totals", PRINTO=1
      Print  list=  "-----------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                            ;^Begin Loop 4:
Cycles through FTYPE
                                                         ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                            ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                  ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_volvmtval[_aiter+_fiter+_liter]     ;  FTYPE  in
Loop 4 and totals X checking variable.
       ENDLOOP                                           ;^End Loop 5.

        if (_vcheck>0)                                            ;^Begin
Condition 2: If current FTYPE in Loop 4
           _fft2=int(_fiter/100)                                ;  has  X>0
continue to report X. Else skip FTYPE.
           print list= _fft2(2.0),"    ", PRINTO=1
           _totvols=0                                       ;^Initialize
FTYPE total X.

           LOOP _liter2=1,9,1                             ;^Begin Loop 6:
Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             print                                          list="\\","
",_volvmtval[_aiter+_fiter+_liter2](10.0C)," ", PRINTO=1
             _totvols=_totvols+_volvmtval[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_volvmtval[_aiter+_fiter+_liter2]
           ENDLOOP                                       ;^End Loop 6.

             print list="\\"," ",_totvols(10.0C), PRINTO=1
```

```
        endif                                              ;^End Condition
2.

      ENDLOOP                                             ;^End Loop 4.

      Print list= "-------------------------------------------------------
------------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                   ;^Begin Loop 7:
Cycles through Lanes for
                                                          ;  current ATYPE
in Loop 2.
        _lntotals=0                                           ;^Initialize
Lane total X.

        LOOP _aiter2=_aiter,599999,100                     ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                    ; in Loop 2 to
generate Lane total X.
          _lntotiter=_aiter2+_liter3
          _lntotals=_lntotals+_volvmtval[_lntotiter]
        ENDLOOP                                           ;^End Loop 8

        print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
      ENDLOOP                                             ;^End Loop 7

      print list="\\"," ",_supertotal(10.0C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                  ;^End Condition
1.

  ENDLOOP                                                 ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                   ;^End Loop 1.

;------------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                 ;^Header
Print list= "                                                    Number of
Lanes per Direction                                                     ",
PRINTO=1
Print list= "FType           1            2            3              4
5           6           7           8           9      Totals", PRINTO=1
Print list= "-----------------------------------------------------------
----------------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                  ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                      ; two-digit
FTYPE.
```

```
  _tafvcheck=0                                              ;^Initialize
FTYPE X checking variable.

  LOOP _liter5=1,9,1                                        ;^Begin Loop
10: Cycles through Lanes for current
                                                        ; FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                       ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_volvmtval[_aiter4+_fiter2+_liter5] ; current
Lanes and FTYPE in order to total X checking variable.
    ENDLOOP                                                   ;^End Loop
11.

  ENDLOOP                                                 ;^End Loop 10.

  if (_tafvcheck>0)                                             ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                  ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                     ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                        ; in Loop 9.
        _totftat=0                                          ;^Initialize
FTYPE total X for all ATYPE.

      LOOP _aiter3= 100000,599999,10000                     ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_volvmtval[_aiter3+_fiter2+_liter4] ; in order
to generate total X for FTYPE by Lane for all ATYPE.
      ENDLOOP                                             ;^End Loop 13.

      print list="\\"," ",_totftat(10.0C)," ", PRINTO=1
    ENDLOOP                                               ;^End Loop 12.

    print list="\\"," ",_tafvcheck(10.0C), PRINTO=1
  endif                                                  ;^End Condition
3.

ENDLOOP                                                   ;^End Loop 9.

Print list= "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                               ;^Initialize
all ATYPE total X.

LOOP _liter6=1,9,1                                          ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                               ;^Initialize
total X for Lanes.
```

```
  LOOP _aiter5=100000,599999,100                              ;^Begin Loop
15: Cycles through ATYPE and
      _lntotiter=_aiter5+_liter6                               ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_volvmtval[_lntotiter]              ; Lanes.
  ENDLOOP                                                  ;^End Loop 15.

  print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                            ;^Generate
total X for all ATYPE.

ENDLOOP                                                    ;^End Loop 14.
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------

Print  list=  "Total  Summary  Area  Types  by  Facility  Types  ",  PRINTO=1
;^Header
Print list= "                                                           Single
Digit Facility Types                                                        ",
PRINTO=1
Print list= "AType           1x            2x            3x             4x
5x          6x          7x          8x          9x      Totals", PRINTO=1
Print  list=  "------------------------------------------------------------
-----------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                           ;^Begin Loop
16: Cycles through ATYPE by 10 to
  _aat1=int(_a1iter2/100000)                                 ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                                 ;^Initialize
total X for all ATYPE

    LOOP _f1iter=1000,9900,1000                              ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                         ;   get   single
digit FTYPE.
      _totftlns=0                                            ;^Initialize
total X for all FTYPE by all Lanes.

      LOOP _fiter3=_f1iter,9900,100                          ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                       ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000                   ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK                  ; for current
single digit ATYPE in Loop 16.

            LOOP                                              _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
```

```
              _totftlns=_totftlns+_volvmtval[_aiter6+_fiter3+_liter7]    ;
in order to generate total X for FTYPE by ATYPE.
            ENDLOOP                                                  ;^End
Loop 20.

        ENDLOOP                                           ;^End Loop 19.

      ENDLOOP                                             ;^End Loop 18.

      _fttotal=_fttotal+_totftlns                               ;^Generate
total X for ATYPE.

      print list="\\"," ",_totftlns(10.0C)," ", PRINTO=1
    ENDLOOP                                               ;^End Loop 17.

  print list="\\"," ",_fttotal(10.0c), PRINTO=1
ENDLOOP                                                   ;^End Loop 16.

Print  list=  "-------------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                               ;^Initialize
overall total X.

LOOP _f1iter2=1000,9900,1000                                ;^Begin Loop
21: Cycles through FTYPE by 10
                                                          ;  to get single
digit FTYPE.
  _ftotals=0                                                ;^Initialize
total X by FTYPE

  LOOP _fiter4=_f1iter2,9900,100                            ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                        ; get all two-
digit FTYPE for current FTYPE in
                                                          ; Loop 21.
    LOOP _liter8=1,9,1                                      ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                      ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                  ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_volvmtval[_ftotiter]
      ENDLOOP                                             ;^End Loop 24.

    ENDLOOP                                               ;^End Loop 23.

  ENDLOOP                                                 ;^End Loop 22.

  _supertotal=_supertotal+_ftotals                              ;^Generate
overall total for all single digit ATYPE
                                                          ; by all single
digit FTYPE.
  print list="\\"," ",_ftotals(10.0C)," ", PRINTO=1
```

```
ENDLOOP                                                     ;^End Loop 21.
_vmtvoloncounts=_supertotal
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ", PRINTO=1
;**************************************************************************
; END VMT VAL REPORT
;**************************************************************************

;==========================================================================
==============
; BEGIN VMT Count REPORT ------------- X = Count VMT on Links w/ Counts
;==========================================================================
==============
Print list=" ", PRINTO=1
Print
list="********************************************************************
*************************************************************", PRINTO=1
Print                                                              list="*
*", PRINTO=1
Print list="*                             Vehicle Miles Traveled (VMT)
using Counts on Links with Counts                                     *",
PRINTO=1
Print                                                              list="*
*", PRINTO=1
Print
list="********************************************************************
*************************************************************", PRINTO=1
Print list=" ", PRINTO=1
;------------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------

LOOP _a1iter=100000,599999,100000                          ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                 ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
           "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                          ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                         ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)


    _avcheck=0                                                 ;^Initialize
ATYPE X checking variable.

    LOOP _achkiter=_aiter,599999,1                          ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                       ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_cntvmtval[_achkiter]
    ENDLOOP                                                 ;^End Loop 3.

    if (_avcheck>0)                                               ;^Begin
Condition 1: If current ATYPE in Loop 2
```

```
                                                         ;    has    X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                          ;^Initialize
ATYPE total X.

      Print list= "Area Type ",_aat2(2.0), PRINTO=1       ;^Header
      Print                          list=                              "
Number           of            Lanes           per            Direction
", PRINTO=1
      Print list= "FType         1            2            3            4
5          6          7           8           9      Totals", PRINTO=1
      Print  list=  "-------------------------------------------------------
------------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                               ;^Begin Loop 4:
Cycles through FTYPE
                                                         ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                             ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                     ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_cntvmtval[_aiter+_fiter+_liter]     ;  FTYPE  in
Loop 4 and totals X checking variable.
       ENDLOOP                                               ;^End Loop 5.

        if  (_vcheck>0)                                               ;^Begin
Condition 2: If current FTYPE in Loop 4
           _fft2=int(_fiter/100)                                  ;  has  X>0
continue to report X. Else skip FTYPE.
           print list= _fft2(2.0),"    ", PRINTO=1
           _totvols=0                                          ;^Initialize
FTYPE total X.

           LOOP _liter2=1,9,1                                ;^Begin Loop 6:
Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             print                                            list="\\","
",_cntvmtval[_aiter+_fiter+_liter2](10.0C)," ", PRINTO=1
             _totvols=_totvols+_cntvmtval[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_cntvmtval[_aiter+_fiter+_liter2]
           ENDLOOP                                             ;^End Loop 6.

             print list="\\"," ",_totvols(10.0C), PRINTO=1
        endif                                                ;^End Condition
2.

      ENDLOOP                                                ;^End Loop 4.

      Print  list=  "-------------------------------------------------------
------------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                     ;^Begin Loop 7:
Cycles through Lanes for
```

```
                                                            ; current ATYPE
in Loop 2.
        _lntotals=0                                            ;^Initialize
Lane total X.

        LOOP _aiter2=_aiter,599999,100                        ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                       ; in Loop 2 to
generate Lane total X.
          _lntotiter=_aiter2+_liter3
          _lntotals=_lntotals+_cntvmtval[_lntotiter]
        ENDLOOP                                               ;^End Loop 8

        print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
      ENDLOOP                                                 ;^End Loop 7

      print list="\\"," ",_supertotal(10.0C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                      ;^End Condition
1.

  ENDLOOP                                                     ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                       ;^End Loop 1.

;------------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                     ;^Header
Print list= "                                                     Number of
Lanes per Direction                                                      ",
PRINTO=1
Print list= "FType          1            2            3            4
5           6           7           8           9       Totals", PRINTO=1
Print list= "------------------------------------------------------------
------------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                     ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                         ; two-digit
FTYPE.

  _tafvcheck=0                                                 ;^Initialize
FTYPE X checking variable.

  LOOP _liter5=1,9,1                                           ;^Begin Loop
10: Cycles through Lanes for current
                                                            ; FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                          ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_cntvmtval[_aiter4+_fiter2+_liter5] ; current
Lanes and FTYPE in order to total X checking variable.
    ENDLOOP                                                      ;^End Loop
11.
```

```
  ENDLOOP                                                    ;^End Loop 10.

  if (_tafvcheck>0)                                                   ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                        ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                          ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                           ; in Loop 9.
        _totftat=0                                               ;^Initialize
FTYPE total X for all ATYPE.

      LOOP _aiter3= 100000,599999,10000                          ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_cntvmtval[_aiter3+_fiter2+_liter4] ; in order
to generate total X for FTYPE by Lane for all ATYPE.
      ENDLOOP                                                ;^End Loop 13.

      print list="\\"," ",_totftat(10.0C)," ", PRINTO=1
    ENDLOOP                                                  ;^End Loop 12.

    print list="\\"," ",_tafvcheck(10.0C), PRINTO=1
  endif                                                       ;^End Condition
3.

ENDLOOP                                                      ;^End Loop 9.

Print list= "--------------------------------------------------------------
-------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                    ;^Initialize
all ATYPE total X.

LOOP _liter6=1,9,1                                               ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                                    ;^Initialize
total X for Lanes.

  LOOP _aiter5=100000,599999,100                                 ;^Begin Loop
15: Cycles through ATYPE and
      _lntotiter=_aiter5+_liter6                                   ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_cntvmtval[_lntotiter]               ; Lanes.
  ENDLOOP                                                    ;^End Loop 15.

  print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                                ;^Generate
total X for all ATYPE.

ENDLOOP                                                      ;^End Loop 14.
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ","\n ", PRINTO=1
```

```
;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------

Print  list=  "Total  Summary  Area  Types  by  Facility  Types  ",  PRINTO=1
;^Header
Print list= "                                                          Single
Digit Facility Types                                                     ",
PRINTO=1
Print list= "AType           1x             2x             3x             4x
5x          6x          7x          8x          9x      Totals", PRINTO=1
Print  list=  "--------------------------------------------------------------
----------------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                          ;^Begin Loop
16: Cycles through ATYPE by 10 to
  _aat1=int(_a1iter2/100000)                                ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                                ;^Initialize
total X for all ATYPE

    LOOP _f1iter=1000,9900,1000                             ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                        ;   get   single
digit FTYPE.
      _totftlns=0                                           ;^Initialize
total X for all FTYPE by all Lanes.

      LOOP _fiter3=_f1iter,9900,100                         ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                     ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000                  ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK                ; for current
single digit ATYPE in Loop 16.

            LOOP                                           _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_cntvmtval[_aiter6+_fiter3+_liter7]    ;
in order to generate total X for FTYPE by ATYPE.
            ENDLOOP                                                  ;^End
Loop 20.

        ENDLOOP                                             ;^End Loop 19.

      ENDLOOP                                               ;^End Loop 18.

      _fttotal=_fttotal+_totftlns                             ;^Generate
total X for ATYPE.

      print list="\\"," ",_totftlns(10.0C)," ", PRINTO=1
    ENDLOOP                                                 ;^End Loop 17.
```

```
  print list="\\"," ",_fttotal(10.0c), PRINTO=1
ENDLOOP                                                    ;^End Loop 16.

Print  list= "-----------------------------------------------------------
---------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                 ;^Initialize
overall total X.

LOOP _f1iter2=1000,9900,1000                                  ;^Begin Loop
21: Cycles through FTYPE by 10
                                                           ;  to get single
digit FTYPE.
  _ftotals=0                                                  ;^Initialize
total X by FTYPE

  LOOP _fiter4=_f1iter2,9900,100                              ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                         ; get all two-
digit FTYPE for current FTYPE in
                                                           ; Loop 21.
    LOOP _liter8=1,9,1                                        ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                        ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                    ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_cntvmtval[_ftotiter]
      ENDLOOP                                              ;^End Loop 24.

    ENDLOOP                                                ;^End Loop 23.

  ENDLOOP                                                  ;^End Loop 22.

  _supertotal=_supertotal+_ftotals                              ;^Generate
overall total for all single digit ATYPE
                                                           ; by all single
digit FTYPE.
  print list="\\"," ",_ftotals(10.0C)," ", PRINTO=1
ENDLOOP                                                    ;^End Loop 21.
_vmtcountsoncounts=_supertotal
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ", PRINTO=1
;*************************************************************************
; END COUNT VMT REPORT
;*************************************************************************

;========================================================================
=====================
; BEGIN VOLUME/COUNT VMT REPORT ------------- X = Volumes over Counts VMT
on Links w/ Counts
;========================================================================
=====================
```

```
Print list=" ", PRINTO=1
Print
list="********************************************************************
**************************************************************", PRINTO=1
Print list="*
*", PRINTO=1
Print list="* VMT Volume over Count
Ratios on Links with Counts
*", PRINTO=1
Print list="*
*", PRINTO=1
Print
list="********************************************************************
**************************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------

LOOP _a1iter=100000,599999,100000                          ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                  ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
           "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                         ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                          ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                                 ;^Initialize
ATYPE X checking variable.

    LOOP _achkiter=_aiter,599999,1                         ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                       ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_vcntby[_achkiter]
    ENDLOOP                                                ;^End Loop 3.

    if (_avcheck>0)                                                ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                            ; has X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                            ;^Initialize
ATYPE total X.
      _supercnts=0

      Print list= "Area Type ",_aat2(2.0), PRINTO=1         ;^Header
      Print list= "
Number of Lanes per Direction
", PRINTO=1
      Print list= "FType         1           2           3           4
5           6           7           8           9       Totals", PRINTO=1
```

```
      Print list= "-------------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                             ;^Begin Loop 4:
Cycles through FTYPE
                                                          ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                              ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                   ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_vcntby[_aiter+_fiter+_liter]       ;  FTYPE  in
Loop 4 and totals X checking variable.
       ENDLOOP                                            ;^End Loop 5.

        if (_vcheck>0)                                            ;^Begin
Condition 2: If current FTYPE in Loop 4
           _fft2=int(_fiter/100)                                ; has X>0
continue to report X. Else skip FTYPE.
           print list= _fft2(2.0),"    ", PRINTO=1
           _totvols=0                                         ;^Initialize
FTYPE total X.
           _totcnts=0

            LOOP _liter2=1,9,1                                ;^Begin Loop
6: Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             if (_cntby[_aiter+_fiter+_liter2]>0)

_links=_volvmtval[_aiter+_fiter+_liter2]/_cntvmtval[_aiter+_fiter+_liter2
]
             else
               _links=0
             endif
             print list="\\"," ",_links(10.2C)," ", PRINTO=1
             _totvols=_totvols+_volvmtval[_aiter+_fiter+_liter2]
             _totcnts=_totcnts+_cntvmtval[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_volvmtval[_aiter+_fiter+_liter2]
             _supercnts=_supercnts+_cntvmtval[_aiter+_fiter+_liter2]
           ENDLOOP                                        ;^End Loop 6.

             if (_totcnts>0)
               _totvc=_totvols/_totcnts
             else
               _totvc=0
             endif
           print list="\\"," ",_totvc(10.2C), PRINTO=1
        endif                                              ;^End Condition
2.

      ENDLOOP                                             ;^End Loop 4.

      Print list= "-------------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1
```

```
      LOOP _liter3=1,9,1                                    ;^Begin Loop 7:
Cycles through Lanes for
                                                            ;  current  ATYPE
in Loop 2.
        _lntotals=0                                            ;^Initialize
Lane total X.
        _lncnts=0

        LOOP _aiter2=_aiter,599999,100                      ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                     ; in Loop 2 to
generate Lane total X.
          _lntotiter=_aiter2+_liter3
          _lntotals=_lntotals+_volvmtval[_lntotiter]
          _lncnts=_lncnts+_cntvmtval[_lntotiter]
        ENDLOOP                                             ;^End Loop 8

        if (_lncnts>0)
          _lnvc=_lntotals/_lncnts
        else
          _lnvc=0
        endif
        print list="\\"," ",_lnvc(10.2C)," ", PRINTO=1
      ENDLOOP                                               ;^End Loop 7

      if (_supercnts>0)
        _supervc=_supertotal/_supercnts
      else
        _supervc=0
      endif
      print list="\\"," ",_supervc(10.2C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                   ;^End Condition
1.

  ENDLOOP                                                   ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                     ;^End Loop 1.

;-----------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                   ;^Header
Print list= "                                                    Number of
Lanes per Direction                                                      ",
PRINTO=1
Print  list= "FType          1             2             3             4
5           6           7           8           9       Totals", PRINTO=1
Print  list= "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                   ;^Begin Loop 9:
Cycles through FTYPES to get
```

```
  _fft2=int(_fiter2/100)                                      ; two-digit
FTYPE.

  _tafvcheck=0                                               ;^Initialize
FTYPE X checking variable.
  _tafcnts=0

  LOOP _liter5=1,9,1                                         ;^Begin Loop
10: Cycles through Lanes for current
                                                           ; FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                        ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_volvmtval[_aiter4+_fiter2+_liter5] ; current
Lanes and FTYPE in order to total X checking variable.
      _tafcnts=_tafcnts+_cntvmtval[_aiter4+_fiter2+_liter5]
    ENDLOOP                                                    ;^End Loop
11.

  ENDLOOP                                                  ;^End Loop 10.

  if (_tafvcheck>0)                                               ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                   ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                      ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                           ; in Loop 9.
        _totftat=0                                           ;^Initialize
FTYPE total X for all ATYPE.
        _totcnts=0

      LOOP _aiter3= 100000,599999,10000                      ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_volvmtval[_aiter3+_fiter2+_liter4]  ;  in  order
to generate total X for FTYPE by Lane for all ATYPE.
        _totcnts=_totcnts+_cntvmtval[_aiter3+_fiter2+_liter4]
      ENDLOOP                                              ;^End Loop 13.
      if (_totcnts>0)
        _totvc=_totftat/_totcnts
      else
        _totvc=0
      endif
      print list="\\"," ",_totvc(10.2C)," ", PRINTO=1
    ENDLOOP                                                ;^End Loop 12.
    if (_tafcnts>0)
      _tafvc=_tafvcheck/_tafcnts
    else
      _tafvc=0
    endif
    print list="\\"," ",_tafvc(10.2C), PRINTO=1
  endif                                                     ;^End Condition
3.

ENDLOOP                                                    ;^End Loop 9.
```

```
Print list= "-----------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                ;^Initialize
all ATYPE total X.
_supercnts=0

LOOP _liter6=1,9,1                                           ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                                ;^Initialize
total X for Lanes.
  _lncnts=0

  LOOP _aiter5=100000,599999,100                             ;^Begin Loop
15: Cycles through ATYPE and
      _lntotiter=_aiter5+_liter6                              ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_volvmtval[_lntotiter]             ; Lanes.
      _lncnts=_lncnts+_cntvmtval[_lntotiter]
  ENDLOOP                                                ;^End Loop 15.
  if (_lncnts>0)
    _lnvc=_lntotals/_lncnts
  else
    _lnvc=0
  endif
  print list="\\"," ",_lnvc(10.2C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                           ;^Generate
total X for all ATYPE.
  _supercnts=_supercnts+_lncnts
ENDLOOP                                                  ;^End Loop 14.
if (_supercnts>0)
  _supervc=_supertotal/_supercnts
else
  _supervc=0
endif
print list="\\"," ",_supervc(10.2C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------

Print list= "Total Summary Area Types by Facility Types ", PRINTO=1
;^Header
Print list= "                                                          Single
Digit Facility Types                                                    ",
PRINTO=1
Print list= "AType          1x           2x           3x           4x
5x         6x         7x         8x         9x      Totals", PRINTO=1
Print list= "-----------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                           ;^Begin Loop
16: Cycles through ATYPE by 10 to
```

```
  _aat1=int(_a1iter2/100000)                              ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                              ;^Initialize
total X for all ATYPE
  _ftcnts=0

    LOOP _f1iter=1000,9900,1000                           ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                       ;   get   single
digit FTYPE.
      _totftlns=0                                         ;^Initialize
total X for all FTYPE by all Lanes.
      _totftcnts=0

      LOOP _fiter3=_f1iter,9900,100                       ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                   ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000                ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK              ; for current
single digit ATYPE in Loop 16.

            LOOP                                       _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_volvmtval[_aiter6+_fiter3+_liter7]    ;
in order to generate total X for FTYPE by ATYPE.
              _totftcnts=_totftcnts+_cntvmtval[_aiter6+_fiter3+_liter7]
            ENDLOOP                                             ;^End
Loop 20.

        ENDLOOP                                           ;^End Loop 19.

      ENDLOOP                                             ;^End Loop 18.

      _fttotal=_fttotal+_totftlns                           ;^Generate
total X for ATYPE.
      _ftcnts=_ftcnts+_totftcnts

      if (_totftcnts>0)
        _totftvc=_totftlns/_totftcnts
      else
        _totftvc=0
      endif
      print list="\\"," ",_totftvc(10.2C)," ", PRINTO=1
    ENDLOOP                                               ;^End Loop 17.
    if (_ftcnts>0)
      _ftvc=_fttotal/_ftcnts
    else
      _ftvc=0
    endif
  print list="\\"," ",_ftvc(10.2c), PRINTO=1
ENDLOOP                                                   ;^End Loop 16.
```

```
Print  list= "-----------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                ;^Initialize
overall total X.
_supercnts=0

LOOP _f1iter2=1000,9900,1000                                 ;^Begin Loop
21: Cycles through FTYPE by 10
                                                           ;  to get single
digit FTYPE.
  _ftotals=0                                                 ;^Initialize
total X by FTYPE
  _ftcnts=0

  LOOP _fiter4=_f1iter2,9900,100                             ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                         ; get all two-
digit FTYPE for current FTYPE in
                                                           ; Loop 21.
    LOOP _liter8=1,9,1                                       ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                       ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                    ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_volvmtval[_ftotiter]
        _ftcnts=_ftcnts+_cntvmtval[_ftotiter]
      ENDLOOP                                              ;^End Loop 24.

    ENDLOOP                                                ;^End Loop 23.

  ENDLOOP                                                  ;^End Loop 22.

  _supertotal=_supertotal+_ftotals                            ;^Generate
overall total for all single digit ATYPE
  _supercnts=_supercnts+_ftcnts                            ; by all single
digit FTYPE.

  if (_ftcnts>0)
    _ftvc=_ftotals/_ftcnts
  else
    _ftvc=0
  endif
  print list="\\"," ",_ftvc(10.2C)," ", PRINTO=1
ENDLOOP                                                    ;^End Loop 21.
if (_supercnts>0)
  _supervc=_supertotal/_supercnts
else
  _supervc=0
endif
_vmtvolovercounts=_supervc
print list="\\"," ",_supervc(10.2C), PRINTO=1
print list=" ", PRINTO=1
```

```
;*************************************************************************
; END VMT VOLUME OVER COUNT REPORT
;*************************************************************************

;========================================================================
==============
; BEGIN VHT VAL REPORT ------------- X = VHT on Links w/ Counts
;========================================================================
==============
Print list=" ", PRINTO=1
Print
list="*************************************************************
************************************************************", PRINTO=1
Print                                                           list="*
*", PRINTO=1
Print list="*                        Vehicle Hours Traveled (VHT)
using Volumes on Links with Counts                                   *",
PRINTO=1
Print                                                           list="*
*", PRINTO=1
Print
list="*************************************************************
************************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------

LOOP _a1iter=100000,599999,100000                         ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                 ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
           "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                        ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                         ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                                ;^Initialize
ATYPE X checking variable.

    LOOP _achkiter=_aiter,599999,1                        ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                      ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_volvhtval[_achkiter]
    ENDLOOP                                              ;^End Loop 3.

    if (_avcheck>0)                                               ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                         ;    has    X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                           ;^Initialize
ATYPE total X.
```

```
      Print list= "Area Type ",_aat2(2.0), PRINTO=1       ;^Header
      Print                            list=                            "
Number            of             Lanes            per            Direction
", PRINTO=1
      Print list= "FType         1            2            3            4
5           6           7           8           9       Totals", PRINTO=1
      Print  list=  "-------------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                            ;^Begin Loop 4:
Cycles through FTYPE
                                                         ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                             ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                  ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_volvhtval[_aiter+_fiter+_liter]     ;  FTYPE  in
Loop 4 and totals X checking variable.
       ENDLOOP                                            ;^End Loop 5.

        if  (_vcheck>0)                                          ;^Begin
Condition 2: If current FTYPE in Loop 4
           _fft2=int(_fiter/100)                               ;  has  X>0
continue to report X. Else skip FTYPE.
           print list= _fft2(2.0),"    ", PRINTO=1
           _totvols=0                                        ;^Initialize
FTYPE total X.

           LOOP _liter2=1,9,1                             ;^Begin Loop 6:
Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             print                                           list="\\","
",_volvhtval[_aiter+_fiter+_liter2](10.0C)," ", PRINTO=1
             _totvols=_totvols+_volvhtval[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_volvhtval[_aiter+_fiter+_liter2]
           ENDLOOP                                        ;^End Loop 6.

             print list="\\"," ",_totvols(10.0C), PRINTO=1
        endif                                             ;^End Condition
2.

      ENDLOOP                                             ;^End Loop 4.

      Print  list=  "-------------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                  ;^Begin Loop 7:
Cycles through Lanes for
                                                         ;  current  ATYPE
in Loop 2.
        _lntotals=0                                          ;^Initialize
Lane total X.
```

```
        LOOP _aiter2=_aiter,599999,100                      ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                     ; in Loop 2 to
generate Lane total X.
          _lntotiter=_aiter2+_liter3
          _lntotals=_lntotals+_volvhtval[_lntotiter]
        ENDLOOP                                             ;^End Loop 8

        print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
      ENDLOOP                                               ;^End Loop 7

      print list="\\"," ",_supertotal(10.0C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                    ;^End Condition
1.

  ENDLOOP                                                   ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                     ;^End Loop 1.

;------------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                   ;^Header
Print list= "                                                        Number of
Lanes per Direction                                                      ",
PRINTO=1
Print list= "FType          1             2             3              4
5          6           7           8           9       Totals", PRINTO=1
Print list= "-------------------------------------------------------------
----------------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                    ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                        ; two-digit
FTYPE.

  _tafvcheck=0                                                 ;^Initialize
FTYPE X checking variable.

  LOOP _liter5=1,9,1                                           ;^Begin Loop
10: Cycles through Lanes for current
                                                            ;  FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                          ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_volvhtval[_aiter4+_fiter2+_liter5] ; current
Lanes and FTYPE in order to total X checking variable.
    ENDLOOP                                                     ;^End Loop
11.

  ENDLOOP                                                   ;^End Loop 10.

  if (_tafvcheck>0)                                                ;^Begin
Condition 3: If current FTYPE in Loop 9
```

```
    print list= _fft2(2.0),"     ", PRINTO=1                    ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                        ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                            ; in Loop 9.
        _totftat=0                                             ;^Initialize
FTYPE total X for all ATYPE.

      LOOP _aiter3= 100000,599999,10000                        ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_volvhtval[_aiter3+_fiter2+_liter4] ; in order
to generate total X for FTYPE by Lane for all ATYPE.
      ENDLOOP                                                 ;^End Loop 13.

      print list="\\"," ",_totftat(10.0C)," ", PRINTO=1
    ENDLOOP                                                   ;^End Loop 12.

    print list="\\"," ",_tafvcheck(10.0C), PRINTO=1
  endif                                                       ;^End Condition
3.

ENDLOOP                                                       ;^End Loop 9.

Print list= "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                  ;^Initialize
all ATYPE total X.

LOOP _liter6=1,9,1                                             ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                                  ;^Initialize
total X for Lanes.

  LOOP _aiter5=100000,599999,100                               ;^Begin Loop
15: Cycles through ATYPE and
      _lntotiter=_aiter5+_liter6                                ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_volvhtval[_lntotiter]               ; Lanes.
  ENDLOOP                                                     ;^End Loop 15.

  print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                             ;^Generate
total X for all ATYPE.

ENDLOOP                                                       ;^End Loop 14.
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------
```

```
Print  list=  "Total  Summary  Area  Types  by  Facility  Types  ",  PRINTO=1
;^Header
Print list= "                                                         Single
Digit Facility Types                                                   ",
PRINTO=1
Print  list= "AType          1x           2x           3x            4x
5x          6x          7x          8x          9x      Totals", PRINTO=1
Print  list=  "-------------------------------------------------------------
-------------------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                           ;^Begin Loop
16: Cycles through ATYPE by 10 to
  _aat1=int(_a1iter2/100000)                                 ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                                 ;^Initialize
total X for all ATYPE

    LOOP _f1iter=1000,9900,1000                              ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                          ;   get   single
digit FTYPE.
      _totftlns=0                                            ;^Initialize
total X for all FTYPE by all Lanes.

      LOOP _fiter3=_f1iter,9900,100                          ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                      ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000                   ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK                 ; for current
single digit ATYPE in Loop 16.

            LOOP                                            _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_volvhtval[_aiter6+_fiter3+_liter7]    ;
in order to generate total X for FTYPE by ATYPE.
            ENDLOOP                                                 ;^End
Loop 20.

        ENDLOOP                                           ;^End Loop 19.

      ENDLOOP                                             ;^End Loop 18.

      _fttotal=_fttotal+_totftlns                              ;^Generate
total X for ATYPE.

      print list="\\"," ",_totftlns(10.0C)," ", PRINTO=1
    ENDLOOP                                               ;^End Loop 17.

  print list="\\"," ",_fttotal(10.0c), PRINTO=1
ENDLOOP                                                   ;^End Loop 16.
```

```
Print  list= "--------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                 ;^Initialize
overall total X.

LOOP _f1iter2=1000,9900,1000                                  ;^Begin Loop
21: Cycles through FTYPE by 10
                                                           ;  to get single
digit FTYPE.
  _ftotals=0                                                  ;^Initialize
total X by FTYPE

  LOOP _fiter4=_f1iter2,9900,100                              ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                         ; get all two-
digit FTYPE for current FTYPE in
                                                           ; Loop 21.
    LOOP _liter8=1,9,1                                        ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                        ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                    ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_volvhtval[_ftotiter]
      ENDLOOP                                              ;^End Loop 24.

    ENDLOOP                                                ;^End Loop 23.

  ENDLOOP                                                  ;^End Loop 22.

  _supertotal=_supertotal+_ftotals                             ;^Generate
overall total for all single digit ATYPE
                                                           ;  by all single
digit FTYPE.
  print list="\\"," ",_ftotals(10.0C)," ", PRINTO=1
ENDLOOP                                                    ;^End Loop 21.
_vhtvoloncounts=_supertotal
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ", PRINTO=1
;*************************************************************************
; END VHT VAL REPORT
;*************************************************************************

;=========================================================================
==============
; BEGIN VHT Count REPORT ------------- X = Count VHT on Links w/ Counts
;=========================================================================
==============
Print list=" ", PRINTO=1
Print
list="********************************************************************
**************************************************************", PRINTO=1
```

```
Print                                                         list="*
*", PRINTO=1
Print list="*                           Vehicle Hours Traveled (VHT)
using Counts on Links with Counts                                  *",
PRINTO=1
Print                                                         list="*
*", PRINTO=1
Print
list="*******************************************************************
*********************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------

LOOP _a1iter=100000,599999,100000                        ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
           "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                       ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                        ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                              ;^Initialize
ATYPE X checking variable.

    LOOP _achkiter=_aiter,599999,1                       ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                     ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_cntvhtval[_achkiter]
    ENDLOOP                                              ;^End Loop 3.

    if (_avcheck>0)                                              ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                         ;     has    X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                         ;^Initialize
ATYPE total X.

      Print list= "Area Type ",_aat2(2.0), PRINTO=1       ;^Header
      Print                        list=                                "
Number            of            Lanes            per            Direction
", PRINTO=1
      Print list= "FType         1            2            3            4
5           6           7           8           9       Totals", PRINTO=1
      Print list= "-----------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                           ;^Begin Loop 4:
Cycles through FTYPE
```

```
                                                         ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                             ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                 ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_cntvhtval[_aiter+_fiter+_liter]     ; FTYPE in
Loop 4 and totals X checking variable.
       ENDLOOP                                          ;^End Loop 5.

        if (_vcheck>0)                                           ;^Begin
Condition 2: If current FTYPE in Loop 4
           _fft2=int(_fiter/100)                               ; has X>0
continue to report X. Else skip FTYPE.
           print list= _fft2(2.0),"    ", PRINTO=1
           _totvols=0                                        ;^Initialize
FTYPE total X.

           LOOP _liter2=1,9,1                            ;^Begin Loop 6:
Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             print                                          list="\\","
",_cntvhtval[_aiter+_fiter+_liter2](10.0C)," ", PRINTO=1
             _totvols=_totvols+_cntvhtval[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_cntvhtval[_aiter+_fiter+_liter2]
           ENDLOOP                                      ;^End Loop 6.

             print list="\\"," ",_totvols(10.0C), PRINTO=1
        endif                                           ;^End Condition
2.

      ENDLOOP                                           ;^End Loop 4.

      Print list= "-------------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                 ;^Begin Loop 7:
Cycles through Lanes for
                                                         ; current ATYPE
in Loop 2.
        _lntotals=0                                          ;^Initialize
Lane total X.

        LOOP _aiter2=_aiter,599999,100                   ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                  ; in Loop 2 to
generate Lane total X.
          _lntotiter=_aiter2+_liter3
          _lntotals=_lntotals+_cntvhtval[_lntotiter]
        ENDLOOP                                         ;^End Loop 8

        print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
      ENDLOOP                                           ;^End Loop 7
```

```
      print list="\\"," ",_supertotal(10.0C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                   ;^End Condition
1.

  ENDLOOP                                                  ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                    ;^End Loop 1.

;-----------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                  ;^Header
Print list= "                                                     Number of
Lanes per Direction                                                    ",
PRINTO=1
Print list= "FType           1              2              3              4
5          6           7           8           9      Totals", PRINTO=1
Print list= "------------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                  ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                       ; two-digit
FTYPE.

  _tafvcheck=0                                                ;^Initialize
FTYPE X checking variable.

  LOOP _liter5=1,9,1                                          ;^Begin Loop
10: Cycles through Lanes for current
                                                           ;  FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                         ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_cntvhtval[_aiter4+_fiter2+_liter5] ; current
Lanes and FTYPE in order to total X checking variable.
    ENDLOOP                                                     ;^End Loop
11.

  ENDLOOP                                                  ;^End Loop 10.

  if (_tafvcheck>0)                                               ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                    ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                       ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                           ; in Loop 9.
        _totftat=0                                            ;^Initialize
FTYPE total X for all ATYPE.

      LOOP _aiter3= 100000,599999,10000                       ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
```

```
        _totftat=_totftat+_cntvhtval[_aiter3+_fiter2+_liter4]  ;  in  order
to generate total X for FTYPE by Lane for all ATYPE.
      ENDLOOP                                                ;^End Loop 13.

      print list="\\"," ",_totftat(10.0C)," ", PRINTO=1
    ENDLOOP                                                  ;^End Loop 12.

    print list="\\"," ",_tafvcheck(10.0C), PRINTO=1
  endif                                                       ;^End Condition
3.

ENDLOOP                                                      ;^End Loop 9.

Print  list=  "---------------------------------------------------------------
-------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                    ;^Initialize
all ATYPE total X.

LOOP _liter6=1,9,1                                               ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                                    ;^Initialize
total X for Lanes.

  LOOP _aiter5=100000,599999,100                                 ;^Begin Loop
15: Cycles through ATYPE and
      _lntotiter=_aiter5+_liter6                                  ;  FTYPE  in
order to generate total X for
      _lntotals=_lntotals+_cntvhtval[_lntotiter]                ; Lanes.
  ENDLOOP                                                    ;^End Loop 15.

  print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                                ;^Generate
total X for all ATYPE.

ENDLOOP                                                      ;^End Loop 14.
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------

Print  list=  "Total  Summary  Area  Types  by  Facility  Types  ",  PRINTO=1
;^Header
Print list= "                                                          Single
Digit Facility Types                                                      ",
PRINTO=1
Print list= "AType           1x            2x            3x             4x
5x          6x          7x          8x          9x       Totals", PRINTO=1
Print  list=  "---------------------------------------------------------------
-------------------------------------------------------------------",
PRINTO=1
```

```
LOOP _a1iter2=100000,599999,100000                          ;^Begin Loop
16: Cycles through ATYPE by 10 to
  _aat1=int(_a1iter2/100000)                                ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                                ;^Initialize
total X for all ATYPE

    LOOP _f1iter=1000,9900,1000                             ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                        ;   get   single
digit FTYPE.
      _totftlns=0                                           ;^Initialize
total X for all FTYPE by all Lanes.

      LOOP _fiter3=_f1iter,9900,100                         ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                     ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000                  ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK                ; for current
single digit ATYPE in Loop 16.

            LOOP                                           _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_cntvhtval[_aiter6+_fiter3+_liter7]    ;
in order to generate total X for FTYPE by ATYPE.
            ENDLOOP                                                  ;^End
Loop 20.

        ENDLOOP                                             ;^End Loop 19.

      ENDLOOP                                               ;^End Loop 18.

      _fttotal=_fttotal+_totftlns                             ;^Generate
total X for ATYPE.

      print list="\\"," ",_totftlns(10.0C)," ", PRINTO=1
    ENDLOOP                                                 ;^End Loop 17.

  print list="\\"," ",_fttotal(10.0c), PRINTO=1
ENDLOOP                                                     ;^End Loop 16.

Print  list=  "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                               ;^Initialize
overall total X.

LOOP _f1iter2=1000,9900,1000                                ;^Begin Loop
21: Cycles through FTYPE by 10
```

```
                                                          ; to get single
digit FTYPE.
  _ftotals=0                                                 ;^Initialize
total X by FTYPE

  LOOP _fiter4=_f1iter2,9900,100                             ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                        ; get all two-
digit FTYPE for current FTYPE in
                                                          ; Loop 21.
    LOOP _liter8=1,9,1                                       ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                       ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                  ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_cntvhtval[_ftotiter]
      ENDLOOP                                             ;^End Loop 24.

    ENDLOOP                                               ;^End Loop 23.

  ENDLOOP                                                 ;^End Loop 22.

  _supertotal=_supertotal+_ftotals                             ;^Generate
overall total for all single digit ATYPE
                                                          ; by all single
digit FTYPE.
  print list="\\"," ",_ftotals(10.0C)," ", PRINTO=1
ENDLOOP                                                   ;^End Loop 21.
_vhtcountsoncounts=_supertotal
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ", PRINTO=1
;************************************************************************
; END COUNT VHT REPORT
;************************************************************************

;========================================================================
=====================
; BEGIN VOLUME/COUNT VHT REPORT ------------- X = Volumes over Counts VHT
on Links w/ Counts
;========================================================================
=====================
Print list=" ", PRINTO=1
Print
list="************************************************************************
*************************************************************", PRINTO=1
Print                                                             list="*
*", PRINTO=1
Print list="*                                      VHT Volume over Count
Ratios             on            Links           with            Counts
*", PRINTO=1
Print                                                             list="*
*", PRINTO=1
Print
list="************************************************************************
*************************************************************", PRINTO=1
```

```
Print list=" ", PRINTO=1
;------------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------

LOOP _a1iter=100000,599999,100000                          ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                  ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
           "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                         ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                          ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                                ;^Initialize
ATYPE X checking variable.

    LOOP _achkiter=_aiter,599999,1                         ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                       ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_vcntby[_achkiter]
    ENDLOOP                                                 ;^End Loop 3.

    if (_avcheck>0)                                                ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                          ;     has     X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                           ;^Initialize
ATYPE total X.
      _supercnts=0

      Print list= "Area Type ",_aat2(2.0), PRINTO=1       ;^Header
      Print                            list=                              "
Number             of             Lanes             per             Direction
", PRINTO=1
      Print list= "FType          1            2            3            4
5           6           7           8           9       Totals", PRINTO=1
      Print list= "----------------------------------------------------------
----------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                             ;^Begin Loop 4:
Cycles through FTYPE
                                                          ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                              ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                   ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_vcntby[_aiter+_fiter+_liter]       ;  FTYPE  in
Loop 4 and totals X checking variable.
       ENDLOOP                                              ;^End Loop 5.
```

```
        if (_vcheck>0)                                          ;^Begin
Condition 2: If current FTYPE in Loop 4
           _fft2=int(_fiter/100)                              ; has X>0
continue to report X. Else skip FTYPE.
           print list= _fft2(2.0),"    ", PRINTO=1
           _totvols=0                                          ;^Initialize
FTYPE total X.
           _totcnts=0

            LOOP _liter2=1,9,1                                 ;^Begin Loop
6: Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             if (_cntby[_aiter+_fiter+_liter2]>0)

_links=_volvhtval[_aiter+_fiter+_liter2]/_cntvhtval[_aiter+_fiter+_liter2
]
             else
               _links=0
             endif
             print list="\\"," ",_links(10.2C)," ", PRINTO=1
             _totvols=_totvols+_volvhtval[_aiter+_fiter+_liter2]
             _totcnts=_totcnts+_cntvhtval[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_volvhtval[_aiter+_fiter+_liter2]
             _supercnts=_supercnts+_cntvhtval[_aiter+_fiter+_liter2]
           ENDLOOP                                          ;^End Loop 6.

             if (_totcnts>0)
               _totvc=_totvols/_totcnts
             else
               _totvc=0
             endif
           print list="\\"," ",_totvc(10.2C), PRINTO=1
        endif                                               ;^End Condition
2.

      ENDLOOP                                               ;^End Loop 4.

      Print list= "-------------------------------------------------------
------------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                     ;^Begin Loop 7:
Cycles through Lanes for
                                                            ; current ATYPE
in Loop 2.
        _lntotals=0                                            ;^Initialize
Lane total X.
        _lncnts=0

        LOOP _aiter2=_aiter,599999,100                       ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                      ; in Loop 2 to
generate Lane total X.
          _lntotiter=_aiter2+_liter3
          _lntotals=_lntotals+_volvhtval[_lntotiter]
          _lncnts=_lncnts+_cntvhtval[_lntotiter]
```

```
        ENDLOOP                                             ;^End Loop 8

        if (_lncnts>0)
          _lnvc=_lntotals/_lncnts
        else
          _lnvc=0
        endif
        print list="\\"," ",_lnvc(10.2C)," ", PRINTO=1
      ENDLOOP                                               ;^End Loop 7

      if (_supercnts>0)
        _supervc=_supertotal/_supercnts
      else
        _supervc=0
      endif
      print list="\\"," ",_supervc(10.2C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                    ;^End Condition
1.

  ENDLOOP                                                   ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                     ;^End Loop 1.

;-----------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                   ;^Header
Print list= "                                                     Number of
Lanes per Direction                                                    ",
PRINTO=1
Print list= "FType          1             2             3             4
5           6           7           8           9       Totals", PRINTO=1
Print list= "-------------------------------------------------------------
-----------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                    ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                        ; two-digit
FTYPE.

  _tafvcheck=0                                                 ;^Initialize
FTYPE X checking variable.
  _tafcnts=0

  LOOP _liter5=1,9,1                                           ;^Begin Loop
10: Cycles through Lanes for current
                                                            ; FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                          ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_volvhtval[_aiter4+_fiter2+_liter5] ; current
Lanes and FTYPE in order to total X checking variable.
      _tafcnts=_tafcnts+_cntvhtval[_aiter4+_fiter2+_liter5]
```

```
    ENDLOOP                                                     ;^End Loop
11.

  ENDLOOP                                                     ;^End Loop 10.

  if (_tafvcheck>0)                                                  ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                    ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                        ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                             ; in Loop 9.
        _totftat=0                                             ;^Initialize
FTYPE total X for all ATYPE.
        _totcnts=0

      LOOP _aiter3= 100000,599999,10000                        ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_volvhtval[_aiter3+_fiter2+_liter4] ; in order
to generate total X for FTYPE by Lane for all ATYPE.
        _totcnts=_totcnts+_cntvhtval[_aiter3+_fiter2+_liter4]
      ENDLOOP                                                 ;^End Loop 13.
      if (_totcnts>0)
        _totvc=_totftat/_totcnts
      else
        _totvc=0
      endif
      print list="\\"," ",_totvc(10.2C)," ", PRINTO=1
    ENDLOOP                                                   ;^End Loop 12.
    if (_tafcnts>0)
      _tafvc=_tafvcheck/_tafcnts
    else
      _tafvc=0
    endif
    print list="\\"," ",_tafvc(10.2C), PRINTO=1
  endif                                                      ;^End Condition
3.

ENDLOOP                                                       ;^End Loop 9.

Print list= "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                  ;^Initialize
all ATYPE total X.
_supercnts=0

LOOP _liter6=1,9,1                                             ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                                  ;^Initialize
total X for Lanes.
  _lncnts=0
```

```
  LOOP _aiter5=100000,599999,100                            ;^Begin Loop
15: Cycles through ATYPE and
      _lntotiter=_aiter5+_liter6                             ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_volvhtval[_lntotiter]            ; Lanes.
      _lncnts=_lncnts+_cntvhtval[_lntotiter]
  ENDLOOP                                                  ;^End Loop 15.
  if (_lncnts>0)
    _lnvc=_lntotals/_lncnts
  else
    _lnvc=0
  endif
  print list="\\"," ",_lnvc(10.2C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                          ;^Generate
total X for all ATYPE.
  _supercnts=_supercnts+_lncnts
ENDLOOP                                                    ;^End Loop 14.
if (_supercnts>0)
  _supervc=_supertotal/_supercnts
else
  _supervc=0
endif
print list="\\"," ",_supervc(10.2C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------

Print list= "Total Summary Area Types by Facility Types ", PRINTO=1
;^Header
Print list= "                                                          Single
Digit Facility Types                                                      ",
PRINTO=1
Print list= "AType          1x           2x           3x           4x
5x          6x          7x          8x          9x      Totals", PRINTO=1
Print list= "-------------------------------------------------------------
-----------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                          ;^Begin Loop
16: Cycles through ATYPE by 10 to
  _aat1=int(_a1iter2/100000)                                ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                                ;^Initialize
total X for all ATYPE
  _ftcnts=0

    LOOP _f1iter=1000,9900,1000                             ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                          ;   get   single
digit FTYPE.
      _totftlns=0                                           ;^Initialize
total X for all FTYPE by all Lanes.
      _totftcnts=0
```

```
      LOOP _fiter3=_f1iter,9900,100                          ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                      ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000                  ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK                 ; for current
single digit ATYPE in Loop 16.

            LOOP                                            _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_volvhtval[_aiter6+_fiter3+_liter7]    ;
in order to generate total X for FTYPE by ATYPE.
              _totftcnts=_totftcnts+_cntvhtval[_aiter6+_fiter3+_liter7]
            ENDLOOP                                                  ;^End
Loop 20.

        ENDLOOP                                         ;^End Loop 19.

      ENDLOOP                                           ;^End Loop 18.

      _fttotal=_fttotal+_totftlns                           ;^Generate
total X for ATYPE.
      _ftcnts=_ftcnts+_totftcnts

      if (_totftcnts>0)
        _totftvc=_totftlns/_totftcnts
      else
        _totftvc=0
      endif
      print list="\\"," ",_totftvc(10.2C)," ", PRINTO=1
    ENDLOOP                                             ;^End Loop 17.
    if (_ftcnts>0)
      _ftvc=_fttotal/_ftcnts
    else
      _ftvc=0
    endif
  print list="\\"," ",_ftvc(10.2c), PRINTO=1
ENDLOOP                                                 ;^End Loop 16.

Print list= "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                           ;^Initialize
overall total X.
_supercnts=0

LOOP _f1iter2=1000,9900,1000                            ;^Begin Loop
21: Cycles through FTYPE by 10
                                                        ; to get single
digit FTYPE.
  _ftotals=0                                            ;^Initialize
total X by FTYPE
  _ftcnts=0
```

```
  LOOP _fiter4=_f1iter2,9900,100                               ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                          ; get all two-
digit FTYPE for current FTYPE in
                                                            ; Loop 21.
    LOOP _liter8=1,9,1                                         ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                         ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                       ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_volvhtval[_ftotiter]
        _ftcnts=_ftcnts+_cntvhtval[_ftotiter]
      ENDLOOP                                               ;^End Loop 24.

    ENDLOOP                                                 ;^End Loop 23.

  ENDLOOP                                                   ;^End Loop 22.

  _supertotal=_supertotal+_ftotals                               ;^Generate
overall total for all single digit ATYPE
  _supercnts=_supercnts+_ftcnts                              ; by all single
digit FTYPE.

  if (_ftcnts>0)
    _ftvc=_ftotals/_ftcnts
  else
    _ftvc=0
  endif

  print list="\\"," ",_ftvc(10.2C)," ", PRINTO=1
ENDLOOP                                                     ;^End Loop 21.
if (_supercnts>0)
  _supervc=_supertotal/_supercnts
else
  _supervc=0
endif
_vhtvolovercounts=_supervc
print list="\\"," ",_supervc(10.2C), PRINTO=1
print list=" ", PRINTO=1
;*************************************************************************
; END VHT VOLUME OVER COUNT REPORT
;*************************************************************************

;=========================================================================
==============
; BEGIN VOLUME REPORT ------------- X = Volumes on Links w/ Counts
;=========================================================================
==============
Print list=" ", PRINTO=1
Print
list="*******************************************************************
**************************************************************", PRINTO=1
Print                                                                list="*
*", PRINTO=1
```

```
Print list="*                                        Estimated Volumes on
Links with Counts                                                    *",
PRINTO=1
Print                                                            list="*
*", PRINTO=1
Print
list="**************************************************************
***********************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------

LOOP _a1iter=100000,599999,100000                        ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
           "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                       ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                        ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                               ;^Initialize
ATYPE X checking variable.

    LOOP _achkiter=_aiter,599999,1                       ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                     ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_volby[_achkiter]
    ENDLOOP                                              ;^End Loop 3.

    if (_avcheck>0)                                               ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                         ;     has     X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                          ;^Initialize
ATYPE total X.

      Print list= "Area Type ",_aat2(2.0), PRINTO=1      ;^Header
      Print                            list=                             "
Number            of            Lanes            per            Direction
", PRINTO=1
      Print list= "FType         1            2            3            4
5           6           7           8           9       Totals", PRINTO=1
      Print list= "-------------------------------------------------------
---------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                           ;^Begin Loop 4:
Cycles through FTYPE
                                                         ; by 1 in order
to get two-digit FTYPE.
```

```
       _vcheck=0                                              ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                   ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_volby[_aiter+_fiter+_liter]     ; FTYPE in Loop
4 and totals X checking variable.
       ENDLOOP                                             ;^End Loop 5.

        if (_vcheck>0)                                          ;^Begin
Condition 2: If current FTYPE in Loop 4
           _fft2=int(_fiter/100)                              ; has X>0
continue to report X. Else skip FTYPE.
           print list= _fft2(2.0),"    ", PRINTO=1
           _totvols=0                                         ;^Initialize
FTYPE total X.

           LOOP _liter2=1,9,1                              ;^Begin Loop 6:
Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             print  list="\\","  ",_volby[_aiter+_fiter+_liter2](10.0C),"
", PRINTO=1
             _totvols=_totvols+_volby[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_volby[_aiter+_fiter+_liter2]
           ENDLOOP                                         ;^End Loop 6.

             print list="\\"," ",_totvols(10.0C), PRINTO=1
        endif                                              ;^End Condition
2.

      ENDLOOP                                              ;^End Loop 4.

      Print list= "-------------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                   ;^Begin Loop 7:
Cycles through Lanes for
                                                           ; current ATYPE
in Loop 2.
        _lntotals=0                                           ;^Initialize
Lane total X.

        LOOP _aiter2=_aiter,599999,100                     ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                    ; in Loop 2 to
generate Lane total X.
          _lntotiter=_aiter2+_liter3
          _lntotals=_lntotals+_volby[_lntotiter]
        ENDLOOP                                            ;^End Loop 8

        print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
      ENDLOOP                                              ;^End Loop 7

      print list="\\"," ",_supertotal(10.0C), PRINTO=1
      print list=" ", PRINTO=1
```

```
    endif                                                   ;^End Condition
1.

  ENDLOOP                                                  ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                    ;^End Loop 1.

;-----------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                  ;^Header
Print list= "                                                     Number of
Lanes per Direction                                                    ",
PRINTO=1
Print list= "FType         1            2            3             4
5          6          7           8           9      Totals", PRINTO=1
Print list= "------------------------------------------------------------
-----------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                   ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                       ; two-digit
FTYPE.

  _tafvcheck=0                                                ;^Initialize
FTYPE X checking variable.

  LOOP _liter5=1,9,1                                          ;^Begin Loop
10: Cycles through Lanes for current
                                                           ; FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                         ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_volby[_aiter4+_fiter2+_liter5]   ;   current
Lanes and FTYPE in order to total X checking variable.
    ENDLOOP                                                     ;^End Loop
11.

  ENDLOOP                                                  ;^End Loop 10.

  if (_tafvcheck>0)                                                ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                  ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                       ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                           ; in Loop 9.
        _totftat=0                                            ;^Initialize
FTYPE total X for all ATYPE.

      LOOP _aiter3= 100000,599999,10000                       ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_volby[_aiter3+_fiter2+_liter4]  ;  in  order  to
generate total X for FTYPE by Lane for all ATYPE.
```

```
      ENDLOOP                                                   ;^End Loop 13.

      print list="\\"," ",_totftat(10.0C)," ", PRINTO=1
    ENDLOOP                                                     ;^End Loop 12.

    print list="\\"," ",_tafvcheck(10.0C), PRINTO=1
  endif                                                          ;^End Condition
3.

ENDLOOP                                                         ;^End Loop 9.

Print list= "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                       ;^Initialize
all ATYPE total X.

LOOP _liter6=1,9,1                                                  ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                                       ;^Initialize
total X for Lanes.

  LOOP _aiter5=100000,599999,100                                    ;^Begin Loop
15: Cycles through ATYPE and
      _lntotiter=_aiter5+_liter6                                     ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_volby[_lntotiter]                    ; Lanes.
  ENDLOOP                                                       ;^End Loop 15.

  print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                                   ;^Generate
total X for all ATYPE.

ENDLOOP                                                         ;^End Loop 14.
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------

Print list= "Total Summary Area Types by Facility Types ", PRINTO=1
;^Header
Print list= "                                                          Single
Digit Facility Types                                                   ",
PRINTO=1
Print list= "AType          1x           2x           3x            4x
5x          6x          7x          8x          9x      Totals", PRINTO=1
Print list= "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                                  ;^Begin Loop
16: Cycles through ATYPE by 10 to
```

```
  _aat1=int(_a1iter2/100000)                          ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                          ;^Initialize
total X for all ATYPE

    LOOP _f1iter=1000,9900,1000                       ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                   ;   get   single
digit FTYPE.
      _totftlns=0                                     ;^Initialize
total X for all FTYPE by all Lanes.

      LOOP _fiter3=_f1iter,9900,100                   ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK               ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000            ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK          ; for current
single digit ATYPE in Loop 16.

            LOOP                                    _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_volby[_aiter6+_fiter3+_liter7]    ; in
order to generate total X for FTYPE by ATYPE.
            ENDLOOP                                           ;^End
Loop 20.

        ENDLOOP                                    ;^End Loop 19.

      ENDLOOP                                      ;^End Loop 18.

      _fttotal=_fttotal+_totftlns                        ;^Generate
total X for ATYPE.

      print list="\\"," ",_totftlns(10.0C)," ", PRINTO=1
    ENDLOOP                                        ;^End Loop 17.

  print list="\\"," ",_fttotal(10.0c), PRINTO=1
ENDLOOP                                            ;^End Loop 16.

Print list= "-------------------------------------------------------------
-------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                         ;^Initialize
overall total X.

LOOP _f1iter2=1000,9900,1000                          ;^Begin Loop
21: Cycles through FTYPE by 10
                                                   ; to get single
digit FTYPE.
```

```
  _ftotals=0                                              ;^Initialize
total X by FTYPE

  LOOP _fiter4=_f1iter2,9900,100                          ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                      ; get all two-
digit FTYPE for current FTYPE in
                                                       ; Loop 21.
    LOOP _liter8=1,9,1                                    ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                    ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                 ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_volby[_ftotiter]
      ENDLOOP                                          ;^End Loop 24.

    ENDLOOP                                            ;^End Loop 23.

  ENDLOOP                                              ;^End Loop 22.

  _supertotal=_supertotal+_ftotals                          ;^Generate
overall total for all single digit ATYPE
                                                       ; by all single
digit FTYPE.
  print list="\\"," ",_ftotals(10.0C)," ", PRINTO=1
ENDLOOP                                                ;^End Loop 21.

print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ", PRINTO=1
;************************************************************************
; END VOLUME REPORT
;************************************************************************

;========================================================================
==============
; BEGIN Count REPORT ------------- X = Count on Links w/ Counts
;========================================================================
==============
Print list=" ", PRINTO=1
Print
list="*******************************************************************
*************************************************************", PRINTO=1
Print                                                           list="*
*", PRINTO=1
Print list="*                                       Observed Counts on
Links with Counts                                                    *",
PRINTO=1
Print                                                           list="*
*", PRINTO=1
Print
list="*******************************************************************
*************************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------
```

```
LOOP _a1iter=100000,599999,100000                           ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                   ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
           "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                          ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                           ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                                ;^Initialize
ATYPE X checking variable.

    LOOP _achkiter=_aiter,599999,1                          ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                        ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_cntby[_achkiter]
    ENDLOOP                                                ;^End Loop 3.

    if (_avcheck>0)                                                ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                           ;    has    X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                           ;^Initialize
ATYPE total X.

      Print list= "Area Type ",_aat2(2.0), PRINTO=1        ;^Header
      Print                            list=                              "
Number            of            Lanes            per            Direction
", PRINTO=1
      Print list= "FType         1            2            3            4
5          6           7           8           9       Totals", PRINTO=1
      Print  list=  "-------------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                              ;^Begin Loop 4:
Cycles through FTYPE
                                                           ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                              ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                    ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_cntby[_aiter+_fiter+_liter]      ; FTYPE in Loop
4 and totals X checking variable.
       ENDLOOP                                             ;^End Loop 5.

        if (_vcheck>0)                                             ;^Begin
Condition 2: If current FTYPE in Loop 4
```

```
           _fft2=int(_fiter/100)                                    ; has X>0
continue to report X. Else skip FTYPE.
           print list= _fft2(2.0),"    ", PRINTO=1
           _totvols=0                                              ;^Initialize
FTYPE total X.

           LOOP _liter2=1,9,1                                      ;^Begin Loop 6:
Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             print  list="\\","  ",_cntby[_aiter+_fiter+_liter2](10.0C),"
", PRINTO=1
             _totvols=_totvols+_cntby[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_cntby[_aiter+_fiter+_liter2]
           ENDLOOP                                                ;^End Loop 6.

             print list="\\"," ",_totvols(10.0C), PRINTO=1
        endif                                                      ;^End Condition
2.

      ENDLOOP                                                     ;^End Loop 4.

      Print list= "-------------------------------------------------------
------------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                           ;^Begin Loop 7:
Cycles through Lanes for
                                                                  ; current ATYPE
in Loop 2.
        _lntotals=0                                                   ;^Initialize
Lane total X.

        LOOP _aiter2=_aiter,599999,100                             ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                            ; in Loop 2 to
generate Lane total X.
          _lntotiter=_aiter2+_liter3
          _lntotals=_lntotals+_cntby[_lntotiter]
        ENDLOOP                                                   ;^End Loop 8

        print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
      ENDLOOP                                                     ;^End Loop 7

      print list="\\"," ",_supertotal(10.0C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                          ;^End Condition
1.

  ENDLOOP                                                         ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                           ;^End Loop 1.

;------------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                         ;^Header
```

```
Print list= "                                                  Number of
Lanes per Direction                                               ",
PRINTO=1
Print list= "FType          1             2             3            4
5          6           7           8           9      Totals", PRINTO=1
Print list= "--------------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                 ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                     ; two-digit
FTYPE.

  _tafvcheck=0                                              ;^Initialize
FTYPE X checking variable.

  LOOP _liter5=1,9,1                                        ;^Begin Loop
10: Cycles through Lanes for current
                                                          ; FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                       ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_cntby[_aiter4+_fiter2+_liter5]   ;   current
Lanes and FTYPE in order to total X checking variable.
    ENDLOOP                                                   ;^End Loop
11.

  ENDLOOP                                                 ;^End Loop 10.

  if (_tafvcheck>0)                                             ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                  ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                     ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                          ; in Loop 9.
      _totftat=0                                            ;^Initialize
FTYPE total X for all ATYPE.

      LOOP _aiter3= 100000,599999,10000                     ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_cntby[_aiter3+_fiter2+_liter4]  ;  in  order  to
generate total X for FTYPE by Lane for all ATYPE.
      ENDLOOP                                             ;^End Loop 13.

      print list="\\"," ",_totftat(10.0C)," ", PRINTO=1
    ENDLOOP                                               ;^End Loop 12.

    print list="\\"," ",_tafvcheck(10.0C), PRINTO=1
  endif                                                    ;^End Condition
3.

ENDLOOP                                                   ;^End Loop 9.
```

```
Print list= "---------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                ;^Initialize
all ATYPE total X.

LOOP _liter6=1,9,1                                           ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                                ;^Initialize
total X for Lanes.

  LOOP _aiter5=100000,599999,100                             ;^Begin Loop
15: Cycles through ATYPE and
      _lntotiter=_aiter5+_liter6                              ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_cntby[_lntotiter]             ; Lanes.
  ENDLOOP                                                ;^End Loop 15.

  print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                           ;^Generate
total X for all ATYPE.

ENDLOOP                                                  ;^End Loop 14.
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------

Print list= "Total Summary Area Types by Facility Types ", PRINTO=1
;^Header
Print list= "                                                      Single
Digit Facility Types                                                 ",
PRINTO=1
Print list= "AType           1x             2x             3x            4x
5x         6x           7x           8x           9x      Totals", PRINTO=1
Print list= "---------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                           ;^Begin Loop
16: Cycles through ATYPE by 10 to
  _aat1=int(_a1iter2/100000)                                 ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                                 ;^Initialize
total X for all ATYPE

    LOOP _f1iter=1000,9900,1000                              ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                         ;   get   single
digit FTYPE.
```

```
      _totftlns=0                                            ;^Initialize
total X for all FTYPE by all Lanes.

      LOOP _fiter3=_f1iter,9900,100                          ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                       ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000                   ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK                  ; for current
single digit ATYPE in Loop 16.

            LOOP                                            _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_cntby[_aiter6+_fiter3+_liter7]    ; in
order to generate total X for FTYPE by ATYPE.
            ENDLOOP                                                  ;^End
Loop 20.

        ENDLOOP                                          ;^End Loop 19.

      ENDLOOP                                            ;^End Loop 18.

      _fttotal=_fttotal+_totftlns                              ;^Generate
total X for ATYPE.

      print list="\\"," ",_totftlns(10.0C)," ", PRINTO=1
    ENDLOOP                                              ;^End Loop 17.

  print list="\\"," ",_fttotal(10.0c), PRINTO=1
ENDLOOP                                                  ;^End Loop 16.

Print  list= "-------------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                ;^Initialize
overall total X.

LOOP _f1iter2=1000,9900,1000                                 ;^Begin Loop
21: Cycles through FTYPE by 10
                                                         ; to get single
digit FTYPE.
  _ftotals=0                                                 ;^Initialize
total X by FTYPE

  LOOP _fiter4=_f1iter2,9900,100                             ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                         ; get all two-
digit FTYPE for current FTYPE in
                                                         ; Loop 21.
    LOOP _liter8=1,9,1                                       ;^Begin Loop
23: Cycles through Lanes.
```

```
      LOOP _aiter7=100000,599999,10000                        ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                    ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_cntby[_ftotiter]
      ENDLOOP                                              ;^End Loop 24.

    ENDLOOP                                                ;^End Loop 23.

  ENDLOOP                                                  ;^End Loop 22.

  _supertotal=_supertotal+_ftotals                            ;^Generate
overall total for all single digit ATYPE
                                                           ; by all single
digit FTYPE.
  print list="\\"," ",_ftotals(10.0C)," ", PRINTO=1
ENDLOOP                                                    ;^End Loop 21.

print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ", PRINTO=1
;************************************************************************
; END COUNT REPORT
;************************************************************************

;========================================================================
==============
; BEGIN VOLUME/COUNT REPORT ------------- X = Volumes over Counts on
Links w/ Counts
;========================================================================
==============
Print list=" ", PRINTO=1
Print
list="*******************************************************************
*************************************************************", PRINTO=1
Print                                                            list="*
*", PRINTO=1
Print list="*                                    Volume over Count Ratios
on Links with Counts                                                  *",
PRINTO=1
Print                                                            list="*
*", PRINTO=1
Print
list="*******************************************************************
*************************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------

LOOP _a1iter=100000,599999,100000                          ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                  ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
           "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                         ;^Begin Loop 2:
Cycles through ATYPE by 1
```

```
    if (_aiter>_a1iter+99999) BREAK                         ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                              ;^Initialize
ATYPE X checking variable.

    LOOP _achkiter=_aiter,599999,1                         ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                      ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_vcntby[_achkiter]
    ENDLOOP                                                ;^End Loop 3.

    if (_avcheck>0)                                               ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                           ;    has    X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                         ;^Initialize
ATYPE total X.
      _supercnts=0

      Print list= "Area Type ",_aat2(2.0), PRINTO=1        ;^Header
      Print                            list=                              "
Number            of            Lanes            per            Direction
", PRINTO=1
      Print list= "FType          1            2            3            4
5          6          7           8           9      Totals", PRINTO=1
      Print  list= "-------------------------------------------------------
------------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                             ;^Begin Loop 4:
Cycles through FTYPE
                                                           ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                            ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                   ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_vcntby[_aiter+_fiter+_liter]       ;  FTYPE  in
Loop 4 and totals X checking variable.
       ENDLOOP                                             ;^End Loop 5.

        if (_vcheck>0)                                            ;^Begin
Condition 2: If current FTYPE in Loop 4
          _fft2=int(_fiter/100)                                 ; has X>0
continue to report X. Else skip FTYPE.
          print list= _fft2(2.0),"    ", PRINTO=1
          _totvols=0                                        ;^Initialize
FTYPE total X.
          _totcnts=0

           LOOP _liter2=1,9,1                               ;^Begin Loop
6: Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             if (_cntby[_aiter+_fiter+_liter2]>0)
```

```
_links=_volby[_aiter+_fiter+_liter2]/_cntby[_aiter+_fiter+_liter2]
             else
               _links=0
             endif
             print list="\\"," ",_links(10.2C)," ", PRINTO=1
             _totvols=_totvols+_volby[_aiter+_fiter+_liter2]
             _totcnts=_totcnts+_cntby[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_volby[_aiter+_fiter+_liter2]
             _supercnts=_supercnts+_cntby[_aiter+_fiter+_liter2]
           ENDLOOP                                       ;^End Loop 6.

             if (_totcnts>0)
               _totvc=_totvols/_totcnts
             else
               _totvc=0
             endif
           print list="\\"," ",_totvc(10.2C), PRINTO=1
        endif                                            ;^End Condition
2.

      ENDLOOP                                            ;^End Loop 4.

      Print  list= "----------------------------------------------------
----------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                 ;^Begin Loop 7:
Cycles through Lanes for
                                                         ;  current  ATYPE
in Loop 2.
        _lntotals=0                                         ;^Initialize
Lane total X.
        _lncnts=0

        LOOP _aiter2=_aiter,599999,100                   ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                  ; in Loop 2 to
generate Lane total X.
          _lntotiter=_aiter2+_liter3
          _lntotals=_lntotals+_volby[_lntotiter]
          _lncnts=_lncnts+_cntby[_lntotiter]
        ENDLOOP                                          ;^End Loop 8

        if (_lncnts>0)
          _lnvc=_lntotals/_lncnts
        else
          _lnvc=0
        endif
        print list="\\"," ",_lnvc(10.2C)," ", PRINTO=1
      ENDLOOP                                            ;^End Loop 7

      if (_supercnts>0)
        _supervc=_supertotal/_supercnts
      else
        _supervc=0
```

```
      endif
      print list="\\"," ",_supervc(10.2C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                   ;^End Condition
1.

  ENDLOOP                                                  ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                    ;^End Loop 1.

;-----------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                  ;^Header
Print list= "                                                     Number of
Lanes per Direction                                                    ",
PRINTO=1
Print  list=  "FType          1              2              3              4
5          6           7           8           9       Totals", PRINTO=1
Print  list=  "-------------------------------------------------------------
------------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                   ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                        ; two-digit
FTYPE.

  _tafvcheck=0                                                ;^Initialize
FTYPE X checking variable.
  _tafcnts=0

  LOOP _liter5=1,9,1                                          ;^Begin Loop
10: Cycles through Lanes for current
                                                             ;  FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                         ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_volby[_aiter4+_fiter2+_liter5]   ;   current
Lanes and FTYPE in order to total X checking variable.
      _tafcnts=_tafcnts+_cntby[_aiter4+_fiter2+_liter5]
    ENDLOOP                                                     ;^End Loop
11.

  ENDLOOP                                                  ;^End Loop 10.

  if (_tafvcheck>0)                                               ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                   ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                       ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                             ; in Loop 9.
        _totftat=0                                            ;^Initialize
FTYPE total X for all ATYPE.
```

```
        _totcnts=0

      LOOP _aiter3= 100000,599999,10000                      ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_volby[_aiter3+_fiter2+_liter4]  ;  in  order  to
generate total X for FTYPE by Lane for all ATYPE.
        _totcnts=_totcnts+_cntby[_aiter3+_fiter2+_liter4]
      ENDLOOP                                              ;^End Loop 13.
      if (_totcnts>0)
        _totvc=_totftat/_totcnts
      else
        _totvc=0
      endif
      print list="\\"," ",_totvc(10.2C)," ", PRINTO=1
    ENDLOOP                                                ;^End Loop 12.
    if (_tafcnts>0)
      _tafvc=_tafvcheck/_tafcnts
    else
      _tafvc=0
    endif
    print list="\\"," ",_tafvc(10.2C), PRINTO=1
  endif                                                     ;^End Condition
3.

ENDLOOP                                                    ;^End Loop 9.

Print  list=  "-------------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                  ;^Initialize
all ATYPE total X.
_supercnts=0

LOOP _liter6=1,9,1                                             ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                                  ;^Initialize
total X for Lanes.
  _lncnts=0

  LOOP _aiter5=100000,599999,100                               ;^Begin Loop
15: Cycles through ATYPE and
      _lntotiter=_aiter5+_liter6                                 ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_volby[_lntotiter]               ; Lanes.
      _lncnts=_lncnts+_cntby[_lntotiter]
  ENDLOOP                                                  ;^End Loop 15.
  if (_lncnts>0)
    _lnvc=_lntotals/_lncnts
  else
    _lnvc=0
  endif
  print list="\\"," ",_lnvc(10.2C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                             ;^Generate
total X for all ATYPE.
```

```
  _supercnts=_supercnts+_lncnts
ENDLOOP                                                      ;^End Loop 14.
if (_supercnts>0)
  _supervc=_supertotal/_supercnts
else
  _supervc=0
endif
print list="\\"," ",_supervc(10.2C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------

Print list= "Total Summary Area Types by Facility Types ", PRINTO=1
;^Header
Print list= "                                                          Single
Digit Facility Types                                                       ",
PRINTO=1
Print list= "AType          1x            2x            3x            4x
5x          6x          7x          8x          9x      Totals", PRINTO=1
Print list= "-------------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                              ;^Begin Loop
16: Cycles through ATYPE by 10 to
  _aat1=int(_a1iter2/100000)                                    ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                                    ;^Initialize
total X for all ATYPE
  _ftcnts=0

    LOOP _f1iter=1000,9900,1000                                 ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                            ;   get   single
digit FTYPE.
      _totftlns=0                                               ;^Initialize
total X for all FTYPE by all Lanes.
      _totftcnts=0

      LOOP _fiter3=_f1iter,9900,100                             ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                         ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000                      ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK                    ; for current
single digit ATYPE in Loop 16.

            LOOP                                               _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_volby[_aiter6+_fiter3+_liter7]    ;  in
order to generate total X for FTYPE by ATYPE.
              _totftcnts=_totftcnts+_cntby[_aiter6+_fiter3+_liter7]
```

```
            ENDLOOP                                                  ;^End
Loop 20.

        ENDLOOP                                                ;^End Loop 19.

      ENDLOOP                                                  ;^End Loop 18.

      _fttotal=_fttotal+_totftlns                                    ;^Generate
total X for ATYPE.
      _ftcnts=_ftcnts+_totftcnts

      if (_totftcnts>0)
        _totftvc=_totftlns/_totftcnts
      else
        _totftvc=0
      endif
      print list="\\"," ",_totftvc(10.2C)," ", PRINTO=1
    ENDLOOP                                                    ;^End Loop 17.
    if (_ftcnts>0)
      _ftvc=_fttotal/_ftcnts
    else
      _ftvc=0
    endif
  print list="\\"," ",_ftvc(10.2c), PRINTO=1
ENDLOOP                                                        ;^End Loop 16.

Print  list=  "------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                    ;^Initialize
overall total X.
_supercnts=0

LOOP _f1iter2=1000,9900,1000                                     ;^Begin Loop
21: Cycles through FTYPE by 10
                                                               ;  to get single
digit FTYPE.
  _ftotals=0                                                     ;^Initialize
total X by FTYPE
  _ftcnts=0

  LOOP _fiter4=_f1iter2,9900,100                                 ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                             ; get all two-
digit FTYPE for current FTYPE in
                                                               ; Loop 21.
    LOOP _liter8=1,9,1                                           ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                           ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                       ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_volby[_ftotiter]
        _ftcnts=_ftcnts+_cntby[_ftotiter]
```

```
      ENDLOOP                                                   ;^End Loop 24.

    ENDLOOP                                                     ;^End Loop 23.

  ENDLOOP                                                       ;^End Loop 22.

  _supertotal=_supertotal+_ftotals                                    ;^Generate
overall total for all single digit ATYPE
  _supercnts=_supercnts+_ftcnts                                 ; by all single
digit FTYPE.

  if (_ftcnts>0)
    _ftvc=_ftotals/_ftcnts
  else
    _ftvc=0
  endif

  print list="\\"," ",_ftvc(10.2C)," ", PRINTO=1
ENDLOOP                                                         ;^End Loop 21.
if (_supercnts>0)
  _supervc=_supertotal/_supercnts
else
  _supervc=0
endif
print list="\\"," ",_supervc(10.2C), PRINTO=1
print list=" ", PRINTO=1
;*************************************************************************
; END VOLUME OVER COUNT REPORT
;*************************************************************************

;========================================================================
==============
; BEGIN VOLUME ON ALL LINKS ------------- X = VOLUME
;========================================================================
==============
Print list=" ", PRINTO=1
Print
list="*************************************************************************
*************************************************************", PRINTO=1
Print                                                                 list="*
*", PRINTO=1
Print list="*                                      Total Volume on All Links
(Centroid Connectors Excluded)                                              *",
PRINTO=1
Print                                                                 list="*
*", PRINTO=1
Print
list="*************************************************************************
*************************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------

LOOP _a1iter=100000,599999,100000                               ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                       ; in order to
get single digit ATYPE.
```

```
  print list= "Area Type ",_aat1(1.0),"x Range:",
           "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                        ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                        ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                              ;^Initialize
ATYPE X checking variable.

    LOOP _achkiter=_aiter,599999,1                        ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                     ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_volall[_achkiter]
    ENDLOOP                                                ;^End Loop 3.

    if (_avcheck>0)                                              ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                           ;    has    X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                         ;^Initialize
ATYPE total X.

      Print list= "Area Type ",_aat2(2.0), PRINTO=1       ;^Header
      Print                        list=                             "
Number          of           Lanes           per           Direction
", PRINTO=1
      Print list= "FType         1           2           3           4
5          6          7          8          9      Totals", PRINTO=1
      Print list= "---------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                             ;^Begin Loop 4:
Cycles through FTYPE
                                                           ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                            ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                   ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_volall[_aiter+_fiter+_liter]      ;  FTYPE  in
Loop 4 and totals X checking variable.
       ENDLOOP                                             ;^End Loop 5.

        if  (_vcheck>0  &  (_fiter<5000  |  _fiter>5999))          ;^Begin
Condition 2: If current FTYPE in Loop 4
          _fft2=int(_fiter/100)                               ; has X>0
continue to report X. Else skip FTYPE.
          print list= _fft2(2.0),"    ", PRINTO=1
          _totvols=0                                        ;^Initialize
FTYPE total X.
```

```
           LOOP _liter2=1,9,1                              ;^Begin Loop 6:
Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             print  list="\\","  ",_volall[_aiter+_fiter+_liter2](10.0C),"
", PRINTO=1
             _totvols=_totvols+_volall[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_volall[_aiter+_fiter+_liter2]
           ENDLOOP                                        ;^End Loop 6.

             print list="\\"," ",_totvols(10.0C), PRINTO=1
        endif                                              ;^End Condition
2.

      ENDLOOP                                             ;^End Loop 4.

      Print  list= "---------------------------------------------------------
-------------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                   ;^Begin Loop 7:
Cycles through Lanes for
                                                          ;  current  ATYPE
in Loop 2.
        _lntotals=0                                           ;^Initialize
Lane total X.

        LOOP _aiter2=_aiter,599999,100                     ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                    ; in Loop 2 to
generate Lane total X.
          if (_aiter2<_aiter+5000 | _aiter2>_aiter+5999)
            _lntotiter=_aiter2+_liter3
            _lntotals=_lntotals+_volall[_lntotiter]
          endif
        ENDLOOP                                           ;^End Loop 8

        print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
      ENDLOOP                                             ;^End Loop 7

      print list="\\"," ",_supertotal(10.0C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                  ;^End Condition
1.

  ENDLOOP                                                 ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                   ;^End Loop 1.

;-----------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                 ;^Header
Print list= "                                                     Number of
Lanes per Direction                                                    ",
PRINTO=1
```

```
Print list= "FType           1              2              3              4
5           6           7           8           9       Totals", PRINTO=1
Print list= "-------------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                  ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                       ; two-digit
FTYPE.

  _tafvcheck=0                                              ;^Initialize
FTYPE X checking variable.
 if (_fft2<50 | _fft2>59)
  LOOP _liter5=1,9,1                                          ;^Begin Loop
10: Cycles through Lanes for current
                                                           ; FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                         ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_volall[_aiter4+_fiter2+_liter5]   ;   current
Lanes and FTYPE in order to total X checking variable.
    ENDLOOP                                                     ;^End Loop
11.

  ENDLOOP                                                   ;^End Loop 10.

  if (_tafvcheck>0)                                               ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                     ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                       ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                           ; in Loop 9.
        _totftat=0                                            ;^Initialize
FTYPE total X for all ATYPE.

      LOOP _aiter3= 100000,599999,10000                       ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_volall[_aiter3+_fiter2+_liter4]  ;  in  order  to
generate total X for FTYPE by Lane for all ATYPE.
      ENDLOOP                                               ;^End Loop 13.

      print list="\\"," ",_totftat(10.0C)," ", PRINTO=1
    ENDLOOP                                                 ;^End Loop 12.

    print list="\\"," ",_tafvcheck(10.0C), PRINTO=1
  endif                                                      ;^End Condition
3.
 endif
ENDLOOP                                                     ;^End Loop 9.

Print list= "-------------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1
```

```
_supertotal=0                                                  ;^Initialize
all ATYPE total X.

LOOP _liter6=1,9,1                                             ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                                  ;^Initialize
total X for Lanes.

  LOOP _aiter5=100000,599999,100                               ;^Begin Loop
15: Cycles through ATYPE and
    if ((_aiter5<105000 | _aiter5>105999) &
        (_aiter5<115000 | _aiter5>115999) &
        (_aiter5<125000 | _aiter5>125999) &
        (_aiter5<135000 | _aiter5>135999) &
        (_aiter5<145000 | _aiter5>145999) &
        (_aiter5<155000 | _aiter5>155999) &
        (_aiter5<165000 | _aiter5>165999) &
        (_aiter5<175000 | _aiter5>175999) &
        (_aiter5<185000 | _aiter5>185999) &
        (_aiter5<195000 | _aiter5>195999) &
        (_aiter5<205000 | _aiter5>205999) &
        (_aiter5<215000 | _aiter5>215999) &
        (_aiter5<225000 | _aiter5>225999) &
        (_aiter5<235000 | _aiter5>235999) &
        (_aiter5<245000 | _aiter5>245999) &
        (_aiter5<255000 | _aiter5>255999) &
        (_aiter5<265000 | _aiter5>265999) &
        (_aiter5<275000 | _aiter5>275999) &
        (_aiter5<285000 | _aiter5>285999) &
        (_aiter5<295000 | _aiter5>295999) &
        (_aiter5<305000 | _aiter5>305999) &
        (_aiter5<315000 | _aiter5>315999) &
        (_aiter5<325000 | _aiter5>325999) &
        (_aiter5<335000 | _aiter5>335999) &
        (_aiter5<345000 | _aiter5>345999) &
        (_aiter5<355000 | _aiter5>355999) &
        (_aiter5<365000 | _aiter5>365999) &
        (_aiter5<375000 | _aiter5>375999) &
        (_aiter5<385000 | _aiter5>385999) &
        (_aiter5<395000 | _aiter5>395999) &
        (_aiter5<405000 | _aiter5>405999) &
        (_aiter5<415000 | _aiter5>415999) &
        (_aiter5<425000 | _aiter5>425999) &
        (_aiter5<435000 | _aiter5>435999) &
        (_aiter5<445000 | _aiter5>445999) &
        (_aiter5<455000 | _aiter5>455999) &
        (_aiter5<465000 | _aiter5>465999) &
        (_aiter5<475000 | _aiter5>475999) &
        (_aiter5<485000 | _aiter5>485999) &
        (_aiter5<495000 | _aiter5>495999) &
        (_aiter5<505000 | _aiter5>505999) &
        (_aiter5<515000 | _aiter5>515999) &
        (_aiter5<525000 | _aiter5>525999) &
        (_aiter5<535000 | _aiter5>535999) &
        (_aiter5<545000 | _aiter5>545999) &
```

```
        (_aiter5<555000 | _aiter5>555999) &
        (_aiter5<565000 | _aiter5>565999) &
        (_aiter5<575000 | _aiter5>575999) &
        (_aiter5<585000 | _aiter5>585999) &
        (_aiter5<595000 | _aiter5>595999))

      _lntotiter=_aiter5+_liter6                              ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_volall[_lntotiter]              ; Lanes.

    endif
  ENDLOOP                                                   ;^End Loop 15.

  print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                          ;^Generate
total X for all ATYPE.

ENDLOOP                                                     ;^End Loop 14.
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------

Print  list=  "Total  Summary  Area  Types  by  Facility  Types  ",  PRINTO=1
;^Header
Print list= "                                                        Single
Digit Facility Types                                                    ",
PRINTO=1
Print list= "AType          1x            2x            3x            4x
5x           6x           7x           8x           9x      Totals", PRINTO=1
Print  list=  "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                          ;^Begin Loop
16: Cycles through ATYPE by 10 to
  _aat1=int(_a1iter2/100000)                                ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                                ;^Initialize
total X for all ATYPE

    LOOP _f1iter=1000,9900,1000                             ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                          ;   get   single
digit FTYPE.
      _totftlns=0                                           ;^Initialize
total X for all FTYPE by all Lanes.
      if (_f1iter<5000 | _f1iter>5999)
      LOOP _fiter3=_f1iter,9900,100                         ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                     ; for current
single digit FTYPE in Loop 17.
```

```
        LOOP _aiter6=_a1iter2,599999,10000                   ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK                 ; for current
single digit ATYPE in Loop 16.

            LOOP                                            _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_volall[_aiter6+_fiter3+_liter7]    ; in
order to generate total X for FTYPE by ATYPE.
            ENDLOOP                                                  ;^End
Loop 20.

        ENDLOOP                                           ;^End Loop 19.

      ENDLOOP                                             ;^End Loop 18.
      endif
      _fttotal=_fttotal+_totftlns                               ;^Generate
total X for ATYPE.

      print list="\\"," ",_totftlns(10.0C)," ", PRINTO=1
    ENDLOOP                                               ;^End Loop 17.

  print list="\\"," ",_fttotal(10.0c), PRINTO=1
ENDLOOP                                                   ;^End Loop 16.

Print list= "-------------------------------------------------------------
-------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                               ;^Initialize
overall total X.

LOOP _f1iter2=1000,9900,1000                                ;^Begin Loop
21: Cycles through FTYPE by 10
                                                          ; to get single
digit FTYPE.
  _ftotals=0                                                ;^Initialize
total X by FTYPE

  LOOP _fiter4=_f1iter2,9900,100                            ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                        ; get all two-
digit FTYPE for current FTYPE in
    if              (_f1iter2<5000            |            _f1iter2>5999)
; Loop 21.
    LOOP _liter8=1,9,1                                      ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                      ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                  ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_volall[_ftotiter]
      ENDLOOP                                             ;^End Loop 24.

    ENDLOOP                                               ;^End Loop 23.
```

```
    endif
  ENDLOOP                                                    ;^End Loop 22.
  _supertotal=_supertotal+_ftotals                                ;^Generate
overall total for all single digit ATYPE
                                                             ; by all single
digit FTYPE.
  print list="\\"," ",_ftotals(10.0C)," ", PRINTO=1
ENDLOOP                                                      ;^End Loop 21.
_totalvolumes=_supertotal
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ", PRINTO=1
;*************************************************************************
; END VOLUME ON ALL LINKS REPORT
;*************************************************************************

;==========================================================================
==============
; BEGIN VOLUME PERCENTAGES ON ALL LINKS ------------- X = VOLUME
;==========================================================================
==============
Print list=" ", PRINTO=1
Print
list="******************************************************************
*************************************************************", PRINTO=1
Print                                                              list="*
*", PRINTO=1
Print list="*                                Volume Percentages on All
Links (Centroid Connectors Excluded)                                   *",
PRINTO=1
Print                                                              list="*
*", PRINTO=1
Print
list="******************************************************************
*************************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------
_supersuper=0
LOOP _supera= 100000,599999,10000                            ;^Begin Loops
Pre-1 through Pre-3: Cycles through all non-centroid
  LOOP _superf= 1000,9999,100                                  ; connector
links to generate overall total X.
   if (_superf<5000 | _superf>5999)
     LOOP _superl=1,9,1
       _supersuper=_supersuper+_volall[_supera+_superf+_superl]/100
;^Divide by 100 to get pecentages and not ratios in later computations.
     ENDLOOP
   endif
  ENDLOOP                                                    ;End Loops Pre-
3 through Pre-1.
ENDLOOP

LOOP _a1iter=100000,599999,100000                            ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                   ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
```

```
          "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                        ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                        ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                              ;^Initialize
ATYPE X checking variable.



    LOOP _achkiter=_aiter,599999,1                          ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                       ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_volall[_achkiter]
    ENDLOOP                                                 ;^End Loop 3.

    if (_avcheck>0)                                               ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                           ;    has    X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                         ;^Initialize
ATYPE total X.

      Print list= "Area Type ",_aat2(2.0), PRINTO=1       ;^Header
      Print                            list=                            "
Number            of             Lanes            per              Direction
", PRINTO=1
      Print list= "FType         1           2           3           4
5           6           7           8           9       Totals", PRINTO=1
      Print  list=  "-------------------------------------------------------
---------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                              ;^Begin Loop 4:
Cycles through FTYPE
                                                           ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                            ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                    ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_volall[_aiter+_fiter+_liter]       ;  FTYPE  in
Loop 4 and totals X checking variable.
       ENDLOOP                                             ;^End Loop 5.

        if  (_vcheck>0  &  (_fiter<5000  |  _fiter>5999))          ;^Begin
Condition 2: If current FTYPE in Loop 4
          _fft2=int(_fiter/100)                                 ; has X>0
continue to report X. Else skip FTYPE.
          print list= _fft2(2.0),"    ", PRINTO=1
          _totvols=0                                        ;^Initialize
FTYPE total X.
```

```
           LOOP _liter2=1,9,1                              ;^Begin Loop 6:
Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             print                                                list="\\","
",(_volall[_aiter+_fiter+_liter2]/_supersuper)(10.2C)," ", PRINTO=1
             _totvols=_totvols+_volall[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_volall[_aiter+_fiter+_liter2]
           ENDLOOP                                        ;^End Loop 6.

             print list="\\"," ",(_totvols/_supersuper)(10.2C), PRINTO=1
        endif                                              ;^End Condition
2.

      ENDLOOP                                             ;^End Loop 4.

      Print  list= "-------------------------------------------------------
------------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                   ;^Begin Loop 7:
Cycles through Lanes for
                                                          ;  current  ATYPE
in Loop 2.
        _lntotals=0                                          ;^Initialize
Lane total X.

        LOOP _aiter2=_aiter,599999,100                     ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                    ; in Loop 2 to
generate Lane total X.
          if (_aiter2<_aiter+5000 | _aiter2>_aiter+5999)
            _lntotiter=_aiter2+_liter3
            _lntotals=_lntotals+_volall[_lntotiter]
          endif
        ENDLOOP                                           ;^End Loop 8

        print list="\\"," ",(_lntotals/_supersuper)(10.2C)," ", PRINTO=1
      ENDLOOP                                             ;^End Loop 7

      print list="\\"," ",(_supertotal/_supersuper)(10.2C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                  ;^End Condition
1.

  ENDLOOP                                                 ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                   ;^End Loop 1.

;-----------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                ;^Header
Print list= "                                                   Number of
Lanes per Direction                                                    ",
PRINTO=1
```

```
Print list= "FType           1              2              3              4
5           6           7           8           9       Totals", PRINTO=1
Print list= "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                  ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                       ; two-digit
FTYPE.

  _tafvcheck=0                                                ;^Initialize
FTYPE X checking variable.
 if (_fft2<50 | _fft2>59)
  LOOP _liter5=1,9,1                                          ;^Begin Loop
10: Cycles through Lanes for current
                                                           ; FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                         ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_volall[_aiter4+_fiter2+_liter5]   ;   current
Lanes and FTYPE in order to total X checking variable.
    ENDLOOP                                                     ;^End Loop
11.

  ENDLOOP                                                  ;^End Loop 10.

  if (_tafvcheck>0)                                              ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                     ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                       ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                           ; in Loop 9.
        _totftat=0                                            ;^Initialize
FTYPE total X for all ATYPE.

      LOOP _aiter3= 100000,599999,10000                       ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_volall[_aiter3+_fiter2+_liter4]  ;  in  order  to
generate total X for FTYPE by Lane for all ATYPE.
      ENDLOOP                                              ;^End Loop 13.

      print list="\\"," ",(_totftat/_supersuper)(10.2C)," ", PRINTO=1
    ENDLOOP                                                ;^End Loop 12.

    print list="\\"," ",(_tafvcheck/_supersuper)(10.2C), PRINTO=1
  endif                                                     ;^End Condition
3.
 endif
ENDLOOP                                                    ;^End Loop 9.

Print list= "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1
```

```
_supertotal=0                                               ;^Initialize
all ATYPE total X.

LOOP _liter6=1,9,1                                          ;^Begin Loop
14: Cycles through Lanes.


  _lntotals=0                                               ;^Initialize
total X for Lanes.

  LOOP _aiter5=100000,599999,100                            ;^Begin Loop
15: Cycles through ATYPE and
    if ((_aiter5<105000 | _aiter5>105999) &
        (_aiter5<115000 | _aiter5>115999) &
        (_aiter5<125000 | _aiter5>125999) &
        (_aiter5<135000 | _aiter5>135999) &
        (_aiter5<145000 | _aiter5>145999) &
        (_aiter5<155000 | _aiter5>155999) &
        (_aiter5<165000 | _aiter5>165999) &
        (_aiter5<175000 | _aiter5>175999) &
        (_aiter5<185000 | _aiter5>185999) &
        (_aiter5<195000 | _aiter5>195999) &
        (_aiter5<205000 | _aiter5>205999) &
        (_aiter5<215000 | _aiter5>215999) &
        (_aiter5<225000 | _aiter5>225999) &
        (_aiter5<235000 | _aiter5>235999) &
        (_aiter5<245000 | _aiter5>245999) &
        (_aiter5<255000 | _aiter5>255999) &
        (_aiter5<265000 | _aiter5>265999) &
        (_aiter5<275000 | _aiter5>275999) &
        (_aiter5<285000 | _aiter5>285999) &
        (_aiter5<295000 | _aiter5>295999) &
        (_aiter5<305000 | _aiter5>305999) &
        (_aiter5<315000 | _aiter5>315999) &
        (_aiter5<325000 | _aiter5>325999) &
        (_aiter5<335000 | _aiter5>335999) &
        (_aiter5<345000 | _aiter5>345999) &
        (_aiter5<355000 | _aiter5>355999) &
        (_aiter5<365000 | _aiter5>365999) &
        (_aiter5<375000 | _aiter5>375999) &
        (_aiter5<385000 | _aiter5>385999) &
        (_aiter5<395000 | _aiter5>395999) &
        (_aiter5<405000 | _aiter5>405999) &
        (_aiter5<415000 | _aiter5>415999) &
        (_aiter5<425000 | _aiter5>425999) &
        (_aiter5<435000 | _aiter5>435999) &
        (_aiter5<445000 | _aiter5>445999) &
        (_aiter5<455000 | _aiter5>455999) &
        (_aiter5<465000 | _aiter5>465999) &
        (_aiter5<475000 | _aiter5>475999) &
        (_aiter5<485000 | _aiter5>485999) &
        (_aiter5<495000 | _aiter5>495999) &
        (_aiter5<505000 | _aiter5>505999) &
        (_aiter5<515000 | _aiter5>515999) &
        (_aiter5<525000 | _aiter5>525999) &
        (_aiter5<535000 | _aiter5>535999) &
```

```
        (_aiter5<545000 | _aiter5>545999) &
        (_aiter5<555000 | _aiter5>555999) &
        (_aiter5<565000 | _aiter5>565999) &
        (_aiter5<575000 | _aiter5>575999) &
        (_aiter5<585000 | _aiter5>585999) &
        (_aiter5<595000 | _aiter5>595999))

      _lntotiter=_aiter5+_liter6                               ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_volall[_lntotiter]              ; Lanes.

    endif
  ENDLOOP                                                 ;^End Loop 15.

  print list="\\"," ",(_lntotals/_supersuper)(10.2C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                             ;^Generate
total X for all ATYPE.

ENDLOOP                                                   ;^End Loop 14.
print list="\\"," ",(_supertotal/_supersuper)(10.2C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------

Print  list=  "Total  Summary  Area  Types  by  Facility  Types  ",  PRINTO=1
;^Header
Print list= "                                                           Single
Digit Facility Types                                                        ",
PRINTO=1
Print list= "AType          1x           2x           3x           4x
5x         6x          7x          8x          9x      Totals", PRINTO=1
Print  list=  "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                          ;^Begin Loop
16: Cycles through ATYPE by 10 to
  _aat1=int(_a1iter2/100000)                                ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                                ;^Initialize
total X for all ATYPE

    LOOP _f1iter=1000,9900,1000                             ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                        ;   get   single
digit FTYPE.
      _totftlns=0                                           ;^Initialize
total X for all FTYPE by all Lanes.
      if (_f1iter<5000 | _f1iter>5999)
      LOOP _fiter3=_f1iter,9900,100                         ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                    ; for current
single digit FTYPE in Loop 17.
```

```
        LOOP _aiter6=_a1iter2,599999,10000                    ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK                  ; for current
single digit ATYPE in Loop 16.

            LOOP                                              _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_volall[_aiter6+_fiter3+_liter7]    ; in
order to generate total X for FTYPE by ATYPE.
            ENDLOOP                                                    ;^End
Loop 20.

        ENDLOOP                                          ;^End Loop 19.

      ENDLOOP                                            ;^End Loop 18.
      endif
      _fttotal=_fttotal+_totftlns                              ;^Generate
total X for ATYPE.

      print list="\\"," ",(_totftlns/_supersuper)(10.2C)," ", PRINTO=1
    ENDLOOP                                              ;^End Loop 17.

  print list="\\"," ",(_fttotal/_supersuper)(10.2c), PRINTO=1
ENDLOOP                                                  ;^End Loop 16.

Print list= "------------------------------------------------------------
---------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                ;^Initialize
overall total X.

LOOP _f1iter2=1000,9900,1000                                 ;^Begin Loop
21: Cycles through FTYPE by 10
                                                         ; to get single
digit FTYPE.
  _ftotals=0                                                 ;^Initialize
total X by FTYPE

  LOOP _fiter4=_f1iter2,9900,100                             ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                        ; get all two-
digit FTYPE for current FTYPE in
    if            (_f1iter2<5000            |            _f1iter2>5999)
; Loop 21.
    LOOP _liter8=1,9,1                                       ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                       ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                   ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_volall[_ftotiter]
      ENDLOOP                                            ;^End Loop 24.

    ENDLOOP                                              ;^End Loop 23.
```

```
    endif
  ENDLOOP                                                   ;^End Loop 22.
  _supertotal=_supertotal+_ftotals                                ;^Generate
overall total for all single digit ATYPE
                                                            ; by all single
digit FTYPE.
  print list="\\"," ",(_ftotals/_supersuper)(10.2C)," ", PRINTO=1
ENDLOOP                                                     ;^End Loop 21.

print list="\\"," ",(_supertotal/_supersuper)(10.2C), PRINTO=1
print list=" ", PRINTO=1
;*************************************************************************
; END VOLUME PERCENTAGES ON ALL LINKS REPORT
;*************************************************************************

;=========================================================================
==============
; BEGIN VMT ALL LINKS REPORT ------------- X = VMT ON ALL LINKS
;=========================================================================
==============
Print list=" ", PRINTO=1
Print
list="************************************************************************
***************************************************************", PRINTO=1
Print                                                              list="*
*", PRINTO=1
Print list="*                                           VMT on All Links
(Centroid                   Connectors                            Excluded)
*", PRINTO=1
Print                                                              list="*
*", PRINTO=1
Print
list="************************************************************************
***************************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------

LOOP _a1iter=100000,599999,100000                           ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                   ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
          "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                          ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                           ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                                  ;^Initialize
ATYPE X checking variable.

    LOOP _achkiter=_aiter,599999,1                          ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
```

```
      if (_achkiter>_aiter+9999) BREAK                      ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_vmtall[_achkiter]
    ENDLOOP                                               ;^End Loop 3.

    if (_avcheck>0)                                                ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                          ;    has    X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                            ;^Initialize
ATYPE total X.

      Print list= "Area Type ",_aat2(2.0), PRINTO=1       ;^Header
      Print                            list=                            "
Number            of            Lanes            per            Direction
", PRINTO=1
      Print list= "FType          1            2            3            4
5          6          7           8           9      Totals", PRINTO=1
      Print  list=  "-----------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                             ;^Begin Loop 4:
Cycles through FTYPE
                                                          ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                               ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                   ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_vmtall[_aiter+_fiter+_liter]       ;  FTYPE  in
Loop 4 and totals X checking variable.
       ENDLOOP                                            ;^End Loop 5.

        if  (_vcheck>0  &  (_fiter<5000  |  _fiter>5999))          ;^Begin
Condition 2: If current FTYPE in Loop 4
          _fft2=int(_fiter/100)                                 ; has X>0
continue to report X. Else skip FTYPE.
           print list= _fft2(2.0),"    ", PRINTO=1
           _totvols=0                                          ;^Initialize
FTYPE total X.

           LOOP _liter2=1,9,1                               ;^Begin Loop 6:
Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             print  list="\\","  ",_vmtall[_aiter+_fiter+_liter2](10.0C),"
", PRINTO=1
             _totvols=_totvols+_vmtall[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_vmtall[_aiter+_fiter+_liter2]
           ENDLOOP                                        ;^End Loop 6.

             print list="\\"," ",_totvols(10.0C), PRINTO=1
        endif                                              ;^End Condition
2.

      ENDLOOP                                             ;^End Loop 4.
```

```
      Print  list= "-----------------------------------------------------
------------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                  ;^Begin Loop 7:
Cycles through Lanes for
                                                         ;  current  ATYPE
in Loop 2.
        _lntotals=0                                          ;^Initialize
Lane total X.

        LOOP _aiter2=_aiter,599999,100                    ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                   ; in Loop 2 to
generate Lane total X.
          if (_aiter2<_aiter+5000 | _aiter2>_aiter+5999)
            _lntotiter=_aiter2+_liter3
            _lntotals=_lntotals+_vmtall[_lntotiter]
          endif
        ENDLOOP                                          ;^End Loop 8

        print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
      ENDLOOP                                            ;^End Loop 7

      print list="\\"," ",_supertotal(10.0C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                 ;^End Condition
1.

  ENDLOOP                                                ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                  ;^End Loop 1.

;-----------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                ;^Header
Print list= "                                                   Number of
Lanes per Direction                                                   ",
PRINTO=1
Print  list=  "FType          1             2             3             4
5           6           7           8           9       Totals", PRINTO=1
Print  list=  "-------------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                 ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                     ; two-digit
FTYPE.

  _tafvcheck=0                                               ;^Initialize
FTYPE X checking variable.
 if (_fft2<50 | _fft2>59)
```

```
  LOOP _liter5=1,9,1                                        ;^Begin Loop
10: Cycles through Lanes for current
                                                          ;  FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                       ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_vmtall[_aiter4+_fiter2+_liter5]   ;   current
Lanes and FTYPE in order to total X checking variable.
    ENDLOOP                                                   ;^End Loop
11.

  ENDLOOP                                                 ;^End Loop 10.

  if (_tafvcheck>0)                                              ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                   ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                     ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                          ; in Loop 9.
        _totftat=0                                          ;^Initialize
FTYPE total X for all ATYPE.

      LOOP _aiter3= 100000,599999,10000                     ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_vmtall[_aiter3+_fiter2+_liter4] ; in order to
generate total X for FTYPE by Lane for all ATYPE.
      ENDLOOP                                             ;^End Loop 13.

      print list="\\"," ",_totftat(10.0C)," ", PRINTO=1
    ENDLOOP                                               ;^End Loop 12.

    print list="\\"," ",_tafvcheck(10.0C), PRINTO=1
  endif                                                    ;^End Condition
3.
 endif
ENDLOOP                                                   ;^End Loop 9.

Print list= "-------------------------------------------------------------
-------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                               ;^Initialize
all ATYPE total X.

LOOP _liter6=1,9,1                                          ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                               ;^Initialize
total X for Lanes.

  LOOP _aiter5=100000,599999,100                            ;^Begin Loop
15: Cycles through ATYPE and
    if ((_aiter5<105000 | _aiter5>105999) &
        (_aiter5<115000 | _aiter5>115999) &
```

```
        (_aiter5<125000 | _aiter5>125999) &
        (_aiter5<135000 | _aiter5>135999) &
        (_aiter5<145000 | _aiter5>145999) &
        (_aiter5<155000 | _aiter5>155999) &
        (_aiter5<165000 | _aiter5>165999) &
        (_aiter5<175000 | _aiter5>175999) &
        (_aiter5<185000 | _aiter5>185999) &

        (_aiter5<195000 | _aiter5>195999) &
        (_aiter5<205000 | _aiter5>205999) &
        (_aiter5<215000 | _aiter5>215999) &
        (_aiter5<225000 | _aiter5>225999) &
        (_aiter5<235000 | _aiter5>235999) &
        (_aiter5<245000 | _aiter5>245999) &
        (_aiter5<255000 | _aiter5>255999) &
        (_aiter5<265000 | _aiter5>265999) &
        (_aiter5<275000 | _aiter5>275999) &
        (_aiter5<285000 | _aiter5>285999) &
        (_aiter5<295000 | _aiter5>295999) &
        (_aiter5<305000 | _aiter5>305999) &
        (_aiter5<315000 | _aiter5>315999) &
        (_aiter5<325000 | _aiter5>325999) &
        (_aiter5<335000 | _aiter5>335999) &
        (_aiter5<345000 | _aiter5>345999) &
        (_aiter5<355000 | _aiter5>355999) &
        (_aiter5<365000 | _aiter5>365999) &
        (_aiter5<375000 | _aiter5>375999) &
        (_aiter5<385000 | _aiter5>385999) &
        (_aiter5<395000 | _aiter5>395999) &
        (_aiter5<405000 | _aiter5>405999) &
        (_aiter5<415000 | _aiter5>415999) &
        (_aiter5<425000 | _aiter5>425999) &
        (_aiter5<435000 | _aiter5>435999) &
        (_aiter5<445000 | _aiter5>445999) &
        (_aiter5<455000 | _aiter5>455999) &
        (_aiter5<465000 | _aiter5>465999) &
        (_aiter5<475000 | _aiter5>475999) &
        (_aiter5<485000 | _aiter5>485999) &
        (_aiter5<495000 | _aiter5>495999) &
        (_aiter5<505000 | _aiter5>505999) &
        (_aiter5<515000 | _aiter5>515999) &
        (_aiter5<525000 | _aiter5>525999) &
        (_aiter5<535000 | _aiter5>535999) &
        (_aiter5<545000 | _aiter5>545999) &
        (_aiter5<555000 | _aiter5>555999) &
        (_aiter5<565000 | _aiter5>565999) &
        (_aiter5<575000 | _aiter5>575999) &
        (_aiter5<585000 | _aiter5>585999) &
        (_aiter5<595000 | _aiter5>595999))

      _lntotiter=_aiter5+_liter6                              ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_vmtall[_lntotiter]              ; Lanes.

    endif
  ENDLOOP                                                 ;^End Loop 15.
```

```
  print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                              ;^Generate
total X for all ATYPE.

ENDLOOP                                                      ;^End Loop 14.
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------

Print list= "Total Summary Area Types by Facility Types ", PRINTO=1
;^Header
Print list= "                                                           Single
Digit Facility Types                                                       ",
PRINTO=1
Print list= "AType          1x           2x           3x           4x
5x          6x          7x          8x          9x       Totals", PRINTO=1
Print list= "-------------------------------------------------------------
------------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                           ;^Begin Loop
16: Cycles through ATYPE by 10 to
  _aat1=int(_a1iter2/100000)                                 ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                                 ;^Initialize
total X for all ATYPE

    LOOP _f1iter=1000,9900,1000                              ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                         ;   get   single
digit FTYPE.
      _totftlns=0                                            ;^Initialize
total X for all FTYPE by all Lanes.
      if (_f1iter<5000 | _f1iter>5999)
      LOOP _fiter3=_f1iter,9900,100                          ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                      ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000                   ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK                 ; for current
single digit ATYPE in Loop 16.

            LOOP                                             _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_vmtall[_aiter6+_fiter3+_liter7]    ; in
order to generate total X for FTYPE by ATYPE.
            ENDLOOP                                                 ;^End
Loop 20.

        ENDLOOP                                              ;^End Loop 19.
```

```
      ENDLOOP                                              ;^End Loop 18.
      endif
      _fttotal=_fttotal+_totftlns                               ;^Generate
total X for ATYPE.

      print list="\\"," ",_totftlns(10.0C)," ", PRINTO=1
    ENDLOOP                                                ;^End Loop 17.

  print list="\\"," ",_fttotal(10.0c), PRINTO=1
ENDLOOP                                                    ;^End Loop 16.

Print list= "-------------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                 ;^Initialize
overall total X.

LOOP _f1iter2=1000,9900,1000                                  ;^Begin Loop
21: Cycles through FTYPE by 10
                                                           ; to get single
digit FTYPE.
  _ftotals=0                                                  ;^Initialize
total X by FTYPE

  LOOP _fiter4=_f1iter2,9900,100                              ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                          ; get all two-
digit FTYPE for current FTYPE in
    if            (_f1iter2<5000          |            _f1iter2>5999)
; Loop 21.
    LOOP _liter8=1,9,1                                        ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                        ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                    ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_vmtall[_ftotiter]
      ENDLOOP                                              ;^End Loop 24.

    ENDLOOP                                                ;^End Loop 23.
    endif
  ENDLOOP                                                  ;^End Loop 22.
  _supertotal=_supertotal+_ftotals                              ;^Generate
overall total for all single digit ATYPE
                                                           ; by all single
digit FTYPE.
  print list="\\"," ",_ftotals(10.0C)," ", PRINTO=1
ENDLOOP                                                    ;^End Loop 21.
_totalvmt=_supertotal
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ", PRINTO=1
;*********************************************************************
; END VMT ALL LINKS REPORT
```

```
;************************************************************************

;========================================================================
==============
; BEGIN VHT ALL LINKS REPORT ------------- X = VHT ON ALL LINKS
;========================================================================
==============
Print list=" ", PRINTO=1
Print
list="*******************************************************************
************************************************************", PRINTO=1
Print                                                              list="*
*", PRINTO=1
Print list="*                                             VHT on All Links
(Centroid                      Connectors                        Excluded)
*", PRINTO=1
Print                                                              list="*
*", PRINTO=1
Print
list="*******************************************************************
************************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------

LOOP _a1iter=100000,599999,100000                         ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                 ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
           "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                        ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                         ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                               ;^Initialize
ATYPE X checking variable.

    LOOP _achkiter=_aiter,599999,1                        ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                      ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_vhtall[_achkiter]
    ENDLOOP                                              ;^End Loop 3.

    if (_avcheck>0)                                              ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                         ;     has    X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                          ;^Initialize
ATYPE total X.

      Print list= "Area Type ",_aat2(2.0), PRINTO=1       ;^Header
```

```
      Print                            list=                            "
Number             of            Lanes            per            Direction
", PRINTO=1
      Print list= "FType          1            2            3            4
5           6           7           8           9       Totals", PRINTO=1
      Print  list=  "----------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                            ;^Begin Loop 4:
Cycles through FTYPE
                                                         ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                             ;^Initialize
FTYPE X checking variable.

       LOOP _liter=1,9,1                                  ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_vhtall[_aiter+_fiter+_liter]       ;  FTYPE  in
Loop 4 and totals X checking variable.
       ENDLOOP                                           ;^End Loop 5.

        if  (_vcheck>0  &  (_fiter<5000  |  _fiter>5999))          ;^Begin
Condition 2: If current FTYPE in Loop 4
           _fft2=int(_fiter/100)                               ;  has  X>0
continue to report X. Else skip FTYPE.
           print list= _fft2(2.0),"    ", PRINTO=1
           _totvols=0                                        ;^Initialize
FTYPE total X.

           LOOP _liter2=1,9,1                             ;^Begin Loop 6:
Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             print  list="\\","  ",_vhtall[_aiter+_fiter+_liter2](10.0C),"
", PRINTO=1
             _totvols=_totvols+_vhtall[_aiter+_fiter+_liter2]
             _supertotal=_supertotal+_vhtall[_aiter+_fiter+_liter2]
           ENDLOOP                                       ;^End Loop 6.

             print list="\\"," ",_totvols(10.0C), PRINTO=1
        endif                                             ;^End Condition
2.

      ENDLOOP                                            ;^End Loop 4.

      Print  list=  "----------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                  ;^Begin Loop 7:
Cycles through Lanes for
                                                         ;  current  ATYPE
in Loop 2.
        _lntotals=0                                          ;^Initialize
Lane total X.
```

```
        LOOP _aiter2=_aiter,599999,100                      ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                     ; in Loop 2 to
generate Lane total X.
          if (_aiter2<_aiter+5000 | _aiter2>_aiter+5999)
            _lntotiter=_aiter2+_liter3
            _lntotals=_lntotals+_vhtall[_lntotiter]
          endif
        ENDLOOP                                             ;^End Loop 8

        print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
      ENDLOOP                                               ;^End Loop 7

      print list="\\"," ",_supertotal(10.0C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                   ;^End Condition
1.

  ENDLOOP                                                   ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                     ;^End Loop 1.

;-----------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                   ;^Header
Print list= "                                                    Number of
Lanes per Direction                                                    ",
PRINTO=1
Print list= "FType           1             2             3             4
5           6           7           8           9       Totals", PRINTO=1
Print list= "-----------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                   ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                    ; two-digit
FTYPE.

  _tafvcheck=0                                              ;^Initialize
FTYPE X checking variable.
 if (_fft2<50 | _fft2>59)
  LOOP _liter5=1,9,1                                        ;^Begin Loop
10: Cycles through Lanes for current
                                                            ; FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                       ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_vhtall[_aiter4+_fiter2+_liter5]   ;   current
Lanes and FTYPE in order to total X checking variable.

    ENDLOOP                                                 ;^End Loop
11.

  ENDLOOP                                                   ;^End Loop 10.
```

```
  if (_tafvcheck>0)                                                ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                      ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                        ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                           ; in Loop 9.
        _totftat=0                                             ;^Initialize
FTYPE total X for all ATYPE.

      LOOP _aiter3= 100000,599999,10000                        ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_vhtall[_aiter3+_fiter2+_liter4] ; in order to
generate total X for FTYPE by Lane for all ATYPE.
      ENDLOOP                                                  ;^End Loop 13.

      print list="\\"," ",_totftat(10.0C)," ", PRINTO=1
    ENDLOOP                                                    ;^End Loop 12.

    print list="\\"," ",_tafvcheck(10.0C), PRINTO=1
  endif                                                        ;^End Condition
3.
 endif
ENDLOOP                                                        ;^End Loop 9.

Print list= "------------------------------------------------------------
-------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                  ;^Initialize
all ATYPE total X.

LOOP _liter6=1,9,1                                             ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                                  ;^Initialize
total X for Lanes.

  LOOP _aiter5=100000,599999,100                               ;^Begin Loop
15: Cycles through ATYPE and
    if ((_aiter5<105000 | _aiter5>105999) &
        (_aiter5<115000 | _aiter5>115999) &
        (_aiter5<125000 | _aiter5>125999) &
        (_aiter5<135000 | _aiter5>135999) &
        (_aiter5<145000 | _aiter5>145999) &
        (_aiter5<155000 | _aiter5>155999) &
        (_aiter5<165000 | _aiter5>165999) &
        (_aiter5<175000 | _aiter5>175999) &
        (_aiter5<185000 | _aiter5>185999) &
        (_aiter5<195000 | _aiter5>195999) &
        (_aiter5<205000 | _aiter5>205999) &
        (_aiter5<215000 | _aiter5>215999) &
        (_aiter5<225000 | _aiter5>225999) &
        (_aiter5<235000 | _aiter5>235999) &
```

```
        (_aiter5<245000 | _aiter5>245999) &
        (_aiter5<255000 | _aiter5>255999) &
        (_aiter5<265000 | _aiter5>265999) &
        (_aiter5<275000 | _aiter5>275999) &
        (_aiter5<285000 | _aiter5>285999) &
        (_aiter5<295000 | _aiter5>295999) &
        (_aiter5<305000 | _aiter5>305999) &
        (_aiter5<315000 | _aiter5>315999) &
        (_aiter5<325000 | _aiter5>325999) &
        (_aiter5<335000 | _aiter5>335999) &
        (_aiter5<345000 | _aiter5>345999) &
        (_aiter5<355000 | _aiter5>355999) &
        (_aiter5<365000 | _aiter5>365999) &
        (_aiter5<375000 | _aiter5>375999) &
        (_aiter5<385000 | _aiter5>385999) &
        (_aiter5<395000 | _aiter5>395999) &
        (_aiter5<405000 | _aiter5>405999) &
        (_aiter5<415000 | _aiter5>415999) &
        (_aiter5<425000 | _aiter5>425999) &
        (_aiter5<435000 | _aiter5>435999) &
        (_aiter5<445000 | _aiter5>445999) &
        (_aiter5<455000 | _aiter5>455999) &
        (_aiter5<465000 | _aiter5>465999) &
        (_aiter5<475000 | _aiter5>475999) &
        (_aiter5<485000 | _aiter5>485999) &
        (_aiter5<495000 | _aiter5>495999) &
        (_aiter5<505000 | _aiter5>505999) &
        (_aiter5<515000 | _aiter5>515999) &
        (_aiter5<525000 | _aiter5>525999) &
        (_aiter5<535000 | _aiter5>535999) &
        (_aiter5<545000 | _aiter5>545999) &
        (_aiter5<555000 | _aiter5>555999) &
        (_aiter5<565000 | _aiter5>565999) &
        (_aiter5<575000 | _aiter5>575999) &
        (_aiter5<585000 | _aiter5>585999) &
        (_aiter5<595000 | _aiter5>595999))

      _lntotiter=_aiter5+_liter6                               ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_vhtall[_lntotiter]               ; Lanes.

    endif
  ENDLOOP                                                  ;^End Loop 15.

  print list="\\"," ",_lntotals(10.0C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                         ;^Generate
total X for all ATYPE.

ENDLOOP                                                    ;^End Loop 14.
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------

Print  list=  "Total  Summary  Area  Types  by  Facility  Types  ",  PRINTO=1
;^Header
```

```
Print list= "                                                          Single
Digit Facility Types                                                      ",
PRINTO=1
Print list= "AType          1x            2x            3x             4x
5x         6x          7x           8x           9x      Totals", PRINTO=1
Print list= "------------------------------------------------------------
-------------------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                            ;^Begin Loop
16: Cycles through ATYPE by 10 to
  _aat1=int(_a1iter2/100000)                                  ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                                  ;^Initialize
total X for all ATYPE

    LOOP _f1iter=1000,9900,1000                               ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                          ;   get   single
digit FTYPE.
      _totftlns=0                                             ;^Initialize
total X for all FTYPE by all Lanes.
      if (_f1iter<5000 | _f1iter>5999)
      LOOP _fiter3=_f1iter,9900,100                           ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                       ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000                    ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK                  ; for current
single digit ATYPE in Loop 16.

            LOOP                                            _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_vhtall[_aiter6+_fiter3+_liter7]    ; in
order to generate total X for FTYPE by ATYPE.
            ENDLOOP                                                  ;^End
Loop 20.

        ENDLOOP                                               ;^End Loop 19.

      ENDLOOP                                                 ;^End Loop 18.
      endif
      _fttotal=_fttotal+_totftlns                               ;^Generate
total X for ATYPE.

      print list="\\"," ",_totftlns(10.0C)," ", PRINTO=1
    ENDLOOP                                                   ;^End Loop 17.

  print list="\\"," ",_fttotal(10.0c), PRINTO=1
ENDLOOP                                                       ;^End Loop 16.
```

```
Print  list= "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                    ;^Initialize
overall total X.

LOOP _f1iter2=1000,9900,1000                                     ;^Begin Loop
21: Cycles through FTYPE by 10
                                                              ;  to get single
digit FTYPE.
  _ftotals=0                                                     ;^Initialize
total X by FTYPE

  LOOP _fiter4=_f1iter2,9900,100                                 ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                             ; get all two-
digit FTYPE for current FTYPE in
    if            (_f1iter2<5000           |            _f1iter2>5999)
; Loop 21.
    LOOP _liter8=1,9,1                                           ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                           ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                      ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_vhtall[_ftotiter]
      ENDLOOP                                                 ;^End Loop 24.

    ENDLOOP                                                   ;^End Loop 23.
    endif
  ENDLOOP                                                     ;^End Loop 22.
  _supertotal=_supertotal+_ftotals                                 ;^Generate
overall total for all single digit ATYPE
                                                              ;  by all single
digit FTYPE.
  print list="\\"," ",_ftotals(10.0C)," ", PRINTO=1
ENDLOOP                                                       ;^End Loop 21.
_totalvht=_supertotal
print list="\\"," ",_supertotal(10.0C), PRINTO=1
print list=" ", PRINTO=1
;*************************************************************************
; END VHT ALL LINKS REPORT
;*************************************************************************

;=========================================================================
==============
; BEGIN FREE FLOW SPEED REPORT ------------- X = Free Flow Speeds
;=========================================================================
==============
Print list=" ", PRINTO=1
Print
list="*******************************************************************
*************************************************************", PRINTO=1
```

```
Print                                                            list="*
*", PRINTO=1
Print list="*                                                   Original
Speed (MPH)                                                          *",
PRINTO=1
Print                                                            list="*
*", PRINTO=1
Print
list="******************************************************************
*********************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------
LOOP _a1iter=100000,599999,100000                          ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                  ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
           "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                         ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                          ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                                ;^Initialize
ATYPE X checking variable.
    _avdist=0

    LOOP _achkiter=_aiter,599999,1                         ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                       ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_wffspd[_achkiter]
    ENDLOOP                                                ;^End Loop 3.

    if (_avcheck>0)                                                ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                           ;     has    X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                           ;^Initialize
ATYPE total X.
      _superdist=0

      Print list= "Area Type ",_aat2(2.0), PRINTO=1       ;^Header
      Print                            list=                               "
Number             of            Lanes            per           Direction
", PRINTO=1
      Print list= "FType          1           2           3              4
5          6           7           8           9      Totals", PRINTO=1
      Print  list=  "-------------------------------------------------------
-----------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                             ;^Begin Loop 4:
Cycles through FTYPE
```

```
                                                         ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                            ;^Initialize
FTYPE X checking variable.
       _vdist=0

       LOOP _liter=1,9,1                                     ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_wffspd[_aiter+_fiter+_liter]       ;  FTYPE  in
Loop 4 and totals X checking variable.
       ENDLOOP                                              ;^End Loop 5.

        if  (_vcheck>0  &  (_fiter<5000  |  _fiter>5999))           ;^Begin
Condition 2: If current FTYPE in Loop 4
           _fft2=int(_fiter/100)                              ; has X>0
continue to report X. Else skip FTYPE.
           print list= _fft2(2.0),"    ", PRINTO=1
           _totvols=0                                       ;^Initialize
FTYPE total X.
           _totdist=0

           LOOP _liter2=1,9,1                                ;^Begin Loop 6:
Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             if (_dmiles[_aiter+_fiter+_liter2]>0)

_spdspd=_wffspd[_aiter+_fiter+_liter2]/_dmiles[_aiter+_fiter+_liter2]
             else
               _spdspd=0
             endif
             print list="\\"," ",_spdspd(10.2C)," ", PRINTO=1
             _totvols=_totvols+_wffspd[_aiter+_fiter+_liter2]
             _totdist=_totdist+_dmiles[_aiter+_fiter+_liter2]
            _supertotal=_supertotal+_wffspd[_aiter+_fiter+_liter2]
            _superdist=_superdist+_dmiles[_aiter+_fiter+_liter2]

           ENDLOOP                                          ;^End Loop 6
             if (_totdist>0)
               _totspd=_totvols/_totdist
             else
               _totspd=0
             endif
             print list="\\"," ",_totspd(10.2C), PRINTO=1
        endif                                                ;^End Condition
2.

      ENDLOOP                                               ;^End Loop 4.


      Print  list=  "-------------------------------------------------------
-----------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                     ;^Begin Loop 7:
Cycles through Lanes for
                                                         ;  current  ATYPE
in Loop 2.
```

```
        _lntotals=0                                              ;^Initialize
Lane total X.
        _lndist=0

        LOOP _aiter2=_aiter,599999,100                        ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                       ; in Loop 2 to
generate Lane total X.
          if (_aiter2<_aiter+5000 | _aiter2>_aiter+5999)
            _lntotiter=_aiter2+_liter3
            _lntotals=_lntotals+_wffspd[_lntotiter]
            _lndist=_lndist+_dmiles[_lntotiter]
          endif
        ENDLOOP                                               ;^End Loop 8

        if (_lndist>0)
          _lnspd=_lntotals/_lndist
        else
          _lnspd=0
        endif
        print list="\\"," ",_lnspd(10.2C)," ", PRINTO=1
      ENDLOOP                                                 ;^End Loop 7

      if (_superdist>0)
        _superspd=_supertotal/_superdist
      else
        _superspd=0
      endif
      print list="\\"," ",_superspd(10.2C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                      ;^End Condition
1.

  ENDLOOP                                                     ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                       ;^End Loop 1.

;-----------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                     ;^Header
Print list= "                                                        Number of
Lanes per Direction                                                      ",
PRINTO=1
Print list= "FType           1             2             3              4
5           6           7           8           9       Totals", PRINTO=1
Print list= "------------------------------------------------------------
-------------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                      ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                          ; two-digit
FTYPE.
```

```
  _tafvcheck=0                                              ;^Initialize
FTYPE X checking variable.
  _tafvdist=0

 if (_fft2<50 | _fft2>59)
  LOOP _liter5=1,9,1                                        ;^Begin Loop
10: Cycles through Lanes for current
                                                          ; FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                       ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_wffspd[_aiter4+_fiter2+_liter5]   ;   current
Lanes and FTYPE in order to total X checking variable.
      _tafvdist=_tafvdist+_dmiles[_aiter4+_fiter2+_liter5]
    ENDLOOP                                                   ;^End Loop
11.

  ENDLOOP                                                 ;^End Loop 10.

  if (_tafvcheck>0)                                             ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                  ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                     ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                          ; in Loop 9.
        _totftat=0                                          ;^Initialize
FTYPE total X for all ATYPE.
        _totftatdist=0

      LOOP _aiter3= 100000,599999,10000                     ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_wffspd[_aiter3+_fiter2+_liter4] ; in order to
generate total X for FTYPE by Lane for all ATYPE.
        _totftatdist=_totftatdist+_dmiles[_aiter3+_fiter2+_liter4]
      ENDLOOP                                             ;^End Loop 13.

      if (_totftatdist>0)
        _totftatspd=_totftat/_totftatdist
      else
        _totftatspd=0
      endif
      print list="\\"," ",_totftatspd(10.2C)," ", PRINTO=1
    ENDLOOP                                               ;^End Loop 12.

    if (_tafvdist>0)
      _tafvspd=_tafvcheck/_tafvdist
    else
      _tafvspd=0
    endif
    print list="\\"," ",_tafvspd(10.2C), PRINTO=1
  endif                                                   ;^End Condition
3.
 endif
ENDLOOP                                                   ;^End Loop 9.
```

```
Print list= "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                ;^Initialize
all ATYPE total X.
_superdist=0

LOOP _liter6=1,9,1                                           ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                                ;^Initialize
total X for Lanes.
  _lndist=0

  LOOP _aiter5=100000,599999,100                             ;^Begin Loop
15: Cycles through ATYPE and
    if ((_aiter5<105000 | _aiter5>105999) &
        (_aiter5<115000 | _aiter5>115999) &
        (_aiter5<125000 | _aiter5>125999) &
        (_aiter5<135000 | _aiter5>135999) &
        (_aiter5<145000 | _aiter5>145999) &
        (_aiter5<155000 | _aiter5>155999) &
        (_aiter5<165000 | _aiter5>165999) &
        (_aiter5<175000 | _aiter5>175999) &
        (_aiter5<185000 | _aiter5>185999) &
        (_aiter5<195000 | _aiter5>195999) &
        (_aiter5<205000 | _aiter5>205999) &
        (_aiter5<215000 | _aiter5>215999) &
        (_aiter5<225000 | _aiter5>225999) &
        (_aiter5<235000 | _aiter5>235999) &
        (_aiter5<245000 | _aiter5>245999) &
        (_aiter5<255000 | _aiter5>255999) &
        (_aiter5<265000 | _aiter5>265999) &
        (_aiter5<275000 | _aiter5>275999) &
        (_aiter5<285000 | _aiter5>285999) &
        (_aiter5<295000 | _aiter5>295999) &
        (_aiter5<305000 | _aiter5>305999) &
        (_aiter5<315000 | _aiter5>315999) &
        (_aiter5<325000 | _aiter5>325999) &
        (_aiter5<335000 | _aiter5>335999) &
        (_aiter5<345000 | _aiter5>345999) &
        (_aiter5<355000 | _aiter5>355999) &
        (_aiter5<365000 | _aiter5>365999) &
        (_aiter5<375000 | _aiter5>375999) &
        (_aiter5<385000 | _aiter5>385999) &
        (_aiter5<395000 | _aiter5>395999) &
        (_aiter5<405000 | _aiter5>405999) &
        (_aiter5<415000 | _aiter5>415999) &
        (_aiter5<425000 | _aiter5>425999) &
        (_aiter5<435000 | _aiter5>435999) &
        (_aiter5<445000 | _aiter5>445999) &
        (_aiter5<455000 | _aiter5>455999) &
        (_aiter5<465000 | _aiter5>465999) &
        (_aiter5<475000 | _aiter5>475999) &
        (_aiter5<485000 | _aiter5>485999) &
```

```
        (_aiter5<495000 | _aiter5>495999) &
        (_aiter5<505000 | _aiter5>505999) &
        (_aiter5<515000 | _aiter5>515999) &
        (_aiter5<525000 | _aiter5>525999) &
        (_aiter5<535000 | _aiter5>535999) &
        (_aiter5<545000 | _aiter5>545999) &
        (_aiter5<555000 | _aiter5>555999) &
        (_aiter5<565000 | _aiter5>565999) &
        (_aiter5<575000 | _aiter5>575999) &
        (_aiter5<585000 | _aiter5>585999) &
        (_aiter5<595000 | _aiter5>595999))

      _lntotiter=_aiter5+_liter6                               ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_wffspd[_lntotiter]              ; Lanes.
      _lndist=_lndist+_dmiles[_lntotiter]

    endif
  ENDLOOP                                                  ;^End Loop 15.

  if (_lndist>0)
    _lnspd=_lntotals/_lndist
  else
    _lnspd=0
  endif
  print list="\\"," ",_lnspd(10.2C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                          ;^Generate
total X for all ATYPE.
  _superdist=_superdist+_lndist

ENDLOOP                                                    ;^End Loop 14.
if (_superdist>0)
  _superspd=_supertotal/_superdist
else
  _superspd=0
endif
print list="\\"," ",_superspd(10.2C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------

Print  list=  "Total  Summary  Area  Types  by  Facility  Types  ",  PRINTO=1
;^Header
Print list= "                                                          Single
Digit Facility Types                                                     ",
PRINTO=1
Print  list=  "AType          1x            2x            3x            4x
5x          6x          7x          8x          9x      Totals", PRINTO=1
Print  list=  "--------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                          ;^Begin Loop
16: Cycles through ATYPE by 10 to
  _aat1=int(_a1iter2/100000)                                ; get single
digit ATYPE.
```

```
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                                ;^Initialize
total X for all ATYPE
  _ftdist=0

    LOOP _f1iter=1000,9900,1000                             ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                        ;   get   single
digit FTYPE.
      _totftlns=0                                           ;^Initialize
total X for all FTYPE by all Lanes.
      _totftlnsdist=0
      if (_f1iter<5000 | _f1iter>5999)
      LOOP _fiter3=_f1iter,9900,100                         ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                     ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000                  ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK                ; for current
single digit ATYPE in Loop 16.

            LOOP                                            _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_wffspd[_aiter6+_fiter3+_liter7]    ; in
order to generate total X for FTYPE by ATYPE.

_totftlnsdist=_totftlnsdist+_dmiles[_aiter6+_fiter3+_liter7]
            ENDLOOP                                                ;^End
Loop 20.

        ENDLOOP                                             ;^End Loop 19.

      ENDLOOP                                               ;^End Loop 18.
      endif
      _fttotal=_fttotal+_totftlns                             ;^Generate
total X for ATYPE.
      _ftdist=_ftdist+_totftlnsdist

      if (_totftlnsdist>0)
        _totftlnsspd=_totftlns/_totftlnsdist
      else
        _totftlnsspd=0
      endif
      print list="\\"," ",_totftlnsspd(10.2C)," ", PRINTO=1
    ENDLOOP                                                 ;^End Loop 17.

  if (_ftdist>0)
    _ftspd=_fttotal/_ftdist
  else
    _ftspd=0
  endif
  print list="\\"," ",_ftspd(10.2c), PRINTO=1
ENDLOOP                                                     ;^End Loop 16.
```

```
Print list= "-------------------------------------------------------------
-----------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                ;^Initialize
overall total X.
_superdist=0

LOOP _f1iter2=1000,9900,1000                                 ;^Begin Loop
21: Cycles through FTYPE by 10
                                                          ; to get single
digit FTYPE.
  _ftotals=0                                                 ;^Initialize
total X by FTYPE
  _ftdist=0

  LOOP _fiter4=_f1iter2,9900,100                             ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                        ; get all two-
digit FTYPE for current FTYPE in
    if             (_f1iter2<5000            |             _f1iter2>5999)
; Loop 21.
    LOOP _liter8=1,9,1                                       ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                       ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                     ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_wffspd[_ftotiter]
        _ftdist=_ftdist+_dmiles[_ftotiter]
      ENDLOOP                                             ;^End Loop 24.

    ENDLOOP                                               ;^End Loop 23.
    endif
  ENDLOOP                                                 ;^End Loop 22.
  _supertotal=_supertotal+_ftotals                              ;^Generate
overall total for all single digit ATYPE
  _superdist=_superdist+_ftdist                            ; by all single
digit FTYPE.

  if (_ftdist>0)
    _ftspd=_ftotals/_ftdist
  else
    _ftspd=0
  endif
  print list="\\"," ",_ftspd(10.2C)," ", PRINTO=1
ENDLOOP                                                   ;^End Loop 21.

if (_superdist>0)
  _superspd=_supertotal/_superdist
else
  _superspd=0
endif
_totalffspd=_superspd
print list="\\"," ",_superspd(10.2C), PRINTO=1
```

```
print list=" ", PRINTO=1
;*************************************************************************
; END FREE FLOW SPEED REPORT
;*************************************************************************

;=========================================================================
==============
; BEGIN CONGESTED SPEED REPORT ------------- X = Congested Speeds
;=========================================================================
==============
Print list=" ", PRINTO=1
Print
list="*************************************************************************
*************************************************************", PRINTO=1
Print                                                                list="*
*", PRINTO=1
Print list="*                                                      Congested
Speed (MPH)                                                              *",
PRINTO=1
Print                                                                list="*
*", PRINTO=1
Print
list="*************************************************************************
*************************************************************", PRINTO=1
Print list=" ", PRINTO=1
;-----------------2-DIGIT FACILITY TYPES BY 2-DIGIT AREA TYPES-----------
---------
LOOP _a1iter=100000,599999,100000                         ;^Begin Loop 1:
Cycles through Area Types (ATYPE) by 10
  _aat1=int(_a1iter/100000)                                 ; in order to
get single digit ATYPE.
  print list= "Area Type ",_aat1(1.0),"x Range:",
           "\n ", PRINTO=1

  LOOP _aiter=_a1iter,599999,10000                        ;^Begin Loop 2:
Cycles through ATYPE by 1
    if (_aiter>_a1iter+99999) BREAK                         ; in order to
get two-digit ATYPE.
    _aat2=int(_aiter/10000)

    _avcheck=0                                                ;^Initialize
ATYPE X checking variable.
    _avdist=0

    LOOP _achkiter=_aiter,599999,1                        ;^Begin Loop 3:
Cycles through Lanes and Facility Types (FTYPE)
      if (_achkiter>_aiter+9999) BREAK                      ; for current
ATYPE in Loop 2 and totals X checking variable.
      _avcheck=_avcheck+_wcgspd[_achkiter]
    ENDLOOP                                              ;^End Loop 3.

    if (_avcheck>0)                                               ;^Begin
Condition 1: If current ATYPE in Loop 2
                                                         ;     has    X>0
continue to report X. Else skip ATYPE.
      _supertotal=0                                           ;^Initialize
ATYPE total X.
```

```
      _superdist=0

      Print list= "Area Type ",_aat2(2.0), PRINTO=1       ;^Header
      Print                            list=                            "
Number             of             Lanes             per             Direction
", PRINTO=1
      Print list= "FType          1            2            3            4
5           6           7           8           9       Totals", PRINTO=1
      Print  list=  "-----------------------------------------------------------
-------------------------------------------------------------------------
", PRINTO=1

      LOOP _fiter=100,9900,100                              ;^Begin Loop 4:
Cycles through FTYPE
                                                           ; by 1 in order
to get two-digit FTYPE.
       _vcheck=0                                               ;^Initialize
FTYPE X checking variable.
       _vdist=0

       LOOP _liter=1,9,1                                    ;^Begin Loop 5:
Cycles through Lanes for current
          _vcheck=_vcheck+_wcgspd[_aiter+_fiter+_liter]       ;  FTYPE  in
Loop 4 and totals X checking variable.
       ENDLOOP                                             ;^End Loop 5.

        if  (_vcheck>0  &  (_fiter<5000  |  _fiter>5999))           ;^Begin
Condition 2: If current FTYPE in Loop 4
           _fft2=int(_fiter/100)                                 ; has X>0
continue to report X. Else skip FTYPE.
           print list= _fft2(2.0),"    ", PRINTO=1
           _totvols=0                                          ;^Initialize
FTYPE total X.
           _totdist=0

           LOOP _liter2=1,9,1                               ;^Begin Loop 6:
Cycles through Lanes to generate ATYPE by FTYPE by Lanes total X.
             if (_dmiles[_aiter+_fiter+_liter2]>0)

_spdspd=_wcgspd[_aiter+_fiter+_liter2]/_dmiles[_aiter+_fiter+_liter2]
             else
               _spdspd=0
             endif
             print list="\\"," ",_spdspd(10.2C)," ", PRINTO=1
             _totvols=_totvols+_wcgspd[_aiter+_fiter+_liter2]
             _totdist=_totdist+_dmiles[_aiter+_fiter+_liter2]
            _supertotal=_supertotal+_wcgspd[_aiter+_fiter+_liter2]
            _superdist=_superdist+_dmiles[_aiter+_fiter+_liter2]

           ENDLOOP                                         ;^End Loop 6
             if (_totdist>0)
               _totspd=_totvols/_totdist
             else
               _totspd=0
             endif
             print list="\\"," ",_totspd(10.2C), PRINTO=1
```

```
        endif                                              ;^End Condition
2.

      ENDLOOP                                             ;^End Loop 4.

      Print list= "-------------------------------------------------------
------------------------------------------------------------------------
", PRINTO=1
      print list="Totals", PRINTO=1

      LOOP _liter3=1,9,1                                   ;^Begin Loop 7:
Cycles through Lanes for
                                                          ; current ATYPE
in Loop 2.
        _lntotals=0                                          ;^Initialize
Lane total X.
        _lndist=0

        LOOP _aiter2=_aiter,599999,100                     ;^Begin Loop 8:
Cycles through FTYPE for current ATYPE
          if (_aiter2>_aiter+9999) BREAK                    ; in Loop 2 to
generate Lane total X.
          if (_aiter2<_aiter+5000 | _aiter2>_aiter+5999)
            _lntotiter=_aiter2+_liter3
            _lntotals=_lntotals+_wcgspd[_lntotiter]
            _lndist=_lndist+_dmiles[_lntotiter]
          endif
        ENDLOOP                                           ;^End Loop 8

        if (_lndist>0)
          _lnspd=_lntotals/_lndist
        else
          _lnspd=0
        endif
        print list="\\"," ",_lnspd(10.2C)," ", PRINTO=1
      ENDLOOP                                             ;^End Loop 7

      if (_superdist>0)
        _superspd=_supertotal/_superdist
      else
        _superspd=0
      endif
      print list="\\"," ",_superspd(10.2C), PRINTO=1
      print list=" ", PRINTO=1
    endif                                                  ;^End Condition
1.

  ENDLOOP                                                 ;^End Loop 2.

  print list=" ", PRINTO=1
ENDLOOP                                                   ;^End Loop 1.

;------------------2-DIGIT FACILITY TYPES BY TOTAL AREA TYPES-------------
-------

Print list= "Total Area Types ", PRINTO=1                 ;^Header
```

```
Print list= "                                                  Number of
Lanes per Direction                                                   ",
PRINTO=1
Print list= "FType          1             2             3             4
5          6           7           8           9       Totals", PRINTO=1
Print list= "----------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1

LOOP _fiter2=100,9900,100                                  ;^Begin Loop 9:
Cycles through FTYPES to get
  _fft2=int(_fiter2/100)                                      ; two-digit
FTYPE.

  _tafvcheck=0                                               ;^Initialize
FTYPE X checking variable.
  _tafvdist=0

 if (_fft2<50 | _fft2>59)
  LOOP _liter5=1,9,1                                         ;^Begin Loop
10: Cycles through Lanes for current
                                                           ; FTYPE in Loop
9.
    LOOP _aiter4= 100000,599999,10000                        ;^Begin Loop
11: Cycles through ATYPE for
      _tafvcheck=_tafvcheck+_wcgspd[_aiter4+_fiter2+_liter5]   ;   current
Lanes and FTYPE in order to total X checking variable.
      _tafvdist=_tafvdist+_dmiles[_aiter4+_fiter2+_liter5]
    ENDLOOP                                                    ;^End Loop
11.

  ENDLOOP                                                  ;^End Loop 10.

  if (_tafvcheck>0)                                             ;^Begin
Condition 3: If current FTYPE in Loop 9
    print list= _fft2(2.0),"     ", PRINTO=1                   ; has X>0
continue to report X. Else skip FTYPE.

    LOOP _liter4= 1,9,1                                      ;^Begin Loop
12: Cycles through Lanes for current FTYPE
                                                           ; in Loop 9.
        _totftat=0                                           ;^Initialize
FTYPE total X for all ATYPE.
        _totftatdist=0

      LOOP _aiter3= 100000,599999,10000                      ;^Begin Loop
13: Cycles through ATYPE for current Lanes in Loop 12
        _totftat=_totftat+_wcgspd[_aiter3+_fiter2+_liter4] ; in order to
generate total X for FTYPE by Lane for all ATYPE.
        _totftatdist=_totftatdist+_dmiles[_aiter3+_fiter2+_liter4]
      ENDLOOP                                              ;^End Loop 13.

      if (_totftatdist>0)
        _totftatspd=_totftat/_totftatdist
      else
        _totftatspd=0
      endif
```

```
      print list="\\"," ",_totftatspd(10.2C)," ", PRINTO=1
    ENDLOOP                                                    ;^End Loop 12.

    if (_tafvdist>0)
      _tafvspd=_tafvcheck/_tafvdist
    else
      _tafvspd=0
    endif
    print list="\\"," ",_tafvspd(10.2C), PRINTO=1
  endif                                                         ;^End Condition
3.
 endif
ENDLOOP                                                        ;^End Loop 9.

Print  list= "-------------------------------------------------------------
-------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                     ;^Initialize
all ATYPE total X.
_superdist=0

LOOP _liter6=1,9,1                                                ;^Begin Loop
14: Cycles through Lanes.

  _lntotals=0                                                     ;^Initialize
total X for Lanes.
  _lndist=0

  LOOP _aiter5=100000,599999,100                                  ;^Begin Loop
15: Cycles through ATYPE and
    if ((_aiter5<105000 | _aiter5>105999) &
        (_aiter5<115000 | _aiter5>115999) &
        (_aiter5<125000 | _aiter5>125999) &
        (_aiter5<135000 | _aiter5>135999) &
        (_aiter5<145000 | _aiter5>145999) &
        (_aiter5<155000 | _aiter5>155999) &
        (_aiter5<165000 | _aiter5>165999) &
        (_aiter5<175000 | _aiter5>175999) &
        (_aiter5<185000 | _aiter5>185999) &
        (_aiter5<195000 | _aiter5>195999) &
        (_aiter5<205000 | _aiter5>205999) &
        (_aiter5<215000 | _aiter5>215999) &
        (_aiter5<225000 | _aiter5>225999) &
        (_aiter5<235000 | _aiter5>235999) &
        (_aiter5<245000 | _aiter5>245999) &
        (_aiter5<255000 | _aiter5>255999) &
        (_aiter5<265000 | _aiter5>265999) &
        (_aiter5<275000 | _aiter5>275999) &
        (_aiter5<285000 | _aiter5>285999) &
        (_aiter5<295000 | _aiter5>295999) &
        (_aiter5<305000 | _aiter5>305999) &
        (_aiter5<315000 | _aiter5>315999) &
        (_aiter5<325000 | _aiter5>325999) &
        (_aiter5<335000 | _aiter5>335999) &
        (_aiter5<345000 | _aiter5>345999) &
```

```
        (_aiter5<355000 | _aiter5>355999) &
        (_aiter5<365000 | _aiter5>365999) &
        (_aiter5<375000 | _aiter5>375999) &
        (_aiter5<385000 | _aiter5>385999) &
        (_aiter5<395000 | _aiter5>395999) &
        (_aiter5<405000 | _aiter5>405999) &
        (_aiter5<415000 | _aiter5>415999) &
        (_aiter5<425000 | _aiter5>425999) &
        (_aiter5<435000 | _aiter5>435999) &
        (_aiter5<445000 | _aiter5>445999) &
        (_aiter5<455000 | _aiter5>455999) &
        (_aiter5<465000 | _aiter5>465999) &
        (_aiter5<475000 | _aiter5>475999) &
        (_aiter5<485000 | _aiter5>485999) &
        (_aiter5<495000 | _aiter5>495999) &
        (_aiter5<505000 | _aiter5>505999) &
        (_aiter5<515000 | _aiter5>515999) &
        (_aiter5<525000 | _aiter5>525999) &
        (_aiter5<535000 | _aiter5>535999) &
        (_aiter5<545000 | _aiter5>545999) &
        (_aiter5<555000 | _aiter5>555999) &
        (_aiter5<565000 | _aiter5>565999) &
        (_aiter5<575000 | _aiter5>575999) &
        (_aiter5<585000 | _aiter5>585999) &
        (_aiter5<595000 | _aiter5>595999))

      _lntotiter=_aiter5+_liter6                              ; FTYPE in
order to generate total X for
      _lntotals=_lntotals+_wcgspd[_lntotiter]             ; Lanes.
      _lndist=_lndist+dmiles[_lntotiter]

    endif
  ENDLOOP                                                  ;^End Loop 15.

  if (_lndist>0)
    _lnspd=_lntotals/_lndist
  else
    _lnspd=0
  endif
  print list="\\"," ",_lnspd(10.2C)," ", PRINTO=1
  _supertotal=_supertotal+_lntotals                             ;^Generate
total X for all ATYPE.
  _superdist=_superdist+_lndist

ENDLOOP                                                    ;^End Loop 14.
if (_superdist>0)
  _superspd=_supertotal/_superdist
else
  _superspd=0
endif
print list="\\"," ",_superspd(10.2C), PRINTO=1
print list=" ","\n ", PRINTO=1

;---------------1-DIGIT FACILITY TYPES BY 1-DIGIT AREA TYPES SUMMARY-----
-----------
```

```
Print  list=  "Total  Summary  Area  Types  by  Facility  Types  ",  PRINTO=1
;^Header
Print list= "                                                      Single
Digit Facility Types                                                 ",
PRINTO=1
Print  list= "AType           1x             2x             3x              4x
5x           6x           7x           8x           9x      Totals", PRINTO=1
Print  list=  "------------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1

LOOP _a1iter2=100000,599999,100000                             ;^Begin Loop
16: Cycles through ATYPE by 10 to
  _aat1=int(_a1iter2/100000)                                   ; get single
digit ATYPE.
  print list= _aat1(1.0),"x","    ", PRINTO=1

  _fttotal=0                                                   ;^Initialize
total X for all ATYPE
  _ftdist=0

    LOOP _f1iter=1000,9900,1000                                ;^Begin Loop
17: Cycles through FTYPE by 10 to
                                                           ;   get   single
digit FTYPE.
      _totftlns=0                                              ;^Initialize
total X for all FTYPE by all Lanes.
      _totftlnsdist=0
      if (_f1iter<5000 | _f1iter>5999)
      LOOP _fiter3=_f1iter,9900,100                            ;^Begin Loop
18: Cycles through two-digit FTYPE
        if (_fiter3>_f1iter+999) BREAK                        ; for current
single digit FTYPE in Loop 17.

        LOOP _aiter6=_a1iter2,599999,10000                     ;^Begin Loop
19: Cycles through two-digit ATYPE
          if (_aiter6>_a1iter2+99999) BREAK                   ; for current
single digit ATYPE in Loop 16.

            LOOP                                              _liter7=1,9,1
;^Begin Loop 20: Cycles through Lanes for current FTYPE and ATYPE
              _totftlns=_totftlns+_wcgspd[_aiter6+_fiter3+_liter7]    ;  in
order to generate total X for FTYPE by ATYPE.

_totftlnsdist=_totftlnsdist+_dmiles[_aiter6+_fiter3+_liter7]
            ENDLOOP                                                   ;^End
Loop 20.

        ENDLOOP                                            ;^End Loop 19.

      ENDLOOP                                              ;^End Loop 18.
      endif
      _fttotal=_fttotal+_totftlns                                ;^Generate
total X for ATYPE.
      _ftdist=_ftdist+_totftlnsdist

      if (_totftlnsdist>0)
```

```
        _totftlnsspd=_totftlns/_totftlnsdist
      else
        _totftlnsspd=0
      endif
      print list="\\"," ",_totftlnsspd(10.2C)," ", PRINTO=1
    ENDLOOP                                                  ;^End Loop 17.

  if (_ftdist>0)
    _ftspd=_fttotal/_ftdist
  else
    _ftspd=0
  endif
  print list="\\"," ",_ftspd(10.2c), PRINTO=1
ENDLOOP                                                      ;^End Loop 16.

Print  list=  "------------------------------------------------------------
------------------------------------------------------------------",
PRINTO=1
print list="Totals", PRINTO=1

_supertotal=0                                                   ;^Initialize
overall total X.
_superdist=0

LOOP _f1iter2=1000,9900,1000                                    ;^Begin Loop
21: Cycles through FTYPE by 10
                                                             ;  to get  single
digit FTYPE.
  _ftotals=0                                                    ;^Initialize
total X by FTYPE
  _ftdist=0

  LOOP  _fiter4=_f1iter2,9900,100                               ;^Begin Loop
22: Cycles through FTYPE by 1 to
    if (_fiter4>_f1iter2+999) BREAK                           ; get all two-
digit FTYPE for current FTYPE in
    if            (_f1iter2<5000            |            _f1iter2>5999)
; Loop 21.
    LOOP _liter8=1,9,1                                          ;^Begin Loop
23: Cycles through Lanes.

      LOOP _aiter7=100000,599999,10000                          ;^Begin Loop
24: Cycles through ATYPE in order
        _ftotiter=_aiter7+_fiter4+_liter8                      ; to generate
total X by single digit FTYPE.
        _ftotals=_ftotals+_wcgspd[_ftotiter]
        _ftdist=_ftdist+_dmiles[_ftotiter]
      ENDLOOP                                                ;^End Loop 24.

    ENDLOOP                                                  ;^End Loop 23.
    endif
  ENDLOOP                                                    ;^End Loop 22.
  _supertotal=_supertotal+_ftotals                               ;^Generate
overall total for all single digit ATYPE
  _superdist=_superdist+_ftdist                               ; by all single
digit FTYPE.
```

```
  if (_ftdist>0)
    _ftspd=_ftotals/_ftdist
  else
    _ftspd=0
  endif
  print list="\\"," ",_ftspd(10.2C)," ", PRINTO=1
ENDLOOP                                                    ;^End Loop 21.

if (_superdist>0)
  _superspd=_supertotal/_superdist
else
  _superspd=0
endif
_totalcgspd=_superspd
print list="\\"," ",_superspd(10.2C), PRINTO=1
print list=" ", PRINTO=1
;*************************************************************************
; END CONGESTED SPEED REPORT
;*************************************************************************

;=========================================================================
==============
; BEGIN SCREENLINE SUMMARY REPORT ------------- X = SCREENLINE Volume
over Count
;=========================================================================
==============
Print list=" ", PRINTO=1
Print
list="*******************************************************************
*************************************************************", PRINTO=1
Print                                                            list="*
*", PRINTO=1
Print list="*                                                 Screenline
Volume over Count                                                    *",
PRINTO=1
Print                                                            list="*
*", PRINTO=1
Print
list="*******************************************************************
*************************************************************", PRINTO=1
Print list=" ", PRINTO=1

LOOP _sliter=1,99,1
  if (_slvol[_sliter]>0)
    Print   list=   "Screenline   ",_sliter(2.0),"   Volume/Count   Ratio:
", (_slvol[_sliter]/_slcnt[_sliter])(4.2), PRINTO=1
    if (_sliter/5=int(_sliter/5)) Print list= " ", PRINTO=1
  endif
ENDLOOP
;*************************************************************************
; END SCREENLINE SUMMARY REPORT
;*************************************************************************

;=========================================================================
==============
; BEGIN SUMMARY REPORT
```

```
;==============================================================================
==============
Print list=" ", PRINTO=1
Print
list="************************************************************************
**************************************************************", PRINTO=1
Print                                                                  list="*
*", PRINTO=1
Print                                                                  list="*
Overall                                                                Summary
*", PRINTO=1
Print                                                                  list="*
*", PRINTO=1
Print list=" ", PRINTO=1

print list= " Total Number of Links:         ",_numlinks(10.0C),
      "\n", " Total Lane Miles:              ",_lanemiles(10.2C),
      "\n", " Total Directional Miles:       ",_dirmiles(10.2C),
      "\n", " Total VMT using Volumes:        ",_vmtvoloncounts(10.0C), "
(Links With Counts)",
      "\n", " Total VMT using Counts:        ",_vmtcountsoncounts(10.0C),
"    (Links With Counts)",
      "\n", " Total VMT Volume over Counts:  ",_vmtvolovercounts(10.2C),
"    (Links With Counts)",
      "\n", " Total VHT using Volumes:        ",_vhtvoloncounts(10.0C), "
(Links With Counts)",
      "\n", " Total VHT using Counts:         ",_vhtcountsoncounts(10.C),
"    (Links With Counts)",
      "\n", " Total VHT Volume over Counts:  ",_vhtvolovercounts(10.2C),
"    (Links With Counts)",
      "\n", " Total Volumes All Links:       ",_totalvolumes(10.0C),
      "\n", " Total VMT All Links:           ",_totalvmt(10.0C),
      "\n", " Total VHT All Links:           ",_totalvht(10.0C),
      "\n", " Original Speed (MPH):          ",_totalffspd(10.2C),
      "\n", " Congested Speed (MPH):         ",_totalcgspd(10.2C),
  PRINTO=1
;~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
~~~~~~~~~
Print list=" ", PRINTO=2
Print
list="************************************************************************
**************************************************************", PRINTO=2
Print                                                                  list="*
*", PRINTO=2
Print                                                                  list="*
Overall                                                                Summary
*", PRINTO=2
Print                                                                  list="*
*", PRINTO=2
Print
list="************************************************************************
**************************************************************", PRINTO=2
Print list=" ", PRINTO=2

print list= " Total Number of Links:         ",_numlinks(10.0C),
      "\n", " Total Lane Miles:              ",_lanemiles(10.2C),
```

```
      "\n", " Total Directional Miles:       ",_dirmiles(10.2C),
      "\n", " Total VMT using Volumes:        ",_vmtvoloncounts(10.0C), "
(Links With Counts)",
      "\n", " Total VMT using Counts:        ",_vmtcountsoncounts(10.0C),
"    (Links With Counts)",
      "\n", " Total VMT Volume over Counts:  ",_vmtvolovercounts(10.2C),
"    (Links With Counts)",
      "\n", " Total VHT using Volumes:        ",_vhtvoloncounts(10.0C), "
(Links With Counts)",
      "\n", " Total VHT using Counts:         ",_vhtcountsoncounts(10.C),
"    (Links With Counts)",
      "\n", " Total VHT Volume over Counts:  ",_vhtvolovercounts(10.2C),
"    (Links With Counts)",
      "\n", " Total Volumes All Links:       ",_totalvolumes(10.0C),
      "\n", " Total VMT All Links:           ",_totalvmt(10.0C),
      "\n", " Total VHT All Links:           ",_totalvht(10.0C),
      "\n", " Original Speed (MPH):          ",_totalffspd(10.2C),
      "\n", " Congested Speed (MPH):         ",_totalcgspd(10.2C),
  PRINTO=2

ENDPROCESS

ENDRUN
```

APPENDIX K: INPUT AND OUTPUT NETWORK FORMAT

Input and Output Network Format

Input Network Format (HNET20{YEAR}.NET)

Note: {YEAR} represents a scenario year in the last two digits. The file name will be HNET2007.NET if it is base year 2007 scenario or HNET2035.NET if it is 2035 Existing plus Committed scenario.

Attribute List for HNET20{YEAR}.NET

Link Attributes

A – A node

B – B node

SCRN – FSUTMS screenline code

DIR – Direction code (0=twoway, 1=oneway)

FTYPE – FSUTMS two-digit facility type. It also should be noted that any link present in the network with FTYPE=0 will not be carried through the model.

ATYPE – FSUTMS two-digit area type

LANES – Directional number of lanes

ROAD_NAME_ – Street name

ROAD_NAME2 – Alternate street name

TYPE – Represents it is a U.S., state or county road if applicable

RCIFCLASS – RCI functional classification

DISTANCE – Link length in miles

BK_LNS – Bike lanes code (0 = no bike lanes, 1 = in street bike lanes, 2 = wide buffers for biking, 3 = off-street multipurpose facilities)

MOCF – Model output conversion factor that is found from FDOT Traffic Info DVD

AADT07 – Year 2007 two-way average annual daily traffic estimate, only for links where the count was available. For I-75 this is the sum of both directions.

COUNT07 – Directional traffic count with MOCF applied. This is used when VC (volume-to-count ratio) is calculated in the output network.

Node Attributes

N – Node number

X – X coordinate

Y – Y coordinate

PNRDESCRIP – Bus park-and-ride lot description (text)

PNRSVCAREA – Maximum park-and-ride service area (highway access distance), in miles.

PARKINGSPA – Number of park-and-ride lot parking spaces. This value is optional because the model does not constrain the auto access mode by the number of spaces.

PNRTERMTIM – Park-and-ride terminal time (walk time from the auto to the bus stop).

KNRTERMTIM – Kiss-and-ride (auto drop-off) terminal time (walk time from the auto to the bus stop).

AMUSEFLAG – Flag to turn the lot on or off for the AM or peak network. If "1", the lot is used, if "0", the model ignores the lot.

AMPNRCOST – Cost in cents to park for AM (peak) park-and-ride trips.

MDUSEFLAG – Flag to turn the lot on or off for the MD or off-peak network. If "1", the lot is used, if "0", the model ignores the lot.

MDPNRCOST – Cost in cents to park for MD (off-peak) park-and-ride trips

■ Output Network Format (COMBINEDLOADED.NET)

Note: All the input attributes that were included in the input network of HNET20{YEAR}.NET are carried over to the output network.

Attribute List for COMBINEDLOADED.NET

NONMOTORVOL – Total nonmotorized volumes

CGSPEED – Congested speed

CGTIME – Congested travel time (minutes)

SELZONE_MOTOR – Select zone volumes if ZoneData{YEAR}.DBF included the value of one in the SELECTZONE attribute.

UF_MOTOR – Light plus heavy vehicles with a UF trip end

LIGHTVEHICLES – Total light vehicles

HEAVYTRUCKS – Total heavy trucks

MOTORIZEDVOL – Light vehicles plus heavy trucks (MOTORIZEDVOL is most important because it is directional assigned auto volume that is used for highway evaluation)

VMT – Total motorized vehicle miles of travel.

VHT – Total motorized vehicle hours of travel.

PEDESTRIANS – Pedestrian volumes.

BICYCLISTS – Bike volumes.

VOL_CAP – Motorized volume/ (FSUTMS LOS C capacity)

DAILYCAPE– Daily FSUTMS LOS E capacity

VOL_CAPE – Motorized volume/ (FSUTMS LOS E capacity)

TranVol – Total transit volume (daily persons)

VC – 2007 Volume-to-Count Ratio (VC=MOTORIZEDVOL/COUNT07) This is only available in the base year 2007 scenario.

CONFAC – percentage of daily traffic occurring in the peak hour from VFACTORS.

CAPACITY – Hourly link capacity from the FSUTMS Speed-Capacity table, multiplied by the number of lanes

DAILYCAP – Daily capacity for roadway assignment

SPEED – Free-flow speed from the FSUTMS Speed-Capacity table. If needed, free-flow travel time in minutes can be calculated as: TIME=60*DISTANCE/SPEED

WALKTIME – Travel time in minutes for walk trips at 2.5 miles per hour.

BK_SPD – Bicycle speed

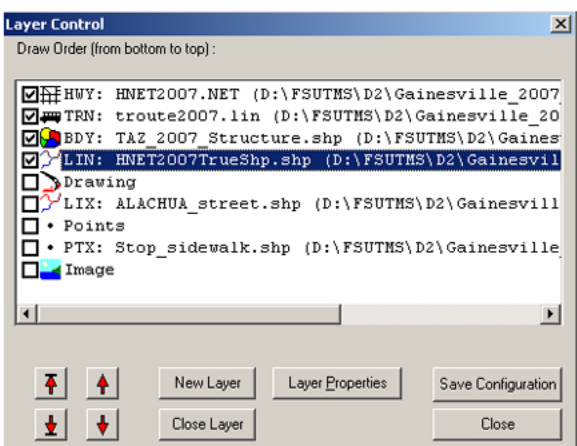
BK_TIME – Bicycle travel time in minutes

Notes Regarding True Shepe Display of Networks

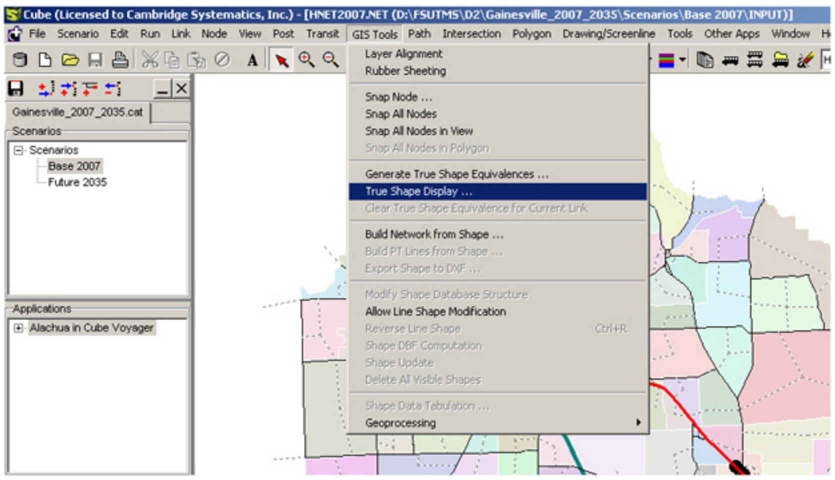
HNET20{YEAR}.NET and COMBINEDLOADED.NET in the Gainesville MTPO 2007 should be applied with True Shapefile Display in Cube software to be shown with curved line shape. Please use True Shape polyline GIS shapefile which is available in model data in the following file location.

…\Gainesville_2007_2035\Media\Street\HNET2007TrueShp.shp

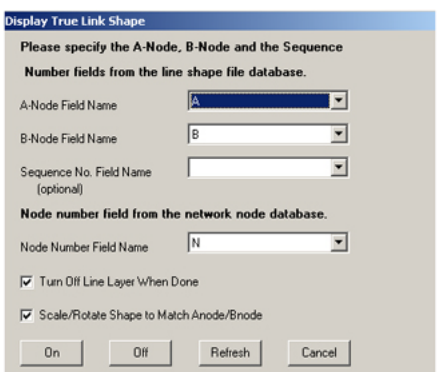
Step 1. Make sure that True Shape GIS shapefile is correctly navigated and overlaid underneath the input or output network, as shown in the next screenshot



Step 2 Go to Tool Bar, and find and select "True Shape Display" function under "GIS Tools"



Step 3 "A" should be selected for A-Node, "B" for B-Node and "N" for Node Number. Click Ok.



Now, you should have a network displayed with curved shape instead of straight line shape.

APPENDIX L: GLOSSARY OF TERMS AND ABBREVIATIONS

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Glossary and Abbreviations

GLOSSARY OF TERMS

(Source FSUTMS CUBE Comprehensive Workshop Front Matter Documentation – April 2010)

Access – Connectivity between a TAZ and the network. Access can be distinguished between highway and transit networks, and between automobile and pedestrian modes.

Advanced Traffic Management Systems (ATMS) -ATMS is the application of information and telecommunications technologies to the management of freeway and surface street facilities to maximize the use of existing roadway capacity, improve safety, reduce congestion, and provide predictable services

Advanced Traveler Information Systems (ATIS) - The collection, aggregation and dissemination of information to assist surface transportation travelers in moving from an origin to a destination.

Advanced Public Transportation Systems (APTS) - The use of information and communication technologies to improve the performance of transit services and level of service provided to customers.

Alightings - The number of persons getting off a transit vehicle.

Area Type - Network link code representing the type of land use in the area.

Attraction - The desirability of a zone. For non-home-based trips, attractions in a zone can be considered synonymous with trip destinations in that zone.

Auto Occupancy Rate - Average number of persons per vehicle.

Best Path - One of many paths between a specific origin and destination pair in a transit network determined to be the most efficient means of traveling from the origin to the destination. The default transit path methodology used in Florida.

Boardings - The number of persons getting on a transit vehicle.

Calibration - A process where models are adjusted to simulate trip-making characteristics of households in the model study area to match observed traffic activity in the study area. FSUTMS Comprehensive Modeling Workshop – Glossary of Terms Page 14

Capacity - The maximum number of vehicles that can pass over a given section of a lane or roadway in one direction (or in both directions for a two-lane or three-lane highway). It is the maximum rate of flow that has a reasonable expectation of occurring. The terms “capacity” and “possible capacity”are synonymous. In the absence of a time modifier, capacity is an hourly volume. In expressing capacity, it is essential to state the prevailing roadway and traffic conditions under which the capacity is applicable. The capacity would not normally be exceeded without changing one or more of the conditions that prevail.

Centroid - Centroids are nodes used to identify the center of activity within a traffic analysis zone.

Centroid Connector - The Centroid Connector connects the traffic analysis zone centroid to the surrounding network links.

Cordon Line - An imaginary line encircling a study area. Traffic counts, travel origins and destinations, and other traffic data are collected at the locations where the imaginary line intersects the roads entering and leaving the study area. Used in modeling to estimate traffic entering and exiting the study area.

Commercial Vehicle Operations (CVO) - ITS technologies that uniquely support commercial vehicle operations to promote safe, economical, and efficient truck transportation.

Cube Voyager - A modeling software, developed by Citilabs, used as a modeling engine for the Florida Standard Model.

Demand - A desire for travel from an origin to a destination. Demand is not a fixed amount of travel, but afunction of level of service.

Destination - Location to which trips are made, variously identified as a zone of specified area (in aggregate travel forecasting) or a location with a specified "attraction power," measured by things such as employees (for work trips) or square feet of sales area (for shopping trips).

Desire Line - Lines on a map representing the number of trips between zones. The thicker the line, the larger the number of trips.

EE Trips - External-External trips represent trips that travel through but have both trip ends outside of the model study area.

Facility Type - A network link code representing the type of service a roadway provides, such as principal arterial, minor arterial, collector, etc. The facility type does not always match the functional classification, as the facility type is used for modeling purposes only to simulate actual conditions.

Friction Factors (F-Factors, FF) - Reflects the regional sensitivities toward certain trip lengths for certain trip purposes. For example, home-based shopping trips may tend to be shorter than home-based work trips. Used to modify impedance during trip distribution.

Gravity Model - A mathematical model of trip distribution based on the premise that trips produced in any given area will distribute themselves in accordance with the accessibility of other areas and the opportunities they offer.

Headway - The amount of wait time between arrivals at a given transit stop for a given transit line.

Highway-Only Model - A model that only includes a roadway network thereby excluding transit.

Home-Based Trip - A trip with one end at the residence of the person making the trip.

HOV Trips - High Occupancy Vehicle trips, or carpool trips, represent the number of trips with usually two or more persons in the vehicle, including the driver.

Impedance - More general than Friction Factors, impedance shows the effect that various levels of time and cost will have on travel between zones. Impedance can include various types of time (walking, waiting, riding, etc.) and cost (fares, operating costs, tolls, parking costs, etc.). Other factors, such as comfort, convenience, personal safety, etc., may also be included.

IE Trips - Internal-External trips represent trips that have one end inside the model study area and one end outside the model study area.

II Trips - Internal-Internal trips represent trips that have both ends inside the model study area.

Incident Management Systems - These systems manage both predicted and unexpected incidents so that the impact to the transportation network and traveler safety is minimized. Incident management involves five major phases. These are incident detection, incident verification, incident response, incident clearance, and queue dissipation.

Intelligent Transportation Systems (ITS) - FSUTMS Comprehensive Modeling Workshop – Glossary of Terms Page 16 The application of information and telecommunications technologies to the management and operation of transportation systems.

IntelliDrive/Vehicle-Infrastructure Integration (VII) - The establishment of vehicle to vehicle and vehicle to roadside communication capability nationwide to enable a number of new services that provides significant safety, mobility, and commercial benefits.

Intrazonal Trip - A trip with both its origin and destination in the same zone.

Kiss-and-Ride (KNR) - A type of transit trip characterized by a transit rider being dropped off at a transit station by automobile and boarding a transit line.

Level of Service (LOS) - Multidimensional characteristics of the transportation service provided that are usually identified specifically by the location of the origin and destination of a trip and that are divided into those that are quantifiable (travel time, travel cost, number of transfers) and those that are difficult to quantify (comfort, mode image).

Link - A basic component of a network representing a segment of roadway. This component is a primary unit of analysis and carries data pertaining to roadway characteristics, traffic volumes, and performance measures.

Managed Lanes - Managed lanes help maximize the use of existing highway capacity by using price and/or occupancy restrictions to manage the number of vehicles traveling on them. Managed lanes maintain volumes consistent with acceptable levels of service even during peak travel periods.

Micro-coding - A transit modeling technique used to introduce a higher level of detail at transit stations by separating access points between modes and introducing links connecting them. allows for a more realistic representation of transferring between modes.

Mode Choice - Mode choice models calculate which trips will use the highway network and which will use the transit network. The model predicts how the trips will be divided among variable modes of travel.

Mode of Travel - Means of travel such as auto driver, vehicle passenger, mass transit passenger, walking or bicycle.

Nested Logit Model (NLM) - Analytical form for demand modeling that is suited to modeling of multiple travel choice situations by grouping different modes of travel according to their likelihood for direct competition.

Network - Set of nodes and connecting links that represent transportation facilities in an area. Attributes normally associated with links are distances, levels of service, capacities, and volumes.

Node - A point where two links join in a network, usually representing a decision point for route choice but sometimes indicating only a change in some important link attribute.

Occupancy Model - Converts person trips to vehicle trips using auto occupancy factors.

Origin - The location of the beginning of a trip or the zone in which a trip begins.

Park-and-Ride (PNR) - A type of transit trip characterized by the act of parking at a transit station and boarding a transit line.

Path - A set of links representing a possible route between an origin and a destination. There can be a number of paths between any specific origin and destination pair.

Peak Period - The period during which the maximum amount of travel occurs. This may be one or more hours.Generally, there is a morning peak and an afternoon peak and traffic assignments may be made for each period.

Productions - The number of home-based trip ends in the zone of residence. For all non-home based trips, productions are synonymous with origins.

Ramp Metering - The application of signal control devices to regulate the number of and/or how vehicles merge into the freeway mainline lanes with the objective in most cases to balance flow and demand.

Ridership - Number of individuals using a transit line. Used as an assessment of a transit line's attractiveness.

RMSE - Root Mean Square Error is a measure of total error defined as the square root of the sum of the variance and the square of the bias. It assumes that larger forecast errors are of greater importance than smaller ones; hence they are given a more than proportionate penalty.

Road-Weather Information Systems (RWIS) - RWIS provides information to travelers and also to agencies for better deployment of resources. They use combinations of weather information services and data collected from environmental sensors.

Screenline - An imaginary line, usually along a physical barrier such as a river or railroad tracks, splitting the study area into parts. Traffic counts and possibly interviews are conducted along this line, and the crossings are compared to those calculated from the home interview data as a check of survey accuracy. Crossing may also be compared with model estimates as part of calibration.

Selected Link Analysis - Traces the entire length of each trip passing through a particular link or set of links along the network to determine where such trips are coming from and going to.

Selected Zone Analysis - Traces the entire length of each trip traveling to or from a particular zone or set of zones.

Shortest Path - A path representing the least cost option of traveling between any specific origin and destination pair.

Signal Preemption - Traffic signal preemption is a type of system that allows the normal operation of traffic lights to be preempted, often to assist emergency vehicles. The most common use of these systems is to provide emergency vehicles priority by changing traffic signals in the path of the vehicle to green and stopping conflicting traffic.

Smart work zones (SWZ) - SWZ are automated systems that provide real-time information on work zone traffic conditions. In recent years, transportation agencies across the nation have deployed portable ITS technologies to monitor traffic and manage mobility and safety during construction and maintenance of highways.

Socioeconomic Data - Demographic data, such as household, population, and employment characteristics, that are input into the model to determine the impact on trip-making patterns.

SOV Trips - Single Occupancy Vehicle trips, or drive-alone trips, represent the number of trips with only one person in the vehicle, including the driver.

Special Generators - Concentrations of activities of such size or unusual nature to warrant special consideration in trip generation analysis.

Station - A node in the transit network that offers an opportunity for automobile access. FSUTMS Comprehensive Modeling Workshop – Glossary of Terms Page 19

Stop Node - A node along a transit line that represents an opportunity for boardings and alightings.

Study Area Boundary - The area that is expected to take on urban characteristics in the next 20 to 30 years (by the end of the planning period).

TAZ - Traffic Analysis Zone - a small geographic area that serves as the primary unit of analysis in a travel forecasting model.

Traffic Count - The observed number of trips collected at a specific location. Used to assist with model validation.

Transit Legs - Distinct units of a transit line representing a segment from one stop to the next. Transit paths are built by assessing the relative costs of available transit legs.

Transit Line - A collection of transit stops arranged into a route along which public transport vehicles travel. A system of interacting transit lines is a transit network

Transit Signal Priority - Transit Signal Priority (TSP) is an operational strategy that facilitates the movement of in-service transit vehicles through traffic signal controlled intersections. Signal priority modifies the normal signal operation process to better accommodate transit vehicles.

Transportation Model - A mathematical description of a transportation system's characteristics including traffic volumes, and use, roadway type and population. After a mathematical relationship is established, the model is used to predict traffic volumes based on anticipated changes in the other characteristics.

Trip Assignment - The process of determining route or routes of travel and allocating the zone-to-zone trips to these routes.

Trip Distribution - The process by which the movement of trips between zones is estimated. The data for each distribution may be measured or estimated by a growth factor process, or by synthetic model.

Trip End - Either a trip origin or a trip destination.

Trip Generation - A general term describing the analysis and application of the relationships that exist among the trip makers, the urban area, and trip making. It is used to determine the number of trip ends in any part of the urban area.

Trip Purpose - The reason for making a trip, normally one of several possible purposes. Each trip may have a purpose at each end; (e.g., home to work) or may be classified by the purpose at the non-home end (e.g. home to shop).

Trip Table - A table showing trips between zones -- either directionally or total two-way. The trips may be separated by mode, by purpose, by time period, by vehicle type, or other classification.

Trip Rate - The average number of trips per household for specific trip purposes. In Florida, trip rates are usually applied by household size and auto availability within each zone by trip purpose.

Validation - The procedure used to adjust models to simulate base year traffic conditions. A preliminary step that must be undertaken before models may be reasonably used to forecast future traffic conditions.

VHT - Vehicle hours of travel.

VMT - Vehicle miles of travel.

Volume-to-Capacity Ratio - The number of trips simulated in the model divided by the capacity of the link. A volume-to-capacity ratio of 1.0 represents 100 percent of the capacity.

Volume-to-Count Ratio - The number of trips simulated in the model divided by the count on the link. A volume-to-count ratio of 1.0 represents an exact match between the simulated volumes and the observed counts. Typically assessed only during validation.

ACRONYMS (Sourced from FDOT Project Forecasting Handbook 2002)
ADT Average Daily Traffic

AADT Annual Average Daily Traffic

D Directional traffic split

D30 Proportion of traffic in the peak direction for the 30th highest hour

DHV Design Hour Volume

DDHV Directional Design Hour Volume

DHT Design Hour Truck Percentage

ESAL Equivalent Single Axle Load

FDOT Florida Department of Transportation

FHWA Federal Highway Administration

FIHS Florida Intrastate Highway System

FM Financial Management

FPI Financial Project Identifier

FSUTMS Florida Standard Urban Transportation Model Structure computer program

HCM Highway Capacity Manual

K30 Ratio of DHV to AADT for the 30th highest hour

Lf Lane Factor

LGCP Local Government Comprehensive Plan

LOS Level of Service

MOCF Model Output Conversion Factor

MPO Metropolitan Planning Organization

PD&E Project Development and Environment

PHF Peak Hour Factor

PTMS Portable Traffic Monitoring Site

PSWADT Peak Season Weekday Average Daily Traffic

RCI Roadway Characteristics Inventory database

SF Seasonal Factor

T Truck Factor

TCI Traffic Characteristics Inventory database

TTMS Telemetric Traffic Monitoring Site

V/C Volume to Capacity Ratio

WPA Work Program Administration

WPI Work Program Item (First 6 digits of FPI)

Additional Resources and/or Recommended Readings

FSUTMS New Standards and Enhancements – A User Oriented Approach, A Florida Model Task Force White Paper, Florida Department of Transportation, Systems Planning Office, January 2006. http://www.fsutmsonline.net/images/uploads/mtf-files/whitepaper.pdf

FSUTMS Powered by CUBE/Voyager Data Dictionary, Florida Department of Transportation, Systems Planning Office, December 2005. http://www.fsutmsonline.net/images/uploads/mtf-files/datadictionary.pdf

FSUTMS Transit Model Application Guide, Florida Department of Transportation, Systems Planning Office, October 2008. http://www.fsutmsonline.net/images/uploads/reports/TM_ApplicationGuide.pdf

APPENDIX M: SCENARIO MANAGER / RUNNING MODEL

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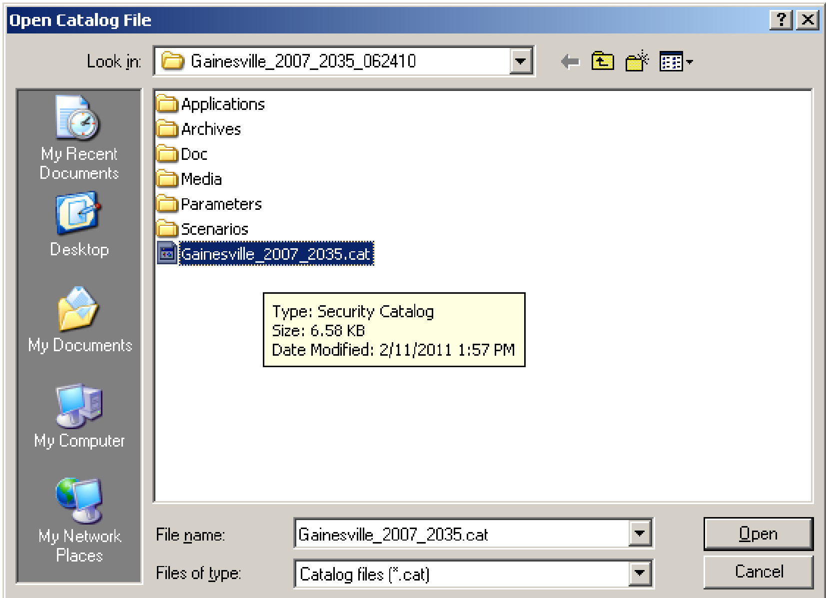
Scenario Manager / Running Model

1. To run the Alachua County model, you first have to open up the Cube Application window by navigating to it or clicking the Cube desktop icon.

2. This brings up a dialog asking for the catalog location of the model.

3. Navigate to the location for the catalog on your computer/network and open it.

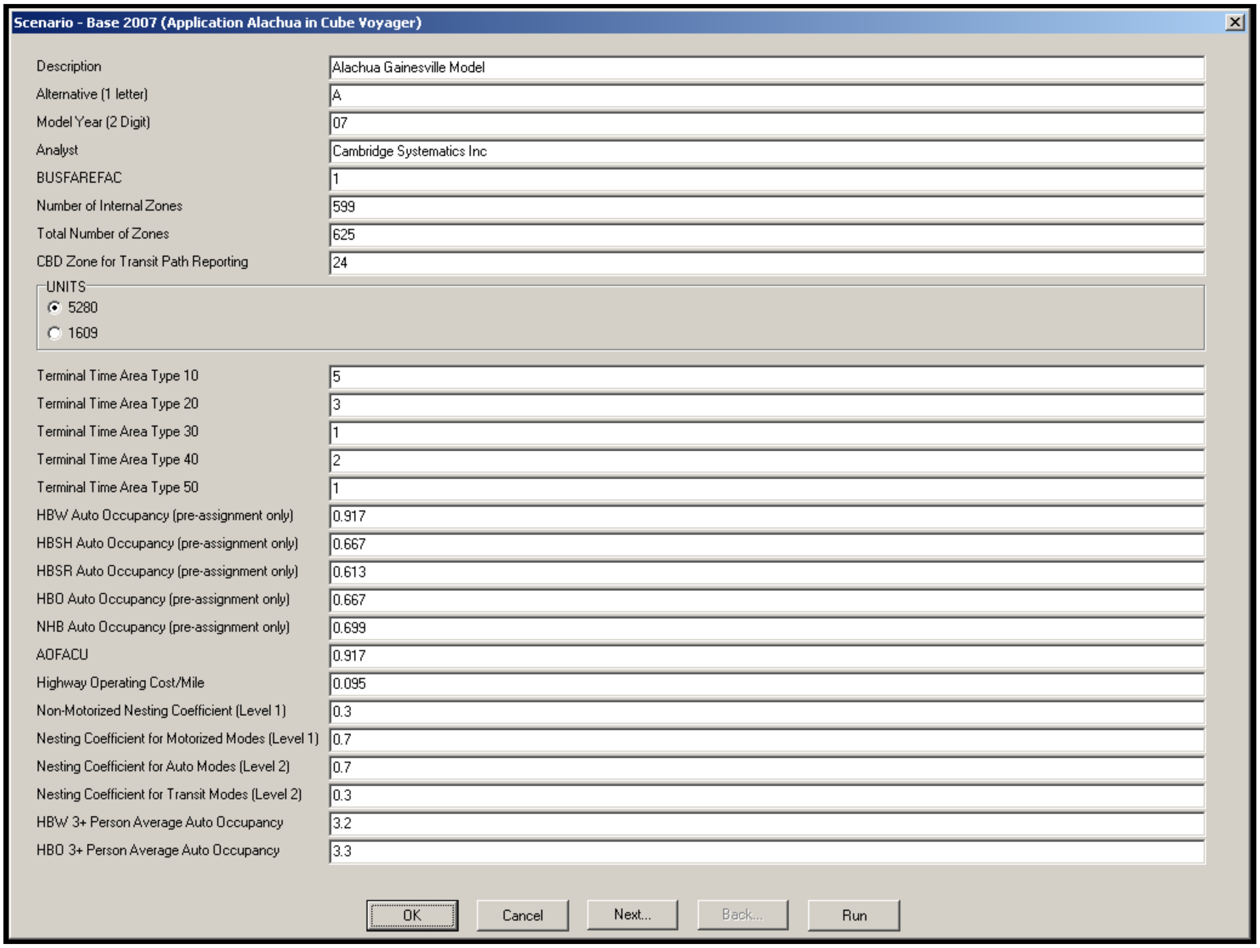


4. This brings up the Gaineville modelapplication window.

The dialog box above is referenced from the FSUTMS Comprehensive Workshop and illustrates the various parts of the Cube catalog file.

5. To run a particular scenario, for example the Base Year, you would go to the Part 1 section, expand the folder beside Scenarios and choose **Base 2007.**

When chosen, the Scenario dialog box is displayed as illustrated below.



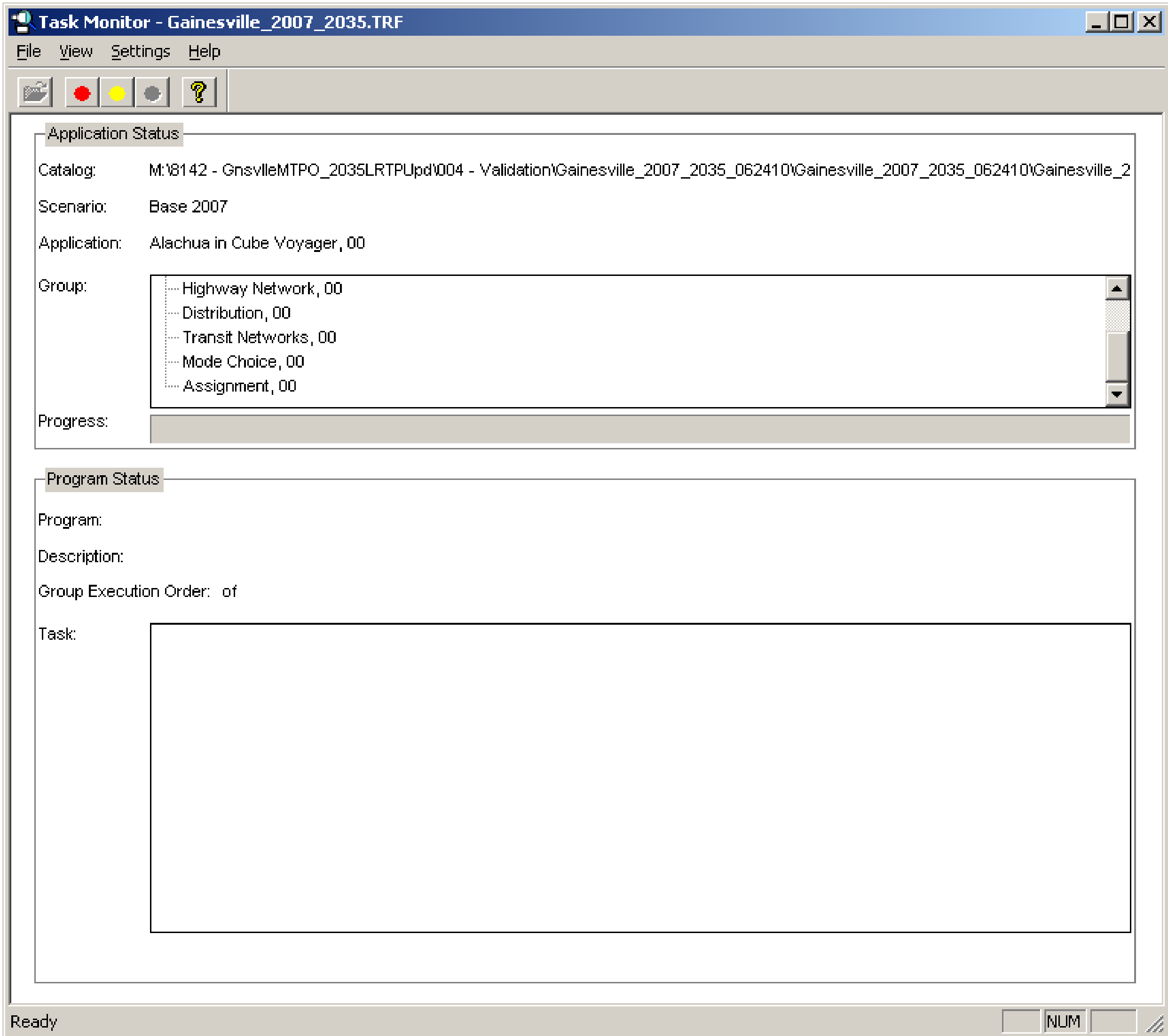
This dialog box allows you to change model runtime options and set model parameters. These parameters are stores as Cube Catalog Keys which are effectively variables which are references in the model script during the relevant model processing phase.The Catalog Key values can also be observed in Part 4 of the Catalog File diagram above.

6. To run the model with the indicated variables, simply press **Run** and then **OK** and the model will be launched. When the model run is completed, press **OK.** You may then analyze the results.

The **Applications** section of the Catalog file shows the model processes and may be used to open the Cube Application Flowchart for a specific step or for the general mode.

The **Data** section of the Catalog file shows the input files, output files and any reports generated by the model run processes.

For further details on the Scenario Manager and running FSUTMS models, you may refer to the content in the FSUTMS Comprehensive Modeling Workshops held periodically throughout the year in various locations across the state.


Task Monitor - Gainesville_2007_2035.TRF
File View Settings Help
Application Status
Catalog:
M:\8142 - GnsvlleMTPO_2035LRTPUpd\004 - Validation\Gainesville_2007_2035_062410\Gainesville_2007_2035_062410\Gainesville_2
Scenario:
Base 2007
Application:
Alachua in Cube Voyager, 00
Group:
Highway Network, 00
Distribution, 00
Transit Networks, 00
Mode Choice, 00
Assignment, 00
Progress:
Program Status
Program:
Description:
Group Execution Order: of
Task:
Ready
NUM

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APPENDIX N: YEAR 2035 NEEDS PLAN ETDM SCREENING RESULTS: COMMUNITY, CULTURAL AND NATURAL ISSUES

ETDM #	PRJNAME	PLAN_ID	FROM_FACILITY	TO_FACILITY	Improvement	100-Foot Buffer Distance	200-Foot Buffer Distance	500-Foot Buffer Distance
11734	NDS: Haile Village Center to Butler Plaza Intermodal Center	T-B	Haile Village Center	Butler Plaza Intermodal Center	Bus Rapid Transit	Community • Over 33% Residential land use • One blockgroup with a median family income under $25,000 • One blockgroup with a minority population over 40% • One Public School • Three Private Schools Cultural • 2 historic structures • 4 archaeological sites • one NRHP-listed site • one Resource Group • 3 Parks • One Trail Natural • One State Funded Hazardous Waste Cleanup Site • One Toxic Release Inventory Site	Community • 2 additional blockgroups with a minority population over 40% • one additional private school Cultural • 7 additional historic structures • 3 additional archaeological sites	Community • 2 additional blockgroups with a minority population over 40% • Alachua County Fire Rescue Station 15 • one additional school Cultural • 5 additional historic structures • 3 additional archaeological sites Natural • one Threatened or Endangered Specie
11735	NDS: Jonesville to Butler Plaza Intermodal Center (via Oaks Mall)	T-C1	Jonesville	Butler Plaza Intermodal Center	Bus Rapid Transit	Community • 2 blockgroups with a median family income under $25,000 • 2 blockgroups with a minority population over 40% • One Private School Cultural • 11 archaeological sites (2 are potentially NRHP-eligible) • one Resource Group • 2 Trails • 4 Parks • 2 Florida Managed Areas Natural • One occurrence of Rare and Imperiled Fish • One State Funded Hazardous Waste Cleanup Site	Community • One cemetery Cultural • 4 historic structures • 2 additional archaeological sites Natural • Special Flood Hazard Areas over 31%	Community • North Florida Regional Medical Center • one private school • one hospital Cultural • 6 additional historic structures • 2 additional archaeological sites • one additional Florida Managed Area • one additional park

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ETDM #	PRJNAME	PLAN_ID	FROM_FACILITY	TO_FACILITY	Improvement	100-Foot Buffer Distance	200-Foot Buffer Distance	500-Foot Buffer Distance
11736	NDS: Northwood Village to UF/ 2nd Ave S (via 13th Street)	T-D	Northwood Village	UF/ 2nd Ave S	Bus Rapid Transit	Community • Over 29% Commercial and Services land use • University of Florida • 10 blockgroups with a median family income under $25,000 • 20 blockgroups with a minority population over 40% • one cemetery • one fire station • one law enforcement station • 2 private schools Cultural • 38 historic structures • one archaeological site • 4 NRHP-listed sites • 9 Resource Groups • 2 existing recreational trails • 6 Trails • one park • 3 Florida Managed Areas • 2 parcel derived parks Natural • Red-Cockaded Woodpecker Consultation Area • 2 occurrences of Rare and Imperiled Fish • 2 Brownfield Boundaries • one waste water facility	Community • 3 additional blockgroups with a minority population over 40% • one additional fire station Cultural • 11 additional historic structures • one additional NRHP-listed site • one additional Resource Group • one additional park Natural • Special Flood Hazard Areas over 29% • one additional waste water facility	Community • one additional school • 8 additional blockgroups with a minority population over 40% • one law enforcement station Cultural • one historic bridge • one greenway • 72 additional historic structures • 3 additional archaeological sites • 3 additional NRHP-listed sites • one additional Resource Group • one additional existing recreational trail • 2 additional parks • one additional Florida Managed Area • 2 additional parks • one additional Florida Managed Area Natural • One Toxic Release Inventory Site

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ETDM #	PRJNAME	PLAN_ID	FROM_FACILITY	TO_FACILITY	Improvement	100-Foot Buffer Distance	200-Foot Buffer Distance	500-Foot Buffer Distance
11737	NDS: Eastside Activity Center (@ SE 43rd St) to Downtown RTS Transfer Center	T-C2	Eastside Activity Center (@ SE	Downtown RTS Transfer Center	Bus Rapid Transit	Community • Over 26% Residential land use • 6 blockgroups with a median family income under $25,000 • 42 blockgroups with a minority population over 40% • 5 private schools • one fire station • 1 cemetery • one law enforcement station • one Front Porch Community Cultural • one historic cemetery • 30 historic structures • 3 archaeological sites • 5 Resource Groups • one existing recreational trail • 6 trails Natural • one Brownfiled Boundary • one Black Bear Nuisance Report • Red-Cockaded Woodpecker Consultation Area • 2 occurrences of Rare and Imperiled Fish	Community • 4 additional blockgroups with a minority population over 40% Cultural • 16 additional historic structures • one NRHP-listed site Natural • one waste water facility	Community • 3 additional schools • 22 additional blockgroups with a minority population over 40% Cultural • 2 parks • 25 additional historic structures • 2 additional archaeological sites • one additional NRHP-listed site • one additional Resource Group Natural • One Toxic Release Inventory Site

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ETDM #	PRJNAME	PLAN_ID	FROM_FACILITY	TO_FACILITY	Improvement	100-Foot Buffer Distance	200-Foot Buffer Distance	500-Foot Buffer Distance
11738	NDS: Santa Fe to Airport (via Oaks Mall, Archer Road, Downtown)	T-A	Santa Fe	Airport	Bus Rapid Transit	Community • Shands Rehabilitation Hospital • Shands Vista Behavioral Health • 2 private schools • one public school • 2 colleges • 17 blockgroups with a median family income under $25,000 • 54 blockgroups with a minority population over 40% • one correctional facility • 3 fire stations Cultural • one historic cemetery • 41 historic structures • 12 archaeological sites • 2 NRHP-listed sites • 10 Resource Groups • 2 existing recreational trails • 6 trails • 5 parks • 5 Florida Managed Areas Natural • one Brownfield Boundary • Special Flood Hazard Areas over 28% • one waste water facility • Red-Cockaded Woodpecker Consultation Area • 3 occurrences of Rare and Imperiled Fish	Community • Select Specialty Hospital Gainesville • Gainesville Regional Airport • Shands Hospital Heliport • Shands Helistop • 4 additional blockgroups with a minority population over 40% • one additional correctional facility • one additional fire station Cultural • one historic bridge • 18 additional historic structures • 4 additional archaeological sites (one potentially NRHP-eligible) • one additional Florida Managed Area Natural • one additional waste water facility • one Black Bear Nuisance Report	Community • 3 additional hospitals • 2 additional schools • 31 additional blockgroups with a minority population over 40% • 2 airports Cultural • 3 additional Florida Managed Areas • 52 additional historic structures • 4 additional archaeological sites • 3 additional NRHP-listed sites • 2 additional Resource Groups • 4 additional parks Natural • One Toxic Release Inventory Site • one Bald Eagle Nesting Territory • one threatened or endangered specie
11739	NDS: Waldo Road Multiway Boulevard	AD	University Avenue	NE 39th Street	Multiway Boulevard	Community • 6 blockgroups with a median family income under $25,000 • 7 blockgroups with a minority population over 40% • one Front Porch Community Cultural • one historic cemetery • 3 Resource Groups • one existing recreational trail • 5 trails Natural • Red-Cockaded Woodpecker	Community • One private school • 6 additional blockgroups with a minority population over 40% Cultural • one historic structure	Community • one fire station • one school • 18 additional blockgroups with a minority population over 40% • one Emergency Medical Service Cultural • 2 parks • 8 additional historic structures

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ETDM #	PRJNAME	PLAN_ID	FROM_FACILITY	TO_FACILITY	Improvement	100-Foot Buffer Distance	200-Foot Buffer Distance	500-Foot Buffer Distance
						Consultation Area • 2 occurrences of Rare and Imperiled Fish		
11740	NDS: SE 4th Ave	AC	Depot Ave	Williston Rd	Reconstruction	Community • Over 28% Residential land use • 3 blockgroups with a median family income under $25,000 • 12 blockgroups with a minority population over 40% Cultural • 6 historic structures • 4 Resource Groups • 2 existing recreational trails • 6 trails • one park Natural • one Brownfield Boundary Red-Cockaded Woodpecker Consultation Area	Community • One additional blockgroup with a minority population over 40% Cultural • one additional historic structure	Community • one fire station • one emergency medical service • 6 additional blockgroups with a minority population over 40%, Cultural • One NRHP-listed site • 7 additional historic structures Natural • one waste water facility
11741	NDS: NW/SW 13th Street	P	SW 16th Ave	NW 23rd Ave	Multimodal Emphasis	Community • Over 29% Commercial and Services land use • University of Florida • 8 blockgroups with a median family income under $25,000 • 7 blockgroups with a minority population over 40% Cultural • one historic bridge • 23 historic structures • one archaeological site • 2 NRHP-listed sites • 4 Resource Groups • one existing recreational trail • 6 trails • one Florida Managed Area Natural • one Brownfield Boundary • Red-Cockaded Woodpecker Consultation Area • one occurrence of Rare and Imperiled Fish	Community • One additional blockgroup with a minority population over 40% Cultural • 15 additional historic structures • one additional NRHP-listed site	Community • one additional school • 3 additional blockgroups with a minority population over 40% Cultural • One park • 63 additional historic structures • one additional archaeological site • one additional NRHP-listed site

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ETDM #	PRJNAME	PLAN_ID	FROM_FACILITY	TO_FACILITY	Improvement	100-Foot Buffer Distance	200-Foot Buffer Distance	500-Foot Buffer Distance
11742	NDS: University Avenue	G	NW 34th St	Waldo Rd	Multimodal Emphasis	Community • Over 29% Residential land use • over 26% Commercial and Services land use • one college • one public school • University of Florida • Amtrak Railroad Terminal • 6 blockgroups with a median family income under $25,000 • 6 blockgroups with a minority population over 40% • one Front Porch Community Cultural • 70 historic structures • 7 NRHP-listed sites • 11 Resource Groups • 5 trails • 2 parks • 3 Florida Managed Areas Natural • Red-Cockaded Woodpecker Consultation Area • one occurrence of Rare and Imperiled Fish	Community • one additional blockgroup with a minority population over 40% • one law enforcement office Cultural • one historic cemetery • 64 additional historic structures • 2 additional NRHP-listed sites • one existing recreational trail Natural • One Brownfield Boundary	Community • 5 additional blockgroups with a minority population over 40% Cultural • One archaeological site • 182 additional historic structures • 6 additional NRHP-listed sites • 2 additional Resource Groups
11743	NDS: NW 34th Street	L	NW 16th Ave	US 441	Add turn lanes	Community • Over 75% Residential land use • 2 private schools • 5 blockgroups with a minority population over 40% • one fire station • one law enforcement station Cultural • one existing recreational trail • 2 trails • 2 parks Natural • 3 occurrences of Rare and Imperiled Fish	Community • One additional blockgroup with a minority population over 40% Cultural • one Resource Group	Community • One additional private school • one additional law enforcement station • one additional fire station Cultural • one greenway • one additional park Natural • Special Flood Hazard Areas over 29%

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ETDM #	PRJNAME	PLAN_ID	FROM_FACILITY	TO_FACILITY	Improvement	100-Foot Buffer Distance	200-Foot Buffer Distance	500-Foot Buffer Distance
11744	NDS: SW 20th Avenue	R	SW 34th Ave	SW 43rd St	Reconstruction	Community • Over 60% Residential land use • 2 blockgroups with a median family income under $25,000 • 6 blockgroups with a minority population over 40% Cultural • one trail • one park • one Florida Managed Area • 4 archaeological sites Natural • one occurrence of Rare and Imperiled Fish	Community • one fire station	Community • State University • one Emergency Medical Service • one school Cultural • 2 additional archaeological sites • one additional park • one additional Florida Managed Area Natural • Special Flood Hazard Areas over 29%
11745	NDS: Tower Road	AB	SW 8th Avenue	Archer Road	Reconstruction	Community • Over 59% Residential land use • 3 private schools • one college • 2 blockgroups with a median family income under $25,000 • 5 blockgroups with a minority population over 40% • one public school • one fire station Cultural • 4 archaeological sites • one Resource Group • 2 trails • one park	Cultural • one historic structure • 2 additional archaeological sites	Community • one additional blockgroup with a minority population over 40% Cultural • one additional archaeological site

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ETDM #	PRJNAME	PLAN_ID	FROM_FACILITY	TO_FACILITY	Improvement	100-Foot Buffer Distance	200-Foot Buffer Distance	500-Foot Buffer Distance
11746	NDS: Downtown/UF	T-G	Downtown	UF	Streetcar	Community • Shands Alachua General Hospital • Over 25% Commercial and Services land use • University of Florida • Alachua General Hospital Heliport • 9 blockgroups with a median family income under $25,000 • 8 blockgroups with a minority population over 40% • one fire station • one existing recreational trail • 6 trails • one park • 8 Florida Managed Areas • one Emergency Medical Service Cultural • 198 historic structures • 10 NRHP-listed sites • 7 Resource Groups Natural • one USEPA Power Plant • one Brownfield Boundary • one Toxic Release Inventory Site • 2 waste water facilities • Red-Cockaded Woodpecker Consultation Area	Community • one law enforcement station Cultural • 16 additional historic structures • 3 NRHP-listed sites Natural • Two additional USEPA Power Plants	Community • one additional law enforcement station • one additional airport • 7 additional blockgroups with a minority population over 40% • 3 additional schools Cultural • 4 archaeological sites • 98 additional historic structures • 5 additional NRHP-listed sites • one additional Resource Group • one additional park • one additional Florida Managed Area Natural • one additional waste water facility
11747	NDS: Urban Village/UF	T-H	Urban Village	UF	Streetcar	Community • University of Florida • 4 blockgroups with a median family income under $25,000 • 2 blockgroups with a minority population over 40% Cultural • 9 archaeological sites • 2 trails • one park • 3 Florida Managed Areas Natural • 3 Solid Waste Facilities • one State Funded Hazardous Waste Cleanup Sites • one occurrence of Rare and Imperiled Fish	Community • Veterans Administration Medical Center Airport • one additional blockgroup with a minority population over 40% Cultural • 2 historic structures • one additional Florida Managed Area	Community • 3 additional schools Cultural • 2 additional historic structures • 6 additional archaeological sites • one additional Florida Managed Area Natural • One waste water facility • Special Flood Hazard Areas over 49%

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ETDM #	PRJNAME	PLAN_ID	FROM_FACILITY	TO_FACILITY	Improvement	100-Foot Buffer Distance	200-Foot Buffer Distance	500-Foot Buffer Distance
11748	NDS: NE 39th Avenue (SR 222)	AG	University Avenue	NE 39th Street	Multiway Boulevard	Community • Over 49% Residential land use Gainesville Regional Airport • one blockgroup with a median family income under $25,000 • 6 blockgroups with a minority population over 40% • one cemetery Cultural • one trail • one park Natural • Red-Cockaded Woodpecker Consultation Area • 3 occurrences of Rare and Imperiled Fish	Cultural • 2 historic structures • one additional park Natural • Special Flood Hazard Areas Zone A over 29%	Community • 3 additional blockgroups with a minority population over 40% Cultural • One archaeological site • one additional historic structure Natural • Special Flood Hazard Areas over 73%
11749	NDS: Archer Road	B	West of I-75	Archer (city limits)	Widen from 2 to 4 lanes	Community • Over 46% Residential land use • one private school • 2 blockgroups with a minority population over 40% Cultural • one historic structure • 6 archaeological sites • one NRHP-listed site • one Resource Group • one trail • one park	Cultural • 2 additional historic structures • one additional archaeological site	Community • Peach Orchard Airport • 2 fire stations Cultural • 8 additional historic structures Natural • one Threatened or Endangered Species,
11750	NDS: Williston Road	H	West of I-75	SW 62nd Ave	Widen from 2 to 4 lanes	Community • Over 34% Residential land use • one blockgroup with a median family income under $25,000 Cultural • one archaeological site (potentially NRHP-eligible) Natural • Special Flood Hazard Areas Zone A over 30%,	Community • One blockgroup with a minority population over 40%	

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ETDM #	PRJNAME	PLAN_ID	FROM_FACILITY	TO_FACILITY	Improvement	100-Foot Buffer Distance	200-Foot Buffer Distance	500-Foot Buffer Distance
11751	NDS: NW 23rd Avenue	J	NW 55th St	NW 98th St	Widen from 2 to 4 lanes	Community • Over 61% Residential land use • 2 private schools • one college Cultural • one historic cemetery • 3 historic structures • one archaeological site • one NRHP-listed site • one trail • one park	Cultural • 2 additional historic structures and one additional archaeological site	Community • One additional school Cultural • 2 additional historic structures • 3 additional archaeological sites
11752	NDS: NW 34th Street/SR121	M	NW 58th Ave	NW 67th Place	Widen from 2 to 4 lanes	Community • Over 49% Commercial and Services land use • one fire station • one law enforcement station Cultural • one Resource Group • one existing recreational trail • one trail • one park Natural • Special Flood Hazard Areas Zone A over 46% • 2 occurrences of Rare and Imperiled Fish	Community • One blockgroup with a minority population over 40% • one Emergency Medical Service	Community • One additional law enforcement station Cultural • one additional park
11753	NDS: SE 16th Avenue	Q	Main St	Williston Rd	Widen from 2 to 4 lanes	Community • 2 blockgroups with a median family income under $25,000 • 2 blockgroups with a minority population over 40% Cultural • one Resource Group • 5 trails Natural • Red-Cockaded Woodpecker Consultation Area		Community • 2 additional blockgroups with a minority population over 40% Cultural • One archaeological site • one park • 2 Florida Managed Areas • one additional Resource Group • 4 existing recreational trails Natural • one sewage treatment facility • one waste water facility

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ETDM #	PRJNAME	PLAN_ID	FROM_FACILITY	TO_FACILITY	Improvement	100-Foot Buffer Distance	200-Foot Buffer Distance	500-Foot Buffer Distance
11754	NDS: SW 20th Avenue	S	SW 43rd St	SW 62nd Blvd	Widen from 2 to 4 lanes	Community • Over 55% Residential land use • 2 blockgroups with a median family income under $25,000 • 2 blockgroups with a minority population over 40% Cultural • one archaeological site • one existing recreational trail • one park Natural • one occurrence of Rare and Imperiled Fish		Cultural • one Florida Managed Area • one additional archaeological site Natural • one Threatened or Endangered Specie
11755	NDS: SW 62nd Boulevard*	X	Newberry Rd	SW 20th Ave	Widen from 2 to 4 lanes	Community • Over 43% Residential land use Cultural • 3 archaeological sites • one trail • 2 parks • one Florida Managed Area Natural • Special Flood Hazard Areas Zone AE over 29% • one occurrence of Rare and Imperiled Fish		Community • One public school Cultural • one park
11756	NDS: Airport Access Road	A	Waldo Rd	Airport	New 2-lane road	Community • Gainesville Regional Airport • 2 blockgroups with a median family income under $25,000 • 2 blockgroups with a minority population over 40% • one intermodal facility Cultural • one Resource Group • one trail Natural • Red-Cockaded Woodpecker Consultation Area • one occurrence of Rare and Imperiled Fish		Community • One additional blockgroup with a minority population over 40% Natural • one additional occurrence of Rare and Imperiled Fish

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ETDM #	PRJNAME	PLAN_ID	FROM_FACILITY	TO_FACILITY	Improvement	100-Foot Buffer Distance	200-Foot Buffer Distance	500-Foot Buffer Distance
11757	NDS: SW 47th Street Extension	AA	(east	SW 40th Place)	New 2-lane road	Community • Over 57% Residential land use Cultural • one Resource Group • one trail	Cultural • one additional trail	
11758	NDS: SW 63rd/SW 67th Ave	AE	University Avenue	NE 39th Street	Multiway Boulevard	Community • Over 45% Residential land use • one blockgroup with a median family income under $25,000 • 3 blockgroups with a minority population over 40% Cultural • one historic cemetery • one historic structure • 2 archaeological sites • 2 Resource Groups • one trail • 2 parks • one Florida Managed Area	Community • One additional blockgroup with a minority population over 40% Cultural • 2 additional archaeological sites • one additional park • one additional Florida Managed Area	Community • One college • one public school • 2 additional blockgroups with a minority population over 40% • one cemetery Cultural • 3 additional historic structures • 2 additional archaeological sites • one additional park • one additional Florida Managed Area Natural • one waste water facility
11759	NDS: SW 57th Road	AF	University Avenue	NE 39th Street	Multiway Boulevard	Community • Over 50% Residential land use • 3 blockgroups with a minority population over 40% Cultural • one historic structure • one Resource Group • one trail Natural • 2 Solid Waste Facilities	Cultural • 3 additional historic structures	Community • 2 additional blockgroups with a minority population over 40% Cultural • 5 additional historic structures

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ETDM #	PRJNAME	PLAN_ID	FROM_FACILITY	TO_FACILITY	Improvement	100-Foot Buffer Distance	200-Foot Buffer Distance	500-Foot Buffer Distance
11760	NDS: SW 43rd Street / Hull Road Extension	D	SW 20th Avenue	SW 34th St	New 2-lane road	Community • One college • 3 blockgroups with a median family income under $25,000 • 2 blockgroups with a minority population over 40% Cultural • one historic cemetery • one historic structure • 4 archaeological sites • 2 trails • one park Natural • 3 Solid Waste Facilities • Special Flood Hazard Areas Zone AE over 47% • National Wetlands Inventory (NWI) Palustrine over 37% • one occurrence of Rare and Imperiled Fish	Cultural • one additional park	Community • One fire station • one Emergency Medical Service • one additional school one additional blockgroup with a minority population over 40% Cultural • one Florida Managed Area • one additional archaeological site • one additional park Natural • National Wetlands Inventory over 52%
11761	NDS: Radio Road Extension	E	SW 34th St.	Hull Rd Extension	New 2-lane road	Community • One college • 2 blockgroups with a median family income under $25,000 • 2 blockgroups with a minority population over 40% Cultural • 3 archaeological sites • 2 trails • one park • one Florida Managed Area Natural • Special Flood Hazard Areas Zone AE over 24% • one occurrence of Rare and Imperiled Fish		Community • one additional blockgroup with a minority population over 40% Cultural • one historic structure • one additional archaeological site Natural • One Solid Waste Facility
11762	NDS: Springhills Boulevard	F	NW 83rd St Ext	NW 115th St	New 2-lane road	Community • One private school Cultural • one archaeological site (potentially NRHP-eligible)		Community • Shands Vista Psychiatric Hospital Natural • 2 Forest Inventory

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ETDM #	PRJNAME	PLAN_ID	FROM_FACILITY	TO_FACILITY	Improvement	100-Foot Buffer Distance	200-Foot Buffer Distance	500-Foot Buffer Distance
11763	NDS: NW 122nd Street Extension	I	NW 46th Ave	Newbery Rd	New 2-lane road	Community • One private school Cultural • 2 archaeological sites • one trail Natural • one occurrence of timberland	Cultural • one historic structure • one Resource Group	Cultural • one additional historic structure • one additional archaeological site
11764	NDS: NW 23rd Avenue Extension	K	NW 98th St	NW 143rd St (CR 241)	New 2-lane road	Cultural • one archaeological site • one trail • one park		Cultural • One historic structure • one additional park
11765	NDS: NW 76th Boulevard Extension	N	NW 76th Blvd	Ft Clarke	New 2-lane road	Cultural • one trail		
11766	NDS: NW 83rd Street Extension	O	NW 39th St	Millhopper Rd	New 2-lane road	Cultural • 2 archaeological sites		Community • Shands Vista Psychiatric Hospital Cultural • one additional archaeological site
11767	NDS: SW 23rd Terrace Extension to University of Florida campus	T	Hull Rd	Archer Rd	New 2-lane road	Community • One college • Veterans Administration Medical Center • 3 blockgroups with a median family income under $25,000 • one blockgroup with a minority population over 40% Cultural • one Resource Group • 2 trails		
11768	NDS: SW 45th Street	V	Archer Rd	I-75	New 2-lane road and two transit lanes	Community • Over 31% Residential land use • one blockgroup with a median family income under $25,000 Cultural • one historic structure • one Resource Group • one trail		Cultural • One archaeological site (potentially NRHP-eligible) • one additional historic structure

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ETDM #	PRJNAME	PLAN_ID	FROM_FACILITY	TO_FACILITY	Improvement	100-Foot Buffer Distance	200-Foot Buffer Distance	500-Foot Buffer Distance
11769	NDS: SW 62nd Boulevard Extension*	Y	SW 20th Ave	Windmeadows Blvd	New 4-lane road	Community • one blockgroup with a median family income under $25,000 Cultural • 6 archaeological sites (one potentially NRHP-eligible) • one trail • one Florida Managed Area Natural • one occurrence of Rare and Imperiled Fish	Cultural • One additional archaeological site	Cultural • 2 historic structures • 3 additional archaeological sites • one additional Florida Managed Area
11770	NDS: SW 8th Avenue Extension	Z	SW 122nd St	SW 143rd (CR 241)	New 2-lane road	Community • Over 34% Residential land use • one blockgroup with a minority population over 40% Cultural • one trail		

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APPENDIX O: YEAR 2035 NEEDS PLAN ETDM SCREENING RESULTS: POTENTIAL EFFECTS

						Wetlands			Wildlife and Habitat		Special Designations		Historic and Archaeological Sites			Contaminated Sites			Navigation		Farmland			Floodplains			Recreation			Water		Summary	
ETDM #	Project	Plan_ID	From	To	Project Type	Acres	Description	Potential Effect	Description	Potential Effect	Description	Potential Effect	No. of Sites	Description	Potential Effect	No. of Sites	Description	Potential Effect	Description	Potential Effect	Acres	Description	Potential Effect	Acres	Description	Potential Effect	No. of Sites	Description	Potential Effect	Description	Potential Effect	Total Score	Potential Effects
11734	NDS: Haile Village Center to Butler Plaza Intermodal Center	T-B	Haile Village Center	Butler Plaza Intermodal Center	Bus Rapid Transit	7.10	National Wetlands Inventory (NWI) Palustrine 0.96%	Low	1 Threatened or Endangered Specie	Moderate	-	Low	26	15 Florida Site File (FSF) Historic Standing Structures, 10 FSF Archaeological or Historic Sites 35.58 acres, and 1 Resource Group 24.43 acres	High	9	1 Super Act Risk Source, 1 State Funded Hazardous Waste Cleanup Site, and 6 USEPA Resouce Conservation and Recovery Act (RCRA) Regulated Facilities	Moderate	-	Low	16.8	All Areas Are Prime Farmland 2.27%	Moderate	-	-	Low	2	Geocoded Schools	Moderate	-	Low	16	Low
11735	NDS: Jonesville to Butler Plaza Intermodal Center (via Oaks Mall)	T-C1	Jonesville	Butler Plaza Intermodal Center	Bus Rapid Transit	27.40	NWI Palustrine 2.5%	Moderate	-	Low	-	Low	27	1 FSF Cemetery 1.52 acres, 10 FSF Historic Standing Structures, 15 Archaeological or Historic Sites 146.37 acres, and 1 Resource Group 66.9 acres	High	23	8 Super Act Risk Sources, 1 State Funded Hazardous Waste Cleanup Site, and 14 USEPA RCRA Regulated Facilities	High	-	Low	20.1	All Areas Are Prime Farmland 1.83%	Moderate	74.4	Special Flood Hazard Areas 6.78%	Moderate	2	1 Geocoded Park and 1 Geocoded School	Moderate	-	Low	18	Moderate
11736	NDS: Northwood Village to UF/ 2nd Ave S (via 13th Street)	T-D	Northwood Village	UF/ 2nd Ave S	Bus Rapid Transit	9.80	NWI Palustrine 1.25%	Moderate	-	Low	-	Low	138	1 FSF Cemetery 2.99 acres, 1 FSF Historic Bridge, 121 FSF Historic Standing Structures, 4 FSF Archaeological or Historic Sites 4.69 acres, and 11 Resource Groups 117.88 acres	High	67	13 FDEP Off Site Contamination Notices, 27 Super Act Risk Sources, 1 Toxic Release Inventory Site, and 26 USEPA RCRA Regulated Facilities	High	-	Low	-	-	Low	81.1	Special Flood Hazard Areas 10.34%	Moderate	3	1 Geocoded Park and 2 Geocoded Schools	High	-	Low	18	Moderate
11737	NDS: Eastside Activity Center (@ SE 43rd St) to Downtown RTS Transfer Center	T-C2	Eastside Activity Center (@ SE	Downtown RTS Transfer Center	Bus Rapid Transit	10.80	NWI Palustrine 2.11%	Moderate	-	Low	-	Low	83	1 FSF Cemetery 1.96 acres, 71 FSF Historic Standing Structures, 5 FSF Archaeological or Historic Sites 9.43 acres, and 6 Resource Groups 43.88 acres	High	29	16 Super Act Risk Sources, 1 Toxic Release Inventory Site, and 12 USEPA RCRA Regulated Facilities	High	-	Low	-	-	Low	1.7	Special Flood Hazard Areas 0.33%	Low	1	1 Geocoded Park	Moderate	-	Low	16	Low
11738	NDS: Santa Fe to Airport (via Oaks Mall, Archer Road, Downtown)	T-A	Santa Fe	Airport	Bus Rapid Transit	39.40	NWI Palustrine 1.78%	Moderate	1 Bald Eagle Nesting Territory and 1 Threatened or Endangered Specie	Moderate	-	Low	145	1 FSF Cemetery 1.96 acres, 1 FSF Historic Bridge, 111 FSF Historic Standing Structures, 20 Archaeological or Historic Sites 127.49 acres, 12 Resource Groups 124.57 acres	High	87	3 FDEP Off Site Contamination Notices, 33 Super Act Risk Sources, 1 Toxic Release Inventory Site, and 50 USEPA RCRA Regulated Facilities	High	-	Low	-	-	Low	160.1	Special Flood Hazard Areas 7.25%	Moderate	10	4 Geocoded Parks and 6 Geocoded Schools	High	-	Low	19	Moderate
11739	NDS: Waldo Road Multiway Boulevard	AD	University Avenue	NE 39th Street	Multiway Boulevard	-	-	Low	-	Low	-	Low	13	1 FSF Cemetery 1.96 acres, 9 FSF Historic Standing Structures, and 3 Resource Groups 24.22 acres	High	23	3 FDEP Off Site Contamination Notices, 9 Super Act Risk Sources, 11 USEPA RCRA Regulated Facilities	High	-	Low	-	-	Low	3.2	Special Flood Hazard Areas 0.97%	Low	2	1 Geocoded Park and 1 Geocoded School	Moderate	-	Low	15	Low
11740	NDS: SE 4th Ave	AC	Depot Ave	Williston Rd	Reconstruction	5.00	NWI Palustrine 4.77%	Moderate	-	Low	-	Low	18	14 FSF Historic Standing Structures and 4 Resource Groups 15.29 acres	High	10	5 Super Act Risk Sources and 5 USEPA RCRA Regulated Facilities	High	-	Low	-	-	Low	6.6	Special Flood Hazard Areas 6.3%	Moderate	-	-	Low	-	Low	16	Low
11741	NDS: NW/SW 13th Street	P	SW 16th Ave	NW 23rd Ave	Multimodal Emphasis	1.60	NWI Palustrine 0.48%	Low	-	Low	-	Low	108	1 FSF Historic Bridge, 101 FSF Historic Standing Structures, 2 FSF Archaeological or Historic Sites 2.25 acres, and 4 Resource Groups 64.18 acres	High	26	1 FDEP Off Site Contamination Notice, 12 Super Act Risk Sources, and 13 USEPA RCRA Regulated Facilities	High	-	Low	-	-	Low	-	-	Low	2	2 Geocoded Schools	Moderate	-	Low	15	Low

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ETDM #	Project	Plan_ID	From	To	Project Type	Wetlands: Acres	Wetlands: Description	Wetlands: Potential Effect	Wildlife and Habitat: Description	Wildlife and Habitat: Potential Effect	Special Designations: Description	Special Designations: Potential Effect	Historic and Archaeological Sites: No. of Sites	Historic and Archaeological Sites: Description	Historic and Archaeological Sites: Potential Effect	Contaminated Sites: No. of Sites	Contaminated Sites: Description	Contaminated Sites: Potential Effect	Navigation: Description	Navigation: Potential Effect	Farmland: Acres	Farmland: Description	Farmland: Potential Effect	Floodplains: Acres	Floodplains: Description	Floodplains: Potential Effect	Recreation: No. of Sites	Recreation: Description	Recreation: Potential Effect	Water: Description	Water: Potential Effect	Summary: Total Score	Summary: Potential Effects
11742	NDS: University Avenue	G	NW 34th St	Waldo Rd	Multimodal Emphasis	-	-	Low	-	Low	-	Low	331	1 FSF Cemetery 1.91 acres, 316 FSF Historic Standing Structures, 1 FSF Archaeological or Historic Site 1.65 acres, and 13 Resource Groups 398.23 acres	High	50	12 FDEP Off Site Contamination Notices, 21 Super Act Risk Sources, and 17 USEPA RCRA Regulated Facilities	High	-	Low	-	-	Low	3.5	Special Flood Hazard Areas 0.76%	Low	3	1 Geocoded Park and 2 Geocoded Schools	High	-	Low	16	Low
11743	NDS: NW 34th Street	L	NW 16th Ave	US 441	Add turn lanes	1.50	NWI Palustrine 0.32%	Low	-	Low	-	Low	1	1 Resource Group 1.33 acres	Moderate	3	1 FDEP Off Site Contamination Notice and 2 USEPA RCRA Regulated Facilities	Moderate	-	Low	-	-	Low	29.7	Special Flood Hazard Areas 6.39%	Moderate	1	1 Geocoded School	Moderate	-	Low	14	Low
11744	NDS: SW 20th Avenue	R	SW 34th Ave	SW 43rd St	Reconstruction	10.10	NWI Palustrine 4.68%	Moderate	-	Low	-	Low	6	6 FSF Archaeological or Historic Sites 71.18 acres	Moderate	4	1 Super Act Risk Source and 3 USEPA RCRA Regulated Facilities	Moderate	-	Low	-	-	Low	29.1	Special Flood Hazard Areas 13.47%	Moderate	-	-	Low	-	Low	14	Low
11745	NDS: Tower Road	AB	SW 8th Avenue	Archer Road	Reconstruction	1.50	NWI Palustrine 0.36%	Low	-	Low	-	Low	9	1 FSF Historic Standing Structures, 7 FSF Archaeological or Historic Sites 53.51 acres, and 1 Resource Group 1.34 acres	Moderate	3	3 USEPA RCRA Regulated Facilities	Moderate	-	Low	16.6	All Areas Are Prime Farmland 4.1%	Moderate	5	Special Flood Hazard Areas 1.23%	Moderate	1	1 Geocoded School	Moderate	-	Low	15	Low
11746	NDS: Downtown/ UF	T-G	Downtown	UF	Streetcar	10.70	NWI Palustrine 1.82%	Moderate	-	Low	-	Low	324	312 FSF Historic Standing Structures, 4 FSF Archaeological or Historic Sites 6.47 acres, and 8 Resource Groups 282.93 acres	High	42	5 FDEP Off Site Contamination Notices, 19 Super Act Risk Sources, 1 Toxic Release Inventory Site, 2 USEPA Power Plants, and 15 USEPA RCRA Regulated Facilities	High	-	Low	-	-	Low	23	Special Flood Hazard Areas 3.91%	Moderate	3	2 Geocoded Parks and 1 Geocoded Schools	High	-	Low	18	Moderate
11747	NDS: Urban Village/UF	T-H	Urban Village	UF	Streetcar	39.40	NWI Palustrine 8.78%	Moderate	-	Low	-	Low	19	4 FSF Historic Standing Structures and 15 FSF Archaeological or Historic Sites 54.97 acres	High	11	4 FDEP Off Site Contamination Notices, 3 Solid Waste Facilities, 1 State Funded Hazardous Waste Cleanup Site, and 3 USEPA RCRA Regulated Facilities	High	-	Low	4	All Areas Are Prime Farmland 0.89%	Low	49.4	Special Flood Hazard Areas 11.02%	Moderate	-	-	Low	-	Low	16	Low
11748	NDS: NE 39th Avenue (SR 222)	AG	University Avenue	NE 39th Street	Multiway Boulevard	11.90	NWI Palustrine 5.61%	Moderate	-	Low	-	Low	4	3 FSF Historic Standing Structures and 1 FSF Archaeological or Historic Sites 0.41 acres	Low	2	2 USEPA RCRA Regulated Facilities	Moderate	-	Low	-	-	Low	73.4	Special Flood Hazard Areas 34.56%	Moderate	-	-	Low	-	Low	13	Low
11749	NDS: Archer Road	B	West of I-75	Archer (city limits)	Widen from 2 to 4 lanes	-	-	Low	1 Threatened or Endangered Specie	Moderate	-	Low	19	11 FSF Historic Standing Structures, 7 FSF Archaeological or Historic Sites 19.58 acres, and 1 Resource Group 48.59 acres	High	4	2 Super Act Risk Sources and 2 USEPA RCRA Regulated Facilities	Moderate	-	Low	20.2	All Areas Are Prime Farmland 2.22%	Moderate	-	-	Low	1	1 Geocoded School	Moderate	-	Low	16	Low
11750	NDS: Williston Road	H	West of I-75	SW 62nd Ave	Widen from 2 to 4 lanes	2.00	NWI Palustrine 1.77%	Moderate	-	Low	-	Low	1	1 FSF Archaeological or Historic Site 6.09 acres	Low	5	3 Super Act Risk Sources and 2 USEPA RCRA Regulated Facilities	Moderate	-	Low	-	-	Low	33.5	Special Flood Hazard Areas 29.83%	Moderate	-	-	Low	-	Low	13	Low

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ETDM #	Project	Plan_ID	From	To	Project Type	Wetlands			Wildlife and Habitat		Special Designations		Historic and Archaeological Sites			Contaminated Sites			Navigation		Farmland			Floodplains			Recreation			Water		Summary	
						Acres	Description	Potential Effect	Description	Potential Effect	Description	Potential Effect	No. of Sites	Description	Potential Effect	No. of Sites	Description	Potential Effect	Description	Potential Effect	Acres	Description	Potential Effect	Acres	Description	Potential Effect	No. of Sites	Description	Potential Effect	Description	Potential Effect	Total Score	Potential Effects
11751	NDS: NW 23rd Avenue	J	NW 55th St	NW 98th St	Widen from 2 to 4 lanes	4.30	NWI Palustrine 1.25%	Moderate	-	Low	-	Low	13	1 FSF Cemetery 1.61 acres, 7 FSF Historic Standing Structures, and 5 FSF Archaeological or Historic Sites 4.54 acres	High	1	1 USEPA RCRA Regulated Facility	Moderate	-	Low	-	-	Low	-	-	Low	2	2 Geocoded Schools	Moderate	-	Low	15	Low
11752	NDS: NW 34th Street/SR121	M	NW 58th Ave	NW 67th Place	Widen from 2 to 4 lanes	6.20	NWI Palustrine 7.21%	Moderate	-	Low	-	Low	1	1 Resource Group 1.8 acres	Moderate	-	-	Low	-	Low	-	-	Low	50.1	Special Flood Hazard Areas 58.53%	High	-	-	Low	-	Low	14	Low
11753	NDS: SE 16th Avenue	Q	Main St	Williston Rd	Widen from 2 to 4 lanes	-	-	Low	-	Low	-	Low	3	1 FSF Archaeological or Historic Site 1.0 acres and 2 Resource Groups 4.31 acres	Moderate	7	2 Super Act Risk Sources and 5 USEPA RCRA Regulated Facilities	Moderate	-	Low	-	-	Low	20.1	Special Flood Hazard Areas 23.66%	Moderate	-	-	Low	-	Low	13	Low
11754	NDS: SW 20th Avenue	S	SW 43rd St	SW 62nd Blvd	Widen from 2 to 4 lanes	-	-	Low	1 Threatened or Endangered Specie	Moderate	-	Low	3	3 FSF Archaeological or Historic Sites 44.86 acres	Low	-	-	Low	-	Low	-		Low	-	-	Low	-	-	Low	-	Low	11	Low
11755	NDS: SW 62nd Boulevard*	X	Newberry Rd	SW 20th Ave	Widen from 2 to 4 lanes	11.20	NWI Palustrine 5.77%	Moderate	-	Low	-	Low	3	3 FSF Archaeological or Historic Sites 55.38 acres	Low	1	1 USEPA RCRA Regulated Facility	Moderate	-	Low	-	-	Low	47.5	Special Flood Hazard Areas 24.48%	Moderate	2	1 Geocoded Park and 1 Geocoded School	Moderate	-	Low	14	Low
11756	NDS: Airport Access Road	A	Waldo Rd	Airport	New 2-lane road	1.90	NWI Palustrine 2.29%	Moderate	-	Low	-	Low	1	1 Resource Group 1.55 acres	Moderate	1	1 Super Act Risk Source	Moderate	-	Low	-	-	Low	4.5	Special Flood Hazard Areas 5.46%	Moderate	-	-	Low	-	Low	14	Low
11757	NDS: SW 47th Street Extension	AA	(east	SW 40th Place)	New 2-lane road	2.70	NWI Palustrine 3.28%	Moderate	-	Low	-	Low	1	1 Resource Group 48.49 acres	High	-	-	Low	-	Low	7.8	All Areas Are Prime Farmland 9.43%	Moderate	-	-	Low	-	-	Low	-	Low	14	Low
11758	NDS: SW 63rd/SW 67th Ave	AE	University Avenue	NE 39th Street	Multiway Boulevard	4.70	NWI Palustrine 1.86%	Moderate	-	Low	-	Low	13	1 FSF Cemetery 3.06 acres, 4 FSF Historic Standing Structures, 6 FSF Archaeological or Historic Sites 21.26 acres, and 2 Resource Groups 7.38 acres	High	1	1 USEPA RCRA Regulated Facility	Moderate	-	Low	-	-	Low	4.9	Special Flood Hazard Areas 1.97%	Moderate	2	2 Geocoded Schools	Moderate	-	Low	16	Low
11759	NDS: SW 57th Road	AF	University Avenue	NE 39th Street	Multiway Boulevard	-	-	Low	-	Low	-	Low	10	9 FSF Historic Standing Structures and 1 Resource Group 1.42 acres	High	2	2 Solid Waste Facilities	Moderate	-	Low	11.5	All Areas Are Prime Farmland 3.18%	Moderate	-	-	Low	-	-	Low	-	Low	14	Low
11760	NDS: SW 43rd Street / Hull Road Extension	D	SW 20th Avenue	SW 34th St	New 2-lane road	52.70	NWI Palustrine 30.67%	High	-	Low	-	Low	7	1 FSF Cemetery .27 acres, 1 FSF Historic Standing Structure, and 5 FSF Archaeological or Historic Sites 43.83 acres	Moderate	10	4 FDEP Off Site Contamination Notices, 1 Super Act Risk Source, 3 Solid Waste Facilities, and 2 USEPA RCRA Regulated Facility	High	-	Low	-	-	Low	73.1	Special Flood Hazard Areas 42.5%	Moderate	-	-	Low	-	Low	16	Low
11761	NDS: Radio Road Extension	E	SW 34th St.	Hull Rd Extension	New 2-lane road	15.80	NWI Palustrine 16.91%	High	-	Low	-	Low	5	1 FSF Historic Standing Structure and 4 FSF Archaeological or Historic Sites 9.79 acres	Moderate	1	1 Solid Waste Facility	Moderate	-	Low	-	-	Low	20.9	Special Flood Hazard Areas 22.41%	Moderate	-	-	Low	-	Low	15	Low
11762	NDS: Springhills Boulevard	F	NW 83rd St Ext	NW 115th St	New 2-lane road	1.90	NWI Palustrine 0.74%	Low	-	Low	-	Low	1	1 FSF Archaeological or Historic Site 18.63 acres	Low	-	-	Low	-	Low	2.9	All Areas Are Prime Farmland 1.11%	Moderate	6.8	Special Flood Hazard Areas 2.61%	Moderate	1	1 Geocoded School	Moderate	-	Low	13	Low
11763	NDS: NW 122nd Street Extension	I	NW 46th Ave	Newbery Rd	New 2-lane road	0.30	NWI Palustrine 0.1%	Low	-	Low	-	Low	6	2 FSF Historic Standing Structures, 3 FSF Archaeological or Historic Sites 7.15 acres, and 1 Resource Group 2.13 acres	Moderate	-	-	Low	-	Low	-	-	Low	-	-	Low	1	1 Geocoded School	Moderate	-	Low	12	Low
11764	NDS: NW 23rd Avenue Extension	K	NW 98th St	NW 143rd St (CR 241)	New 2-lane road	-	-	Low	-	Low	-	Low	2	1 FSF Historic Standing Structure and 1 FSF Archaeological or Historic Site 7.52 acres	Low	-	-	Low	-	Low	8.3	All Areas Are Prime Farmland 2.07%	Moderate	-	-	Low	-	-	Low	-	Low	11	Low

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						Wetlands			Wildlife and Habitat		Special Designations		Historic and Archaeological Sites			Contaminated Sites			Navigation		Farmland			Floodplains			Recreation			Water		Summary	
ETDM #	Project	Plan_ID	From	To	Project Type	Acres	Description	Potential Effect	Description	Potential Effect	Description	Potential Effect	No. of Sites	Description	Potential Effect	No. of Sites	Description	Potential Effect	Description	Potential Effect	Acres	Description	Potential Effect	Acres	Description	Potential Effect	No. of Sites	Description	Potential Effect	Description	Potential Effect	Total Score	Potential Effects
11765	NDS: NW 76th Boulevard Extension	N	NW 76th Blvd	Ft Clarke	New 2-lane road	-	-	Low	-	Low	-	Low	-	-	Low	-	-	Low	-	Low	-	-	Low	12.8	Special Flood Hazard Areas 15.79%	Moderate	-	-	Low	-	Low	11	Low
11766	NDS: NW 83rd Street Extension	O	NW 39th St	Millhopper Rd	New 2-lane road	12.10	NWI Palustrine 5.04%	Moderate	-	Low	-	Low	3	3 FSF Archaeological or Historic Sites 22.07 acres	Low	-	-	Low	-	Low	-	-	Low	3.9	Special Flood Hazard Areas 1.65%	Moderate	-	-	Low	-	Low	12	Low
11767	NDS: SW 23rd Terrace Extension to University of Florida campus	T	Hull Rd	Archer Rd	New 2-lane road	-	-	Low	-	Low	-	Low	1	1 Resource Group 1.37 acres	Low	-	-	Low	-	Low	-	-	Low	-	-	Low	-	-	Low	-	Low	10	Low
11768	NDS: SW 45th Street	V	Archer Rd	I-75	New 2-lane road and two transit lanes	0.40	NWI Palustrine 0.22%	Low	-	Low	-	Low	5	3 FSF Historic Standing Structures, 1 FSF Archaeological or Historic Site 1.25 acres, and 1 Resource Group 1.36 acres	Moderate	3	3 USEPA RCRA Regulated Facilities	Moderate	-	Low	-	-	Low	-	-	Low	-	-	Low	-	Low	12	Low
11769	NDS: SW 62nd Boulevard Extension*	Y	SW 20th Ave	Windmeadows Blvd	New 4-lane road	10.20	NWI Palustrine 4.61%	Moderate	-	Low	-	Low	12	2 FSF Historic Standing Structures and 10 FSF Archaeological or Historic Structures 98.51 acres	High	-	-	Low	-	Low	-	-	Low	19.9	Special Flood Hazard Areas 9.03%	Moderate	-	-	Low	-	Low	14	Low
11770	NDS: SW 8th Avenue Extension	Z	SW 122nd St	SW 143rd (CR 241)	New 2-lane road	-	-	Low	-	Low	-	Low	-	-	Low	-	-	Low	-	Low	0.9	All Areas Are Prime Farmland 0.46%	Low	-	-	Low	-	-	Low	-	Low	10	Low

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