Transporting Ecologies

Alachua Countywide Bicycle Master Plan Addendum

Metropolitan Transportation Planning Organization
North Central Florida Regional Planning Council

Final Report

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Transporting Ecologies Studio
www.transportingecologies.com

School of Architecture
University of Florida

Contents

Executive Summary

Transporting Ecologies includes case study analysis, reviews and analysis of the 2001 Alachua Countywide Bicycle Master Plan, development of the conceptual organizational strategies and new project prioritization structure and specific recommendations for improving bicycle connectivity and use in Alachua County. Case study research has been critical in establishing organizational structure and identification of infrastructural requirements and amenities to promote routinized bicycle transportation by varied constituents of the local population.

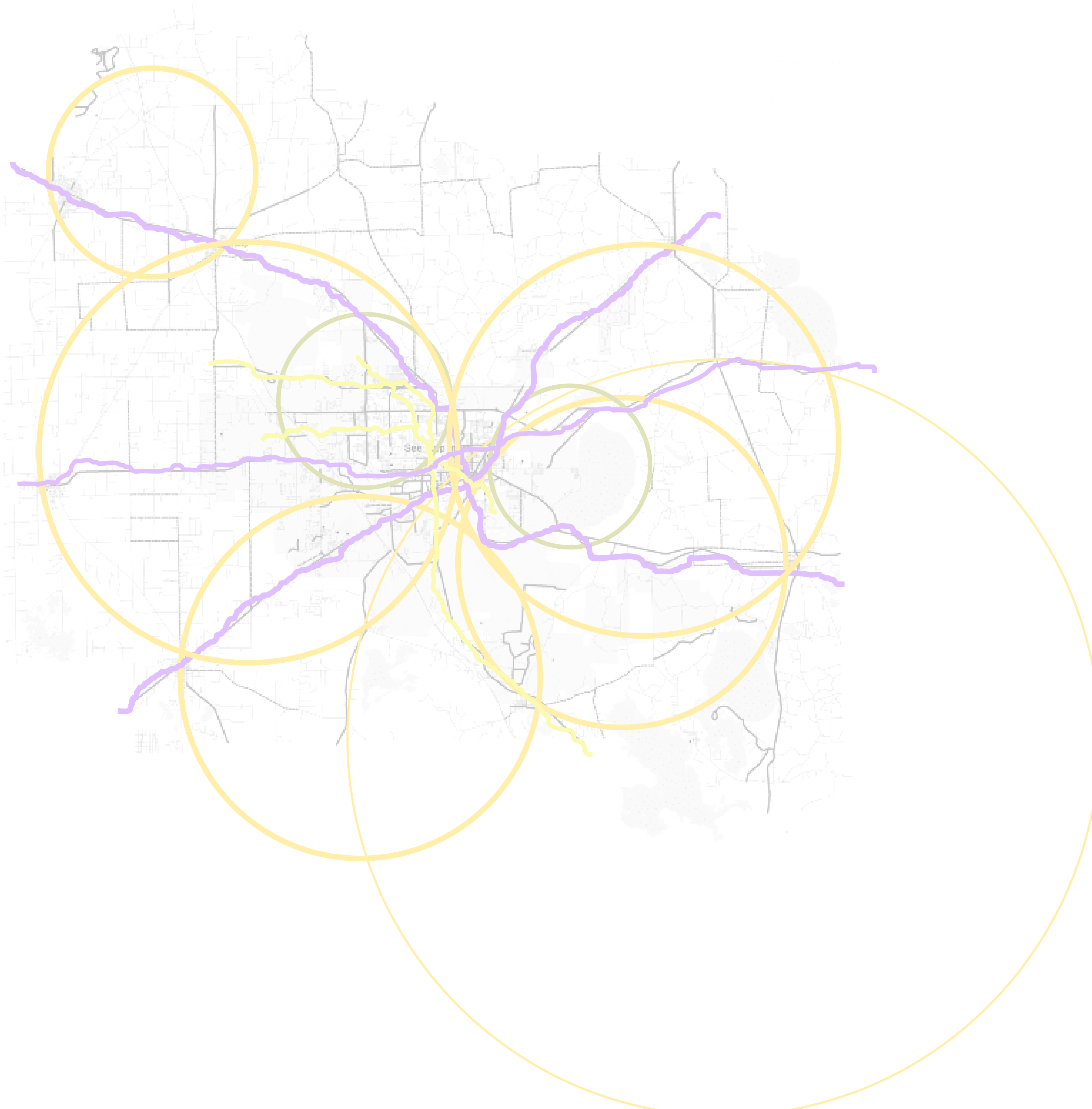
A *Case Studies* supplemental report is included under separate cover presenting bicycle infrastructure in 20 cities in the US and Europe — available on line at www.transportingecologies.com . The 2001 Alachua Countywide Bicycle Master Plan is available on line at www.ncfrpc.org .

Analysis of the 2001 Master Plan report revealed detailed infrastructure assessments and statistical analysis based on Department of Transportation (DOT) road data, field collected data as well as "transportation analysis zone" (TAZ) data. Statistical analysis, conducted in segments ranging from 0.02 to 8 miles ultimately producing 200 "Priority I" segments. Implementation of projects by going down the list of priorities will produce a fragmented system for many years. A strategic process to achieve network connectivity in a more expedient manner was required.

Analysis of this addendum included independent estimates of latent demand through destination matrix mapping; mapping of the existing infrastructure with visualizations and ratings of the quality of service (QOS); maps of existing rural "loops"; analysis of geographical bicycle barriers; analysis of hydrology, riparian corridors and potential green-ways; and an analysis of rail and utility corridors as potential immediate priority paths. Workshops with stakeholders and the public were conducted assess needs, expectations and prioritization including public discussion, small workgroups and formalized survey tools. Information and data collected were used to develop a list of immediate priority "Braids" projects that advance connectivity between major destinations.

From this work, eight immediate priorities have emerged including on-street and off-street potentially high use "Braids" that connect high population areas with high visit destinations tapping into the highest latent demand zones. These Braids subsume existing high priority segments linking them into a larger connected network. Final rank order of ***immediate priority*** Braids is included in the Prioritization Recommendations section of this report.

The Transporting Ecologies website includes large format detailed versions of the maps that have been reduced in size to fit this format. Please refer to these in conjunction with reading this report — www.transportingecologies.com. PDF files of the large format maps and associated data files are included on a compact disk in the back cover of print versions of this report.



1.0 Nets, Braids & Loops Concept

Project conceptualization was required to develop appropriate strategies and protocols appropriate to the scales of context that bicycles encounter in the Alachua County region. Nets, Braids & Loops rationalizes these environments to simplify discussion, assign appropriate levels of bicycle infrastructure, make targeted policy recommendations and to recognize the benefits that are in-place and in some cases, not yet being utilized.

Nets: Neighborhood Connectivity

Nets characterize the street grid system and networks of neighborhood streets that organize most housing and in the case of the downtown commercial and public locations as well. This infrastructure is suitable as-is in most locations providing alternate bicycle routes and typically good connectivity.

Recommendation for Nets attempts to connect more problematic high proximity - low connectivity neighborhoods via new short connecting paths (bicycle pedestrian only) through renovations of existing emergency right-of-way, storm water and utility easements or through purchase-easement creation-sell programs. Nets strategies promote short-cut bicycle/pedestrian-only routes, support the *safe routes to school* program and greatly reduce travel distances for cyclists and pedestrian by encouraging more routinized use.

Analysis Factors:
- Opportunities for neighborhood connectivity
- Safe routes to school — Alachua County "neighborhood schools"
- Travel distance reductions within destination logics
- Potential for local bicycle travel "off" arterial connectors (1 to 3 miles)

Braids: Local Connectivity

Braids are the arterial linkages that included existing streets, roads and paths (green spaces and recovered utility corridors) linking residential areas with commercial and employment destinations. These primary routes promote routinized cycle commuting as the most direct routes and need to be continuous between key destinations in Gainesville — residential areas and the University of Florida and the Downtown.

Recommendation strategies utilize existing right-of-way or easements from roads, rail, or utility corridors to achieve a highly connected network optimizing high use destinations such as the University of Florida . Existing segment analysis is compiled into logical destination based "braids" and recalculated for weighted cost benefit prioritization as complete systems rather than individual segments. To avoid disregarding important segments due to lack of cost data, incomplete segment data from the 2001 Report is estimated in this Addendum. Obviously, more cost analysis will be required and can now be targeted for the most important segments.

Information gathered from sources including the Steering Committee, Gainesville Cycling Club, April 1st public workshop and priority survey data were compiled to prioritize proposed braided segments (Braids).

Analysis Factors:

- Streets, lanes, paths & green way path types (braided threads)
- Destination analysis & prioritization (centripetal linkages)
  Minimizes travel distance
  Optimizes connectivity (complete fragmented routes)
- Segment cost benefit ratio analysis (2001 data)
- Cycling barriers analysis (Identify difficult topographic & geographic obstacles)
  Maximizes accessibility for largest user group
- Quality of Service (QOS) analysis (existing inventory & QOS visualization)
  Existing amenities, difficulties and expectations
- Hydrology matrix (watersheds & riparian corridors)
  Potentials for greenway integration, new paths and environmental stewardship

Loops: Rural Connectivity

Loops are the rural cycle routes that provide connectivity to the natural areas, parks and adjacent communities typically used as competition and recreational circuits. Currently, cyclists share the road with automobiles on rural roads utilizing paved shoulders when available. Although this is an economical solution the safety of the proximity should be questioned. Slightly more than two cyclist are killed each year (on average) in Alachua County on these rural roads when vehicles veer into the paved shoulder occupied by cyclists.

Loops analysis identifies preferred existing and potential new routes to focus resources toward enhanced infrastructure and potential expansion. Expansion would focus on extending to the east and west eventually linking with statewide path networks connecting Florida's coasts via Gainesville. Strategies and recommendations for a safer and more user friendly infrastructure to encourage more riders to utilize cycling as connection to the natural rural areas and scenic ways are included in this report.

Analysis Factors:

- Identification and map existing use (formalized rides & routes)
- Evaluate new Loop potentials
- Identify potential for extended regional connectivity
  Nature Coast Trail and eastern connections
- Identify natural capital potentials
  Promote regional history
  Enhance access to nature areas
  Advance eco-tourism
- Loop multiplicity (support varied user levels)
  Varied challenge levels & alternative vistas and scenery

2.0 Public Health & Community Transportation

"More walking and cycling for practical daily travel is an ideal approach to raising physical activity levels"

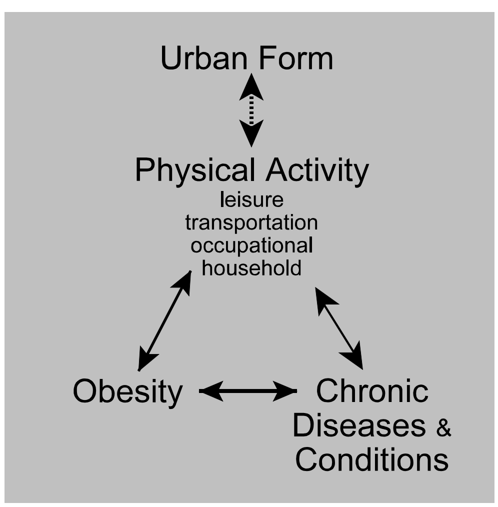
Surgeon General, USA (1996)

The Centers for Disease Control (CDC) initiated research in 1997 that recently has revealed relationships among public health, urban form and transportation modalities. The CDC and the Governor's (Jeb Bush) task force on obesity reported that 31% of Americans are clinically obese, those living in sprawling areas are 6 lbs. heavier than those living in urban areas and 57% of Floridians are overweight. Cardiovascular disease — related to poor eating habits and sedentary lifestyle — is rapidly approaching and expected to soon surpass cancer as the leading cause of death in the United States. Hospitalization, treatment and lack of productivity related to obesity is estimated to cost the public billions of dollars. This has prompted the CDC to consider re-entering the community design and planning arena to address this health threat in a manner similar to the initiation of zoning in the early 20th Century.

Transportation Ecologies leverages these initiatives to direct the focus of transportation resources to facilities and infrastructures that promote healthier modes of transport by adopting the CDC recommendations for recreational activities (parks, bicycle pedestrian paths, and public amenities), routinized activity (alternative transportation options that promote walking and cycling) and reductions in automobile use (improved air quality). European communities with these models in place have low rates of obesity, diabetes and hypertension and citizens with a life expectancy 2.5 to 4.4 years higher than average.

Air quality and it's effects on public health (cancer related) has been the catalyst for the City of Portland's innovative bicycle and light-rail programs. More recently, Houston's *Comprehensive Bikeway Program* will add 1,035 miles of specified bicycle infrastructure to improve air quality. As public health agencies focus on more routinized physical activity, promote improved air quality (breathability) and maximize safety, off-road (separated from automobiles) commuter bicycle routes will naturally emerge as optimized strategies.

Relationship Between Urban Sprawl and Physical Activity, Obesity and Morbidity
Ewing, Schmid, Killingsworth, Zlot & Raudenbush



"...the likelihood of being obese (having a body mass index of 30 or greater) is highest in the most sprawling environments. ...the proportion of obese white males in Atlanta increased from 13 to 23 percent as residential density went from more than eight to less than two dwellings per residential acre."

Larry Frank
Health and Community Design: The Impacts of the Built Environment on Physical Activity

Environmental Stewardship

In the book *Natural Capitalism - Creating the Next Industrial Revolution*, authors Hawkin, Lovin and Lovin argue for recognizing the "productive" value of natural habitats and systems in terms of ecological diversity and environmental health. Adopting a closed-loop cycle of resource management might capture resources such as storm water rather than channeling it away as soon as possible. This might lead to storm water parks or catchment gardens — rather than the typical buried storm drain, thus allowing the water to recharge in-place. Storm water could be filtered and recharge near the site on which it falls. Where hydrological systems become linear riparian systems, we might utilize them as non-invasive transportation (bicycle and pedestrian) corridors, as green ways, providing direct cycle commuter routes, habitat corridors and environmental cleansing systems.

The *factor four principle* (doubling productivity while halving resource consumption) suggests a paramount opportunity for the bicycle pedestrian investment in a small community such as Gainesville, Florida. Typically 95% of the energy used in an automobile is applied to move the vehicle and only 5% to move a single occupant. If even a moderate number of people shift to cycling for daily commuting there could be significant increases in the overall productivity of a community — work accomplished for a given energy input. If health benefits are factored, such as time saved from exercising at a gym and minimizing visits to a physician, the gains truly become multiples. Currently, and as part of the original air quality initiative in Portland, benefit is also measured in terms of carbon dioxide (CO_2) emissions avoided — cycle and transit modes improve everybody's air quality.

A more connected overall bicycle network utilizing the Nets, Braids & Loops strategies outlined in this report provides alternative transportation options, utilizes the most energy efficient mode, provides more options for mobility and uses less resources while advancing a cleaner environment.

Transporting Ecologies seeks to enhance all modes of transportation with an emphasis on the bicycle

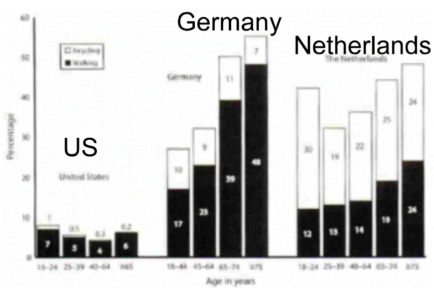
Transportation Modality

Transporting Ecologies optimizes bicycle infrastructure planning as part of a larger transportation initiative conducted by the Metropolitan Transportation Planning Organization. The year 2020 transportation plan calls for improvements to all modes of transportation to offer a more balanced system that provides legitimate options to the automobile.

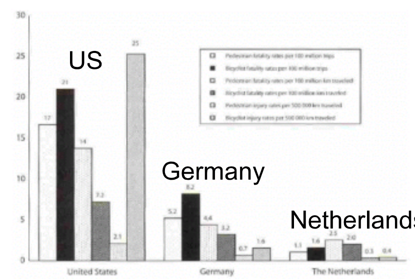
Automobile dominated planning and infrastructure has been in-place since the 1950's. A balanced transportation system will require a strong focus on alternative modes of transportation. An important part of this master plan Addendum is to identify and promote connected routes that can transition current motorist trips into bicycle trips on a routine basis while integrating with existing infrastructure and promoting better public space.

Promoting Safe Walking and Cycling to Improve Public Health: Lessons From the Netherlands and Germany

John Pucher and Lewis Dijkstra



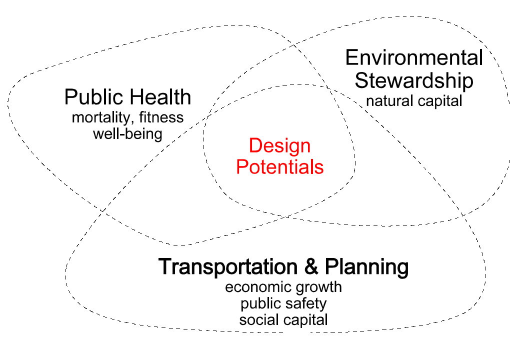
Percentage trips by walking or bicycling



Pedestrian and bicycle fatalities and injuries - trips and miles traveled

Recommendations for infrastructural and policy improvements are included to address safety issues reflected in the statistics above. Although the US has far fewer cyclists and pedestrians, the fatality rates for non-motorized person trips are far higher than European countries with very high rates of cycle pedestrian activity. Infrastructure is a key component yet only part of an initiative that includes policy, education and enforcement.

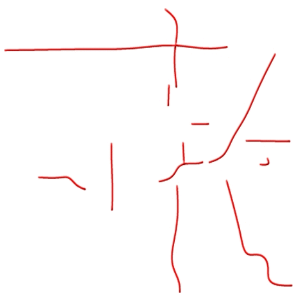
Non reductionist models find efficiency in the overlap of systems and the acceptance of complexity to leverage mutual benefits.



**Public Garden,
Copenhagen, Denmark**

3.0 Analysis

Transporting Ecologies Studio conducted local, national and international analysis of bicycle infrastructure as part of this Master Plan Addendum. Analysis included reviews of existing bicycle recommendation reports, field analysis of existing infrastructure, case studies and field studies of notable bicycle integrated cities, studies of rail and utility corridors, spatial analysis of existing infrastructure and demand potential, geographical barriers studies and riparian corridors and hydrology studies. This information was used to develop a list of the highest priority connectivity needs as well as to reveal any potentials for additional paths not included in the 2001 Master Plan.



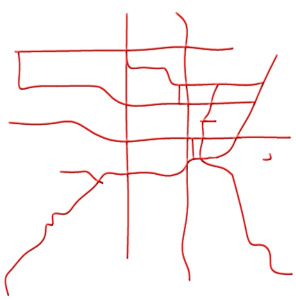
Existing implementation plan reinforces a fragmented network.

2001 Master Plan Review

The 2001 Alachua Countywide Master Plan Report identified goals, objectives and proposed priorities to upgrade existing segments and add new paths or trails. This work included a Quality of Service Analysis and a Latent Demand Analysis submitted as part of the Master Plan under separate covers.

The strength of the 2001 report is in the detailed analysis of infrastructure adopting the Department of Transportation (DOT) street and road data and supplementing that information with a bicycle infrastructure analysis including quality of service analysis (QOS), latent demand analysis and estimated costs for most segments to bring the quality of service from the existing (typically “D” or “E”) to “B” for city and county streets and “C” for state roads. Excellent research into possible new lane and path systems was also included.

Weaknesses of the analysis and recommendations include lack of cost data for key segments (those with the highest latent demand scores) and the extensive segmentation of the network into small data blocks (less than 1 mile segments on average). This methodology revealed 200 priority I (highest priority) segments with no protocol for organizing these into a logical order for implementation. Consequently, project segments are matched based on budget amounts or other influences rather than a coherent connectivity strategy or targeted network approach.



Transporting Ecologies identifies “Braid” priorities that include in-place bicycle infrastructure and new linkages for a connected network

Bicycle Travel Latent Demand studies provided in the 2001 Master Plan report focus on a quantification of the potential for bicycle use based on Travel Analysis Zone (TAZ) data for automobile transportation modeling assuming that if no cars are available, all trips within 0.5, 1.0 and 1.5 (or 2.0 in some cases) miles for specific trips such as school, work, shopping or recreation would be made by bicycle. This produces a single number for each segment but does not indicate which strings of segments work together to provide connected “Braids” of high latent demand segments (or facilities).

Bicycle Quality of Service

Bicycle Quality of Service (QOS) recommendations in the 2001 Master Plan optimize refined segmentation in the assignment of service levels for the existing infrastructure. Through community input, the plan establishes design criteria of “B” level quality for local streets and roads and “C” level quality for state roads. Appropriate on average, many highly traveled corridors with high potential to capture riders might necessitate a higher quality of service while other less traveled local infrastructure might be appropriate with “C” level service. A more targeted strategy is included here with the highest latent demand segments near the campus proposed as “A” and “B” level service while other lower demand areas are sufficient with “C” level of service. On average, this is consistent with the 2001 Master Plan.

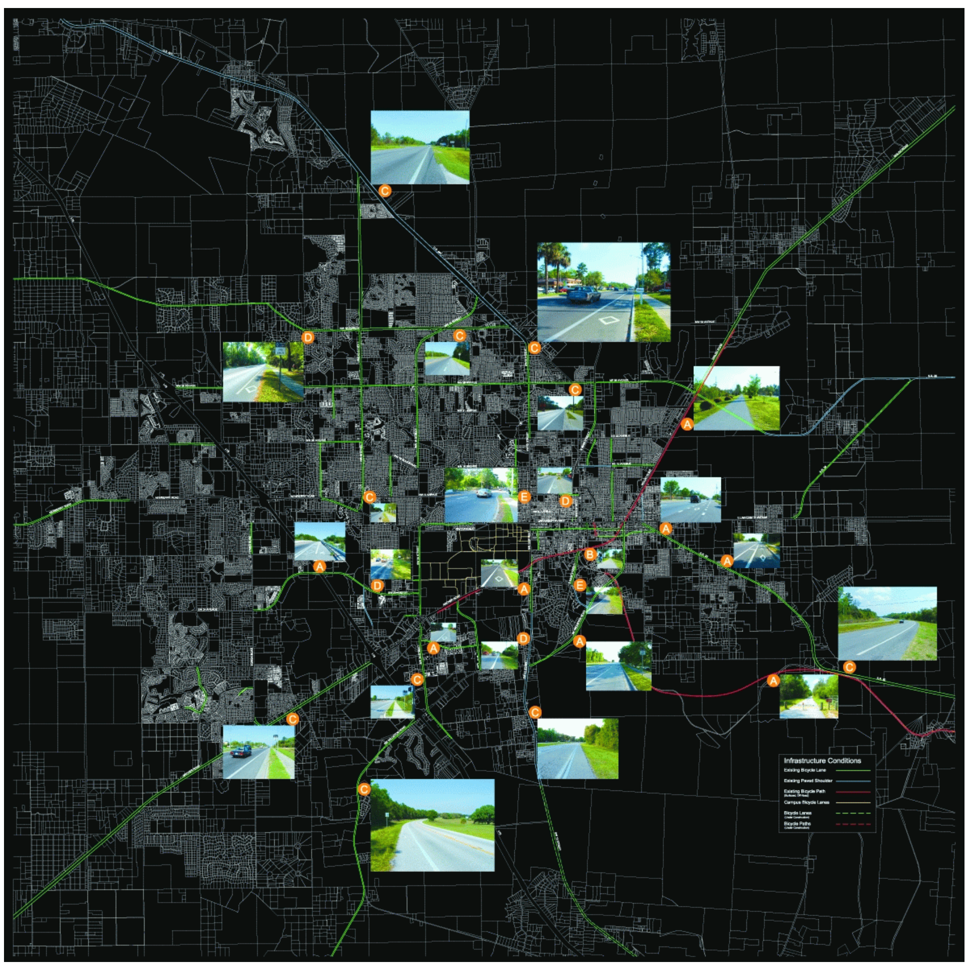
Quality of Service Comparison Matrix

The *Quality of Service Matrix* provides visualizations and definitions of bicycle quality of service (QOS) for various infrastructual elements. PDF poster size is included with the CD provided with this report.

Existing Infrastructure

Compilations of the 2001 Master Plan map studies, Gainesville bike routes map, field investigations and documentation were integrated into an overall assessment map illustrating the extent of the existing network, quality of service rating and images of the segment indicated. It is clear from this study map that the existing system is segmented and incomplete. There are high quality segments that are enjoyable to ride. However, cyclists are often confronted with "end-of-line" conditions requiring undesirable negotiations with automobiles or inconvenient out-of-the-way detours. This analysis supports the Transportation Mobility Element of the Comprehensive Plan by identifying arterials and collector segments not currently designed for in-street bicycle transportation (Policy 4.1.5).

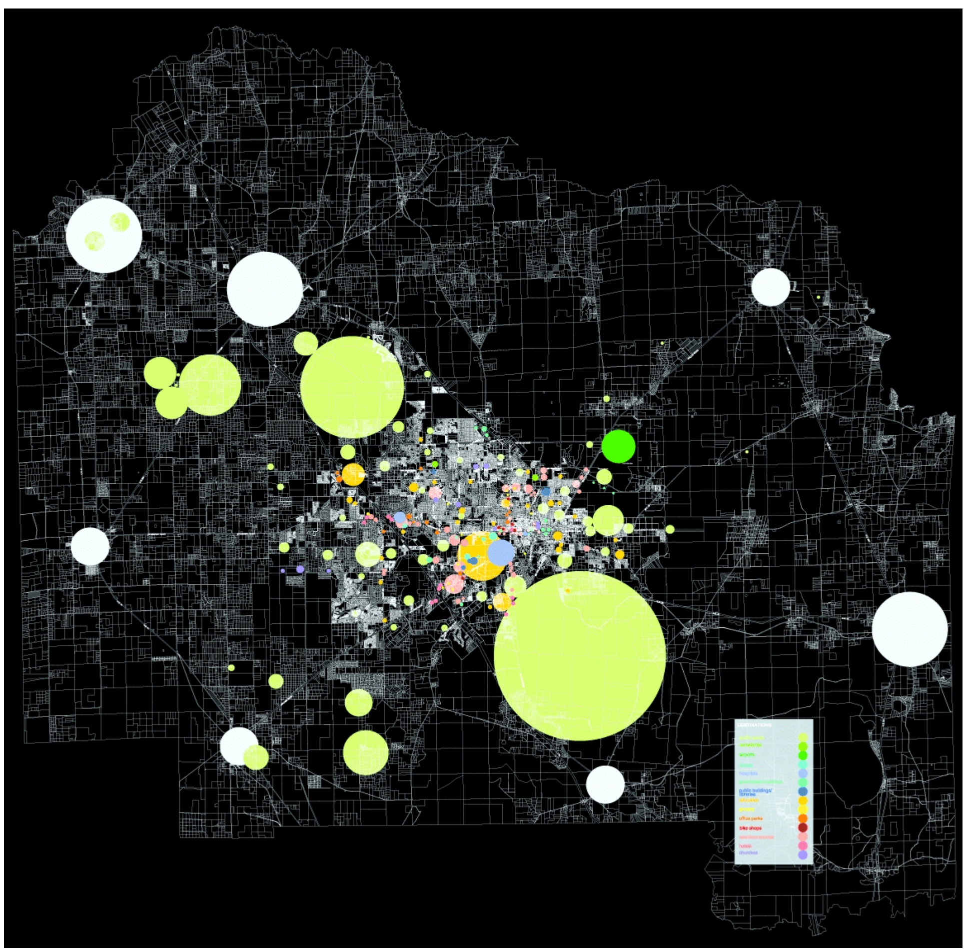
Existing Infrastructure map. Includes visual and QOS rating at locations marked by an orange dot.



Destination Analysis

Potential bicycle destinations were evaluated based on a quasi-gravitational model. Within destination groups such as parks, schools, cultural facilities, retail, work, bicycle repair, religious and other institutions, specific destinations were given a graphic weighting of the potential to draw visitors. This was based on the expected magnitude of visitors given the size, public access and adjacency to other destinations such as shopping centers. Visualizations of this information confirmed that major collector streets gathered the destinations in a linear manner linking key point destinations such as the University of Florida, Shands Hospital/VA, Oaks Mall, Sante Fe Community College and the downtown. Most destinations are on the network of arterial streets connecting these points. This part of the overall analysis partially fulfills the prioritization requirement of the Transportation Element (Policy 4.1.6) of the Gainesville Comprehensive Plan.

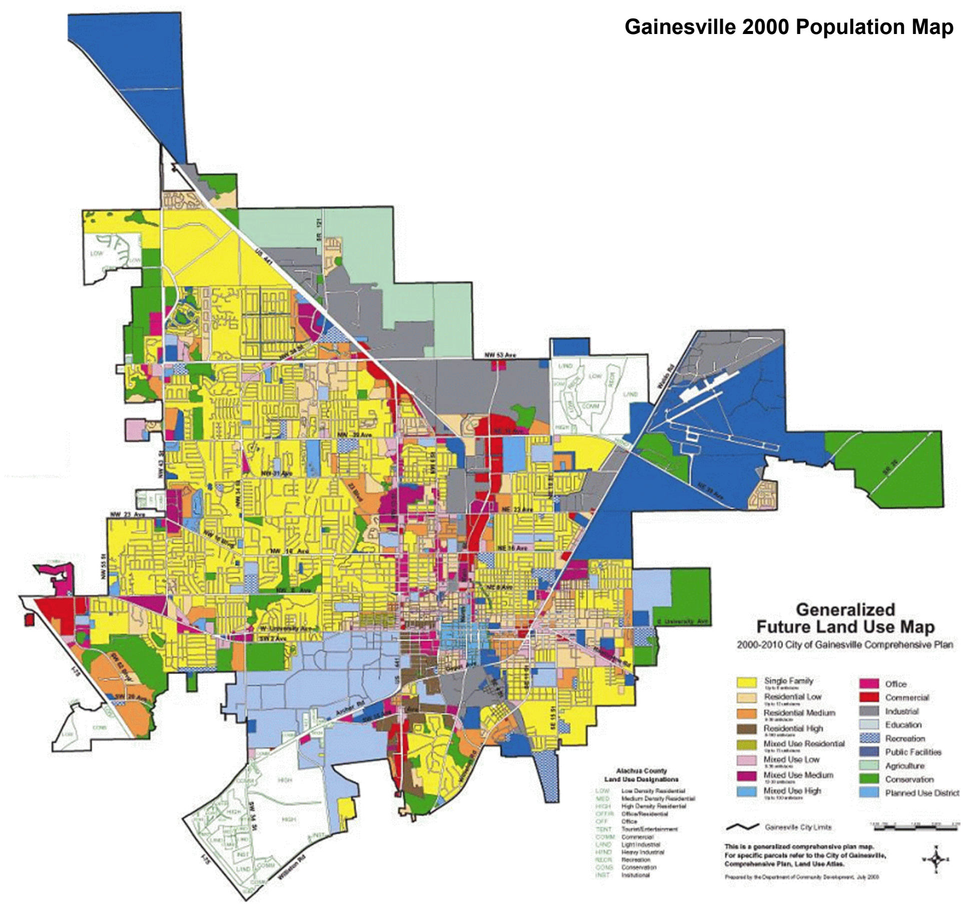
Destination Matrix mapping analysis - countywide

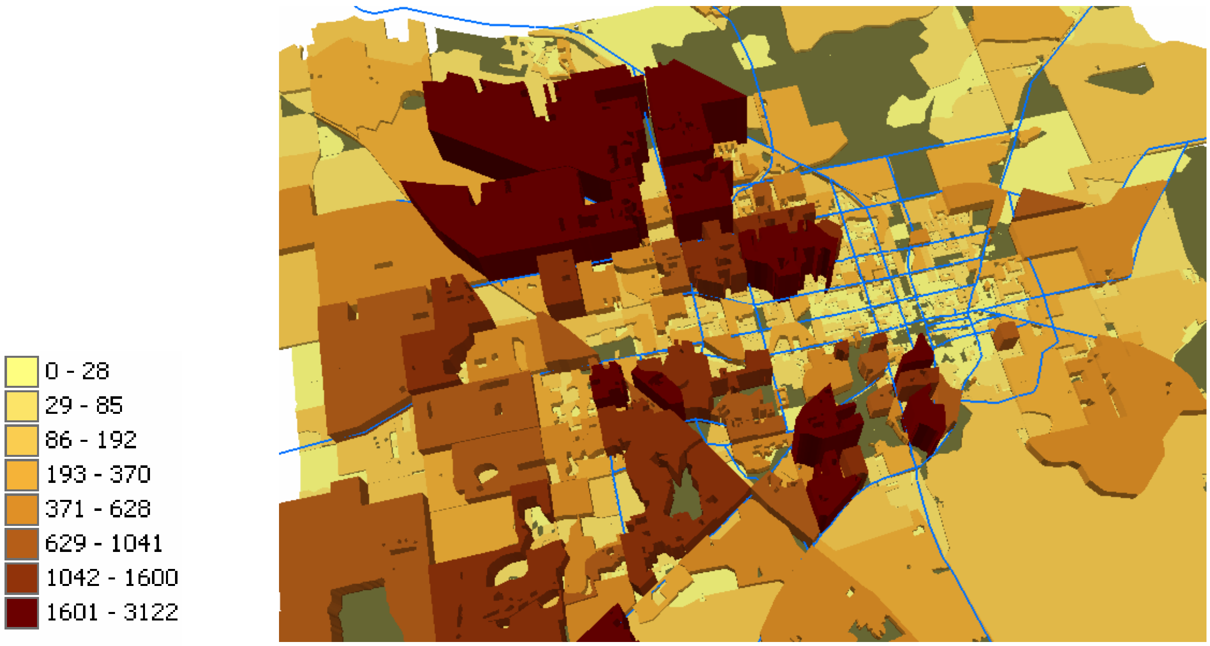


Destination analysis provided the insights into the potential high use Braids and where resources should be focused to make connections between living areas and trip destinations. Moving beyond traditional land use mapping strategies assigning areas of use, the destination matrix reveals overlapping densities within zoning boundaries and the advantages of locations that combine uses in zones.

Gainesville 2000-2010 Generalized Land Use Map

Gainesville 2000 Population Map



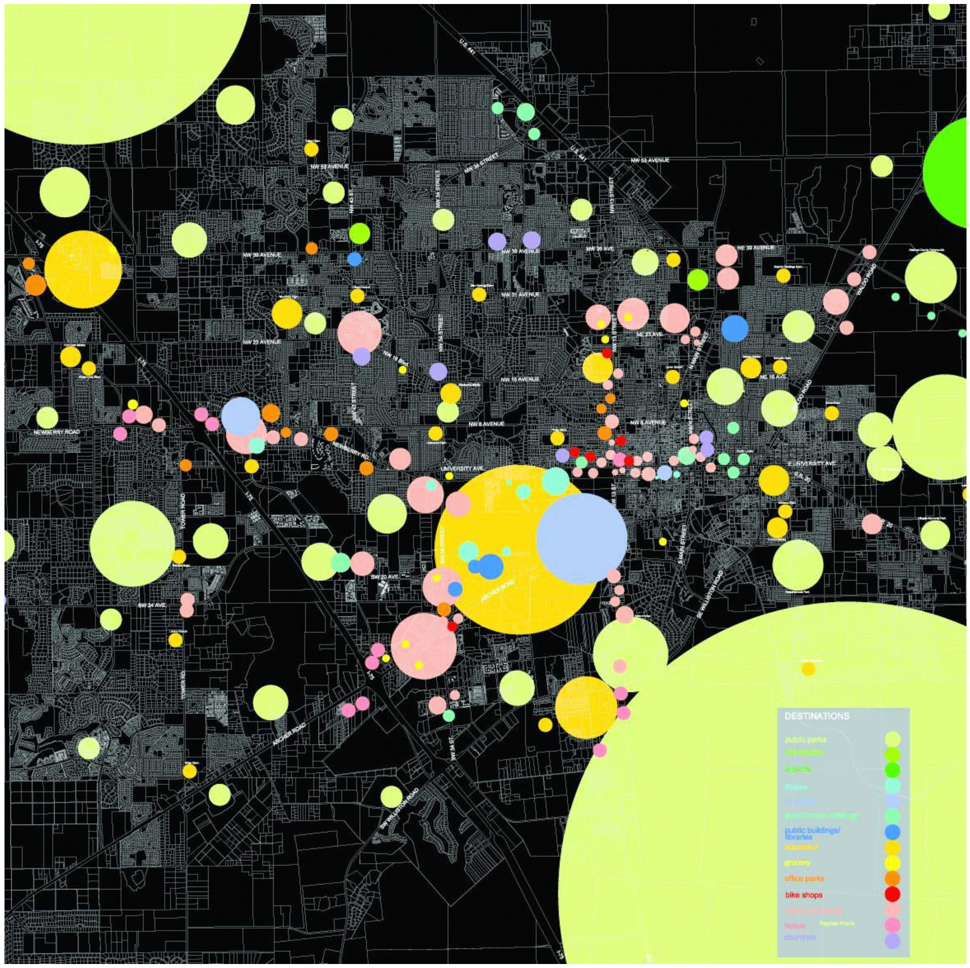


Considering population concentrations conjoined with the linear structure of destination distribution, linkages could be made that leverage existing infrastructure rather than propose new routes. Much of the population lies within 5 miles of the core (UF) and significant portions are within 3 miles. Based on our surveys (discussed in the Public Disposition Section) people would ride on average 25 minutes through well designed infrastructure — equivalent distance of 4+ miles.

Existing arterial connectors in the core of the urbanized area organize destinations like a string of pearls. To advance routinized use, optimize bicycle connectivity, and create the shortest possible routes, a similar linear structure is required allowing cyclists to pass the most alternate destinations between routine destinations such as school or work.

Latent demand models from the 2001 Master Plan report were included in this analysis. The demand scores for arterial connectors were in the 90 to 100 range (100 highest possible). Cost benefit analysis from the 2001 report was also included as part of the Braid prioritization factors discussed in the Prioritization and Recommendations section later in this report.

With the majority of the population density distributed to the north and south favoring the west side of town, linkages that string these locations to the most visited destinations would require both north-south and east-west connectors. Linking residential areas with destinations via existing arterial auto connectors utilizes the natural density built-up along these corridors. Although these may not be the simplest projects to implement, they offer the most potential for increased cycling as a viable routinized transportation option.



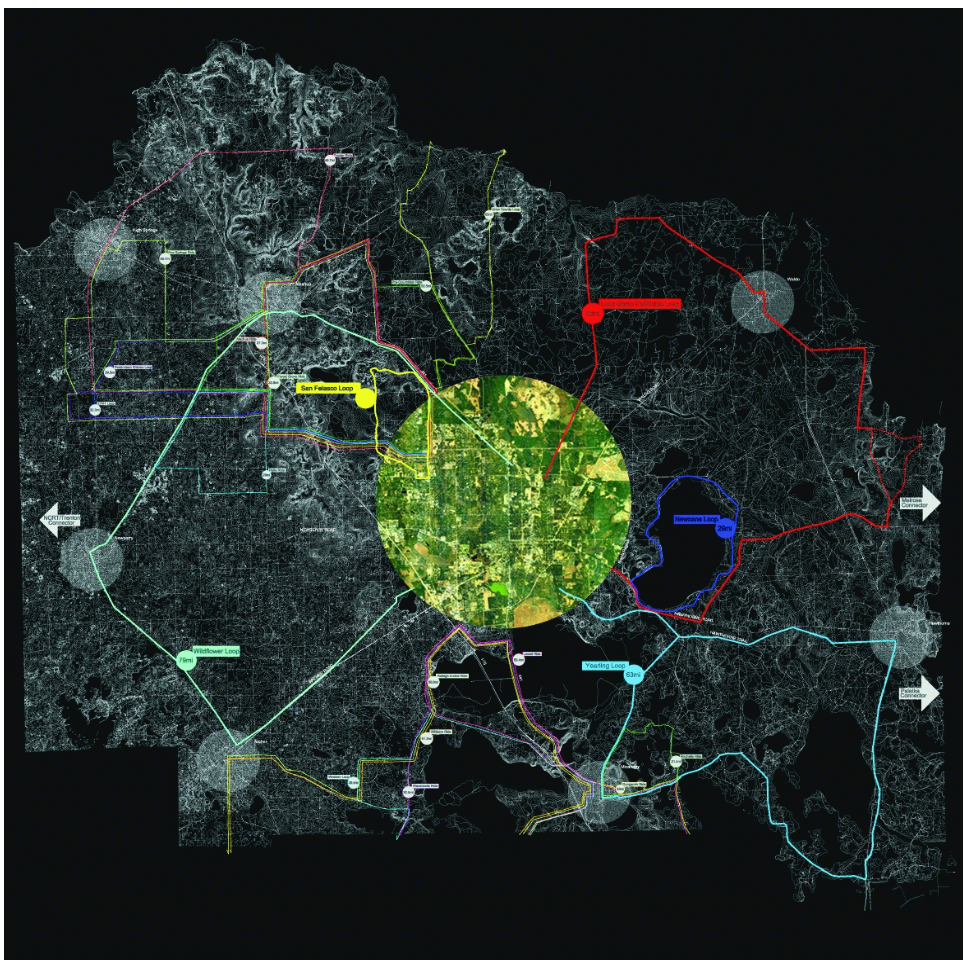
Destination Matrix mapping analysis - urban core

University Avenue and West 13th Street (US 441) act as threads stringing together a large number of businesses. Additionally, these streets provide shortest distance connectivity between large residential zones and key destinations such as the University of Florida. They also provide the most logical connectors for park-n-ride or park-n-bike facilities — a facility that could formalize the underground system currently on-going. The City of Gainesville Comprehensive Plan, in the Transportation Mobility Element Objective 1.1 (Policies 1.1.1 & 1.1.3) calls for these arterials (University Avenue and 13th Street) to be modified to provide transportation choice, multi-modality and livability.

Rural Infrastructure - Loops Analysis

Analysis of rural connectivity and use was implemented through mapping studies and interviews and workshops with representatives from the Gainesville Cycling Club. Existing rides were mapped and themed to identify desirable routes currently in use for recreational and competitive riding. Proposals were made for new routes to improve connectivity between Gainesville and satellite municipalities as well as extending further to the east and west would allow connectivity to the Nature Coast State Trail (west via Trenton) and the Cross Florida Greenway (east via Hawthorne) connecting to Palatka, thus establishing Gainesville as a major cross state connector for cycling enthusiasts and eco tourists.

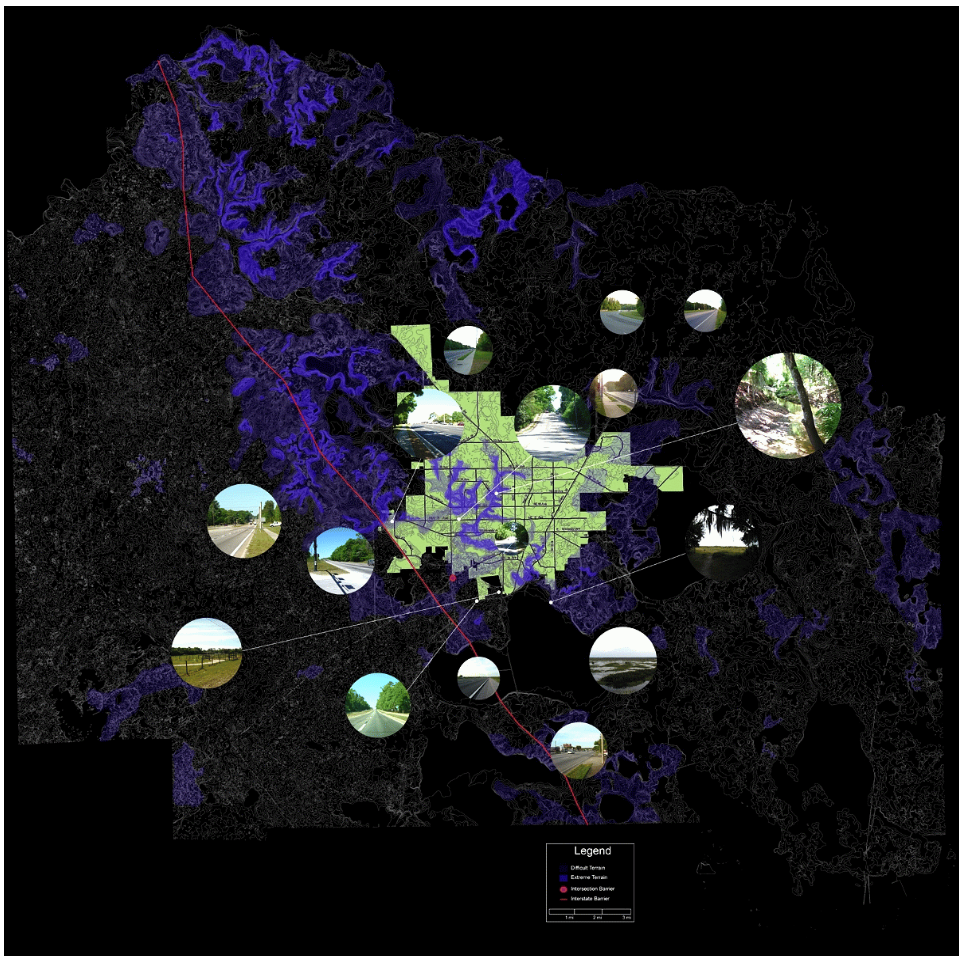
Rural loops analysis and proposal for future expansion



Geographical Barriers Analysis

Analysis of geographical barriers was conducted to assess the impact of topographic relief on potential commuter cycling routes in and around the urban core. Steep inclines can be a serious deterrent to routinized (commuter) cycling especially in a hot and humid climate such as Gainesville. In a effort to identify the most direct yet most level routes, topographic barriers were identified. Interstate I-75 was also indicated as a major geographical barrier as it diverts cycle traffic substantial distances as compared to typical cycle trips between most residential areas and common commuter destinations utilizing a grid network. At the request of the public, the intersection at Archer Road and SW 34th Street was included as a geographical barrier. The study identifies areas that should be avoided in terms of primary cycling infrastructure. As alternate routes for the hearty cyclist they provide important variation and connectivity to hilly neighborhoods and should be supported, but not relied upon as primary infrastructure.

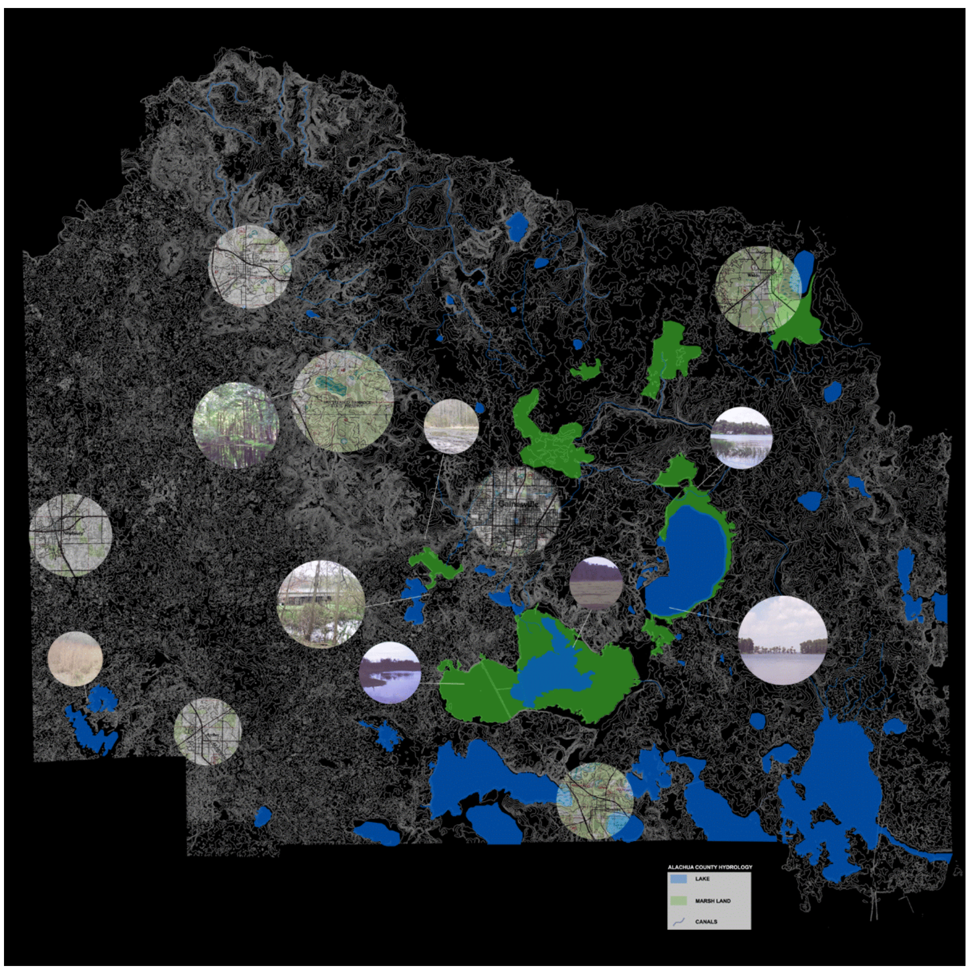
Geographic Barriers map. Blue tinted area shows difficult terrain.



Hydrology Analysis

The potential to capture existing riparian corridors and natural watersheds as bicycle and pedestrian greenway connectors was evaluated primarily through the hydrology analysis. Study identified riparian corridors that move through residential and commercial zones offering the potential for nature trail connectivity to many locations in Gainesville. Engaging this natural resource as an extension of the rich on-street network, a model cyclist and pedestrian connected community could evolve. Riparian corridors are mostly undeveloped in the urban area and provide natural habitat for local and invasive flora and fauna — a condition that could be cultivated and nurtured through investment, occupation and observation.

Hydrology map. Registers major riparian systems, wetlands and lakes.



Public Disposition Analysis

Public information was gathered during a bicycle master plan workshop held April 1, 2004 at the Florida Community Design Center. A formal survey questionnaire was also distributed during the workshop and to other cyclists later at bicycle related events. The survey form is included in Appendix A of this report. A workshop and telephone interviews were conducted with representatives from Gainesville Cycle Club and phone interviews were conducted with concerned citizens responding to news articles printed in the Gainesville Sun on April 1st and 2nd , 2004.

Identifying "nets" potentials

Introduction of Project

Public workshop

The workshop was attended by 35 members of the public. This included the general public, Bicycle/Pedestrian Advisory Board, Gainesville Cycling Club members and state and local agency staff members. After a brief introduction of the project conceptual framework and a discussion of the prioritization goals, a lengthy question and answer session was conducted to address possible outcomes from the recommendations. After this, citizens broke out into two workgroups with maps and markers and were asked to sketch and note problem areas, revisions, new initiatives, and renovation proposals to improve the system.

Alachua Braid identification and suggestions

Workshop group postulating alternate routes

Public Workshop Comments & Recommendations

Comments from the Public Workshop are included below. General comments were recorded after the project introduction and during two focus groups A and B each with approximately 10 members (people moved in and out of the base groups).

Introductory Issues:

- Separation needed on high speed roads (Paine's Prairie, University Ave., West of campus). Not just rumble strips!
- Initiatives for connectivity of new residential construction through enforcement of "Nets" strategies is desirable.
- Disrepair on "successful" paths (Depot Rail-Trail, Hawthorne Trail).
- Linkages (Continuous Braids) needed.
- Support facilities (showers, lockers, repair, transportation) for Downtown and the Airport? Suggested investigation into Tampa and Orlando initiatives.
- Future park linkages (Parks/Rec Department allocating money for future park development) Is Transporting Ecologies flexible to accommodate new parks?
- Tourism possibilities (International athletes – cycling/long distance running)

Focus Group A

- Completion of the Hawthorne Trail connection into the NE. City support dependant on seeing completion of a project.
- Measuring trip generation potential (regular usage, not just recreational/weekend use, consider marketing as well as population factors)
- Lack of SW to NE cross-link connection (hull road/34th to NE Duckpond).
- Intersection barriers (excessive wait time for traffic signals).
- Hawthorne trail braid into NE connection should be HIGHEST PRIORITY!
- Depot Trail maintenance needed (roots, glass).
- Lack of continuity problematic, especially around UF. Access points disappear before reaching campus.
- Archer braid as multi-use corridor (follows Hawthorne Trail example- bikes, blades, walking). Linear parks/RR routes.
- Possible encouragement of future bike commuting by providing recreation/separated trails.
- Narrowing of 34th street NW after University Ave.
- North-South, East-West braids of equal priority.
- CONTINUITY!
- Connection with city (phone/web) for path/trail maintenance. Single agency needed to oversee maintenance. Who does one contact for issues on each trail?
- More destinations along trails (parks and play areas). Encourage neighborhood development along trails. Potential destination based business opportunities.
- No services along trails (water, restrooms, air) Ex. At Boulware Springs, the water access is inside of a building at a distance from the trail.

Focus Group B

- Quality of service low on NW 24th St. between 34th St. and 441.
- Dangerous intersection area from 13th St. to Archer Rd.
- Quality of service 'E' going (13th St.) from Wal-mart to University Ave – lack of (2 mi.) bike lane.
- No commute (no bike lane, need facilities) from 6th St.; additionally pot-holes south of 16th in front of Lloyd Sports (on NW 13th St.).
- No commute (no bike lane, need facilities) Main Street.
- Connect off-road trails from town to San Felasco Nature Preserve.
- Recreational routes: connecting residential and community areas to recreational areas needed.
- Mix of paved and non-paved trails preferred.
- Consider Citizen volunteers for patrolling and communication.
- Community designers needed.
- Designing around topography is not necessary (people enjoy hills and obstacles).
- Increase connectors.
- High priority East/West Braid on Hawthorne to Depot across Campus Hull Rd. to Tower Rd. and Kanapaha.
- Nets: Safe ways to school (biking, etc) connect to back side of schools for more access.
- Intersection treatments between connectors, so that people won't feel intimidated by the connectors.
- Reclaim road on N Main to add bike lanes connect to Waldo.
- Possible Loop around Prairie 234 off-road facility connects to Hawthorne Trail.
- No safe North South route through Gainesville.

Local citizens, students and staff engaged in focus group evaluation of proposed Braids as a network priority.

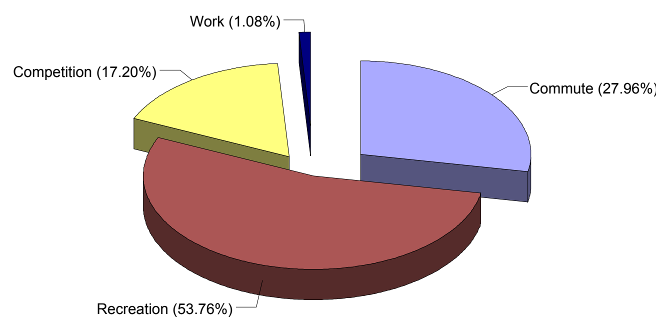
Questionnaire Survey of Public Perception

In addition to the hands-on public workshop sessions, participants were asked to complete a questionnaire survey more specifically targeting information regarding use, potential use, perception of safety and prioritization preferences. The survey was also implemented at a local cycle rally. The groups participating in the survey represent the attitudes of experienced and recreational cyclists in Gainesville. Results do not represent the community at-large but reveal important issues that are a concern to regular and moderately regular cyclists — 55 cyclists responded to the survey.

Cycling Activities breakdown

The majority of cycling activity is recreational (54%) with commuting following second (28%). Respondents indicated each use category they participated in regularly. The work category is for persons who use their bicycle for commercial purposes.

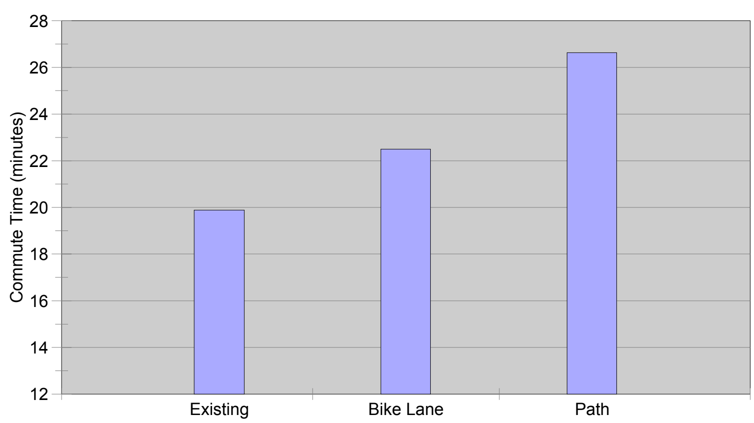
Cycling Activities



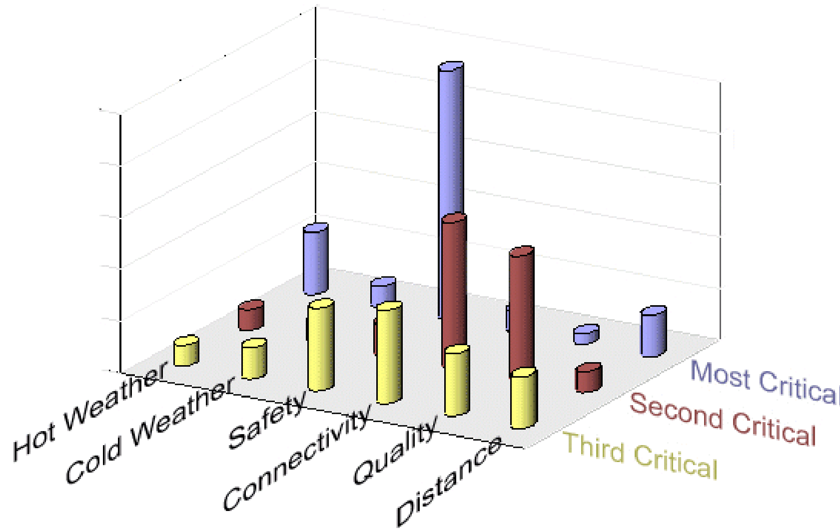
Travel Time Breakdown

Respondents were asked to estimate the trip time (minutes) they would devote to commuting by bicycle to work, shopping or services given the following conditions in their area — on the existing system, on new connected bike lanes, on new connected paths (paved but separated from the road). Separated paths offer the greatest potential for longer distance cycling - up to 5 miles.

Commute Time & Quality



Obstacles to Commuting

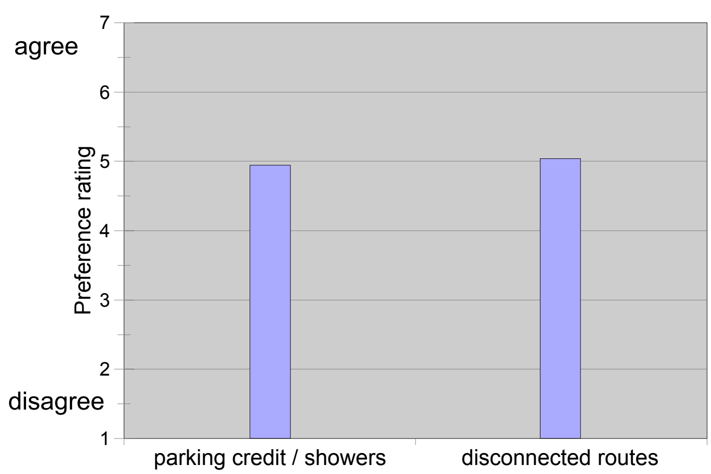


The graph above represents respondent evaluations of the listed obstacles to commuting including hot weather, cold weather, safety, connectivity, quality of ride experience, and distance needed to travel. Each respondent ranked the top three, with “1" representing the obstacle of highest concern. Safety was perceived as the most dominant obstacle to commuting with 24 highest ratings. Connectivity and quality of ride were most commonly selected second in difficulty to commuters (includes shopping and errands trips). Connectivity and safety were also the highest for the third tier obstacles. Most respondents did not see the hot climate in Gainesville as an obstacle. Safety and connectivity were the issues identified as limiting cycling in Gainesville and Alachua County.

Incentives & Impediments

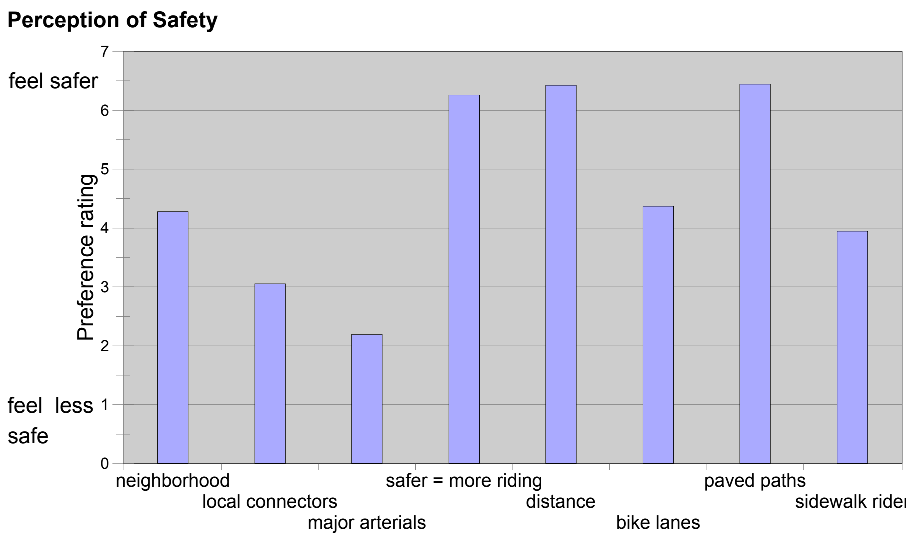
Respondents were asked if incentives such as a parking voucher or showers would influence their commuting habits and if disconnected routes inhibited their commuting habits.

Incentives & Impediments



Perception of Safety

Survey respondents were asked to evaluate the feeling of safety in the existing system relative to their experiences on well-designed portions of the local system or other systems on which they had ridden. The first three questions asked to rate the feeling of safety relative to neighborhood, local connectors and major arterial streets. Respondents felt significantly less safe on major arterial streets. The fourth and fifth questions asked if respondents would ride more often and farther distances if the system were perceived as safer (high score here was "feel safe"). Most felt that they would ride more if they felt the system was safer. The next two questions (6 & 7) evaluated which of the following infrastructures people feel safer on — lanes or paths (separated). The last question asks if the rider rides on the sidewalk as a way to feel safer in the network.



Automobile yielding to cyclist at arterial rotary in Malmo, Sweden. Cyclist moves confidently through the intersection as the car approaches and then stops.

This data represents respondent perceived safety and may have as much to do with rider skill, public awareness of cyclists, motorist responsibilities or anecdotal events such as fatal accidents as it does with the actual infrastructure. However, three important aspects of a cycle network are identified from this data set as promoting perceived safety in Gainesville and Alachua County:

ì People would ride more if the system was perceived as being safer.
í People would ride longer distances if the network was perceived as safer.
î People feel that separated paved paths make them feel safer.

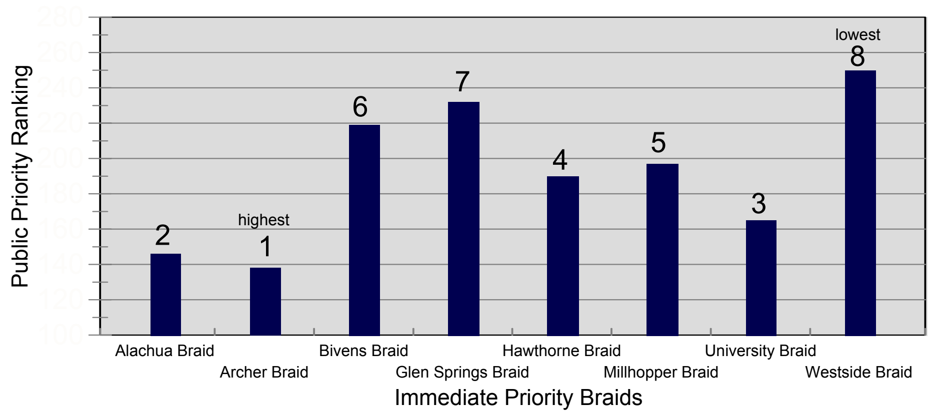
Public Prioritization Preference of Immediate Priority Braids

During the project introduction, the public attendees were informed of the draft phase proposal for specific connecting corridors "Braids" that would link destinations and organize the segmented priorities of the 2001 Master Plan to promote improved connectivity. Maps of the proposed braids were distributed as part of the workshop and attendees prioritized the braids in rank order from 1 to 8 (lowest number indicates highest ranking). Survey respondents not attending the meeting were given a map of the proposed Braids and a brief discussion of the intentions of the survey.

Public Priority Ranking of Braids

1. Archer
2. Alachua
3. University
4. Hawthorne
5. Millhopper
6. Bivens
7. Glen Springs
8. Westside

Public Survey Braid Priorities



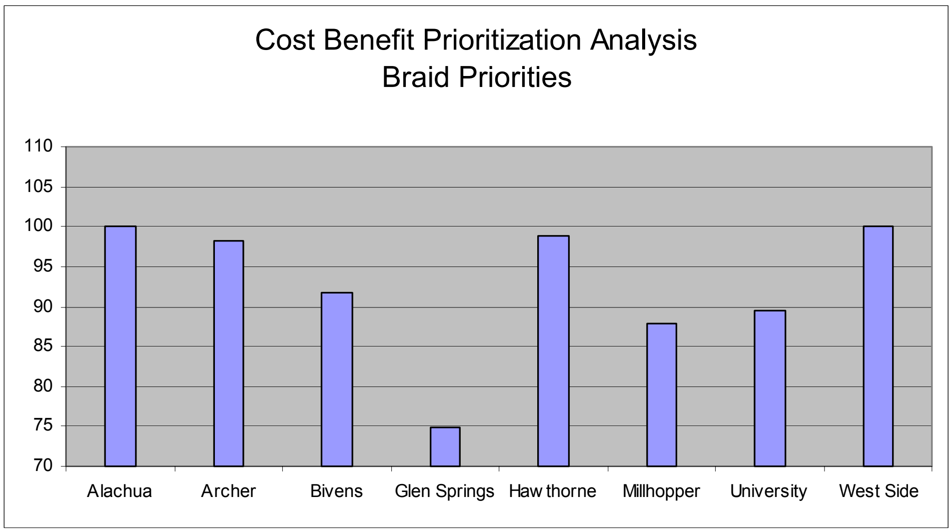
The results above show two clear top preferences for the Archer Braid and the Alachua Braid with slight favor toward the Archer Braid (lowest number is highest preference). The University Braid was clearly the third choice. The Hawthorne and Millhopper Braids respectively were 4th and 5th yet closely grouped as with Bivens and Glen Springs Braids. Although the Westside Braid was ranked last it is statistically similar to the number 7 choice.

This data analyzed in conjunction with cost benefit analysis (provided in the 2001 Master Plan report) was a major influence in the final prioritization recommendations. Please refer to the Braids category of the Prioritization and Recommendations section later in this report for further discussion, final prioritization schedule and specific recommendations for each Braid.

Cost Benefit Analysis

Cost benefit analysis summarizes the benefit to cost of multiple segments that are intertwined to comprise the Braid. In most cases some portion or portions of the Braid has existing bicycle infrastructure that is in good to excellent condition — requiring no upgrades. Typically, there are also major segments or strings of segments that have little or no bicycle infrastructure. Therefore, to promote connectivity and avoid segmented implementation of facilities while establishing appropriate levels of service through areas of high latent demand, segments must be organized into a bundled system — a Braid. Toward this goal, cost benefit prioritization rankings illustrated in the chart below, include both needed and existing segments (existing segments receive cost benefit ratio of 100). The ranking below is the average cost benefit ratio for the aggregated segments of the entire braid.

Braids cost benefit analysis



Prioritizing by individual segments eliminates poor cost benefit segments or complicated segments requiring additional cost analysis. Many of these segment cases are integral to a connected network and must be included as priority initiatives. The methodology used in this addendum weights costs and benefits over the entire Braid (combining multiple connected segments). Therefore, more expensive but critical segments are prioritized in a manner more characteristic of their overall connectivity and latent demand potential. Cost benefit analysis information is averaged using the segment data from the 2001 Master Plan. In some cases, 2001 data segments were not given cost benefit rankings and subsequently were not included in the 2001 prioritization schedule. Those segments are critical to developing a connected system and have been included in this analysis. As with all of the segments, more detailed cost analysis is needed to initiate individual projects — the Braid priority ranking is also a method of selecting detailed study segment candidates.

4.0 Prioritization & Recommendations

Project and infrastructure recommendations and prioritizations are included with suggestions for policy and educational strategies to enhance the infrastructure and promote bicycle use in Gainesville and Alachua County.

Infrastructure improvements are parsed into three priority categories — immediate, high priority and priority projects. The intention is not to preclude any priority level project from capitalizing on opportunistic benefits from related projects such as road renovations, resurfacing, landscaping or restriping that would improve cycle infrastructure on a segment. The eight ***immediate priority projects*** are identified to advance the goals of the 2001 Master Plan by focusing resource generation efforts, public support, new funding initiatives and discretionary transportation funds toward a well connected, highly utilized and safe bicycle network. ***High priority projects*** leverage potential upgrades through their influence in the larger transportation master plan. ***Priority projects*** are identified to frame the longer term vision for dense connectivity and route redundancy as part of a well established cycle network.

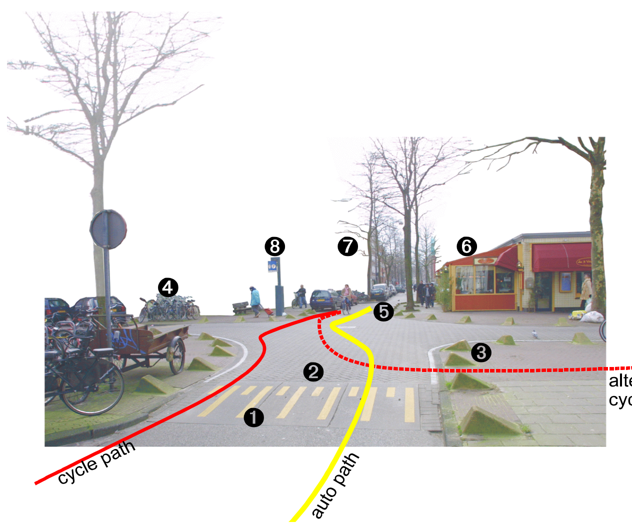
Nets

Nets offer easy alternative routes, diffusion of traffic and shared use of the street by cyclists and automobiles on residential streets. Transporting Ecologies proposes to restitch neighborhoods with bicycle pedestrian connectors providing high connectivity within high proximity areas. This enhances federal and local *Safe Routes to School* programs and promotes more and longer distance walking and cycling trips through improved connectivity.

Nets protocols include low speed limits (20 mph) and traffic calming alternatives to the speed humps, bumps and shelves currently used that slow emergency vehicles. Dutch “Woonerf” principles occupy the street with parking, vegetation and diverting elements to slow cars, enhance the street as a public space and improve safety.

“Woonerf” integrated street provides traffic calming and public space

ì ramp zone
í intersection shelf
î filters auto, cycle pedestrian movement
ï bicycle parking
ð street narrows
ñ commerce added
ò tree allee - shade
ó park fee kiosk



Pedestrian / cycle link between neighborhoods with integrated stormwater catchment swale. Davis, California

Public pedestrian / cycle right of way linking neighborhoods in Davis, California.

Typical cul-de-sac condition. Davis, California.

Multiple opportunities exist to stitch together high proximity — low connectivity neighborhoods. The “gated community” single entrance suburban planning model ultimately disconnects neighborhoods at the pedestrian or bicycle scale. The close proximity to nearby destinations suggests opportunities for capturing cycle transportation yet in many cases travel distances are circuitous and inconvenient as automobile oriented arterial connectors provide the only path.

Cities such as Davis, California, have been implementing bicycle and pedestrian ways to join neighborhoods since the 1960's — now the design standard for new neighborhoods. These connectors typically link with parks (integrating storm water catchments and swales), slipping between residential properties — lots with these connectors typically command the highest real estate values in the neighborhood.

In addition, these linkages could support new neighborhood park initiatives engaging the Alachua County Parks department and park funding to promote multiple outcomes — child play areas, community gathering, bicycle pedestrian connectivity, safety, and security through awareness and occupation — from a single initiative.

Various situations exist where emergency right-of-way public access points are blocked-off, utility easements are cordoned off, storm water catchments are fenced or drainage ways sequestered or undeveloped. These infrastructural public spaces are easily procurable as bicycle and pedestrian neighborhood connectors. Short linking paths with permeable natural surfaces for cyclists and pedestrians could recapture and utilize this lost “public space”. The “dots” on the Bicycle Priorities maps (Urban and County) represent locations initially suitable for Nets interventions. Short “Greenways” along creek corridors are excellent strategies to link multiple neighborhoods and possibly commercial or recreational destinations.

The illustration below shows three potential neighborhood links between Royal Gardens, Coventry, Fox Grove, Maple Hill, Ormond Leigh, Maple Hill, Hermitage, Brywood and Forest Ridge. This would allow short distance connectivity promoting cycle trips to nearby destinations such as Westside Park, Ring Park and schools as well as commuting to UF and the Downtown.

Nets integration protocols (Royal Gardens & Coventry neighborhood examples): A-utilize emergency right-of-way, B-utilize storm water basin easements, C-utilize utility easements.

A quite innovative approach to achieve better connectivity suggests that local municipal governments purchase homes on prime connective land (cul-de-sacs, dead end streets or adjacent to parks or schools) when they go on the real estate market, construct cut-through paths, then resell the homes with the pathway easement or right-of-way controlled by the county, city or town.

Policy should be developed and implemented to provide an application procedure for neighborhoods wishing to initiate connectivity projects. This should also be reviewed by the Alachua County School Board to prioritize routes that offer children safer and more direct routes to school. Neighborhood initiated linkages could reduce the expenditure of resources on areas that are not receptive to these initiatives. A budget for these projects should be established.

The *Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003* provides federal money for the *Safe Routes to Schools Program*, section 150 of title 23 with a budget allocation of $70 million to be distributed nationally. Proposals for utilization of these funds could leverage the safety benefit with the added benefit of public health through neighborhood connectivity and more routinized physical activity.

The Comprehensive Plan and implementing land development regulations should have provisions to require new housing developments to have pedestrian and cycle connectivity (shortest possible routes) to any adjacent properties such as neighborhoods, shopping areas, parks or schools.

Nets connectivity projects have been designated “high priority” as part of a larger system of implementation. This designation is intended to promote the leveraging of related projects (such as storm water infrastructure) that might offer the opportunity for better cycle and pedestrian connectivity.

Braids

Braids recommendations and priorities are based in part on the 2001 Master Plan data analysis and cost benefit rankings. Updated destination matrix analysis, aggregated segment analysis, public survey prioritization analysis and opportunities for funding that are currently in place or on the horizon represent the major influences of this study on current recommendations. Initial Braids proposals were identified based on three functional provisions — coherence (a connected network structure), directness (reduction of distance and detours between destinations) and safety (minimizing the encounters between cyclists and motor-vehicles). Iterations have been modified and refined based on Steering Committee recommendations and public comments.

The Braids Priority Summary Table below lists the immediate priority Braids in rank order from highest to lowest. Public ranking, aggregated cost benefit and latent demand scores predicted the prioritization schedule as discussed in the sections below.

Braids Priority Summary Table

Priority (highest to lowest)	Braid Designation	Public (low score highest priority)	Cost Benefit (100 best)	Latent Demand (100 best)	Funds
1	Archer (Hull Rd ext)	1	98	70	partial
2	Alachua	2	100	81	initial
3	University	3	91	78	no
4	Hawthorne (6th St. rail-trail)	4	98	92	partial
5	Bivens	6	92	68	no
6	Westside	8	100	80	no
7	Millhopper	5	87	79	no
8	Glen Springs	7	75	82	no

The Prioritization Summary table above balances the criteria between public interest, safety, latent demand and cost benefit scores to optimize prioritization. Other interests include projects with the momentum of existing funding. These are ranked to promote funding initiatives and public focus on critical linkages. If opportunities become available from linking to related projects or designated funding sources, lower priority projects may be implemented in advance higher priority initiatives.

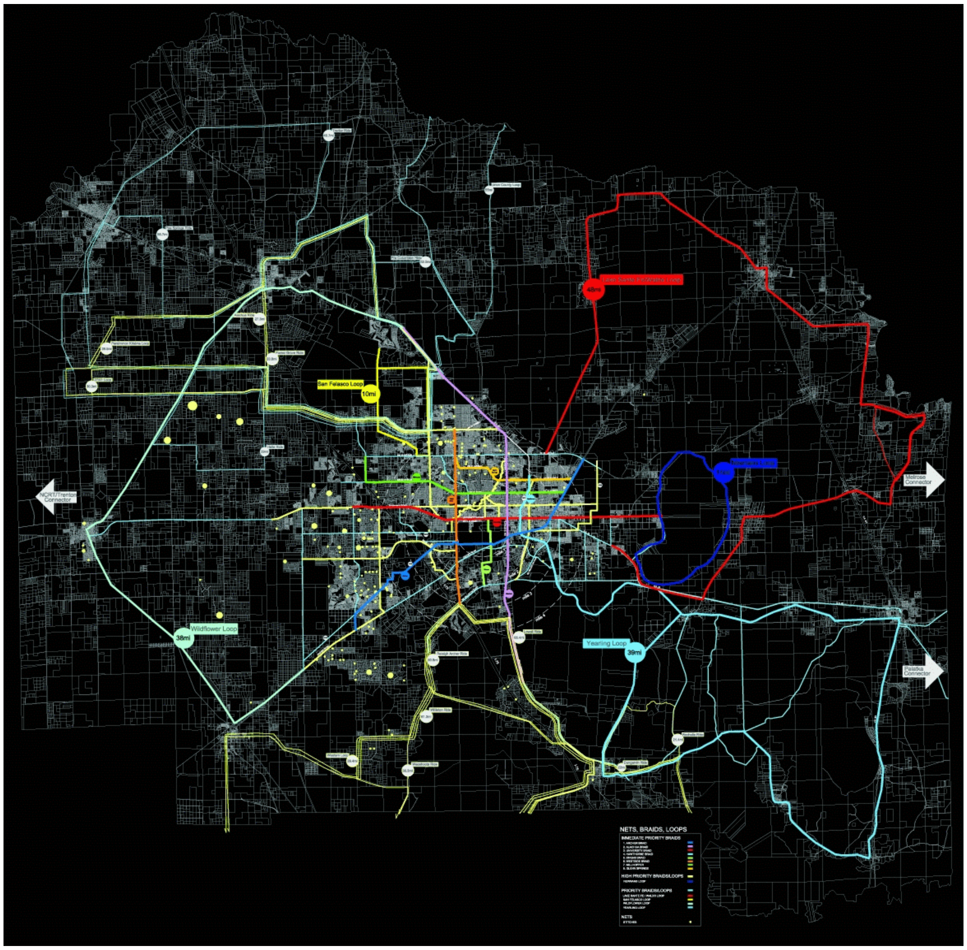
Priorities 1-3 are quite clear in their position optimizing cost benefit, public recommendations and existing initiatives. Furthermore, local bicycle crashes are concentrated within a one mile radius of the University of Florida typically occurring on University Avenue (70) and US 441 (13th Street) (66) with the next highest incidence on Archer Road (36). Improving the cycling conditions near campus was an important recommendation in the 2001 Master Plan report. These priorities are also consistent with the City of Gainesville Comprehensive Plan, in the Transportation Mobility Element Objective 1.1 (Policies 1.1.1 & 1.1.3) calling for these arterials (University Avenue and 13th Street) to be modified to provide transportation choice, multi-modality and livability.

Priorities 4 and 5 with high cost benefit ratios and latent demand scores capitalize on initiatives that are currently underway. The Bivens Braid is currently in the funding application process and represents a relatively small distance to connect. These projects may be achieved before higher priority designations but still maintain their position based the criteria noted above.

Priorities 6-8 are weighted more heavily by the low cost benefit ratio particularly the proposed Millhopper and Glen Springs Braids. The Westside Braid achieved a cost benefit ratio of 100 but is statistically similar to those ranked in the 90's and publicly ranked as less important than the other Braids. Given the safety issues noted above, this public ranking is consistent with targeting resources nearer to campus in the initial phases the Master Plan.

Countywide Bicycle Priorities Map

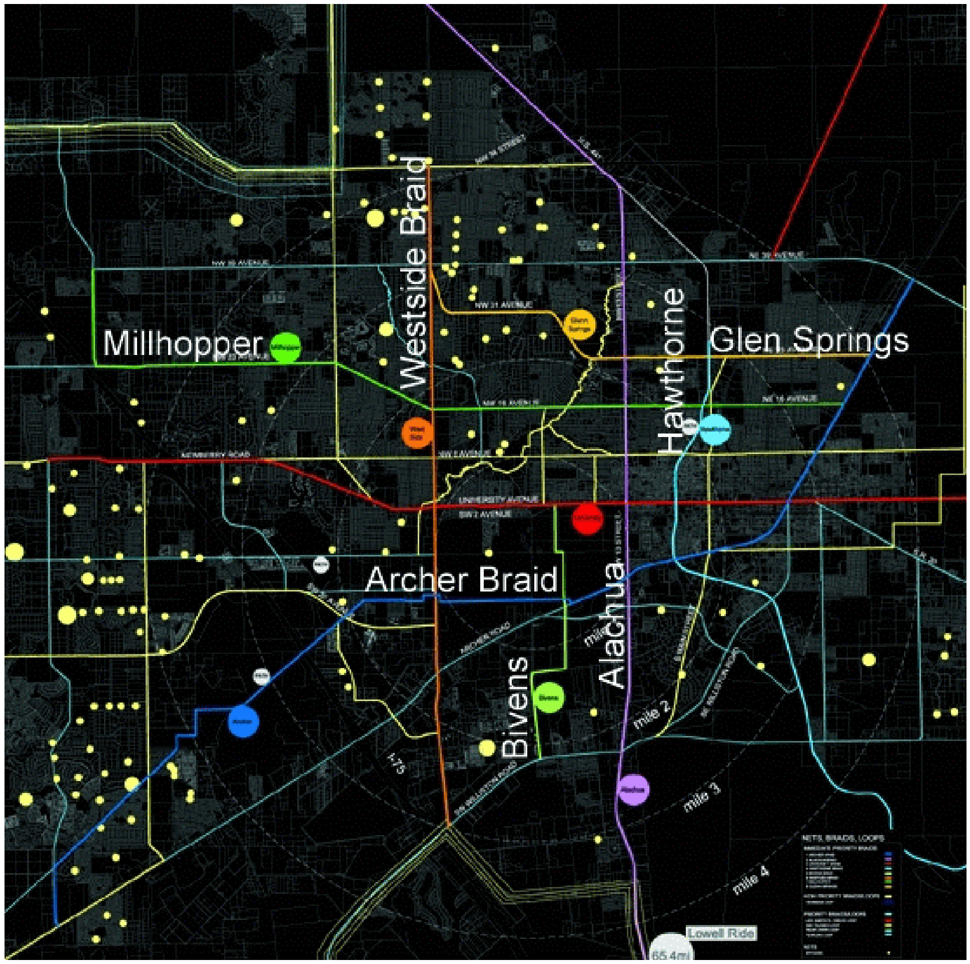
Urban and rural linkages are mapped with immediate, high and priority braids indicated.



The maps below illustrate the Nets, Braids and Loops priority proposal at the county and city scale. A brief description of each of the Braid initiatives summarizes the benefits, advantages and negotiations anticipated in moving toward implementation. Street segment data from the 2001 Master Plan spreadsheet have been compiled into the logical Braids structure delineated here and in the maps and are included in Appendix B of this report.

Urban Area Bicycle Priorities Map

Immediate, high priority and priority Braids are illustrated in addition to Nets stitching suggestions to improve neighborhood connectivity.



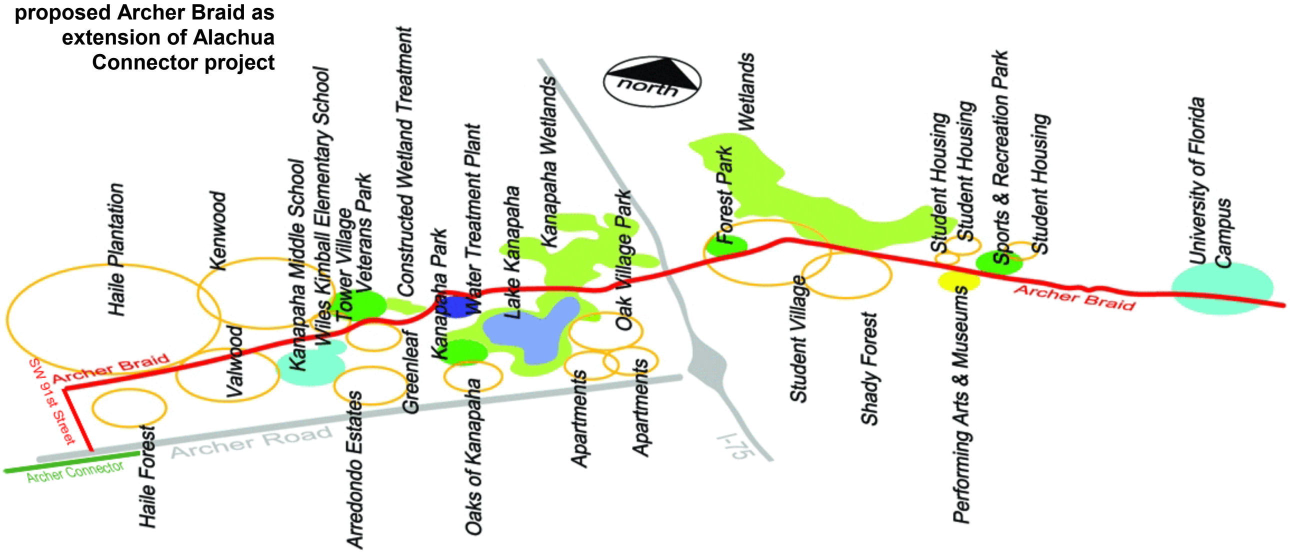
Archer Braid (1st Immediate Priority)

Archer Braid emerged as the top immediate priority based on public input, latent demand ratings, cost benefit analysis and the opportunity to extend existing funded initiatives.

Archer Braid combines two existing cycle path initiatives — ì the Hull road extension and í the Archer Connector (Alachua County). A strategic extension of the proposed Archer Road connector ending at SW 81st Street is recommended to provide superior connectivity between the Haile Plantation area, Kanapaha Gardens and adjacent neighborhoods, SW 20th Avenue “Student Village” and the University of Florida. This adjustment optimizes east-west commuter and recreational off-road cycle and pedestrian potentials. The proposed Braid takes advantage of an existing electrical utility easement — reducing the costs of purchasing property. The new path would showcase the natural Lake Kanapaha wetland recharge area and innovative constructed wetlands wastewater reclamation project while providing better recreational access to Kanapaha Gardens.

This alternate route in the southwest section of the Archer Braid efficiently (through more direct lines of travel) links multiple bicycle and pedestrian oriented destinations including, University of Florida, 20th Avenue Student Village, Lake Kanapaha, Treeo Center, Wiles Kimball Elementary School, Kanapaha Middle School, Alachua County Parks (Forest, Lake Kanapaha, Kanapaha Gardens and Kanapaha Veterans Parks) and provides off-road commuting opportunities for neighborhoods including Oak Park Village, Oaks of Kanapaha, Green leaf, Planters Grove, Valwood, Haile Plantation and University Country Estates.

Conceptual map of proposed Archer Braid as extension of Alachua Connector project



A bicycle pedestrian overpass will stitch across Interstate 75 providing opportunities to design a premier gateway marker (cycle pedestrian bridge) uniquely identifying the community along the national highway system — potentially drawing funding from a variety of sources ranging from the Federal Department of Transportation to the National Endowment for the Arts.

By Linking the western suburbs via the Hull Road extension, a direct off-road path is created to campus, the Shands and VA Health Centers and ultimately proceeding on to the Downtown via the Depot Trail with a final destination at the Gainesville Airport. Commuters from the west can reach the University of Florida central campus in 15 to 25 minutes (depending on speed) which is considerably less time than in a car from the same locations during commute hours. When completed, a continuous east-west off road connector will be available to provide both routinized commuting opportunities, improve urban-rural connectivity and provide new opportunities for access to the nature areas of the Kanapaha.

Alachua Braid (2nd Immediate Priority)

Alachua Braid constituted the highest cost benefit ratio (100) and latent demand scores similar to the Archer Braid with a ranking designation of two by public constituents. The slight difference between 100 and 98 (top two cost benefit ratio scores) is quite marginal and is within the margin of error used to generate the initial segmentation data and prioritization list.

The City of Gainesville Comprehensive Plan, in the Transportation Mobility Element Objective 1.1 (Policies 1.1.1 & 1.1.3) calls for these arterials (University Avenue and 13th Street) to be modified to provide transportation choice, multi-modality and livability.

This major north-south connector utilizes the 13th Street (US 441) corridor. Critical areas for renovation include segments nearest the University of Florida campus. Many unused and oversized curb cuts populate this section of the street generating an abundance of conflict points (contributing to high accident counts). Major renovations of this facility are appropriate in the near future to enhance both automobile, public, cycle and pedestrian transit.

Recommendations for the quality of service (QOS) for this Braid is 'B' for areas 2 miles or more from campus and 'A' for areas within 2 miles of campus. Bicycle Lanes of up to 6 ft in width are recommended with head-start areas at major intersections including NW 23rd, 16th and University Avenues and SW 2nd, 8th and 16th Avenues (See comments on head-start lanes in Section 6.0 of this report). Wide lanes are needed for viable cycle commuting as riders must be able to overtake and pass each other without entering the auto lanes. Renovation of the bridge over NW 8th Avenue is required to accommodate cycle and autos and should include vertical connectivity between the streets. Schematic student design proposals for these features are included in Section 8.0 of this report.

In the immediate future, narrowing of the center "suicide lane" lane (3' to 4'), slight narrowing of travel lanes (1' to 2.5') and new striping to define cycle lanes would provide 4+ foot wide cycle lanes in both directions in many locations (based on University Avenue and NW 13th Street segment). As an area of high traffic congestion and intersections, lower than posted speeds typically occur, further suggesting the thinning of auto lanes.

Many of the existing Alachua Braid segments to the north and south have good cycle infrastructure. Linking between these "in-place" segments will enhance connectivity utilizing resources on the highest latent demand areas. As the segments near campus currently have high rates of cycle-auto accidents the highest potential for accident reduction will be achieved through well-designed cycle infrastructure.

University Braid (3rd Immediate Priority)

University Braid gains priority ranking based on the public input scores, the relatively high cost benefit ratio and the potential for improved network safety. Analysis of the crash data from the 2001 Master Plan report identified this street with the highest rates of accidents in the County — Alachua Braid (above) is the second highest. Therefore, combining public preference rankings with the potential for improved safety in addition to the high latent demand potential, this Braid was designated as the third immediate priority. University Braid begins in the west at W 122nd Street running east past the Oaks Mall, University of Florida, Downtown and eastward to Newnan's lake. There are bicycle facilities on this Braid. However, they are only present in short segments and do not connect between major destinations. University Braid links some of the most highly visited destinations, including the University of Florida, generating over 50,000 commuters a day including students, faculty, staff, contractors and patients. This is one of the fastest developing corridors in the county as more commercial destinations and increased housing density are being planned and added.

Recommendations for the quality of service (QOS) for this Braid is 'B' for areas 2 miles or more from campus and 'A' for areas within 2 miles of campus. This is higher than the 2001 Master Plan ranking based on the expected cycle demand.

Hawthorne Braid (4th Immediate Priority)

Also designated as the Gainesville Eco-History Trail, the Hawthorne Braid has a high cost benefit ratio and a high overall latent demand score. Public ranking was 4th placing it lower than connectors linking directly to campus. It's high latent demand score (overall) is due to the proximity to commerce along the entire length of the trail. When looking at the previous Braids, latent demand is averaged over more miles and miles farther from commercial destinations. Therefore, given the incompleteness of Braids around campus, this ranking (4th) is consistent with latent demand in the high use segments of the higher priority rankings.

This proposal extends the Hawthorne Trail via the Downtown Connector across Main Street leading to and running parallel to W 6th Street and then northward to NW 23rd Avenue. The corridor was the subject of the Gainesville Eco-History Trail Design Competition that generated submissions from across the US and from London, England. The trail passes by Shands at AGH, Sante Fe Community College (Downtown Campus) and the Gainesville Police Department.

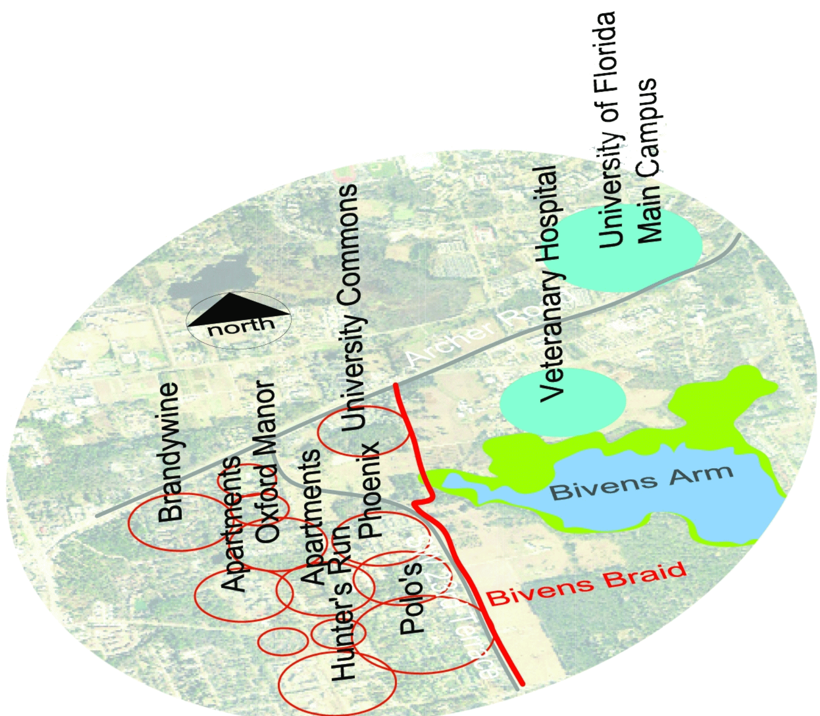
The Braid offers great potential as a core north-south connector providing urban rural connectivity to the Town of Hawthorne. The trail links enterprise neighborhoods, provides pedestrian connectivity through areas without sidewalks or other infrastructure and promotes physical activity. As a trail head, commercial and merchant opportunities would support cyclists getting on and off the trail in the urban area — rather than drive out of town to the trail head.

Although $150,000 has been set aside for the project (City of Gainesville, Department of Public Works), negotiations with CSX railroad (land owner) have yet to produce an agreement for purchase or use of the land at the time of this report.

Bivens Braid (5th Immediate Priority)

Although the public ranked Bivens Braid 6th, there is already an initiative in place to secure funding and support here would help move the project forward. This is consistent with the high latent demand scores and a good cost benefit ratio. Large numbers of students could be served by this Braid based on the high density student housing it links. Bivens Braid emerged as the 5th immediate priority.

Conceptual map of proposed Bivens Braid linking student housing with campus



Bivens Braid was originally identified in the *Corridors to Campus* study of 1997 and provides an off-road short-cut between multiple student apartment complexes and the University of Florida. There is currently an easement in place allowing a low-cost cycle path intervention. A student proposal for a bridge over Archer Road at this location is included in Student Design Vignettes section of this report.

The off-road path should be designed to an ‘A’ QOS level with a 12' - 18' wide path as there will likely be multiple users including cycle, roller-blade, skate board and pedestrians with rush-hour like densities in the morning and afternoon.

Westside Braid (6th Immediate Priority)

Westside Braid was designated 6th although the public score was 8th. The existence of significant infrastructure on the north and south portions of the Braid supported the elevated ranking. This is evidenced in the cost benefit ratio (100) that includes completed segments as part of the entire braid. Furthermore, it links many neighborhoods with the newly renovated Westside Park and three public schools (Littlewood Elementary, Westwood Middle School and Westwood Hills Christian Academy).

Connecting between NW 53rd Avenue in the north and Williston Road in the south utilizing the W 34th Street arterial, Westside Braid becomes an important north/south connector. There will be some difficulty in providing smooth crossing infrastructure at Archer Road and 34th Street which will require detailed design analysis. Solutions might included bicycle signalization, colored lanes, elevated crossing or a special cycle crossing area slightly away from the automobile intersection. As this path links multiple destinations, it could become a viable cycle route with the appropriate infrastructure.

Level of service recommended is 'B' within 1 mile of University Avenue where higher use is expected and 'C' in other locations (as per the 2001 Master Plan report).

Millhopper Braid (7th Immediate Priority)

Garnering public support with a ranking of 5th place, the low cost benefit ratio and low latent demand score placed this Braid low in the rankings of immediate priority projects.

Millhopper Braid will provide an excellent linkage between the more dense cycle network being developed in the urban area and Sante Fe Community College. Current cycling infrastructure to Sante Fe along NW 39th Avenue conveys riders in a non direct path between the college and the urban core requiring an additional 2 miles of riding to utilize the in-place system (based on typical travel).

For a major portion of the Braid from NW 83rd Street to NW 43rd Street an off-road (separated) path is recommended. This is due to the rural character of the area and the high travel speeds (actual speeds). As the path moves into the urban area, lanes are recommended with a QOS of 'B' or higher.

Glen Springs Braid (8^{th} Immediate Priority)

Glen Springs Braid rated second to last in the public ranking and rated lowest in cost benefit analysis and produced a low latent demand. The latter is a result of the lower commercial density along the majority of the Braid.

With the new development in the Glen Springs area and the short-cut auto route between the NW 39^{th} Avenue and NW 31^{st} Street (NW 23^{rd} Avenue) this has the potential to be a major cycle thoroughfare in the future. Unfortunately, given the condition of the existing roadway and the creeks and streams that this path crosses, major construction will be required to achieve a well integrated trail. Future design should include better creek overpasses allowing cycles to pass under and include vertical connectivity to potential creekway paths.

The section of Braid that connects Waldo Road to the Hawthorne Braid (at NE 1^{st} Terrace) is also a key component of a well connected system. This provides a short linkage between the northeast neighborhoods and the off-road Hawthorne Braid as part of a direct commuter route into campus or out of town ultimately connecting to the Gainesville Airport. It is a much more viable commuter route in the northeast than the existing truck dominated NE 39^{th} Avenue infrastructure.

Given that even a cycle lane would require major renovations, an off-road path is recommended for the section between NW 39^{th} Avenue and NW 13^{th} Street. Quality of Service (QOS) 'B' should be achieved between 13^{th} Street and Waldo Road.

Loops

Loops comprise the longer route recreational and competitive cycle network linking the urban and rural areas. During the analysis and design phase of this Master Plan Addendum (Spring of 2004), three individuals were fatally injured while riding on the paved shoulder of US 27/41 in Alachua County. On average, two people are killed each year in the county on rural roads. Although many factors contribute to these horrible events, strategies to reduce this statistic are available — foremost is providing separation between high-speed autos and bicycles.

Existing Loops, as identified on the Countywide Bicycle Priorities map have been designated as high priority and priority projects. In rural areas, where automobile speeds are high (> 45 mph), separated paths provide the safest infrastructure and are preferred by most riders — safety as the most important factor determining where and how far people will ride. These Loops (rural routes) should be upgraded with off-road independent bicycle paths separated from the roadway by 10' or more. This will have a substantial cost and may be difficult to implement in some locations. However, it should be the design goal for infrastructure on the rural routes that cyclists will use most to provide separate bicycle facilities as identified on the Countywide Bicycle Priorities map included in this report.

High priority designations are based on workshops and interviews with the Gainesville Cycling Club, which conducts brevets and recreational rides throughout the county. Additional priority Loops are identified to provide improved connectivity to satellite towns and ultimately link up with the Nature Coast Rail Trail to the west and the Palatka trail to the east crossing the St. Johns River and connecting to the Atlantic coastal trail systems. New Loop recommendations are included to provide better public access to local recreational areas such as the San Felasco preserve and Newnan's Lake — currently an underutilized natural area.

Rural separated path with 20' plus distance between cyclists and automobile traffic (speed limit 60 mph/100kph). Oulu, Finland

New Loop recommendations include Lake Sante Fe/Waldo Loop (48 miles), Newnan's Loop (14 miles), San Felasco Loop (10 miles), Wildflower Loop (38 miles) and the Yearling Loop (39 miles). Loops are illustrated on the Countywide Braid Priorities map available in full-size 36"x36" as a PDF file on the CD in the back cover of this report or on-line at www.transportingecologies.com .

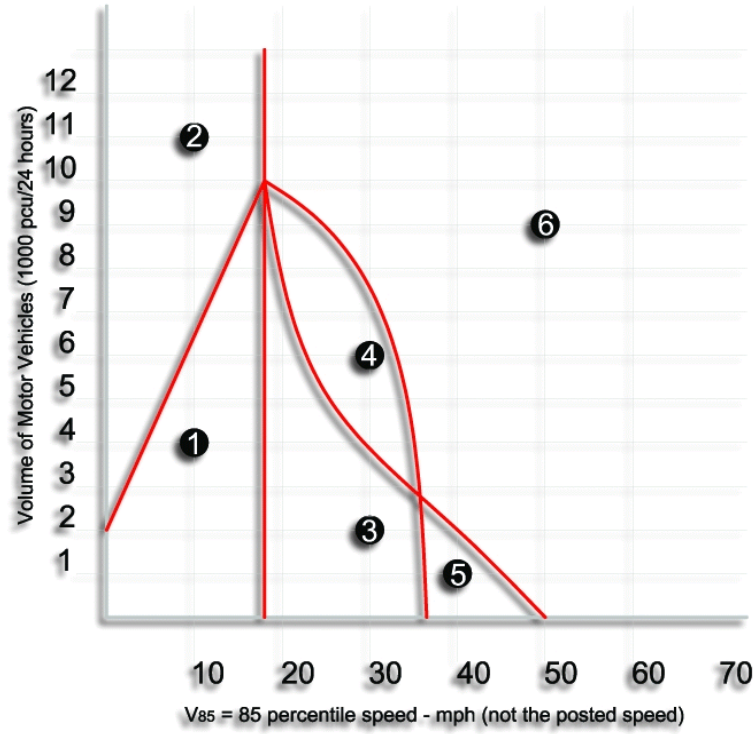
Bicycles do not have crumple zones. This safety feature must be integrated into the design of the transportation infrastructure. Where auto speeds and/or traffic volumes are high spatial separation of modes is required (please refer to the chart on following page). Recommendations for new Loops and up-grades for new Loops include a 10' to 20' separation from the auto way with a 10' wide smooth paved surface. Few design standards for cycle path separation on rural roads are available in the US. However standards are in place for the separation of trees and other *fixed hazardous objects* (FHOs) from roads. Perhaps these *clear zone* distances which range from 15' to 25' for speeds over 55 mph (AASHTO, 1989) should be adopted to protect cyclists from autos. Care must also be taken at intersections to move cyclists efficiently and safely across traffic, especially if a two-way path on one side of the road is used. These strategies would improve safety and potentially save a couple lives per year just in the Gainesville area.

Sec. 1603. Recreational Trails Program (RTP) of the *Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003* provides more flexibility of funding initiatives for trails (for which separated paths may qualify) and a streamlined application process for these smaller scale initiatives.

Separated path with 5' distance 3' elevation at suburban arterial road. Paths provided on each side of street with bicycle designated overpass. Oulu, Finland

Cycle way separation guidelines.

The data shown is compiled from an investigation of cycle safety on various road profiles and various combinations of speed and traffic volume. The study was conducted by the Studiegroep Infrastructuur Weggebonden Openbaar Vervoer (SIWOV), Netherlands, 1989. Speeds have been translated from kilometers per hour (kph) to miles per hour (mph) for this report.



ì When motorized traffic speeds are less than 20 mph, a mixed mode infrastructure is recommended — Nets protocols.

í High traffic volumes and low speeds typically do not exist — recommendations are not needed here.

î A cycle lane or separated path is not required for safety but may be desirable for the perception of safety or to meet other mitigating road or street conditions.

ï A cycle lane or separated path is desirable.

ð A cycle lane or separated path is desirable but not necessary due to the very low traffic volumes. Mixed modes are acceptable.

ñ Separated paths are necessary.

5.0 Policy Recommendations

Policy recommendations are provided that support the 2001 Master Plan, the project prioritization detailed earlier in this report and the conceptual framework for promoting bicycle infrastructure in the Gainesville area. Implementation and general policy will determine the success and degree that a bicycle infrastructure will be advanced, implemented and utilized. The suggestions below are not comprehensive and in some cases may be anecdotal. Nevertheless, they support the bicycle initiative and should be seriously considered.

1. **Budget** - The MTPO should establish a policy of assigning a base percentage of all transportation expenditures to bicycle infrastructure, promotion and education for some lasting period of time such as 10 to 20 years (then review the results and accomplishments to reevaluate the program). One possible strategy would be to allocate the percentage of funding based on the ridership attempting to be captured — if 15% of the transportation share (US Government Goal) is to be by bicycle, we should invest at least that percentage on the infrastructure to promote this goal. The US average cycle mode split is just over 1% with cities such as Davis, California at 17% (60% of the students use cycles as the primary mode of transportation). European counterparts demonstrate potential achievements with Sweden and Germany at 10%, Denmark at 20% and the Netherlands at 28%. A pilot study conducted by the University of Florida Sustainability Task Force indicated that 9% percent of the trips to UF are by Bicycle.

   Specific data on community expenditures is difficult to assess given the complexities of budget allocations, funding sources and yearly variance in spending. Detailed research on this topic should be conducted by staff or a consultant to develop a more refined budget target. Anecdotally, communities such as Oulu, Finland and Davis, California have similar or smaller populations with smaller universities and much better infrastructure and subsequently high cycle mode splits.

   A recurring base funding allocation should be established to promote education, public service announcements (PSAs) and advertisements that promote a more cycle friendly culture and make infrastructural improvements known. It could be used to fund local research, bicycle staff, education programs and promote better design through competition projects.

2. **Use of Public Right-of-Way** - The MTPO should develop policy to encourage or reclaim the use of existing utility right-of-way for public access as non-motorized transportation corridors. This is especially important for public owned utilities where the land is already in the public realm. This may require some kind of indemnification and maintenance agreement for use of land conduits held by private utilities.

3. **Planning** - The Comprehensive Plan and implementing land development regulations should have provisions that require new housing developments to be connected to any adjacent neighborhoods with bicycle and pedestrian public access ways.

4. **Nets Connectivity** - Policy should be developed to initiate an application procedure for neighborhoods wishing to initiate better bicycle pedestrian connectivity. This process should also include a review by the School Board of Alachua County and an evaluation of qualification for the *Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003* Safe Routes to Schools Program ($70 million to be distributed nationally). This would optimize safer and more direct routes to school as part of the larger connectivity initiative. Allowing neighborhoods to initiate these connections should reduce the expenditure of resources in areas that are not receptive to this type of connectivity. A recurring budget should be established for these projects.

5. **Nets Design** - Design protocols should be developed for neighborhood connectivity programs to formalize options for transforming drainage ways, storm water basin areas and existing unused City right-of-way into bicycle pedestrian connections. This could be implemented through a *Neighborhood Connectivity Design Protocols* study and guidelines to develop a set of strategies and design expectations for acceptability for governmental funding.

6. **Appropriate Speed Limits** - In most areas in the US and Europe where autos, cyclists and pedestrians share the same space, speed limits are 20 mph (US school zones and campuses) and 18 mph (European neighborhoods). Based on City and County Public Works Department policies, 25 mph is the lowest speed limit currently allowed to be posted in the City or County (excludes school zones). A reassessment of this policy and protocols (in accordance with Florida Statute 316.189-(1)) for implementing 20 mph speed limits in appropriate residential locations (such as those without sidewalks) is recommended. At 20 mph only 10% of auto-cycle accidents are fatal (30 mph - 50% are fatal; 40 mph - 90% are fatal). Fatality Data excerpted from the Alachua County Corridor Design Manual, November, 2002.

7. **Speed Limiting Devices** - Design speeds are typically set too high, resulting in road designs that encourage vehicles to travel at speeds above those posted (or that are safe). Holistic design approaches that are becoming more popular can change this condition. Rather than employ speed deterrents such as humps, bumps, shelves and trays, alternatives such as vegetation, parking and surface mottling and changes can be used to define space and limit speed. Careful design can actually suggest lower speeds, but maintain clear paths allowing emergency vehicles to pass without slowing for bumps, etc., thereby maintaining high response times — a critical safety issue that should preclude the use of emergency vehicle inhibiting speed control devices. Suggestions for spatial speed control devices are included in Section 6.0 Infrastructure Design Recommendations of this report. The strategies identified not only reduce speed but rationalize movement to make auto-cycle-pedestrian areas more compatible for each of the scales of use.

8. **Vacant Lands** - The MTPO should recommend that local governments develop a policy that is not tolerant of vacant land with potential for non-motorized transportation, recreation and the development of useful public space and promotion of public amenity. Such options include tax disincentives (higher rates) for under-utilized land languishing in the community. This could leverage unmotivated property owners to develop or contribute easements rather than squander the present usefulness — it should be expensive not to use important lands. This strategy would be particularly beneficial in the case of the CSX rail-trail corridor (Hawthorne Braid) which has been unused for many years.

9. **Education** - Continue the highly successful "Safe Ways to Schools" program and other school bicycle educational programs such as the *Share the Road* program through support of the Florida Traffic and Bicycle Safety Program — educating the youth is an investment in the future of cycling.

   Robust continuing education programs should be adopted for City of Gainesville and Alachua County Staff regarding the newest ideas and responsible techniques for integrating and expanding bicycle infrastructure and protocols. Staff must be convinced and committed to ideas and concepts to overcome the daily obstacles, nimbys and budgetary challenges that innovative design inevitably encounters.

   Cutting edge proposals for urban design, infrastructure and transportation in the US are actually in-place, operational and have been highly utilized producing reliable user evaluations of their strategic effectiveness. Traditional Town Planning, Traditional Neighborhood Design (TND), well designed high density housing, efficient automobile infrastructure and traffic management, electric light rail (trams), natural gas (clean burning fuel) busses and bicycle/pedestrian oriented design are commonplace in these areas of the world. A policy of sending City and County staff not only to cities in the United States but also to cities in Europe, Latin America and even Asia is an important educational investment with high potential for future dividends.

   Education for avid motorists is also critical. This is critical initiative to reform public opinion regarding the status of cyclists and there contribution to a cleaner, quieter and more sustainable community (not unlike non-smokers who were a minority voice at one time). Promoting awareness of cyclists, courteous driving habits and the rules-of-the road is difficult as there is no formal infrastructure for conveying these messages beyond school. Consideration should be given to implementing bicycle awareness seminars as one of the choices for the optional driver education courses offered in lieu of traffic penalties. It could also be made mandatory if people find themselves availing themselves of multiple courses.

   The local Drivers License office could conduct a cycle awareness survey as part of new license renewals.

10. **Law Enforcement** - In conjunction with infrastructural improvements, enforcement of bicycle and automobile interaction laws should become a priority — especially in high transportation density areas such as around campus. Warning issuance periods should proceed strict enforcement of fines — the fine stage must be carried out. Important standards for bicycles to maintain include proper yielding of right-of-way (autos and pedestrians), traveling with proper equipment (helmet under 16 or night light), traveling in designated areas and in the proper direction, and obeyance of traffic signal devices. This promotes predictability and respect between vehicular modes. Expand enforcement of lane maintenance laws. Floating randomly between lanes, weaving, changing lanes through turns, wide turns, changing lanes at intersections, careless driving and driving too close to the shoulder are common local practices that are especially dangerous to cyclists attempting to "share the road".

11. **Bicycle Coordinator** - The City of Gainesville should appoint a professional level staff member as the bicycle coordinator and clarify the responsibilities of the position. Currently the position seems to be shared by two persons with unclear (to the public) areas of responsibility limiting consistent communication regarding projects and opportunities. This position(s) should oversee the base budget for bicycle initiatives and should actively seek funding from federal, state and private funding agencies. Perhaps a more senior analyst with a staff of one or two program assistants would be a workable model.

    This position should also liaise with the University of Florida especially for coordinating funding (UF should be a major contributor to the commuter infrastructure to campus) between governmental initiatives and UF contributions.

12. **Licensing & Registration** - A voluntary bicycle licensing program in addition to, or as part of the University of Florida's program is recommended as a strategy for assessing bicycle use, infrastructural needs and disseminating educational information. Home addresses of cyclist users can be used to focus resources. Registration is a great tool for law enforcement to curtail thefts (immediate verification of ownership), return abandoned bicycles to owners and contact owners if cycles are removed for being illegally parked or for being locked to inappropriate facilities.

13. **Network Stewardship** - A direct outcome of the public workshop was the recommendation to engage volunteer and civic groups for maintenance of the paths and lanes. This could be extended to businesses such as the adopt-a-median program. Furthermore, University of Florida School of Building Construction Students, School of Architecture students, local scout troops and other volunteers could design and construct pavilions, and install landscaping along trail systems. The MPTO should designate a contact to administer proposals for these support initiatives.

14. **Funding** - The 2001 Master Plan provides an excellent list of funding sources and should be reviewed at the initiation of any project. Further suggestions not contained in that report include:

    University of Florida - UF generates 50,000 commuters per day with only a little over 20,000 parking spaces. Recognizing this impact the University of Florida Master Plan Transportation Element acknowledges its "fare share" responsibility for improving bicycle infrastructure in coordination with the MTPO to upgrade commuter facilities including pedestrian and cycle overpasses, tunnels and the creation of park-n-ride facilities at the urban boundary.

    Robert Wood Johnson Foundation - Through public health initiatives this foundation is beginning to fund community infrastructure and initiatives that promote routinized physical activity.

    Federal Government - The *Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003* provides federal money for the *Safe Routes to Schools Program*, section 150 of title 23 with a budget allocation of $70 million to be distributed nationally. Proposals for utilization of these funds could leverage the safety benefit with the added benefit of public health through neighborhood connectivity and more routinized physical activity.

    Centers for Disease Control - The new initiatives that focus on the relationship between urban design and obesity provide opportunities for innovative projects to be funded by the CDC in conjunction with research that could be conducted by the University of Florida.

15. **Concurrency** - the City of Gainesville should consider requiring new developments to provide bicycle facilities on adjacent transportation infrastructure to meet concurrency when automobile LOS is degraded. In the case of smaller projects, the cost for bicycle facilities could be collected toward a fund to upgrade multiple segments with bicycle infrastructure.

16. **Maintenance** - Public comments included a policy recommendation for a community wide contact for maintenance reporting. When trails are in need of repair, cleaning and general maintenance the correct contact agency is difficult to determine. Perhaps this could be through the internet as well as by phone.

17. **Amenities** - There are too many potential amenities to mention here but key conceptual strategies are discussed. Amenities and infrastructure should not marginalize cyclists but raise there stature as contributors to a better community. Incentives for amenities such as cycle lockers, showers at work, free bus ride options, parking buy out or cash bonuses should be promoted through tax incentives to area businesses and directly implemented by governmental agencies.

18. **Community Design** - If citizens move from their automobiles (which provide high levels of comfort) to bicycles for commuting (to work, shopping or other errands) the new natural environment of transport should be inspiring. It should be relatively free from pollutants, road debris and excessive negotiations around incomplete facilities. To apply the best practices of cycle design within the complex existing infrastructure of urban fabric, innovative design solutions will be required. Strict adherence to AASHTO guidelines will not provide solutions to complicated problems. The *Alachua County Corridor Design Manual* (November, 2002) provides an excellent basis for community specific design practices and expectations and should be expanded or a companion document for bicycle facilities should be developed. To advance this initiative, the MTPO should invoke design competitions and Request for Proposals (RFP) to flesh out innovative and effective transportation related projects.

    Design Competitions promote innovation through research based design to meet practical concerns, offer promotional opportunities to leverage funding, integrate related benefits and usually elevate the character of public space. They engage the public in the act of crafting the community and promoting the expectation for quality public space. This method produced outside funding and proposals from national and international firms in the Gainesville Eco-History Trail design competition (Hawthorne Braid). The competition administration and call for entries was funded by the National Endowment for the Arts (NEA) and the University of Florida.

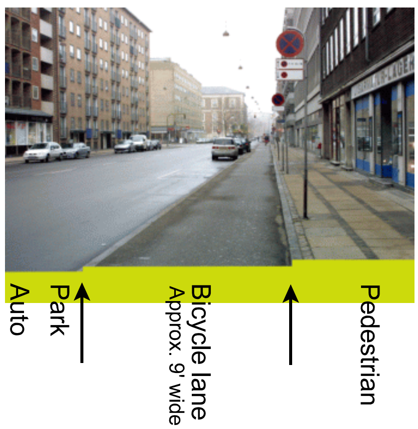
Images from the Gainesville Eco-History Trail Design Competition winning entry — Luoni Gold Design Studio. Vegetal foyer at trail head (top), farmers market and public grove (facing page - upper), fluvial recharge and habitat corridor (facing page - lower) and innovative phytoremediation of arsenic contamination along trail (right).

**RijksMuseum
Amsterdam, The
Netherlands**

6.0 Infrastructure Design Recommendations

AASHTO guidelines provide a minimum bicycle infrastructure standard for various quality of service and road categories. The Alachua County Corridor Design Manual (November, 2002) begins to assign more specific guidelines for bike lanes based on land use adapting AASHTO guidelines. A similar study that focuses on the bike lanes and paths themselves within this land use framework should be conducted. Important innovative cycle strategies and examples of those strategies are included as “best practices” for providing cycle infrastructure and negotiating conflict points between autos, cycles and pedestrians.

Lanes and Paths



In Copenhagen, many cycle lanes are slightly raised and in many cases such as this buffered from the motor way with auto parking. The raised platform allows cycles to move in and out of the lane while diverting autos that might drift into the lane. This would be an appropriate strategy for arterial roads where autos travel at higher speeds.

Amsterdam is famous for it’s cycle infrastructure (some of the best facilities encountered in this research). Colored lanes are used quite successfully in defining the cycle track and improving safety. Materials and upkeep research to find the most efficient means to maintain them is part of the effort.

Arterial connectors have bike lanes separated whenever possible. Lighting and shade is provided. In the Netherlands, cycles are not considered single passenger vehicles. Adults with 3 children were observed on bicycles on more than one occasion — the lawful limit is one adult and two children (with seats).

Suburban planning models include public ways that organize vehicle, cycle and pedestrian movement and parking. Note that the cycle lane is marked through the intersection. The white triangles "sharks teeth" are combined with the yield sign to signal the auto and cycle spatial domain and point of right-of-way. Trees organize the boulevard street type reinforcing the spatial zones and providing shade in the hot summer.

Suburban office park models in Utrecht provide wide separated cycle paths (pedestrian - cycle - vegetative buffer - auto way) to accommodate busy commuting cycle traffic and two-way flow. The red color is maintained to consistently convey the cycle path network.

Not just a place to sit and study. This cycle only transportation network utilizes roundabouts and pedestrian crossways (angle lines in foreground) to manage large volumes of cyclists on the UC Davis campus and adjacent areas. This greatly reduces the accident rates and makes cycling more desirable to a wider segment of the population (although mostly students here).

Headstart lanes are common in Europe and progressive cities in the United States. This intersection in Freiburg, Germany includes a headstart lane for cycles to spread-out and occupy the space in front of the cars. A pedestrian island is included along with the crossing bike lane in the foreground. Continuing the space of the bike lane through the crossing intersection with the broken line is an important design element — notifies motorists to be cautious while crossing this zone and organizes cyclists.

Riparian corridors can be adapted to act as "greenways" combining ecological stewardship of the natural ecosystem while contributing to the non-motorized transportation network and providing enhanced public space. The Hogtown Creek near NW 34th Street could look like the image to the left rather than the concrete storm sewer it currently resembles.

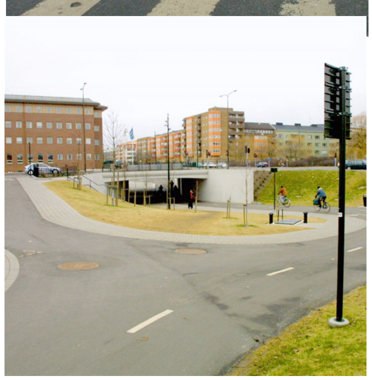
Portland is leading the US in innovative shared use corridors. This active rail and utility easement is also used regularly as cycle path for recreation and commuting. In this case, the rail line was moved over to make room for the cycle / pedestrian path allowing both to share the easement.

Intersections

Roundabouts and traffic circles are becoming more common in the US as they ironically move traffic faster using lower speeds (average speed is higher when not stopped at an intersection). Design for these new intersections must include cyclists especially when the intersection is part of a major cycle artery (Braid) such as the South Main Street and Depot Avenue intersection. Here a cycle lane, pedestrian islands and clearly marked zones for all modes are included.

Conflict points such as this "T" intersection in Utrecht are clearly marked with the cycle lane colored, textured and defined with a broken line. The yield (rather than stop) sign for traffic approaching the intersection is combined with slight hump (difficult to see in image), paver surface changes and markings. The hump magnifies the slowing of the vehicle at the point of conflict.

Colorized cycle lanes identify the cycle ways to motorists passing through the intersection. Motorists can check for cyclists as they approach and use caution when turning while cycles are in the lane. The designation supports cyclist lane adherence as they move through the intersection rather than cutting-across in an unpredictable manner.



Grade separated intersections such as this one in Malmö, Sweden opens up the space to provide an open lawn suitable for public occupation with benches and shade (just out of frame). Cycle and pedestrian access is provided to provide the easiest route for the different modes (stairs near the street for pedestrians). Both through connectivity (intersecting path) and comfortable vertical connectivity are integrated. This is needed on 13th Street at the Depot Trail, Norman Hall and NW 8th Avenue.

Bicycle directional lanes are provided in Copenhagen in areas with high auto & cycle traffic. The lane is approximately 12' wide with left turn/straight ahead lane and right turn lane. Signalization choreographed with automobiles and pedestrians should be provided. Likely a tuning phase (or phases) to work out timing sequences would be conducted to “set” the system.

At this intersection in Malmö, Sweden the raised auto way effectively provides a shelf at the intersection allowing cyclists to maintain a level path. This technique assists in slowing the vehicle at the conflict point. The cycle path is separated and raised from the adjacent auto arterial.

Facilities

Large monitored parking facilities could be provided that are covered and maintained 24 hours a day near campus or the downtown for commuters. This reduces thefts of bicycles or attached accessories.

This Sacramento, California cycle parking facility protects bicycles from the elements and protects personal belongings left with the bike. There are many of these lockers in the government center utilized at a 90% occupancy rate. Monthly rents support the project (much less than auto parking costs). Some employers reimburse the rental costs.

Parking structures could be opportunities for art in public space especially along trails and park play areas. The one illustrated here is on a school playground in Portland, Oregon.

Cycle and pedestrian bridge facilities are important to provide the most direct routes for commuting. An integrated network should favor the cycle over the auto when designing the most direct routes — autos can easily negotiate longer distances.

A bicycle - pedestrian only bridge in Davis, California is shown to the left. One of 27 grade separated crossings, it spans multiple auto lanes (9) plus two rail lines and vegetative buffers in between. It provides linkages between neighborhoods and a large sports park area. Clearly feasible, as it is in-place, demonstrates that small communities can afford this quality — Davis is approximately 1/3 the size of Gainesville with no industry.

A cycle storage facility provides security, rental service, repair and sales. Other businesses in the facility include tourist information, coffee shop and offices. It is strategically located near the rail transit hub. This could be a model for a park-n-ride facility in Gainesville.

Signalization

Cyclist designated signal devices incorporated with automobile signaling provides legitimacy for cyclists and commands obeyance of traffic laws.

Davis, California intersection where an off-road cycle path interfaces with the on-road systems. Cyclists and motorists have independent traffic signals. Autos are stopped and cyclists have the green light in the illustration at the left.

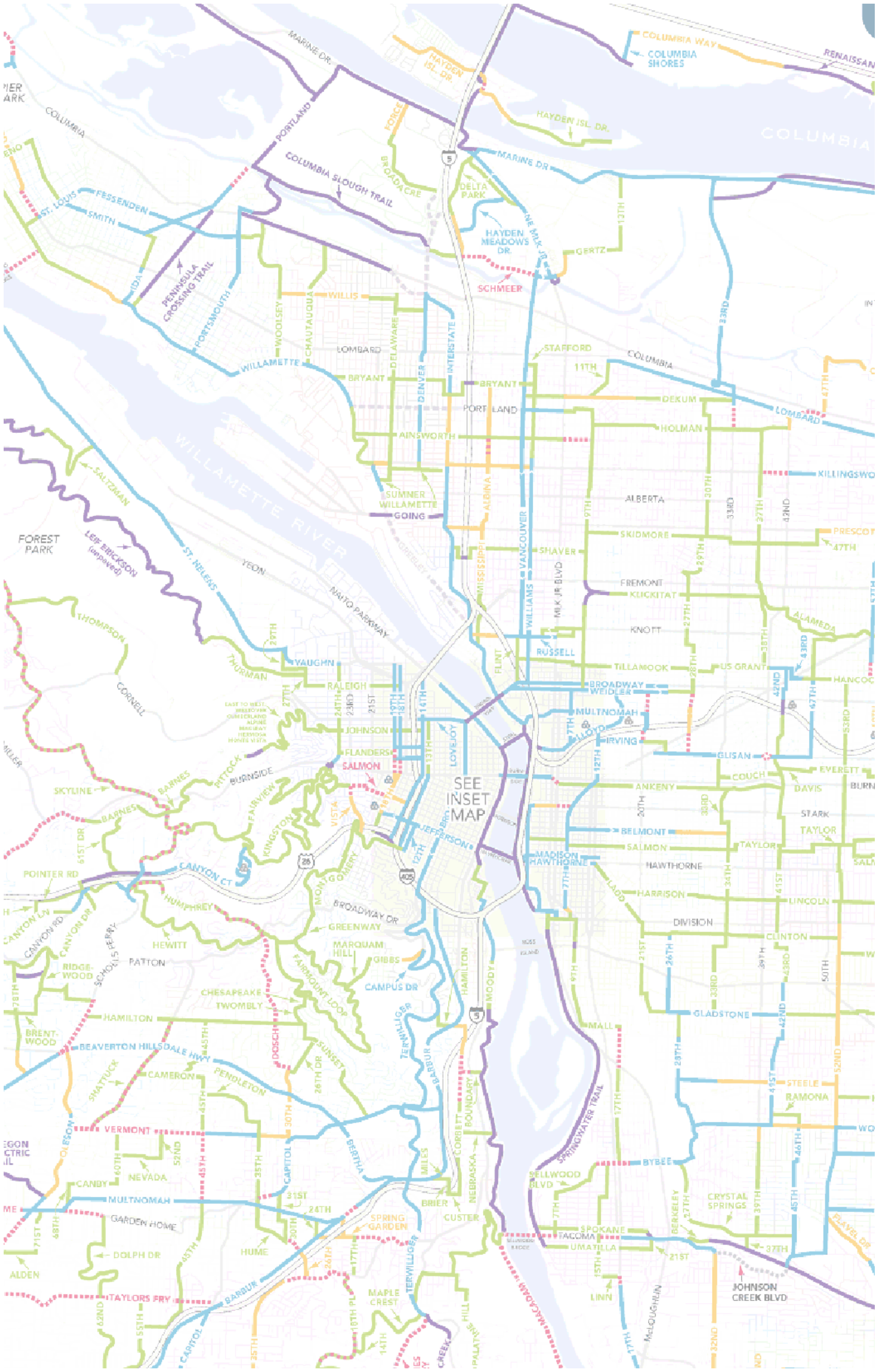
Warning Signage

Warning sign in Portland, Oregon alerting cyclists to the hazard of the light rail track.

Extended Mobility

A good bicycle infrastructure, especially off-road paths, facilitates transportation for both the young and old — populations that do not have access to an automobile. This is particularly important in providing active and rewarding lifestyles for the aging population. This intersection shows a sophisticated auto, cycle, pedestrian interchange with designated lanes spatially marked and yield indicators on signs and marked on the ground.

Portland, Oregon
Bicycle Network Map



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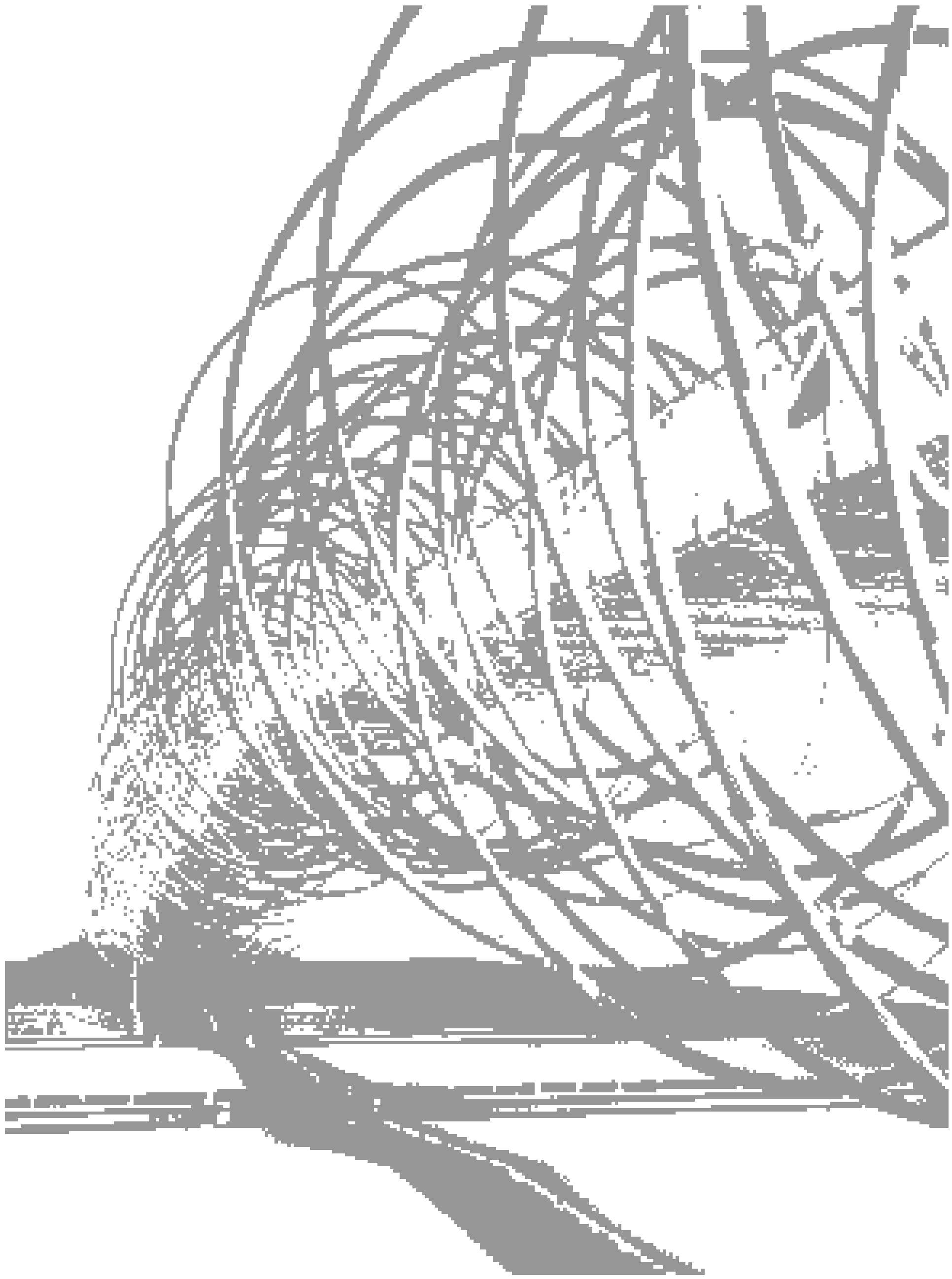

8.0 Student Design Vignettes

Transporting Ecologies Studio engaged undergraduate seniors and first year graduate students in literature and field research and conceptual design exploration to import and develop innovative bicycle infrastructural strategies discussed in the sections above in response to specific challenges in the local community. Students identified appropriate needs, developed strategic approaches, studied local site conditions and developed design interventions to promote connectivity, ecological stewardship, sustainable communities and increased routinized cycle use.

Projects are organized under categories based on the contextual initiatives they propose and issues the projects address.

ì Archer Braid interventions promote vital connectivity infrastructure between the west side of Gainesville (west of I-75) and the University of Florida campus and beyond. Proposals include nature oriented recreational destinations providing educational, directional and health information and emergency services access as kiosks along the way. Innovative energy producing photovoltaic installations are incorporated that feed the power grid via existing high tension lines in the proposed corridor while providing needed shade along the path and at kiosks.

í Alachua Braid interventions. Projects focus on horizontal and vertical connectivity at key “pinch” points on 13th Street (US 441) near the University of Florida campus. New and renovated bridges are proposed at NW 8th Avenue and the Depot Trail overpass in addition to an innovative NW 13th Street University Avenue crossing proposal.

î Multi-modal transportation center initiatives formalize the underground satellite parking culture — a boon for parking lot sign companies. Many students drive to commercial parking areas, illegally park, and ride their bikes to campus from there. In this case, the former K-mart plaza is reconsidered as a multi-modal hub with auto and cycle parking including a bus “station”. Service oriented commercial enterprises are suggested — grocery, dry cleaner, postal store, day care, cycle shop etc. These projects stretch the notion of a “parking lot” engaging elastic vegetal and storm water infrastructures to create “lots-of-park” rather than a parking lot.

ü Modular kiosks were developed to strategically deploy bicycle facilities throughout the system. Elements such as shelter, water/drink vending, informational boards (maps), restrooms, cycle repair center or news stand are designed as stand alone or integrated modular components. Stations can be set up, expanded, moved, reduced or relocated. The proposal provides the flexibility to test locations and the affordability and efficiency of prefabricated systems. As a kit-of-parts stations could be highly individual yet have a similar material and construction language unifying them as a network of stations.

Archer Braid project

Concretized Fluidity: Kanapaha Skate Pavilion

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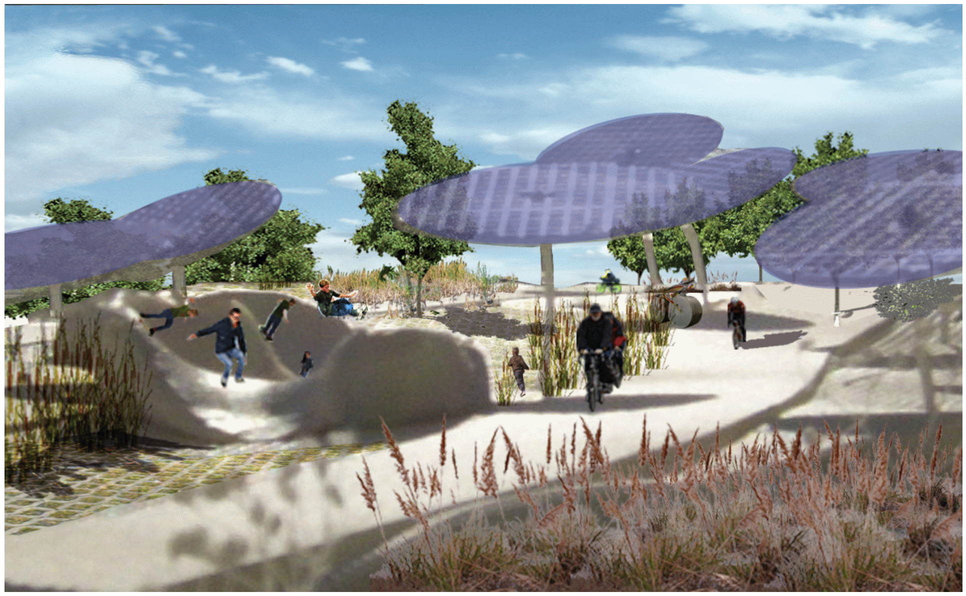
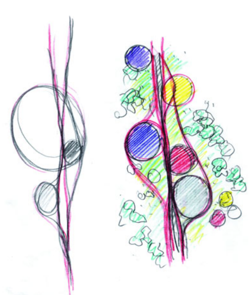
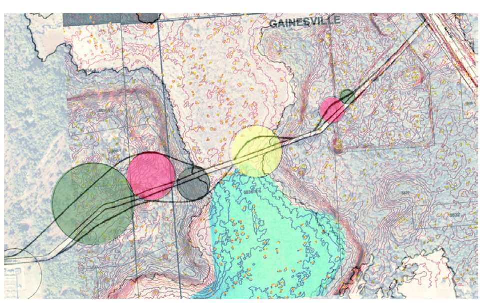
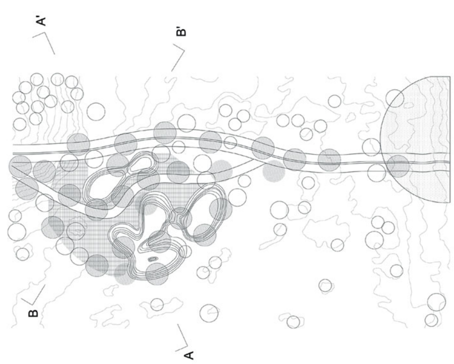
Koyel Sikdar
Graduate Student

Youth are engaged in healthy activities near the vital wetland recharge area of Kanapaha. Photovoltaic and tree canopies are interchanged to provide shade and electric power along the existing power utility corridor. The project promotes both individual health through social physical activity (skate park) and environmental health through awareness and stewardship.









Archer Braid
project

Solar Garden: PV & Educational Kiosks

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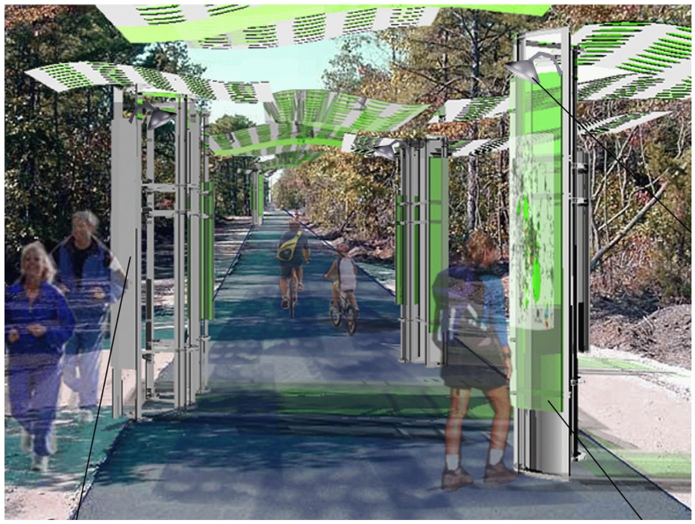
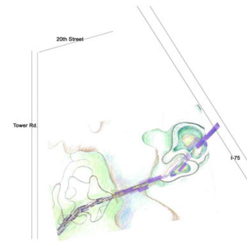
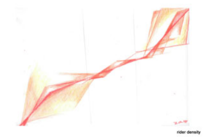
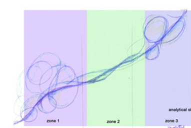
Dara Huang
Undergraduate Senior

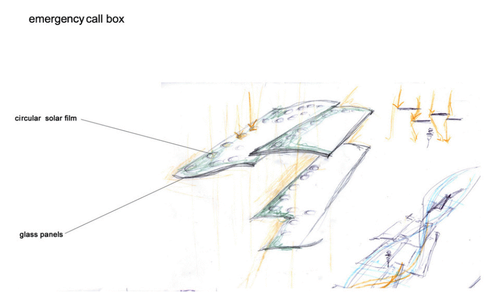


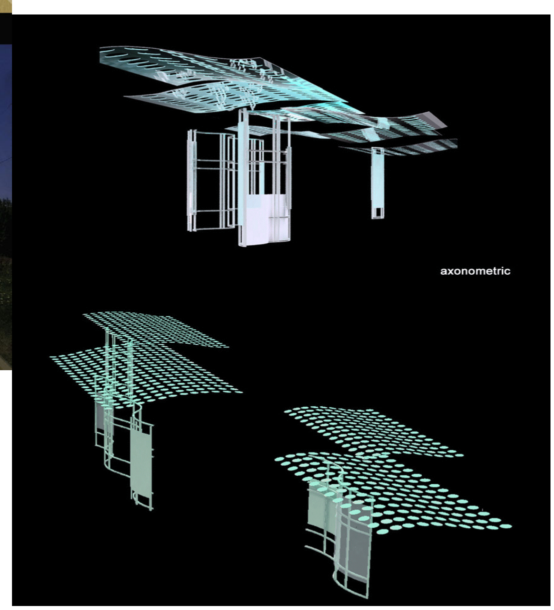


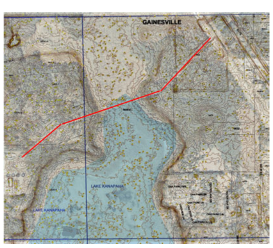




The Solar Garden optimizes the use of photovoltaic devices to provide energy to the community while shading the trail. Promotion of ecology and health is supported through kiosks and rest pavilions along the trail. Kiosks might monitor health (heart rate) or other indicators and/or monitor energy generation. Stopping is promoted as a destination encouraging communal interaction.







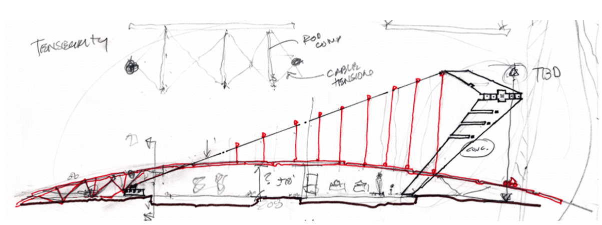
Linear site at northern edge of Kanapaha Lake

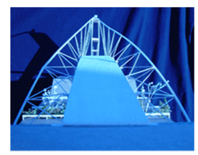
Archer Braid
project

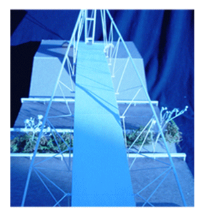
Kanapaha Gateway: Linking Gainesville
.

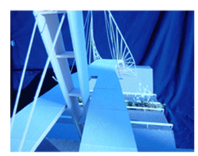
Jason Elmer
Undergraduate Senior

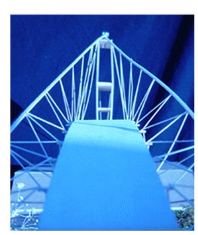
A bicycle pedestrian bridge is proposed to connect west Gainesville across Interstate 75. The bold and innovative tensegrety structure integrates high efficiency structural design minimizes materials, and engenders a visually open and dynamic structure — establishing Gainesville as an important location on the national interstate highway system. Protection for automobiles and safety rails will be included as a visually transparent system such as a web mesh (not shown) to maintain the open feel.

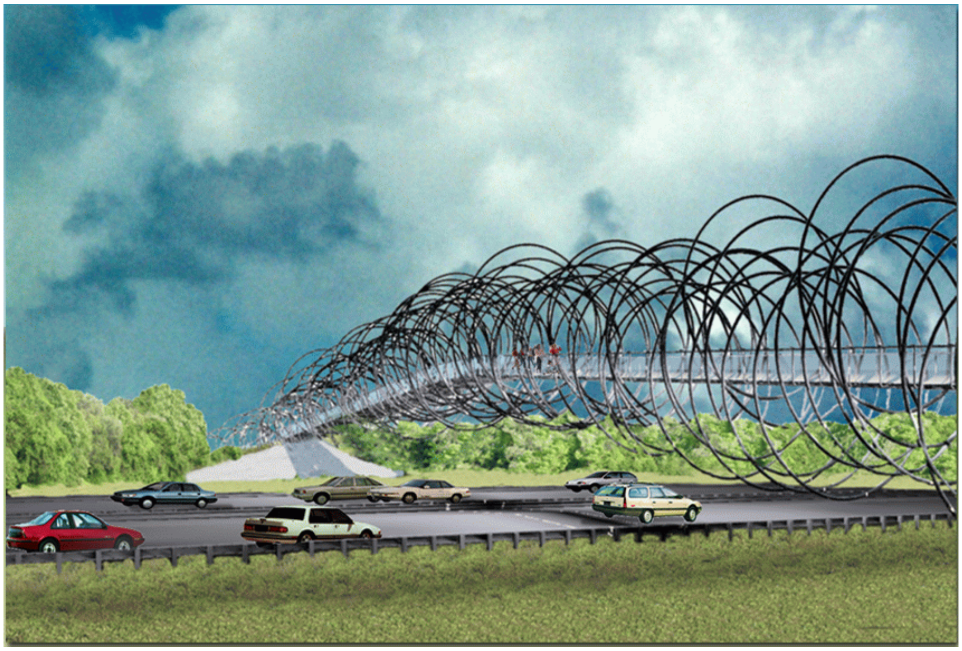










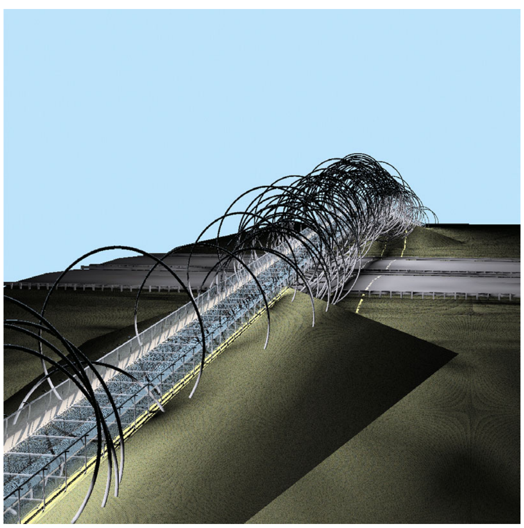


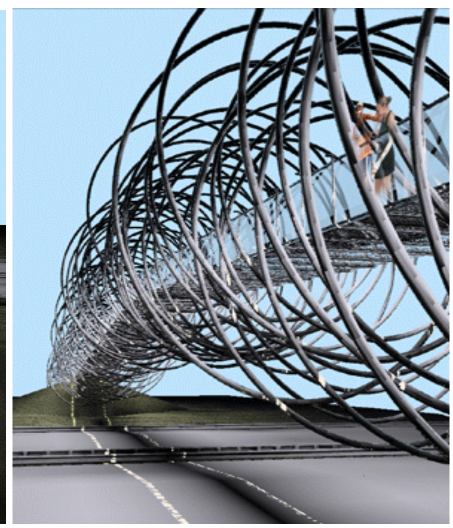
Archer Braid project

Voxilated Tube Bridge: Linking Gainesville

Douglas Mullins
Graduate Student

Voxilated Tube Bridge utilizes ring elements as structural members of a tube truss to free span the existing Interstate — modulated by the rhythms of traffic passing beneath. Cyclists and pedestrians occupy the safety of the tube while retaining a visual spaciousness that opens as one passes through the wall of kudzu on the east to the expanse of the kanapaha wetland to the west. It provides a striking marker conveying the innovative forward looking sensibilities of Gainesville.



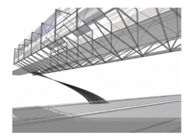


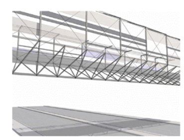
Alacha Braid
project

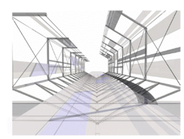
Over & Under Pass: SW 13th Street & Depot Trail.

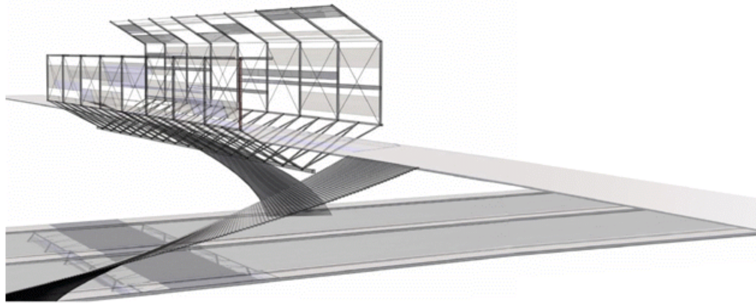
Todd Sussman
Graduate Student

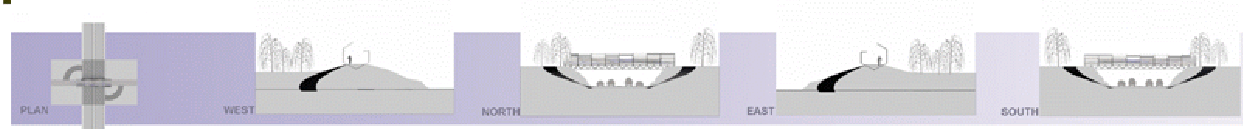
Over & underpass proposes to visually open-up the SW 13th Street area south of the current railroad trestle. A lightweight panel system provides safety and shade pulling away from cycle path limiting unauthorized occupation of the structure. Panels might also be used to identify the structure as a gateway to the University of Florida campus.





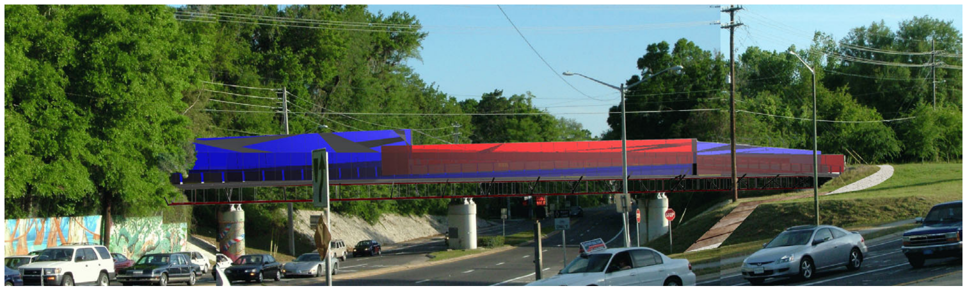






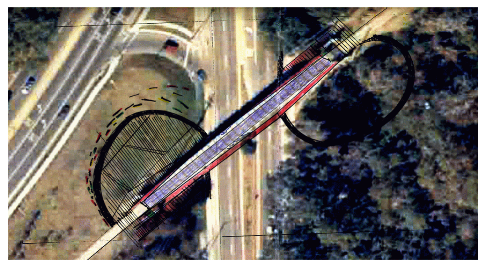
Alacha Braid project

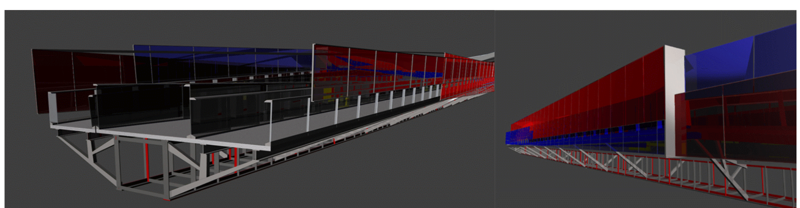
Chroma Train: SW 13th Street & Depot Trail.

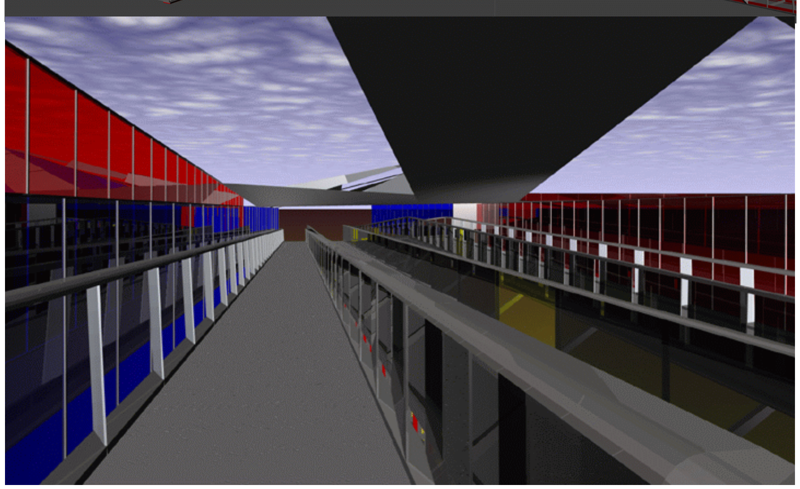


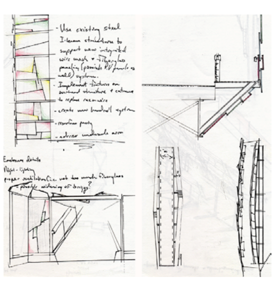
Thomas LaPerriere
Undergraduate Senior

Recalling the images of trains rushing over the trestle, Chroma Train utilizes overlapping colored panels to define cycle and pedestrian pathways on the bridge while marking the bridge as colored luminous object at night. Both horizontal and vertical connectivity are included linking landscape to the tectonic of the bridge. Overhead fabric canopies provide shade while eliminating occupation of the “roof”.







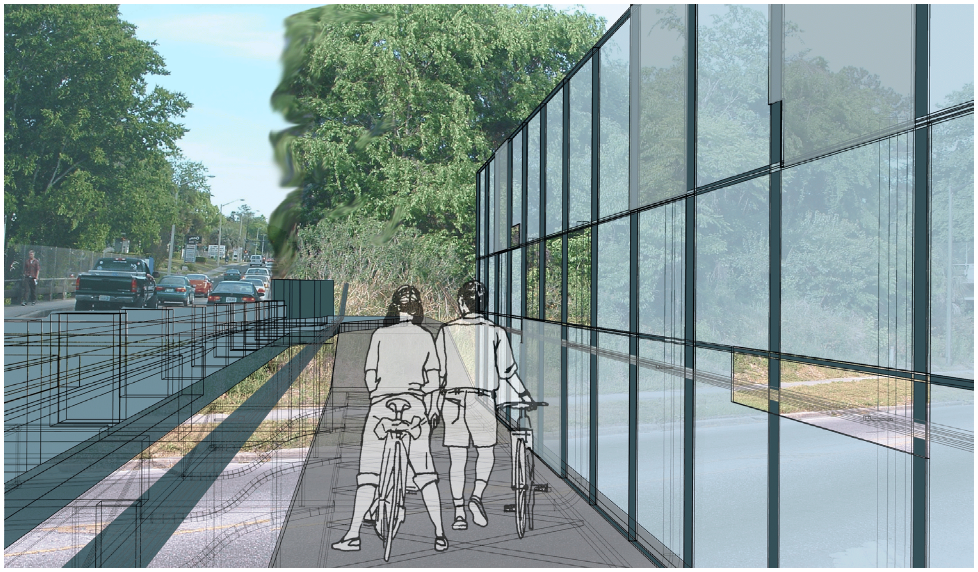


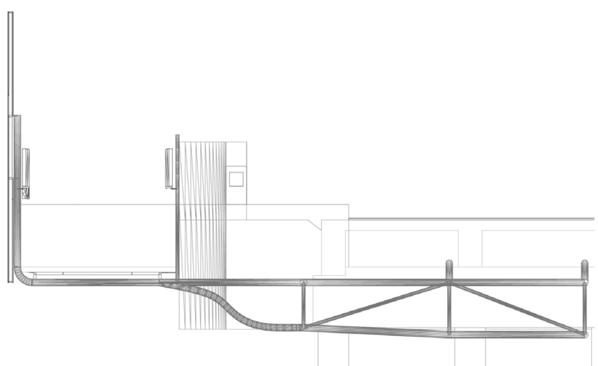
Alacha Braid project

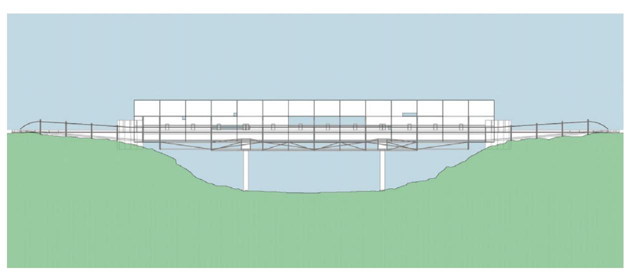
Shadow Screen: NW 13th Street & NW 8th Avenue.

Travis Orr
Undergraduate Senior

Cycle screen utilizes the cycle movement to activate the NW 13th Street overpass at NW 8th Avenue — currently a cycle and pedestrian hostile zone. The adaptation of shadow screen tectonics portrays various scales of cycle and pedestrians crossing the bridge. Separated cycle paths are provided to connect cycle lanes across the narrow bridge. Cycle pedestrian links to NW 8th Avenue below are provided that integrate storm water catchments and vegetation to define circulation paths and public space.





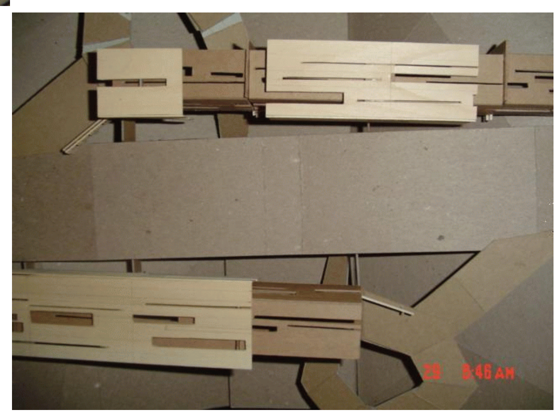


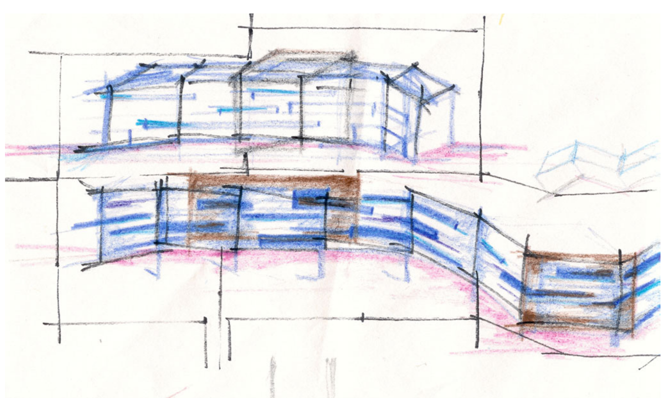
Alacha Braid
project

Shelter Screens: NW 13th Street & NW 8th Avenue.

Ana Marulanda
Undergraduate Senior

This project optimizes safety while providing vertical connectivity at the existing overpass. Attaching to the existing structure, partial rooms are created that allow cycles to move freely on each side of the bridge. The design provides shade, reduces auto noise, admits light and protects cyclists and motorists.



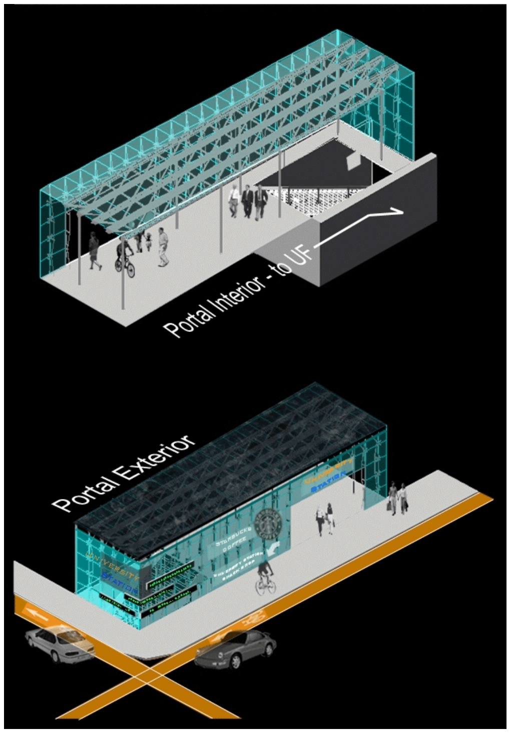


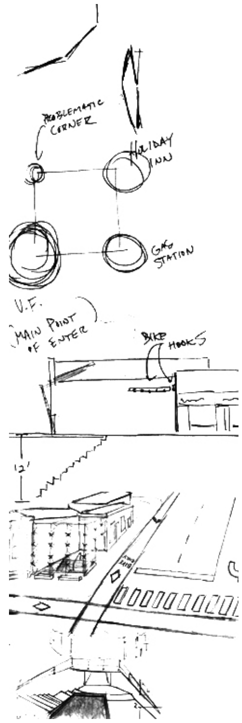
Alacha Braid project

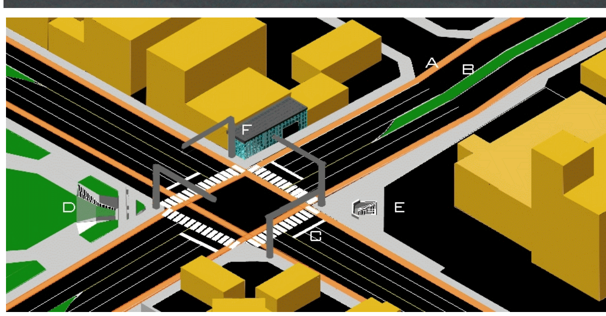
University Portal: Alternatives for the West University Avenue and West 13th Street Intersecton.

Mark Hammerschmidt
Undergraduate Senior

University Portal conveys transit in 3 dimensions at University Avenue and W 13th Street. Marked cycle lanes on the surface streets in conjunction with a below grade portal link the four corners providing pedestrian access and commercial opportunities — vending, news stand and cycle rentals. The portal kiosk (NW corner) shown here provides shelter during the short afternoon downpours while providing vending opportunities. Crosswalk alternative underground routes provide shaded immediate crossing of the busy intersection — perhaps decreasing auto wait times.





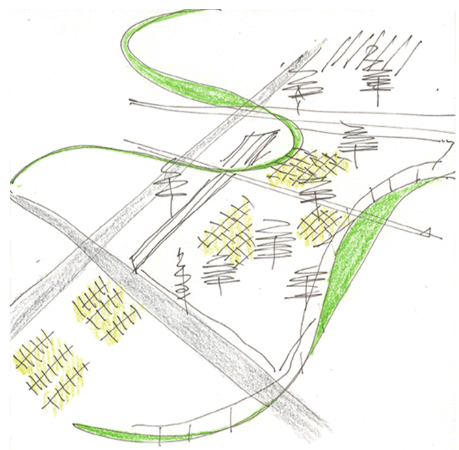


Multi-modal Center project

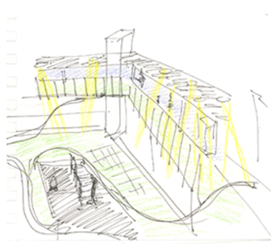
Parking Garden: Bicycle, Auto, Bus and Multi-modal Center

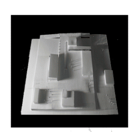
Ximena Valle
Undergraduate Senior

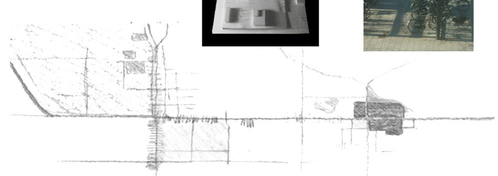
Parking garden proposed a formalization of the "satellite" parking around campus. Integrating a "green" parking lot with support businesses and infrastructure to store bicycles allows a park-n-ride model to exist for cyclists to get in and out of campus more easily. It does rely on a well developed network of paths to campus. Storm water and vegetative islands are used to provide hydrologic infrastructure, shade and habits for birds.



In order to encourage mass use of the bicycle, we must understand its use as a component of an integration of several systems; automobile traffic, public transportation, and bicycle-pedestrian infrastructure. In order for bike use to be widely accepted, we must recognize the need to integrate these systems, so that they together, work to improve our current situation. What is proposed in this project, is a strategy for how this integration might be possible through the introduction of a park & ride model we call a Parking Garden.





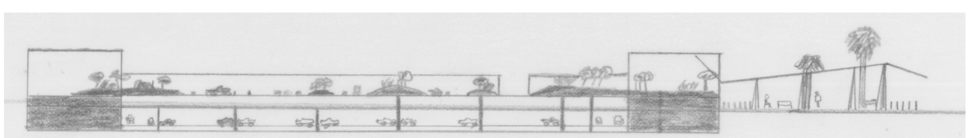


Multi-modal Center project

Eco-park-ing-lot: Bicycle, Auto, Bus Multi-modal Center

Justin Kristan
Graduate Student

Parking ecology unites multi-modal transportation with commerce to provide a park-like environment with easy auto, cycle and pedestrian access to businesses. A vegetated green space with parking garage below maximizes the ecological land value. Secured cycle parking and storage is provided. A bus station is included with coffee shops and news stand. Multiple businesses cater to commuters who will change transport modes at this location.



Appendix A

Public Disposition Survey Questionnaire

Public Disposition Survey - page 1

Transporting Ecologies
nets, braids, loops
Alachua Countywide Master Plan Update
Metropolitan Transportation Planning Organization
North Central Florida Regional Planning Center

School of Architecture
University of Florida

Public Input Survey
Please take a moment to answer the following questions. The results will be used to promote bicycle transportation though improvements to the existing network and toward focusing resources on projects with the highest potential for use, connectivity and public safety.

General

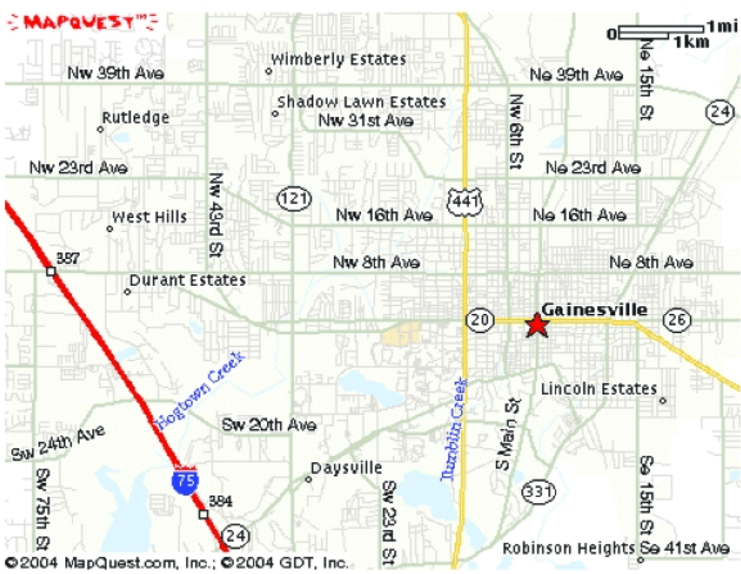
1. How often do you ride a bike?

never	1	2	3	4	5	6	7
			occasionally				every day

2. Which of the following best describes your riding habits? (Circle all that apply)

Commute to work/school — Ride for recreation
Ride competitively/distance — Ride for work (delivery)

Destination Matrix - on the map below, draw lines between the places you travel by bicycle or would like to travel by bicycle if better designed.



Public Disposition Survey - page 2

Potential Use - please use the scale below each question to rate your potential for bicycle use.

3. I would ride a bike for _____ minutes to get to work or school on a regular basis using the existing bicycle network.

   5 minutes 10 15 20 25 30+ would not ride

4. I would ride a bike for _____ minutes to get to work or school on a regular basis using a designated bicycle lane in the street.

   5 minutes 10 15 20 25 30+ would not ride

5. I would ride a bike for _____ minutes to get to work or school on an independent separated path near the street or away from the street in a natural area.

   5 minutes 10 15 20 25 30+ would not ride

6. Which of the following are three most significant obstacles preventing you from riding a bike? (Rank order from worst (1) to least (3))

   ___ Hot weather ___ Cold weather

   ___ Safety ___ Connectivity (bicycle network inadequate)

   ___ Quality (paths hostile or not interesting) ___ Distance between location and destination

7. Would incentives such as showers at work, parking space rebate (non use), bike locker or shower facility at work increase the likelihood that you would cycle commute on a regular basis?

   1 not really 2 3 4 maybe 5 6 7 most definitely

8. Bicycle routes that do not connect to my destinations are prevent me from traveling by bicycle more often.

   1 strongly disagree 2 3 4 5 6 7 strongly agree

Safety - Please use the scale below each question to rate your perception of bicycle safety.

9. When riding a bicycle in my Gainesville neighborhood I feel quite safe.

   1 strongly disagree 2 3 4 5 6 7 strongly agree

10. When riding a bicycle between neighborhoods to nearby commercial areas I feel quite safe.

   1 strongly disagree 2 3 4 5 6 7 strongly agree

11. When riding a bicycle between urban areas of Gainesville on major automobile roads I feel quite safe.

   1 strongly disagree 2 3 4 5 6 7 strongly agree

Public Disposition Survey - page 3

12. I would bicycle more often if the routes felt safer.

1 strongly disagree	2	3	4	5	6	7 strongly agree

13. I would bicycle farther distances if the routes felt safer.

1 strongly disagree	2	3	4	5	6	7 strongly agree

14. It is safer to ride on streets with cars, especially when bike lanes are provided.

1 strongly disagree	2	3	4	5	6	7 strongly agree

15. It is safer to ride on paved paths separated from the road whenever possible.

1 strongly disagree	2	3	4	5	6	7 strongly agree

16. I ride on the sidewalk because the street does not feel safe even when a bike path is present.

1 strongly disagree	2	3	4	5	6	7 strongly agree

Prioritization - please rank in order from highest priority (1) to lowest priority (8+) the following commuter braid possibilities as discussed during the public workshop.

___ Alachua Braid (US 441 / 13th Street)

___ Archer Braid (Archer Rd. / Hull Rd. / Utility easement - new bike/ped I-75 crossing)

___ Bivens Braid (Williston Rd. to campus via SW 35th place and new off-road path)

___ Glenn Springs Braid (N 23 rd avenue between Waldo Rd. and NW 39 th Ave.)

___ Hawthorne Braid (W 6th St. rail corridor - NW 23rd ave to Hawthorne)

___ Millhopper Braid (NW 16th Ave through Millhopper to Sante Fe Community College)

___ University Braid (Tower Rd. to Newnan's Lake)

___ Westside Braid (34th St. from Williston Rd. north to NW 53rd Blvd.)

___ ______________________________ add recommendation

___ ______________________________ add recommendation

Comments - please use the back of this sheet to provide any comments, suggestions or new proposals you might have. Thank you for your insights and participation

Appendix B

Aggregated Braid organized segments with columns consistent with the 2001 Master Plan Report. Complete spreadsheets are included on the CD inside the back cover of this report.

Archer Braid Aggregated Segment Data (from Sprinkle - 2001)

#1 Immediate Priority

F_Seg_Id	Archer Braid Street	From	To	Name	Length (miles)	Bicycle QOS Score	Bicycle QOS Grade (A..F)	Final Facility Selected	Target BQOS Score	Delta BQOS Score	100% Delta BQOS	100% LD Score	100% Public Value	Benefit Score	Unit Facility Cost	100% B/C Ratio	Priority Group (I, II & III)	Facility Cost ($)
6033.0	Haile-Kanapaha Trail	SW 81st Terrace	SW 75th ST/Tower Rd	Alachua	0.72	6.50	F	Trail	2.5	4	100	47	6	69	138000	76.25	I	99360
6032.0	Haile-Kanapaha Trail	SW 75th ST/Tower Rd	SW 41st Place	Alachua	0.44	6.50	F	Trail	2.5	4	100	53	6	72	138000	78.91	I	60720
6041.0	Lake Kanapaha Trail	SW 41st Place	Haile-Kanapaha Trail	Alachua	0.02	6.50	F	Trail	2.5	4	100	57	0	73	138000	80.09	I	2760
6042.0	Lake Kanapaha Trail	SW 41st Place	Haile-Kanapaha Trail	Alachua	0.02	6.50	F	Trail	2.5	4	100	57	0	73	138000	80.2	I	2760
6040.0	Lake Kanapaha Trail	SW 41st Place	Haile-Kanapaha Trail	Alachua	0.86	6.50	F	Trail	2.5	4	100	57	6	74	138000	80.96	I	118680
6038.0	Lake Kanapaha Trail	SW 41st Place	SR 24/Archer Rd	Alachua	0.93	6.50	F	Trail	2.5	4	100	54	11	73	138000	80.11	I	128340
6037.0	Lake Kanapaha Trail	SW 41st Place	SW 24th Avenue	Alachua	0.94	6.50	F	Trail	2.5	4	100	59	11	75	138000	82.13	I	129720
6043.0	Lake Kanapaha Trail Loop East	Lake Kanapaha Trail	A	Alachua	1.07	6.50	F	Trail	2.5	4	100	67	0	77	138000	84.39	I	147660
6044.0	Lake Kanapaha Trail Loop West	A	Lake Kanapaha Trail	Alachua	1.15	6.50	F	Trail	2.5	4	100	62	0	75	138000	82.34	I	158700
6039.0	Lake Kanapaha Trail	Lake Kanapaha Trail Loop Wes	I-75	Alachua	1.05	6.50	F	Trail	2.5	4	100	89	44	90	138000	99	I	144900
7074.0	Hull Road Extension Trail South	I-75 Corridor Trail	SW 40th Blvd	Alachua	0.24	6.50	F	Trail	2.5	4	100	70	0	78	138000	86.05	I	33120
7073.0	Hull Road Extension Trail South	SW 40th Blvd	SW 20th Avenue	Alachua	0.28	6.50	F	Trail	2.5	4	100	72	6	79	138000	87.52	I	38640
6002.0	Hull Road Extension Trail South	SW 20th Avenue	SR 121/W 34th Street	Alachua	1.01	6.50	F	Trail	2.5	4	100	85	0	84	138000	92.62	I	139380
405.0	Hull Road-Mowry Rd	34th Street SW	23rd Drive SW	Alachua	0.81	2.82	C	Existing	2.5	Existing	Existing	91	0	Existing	Existing	Campus	Campus	--
54.0	Hull Road-Mowry Rd	23rd Drive SW	North/South Drive	Alachua	0.52	2.82	C	Existing	2.5	Existing	Existing	91	0	Existing	Existing	Campus	Campus	--
52.0	North-South Drive	Hull/Mowry Road	SR 24/Archer Rd	Alachua	0.17	2.41	B	Existing	2.5	Existing	Existing	87	0	Existing	Existing	Campus	Campus	--
57.0	SR 24/Archer Road	North/South Drive	SW 16th Street	Alachua	0.45	4.41	D	CSN	3.5	0.91	22.75	92	33	59	CSN	CSN	CSN	--
131.0	SR 24/Archer Road	SW 16th Street	US 441/W 13th Street	Alachua	0.31	4.41	D	CSN	3.5	0.91	22.75	91	0	56	CSN	CSN	CSN	--
4001.0	Depot Ave Rail-Trail	Newell Drive	SW 6th Street	Alachua	0.84	6.50	F	Existing	2.5	Existing	Existing	98	0	Existing	Existing	existing	existing	--
4002.0	Depot Ave Rail-Trail	W 6th St	SE 4th Street	Alachua	0.58	6.50	F	Existing	2.5	Existing	Existing	95	0	Existing	Existing	existing	existing	--
5006.0	Downtown Connector	Depot Ave Rail Trail	6th St Trail/S. Main St	Alachua	0.34	6.50	F	Trail	2.5	4	100	91	11	88	138000	96.52	I	46920
5007.0	Downton Connector	6th St Trl /Eof S. Main St	SE 4th Street	Alachua	0.39	6.50	F	Trail	2.5	4	100	88	78	93	138000	100	I	53820
402.0	9th Road SW-Depot Avenue-SE 7th Avenue	SE 4th Street	SE 7th Street	Alachua	0.23	3.62	D	CSN	2.5	1.12	28	93	0	48	CSN	CSN	CSN	--
87.0	7th Ave. SW-Depot Avenue-SE 7th Avenue	SE 7th Street	SR 331	Alachua	0.39	4.06	D	CSN	2.5	1.56	39	85	0	49	CSN	CSN	CSN	--
4008.0	Waldo Road Greenway	SR 331/Williston Road	N 16th Avenue	Alachua	1.20	6.50	F	Existing	2.5	Existing	Existing	88	0	Existing	Existing	existing	existing	--
4007.0	Waldo Road Greenway	N 16th Avenue	N 39th Avenue	Alachua	1.44	6.50	F	Existing	2.5	Existing	Existing	64	0	Existing	Existing	existing	existing	--
38.0	SR 24/Waldo Road	SR 26/ University Avenue	N 8th Avenue	Alachua	0.58	4.51	E	CSN	3.5	1.01	25.25	86	0	55	CSN	CSN	CSN	--
179.0	SR 24/Waldo Road	N 8th Avenue	N 16th Avenue	Alachua	0.58	4.74	E	CSN	3.5	1.24	31	90	0	48	CSN	CSN	CSN	--
180.0	SR 24/Waldo Road	N 16th Avenue	N 23rd Avenue	Alachua	0.59	4.68	E	CSN	3.5	1.18	29.5	76	0	42	CSN	CSN	CSN	--
230.0	SR 24/Waldo Road	N 23rd Avenue	NE 31st Avenue	Alachua	0.60	4.68	E	CSN	3.5	1.18	29.5	57	0	35	CSN	CSN	CSN	--
241.0	SR 24/Waldo Road	NE 31st Avenue	SR 222/E 39th Avenue	Alachua	0.30	4.68	E	CSN	3.5	1.18	29.5	50	0	32	CSN	CSN	CSN	--
				Total Milage	19.05	5.23	D	Avg				76 Avg				98 Avg		
						3.62	A	High										

Alachua Braid Aggregated Segment Data (from Sprinkle - 2001)

#2 Immediate Priority

Alachua Braid

F_Seg_Id	Street	From	To	Name	Length (miles)	Bicycle QOS Score	Bicycle QOS Grade (A..F)	Final Facility Selected	Target BQOS Score	Delta BQOS Score	100% Delta BQOS	100% LD Score	100% Public Value	Benefit Score	Unit Facility Cost	100% B/C Ratio	Priority Group (I, II & III)	Facility Cost ($)
314.0	US 441/W 13th Street	SR 121/W 34th Street	NW 23rd Street	Alachua	0.61	**3.80**	**D**	Existing	3.5	Existing	Existing	46	0	Existing	Existing	**100**	100	--
291.0	US 441/W 13th Street	N 53rd Avenue	SR 121/W 34th Street	Alachua	0.83	**3.85**	**D**	Existing	3.5	Existing	Existing	52	0	Existing	Existing	**100**	100	--
260.0	US 441/W 13th Street	SR 20/ NW 6th Street	N 53rd Avenue	Alachua	0.40	**3.85**	**D**	Existing	3.5	Existing	Existing	54	0	Existing	Existing	**100**	100	--
246.0	US 441/W 13th Street	SR 222/ N39th Avenue	SR 20/ NW 6th Street	Alachua	0.74	**2.87**	**C**	Existing	3.5	Existing	Existing	62	0	Existing	Existing	**100**	100	--
73.0	US 441/W 13th Street	NW 31st Avenue	SR 222/ N39th Avenue	Alachua	0.53	**2.87**	**C**	Existing	3.5	Existing	Existing	71	0	Existing	Existing	**100**	100	--
191.0	US 441/W 13th Street	NW 23rd Avenue	NW 31st Avenue	Alachua	0.45	**2.80**	**C**	Existing	3.5	Existing	Existing	81	6	Existing	Existing	**100**	100	--
181.0	US 441/W 13th Street	NW 16th Avenue	NW 23rd Avenue	Alachua	0.52	**4.73**	**E**	CSN	3.5	1.23	30.75	85	0	46	CSN	**CSN**	CSN	--
137.0	US 441/W 13th Street	NW 8th Avenue	NW 16th Avenue	Alachua	0.52	**4.55**	**E**	CSN	3.5	1.05	26.25	85	0	54	CSN	**CSN**	CSN	--
58.0	US 441/W 13th Street	NW 5th Avenue	NW 8th Avenue	Alachua	0.24	**4.55**	**E**	CSN	3.5	1.05	26.25	94	0	58	CSN	**CSN**	CSN	--
34.0	US 441/W 13th Street	SR 26/University Avenue	NW 5th Avenue	Alachua	0.25	**4.55**	**E**	CSN	3.5	1.05	26.25	95	6	59	CSN	**CSN**	CSN	--
102.5	US 441/W 13th Street	S 4th Avenue	S 2nd Avenue	Alachua	0.13	**4.53**	**E**	CSN	3.5	1.03	25.75	97	0	49	CSN	**CSN**	CSN	--
102.0	US 441/W 13th Street	S 4th Avenue	S 2nd Avenue	Alachua	0.13	**4.06**	**D**	CSN	3.5	0.56	14	97	0	45	CSN	**CSN**	CSN	--
84.0	US 441/W 13th Street	Radio/ Museum Road	S 4th Avenue	Alachua	0.23	**4.46**	**D**	CSN	3.5	0.96	24	100	0	60	CSN	**CSN**	CSN	--
61.0	US 441/W 13th Street	Diamond Rd.	Radio/ Museum Road	Alachua	0.09	**4.46**	**D**	CSN	3.5	0.96	24	93	0	57	CSN	**CSN**	CSN	--
422.0	US 441/W 13th Street	Diamond Road	Archer Road	Alachua	0.12	**3.45**	**C**	Existing	3.5	Existing	Existing	90	0	Existing	Existing	**100**	100	--
297.0	US 441/W 13th Street	SR 24/Archer Road	SR 226/SW 16th Avenue	Alachua	0.37	**2.78**	**C**	Existing	3.5	Existing	Existing	89	0	Existing	Existing	**100**	100	--
316.0	US 441/W 13th Street	SR 226/SW 16th Avenue	SW 14th Drive	Alachua	0.25	**3.02**	**C**	Existing	3.5	Existing	Existing	86	0	Existing	Existing	**100**	100	--
423.0	US 441/W 13th Street	SW 14th Drive	SR 331/Williston	Alachua	1.25	**3.51**	**D**	Existing	3.5	Existing	Existing	86	0	Existing	Existing	**100**	100	--
				Total Milage	**7.66**	**3.44**	**D**	avg				81 avg				**100** avg		
						2.78	**A**	high										

University Braid Aggregated Segment Data (from Sprinkle - 2001)

#3 Immediate Priority

Universtiy Braid

F_Seg_Id	Street	From	To	Name	Length (miles)	Bicycle QOS Score	Bicycle QOS Grade (A..F)	Final Facility Selected	Target BQOS Score	Delta BQOS Score	100% Delta BQOS	100% LD Score	100% Public Value	Benefit Score	Unit Facility Cost	100% B/C Ratio	Priority Group (I, II & III)	Facility Cost ($)
282.0	SR 26/Newberry Road	SW 122nd Street/ Parker Road	NW 107th Terrace	Alachua	0.94	**3.21**	**C**	Existing	3.5	Existing	Existing	29	0	Existing	Existing	**100**	existing	–
283.0	SR 26/Newberry Road	107th Terrace	NW 98th Street	Alachua	0.59	**4.91**	**E**	CSN	3.5	1.41	35.25	38	0	29	CSN	**CSN**	CSN	–
	Newberry Rd	*Callison Rd*	*91 terr NW*	*Alachua*	*0.50*													
100.0	SR 26/Newberry Road	W 91st Street	Ft. Clarke Boulevard	Alachua	0.08	**4.91**	**E**	R3	3.5	1.41	35.25	43	0	31	102000	**46.6**	II	8160
115.0	SR 26/Newberry Road	Ft. Clarke Boulevard	SW 76th Street	Alachua	0.72	**4.91**	**E**	SP	3.5	1.41	35.25	51	0	44	138000	**48.87**	II	99360
413.0	SR 26	76 street NW	75th Street NW	Alachua	0.19	**4.69**	**E**	CSN	3.5	1.19	29.75	54	0	33	CSN	**CSN**	CSN	–
169.0	SR 26/Newberry Road	SW 75th Street/Tower Road	Interstate-75 [east ramp]	Alachua	0.23	**4.49**	**D**	CSN	3.5	0.99	24.75	67	0	47	CSN	**CSN**	CSN	–
216.0	SR 26/Newberry Road	Interstate-75 [east ramp]	SW 62nd Boulevard	Alachua	0.58	**4.96**	**E**	CSN	3.5	1.46	36.5	74	0	54	CSN	**CSN**	CSN	–
300.0	SR 26/Newberry Road	SW 62nd Boulevard	NW 55th Street	Alachua	0.44	**5.00**	**E**	CSN	3.5	1.5	37.5	60	0	39	CSN	**CSN**	CSN	–
91.0	SR 26/Newberry Road	NW 55th Street	NW 43rd Street	Alachua	0.78	**2.94**	**C**	Existing	3.5	Existing	Existing	96	0	Existing	Existing	**100**	existing	–
207.0	SR 26/Newberry Road	NW 43rd Street	SR 26A/ SW 2nd Avenue	Alachua	0.67	**3.73**	**D**	S	3.5	0.23	5.75	79	0	34	1	**100**	I	1
208.0	SR 26/Newberry Road	SR 26A/ SW 2nd Avenue	SR 121/W 34th Street	Alachua	0.41	**4.73**	**E**	SP	3.5	1.23	30.75	86	6	57	138000	**100**	Program	–
18.0	SR 26/University Avenue	SR 121/W 34th Street	NW 22nd Street	Alachua	1.15	**3.71**	**D**	Existing	3.5	Existing	Existing	100	0	Existing	Existing	**100**	existing	–
212.0	SR 26/University Avenue	SR 26A/ SW 2nd Avenue	North/South Drive	Alachua	0.08	**4.60**	**E**	CSN	3.5	1.1	27.5	85	6	56	CSN	**CSN**	CSN	–
89.0	SR 26/University Avenue	NW 22nd Street	SR 26A/ SW 2nd Avenue	Alachua	0.16	**4.40**	**D**	CSN	3.5	0.9	22.5	88	0	54	CSN	**CSN**	CSN	–
111.0	SR 26/University Avenue	North/South Drive	NW 17th Street	Alachua	0.30	**4.72**	**E**	CSN	3.5	1.22	30.5	91	11	60	CSN	**CSN**	CSN	–
133.0	SR 26/University Avenue	NW 17th Street	US 441/W 13th Street	Alachua	0.33	**4.72**	**E**	CSN	3.5	1.22	30.5	95	6	61	CSN	**CSN**	CSN	–
19.0	SR 26/University Avenue	US 441/W 13th Street	W 12th Street	Alachua	0.13	**4.52**	**E**	CSN	3.5	1.02	25.5	95	0	58	CSN	**CSN**	CSN	–
20.0	SR 26/University Avenue	W 12th Street	W 10th Street	Alachua	0.13	**4.52**	**E**	CSN	3.5	1.02	25.5	94	0	58	CSN	**CSN**	CSN	–
50.0	SR 26/University Avenue	W 10th Street	W 6th Street	Alachua	0.25	**4.52**	**E**	CSN	3.5	1.02	25.5	98	0	60	CSN	**CSN**	CSN	–
134.0	SR 26/University Avenue	W 6th Street	W 3rd Street	Alachua	0.18	**4.46**	**D**	CSN	3.5	0.96	24	98	6	60	CSN	**CSN**	CSN	–
135.0	SR 26/University Avenue	W 3rd Street	W 2nd Street	Alachua	0.08	**4.35**	**D**	CSN	3.5	0.85	21.25	92	0	55	CSN	**CSN**	CSN	–
138.0	SR 26/University Avenue	W 2nd Street	N Main Street	Alachua	0.10	**4.22**	**D**	CSN	3.5	0.72	18	92	0	54	CSN	**CSN**	CSN	–
139.0	SR 26/University Avenue	N Main Street	E 1st Street	Alachua	0.07	**4.22**	**D**	CSN	3.5	0.72	18	90	0	53	CSN	**CSN**	CSN	–
140.0	SR 26/University Avenue	E 1st Street	E 3rd Street	Alachua	0.09	**4.22**	**D**	CSN	3.5	0.72	18	91	0	54	CSN	**CSN**	CSN	–
144.0	SR 26/University Avenue	E 3rd Street	NE 9th Street	Alachua	0.46	**4.40**	**D**	CSN	3.5	0.9	22.5	91	11	46	CSN	**CSN**	CSN	–
145.0	SR 26/University Avenue	NE 9th Street	SR 24/Waldo Road	Alachua	0.21	**4.53**	**E**	CSN	3.5	1.03	25.75	83	6	44	CSN	**CSN**	CSN	–
	University	*Waldo Rd*	*NE 14 St*		*0.50*													
24.0	SR 26/University Avenue	SR 20/Hawthorne Road	NE 15th Street	Alachua	0.09	**3.92**	**D**	S	3.5	0.42	10.5	81	0	47	1	**100**	I	1
214.0	SR 26/University Avenue	NE 15th Street	NE 25th Street	Alachua	0.82	**4.26**	**D**	S	3.5	0.76	19	90	6	54	1	**100**	I	1
279.0	SR 26/University Avenue	NE 25th Street	NE 43rd Street	Alachua	1.18	**4.11**	**D**	S	3.5	0.61	15.25	76	0	47	1	**100**	I	1
280.0	SR 26/University Avenue	NE 43rd Street	CR 329B/Lakeshore Drive	Alachua	0.67	**4.11**	**D**	S	3.5	0.61	15.25	50	0	36	1	**100**	I	1
				Total Milage	**13.11**	**4.22** **3.92**	**D** **C**					78				**90**		

Hawthorne Braid Aggregated Segment Data (from Sprinkle - 2001)

#4 Immediate Priority

Hawthorne Braid F_Seg_Id	Street	From	To	Name	Length (miles)	Bicycle QOS Score	Bicycle QOS Grade	Final Facility Selected	Target BQOS Score	Delta BQOS Score	100% Delta BQOS	100% LD Score	100% Public Value	Benefit Score	Unit Facility Cost	100% B/C Ratio	Priority Group (I, II & III)	Facility Cost ($)
5005.0	Downtown Connector	SE 4th Street	Gainesville-Hawthorne Trail	Alachua	1.12	6.50	F	Trail	2.5	4	100	77	100	91	138000	99.89	I	154560
5007.0	Downton Connector	6th St Trl /Eof S. Main St	SE 4th Street	Alachua	0.39	6.50	F	Trail	2.5	4	100	88	78	93	138000	100	I	53820
5006.0	Downtown Connector	Depot Ave Rail Trail	6th St Trail/S. Main St	Alachua	0.34	6.50	F	Trail	2.5	4	100	91	11	88	138000	96.52	I	46920
5002.0	6th Street Rail-Trail	SR 26/University Ave	S. Main St/Downtown Connecto	Alachua	1.06	6.50	F	Trail	2.5	4	100	97	6	80	138000	Program	Program	--
5001.0	6th Street Rail-Trail	NW 8th	SR 26/University Ave	Alachua	0.52	6.50	F	Trail	2.5	4	100	96	50	83	138000	Program	Program	--
5000.0	6th Street Rail-Trail	NW 23rd Ave	NW 8th Ave	Alachua	1.14	6.50	F	Trail	2.5	4	100	100	6	81	138000	Program	Program	--
				Total Milage	4.57	6.50	F	Avg				92 Avg				99 Avg		
						6.50	F	High										

Bivens Braid Aggregated Segment Data (from Sprinkle - 2001)

#5 Immediate Priority

Bivens Braid F_Seg_Id	Street	From	To	Name	Length (miles)	Bicycle QOS Score	Bicycle QOS Grade (A..F)	Final Facility Selected	Target BQOS Score	Delta BQOS Score	100% Delta BQOS	100% LD Score	100% Public Value	Benefit Score	Unit Facility Cost	100% B/C Ratio	Priority Group (I, II & III)	Facility Cost ($)
129.0	North-South Drive	Radio Museum Road	SR 26/W University Avenue	Bivens	0.52	**1.81**	**B**	Existing	2.5	Existing	Existing	90	0	Existing	Existing	**100**	100	--
80.0	North-South Drive	Hull/ Mowry Road	Radio/Museum Road	Bivens	0.40	**1.25**	**A**	Existing	2.5	Existing	Existing	90	0	Existing	Existing	**100**	100	--
52.0	North-South Drive	SR 24/Archer Road	Hull/Mowry Road	Alachua	0.17	**0.00**	**A**	0	2.5	0	0	-	0	0	0		0	0
7065.0	23rd Road Trail	SR 24/Archer Rd	SW 23rd Terr.	Bivens	1.02	**6.50**	**F**	Trail	2.5	4	100	89	6	86	138000	**94.82**	I	140760
6016.0	SW 23 Terrace Trail	35th Place SW	SR 331	Bivens	0.88	**6.50**	**F**	Trail	2.5	4	100	77	6	81	138000	**89.68**	I	121440
6015.0	SW 23 Terrace Trail	SR 331	SW 56th Ave	Bivens	0.91	**6.50**	**F**	Trail	2.5	4	100	70	0	78	138000	**85.99**	I	125580
6017.0	SW 23 Terrace Trail	SW 56th Ave	Rocky Point Rd	Bivens	0.48	**6.50**	**F**	Trail	2.5	4	100	58	0	73	138000	**80.43**	I	66240
												68	**Avg**					
				Total Milage	**4.38**	**4.15**	**D**									**92** Avg		
						0.00	**A**											

Westside Braid Aggregated Segment Data (from Sprinkle - 2001)

#6 Immediate Priority

Westside Braid

F_Seg_Id	Street	From	To	Name	Length (miles)	Bicycle QOS Score	Bicycle QOS Grade (A..F)	Final Facility Selected	Target BQOS Score	Delta BQOS Score	100% Delta BQOS	100% LD Score	100% Public Value	Benefit Score	Unit Facility Cost	100% B/C Ratio	Priority Group (I, II & III)	Facility Cost ($)
97.0	SR 121/W 34th Street	SR 331/Williston Road	SR 24/Archer Road	Alachua	1.60	**3.30**	**C**	Existing	3.5	Existing	Existing	92	0	Existing	Existing	**100**	existing	--
32.0	SR 121/W 34th Street	SR 24/Archer Road	SW 20th Avenue	Alachua	0.51	**4.87**	**E**	CSN	3.5	1.37	34.25	82	0	57	CSN	**CSN**	CSN	--
130.0	SR 121/W 34th Street	SW 20th Avenue	Hull/ Mowry Road	Alachua	0.25	**4.87**	**E**	CSN	3.5	1.37	34.25	80	0	56	CSN	**CSN**	CSN	--
200.0	SR 121/W 34th Street	Hull/ Mowry Road	Radio/Museum Road	Alachua	0.31	**4.87**	**E**	CSN	3.5	1.37	34.25	80	0	56	CSN	**CSN**	CSN	--
205.0	SR 121/W 34th Street	Radio/Museum Road	SR 26A/ SW 2nd Avenue	Alachua	0.55	**4.87**	**E**	CSN	3.5	1.37	34.25	85	6	58	CSN	**CSN**	CSN	--
211.0	SR 121/W 34th Street	SR 26A/ SW 2nd Avenue	SR 26/Newberry Road	Alachua	0.12	**4.61**	**E**	CSN	3.5	1.11	27.75	86	0	56	CSN	**CSN**	CSN	--
210.0	SR 121/W 34th Street	SR 26/Newberry Road	N 8th Avenue	Alachua	0.50	**4.84**	**E**	CSN	3.5	1.34	33.5	88	0	59	CSN	**CSN**	CSN	--
221.0	SR 121/W 34th Street	N 8th Avenue	NW 16th Avenue	Alachua	0.53	**4.84**	**E**	CSN	3.5	1.34	33.5	83	11	58	CSN	**CSN**	CSN	--
35.0	SR 121/W 34th Street	NW 16th Avenue	NW 31st Avenue	Alachua	1.48	**3.51**	**D**	Existing	3.5	Existing	Existing	100	6	Existing	Existing	**100**	100	--
233.0	SR 121/W 34th Street	NW 31st Avenue	SR 222/W 39th Avenue	Alachua	0.17	**3.51**	**D**	Existing	3.5	Existing	Existing	52	0	Existing	Existing	**100**	100	--
72.0	SR 121/W 34th Street	SR 222/W 39 Avenue	N 53rd Avenue	Alachua	1.15	**3.32**	**C**	Existing	3.5	Existing	Existing	54	0	Existing	Existing	**100**	existing	--
				Total Milage	**7.17**	**4.31**	**E**	Avg				80	Avg			**100**	Avg	
						3.30	**C**	High										

Millhopper Braid Aggregated Segment Data (from Sprinkle - 2001)

#7 Immediate Priority

Millhopper Braid F_Seg_Id	Street	From	To	Name	Length (miles)	Bicycle QOS Score	Bicycle QOS Grade (A..F)	Final Facility Selected	Target BQOS Score	Delta BQOS Score	100% Delta BQOS	100% LD Score	100% Public Value	Benefit Score	Unit Facility Cost	100% B/C Ratio	Priority Group (I, II & III)	Facility Cost ($)
76.0	83rd Street NW	SR 222/NW 39th Avenue	NW 23rd Avenue	Alachua	0.98	**4.36**	**D**	SP	2.5	1.86	46.5	42	11	47	138000	**51.39**	II	135240
317.0	23rd Avenue NW	NW 83rd Street	NW 55th Street	Alachua	1.80	**4.77**	**E**	CSN	2.5	2.27	56.75	76	6	54	CSN	**CSN**	CSN	--
	23rd Avenue NW	NW 55th Street	NW 51st Street	Alachua	0.60													
225.0	23rd Avenue NW	NW 51st Street	NW 43rd Street	Alachua	0.50	**3.40**	**C**	Existing	2.5	Existing	Existing	67	6	Existing	Existing	**100**	100	--
184.0	16th Avenue NW	NW 43rd Street	NW 38th Street	Alachua	0.56	**4.60**	**E**	CSN	2.5	2.1	52.5	68	17	50	CSN	**CSN**	CSN	--
227.0	16th Avenue NW	NW 38th Street	SR 121/W 34th Street	Alachua	0.54	**4.60**	**E**	CSN	2.5	2.1	52.5	78	6	63	CSN	**CSN**	CSN	--
228.0	16th Avenue NW	SR 121/W 34th Street	NW 22nd Street	Alachua	1.17	**4.75**	**E**	CSN	2.5	2.25	56.25	94	11	71	CSN	**CSN**	CSN	--
229.0	16th Avenue NW	NW 22nd Street	US 441/W 13th Street	Alachua	0.82	**4.53**	**E**	CSN	2.5	2.03	50.75	94	6	68	CSN	**CSN**	CSN	--
185.0	16th Avenue N	US 441/W 13th Street	SR 20/NW 6th Street	Alachua	0.49	**4.50**	**D**	CSN	2.5	2	50	87	11	56	CSN	**CSN**	CSN	--
	16th Avenue N	SR 20/NW 6th Street	N Main Street	Alachua	0.50													
189.0	16th Avenue N	N Main Street	NE 9th Street	Alachua	0.58	**2.59**	**C**	Existing	2.5	Existing	Existing	87	0	Existing	Existing	**100**	100	--
190.0	16th Avenue N	NE 9th Street	NE 15th Street	Alachua	0.54	**2.59**	**C**	Existing	2.5	Existing	Existing	100	0	Existing	Existing	**100**	100	--
	16th Avenue N	NE 15th Street	SR24/Waldo	Alachua	0.33													
				Total Milage	**9.41**	**4.07**	**D**					79				**88**		
						2.59	**C**											

Glen Springs Braid Aggregated Segment Data (from Sprinkle - 2001)

#8 Immediate Priority

Glen Springs Braid F_Seg_Id	Street	From	To	Name	Length (miles)	Bicycle QOS Score	Bicycle QOS Grade (A..F)	Final Facility Selected	Target BQOS Score	Delta BQOS Score	100% Delta BQOS	100% LD Score	100% Public Value	Benefit Score	Unit Facility Cost	100% B/C Ratio	Priority Group (I, II & III)	Facility Cost ($)
234.0	23rd Blvd NW	NW 16th Terr.	US 441/W 13th Street	Alachua	0.26	3.41	C	S	2.5	0.91	22.75	82	0	42	1	100	I	1
318.0	31st Ave NW/Glen Springs Road	SR 121/W 34th Street	NW 16th Terr.	Alachua	2.33	4.35	D	CSN	2.5	1.85	46.25	92	11	56	CSN	CSN	CSN	--
98.0	SR 120A/N 23rd Avenue	US 441/W 13th Street	SR 20/NW 6th Street	Alachua	0.50	4.54	E	CSN	3.5	1.04	26	83	0	53	CSN	CSN	CSN	--
235.0	SR 120A/N 23rd Avenue	SR 20/ NW 6th Street	N Main Street	Alachua	0.55	4.54	E	CSN	3.5	1.04	26	79	0	42	CSN	CSN	CSN	--
236.0	SR 120A/N 23rd Avenue	N Main Street	NE 9th Street	Alachua	0.41	4.43	D	CSN	3.5	0.93	23.25	79	0	41	CSN	CSN	CSN	--
240.0	SR 120A/N 23rd Avenue	NE 9th Street	NE 15th Street	Alachua	0.54	4.43	D	SP	3.5	0.93	23.25	89	0	45	138000	49.61	II	74520
307.0	SR 120A/N 23rd Avenue	NE 15th Street	SR 24/Waldo Road	Alachua	0.55	4.58	E	CSN	3.5	1.08	27	71	0	39	CSN	CSN	CSN	--
				Total Milage	5.14	4.33	D	avg				82 avg				75 avg		
						3.41	C	hign										

Appendix C

Public Involvement & Steering Committee

ALACHUA COUNTYWIDE BICYCLE MASTER PLAN ADDENDUM

PUBLIC INVOLVEMENT

PROJECT TIMELINE	
DATE	**ACTIVITY**
November 20, 2003	MTPO authorizes contract for Bike Master Plan update
January 13&14, 2004	MTPO Advisory Committees appoint Steering Committee members
February 4, 2004	Steering Committee meeting
March 3, 2004	Steering Committee meeting
March 29, 2004	Steering Committee meeting
April 1, 2004	Public Workshop
May 7, 2004	Steering Committee meeting
May 17, 2004	Steering Committee meeting
May 18, 2004	B/PAB reviewed draft Bike Master Plan Addendum
May 19, 2004	CAC and TAC reviewed draft Bike Master Plan Addendum
May 26, 2004	MTPO approved Bike Master Plan Addendum

STEERING COMMITTEE	
NAME	**AFFILIATION**
Dom Nozzi, Chair	Gainesville Community Development Department
Paul Campbell	B/PAB
Richard Coffman	FDOT District 2
Linda Dixon	UF Campus Planning & Construction Management [TAC]
Ben Fein	B/PAB
Bill Lecher	Alachua County Public Works Department [TAC]
Debbie Leistner	Gainesville Public Works Department [TAC]
Chandler Otis	B/PAB
Julia Reiskind	B/PAB
David Welch	CAC

B/PAB Bicycle/Pedestrian Advisory Board
CAC Citizens Advisory Committee
FDOT Florida Department of Transportation
MTPO Metropolitan Transportation Planning Organization
TAC Technical Advisory Committee
UF University of Florida

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Acknowledgments

MTPO, NCFRPC and the School of Architecture, University of Florida

The Transporting Ecologies Studio in the School of Architecture in conjunction with the Metropolitan Transportation Planning Organization (MTPO) launched this Bicycle Master Plan Addendum project not only to enhance bicycle infrastructure and promote cycle use in Gainesville and Alachua County but also to engage the resources of the community to collaboratively provide long-term visioning coordinated with innovative locally specific design strategies at multiple scales to enhance the quality of life. Students, faculty and administrators contributed substantial resources toward this effort while benefitting from the unique opportunity to conduct first-hand field research in typically unreachable communities. The North Central Florida Regional Planning Council generously supported this effort in terms of guidance, resources and administrative assistance. It is hoped that mutually beneficial projects such as this Master Plan Addendum will continue in this manner fostering community involvement and engaging design as a proactive tool for constructing a better community.

On behalf of the School of Architecture and the students of the Transporting Ecologies Studio, I would like to thank the MTPO for this opportunity.

Martin Gold
Associate Professor