UCF Area Pedestrian Safety Study

Presentation Outline

- Study Tasks
- Recap of Previous Meetings
- Data Collected
- Focus Areas within Study Limits
- Design Principles “Tool Box”
- Recommended Concepts
- Schedule
- Moving Forward
Study Area

UCF Area Pedestrian Safety Study

North Orion Blvd
McCulloch Rd
1 Mile

University Bv
2.6 Miles

Alafaya Tr

Challenger Pkwy

Rouse Rd
1 Mile

McCulloch Rd
UCF Area Pedestrian Safety Study

Focus Areas

- This area experiences high volumes of pedestrians and bicycles, combined with higher occurrences of crashes.
- The land uses on both sides of the street encourage cross-street flow of pedestrians and bicycles.
- The area surrounds the primary UCF entryways.
Design Principles: “Toolbox”

- **ACCESSIBLE**
  - Streets, Sidewalks & Transit
- **CONNECTED**
  - Sidewalks and Bicycle Facilities
- **LEGIBLE**
  - Identifications, Views & Signage
- **SAFE**
  - Secure, Visibility & Appropriate Lighting
- **COMFORTABLE**
  - Scale, Shade & Appropriate Street Setbacks
UCF Area Pedestrian Safety Study
Vision Implementation

- Large landscaped median refuge
- Comfortable, wide sidewalks
- Sidewalk materials
- Mid-block crosswalks with textured pavement
- Smaller turn radii and large landings
- Wider bike lanes
Previous Studies

This study is compatible with and builds on other planning initiatives.
What we heard from stakeholders

- Alafaya Trail & University Boulevard Intersection – Challenging for All Modes, Especially for Pedestrians; High Speeds, & Wide Crossings
- Additional Crosswalks with Signals (Well Marked)
- Fill in Sidewalk Gaps
- Visual Cues to Alert Drivers
- Buildings to be Built to ROW
- Lower Posted Speeds
- Lighting & Reflective Surfaces for Safer Night Time Travel
- UCF Shuttle is Well Used – Expanded shuttle service possibilities
- Coordinated Future Development
Intersection Treatments

Starter Ideas
Enhancing Network Connectivity

- Currently, corridor-wide “Road Diets” are infeasible due to the existing overwhelming vehicular demand caused by a lack of network connectivity.
- In the long term, better vehicular connectivity will allow existing highway corridors to be redesigned to better serve other modes of transportation.
Enhancing Network Connectivity

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UCF Area Pedestrian Safety Study

2nd Core Group Meeting Summary

• Safety
• High visibility
• Addition of Landscape
• Corner uses – high visibility. What is the address?
• Gateways?
• Where are the biggest conflicts?
• How to increase pedestrian education
Concept Studies
Vision

To support the community by creating defined, inter-connected uses that promote an equal emphasis to vehicular, bicycle and pedestrian movements that are planned in a safe, comfortable and legible form in harmony with the existing and future assets of the area.
Recommendations
Alafaya Tr. and University Blvd.
Existing Conditions

- Wide turn radii encourages high speed turns
- Long crossing distances
- Narrow sidewalks
- Poor pedestrian visibility
Alafaya Tr. and University Blvd. Crossing Treatments

- Reduce turn radii on all four corners to 25’
- Create pedestrian refuge by extending and widening medians
  - University Blvd. West
    - 17’ width
    - 34’ extension
    - Created by removing right-turn only lane and shifting lanes to the right
  - Alafaya Tr. South
    - 21’ width
    - 25’ extension
    - Created by shifting northbound traffic lanes 8’ to the right, tapering to original alignment over next 500’
  - Alafaya Tr. North
    - 18’ width
    - 26’ extension
    - Created by removing right-turn only lane and shifting lanes to the right

- 12’ wide textured pavement crosswalks
Alafaya Tr. and University Blvd.
Crossing Treatments with Trees

- Trees planted in medians and shoulders to encourage lower driving speeds and increase shade for pedestrians
- Shrubs planted in median and between sidewalk and curb near intersections to guide pedestrians to cross at safer locations
Alafaya Tr. and University Blvd. Crossing Treatments with Improved Sidewalks

- Sidewalks widened to 8’ minimum (12’ minimum on east side of Alafaya Tr) and are moved 8’ away from the curb to allow greater separation from traffic throughout study area
- Improve Lynx bus stop adjacent to crossing
  - Add standard bus shelter
  - Add 5’ minimum width sidewalk from shelter to curb
Alafaya Tr. and University Blvd. Crossing Treatments with Improved Sidewalks and Trees

- Trees added to planting strip between sidewalk and curb to slow traffic and improve pedestrian comfort
- Shrubs planted in median and between sidewalk and curb near intersections to guide pedestrians to cross at safer locations
BRANDING THE UCF AREA
Alafaya Tr. and University Blvd. Crossing Treatments with Improved Sidewalks and Trees

Intersection ‘vision’

- Buildings to edge of Right of Way can create a ‘gateway’ address to UCF and activate high visibility corners.
- Crosswalk definition
- Large Landing areas for pedestrians
- Marked Bicycle lanes
- Wider Medians
- Landscape – street trees
Alafaya Tr. Midblock Crossing
Existing Conditions

• One of the highest volume midblock crossings is between Solon Dr. and Pasteur Dr.
• Two LYNX bus stops at this location, increasing the number of pedestrians crossing here
• Orange County has identified this as a problem location
Alafaya Tr. Midblock Crossing
Crossing Treatment

- Add midblock crossing controlled by Pedestrian Hybrid Beacon or RRFB close to Solon Dr.
- 12’ wide textured pavement crosswalks
- Move Lynx bus stop adjacent to crossing
  - Add standard bus shelter
  - Add 5’ minimum width sidewalk from shelter to curb
- Reduce turn radius at Solon Dr. and Pasteur Dr. to 25’
- Widen and realign sidewalk near crossing for about 115’ at the east and west side of Alafaya Tr.
  - 8’ minimum width
  - 8’ minimum distance from curb
- Realign sidewalk into UCF
  - Remove 390’ of existing sidewalk and add 465’ long 8’ wide sidewalk direct to crossing
Alafaya Tr. Midblock Crossing
Crossing Treatment with Trees

- Trees planted in medians and shoulders to encourage lower driving speeds and increase shade for pedestrians
- Shrubs planted in median and between sidewalk and curb near intersections to guide pedestrians to cross at new crossing
Alafaya Tr. Midblock Crossing Crossing Treatment with Improved Sidewalks

- Sidewalks widened to 8’ minimum and are moved 8’ away from the curb to allow greater separation from traffic throughout study area.
Alafaya Tr. Midblock Crossing Crossing Treatment with Improved Sidewalks and Trees

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Alafaya Tr. Midblock Crossing
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Alafaya Tr. Midblock Crossing Pedestrian Bridge with Improved Sidewalks

- Add pedestrian bridge over Alafaya Tr.:
  - 14’ width minimum
  - 360’ ramps
  - 16’ minimum clearance
  - 140’ main span
  - 6’ wide stairs on both side of bridge for more direct crossing
- 12’ wide textured pavement crosswalks
- Sidewalks widened to 8’ minimum and are moved 8’ away from the curb to allow greater separation from traffic throughout study area
- Remove 280’ of UCF sidewalk to old bus stop and replace with 350’ of new 8’ wide sidewalk parallel to ramp
- Move LYNX bus stop next to crossing:
  - Add standard bus shelter
  - Add 5’ minimum width sidewalk from shelter to curb
- Reduce turn radius at Solon Dr. and Pasteur Dr. to 25’
Alafaya Tr. Midblock Crossing Pedestrian Bridge with Improved Sidewalks and Trees

- Trees added to planting strip between sidewalk and curb to slow traffic and improve pedestrian comfort
- Shrubs planted in median and between sidewalk and curb near intersections to guide pedestrians to cross at bridge
Typical Minor Road/Driveway Intersection

- Minor Roads and Driveways often have wide turning radii encouraging high speeds that create a hostile pedestrian environment.
- Sidewalks often cross these locations without marked crosswalks, allowing motorists to forget that they are crossing a pedestrian space.
Typical Minor Road/Driveway Intersection with Reduced Turn Radii and Crosswalk Treatment

- Reduce turn radii on all corners to a maximum of 25’
- Textured pavement crosswalks or continuous sidewalk over minor road/driveway
- Can be done in coordination with landscaping and sidewalk enhancement projects
Estimated Right of Way Needs

- Needs estimated for Intersection and Driveway treatments as shown, along with at-grade Mid Block Crossings
  - Intersection treatments that remove turn lanes save 12’ in ROW
  - Bridge option requires an additional 16’ of ROW on the west side of Alafaya
- Estimates based on GIS data, actual surveys would need to be conducted at the design stage
Major Intersections
Physical Treatments

- Reduce turn radii on all corners to 25’
  - $29,500 per corner
- Create pedestrian refuge by extending and widening medians
  - Removing dedicated turn lane
    - Instantly provides ≈12’
    - Requires no additional ROW
    - $198,500 per leg
    - Increases vehicular congestion
- Realign roadway
  - Shifting traffic lanes 8’-12’, tapering to original alignment over next ≈500’
  - Requires 8’-12’ extra ROW
  - Maintain vehicular capacity
  - $487,000 per leg
- Increase pedestrian landing area
- 12’ wide textured pavement crosswalks
  - $15,000 per crossing
Major Intersections
Operational Treatments

• Provide Flashing Yellow Arrow for right turn only lanes
  • Can be programmed for leading pedestrian interval
    • Walk phase several seconds before right turn traffic is allowed to go
    • Improves pedestrian visibility
  • Provides protected crossing phases during peak pedestrian demand
    • Right turns have red light when crosswalk has walk phase
    • No impact on through traffic
• Allows protected right turns during opposing protected left
  • Improves vehicular capacity at places with high volume right turns
• $25,000-$75,000 each
Midblock Crossings

- **At Grade**
  - **Pedestrian Hybrid Beacon**
    - Red light when called, acts like stop sign for rest of crossing
    - Can be tied to adjacent signals
    - **$128,500**
  - **Rectangular Rapid Flashing Beacon (RRFB)**
    - Rapid blinking yellow lights alert drivers to pedestrian presence when called
    - Cannot be tied to adjacent signal
    - Approximately equal compliance
    - **$126,500**
- **12’ wide textured pavement crosswalks**
- **Bridge** (Alafaya Tr/Solon Dr only)
  - Significant ROW needed
  - Work best when integrated in original design (Peds don’t like longer walks)
  - **$5,000,000-$6,000,000**
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Minor Road/Driveway Intersections

- **Crosswalks** (short term)
  - Sidewalks continue over driveway
    - $10,000 per crossing
  - Textured pavement crosswalks
    - As wide as adjacent sidewalk
    - $15,000 per crossing

- **Reduce turn radii on all corners to 25’** (medium term)
  - $29,500 per corner

- **Consolidate driveways and continue to provide internal connection and backage roads** (long term, though policies should be written in the short term)

- **Improvements should be made throughout entire study area**
Overall Improvements

- 5 Major Intersections
- 2 Midblock Crossing treatments
- 13 Minor Road/Driveway treatments
- Wider sidewalks throughout
- Better lighting throughout

$1,360,000 - $2,490,000 per intersection

$160,000 per at-grade crossing
$5m - 6m per pedestrian bridge crossing

$930,000 – Alafaya Trail Limits
$600,000 – University Blvd Limits

Note: Estimates exclude ROW Costs
Sidewalk Improvements

- Pedestrian scale lighting throughout
- Widen sidewalks to 12’ minimum on east side of Alafaya for multi-use trail
- Widen sidewalks to 8’ minimum on west side of Alafaya and both sides of University
- Widen distance between street and sidewalk to 8’ minimum where possible
  - Separates pedestrians from traffic
  - Allows room for trees and landscaping
  - Makes intended crossing locations more conspicuous
- **$196.00** per linear foot not including ROW
## Cost Estimates

<table>
<thead>
<tr>
<th>PROJECT DESCRIPTION</th>
<th>COST</th>
<th>FUNDING RESPONSIBILITY</th>
<th>MAINTENANCE RESPONSIBILITY</th>
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Short-term – 1-5 years  
Mid-Term -5-10 years  
Long-Term 10-20 years  

Note: Estimates exclude ROW & Maintenance Costs
UCF Area Pedestrian Safety Study

Other Recommendations

- Policy updates
- Regulatory updates
- Education Programs (Expansion of UCF program)
- Continued collaboration among stakeholders
- Funding sources
## Schedule

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<th>Oct '14</th>
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Moving Forward

- Identify Recommended Improvement Plans
- Review & Discuss Recommended Improvement Plans & Costs
- Finalize Recommended Improvement Plans