Transporting Ecologies

Phase I: Conceptualization and Protocols

3 March 2004

Alachua Countywide Bicycle Master Plan Update

prepared for the

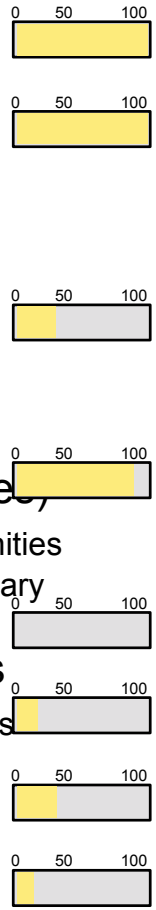
North Central Florida Regional Planning Council

Metropolitan Transportation Planning Organization

Proposal

Advancing the Bicycle Pedestrian Master Plan

- Public health & community infrastructure
- Utilize initiatives from 2001 Master Plan
- Conceptualization of a complete regional system
  - Destination based analysis
  - Contextual analysis
  - New paths and networks potentials
- Identify strategies for implementation (case studies)
  - Analysis of infrastructure in bicycle supportive communities
  - Interviews and literature research collection and summary
- Develop design vignettes for high priority projects
  - Integration of infrastructure and eco-sensitive strategies
  - Visualization of enhanced service
- Link with planning initiatives where appropriate
- Quality of Service visualizations
- Charrette feedback sessions with stakeholders



" To improve the quality of life of Alachua County residents by increasing their choices through the development of a safe and convenient countywide system of on-road and off-road bike facilities that connect neighborhoods with schools, businesses, transit and recreational areas"

Sprinkle Vision Statement

Public Health & Community Design

- CDC initiates research (1997)
- Suburban sprawl linked to:

  Obesity
  Cardiovascular Disease
  Diabetes
  Asthma
  Depression

- Degree of sprawl related to obesity

  (31% of Americans clinically obese) (+ 6 lbs. Sprawling communities)

Recommendations (CDC)

- Governorss Obesity Task Force (57% Floridians overweight)
- Recreational Activity

  parks
  Bicycle and pedestrian paths, lanes & trails
  public amenities

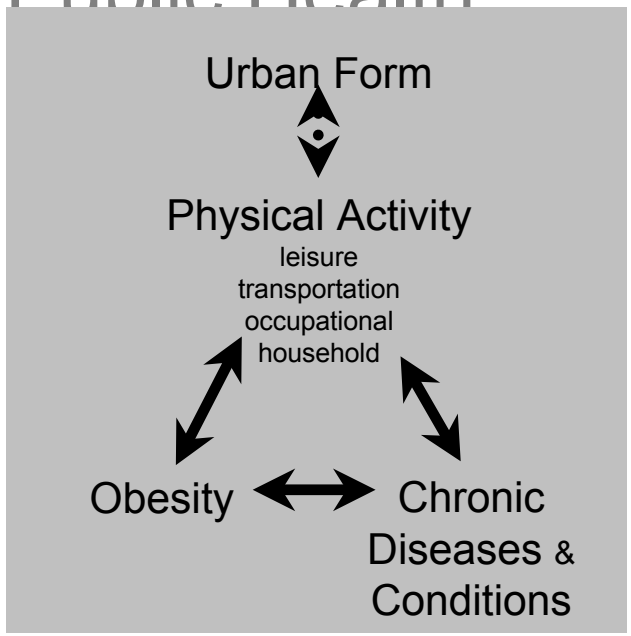
- Routinized Activity

  alternative transportation infrastructure
  smart growth communities

- European Models (walk/cycle)

lowest rates of obesity, diabetes and hypertension
life expectancy +2.5 to 4.4 years

Public Health



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

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

Surgeon General, USA (1996)

Transportation

Multi-modality increases transportation options

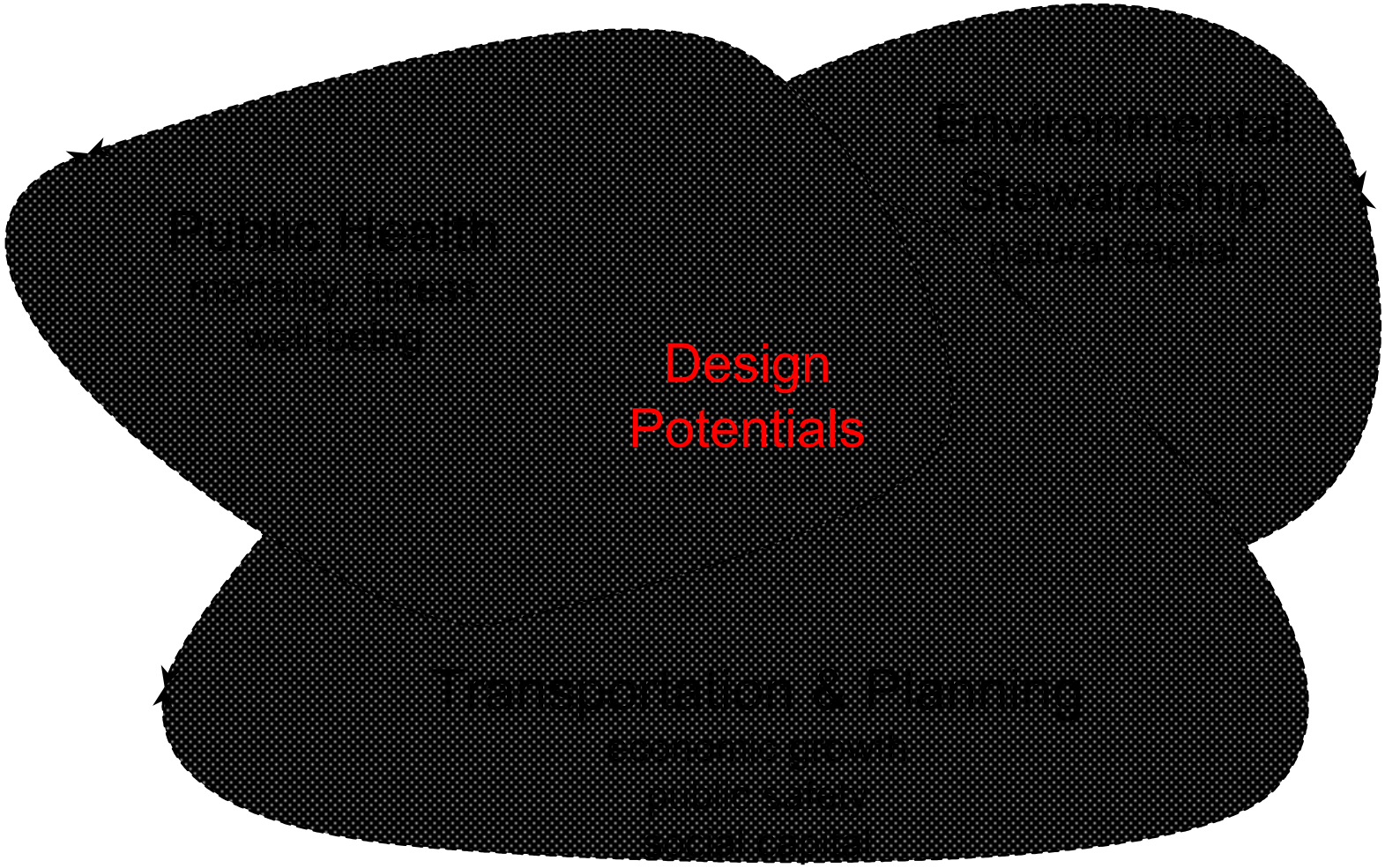
- Mass Transit
  Infrastructure that improves effectiveness of bicycle use
- Automobile
  Integration of bicycle friendly and automobile supportive design
- Bicycle
  Design that leverages mobility, safety and ease of use
- Pedestrian
  Integration with bicycle when appropriate - expands environment

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

Environment

Environmental Stewardship

- Natural Capital
  - Recognizing the value of natural systems
  - Greenways as habitat corridors and cleansing systems
- Closing the Loop
  - Cycling resources at the point of use
  - Integration of hydrology, water reclamation/recharge pools
- Factor 4 Principle
  - Halving resource use and doubling productivity
  - Better community connectivity while reducing energy use


Public Health
mortality, illness
well-being
Environmental
Stewardship
Design
Potentials
Transportation & Planning

Ecolog

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Case Study Cities

20

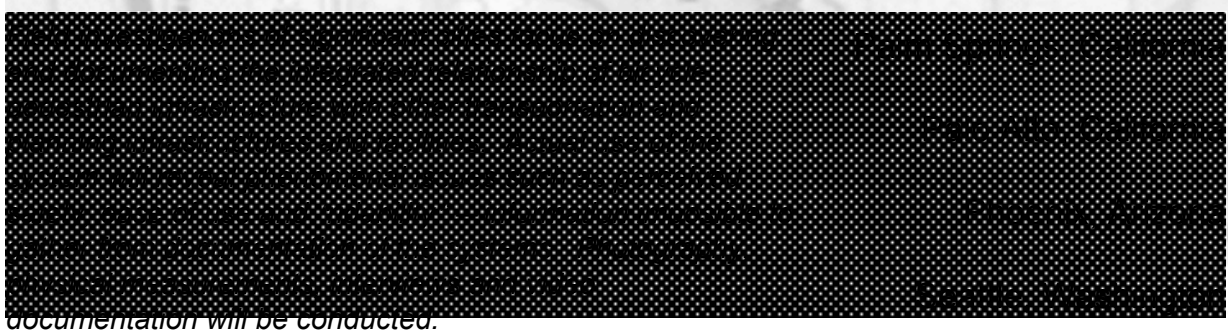
Independent report to be submitted

eleven+ nine

Phase 1

Jan 30th - March 19th

Case study cities provide a basis for developing regional and local strategies leveraging expectation and feasibility. A range of urban sizes, densities and economic infrastructures are represented to minimize anecdotal events while providing the widest view in terms of potential strategies.



documentation will be conducted.

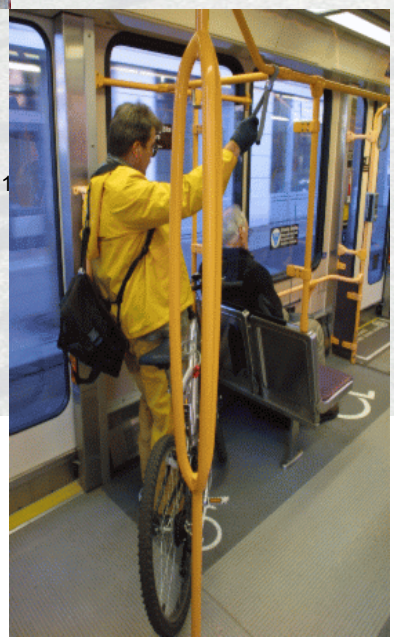
Researched Cities	Field Investigation Cities
Boulder, Colorado	Portland, Oregon
Cambridge, Massachusetts	Davis, California
Houston, Texas	Copenhagen, Denmark
Leiden, Netherlands	Malmö, Sweeden
Münster, Germany	Utrecht, Netherlands
Oulu, Finland	Amsterdam, Netherlands
[illegible]	Houton, Netherlands
[illegible]	Basel, Switzerland
[illegible]	Freiburg, Germany
Washington, DC	

Portland, OR

Population 536,000 (1.95 m metro)
Climate 66 °F - 23 °F

- Critical air pollution index

  100 carbon monoxide violations in 1
- Extensive route network
- Multimodal integration
- Bike Central Program (facilities)
- Research & development - Safety



Davis, CA

Population 62,000
UC Davis Campus

Bicycle round about on campus

Bicycle protected parking

- City Council initiated long range plan
- Grade separated intersections (54)
- University town connectivity coordination
- Innovative bike only intersections
- Shower and changing facility policy

Davis, CA

Population 62,000
UC Davis Campus

Suburban grade separation

Bicycle pedestrian interstate underpass

Copenhagen, DK

Population: 1.7 m

Mean Temp: 68 °F - 32 °F

- Paths & lanes as independent network

  auto, bicycle, park, bus pedestrian combined when needed
- Elevated bicycle lanes
- Bicycle culture
- Car free downtown as pollution control
- Multimodal integration - bus, train facilities
- Free & sponsored bicycle program (1500 bikes)

President Clinton at City Bike ceremony in 1996

Blue lanes - convergence

Lane etiquette

"...combines the idealism of the1960s with the realism of the 1990s"

Copenhagen, DK

- Paths & lanes as independent network

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Innovation and adaptation

Parks cultivated as destinations

Train-bike transfer

Malmö, SE

Population 226,000
Climate temperate / mild winter

- Two-way side paths
- Head-start lanes
- Integration with pedestrians


Roundabout with bicycle pedestrian infrastructure


Bicycle/train connectivity


Two-way path with convergence


Grade separation / public space

Utrecht, NE

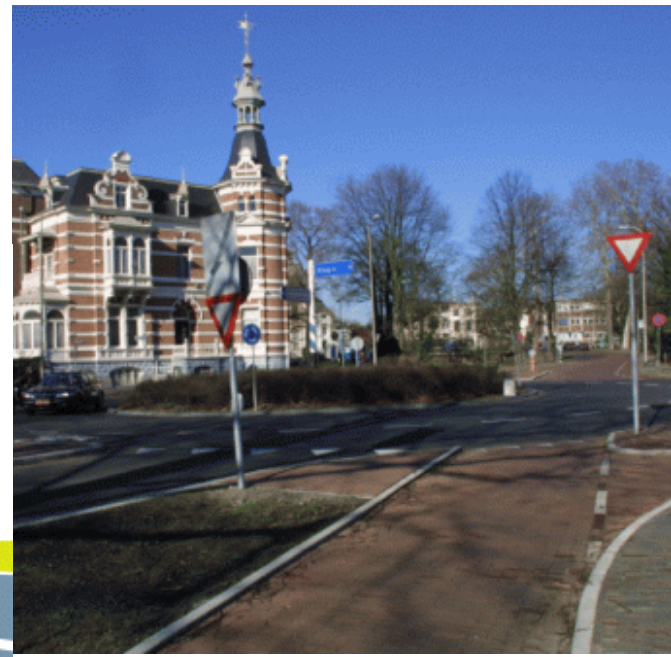
Population: 750,000
Mean Temp: 50 °F

- Separated grade intersections
- Bicycle path standards

  10' wide lanes, stripes, separation, colored areas

- Aesthetic sensibility
- Convenient bicycle storage, parking, rest stops
- School route safety program

Bicycle infrastructure on typical residential streets includes designated lanes and raised crossing locations.



Traffic circle with integrated bicycle lane, independent signage and yeild indicators.

Amsterdam, NL

Population: 125,000
Students: 15,000
Mean temp: S 70°F - W 30°F

- Colored surfaces
- Complex auto bicycle interganges (information)
- Spatial convergence points
- Integrated auto calming infrastructure

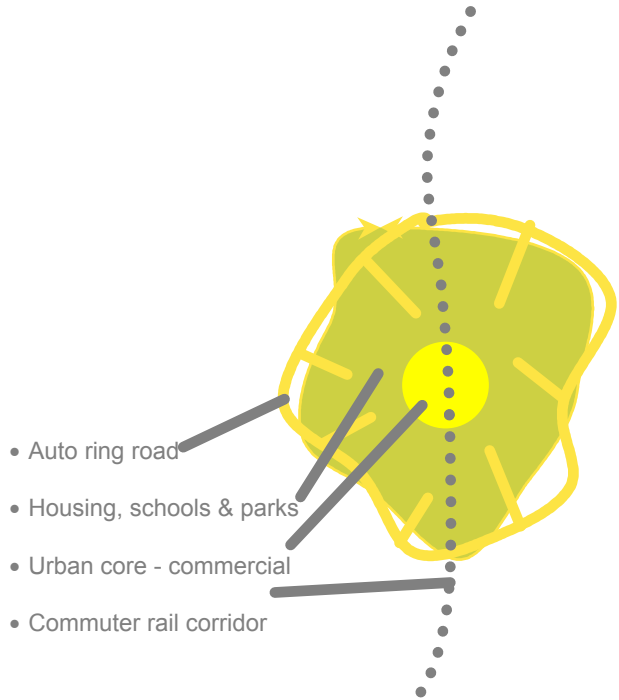
Colored bicycle lanes 2 meters wide (6') auto lane and raised bus/taxi lane.

○Shark§s Teeth○ yield indicators with continuing bike lane (dashed lines) through intersecttion. Three children and mother on one bike.

Colored pedestrian crossing with integrated bicycle infrastructure at traffic circle. Major arterial intersection.

Houton, NL

- Experimental planning
- Separation of auto and bicycle pedestrian zones
- Town center, housing with ring road



Entire urban core is designated as a bicycle pedestrian zone linked to housing by parks and greenways. Operating as a bedroom community to Amsterdam, the passenger rail provides easy commuting into the nearby city.

Basel, CH

- Bicycle implementation plan

  infrastructure in place -showers, lockers, etc.

- Color coded demarcations
- Licensing for bicycles

Twike dual passenger peddle vehichle

Pedestrian - Bike - Auto - Bike - Tram Lanes

Auto ○sharks teeth○ yield designation with yellow bike/ped lanes

Freiburg, DE

Population: 227,000
Students: 32,000

- Integration of transportation and planning - routing
- "Displacement○ more mobility - fewer car trips
- Transition from auto to bicycle
- 90% of students use bicycle/public transport
- 14% reduction in auto use in 16 years

(w/25,000 new in habitants)

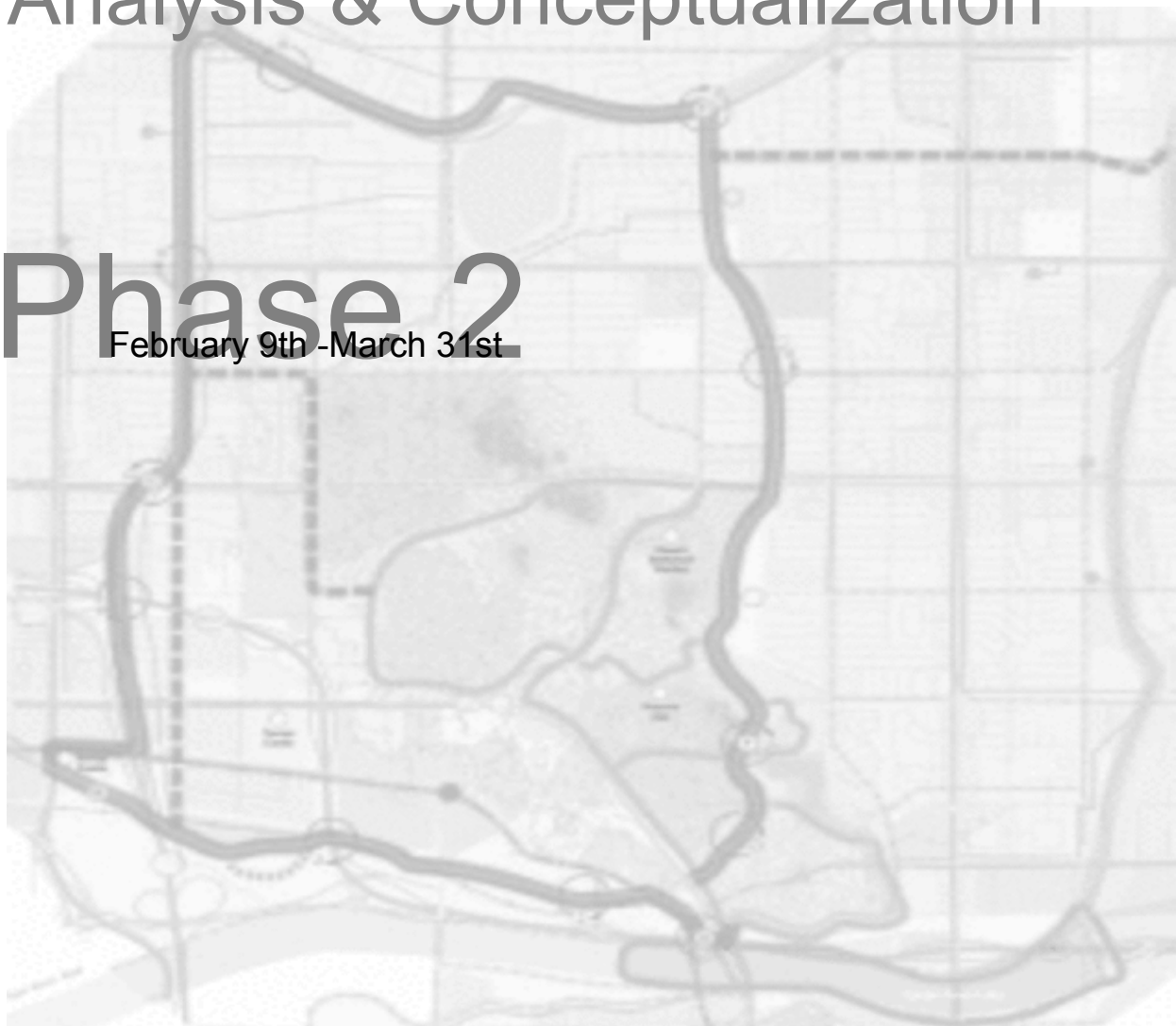
Park destinations

Pontoon bridge allows for passage over wet-try landscapes and varried seasonal flooding.

‘Woonerf§ street principles

Infrastructure facilitating traffic negotiation

Analysis & Conceptualization



Phase 2

February 9th -March 31st

Submit Case Study Report

Develop Conceptual Organization

Asses Recent Projects

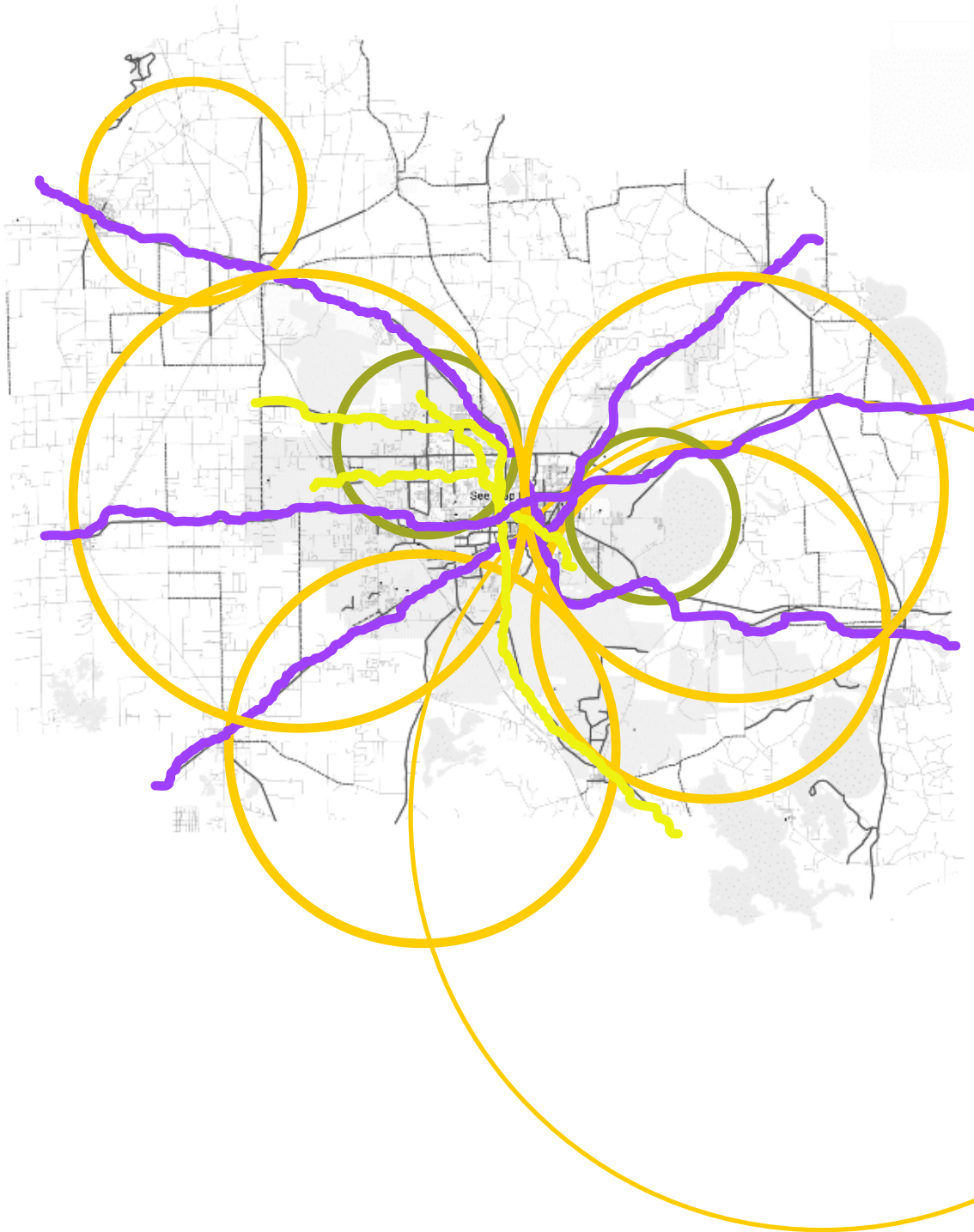
Conduct Design Charrette

New Path Studies

Integrate Priority Matrix (2001)

Submit Project Maps & Meet

Nets, Braids, Loops



Nets:

Transportaion grid
Woonerf principles

Braids:

Destination based
Commuter driven
Multimodal potential
Greenway connectivity

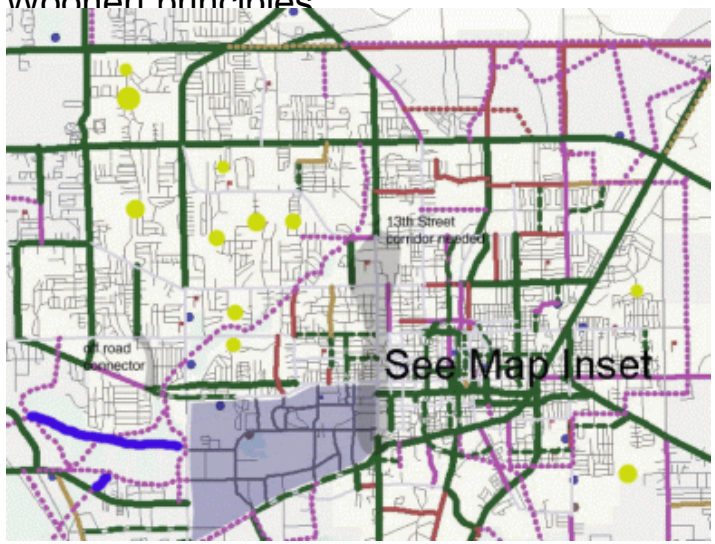
Loops:

Recreational
Nature access
Rural connectivity

Nets:

Neighborhood grid

Woonerf principles



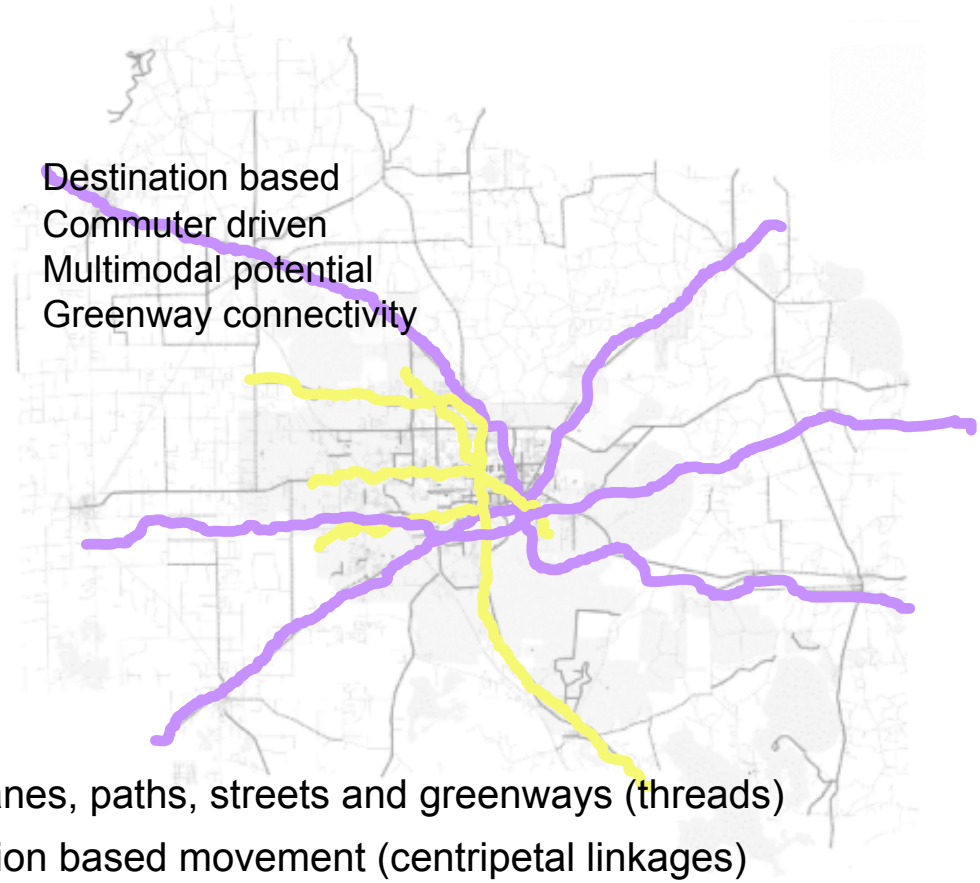
- Re-connecting neighborhood connectivity
- Safer routes for childeren
- Less travel distance
- Promotes local bicycle travel (1 to 3 miles)

Nets

From "high proximity" to "high connectivity

Braids:

Destination based
Commuter driven
Multimodal potential
Greenway connectivity

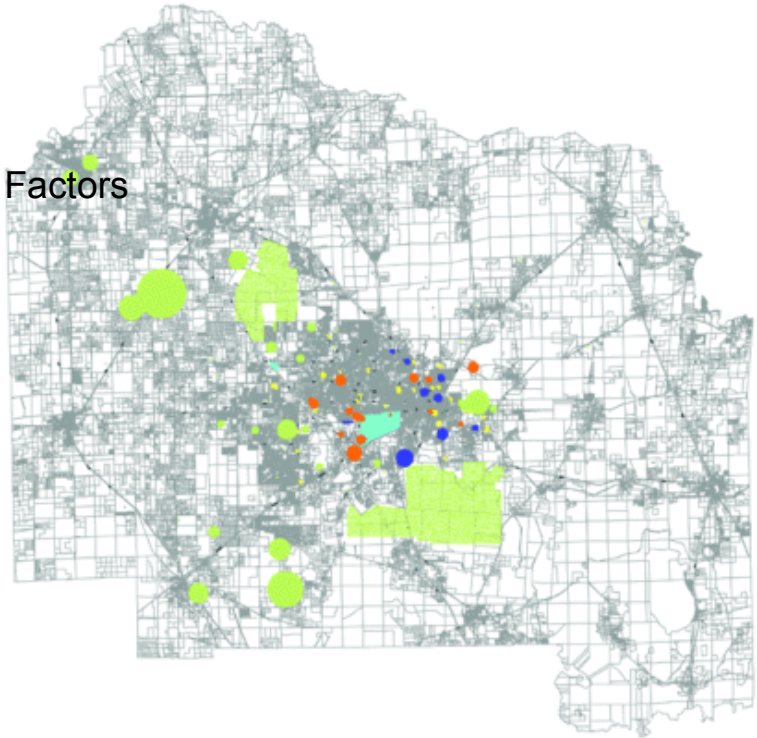


Braids

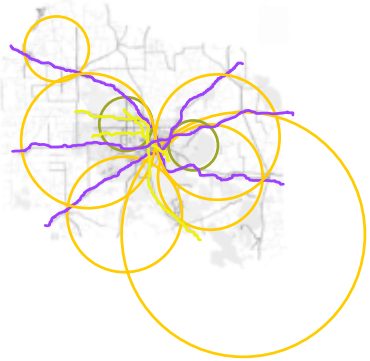
- Braids lanes, paths, streets and greenways (threads)
- Destination based movement (centripetal linkages)
- Minimizes travel distance
- Minimizes time to destination (intersection preference)
- Maximizes safety and comfort for bicyclist

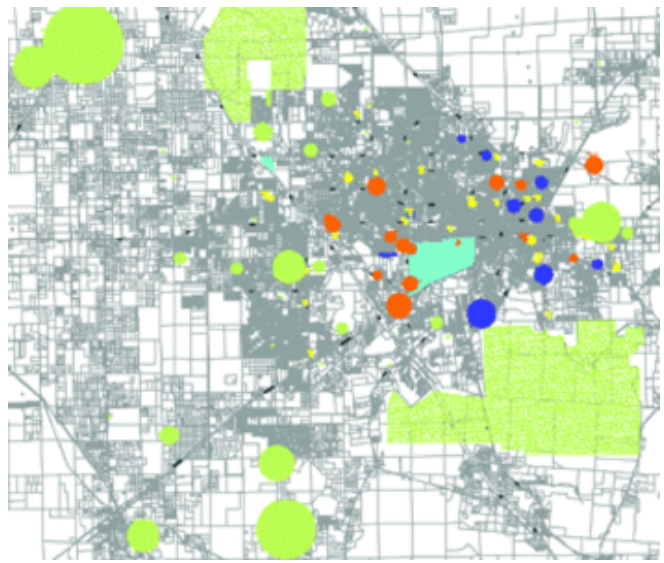
Braids:

Analysis Factors



Braids

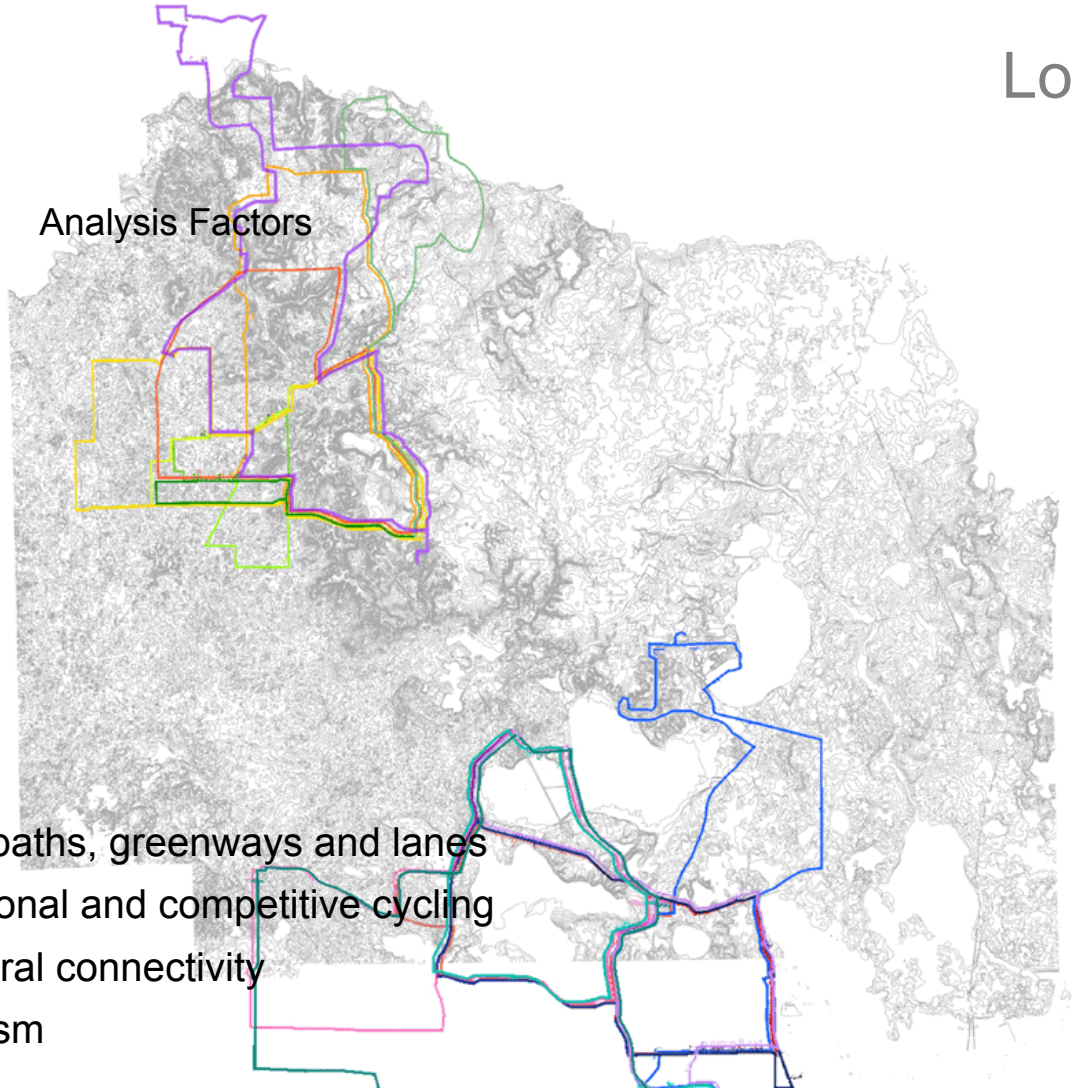




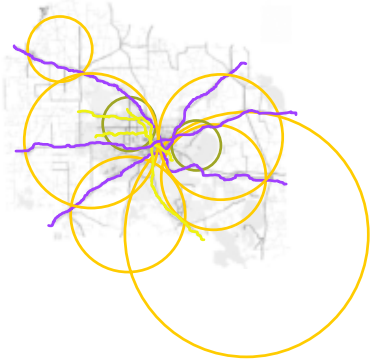
- Existing cost benefit ratios (2001 Master Plan)
- Geographical barriers (contours)
- Destination Matrix (public, commercial, natural)
- Latent Demand Study
- Hydrology matrix (watersheds & riparian corrodors)

Loops:

Analysis Factors



Loops



- Loops - paths, greenways and lanes
- Recreational and competitive cycling
- Urban rural connectivity
- Ecotourism

Design Scheming

Phase 3

March 15th - May 1st

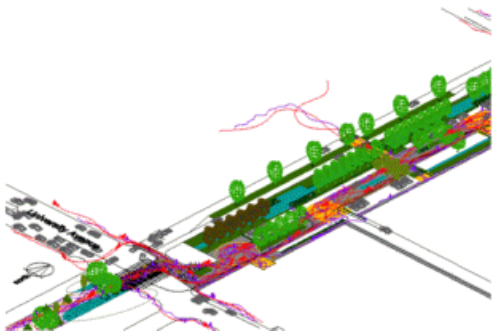
Finalize Conceptualization

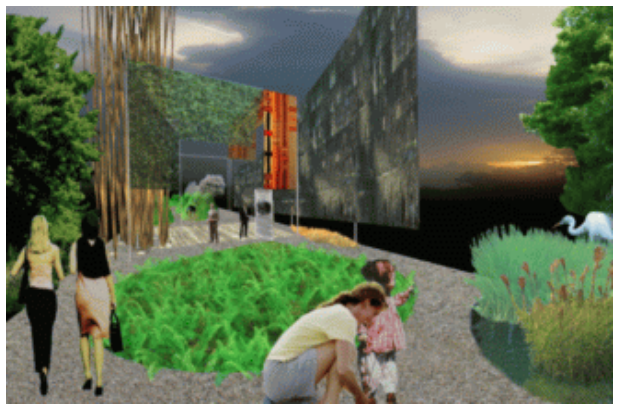
Integration of ecological strategies

Develop integrated designs

Finalize report, posters and web

Design Alternatives





Ecology:

- Stormwater
- Habitat islands
- Greenways

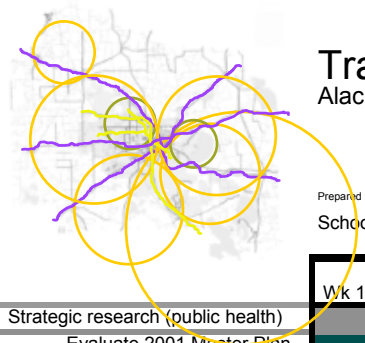
Infrastructure:

- Reconciling auto - bicycle
- Path alternatives
- Support facilities

Civic:

- Greenway connectivity
- Social space
- Public health
- Outreach & policy strategies

Project Schedule



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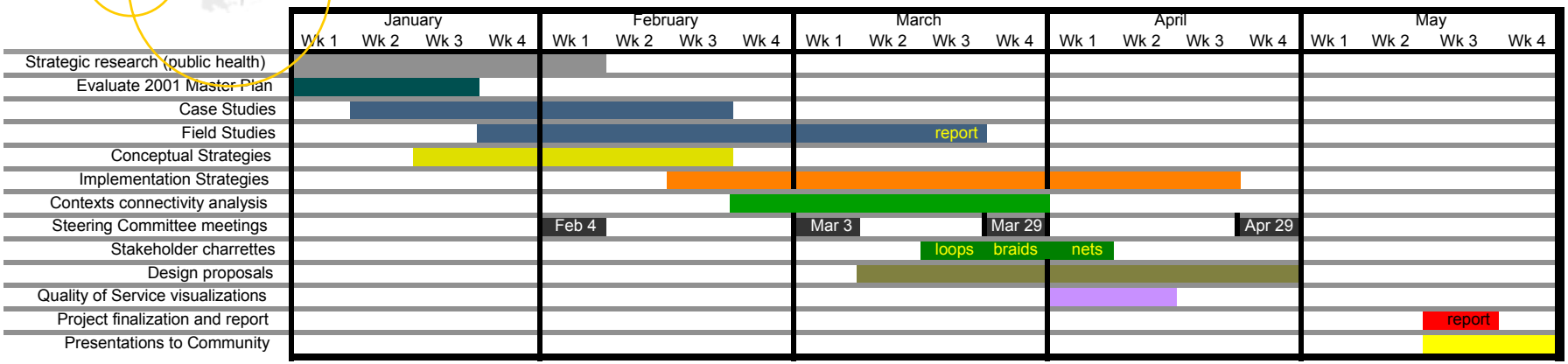
Metropolitan Transportation Planning Organization
North Central Florida Regional Planning Council

Prepared by

School of Architecture, University of Florida



The project schedule outlines durations expected for the specific tasks listed and identifies expected completion dates. Meeting dates with the steering committee are set. Other critical dates will be announced including charrettes with stakeholder groups once coordinated.

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