



APPENDIX A

TECHNICAL MEMORANDUM 1: PUBLIC INVOLVEMENT PLAN



Pine Hills Road Pedestrian/Bicycle Safety Study

Public Involvement Plan

Technical Memorandum No. 1





PUBLIC INVOLVEMENT PLAN

Project Name: Pine Hills Road Pedestrian/Bicycle Safety Study
Project Limits: Colonial Drive (SR 50) to Bonnie Brae Circle
County/State: Orange County, Florida
County Contract: Y16-810

This Public Involvement Plan is submitted to Orange County for review and approval.

Submitted by:

Greg Smith, PE – Consultant Project Manager
WSP | Parsons Brinckerhoff

Date:

Approved by:

Renzo Nastasi, AICP – Division Manager
Orange County Transportation Planning Division

Date:



Pine Hills Road Pedestrian/Bicycle Safety Study

On behalf of Orange County Mayor Teresa Jacobs, District 2 Commissioner Bryan Nelson and District 6 Commissioner Victoria P. Siplin, Orange County is pleased to present this Public Involvement Plan (PIP) to guide the public outreach efforts for the Pine Hills Road Pedestrian/Bicycle Safety Study. The study limits are from Colonial Drive (State Road (SR) 50) to Bonnie Brae Circle, a distance of approximately 3.6 miles.

This Pine Hills Road corridor has been identified as a high crash corridor for pedestrian and bicycle crashes. In addition, there are a variety of land uses along the corridor including multiple schools, residential, retail and office land uses, as well as heavily used transit routes, which result in a truly multi-modal corridor.

The Pine Hills Road Pedestrian/Bicycle Safety Study is a comprehensive review of the Pine Hills Road corridor which will investigate various measures to provide a safe integration of walkers and bicyclists with other modes of transportation. This study is a result of Mayor Jacobs' "Walk-Ride-Thrive!" and "INVEST in Our Home for Life" initiatives to make Orange County roads safer for all pedestrians and bicyclists.



Honorable Teresa Jacobs
Orange County Mayor



Bryan Nelson
Orange County District 2 Commissioner



Victoria P. Siplin
Orange County District 6 Commissioner



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1. INTRODUCTION AND OVERVIEW OF MAYOR'S INITIATIVES

Public involvement includes communicating to, and receiving information from, all interested persons, groups and government organizations regarding the development of a project. This Public Involvement Plan (PIP) outlines the process taken to ensure the appropriate level of public involvement is performed for the Pine Hills Road Pedestrian/Bicycle Study. The primary goal of the public involvement process is to inform the public about the planning process, the concepts suitable for implementation which can be moved forward to design, and public infrastructure investments. This requires a process that is characterized by technical competence, honesty and integrity, and good listening.

Overview of Mayor's Initiatives

Orange County is taking a proactive approach to address pedestrian and bicycle safety on its roadways Countywide. As a result, Mayor Teresa Jacobs has proposed several initiatives, including "Walk-Ride-Thrive!" and "INVEST in Our Home for Life", to make Orange County roads safer for pedestrians and bicyclists. In addition to these initiatives, Mayor Jacobs is one of 120 nationwide mayors who have signed an online pledge to participate in the "Department of Transportation's Mayors' Challenge for Safer People, Safer Streets." The common goal of these initiatives is to make roads throughout the County more pedestrian and bicycle friendly by incorporating safe and convenient walking and biking facilities in transportation projects.

Orange County's current efforts include the Orange County Community Traffic Safety Team, a Student-Pedestrian Safety Committee with Orange County Public Schools, a new County sidewalk projects consisting of \$2 million in annual funding, \$3.5 million in funding annually for sidewalk repairs, regular Road Safety Audit projects, and school safety audits and many other projects.¹

The "Walk-Ride-Thrive!" initiative expands on these efforts by enhancing the County's coordination, capital planning and codes, including changes to the Comprehensive Plan and Orange County Code, and a new Pedestrian Bicycle Safety Action Plan and Complete Streets policy. The "INVEST in Our Home for Life" initiative will provide \$15 million for pedestrian safety improvements at intersections and other selected locations that will enhance various features such as sidewalks, crosswalks, signals, turn lanes, updated signage and other necessary improvements. The pedestrian safety component of the INVEST program will address selected intersections and corridor improvements.

Based on the Mayor's efforts, Pine Hills Road has been identified as a desired corridor to address pedestrian and bicycle safety.

¹ <http://www.orangecountyfl.net/TrafficTransportation/WalkRideThrive.aspx#.Vs3GsE32boo>

2. PURPOSE OF THE STUDY

The purpose of this study is to develop alternatives and strategies that identify solutions to address the mobility needs of the users along this corridor, and to provide for the safe integration of both the walking and bicycle riding public with other modes of transportation, utilizing a context-sensitive approach. The Pine Hills Road Study Area extends from Colonial Drive (SR 50) to Bonnie Brae Circle, a distance of approximately 3.6 miles (Figure 1).



One of the study goals is to place special emphasis at the Silver Star Road (SR 438) and Pine Hills Road intersection, consistent with the Pine Hills Road Neighborhood Improvement District (PHNID), by creating a safe, efficient, and attractive pedestrian gateway and associated amenities at this intersection. Besides the focus at this intersection, the study also will collect data and public input throughout the project limits to identify barriers and obsolete infrastructure, analyze the data collected, develop transportation safety countermeasures and enhancements, and document the cost and schedule of these measures in the study report.

Orange County will be conducting a number of public workshops and meetings to implement the components of the Pine Hills Road Pedestrian/Bicycle Safety Study. The public involvement process gives a voice to all stakeholders along the project corridor and will engage residents, business owners, property owners, agency representatives and other interested individuals in the planning and community design process.

A key component in producing safe/multi-modal recommendations is to have a collective community vision and coordination with the residents and community stakeholders. Orange County will utilize several means to notify the community about each meeting and activity and to engage them throughout the study process.

Figure 1 - Study Area Map

3. MULTI-LINGUAL POINTS OF CONTACT

Recognizing the diverse cultures as well as the large Spanish and Haitian populations in the Pine Hills Road area, the County has identified points of contact in English, Spanish and Haitian-Creole. Their contact information is provided below:

County Project Manager:

Mrs. Anoch P. Whitfield, AICP
Principal Planner
CEDS Department
Transportation Planning Division
4200 S. John Young Parkway
Orlando, Florida 32839
Phone: 407-836-0225
Email: anoch.whitfield@ocfl.net

Consultant Project Manager:

Mr. Greg Smith, P.E.
Transportation Design Manager
Vice President
WSP | Parsons Brinckerhoff
301 E. Pine Street, Suite 1020
Orlando, FL 32801
Phone: 407-587-7801
Email: smithgt@pbworld.com

Para información en Español, llame a:

Esther Fernández-Cañizares
Engineer II
Public Works Department
Engineering Division
4200 S. John Young Parkway
Orlando, Florida 32839
Teléfono: 407-836-7982
Correo electrónico: esther.fernandez@ocfl.net

Si w bezwen tradiksyon an Panyòl:

Celestin Pierre
Assistant Project Manager
Public Works Department
Roads and Drainage Division
4200 S. John Young Parkway
Orlando, Florida 32839
Telefòn li se: 407-836-7873
Imel ba li nan adrès imel li: celestin.pierre@ocfl.net

4. OBJECTIVE OF THE PUBLIC INVOLVEMENT PLAN (PIP)

The Pine Hills Road Pedestrian/Bicycle Safety Study will be conducted around key public involvement milestone events. This Public Involvement Plan (PIP) includes:

- Identification of key stakeholders, including elected officials, internal County stakeholders, civic groups, neighborhood/homeowner associations, transportation agencies, Orange County School Board, the business community and affected property owners;
- Identification of key dates and locations for public meetings;
- Identification of public outreach methods, with particular attention to low-income, elderly, minority and disabled persons. Bilingual staff will provide assistance during community meetings;
- Contact information for key stakeholders and the Study Team; and
- Timelines for completing, reviewing, and distributing the public outreach materials and public notices.

5. PUBLIC OUTREACH GOALS

The overall purpose of public outreach for this Pine Hills Road Pedestrian/Bicycle Safety Study is to have continuous communication and feedback between the Study Team and corridor constituents. The public outreach activities will be designed to share information as well as receive continuous input on evolving ideas related to the study. The following are the specific objectives of the public involvement and outreach process for the Study:

- **Early and continuous engagement:** The Study Team will engage elected officials, agencies, stakeholders, and the public early and regularly throughout the project's key milestones.
- **Engagement through various channels and opportunities:** The Study Team will implement various ways of community engagement, from traditional large-scale workshops to small-group stakeholder meetings. The Study Team will also leverage existing channels of communication with Orange County and with partner agencies including FDOT, MetroPlan Orlando, LYNX, Orange County Sheriffs' Office, OCPS and other agencies in sharing project information and receiving community input. Where feasible, social media, news releases and on-line tools, including the County web page, will be utilized to complement existing traditional public involvement techniques.
- **Engage a diverse group of community members:** The Study Team will provide opportunities for interacting with the Corridor's diverse stakeholders and users, including residents, businesses and property owners.

6. IDENTIFICATION OF OUTREACH POPULATIONS

This section identifies public agencies, local stakeholders and civic organizations that will be included in a stakeholder database that will be used to inform the public of upcoming meetings and events and distribute relevant study information. The County will work to develop strategies for continued outreach to previously underserved or underrepresented populations. Groups providing services to these populations will be asked to post newsletters announcing upcoming meetings and events at specific service locations along the corridor. Orange County Public Schools, including area schools, will also be notified of upcoming events. Contact information for identified stakeholders can be found in **Appendix A**.

Public Agency Stakeholders: Key public agency stakeholders within the Pine Hills community are identified below, and will be included in development of the safety countermeasures.

- Florida Department of Transportation District 5 (FDOT) (Alert Today Alive Tomorrow)
- Central Florida Regional Transportation Authority (LYNX)
- City of Orlando
- MetroPlan Orlando
- Orange County Traffic Engineering Division
- Orange County Engineering Division
- Orange County Environmental Protection Division
- Orange County Public Schools (OCPS)

- Orange County Utilities (OCU)
- Orange County Parks and Recreation
- Orange County Sheriff's Office (OCSO)
- St. John's River Water Management District (SJRWMD)

Local Stakeholders/Property Owners: Key local stakeholders within the Pine Hills community are identified below, and their feedback will assist the Study Team in gaining a better understanding of the corridor from a local perspective. These stakeholders include property owners, major employers, large institutions (schools and churches), community and civic organizations, and neighborhood home owners associations within the corridor.

- Schools
 - Hiawassee Elementary (6800 Hennepin Blvd., Orlando, FL)
 - Mollie E. Ray Elementary (2000 Beecher St., Orlando, FL)
 - Pine Hills Elementary (1006 Ferndell Road, Orlando, FL)
 - Rolling Hills Elementary (4903 Donovan St, Orlando, FL)
 - Ridgewood Park Elementary (3401 Pioneer Road, Orlando, FL)
 - Meadowbrook Middle School (6000 North Lane, Orlando, FL)
 - Robinswood Middle School (6305 Balboa Dr., Orlando, FL)
 - Maynard Evans High School (4949 Silver Star Road, Orlando, FL)
- Churches
 - Ebenezer Baptist Church (3403 N. Pine Hills Road, Orlando, FL)
 - All Nation Church of God (2906 N. Pine Hills Road, Orlando, FL)
 - Eglise Baptiste Haitienne Philadelphie (800 N. Pine Hills Road, Orlando, FL)
 - New Church of Faith (5000 Silver Star Road, Orlando, FL)
 - Joshua Generation Outreach Church (5225 Alhambra Dr., Orlando, FL)
 - Mission of Hope Worship Center (5400 Hernandez Dr., Orlando, FL)
 - New Covenant Church of Jesus Christ (5002 Cortez Dr., Orlando, FL)
 - Faith Christian Center (825 N. Pine Hills Road, Orlando, FL)
 - Pine Hills Community Church (1305 N. Pine Hills Road, Orlando, FL)
 - Miracle Tabernacle Full Gospel Church (4777 Silver Star Road, Orlando, FL)
 - Worship Center (8001 Silver Star Road, Orlando, FL)
 - Kuan-Yin Buddhist Temple (817 N. Pine Hills Road, Orlando, FL)
 - None Shall Lack Ministries (1016 N. Pine Hills Road, Orlando, FL)
- Community Organizations
 - Pine Hills Neighborhood Improvement District (PHNID) Board
 - Pine Hills Community Council
 - Pine Hills Safe Neighborhoods Partnership
 - Pine Hills Community Garden
 - Evergreen Park/W. Colonial Neighborhood Association
 - Northwest Alliance
 - Florida Trail Association – Central Florida Chapter
 - Orange County's Walk-Ride-Thrive! Initiative
 - Home Owners Associations
 - FDOT Alert Today/Alive Tomorrow
 - Bike/Walk Central Florida's Best Foot Forward
 - Caribbean Chamber of Commerce

- Caribbean Community Resource Center
- Pine Hills Boys and Girls Club

7. SPECIAL ACCOMMODATION FOR PERSONS WITH DISABILITIES

Section 504 of the Rehabilitation Act of 1973 (Section 504), the Americans with Disabilities Act of 1990 (ADA), related federal and state laws and regulations and the County's Title VI/Nondiscrimination Policy and Plan forbid discrimination against persons with disabilities. Furthermore, federal laws require federal aid recipients and other government entities to take affirmative steps to reasonably accommodate the disabled and ensure that their needs are equitably represented in County programs, services and activities.

The County will make every effort to ensure that its facilities, programs, services and activities are accessible to those with disabilities.

The County encourages the public to report any facility, program, service or activity that appears inaccessible to the disabled. Furthermore, the County will provide reasonable accommodation to disabled individuals who wish to participate in public involvement events or who require special assistance to access facilities, programs, services or activities. Because providing reasonable accommodation may require outside assistance, organization or resources, the County asks that requests be made at least seven (7) calendar days prior to the need for accommodation.

Questions, concerns, comments or requests for accommodation should be made to the County's ADA Officer:

Dianne Arnold, HFS Administrator/Interim ADA Coordinator
Mable Butler Building
2100 E. Michigan St., Orlando, FL 32806
Email: dianne.arnold@ocfl.net
Phone: 407-836-7588
Fax: 407-245-3191
Hearing Impaired: Florida Relay 7-1-1

8. LIMITED ENGLISH PROFICIENCY STRATEGIES

The County will work with local resources and partners to try to offer meaningful opportunities for Limited English Proficiency (LEP) groups to access information about and provide feedback on the Pine Hills Road Pedestrian/Bicycle Safety Study. In addition to the Spanish and Haitian-Creole contacts provided in Section 1 of this PIP, the County's Title VI/Nondiscrimination Policy and Plan stipulates that, for participation at a public meeting, any persons who require language translation or interpretive services, which are provided at no cost, should contact Ricardo Daye, Orange County Title VI/Nondiscrimination Coordinator, at 407-836-5825 or at ricardo.daye@ocfl.net at least seven (7) days prior to the meeting date.

9. WAYS TO STAY INFORMED

Study Newsletters

At key milestones in the Study, five (5) newsletters will be developed for posting on the County's study webpage to notify interested parties of upcoming meetings and inform them of study-related information. The schedule of newsletters is below:

- Newsletter #1: Prior to Consensus Building Workshop (CBW) #1
- Newsletter #2: Prior to CBW #2
- Newsletter #3: Prior to the Orange County LPA Public Hearing
- Newsletter #4: Prior to the Orange County BCC Public Hearing
- Newsletter #5: After final action by the Orange County BCC

The newsletters shall be sent to each entry in the Master Contact Mailing/Emailing list at least two weeks prior to the scheduled meeting or hearing. Limited copies of the newsletters shall be made available at the small group meetings, workshops and public meetings.

Study Website

Orange County shall prepare a webpage for the Pine Hills Road Pedestrian/Bicycle Safety Study. Meeting minutes and materials, newsletters and other relevant study materials shall be posted to the webpage when available, particularly following each Public Meeting, Workshop, Public Hearing and the final Public Hearing.

Press Releases and Newspaper Ads

Newspaper ads and press releases will be developed with the purpose of informing the general public about upcoming public meetings for the study. The notices will be distributed at least two (2) weeks prior to each meeting, and press releases will be issued within one (1) week. The newspaper notices will be published in the *Orlando Sentinel* and *El Sentinel* (English and Spanish) and shared with distributors of local circulars. Notices will include the date, time, place and procedures of each meeting as well as topics to be considered.

Stakeholder Mailing/Emailing Database

An initial stakeholder database will be created to include the owner of record of the properties within the study area, elected and appointed officials associated with the project, persons or institutions expressing interest in the project, permitting and review agencies, community leaders and media representatives. The mailing lists for the agencies and the study area properties will be provided by the County and updated as needed throughout the course of the study.

10. PUBLIC INVOLVEMENT ACTIVITIES

The following outreach efforts will be employed during the project to notify key stakeholders and the affected public of the study and to solicit public input into the process.

Agency Coordination Meetings

An initial meeting will be held with the following local, regional and state organizations combined – FDOT District Five, Bike/Walk Central Florida, LYNX, Orange County Utilities Department, Orange County School Board and the St. Johns River Water Management District (SJRWMD). We will also conduct up to two (2) follow-up meetings with these groups to inform them of the study progress and solicit their input.

Small Group Meetings

The County and members of the Study Team will be available to attend other related public/community meetings. These small group meetings will be scheduled directly with the requesting parties and will be summarized and included as part of the Public Involvement documentation.

Public Opinion Survey

To help ensure a comprehensive public outreach process, a Public Opinion Survey will be conducted in conjunction with CBW #1 to obtain public feedback on viable safety countermeasures. The survey, developed through SurveyMonkey, will be electronically distributed to residents and stakeholders by email. The survey will also be available on the study website, and hard copies, along with a collection box, will be available at key locations along the corridor. The survey will contain questions to prompt individuals on their ideas for safety improvements. Input will also be solicited on such issues as gateway features, landscaping, and PHNID objectives.

The Public Opinion Survey will be open for at least six (6) weeks (March to April) prior to the first community meeting in order to get initial public feedback on travel needs and preferences and for up to two (2) weeks following the first community meeting to get feedback on potential safety measures that may be advanced into final recommendations.

Public Community Meetings

During the course of the Study, two Consensus Building Workshops (CBWs) will be held to present the study findings, safety improvement alternatives, and study recommendations to key stakeholders and the general public. Additionally, comment cards will be provided so that attendees can submit their input in writing. A public review and comment period of not less than fifteen (15) days will be established for the receipt of comments from citizens. The County will prepare written responses to the person(s) or group(s) who posed the question or comment. A copy of all comments, questions and responses will be documented in the study file located at the Transportation Planning Division.

Meeting participants will have an opportunity to provide feedback on the proposed pedestrian safety countermeasures and recommendations. During each of the two workshops, displays will

feature various safety treatments, information from data collection efforts, potential safety countermeasures and access management alternatives.

- **CBW #1**
 - This workshop will be conducted in early June 2017 following the completion of the data collection and analysis.
 - The purpose is to present the findings of data collection and the evaluation of barriers and challenges and engage the general public to obtain their feedback on strategies for viable pedestrian safety countermeasures.
 - Feedback received through the Public Opinion Survey will also be presented.

- **CBW #2:**
 - This workshop will be conducted in mid-August 2017.
 - The purpose is to present the Safety Improvements Plan Alternatives and Benefit-Cost evaluation, and obtain public feedback on Plan Alternatives, ranking and recommendations prior presentation of the improvements alternatives to the Orange County Local Planning Agency (LPA) and Orange County Board of County Commissioners.

The public community meeting minutes, sign-in sheets and summaries of comment cards shall be posted to the Study website when they become available.

Local Planning Agency Work Session and Public Hearing

Study findings and recommendations and a summary of public and stakeholder feedback will be presented to the Local Planning Agency (LPA) two times during the course of the study: first as a work session agenda item and second as a public hearing agenda item. There will be an opportunity for the public to ask questions and provide comments during the public hearing.

Board of County Commissioners Public Hearing

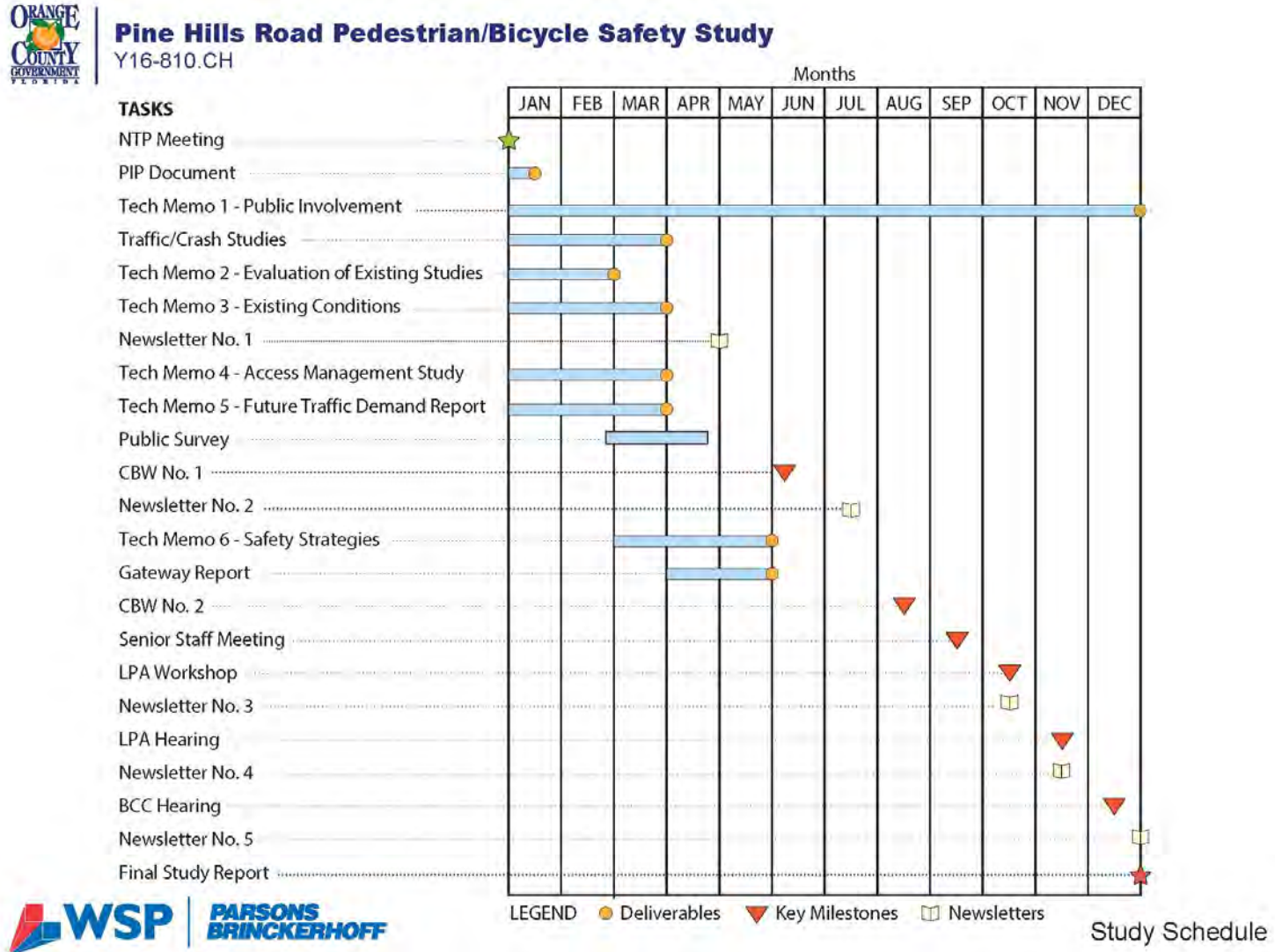
The final Recommended Improvements, updated as appropriate based on input received during the LPA work session and public hearing, will be presented to the Orange County Board of County Commissioners (BCC) as a public hearing agenda item. A presentation will be given by County staff, followed by an opportunity for public comments/questions.

Public comments received throughout the course of the study, i.e. at the community meetings, public hearings, small group meetings, agency coordination meetings, emails, etc., will be documented and summarized in the Study Report.

11. PUBLIC INVOLVEMENT SCHEDULE

Public outreach activities will be scheduled around key project milestones. The project schedule, including the public involvement activities, is displayed in **Figure 2**.

Figure 2 - Project Schedule





APPENDIX A-1

TECHNICAL MEMORANDUM 1: PUBLIC INVOLVEMENT PLAN

Study Stakeholders and Master Contacts List



Study Stakeholders and Master Contacts List

Organization	Name	Address	Phone	Email
Elected Officials				
State of Florida	Rick Scott Governor	State of Florida 400 S. Monroe St. Tallahassee, FL 32399	850-488-7146	rick.scott@eog.myflorida.com
Congressional Delegation	Bill Nelson U.S. Senator	225 E. Robinson St., Suite 410 Orlando, FL 32801	407-872-7161	jenny_solomon@billnelson.senate.gov
	Marco Rubio U.S. Senator	201 S. Orange Ave., Suite 350 Orlando, FL 32801	407-254-2573	thomas_self@rubio.senate.gov
	Alfred Lawson U.S. Representative	10 S. Newnan St., Suite 3 Jacksonville, FL 32202	202-255-0123	
Florida Delegation	Randolph Bracy Florida Senator District 11	PO Box 521 Ocoee, FL 34761	407-656-6716	randolphbracy@yahoo.com
	Bruce Antone Florida Representative District 46	927 S. Goldwyn Ave., Suite 216 Orlando, FL 32805	407-445-5313	
Orange County	Mayor Teresa Jacobs	201 S. Rosalind Ave. 5th Floor Orlando, FL 32801	407-836-7370	mayor@ocfl.net
	Betsy VanderLey District 1 Commissioner		407-836-7350	district1@ocfl.net
	Bryan Nelson District 2 Commissioner		407-836-7350	district2@ocfl.net
	Pete Clarke District 3 Commissioner		407-836-5140	district3@ocfl.net
	Jennifer Thompson District 4 Commissioner		407-836-7350	district4@ocfl.net
	Emily Bonilla District 5 Commissioner		407-836-7350	district5@ocfl.net
	Victoria Siplin District 6 Commissioner		407-836-5860	district6@ocfl.net
	Ajit Lalchandani County Administrator	400 E. South St. Orlando, FL 32801	407-836-7396	
	James Harrison Assistant County Administrator			
	Christopher Testerman Assistant County Administrator			
	James Dunn District 1 LPA Commissioner	PO Box 771000 Winter Garden, FL 34777	321-299-8913	jdunnopc@gmail.com
	William Gusler District 2 LPA Commissioner	PO Box 1074 Apopka, FL 32704	407-880-0356	ocpzc@gusler.net
	Tina Demostene District 3 LPA Commissioner	1 Courthouse Square, Suite 1100 Kissimmee, FL 34741	407-246-1701	tdemosteneCRC@gmail.com

Organization	Name	Address	Phone	Email
	Pat DiVecchio District 4 LPA Commissioner	9789 Sweetleaf St. Orlando, FL 32827	321-206-9278	patpz2011@gmail.com
	J. Gordon Spears District 5 LPA Commissioner	1626 Baltimore Ave. Orlando, FL 32803	321-319-3078	jgspears.ocpzc@gmail.com
	JaJa Wade District 6 LPA Commissioner	801 N. Pine Hills Road Orlando, FL 32808	321-689-2680	jwade@aceconstructionmanagement.com
	Paul Wean LPA Commissioner At-Large	646 E. Colonial Dr. Orlando, FL 32803	407-999-7780 x 4	plwean@wmlo.com
	Jose Cantero LPA Commissioner At-Large	2179 Clapper Trail Apopka, FL 32703	407-239-4565	JACanteroPZC@aol.com
	Yog Melwani LPA Commissioner At-Large	8718 Wythmere Lane Orlando, FL 32835	407-654-8200	yogmelwani@gmail.com
	Bill Cowles Supervisor of Elections	119 W. Kaley St. Orlando, FL 32806	407-836-2070	voter@ocfelections.com
	Jerry Demings County Sheriff	2500 W. Colonial Dr. Orlando, FL 32804	407-254-7000	
	Mark Massaro Public Works Director	Public Works Complex 4200 S. John Young Pkwy Orlando, FL 32839	407-836-7900	
	Jon V. Weiss CEDS Director			
	Lavon Williams Neighborhood Services Manager	450 E. South St., 3 rd Floor Orlando, FL. 32801		lavon.williams@ocfl.net
City of Orlando	Claudia Korobkoff Planning Manager, Transportation Planning Division		407-246-2180	claudia.korobkoff@cityoforlando.net
	Ian Sikonia Planner III, Transportation Planning Division		407-246-3325	ian.sikonia@cityoforlando.net
Transportation Agencies/Organizations				
FDOT District 5	Rick Morrow District Traffic Operations Engineer	719 S. Woodland Blvd. DeLand, FL 32720	386-943-5309	rick.morrow@dot.state.fl.us
	Chris Cairns Professional Engineer Administrator		386-943-5309	chris.cairns@dot.state.fl.us
LYNX	Jeff Reine Engineering & Construction Senior Project Manager	455 N. Garland Ave. Orlando, FL 32801	407-254-6110	jreine@golynx.com
	Doug Robinson Manager of Strategic Planning		407-254-6078	drobinson@golynx.com
	Myles O' Keefe Senior Planner		407-254-6076	mokeefe@golynx.com



Organization	Name	Address	Phone	Email
MetroPlan Orlando	Harry Barley Executive Director	250 S. Orange Ave., Suite 200 Orlando, FL 32801	407-481-5672 x 313	hbarley@metroplanorlando.com
	Gary Huttman Deputy Executive Planning Director		407-481-5672 x 319	ghuttman@metroplanorlando.com
	Keith Caskey Manager of Planning Services		407-481-5672 x 317	kcaskey@metroplanorlando.com
	Nick Lepp Manager of Long Range Planning		407-481-5672 x 324	nlepp@metroplanorlando.com
	Crystal Mercedes Transportation Planner		407-481-5672 x 309	cmercedes@metroplan.com
	Nikhila Rose Transportation Planner		407-481-5672 x 321	nrose@metroplanorlando.com
	Elizabeth Whitton Transportation Planner		407-481-5672 x 312	ewhitton@metroplanorlando.com
Community Organizations				
Pine Hills Neighborhood Improvement District	Michelle Owens	901 Ferrand Dr. Orlando, FL 32808	407-836-6267	michelle.owens@ocfl.net
	Kea Cherfrere			kea.cherfrere@ocfl.net
Pine Hills Community Council	Sandra Fatmi President	PO Box 585733 Orlando, FL 32858	407-797-6955	elr267@bellsouth.net
Pine Hills Safe Neighborhood Partnership	Gwendolyn Parrish	PO Box 681862 Orlando, Florida 32868	407-296-8739	miracleangel99@aol.com
Pine Hills Community Garden	Compton Belle	7202 Rex Hill Trail Orlando, Florida 32818	407-290-5655	compbelle@hotmail.com
Evergreen Park/W. Colonial Neighborhood Association	Julius Threet	2214 S. Rio Grande Ave. Orlando, FL 32805	407-293-9229	blueamigo2@aol.com
Northwest Alliance		2819 Salter Court Orlando, FL 32818		
Florida Trail Association – Central Florida Chapter	Bill Turman Chair	415 Lakepointe Dr., Suite 104 Altamonte Springs, FL 32701	407-415-8592	hokiebill@bellsouth.net
Orange County's Walk-Ride-Thrive! Initiative		4200 S. John Young Pkwy Orlando, FL. 32839	407-836-7890	
FDOT's Alert Today/Alive Tomorrow	Trenda McPherson State Bike/Ped Program Manager	605 Suwannee St., MS 53 Tallahassee, Florida 32399-0450	850-414-4025	trenda.mcpherson@dot.state.fl.us
Bike/Walk Central Florida's Best Foot Forward				http://www.iyield4peds.org/





Organization	Name	Address	Phone	Email
Caribbean Chamber of Commerce	Sandra Fatmi		407-427-1800	caccforlando@gmail.com
Caribbean Community Resource Center	Anjiro Gabriel Chief Executive Officer	1020 N. Pine Hills Road Orlando, FL 32808	407-473-1442	
Pine Hills Boys and Girls Club	Niketra Johnson Orange County Project Director	5211 Hernandes Dr. Orlando, FL 32808	407-295-1100	njohnson@bgccf.org
Schools				
Hiawassee Elementary School	Sharon Jenkins Principal	6800 Hennepin Blvd. Orlando, FL 32818	407-296-6410	
Mollie Ray Elementary School	Lindsey Kyle Smestad Principal	2000 Beecher St. Orlando, FL 32808	407-296-6460	
Pine Hills Elementary School	Fredrick Brooks Principal	1006 Ferndell Road Orlando, FL 32808	407-296-6500	
Rolling Hills Elementary School	Margarete Talbert-Irving Principal	4903 Donovan St. Orlando, FL 32808	407-296-6530	
Ridgewood Park Elementary School	Deborah Coffie Principal	3401 Pioneer Road Orlando, FL 32808	407-296-6510	
Meadowbrook Middle School	Robin Brown Principal	6000 North Lane Orlando, FL 32808	407-296-5130	
Robinswood Middle School	Nicole Jefferson Principal	6305 Balboa Dr. Orlando, FL 32818	407-296-5140	
Maynard Evans High School	Jenny Gibson-Linkh Principal	4949 Silver Star Road Orlando, FL 32808	407-522-3400	
	Jarvis Wheeler			
Neighborhood Organizations				
Nob Hill/Oleander Association	Diane Reiss President	1403 N. Buena Vista Ave. Orlando, FL 32818		flyingdutchess21@aol.com
Bel-Aire Woods 7 th Addition HOA		1830 Carden Court Orlando, FL 32818		
Hiawassa Highlands Neighborhood Association	Roselyn Clouden President	2227 Menomonee Court Orlando, FL 32818		r.clouden@hotmail.com
Westwood Improvement Association, Inc.	Lott Tomlinson President	2808 Sheringham Road Orlando, FL 32808		





Organization	Name	Address	Phone	Email
Silver Pines Pointe Homeowners Association, Inc.		5708 Golf Club Parkway Orlando, FL 32808		
Palm Grove		4133 Kalwit Lane Orlando, FL 32808		
Forrest Park Civic Association, Inc.		5503 Westbury Dr. Orlando, FL 32808		
Atrium Civic Improvement Association, Inc.	Alma Campayne President	498 Palm Springs Dr. Altamonte Springs, FL 32701		alwin4141@yahoo.com
Normandy Shores Neighborhood Association		2306 Continental Dr. Orlando, FL 32818		
Silver Pines Pointe Phase I, II	Miriam Paul Phase II President	75 Gatlin Ave., Suite A Orlando, FL 32806		vi_dolly69@yahoo.com
Oak Park Homeowners Association of Orange County	Gloria Joyner President	P.O. Box 690822 Orlando, FL 32869		redg@cfl.rr.com
J.L.M. Condominium Association		2809 Powers Dr., Suite A Orlando, FL 32818		
Sylvan Hylands Homeowners Association		2512 Martinwood Dr. Orlando, FL 32808		
Magellan Crossing (Subdivision)		6929 Blair Dr. Orlando, FL 32818		
Magellan Crossing Condominium		1497 Magellan Cir. Orlando, FL 32818		
Silver Pines Pointe Phase 2 Homeowners Association		75 Gatlin Ave., Suite A Orlando, FL 32806		
The Willows First Addition Homeowners Association		8603 Snowfire Dr. Orlando, FL 32818		
Parkview on Mercy Drive Homeowners Association		1202 Golden Gate Ave. Orlando, FL 32808		
Silver Pines Golf Village Condominium Association	Michael Wilkie Secretary/Treasurer	5505 Hernandes Dr., Suite 205 Orlando, FL 32808		
Colony Cove Homeowners Association		1406 Peg Lane Orlando, FL 32808		





Organization	Name	Address	Phone	Email
Silver Star Village Homeowners Association	Lynn Campbell President	2450 Rector Ave. Orlando, FL 32818		lzdcamp1951@gmail.com
Robinswood Community Improvement Association	Robert Shanks President	PO Box 683015 Orlando, FL 32850		
Oak Shadows Condominium Association	Jose Ortega President	646 E. Colonial Dr. Orlando, FL 32803		oakshadowscondo@bellsouth.net
Silver Pines Association, Inc.		2216 Silver Pines Place Orlando, FL 32808		
Riviera/San Jose Shores Homeowners Association	Clarence Wilson President	4572 Charleen Ter. Orlando, FL 32808		clarencwilson@aol.com
The Westgate Groves Homeowners Association		6604 Festival Lane Orlando, FL 32818		
The Willows Homeowners Association of Orlando		2884 S. Osceola Ave. Orlando, FL 32808		
Londonderry Hills Improvement Association		4801 Malarkey St. Orlando, FL 32808		
Lake Lawne Shores Neighborhood Organization		4531 Dutton Dr. Orlando, FL 32808		
Media Contacts				
Orlando Sentinel/El Sentinel		633 N. Orange Ave. Orlando, FL 32801	407-420-5100	www.orlandosentinel.com
The Pine Hills Press	Bertina Busch		407-291-3589	bertina@buschandcompany.com
WKMG TV Local 6 CBS		4466 N. John Young Pkwy Orlando, FL 32804	407-521-1200	
WFTV TV Channel 9 ABC		490 E. South Str. Orlando, FL 32801	407-841-9000	
WESH TV Channel 2 NBC		1021 N. Wymore Road Winter Park, FL 32789	407-645-2222	
WOFL TV Channel 35 FOX		35 Skyline Dr. Lake Mary, FL 32746	407-644-3535	
WUCF TV PBS		12443 Research Pkwy, Suite 301 Orlando, FL 32826	407-823-1300	





Organization	Name	Address	Phone	Email
The Wire 98.5 FM	David Porter			thewirenews@gmail.com
WMFE National Public Radio 90.7 FM		11510 E. Colonial Dr. Orlando, Florida 32817		



APPENDIX A-2

TECHNICAL MEMORANDUM 1: PUBLIC INVOLVEMENT PLAN

Public Involvement Summary



**Pine Hills Road Meeting Minutes
Orange County Sherriff's Department
January 3, 2017**

I. Attendees

- Captain Carlos Torres, Captain Daniel Gutierrez, Deputy Mary Norwood, OCSO
- Brian Sanders, Anoch Whitfield, Jerald Marks, OCCEDS Transportation Planning
- Tony Luke, Paul Rhoads, LTEC
- Greg Smith, WSP|PB

II. Discussion Items

- Ms. Whitfield provided overview of project scope
- OCSO is providing a higher presence than normal in the project area through Jan 16. as part of Operation RISE
- Hot spots of pedestrian activity were discussed
 - Pine Hills and Silver Star Intersection, and along Silver Star Road at mid-block locations, especially around the time when Evan HS is letting out (2:00 – 2:30 pm on Mondays, Tuesdays, Thursdays and Fridays and 1:30 – 2:00 pm on Wednesdays early release days)
 - Pine Hills Road and Belco Drive
 - Boys and Girls Club
- OCSO suggested that any personnel from the project team look as official as possible, wear safety vests, if possible travel in pairs and always be alert and vigilant
- Traffic Counts and Accident Data Collection
 - Activities are expected to begin week of Jan 9 and end week of Jan 16. Data collection efforts will include tube counts and cameras to capture pedestrian/bicycle movements.
- Lighting Analysis
 - After the meeting, VHB advised that analysis of existing illumination levels is expected to occur week of Jan 16. Generally, 3-4 days will be needed and the hours will extend from approximately 9pm to 4am.
 - OCSO noted that lighting in the corridor is generally poor such that curves in the road are difficult to recognize by motorists. In some cases, trees block the coverage of the street lighting.
- Two Community Meetings
 - Likely to be held in June and August, from 4-8pm.
 - Potential sites include Evans HS.

III. Action Items

- Project Team members to advise OCSO contacts (see attached) when field activities are anticipated to take place and location of field work.
 - During field work, call 911 of any criminal activities.
 - For non-criminal or suspicious activities, call OCSO at 407-836-4357 and indicating that assistance is needed related to the Pine Hills Traffic Study in order to get priority response

Meeting Minutes

DATE: January 19, 2017 | 9 am – 10:15 am **S&ME PROJECT #:** 527116110
LOCATION: Pine Hills Community Center, 6408 Jennings Rd, Orlando, FL 32818
TO: Attendees
FROM: Eddie Browder
CC:
SUBJECT: **Pine Hills Pedestrian/Bicycle Safety Study Gateway Meeting**

In attendance:

Michelle Owens, Pine Hills Neighborhood Improvement District
Kea Cherfrere, Pine Hills Neighborhood Improvement District
Sandra Fatmi, Pine Hill Community Council
Jarvis Wheeler, Maynard Evans High School
Kenneth Dwyer, Pine Hills Safe Neighborhood Partnership
Anoch Whitfield, Orange County Transportation Planning
Brian Sanders, Orange County Transportation Planning CEDS
Jerald Marks, Orange County Transportation Planning
Julie Salvo, Orange County Public Schools
Cristina Pichardo-Cruz, Orange County Traffic Engineering
Greg Smith, WSP-PB
Eddie Browder, Littlejohn/S&ME
Jay Hood, Littlejohn/S&ME

(see sign in sheets attached)

Welcome and Introductions

- Anoch opened the meeting and asked the attendees to introduce themselves.

Background of Pine Hills Community and PH Neighborhood Improvement District/Gateway

- Michelle gave an overview of the history and continued efforts of the Pine Hills Neighborhood Improvement District (PHNID). They were founded in 2011 and have the goal of making Pine Hills an attractive, prosperous community known for its diverse food, culture and places of worship.
- Kea is the liaison between PHNID and Evan High School. They have a great working relationship; examples of their work include Trojan Service Day and a Crime Prevention Officer who patrols the school area after dismissal. She explained that there are 2,600 students

released from school at the same time and they often spill over the sidewalks and onto the roadways.

- Ken gave an overall history of past studies and public involvement. The Orange County Board of County Commissioners indicated a pedestrian bridge over Pine Hills in 1967. Ken also shared several maps including one of the adjacent trail, one of the LYNX route, etc. (see attached).
- Ken also suggested a digital sign to keep the community informed about current events.

Site Analysis of Intersection (see attached photo board)

- Jay mentioned that Littlejohn's focus is on the Pine Hills Road and Silver Star Road intersection as a potential gateway to the community. The lack of adequate right-of-way, the overhead electric lines and many utility boxes were among the site elements that present design challenges. He proposed planting on private property as a possible solution to the lack of space. This could be a public/private partnership through the use of landscape easements and maintenance agreements.
- Kea mentioned that the PHNID is currently maintaining the landscaping along Silver Star Road. They have a landscape maintenance agreement in place with FDOT.
- The community did not embrace the Pine Hills logo that was produced in the recent APA report and would prefer the new logo with the slogan from the study - "Many Cultures, One Bright Future".
- One potential option being explored would eliminate the auxiliary/acceleration lanes on the north and south approaches which would allow potential space for gateway features, sidewalks, and/or landscaping areas. This option is being analysis for feasibility.
- Julie stated that OCPS would support wider sidewalks for the pedestrians.
- Ken confirmed that the existing sidewalks are inadequate when Evans dismisses in the afternoons.
- Kea said that some type of barrier (fencing, planters, large pots, landscaping) would be desirable to keep students on the sidewalks and out of the road. Fencing and tall landscaping in the medians to prevent mid-block crossings was also suggested. The landscaping in front of Evan High School on Silver Star Road may be helping to discourage ped movements. There are also limited openings in the school fence where the students can exit.
- Brian was involved in the Silver Star Road improvements in front of Evan High School. A fence or landscaping in the median that would extend to the end of the left turn channelization is desirable to focus peds at given locations. Other issues to consider would be traffic safety and visual clearance guidelines. Only low landscaping would be allowed in the medians.
- Ken stated that Pine Hills is not Orlando; it is a gateway to Orlando. The volume of pedestrians is likely to increase on the sidewalks once the LYNX Super Station is built near Belco Drive.

Perhaps there is an opportunity to reduce the speeds on Silver Star Rd between Evans High School and Hastings Road.

Potential Gateway Features (see attached photo board)

- Eddie presented a board that showed comparable images of gateway design elements. He also suggested a phased release of students from Evans High School to spread out the pedestrian flow. The group favored a contemporary style that would support the new logo design and colors.
- Michele warned against increasing visual clutter by adding banners to the streetscape. The District is currently working on urban design guidelines. Eddie explained that the banners could be restricted to the four corners of the intersection to form a gateway.
- Brian reminded that there is an existing bill board in the northeast corner and there are visual clearance rules that must be followed.
- Michelle mentioned that in the past the District has used Bio-trait material on the traffic poles/utility boxes to deter illegal postings from sticking and deter vandalism. Their latest effort to enhance the community is called "Clean Up, Green Up, Spruce Up". It is a yearlong public education campaign to discourage littering which starts next week (1/23/2017).
- Ken mentioned that there should be consistency in the streetscape design along Silver Star Road between Hastings and Evans High School; a branding of Pine Hills. Maybe combine the District logo with the Trojan logos at the intersection.
- Brian explained that a pedestrian bridge would only serve part of the pedestrians and would cost several million dollars to span Silver Star Road. The access ramps would also likely require right-of-way and it would be difficult to force peds to utilize the bridge. Given these constraints, a bridge is not likely to be a viable option.

Next Steps

- Anoch announced that the date of the first public workshop is June 8, 2017, from 6pm to 8pm at Evans High School (Cafeteria).
- The team is to continue to explore potential solutions regarding safety measures. (see attached a quick hand sketch that Jay Hood drew during the meeting and images of potential solutions generated after the meeting)



Pine Hills Pedestrian/Bicycle Safety Study
Gateway Meeting
 Pine Hills Community Center
 January 19, 2017 | 9am – 10am

SIGN IN SHEET

Name	Organization	Email	Phone
GREG SMITH	AKSP	smithgt@pbwvoul.com	407.507.7800
Eddie Browder	Little Johnny / SAME	ebrowder@smeinc.com	407.975.1273
Michelle Owens	Pine Hills NID	michelle.owens@ocfl.net	407.836.6266 407-836-6266
Kea Chertreere	Pine Hills NID	Kea.Chertreere@ocfl.net	407-836-6267
SANDRA FATMI	PINE Hill Community Council	sandrafatmi@aol.com	(770) 789-7004
JARVIS WHEELER	EVANS COMMUNITY SCHOOL	JARVIS.WHEELER@OCPS.NET	(407) 522 3400



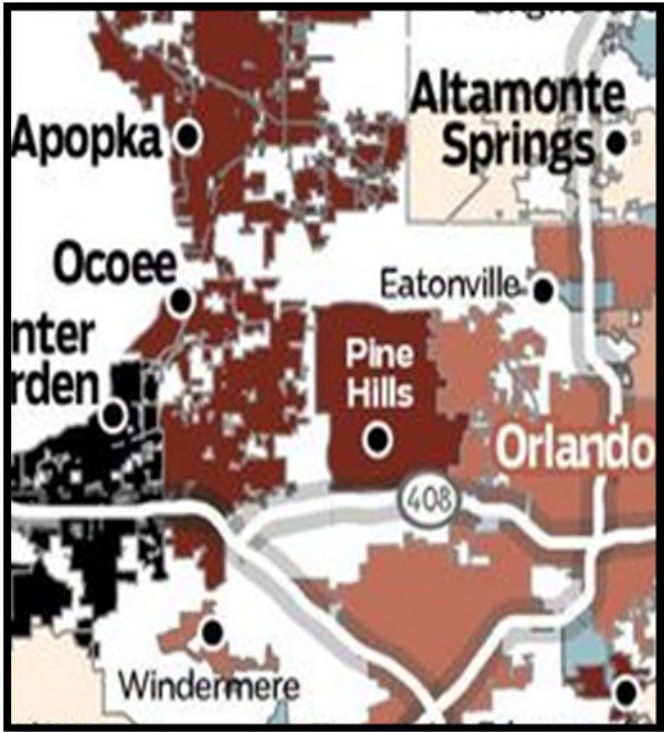
Pine Hills Pedestrian/Bicycle Safety Study
Gateway Meeting
 Pine Hills Community Center
 January 19, 2017 | 9am – 10am

SIGN IN SHEET

Name	Organization	Email	Phone
KENNETH DWYER	PHSNP	KENCHRISD2@ASN.COM	
Anoch Whitfield	O.C. Trans. Planning	anoch.whitfield@ocfl.net	407-836-0225
BRIAN SANDERS	OC TP CEDS		
GERALD MARKS	O.C. TRANSPORTATION PLANNING	GERALD.MARKSJR@OCFL.NET	407-836-0231
Julie Salvo	OCPS	julie.salvo@ocps.net	407-317-3700
Cristina Richardo-Cruz	OC Traffic Eng	cristinarichardocruz@ocfl.net	407-836-7682 5674

From Kenneth Dwyer, PHSNP

Anoch Whitfield, Gov Orange

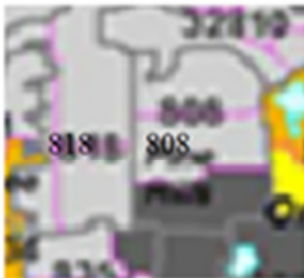


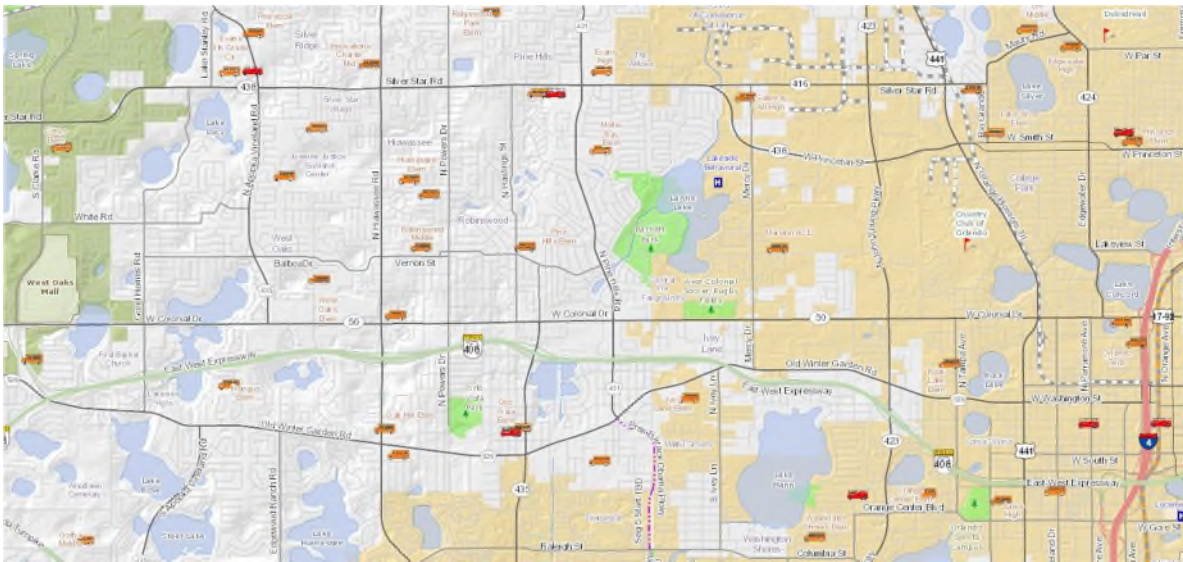
Pine Hills Trail

[\[Cost to Cost trail\]](#)

[\[Single Creek trail\]](#)

[Link to](#)



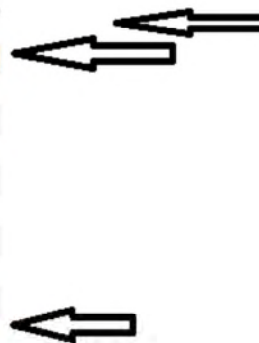


Pedestrian Deaths 5

Bad intersections for pedestrians

Broad, multi-turn-lane intersections tend to scare pedestrians into crossing at midblock. Here are the intersections where pedestrians were most often hit, either in the crosswalk or nearby crossing at midblock, during the past 6 years.*

Rank	County	1st road	2nd road	2007-12 pedestrian crashes	2007-12 pedestrian deaths
1	Orange	Silver Star Rd.	Pine Hills Rd.	21	0
2	Orange	Silver Star Rd.	Hiwassee Road	17	3
3	Orange	Colonial Dr.	Alafaya Trail	15	0
4	Orange	Colonial Dr.	Semoran Blvd.	14	1
5	Orange	Sand Lake Rd.	International Dr.	14	0
6	Orange	Semoran Blvd.	Aloma Ave.	14	0
7	Orange	Orange Blossom Trail	Holden Ave.	13	0
8	Orange	Orange Blossom Trail	Sand Lake Rd.	13	0
9	Orange	Oak Ridge Rd.	Texas Ave.	11	0
10	Seminole	Oxford Rd.	Semoran Blvd.	10	2
11	Orange	Colonial Dr.	Pine Hills Rd.	10	2
12	Orange	Orange Blossom Trail	Oak Ridge Rd.	10	1
13	Orange	Lee Rd.	Edgewater Dr.	10	0
14	Orange	Semoran Blvd.	Old Cheney Hwy.	9	3
15	Orange	Lee Rd.	I-4	9	0



Recommended Alternative

- BRT Service from Oakland to UCF
- Initial Operating Phase (Phase 1)
 - BRT in Mixed Traffic from Powers Drive to Goldenrod Road
- Express Bus Service between Downtown Area and UCF Area (Funded through existing mechanism)



SR 50/UCF Connector Alternatives Analysis

Redesign Pine Hills Rd



This from the Orlando Business Journal

<u>2013 Esri Wealth Rank</u>	<u>ZIP Code</u>	<u>City</u>	<u>2013 Median Household Income</u>	<u>2013 Median Home Value</u>	<u>Demographic Description</u>	
1	32805	Orlando	\$23,158.00	\$82,624.00	62 Modest Income Homes	Details
2	32808	Orlando	\$31,932.00	\$98,666.00	51 Metro City Edge	Details
3	34741	Kissimmee	\$33,973.00	\$100,794.00	52 Inner City Tenants	Details
4	32811	Orlando	\$33,587.00	\$78,227.00	39 Young and Restless	Details
5	32839	Orlando	\$35,406.00	\$118,267.00	52 Inner City Tenants	Details
6	32807	Orlando	\$35,303.00	\$114,044.00	52 Inner City Tenants	Details
7	32767	Paisley	\$31,189.00	\$82,420.00	46 Rooted Rural	Details
8	32822	Orlando	\$38,326.00	\$117,622.00	52 Inner City Tenants	Details
9	34753	Mascotte	\$40,834.00	\$106,334.00	38 Industrious Urban Fringe	Details
10	34743	Kissimmee	\$40,547.00	\$109,965.00	38 Industrious Urban Fringe	Details

<u>2013 Esri Wealth Rank</u>	<u>ZIP Code</u>	<u>City</u>	<u>2013 Median Household Income</u>	<u>2013 Median Home Value</u>	<u>Demographic Description</u>	
11	32702	Altoona	\$31,817.00	\$82,911.00	49 Senior Sun Seekers	Details
12	32818	Orlando	\$41,380.00	\$133,792.00	19 Milk and Cookies	Details

Segment 19 - Milk and Cookies

Young, affluent married-couple families, half of whom have children, live in single-family houses in Suburban...The median age is 34.2 years. Two incomes, more than one child, and two vehicles are the norm for these folks. The median household income is \$54,389 and the median home value is \$134,570. The home ownership rate is 76 percent.

Segment 51 - Metro City Edge

Married couples, single parents, and multi-generational families live in these older neighborhoods of large Midwestern and Southern metropolitan cities. The median age is 31 years and the median household income is \$27,875. Nearly half of the employed residents work in the service industry. Most live in single-family housing; 14 percent live in 2-4 unit buildings, many of which are duplexes.

Geography Pine Hills is located at

According to the [United States Census Bureau](#), the CDP has a total area of 12.7 square miles (33.0 km²), of which 12.2 square miles (31.7 km²) is land and 0.50 square miles (1.3 km²) (3.87%) is water.^[4]

Is this for only the Silver Starr Gateway??

This a Gate way for Pine Hills and a Gateway for West Orange??

Names for the square??

Traffic Poles ???

Digital Sign ???

Bike Crossover ??

Brick for the Center??

column (columns)???



V1



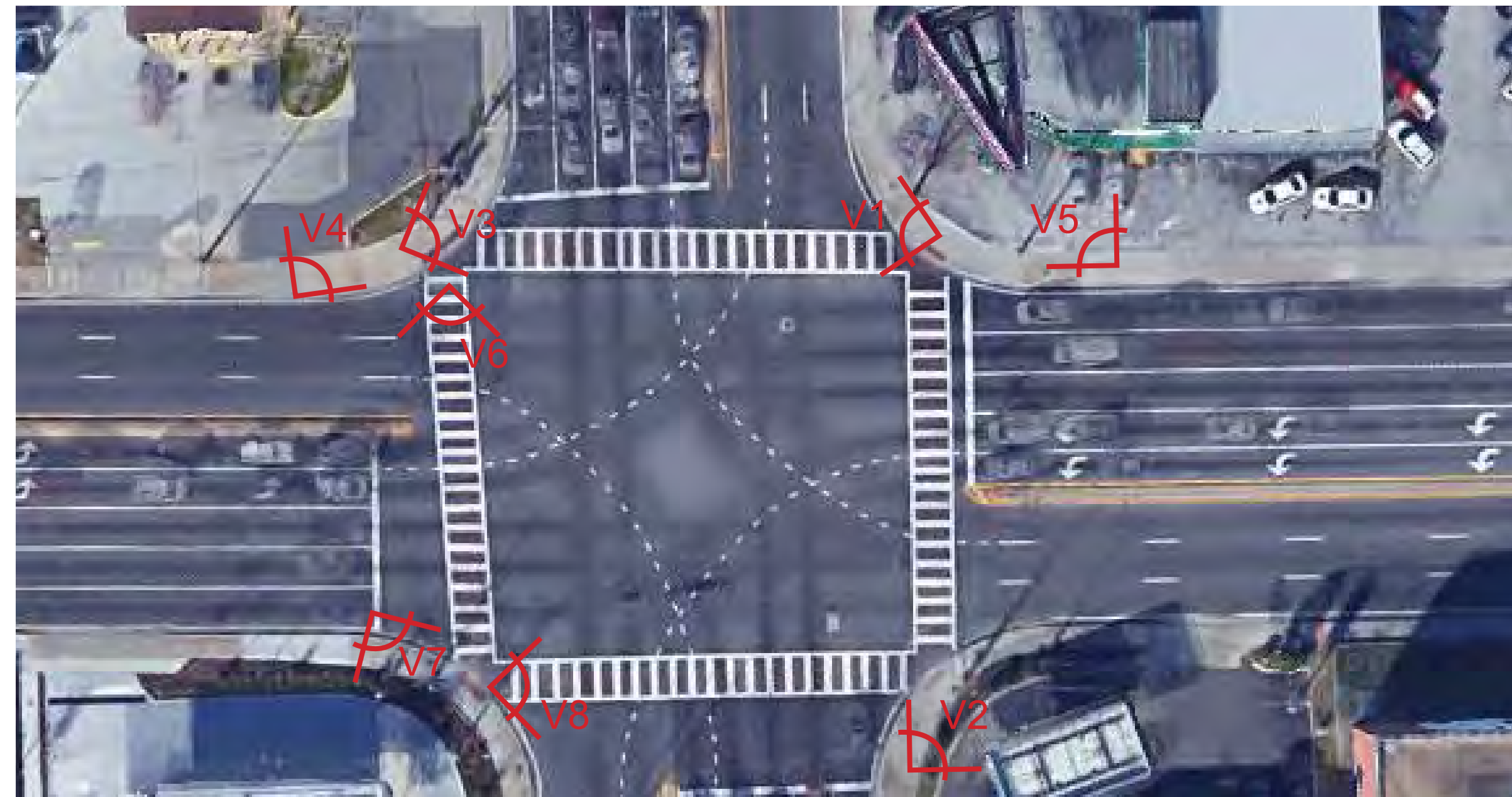
V2



V3



V4



V5



V6



V7



V8









Lake Nona Blvd

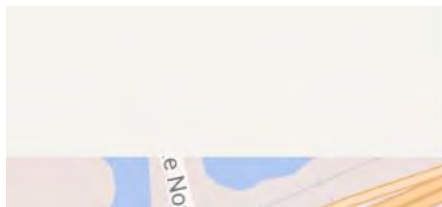
Low Wall Between Road and Trail / Sidewalk at Intersection



Image capture: Sep 2014 © 2017 Google

Orlando, Florida

Street View - Sep 2014





7190 Lake Nona Blvd

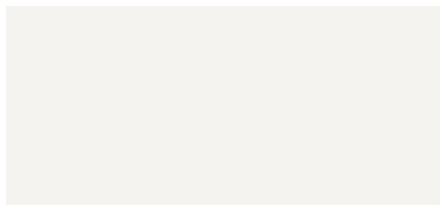
Low Walls in Median at Intersection



Image capture: Apr 2015 © 2017 Google

Orlando, Florida

Street View - Apr 2015





Gemini Blvd S

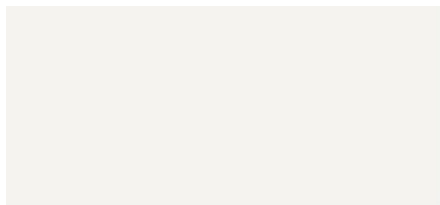
Low Wall Between Roadway and Pedestrians Near Intersection



Image capture: Jul 2016 © 2017 Google

Orlando, Florida

Street View - Jul 2016





US-92

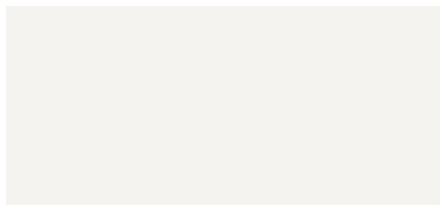
Fencing for Pedestrian Control at Intersection



Image capture: Jul 2016 © 2017 Google

Daytona Beach, Florida

Street View - Jul 2016





Meeting Minutes

Date: January 26, 2017 at 10:00AM
Location: Orange County Public Works Plan Review Conference Room
Subject: Pine Hills Road Pedestrian/Bicycle Safety Study Agency Coordination Meeting
Author: Laura Minns, WSP|Parsons Brinckerhoff

1. Attendees

- Anoch Whitfield, Brian Sanders, Cristina Pichardo-Cruz, Hatem Abou-Senna, Hazem El-Assar, Jerald Marks, Renzo Nastasi, Christy Lofye, Evelyn Gonzalez(Orange County)
- Vanessa Lewis (Commissioner Bryan Nelson's Office)
- Michelle Owens and Kea Cherfere (Pine Hills Neighborhood Improvement District)
- Jeff Reine (LYNX)
- Tony Calabro, Barbara Giles, Amanda Day (Bike Walk Central Florida)
- Tony Nosse (FDOT District 5)
- Julie Salvo (Orange County School District)
- Mighk Wilson (MetroPlan Orlando)
- Greg Smith, Laura Minns, and Amy Dunham (WSP | Parsons Brinckerhoff)

(sign in sheet attached)

2. Welcome and Introductions

Anoch opened the meeting, asked attendees to introduce themselves, and gave a brief overview of the study.

3. Overview of Project

- The Pine Hills Road Pedestrian/Bicycle Safety Study is an INVEST project, part of Mayor Jacobs' Walk-Ride-Thrive initiative, which focuses on safety of walking/bicycling along and across the County's roadways.
- The project study limits extend from north of Colonial Drive (SR 50) to Bonnie Brae Circle.
- Within the project study limits, there are high-crash locations for pedestrians/bicyclists.

4. Schedule

- Newsletter #1
 - Draft completed in mid-January, and currently under review by Orange County.
- Public Involvement Plan
 - Completed in mid-January, and currently under review by Orange County.
- Traffic and Pedestrian Counts
 - Approximately 50% completed, with an estimated completion date in early February.
- Luminosity Evaluation
 - Completed - every existing pedestrian crossing in the corridor did not meet luminosity/lighting standards.

5. Potential Safety Countermeasures and Strategies

- A draft list of countermeasures have been identified for possible use within the project corridor, including:
 - Short Fences in the Median

- FDOT has recently developed a new, developmental standard for short fences in medians (with three types available).
- Acceleration Lane Removal
 - Removing the existing acceleration lanes at the SW and NE corners of the Pine Hills Road/Silver Star intersection. The purpose of this measure would be to reduce the length of the crosswalk thereby reducing crossing times. This measure would also provide room for a gateway features on the above corners.
- Medians
 - Pine Hills Road today is currently a five-lane undivided section which may be converted to a four-lane divided section, assuming access management criteria can be met and sufficient room exists for U-turns. The closed medians would allow areas for mid-street refuge by pedestrians, and potentially focus crossing movements at designated areas.
 - There are a high number of driveways along Pine Hills Road, with some potential sight distance issues that could be improved with medians, lighting, or rapid flashing beacons (RRFBs).
- Speed Control
 - Current speed limit along Pine Hills Road is 35 mph. The existing horizontal curvilinear geometry for this roadway may influence lower travel speeds.
 - Reduction of speed along the corridor may be a consideration depending on the outcome of the spot speed study.
 - Narrowing travel lanes which may result in reduced travel speed limits may be beneficial and allow for wider/buffered bicycle lanes.
- Pedestrian Enhancements
 - Adding high emphasis treatments at pedestrian crossings including RRFBs, mid-block pedestrian activated signals, flashers, etc.
 - Widening of sidewalks
- Lighting and Markings at Selected Pedestrian Crossings
 - Increase visibility for motorists, cyclists, and pedestrians
 - Added markings for high emphasis cross walks

6. Gateway Development at Pine Hills Road/Silver Star Road

- Meeting held January 19th, 2017 to discuss potential gateway features
- Gateway Features Under Consideration – Signage, Raised Curb
- Potential area may be available for gateway features if the acceleration lanes at Pine Hills Road and Silver Star Road are removed.

7. Round Table Discussion/Agency Feedback

- Midblock Crossing Effectiveness
 - Bike Walk Central Florida / Best Foot Forward: They have been using the Pine Hills/Torino crossing for several years, and it has been unsafe. While state law requires cars to stop for a midblock crossing, the inclusion of a flashing light and stop signal would be incredibly helpful to make sure cars are required to stop.
 - Orange County Traffic Engineering: At Oak Ridge Road, a suggestion was made to reduce the number of signs avoid clutter and provide consistency. For signal strategies, a flashing yellow signal was recommended at some signals to encourage drivers to be more conscientious. No right turn on red signs were also added in some locations.
- Driveway Access
 - PHNID: Since there are several residential and commercial driveways along Pine Hills Road, the team should consider if potential driveway consolidation would

- work, while still maintaining access for residents/employees. Also, parking lots could potentially be impacted by driveway consolidation.
 - Orange County: Once a driveway goes in, they are difficult to remove. There may be opportunities to make some driveways or parking lot entrances narrower, while not eliminating them entirely.
 - Orange County: Asked if there was enough right of way to install a median and maintain existing two traffic lanes and four-foot bicycle lanes in both directions. This configuration will be evaluated by once existing field information has been collected.
 - If a raised median is considered, the study will check if passenger vehicles can make U-turns within the resulting roadway width. Even if small median concrete separators are added, they would discourage cars from traveling in the two-way left turn lanes, thereby mitigating the issue of drivers using the center turn lane for passing or as a general travel lane.
- Lane Width and Bus Stop Consolidation
 - LYNX: If lane width reduction is considered along the corridor to reduce speeds, the minimum lane width for buses is 11 feet.
 - LYNX: Supports moving or consolidating existing bus stop locations so as to encourage pedestrians to cross at marked midblock crossings instead of in between crossings or signalized intersections.
- Pedestrian/Bicycle Safety Outreach
 - MetroPlan Orlando: Asked if the project included programmatic recommendations, such as outreach to community organizations and schools/educational facilities. Discussion ensued regarding outreach to K-12 students. Metroplan staff suggested in addition to targeting K-12 students, the study should also incorporate pedestrian/bicycle safety education for adults. In their review of bicycle crashes, they see mainly adults riding or walking in unsafe ways, not necessarily students.
 - Commissioner's Office: The Walk-Ride-Thrive initiative would be happy to provide/partner on local educational seminars, walk/cycle trainings, helmet training, and pedestrian safety.
 - PHNID: The project team should reach out to the Pine Hills Safe Neighborhoods (meets the 3rd Thursday of each month) and the Pine Hills Community Council (meets the 1st Tuesday of each month).
 - Orange County Traffic Engineering: In the Texas Americana Study, the team found that most of the participants didn't understand pedestrian laws. Kim Montes (FHP) came with them to one of their community meetings to instruct on pedestrian laws. She would be good to have at any education forums.
 - Orange County School District: Educating crossing guards is also an important aspect of outreach as well.
- Pedestrian Lighting
 - FDOT: Currently, there is a Pedestrian Lighting Initiative underway through most of the counties in District Five. Two pedestrian lighting projects are programmed – one at the Pine Hills Road/Silver Star intersection, and the other at the Colonial Drive (SR 50)/Pine Hills Road Intersection.
 - Design is programmed for FY 2018, and construction in FY 2019.
- Sidewalk Widening
 - FDOT: Depending on available right-of-way, consideration may be given to widening sidewalks, and specifically where pedestrian demands are high, and at locations of existing natural pedestrian pathways.
 - Orange County School District: The school district would always prefer sidewalks on both sides if possible, however, it's more important to tailor mobility to the natural pathways students would use to get to/from school. The School District has private information on student locations which are geocoded, so they can plan bus routes and pedestrian paths. They can share general neighborhood locations with WSP | PB for analysis.
- Coordination with Other Projects

- LYNX: The study needs to take into account the final recommendations for the Pine Hills Trail and the LYNX SuperStop at the Belco site. Many students cross through the Belco site to/from school.
 - PHNID: Several students have been using the proposed Pine Hills Trail pathway, even without pavement. There are plans to construct signals at the trail and Silver Star Road. A fully signalized crossing at Pine Hills Road and Dolores Drive is also planned for the trail spur.
 - PHNID: The owners of Silver Star Shopping Plaza (NW corner of Pine Hills Road/Silver Star intersection) have expressed concern about safety related to pedestrian access from the trail into their shopping plaza. PHNID recently met with the owners and the Orange County Sheriff's Office to discuss further and address their concerns. Even after that meeting, their negative view of the trail is focused on potential criminal/safety issues that could result, not on the regional focus and presence that a trail could bring to their shopping center – more active and natural surveillance would help. The Silver Star Shopping Plaza currently has 24-7 monitored security and video cameras, but are hesitant about the potential negative impacts of the trail.
- Trail Projects
 - Orange County: A signal is planned for the trail crossing at Dolores Drive and Pine Hills Road.
 - PHNID: The study should consider including directional and/or wayfinding signs to alert pedestrians and cyclists regarding the Pine Hills Trail. The Gateway Study may provide some opportunity for wayfinding signage.
- Bicycle Safety
 - MetroPlan Orlando: There is no evidence that adding green paint promotes safety for bicycling. The largest issues in bicycling stem from incorrect education – many people ride the wrong way in bicycle lanes. In the north side of the corridor, there isn't enough pavement width for a dedicated lane (maybe sharrows).
 - Cycle Track: A cycle track may not be desirable for the Pine Hills Road corridor given the nearby proximity of the proposed and under construction Pine Hills Trail. Another concern of the cycle track is that with bicycle traffic traveling opposite each other within a single pathway, then those cyclists next to opposing vehicular traffic may have more likelihood or potential for collisions.
- Design Guidelines
 - Orange County School District: There is no urban design overlay for the corridor, but PHNID is currently working on guidelines that address signing, landscaping, and lighting.
 - PHNID: To make sure the gateway treatment and corridor meet the intended purpose, PHNID is very receptive to assisting Orange County with the funding of landscaping. However, PHNID cannot spend money outside their legal boundaries, but they can work with Safe Neighborhoods to reach areas not within their boundaries. (Safe Neighborhoods is a more residential-focused group vs. PHNID which focuses more on businesses)
 - Orange County: Evaluate the length of the pedestrian walk interval at the Pine Hills/Silver Star intersection – there are a lot of left turn crashes. Currently, the signal phase duration is 10 seconds.

8. Next Steps/Meeting

- The first Community Based Workshop (CBW) is scheduled for June 8th at Evans High School
- The Orange County project website for Pine Hills Road will be live soon.

9. Adjourn



Meeting Minutes

Date: May 10, 2017 at 2:00 PM
Subject: Pine Hills Road Pedestrian/Bicycle Safety Study – Gateway Meeting
Author: Amy Dunham, WSP

Attendees (13)

- Mark Massaro, Renzo Nastasi, Anoch Whitfield, Jerald Marks, Damian Czapka, Cristina Pichardo-Cruz, Christi Lofye, and Ghulam Qadir (Orange County)
- Greg Smith, Alan Danaher, and Amy Dunham (WSP)
- Jay Hood, Eddie Browder, Boris Wong (S&ME)

1. Introduction

- a. The purpose of this meeting was to receive comments on the proposed gateway features at the Pine Hills Road/Silver Star Road intersection from Orange County staff before the Agency Meeting on May 11, the public Consensus Building Workshop #1 on June 8, and an upcoming meeting with FDOT.
- b. Summary of the project findings thus far from Greg Smith (WSP).

2. Discussion of Potential Gateway Features

- a. Eddie Browder (S&ME) presented the potential gateway features at the Pine Hills Road/Silver Star Road intersection including an overview of the existing visual clutter within the intersection, the high number of pedestrian/bicycle crashes, and high number of driveways.
- b. In response to existing conditions at the intersection and in keeping with the PHNID goals, the potential gateway features would promote improved pedestrian/bicycle safety through enhanced pedestrian spaces and wider crosswalks, increased lighting, an all-red pedestrian signal, and landscaping (to be discussed further with the PHNID). Other improvements would include enhanced crosswalk markings, replacement of span wire signals with mast arms, wayfinding signage, illuminated towers, and a low wall which could serve as a horizontal bench/sign.
- c. Discussion about Design Elements
 - i. **Pavement Logo:** Orange County raised concerns over potential maintenance and jurisdictional issues that could result from the pavement logo in the middle of the intersection, as indicated in meeting graphics. Because Silver Star Road is a FDOT facility, the County will discuss the feasibility of colored asphalt at the intersection, though the logo will be eliminated as one of the gateway features over maintenance concerns and lack of visibility for motorists.
 - ii. **Maintenance:** Orange County emphasized that any improvement requiring maintenance (particularly landscaping) should be coordinated in writing with the PHNID, detailing specific costs and responsibilities.
 - iii. **Acceleration Lanes:** By partially reducing the acceleration lanes on the north and south approaches, more room can be created for waiting pedestrians at the intersection. This improvement would also reduce the pedestrian crosswalk length as well.
 - iv. **Crosswalk Modifications:** Orange County raised questions about the type/style of curb at the four crossings. A curb is to be provided between the crosswalk connections to the

sidewalk to prevent drivers from cutting the corner and driving over the pedestrian sidewalk area.

- Orange County requested that curbs be added to all four intersection corners to minimize this occurrence.
 - v. **Lighting:** Orange County inquired if the lighted towers at all four corners would create potential sight distance issues for turning vehicles and Mr. Browder replied that it would not.
 - vi. **Mast Arms:** Orange County inquired if mast arms would be constructed in the right-of-way and the response was yes.
 - vii. **Pedestrian Fencing:** Mr. Massaro indicated interest in providing pedestrian fencing along the curb lines near the intersection or within medians. However, FDOT standards require a four-foot separation from traffic lanes where traffic separators are present. In addition, fencing could be provided where the full median is present along Pine Hills Road and potentially Silver Star Road (if accepted by FDOT). Fencing along the curb lines would not be practical given the high number of driveways in the area.
- d. Discussion about Budget/Policy
- i. **Total Cost:** Orange County raised questions over the estimated cost of the presented gateway features vs their available budget. Staff was asked to determine overall maintenance responsibilities between the County and PHNID.
 - ii. **Dismissal at Evans HS:** Orange County raised concerns about phasing the release of student dismissals at Evans High School which would result spreading the pedestrian activity across the intersection over a longer time period. Some expressed reservations that phased dismissals would not be accepted by the school. Orange County indicated support for the all-red signal for pedestrians at the Silver Star Road intersection, though they preferred not to provide diagonal pavement markings across the intersection for potential liability reasons.
- e. Overall Discussion
- i. Orange County indicated that they are not comfortable with the currently proposed gateway features, due to cost projections for the project. Mr. Massaro requested the removal of the center pavement design in the middle of the intersection before the Agency meeting on May 11.
 - 1. WSP will remove the center pavement design in the middle of the intersection before producing graphics for the Agency meeting on May 11.

3. Next Steps/Schedule

- a. Meeting with FDOT to review gateway features at Silver Star Road
- b. CBW #1 – June 8 at Evans High School

4. Action Items

- a. WSP
 - i. WSP to remove the center pavement design in the middle of the intersection before producing graphics for the Agency meeting on May 11.



Pine Hills Road Pedestrian/Bicycle Safety Study
Gateway Meeting
May 10, 2017 | 2:00 PM | Orange County Public Works

Name	Organization	Email Address
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Amy Dunham	WSP	dunhama@pbworld.com
JAY HOOD	S&ME	JHOOD@SMEINC.COM
EDDIE BROWDER	S&ME	EBROWDER@SMEINC.COM
BORIS WONG	S&ME	BWONG@SMEINC.COM
GREG SMITH	WSP	smithgt@pbworld.com
Mark Massaro	O.C.	Mark.Massaro@ocfl.net



**Pine Hills Road Pedestrian/Bicycle Safety Study
 Gateway Meeting
 May 10, 2017 | 2:00 PM | Orange County Public Works**

Name	Organization	Email Address
Cristina Pichardo-Cruz	OC Traffic Eng	Cristina.pichardo-cruz@ocfl.net
GERALD MARKS	O.C. TRANS. PLANNING	GERALD.MARKS@OCFL.NET
RENZO NASTASI	OC " "	RENZO.NASTASI@OCFL.NET
Ghulam Gadir	OC Engineering	ghulam.gadir@ocfl.net
Alan Danaher	WSP	alan.danaher@wsp.com



Meeting Minutes

Date: May 11, 2017 at 3:30 PM
Subject: Pine Hills Road Pedestrian/Bicycle Safety Study – Agency Meeting #2
Author: Amy Dunham, WSP

Attendees

- Renzo Nastasi, Brian Sanders, Anoch Whitfield, Jerald Marks, Jason Reynolds, Cristina Pichardo-Cruz, and Hazem El-Assar (Orange County)
- Greg Smith, Alan Danaher, and Amy Dunham (WSP)
- Jeff Reine (LYNX)
- Michelle Owens and Kea Cherfrere (PHNID)
- Mighk Wilson (MetroPlan Orlando)
- Barbara Giles and Tony Calabro (Best Foot Forward)
- Rose-Nancy Joseph (Commissioner Siplin's Office)
- Vanessa Lewis (Commissioner Nelson's Office)

1. Introduction

- a. The purpose of this meeting was to receive feedback on the project before the Consensus Building Workshop #1 on June 8.
- b. Summary of the project findings thus far from Greg Smith (WSP).

2. Summary of Existing Conditions

- a. Draft Tech Memo #3, the Existing Conditions Report, is currently undergoing review and will be finalized shortly for distribution to agencies.
- b. Existing Conditions Review
 - i. From 2014 to 2016, there were a total of 71 pedestrian/bicycle-related crashes within the corridor, and of those, 5 were fatalities. There have been 2 fatalities in 2017. The majority of pedestrian-bicycle related crashes have occurred at either the SR 50 or Silver Star Road intersections, and several were spread along segments in the Corridor.
 - ii. The luminosity study revealed that none of the existing Pine Hills Road corridor including the existing pedestrian crossings met FDOT lighting criteria, suggesting lighting-related improvements. Around 45% of crashes occurred in low lighting conditions
 - iii. Further crash analysis revealed that around 33% of pedestrian/bicycle-related crashes involved those 18 or younger, suggesting a need for education countermeasures.
- c. Community Survey
 - i. The community survey closed on April 16, and received 170 responses. The survey attempted to show what the community thinks about traveling along Pine Hills Road.
 - ii. Of the responses, only 10% indicated that they either walk/bicycle along Pine Hills Road.
 - iii. When presented with a list of potential countermeasures (more than one option could be selected), more than 60% of respondents preferred improved lighting and 60% preferred flashing pedestrian signals. Other popular responses were wider sidewalks and signal timing adjustments.

3. Summary of Typical Sections

- a. Typical Section Alternative #1 – South of Silver Star
 - i. This alternative presents a closed median along Pine Hills Road, which reduces potential vehicle/pedestrian/bicycle conflict points and consolidates pedestrian movements. This alternative uses a FDOT Type E curb (similar to those used on Colonial Drive or Silver Star Road), which could be traversable by an emergency vehicle if needed.
 - ii. At midblock crossings, the median allows for pedestrian refuge if there aren't enough traffic gaps to allow the entire crossing to be taken at one time.
 - iii. Reduction of travel lanes from 12' to 11' for traffic calming purposes.
 - iv. No modification of existing speed limit of 40 mph, since the 85th percentile speed as indicated from the spot speed study is higher than the speed limit.
 - v. Orange County question - In the vehicle gap study, were any staged crossings observed?
 1. WSP: No, because vehicular gaps were analyzed, not pedestrian movements.
 - vi. Orange County question - In this alternative, is the existing curb be adjusted?
 1. WSP: This alternative maintains a median width of 23' which allows the median to be constructed with no curb or drainage adjustments along the outside existing curb.
- b. Typical Section Alternative #2 - South of Silver Star
 - i. This alternative narrows the median from 23' to 16', requiring reconstruction of the existing curb as well as drainage adjustments. This narrower median allows for a landscaped buffer on each side of Pine Hills Road along with bicycle lanes. However, bulb-outs for U-turning vehicles would be needed and since this alternative results in a narrower median, it would require reconstruction of curb and inlets which would increase costs above Alternative #1.
 - ii. Mr. Sanders indicated that this alternative could support emerging commercial land uses along the corridor, and could potentially allow on-street parking. Businesses have very limited parking along Pine Hills Road and on their properties.
 1. WSP: On-street parking along the corridor might be difficult to implement due to the relative high travel speeds on Pine Hills Road and frequency of existing driveways every 20-30' on south end. In addition, there may be safety concerns for pedestrians trying to cross in between vehicles.
- c. Typical Section North of Silver Star Road
 - i. This alternative provides a 12' multi-use path on the east side of Pine Hills Road, north of Silver Star Road, to respond to the survey.
 1. Orange County: The Parks Department is considering bringing the Pine Hills Trail, Phase 2 out to Pine Hills Road, and this would correlate well.
 2. The Coast-to-Coast trail is planning to provide a spur to Pine Hills Trail.

4. Summary of Potential Gateway Features

- a. The design of the gateway features at the Pine Hills Road/Silver Star Road intersection were influenced from the PHNID APA Report, which recommends establishing a neighborhood identity, brand, culture using banners and gateway signage at the future town center.
- b. Enhanced pavement markings at the intersection would recognize the importance of pedestrian activity at the intersection – sign towers, low walls at corners, conversion of span wire signals to mast arms, coloring the crosswalks for visibility, additional landscaping, banners/signage. Where possible, limited landscaping can be provided at selected locations along both Pine Hills Road and Silver Star Road. Existing landscaping is already in place on the east approach.
- c. Part of the acceleration lanes would be removed to provide a larger pedestrian landing at each corner of the intersection.
- d. Gateway and Wayfinding signage – directions to amenities, trail, LYNX transit center, parks, schools.
- e. Agency thoughts:
 - i. Best Foot Forward: Could you raise the crosswalk across Pine Hills Rd to improve visibility?
 1. Orange County: Typically, raised crosswalks are used on local streets with lower speeds to improve safety, not on multi-lane roadways with higher speeds such as Pine Hills or Silver Star Roads.

- ii. Pine Hills NID: Strong concern about the banners, since PHNID is already trying to discourage visual clutter along the corridor. One option would be to limit gateway banners to just the four corners of the intersection, not only every pole Pine Hills Road or Silver Star Road. As PHNID addresses visual clutter in the future, banners could be considered later on.
- iii. Orange County: Should we use a buffered bike lane instead of non-buffered?
 - 1. Orange County: With the number of driveways along Pine Hills Road, it might be difficult to put in buffered bike lanes since there would have to be so many openings.
- iv. Commissioners Office: Can the crosswalks use LED signals indicating that a pedestrian is crossing?
 - 1. Orange County: There are other efforts going on (partnership with Orange County Sheriff) already to improve all roadway lighting to meet FDOT standards along Corridor, particularly at crosswalks and midblock crossings.
 - 2. Orange County: In other municipalities that have use in-ground roadway lighting at crosswalks, they have found that the maintenance costs are extremely high.
 - 3. Orange County: Planning to implement roadway lighting regardless of this project. Efforts will be undertaken to ensure lighting improvements address both roadway and pedestrian usages.
 - 4. WSP: The proposed lighting improvements will be designed to address the multi-use path.
- v. Commissioners Office: Would bike lanes be colored green or another color?
 - 1. Orange County: Different colored asphalt could be incorporated to allow the bicycle lane to stand out as compared to the roadway lanes.
- vi. Orange County: Since the County is moving ahead on adding general roadway lighting along the Corridor, how will we go ahead a year from now and assess the updated “existing lighting” to address countermeasures?
 - 1. Duke Energy will design to the level required by FDOT. This project should identify the locations for further luminosity study for pedestrians/bicycles specifically.
- vii. Orange County: Illuminated tower signs were positively received, including the use of multi-color LEDs.
- viii. Orange County: Mast arms should be galvanized, not black in color on graphic.

5. Summary of Potential Safety Countermeasures

- a. Summary of the potential safety countermeasures developed thus far from Greg Smith (WSP).
- b. Best Foot Forward: Discussion about RRFB’s – sometimes they are activated by pedestrian who walks away, which confuses drivers. The flashing signal isn’t as effective as a required red stop movement for vehicles on the roadway. At El Trio Road, the crosswalk should have a red light, because the flashing signals isn’t as effective and vehicles fail to yield. These are two of the highest crosswalks in terms of pedestrian volumes (PM) along the Corridor.
 - i. Orange County: At Texas-Americana, County has initiated pedestrian education to instruct pedestrians on how to use RRFB’s properly.
 - ii. WSP: Could be developed into a Ped Education program as part of the safety countermeasures, tied to OCPS.
 - iii. Best Foot Forward: The high school isn’t doing much “common” education outside of Common Core, (drunk driving education, etc.), and might not be receptive to adding to their curriculum.
- c. Orange County: Will be attending a FHP event, and will bring it up to law enforcement and OCPS.
- d. Orange County: Suggestion to look at CMF for expected reductions in crashes along different segments and intersections within the Corridor.
- e. Orange County: How do transit stops factor in to pedestrian safety? Is there a correlation between people departing transit stops and getting hit crossing, etc.?
 - i. MetroPlan Orlando: Since very few crash reports mention transit access – hard to correlate.

6. Summary of Access Management Recommendations

- a. Summary of access management recommendations developed thus far from Greg Smith (WSP).

- i. South of Belco Drive, an AM class of 7 is recommended (least restrictive).
- ii. North of Belco Drive, an AM class of 5 is recommended.

7. Upcoming Meetings

- a. CBW #1 on June 8 from 6:00 to 8:00 pm at Evans High School Cafeteria
- b. CBW #2 on August 24



**Pine Hills Road Pedestrian/Bicycle Safety Study
Agency Meeting
May 11, 2017 | 3:30 PM | Orange County Public Works**

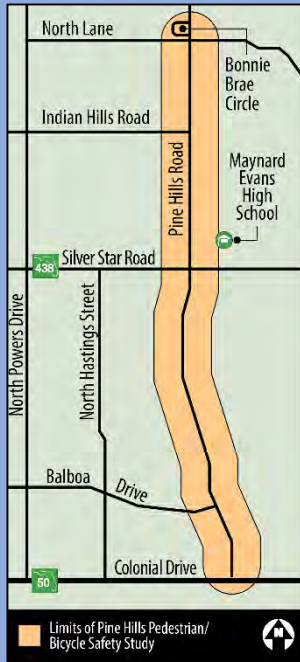
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Cristina Richards Cruz	OC Traffic Eng	cristina.richardscruz@ocfl.net
JERALD MARKS	O.C. TRANS. PLANNING	GERALD.MARKS J2 @ OCFL.NET



Pine Hills Road Pedestrian/Bicycle Safety Study
Agency Meeting
May 11, 2017 | 3:30 PM | Orange County Public Works

Name	Organization	Email Address
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WILBERT WILSON	WSP	WILBERT.WILSON@OCFL.net
Barbara Gies	BWCF - BFF	barbara@bikewalkof.org
TONY CALABRO	BEST FOOT FORWARD	ALLCOAST1@OUTLOOK.COM
Amy Dunham	WSP	amy.dunham@wsp.com
Jason Reynolds	Orange County	Jason.Reynolds@ocfl.net
Hazem El-Aasser	Orange Co.	hazem.el-aasser@ocfl.net

You're Invited!
!Estas invitado!
Nou envite w!



Pine Hills Road

**Pedestrian/Bicycle Safety Study
Community Workshop #1**

**Peaton/Bicicleta Seguridad Estudio
Comunitario Taller #1**

**Etid sou Sekirite Pyeton/Bisiklèt Atelye
Kominotè #1**



Orange County Community, Environmental
and Development Services Department
Transportation Planning Division
4200 S. John Young Parkway
Orlando, FL 32839

Join Us!
Únete a Nosotros!
Rasanble Ak Nou!

Community Workshop #1

Thursday, June 8, 2017

6:00 – 8:00 pm

Maynard Evans High School Cafeteria

4949 Silver Star Road

Orlando, FL 32808

On behalf of Mayor Teresa Jacobs, District 2 Commissioner Bryan Nelson, and District 6 Commissioner Victoria Siplin, Orange County is pleased to invite you to attend Community Workshop #1 for the **Pine Hills Road Pedestrian/Bicycle Safety Study**. Please join us and provide your input on strategies for viable pedestrian safety countermeasures.

En nombre de la Alcadesa Teresa Jacobs, el Comisionado del Distrito 2 Bryan Nelson, y la Comisionada del Distrito 6 Victoria Siplin el Condado Orange tiene el agrado de invitarle a participar en el Taller Comunitario #1 para el **Estudio de Seguridad de Peatones/Bicicletas en Pine Hill Road**. Por favor, únase a nosotros y proporcione su opinión sobre las estrategias para las contramedidas viables de seguridad peatonal.

Nan non Majistra Teresa Jacobs, Delege Distrik 2 ki se Bryan Nelson, ak Delege Distrik 6 ki se Victoria Siplin, Orange County kontan envite ou pou vini nan Atelye Kominotè # 1 pou Pyeton nan **Pine Hill Road / Bisiklèt Sekirite Etid**. Souple rasanble ak nou epi bay opinyon ou sou estrateji pou kontrekare pwoblèm sekirite pyeton.

What is the Pine Hills Road Pedestrian/Bicycle Safety Study?

The Pine Hills Road Pedestrian/Bicycle Safety Study is a comprehensive review of the corridor that will develop alternatives and strategies to address the mobility needs of the users along the corridor, and to provide for the safe integration of both the walking and bicycle riding public with other modes of transportation.

El Estudio de Seguridad de Peatones / Bicicletas de Pine Hills Road es una revisión exhaustiva del corredor que desarrollará alternativas y estrategias para atender las necesidades de movilidad de los usuarios a lo largo del corredor, y para asegurar la integración segura del público a pie y en bicicleta. Otros modos de transporte.

Etid sou sekirite Pyeton/Bisiklèt nan Pine Hills Road se yon revizyon total kapital de sikwi sila a ki ap gen pou tabli divès chwa ak estrateji pou jere bezwen pasan yo atravè sikwi a. Konsa tou l ap founi lòt mwayen transpò ki va itil pou bonjan entegrasyon pèp la ki ap sikile a pye e sou bisiklèt.

Contact Us Contácteno Kontakte Nou

Anoch Whitfield, AICP - Orange County Project Manager
Email: anoch.whitfield@ocfl.net, Phone: 407-836-0225

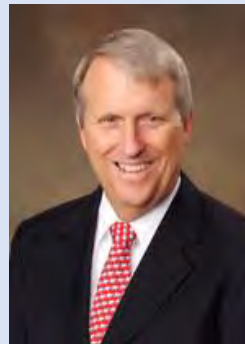
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Celestin Pierre – Assistant Project Manager
Email: celestin.pierre@ocfl.net, Phone: 407-836-7873



Honorable Teresa Jacobs
Orange County Mayor



Bryan Nelson
District 2 Commissioner



Victoria Siplin
District 6 Commissioner

Additional Information Información Adicional Lòt Enfòmasyon

Public participation is solicited without regard to race, color, national origin, age, sex, religion, income, disability or familial status. Persons who require language translation or interpretation services, which are provided at no cost, should contact Orange County Title VI/ Nondiscrimination Coordinator Ricardo Daye at 407-836-5825 or ricardo.daye@ocfl.net at least seven (7) days prior to the workshop. Persons requiring special accommodations under the Americans with Disabilities Act of 1990 (ADA) may request assistance by contacting County ADA Coordinator Dianne Arnold at 407-836-7588 or dianne.arnold@ocfl.net at least seven (7) days prior to the meeting.

La participación pública se solicita sin tener en cuenta raza, color, nacionalidad de origen, edad, sexo, religión, ingresos, discapacidad o estado familiar. Las personas que requieran servicios de traducción o interpretación de idiomas; los cuales son proveídos sin costo alguno, deberían contactar en Orange County al Coordinador para el "Title VI/ Nondiscrimination", Coordinador de imparcialidad o no discriminación del Condado Orange Ricardo Daye al teléfono 407-836-5825 o al correo electrónico ricardo.daye@ocfl.net por lo menos siete (7) días antes del taller. Las personas que requieran alojamientos especiales bajo la Ley de Americanos con Discapacidades de 1990 (ADA) pueden solicitar asistencia contactando a la Coordinadora de la ADA Dianne Arnold al 407-836-7588 o dianne.arnold@ocfl.net por lo menos siete (7) días antes de la reunión.

Patisipasyon nou an mas se sa nèt, san nou pa gade sou ras, koulè, orijin nasyonal, laj, sèks, relijyon, revni, andikap, oubyen kondisyon familyal. Moun ki bezwen tradiksyon lang oswa sèvis entèprèt, ki ap disponib gratis, yo ta dwe kontakte Tit VI Orange County Koòdonatè / Diskriminasyon Ricardo Daye nan 407-836-5825 oswa ricardo.daye@ocfl.net omwen sèt (7) jou anvan atelye a. Moun ki gen nesesite tretman espesyal nan kad Rezolisyon 1990 (ADA) pou Ameriken ki Andikape kapab rive jwenn asistans si yo kontakte Kowòdonatè Konte ADA Dianne Arnold nan 407-836-7588 oswa dianne.arnold@ocfl.net omwen sèt (7) jou anvan reyinyon an.

**PUBLIC MEETING – PINE HILLS
ROAD PEDESTRIAN/BICYCLE
SAFETY STUDY**

Date: Thursday, June 8, 2017

Time: 6 - 8 p.m.

**Location: Maynard Evans High School
Cafeteria**

4949 Silver Star Road, Orlando, FL 32808

Orange County is conducting the Pine Hills Road Pedestrian/Bicycle Safety Study, which extends from SR 50 (Colonial Drive) to Bonnie Brae Circle. The purpose of the study is to develop viable solutions that improve pedestrian/bicycle safety by effectively integrating walking and bicycling with other modes of transportation along the corridor. As part of the data collection and public involvement components, the County conducted a community survey to find out how the community members are traveling within the corridor, what safety issues/challenges they face and what improvements they would like to see come out of this study. The results of the survey, which ran from March 1, 2017 to April 15, 2017, will be incorporated into the safety strategies and recommendations, as appropriate.

The County is hosting the first of two public meetings to engage the public to determine how best to improve pedestrian and bicyclist safety along Pine Hills Road. The meeting will begin with an open house at 6 p.m. At 6:30 p.m., there will be a formal presentation followed by a question-and-answer forum. Orange County encourages you to attend and provide feedback for the corridor to be considered in the resulting safety recommendations.

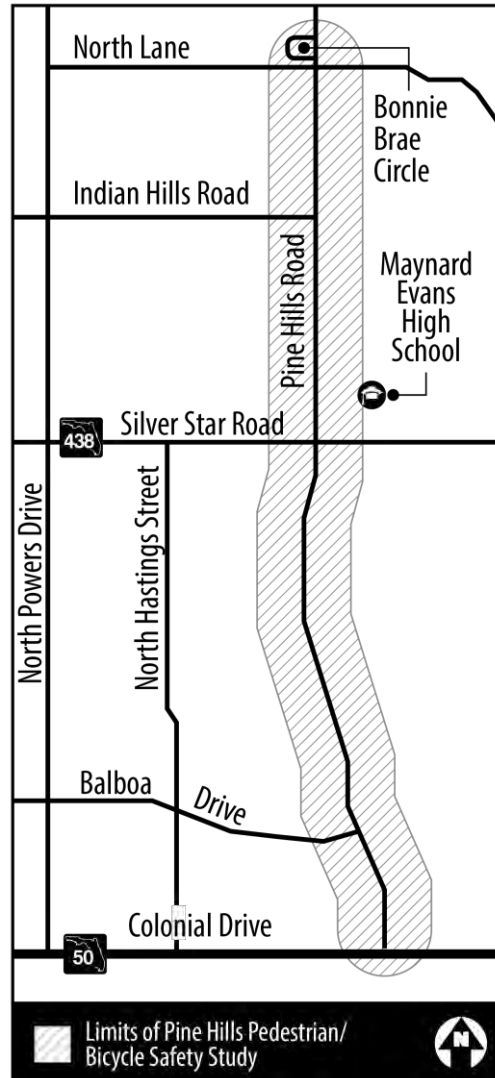
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If you have any questions regarding the study or public meeting, please contact: Anoch P. Whitfield, AICP, Orange County Project Manager, 4200 S. John Young Parkway, Orlando, Florida 32839
Phone: 407-836-0225
Email: anoch.whitfield@ocfl.net

Para Información en Español llame a:
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Roads and Drainage Division
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imel ba li nan adrès imel li: celestin.pierre@ocfl.net





FOR IMMEDIATE RELEASE

May 25, 2017

Contact: Doreen Overstreet, Public Information Officer
Telephone: 407-836-5301; Email: doreen.overstreet@ocfl.net

**Pine Hills Road Pedestrian/Bicycle Safety Study
*Community Meeting on June 8, 2017***

Orange County, Fla. – Orange County is conducting the Pine Hills Road Pedestrian/Bicycle Safety Study, which extends from SR 50 (Colonial Drive) to Bonnie Brae Circle. The purpose of this study is to evaluate barriers and challenges to safety and identify opportunities for implementing safety improvements along Pine Hills Road for people walking, bicycling, driving or taking the bus.

The County is hosting a community meeting to present the findings of the data collection and analysis, results of the community survey, potential access management, gateway and safety measures that are under consideration to obtain citizen input. Orange County encourages you to attend and provide feedback to be considered in the development of the recommendations. The community meeting has been scheduled for:

Thursday, June 8, 2017 at 6PM | Presentation at 6:30 PM
Maynard Evans High School (Cafeteria)
4949 Silver Star Road
Orlando, Florida 32808

The meeting will begin with an open house at 6 p.m. At 6:30 p.m., there will be a formal presentation followed by a questions-and-answers forum. Maps and displays depicting study information will be available for public review and comment. Study representatives will also be present to discuss the study and answer any questions.

Public participation is solicited without regard to race, color, national origin, age, sex, religion, income, disability or familial status. Persons who require language translation or interpretation services, which are provided at no cost, should contact Ricardo Daye, Orange County Title VI/Nondiscrimination Coordinator, at 407-836-5825 or via email at ricardo.daye@ocfl.net at least seven (7) days prior to the meeting. Persons requiring special accommodations under the Americans with Disabilities Act of 1990 (ADA) may request assistance with the County ADA Coordinator, Dianne Arnold, by phone at 407-836-7588 or by e-mail to dianne.arnold@ocfl.net at least seven (7) days prior to the meeting.

If you have any questions regarding the study or meeting, please visit the project website located at [Pine Hills Road Pedestrian/Bicycle Safety Study](#) or contact: Anoch Whitfield, Orange County Project Manager, Phone 407-836-0225, Email: anoch.whitfield@ocfl.net. Para información en Español, llame a Sra. Esther Fernandez-Cañizares, P.E., Orange County Public Works, Engineering Division, 4200 S. John Young Parkway, Orlando, FL 32839. Teléfono: 407-836-7982; Correo Electrónico: esther.fernandez@ocfl.net. Si w bezwen tradiksyon an Keyol: Celestin Pierre, Assistant Project Manager, Public Works Department, Roads and Drainage Division, 4200 South John Young Parkway, Orlando, Florida 32839. Telefón li se: 407-836-7873; imel ba li nan adrès imel li: celestin.pierre@ocfl.net.

###

About Orange County Government: Orange County Government strives to serve its citizens and guests with integrity, honesty, fairness and professionalism. Located in Central Florida, Orange County includes 13 municipalities and is home to world-famous theme parks, the nation's second-largest convention center, and a thriving life science research park. Seven elected members make up the Board of County Commissioners including the Mayor who is elected countywide. For more information, visit www.ocfl.net or go to the Orange County Facebook and Twitter pages.



Meeting Minutes

Date: June 8, 2017 at 6:00 PM
Subject: Pine Hills Road Pedestrian/Bicycle Safety Study – CBW #1
Author: Amy Dunham, WSP

On June 8, 2017, CBW #1 was held in the Maynard Evans High School Cafeteria, beginning at 6:00 pm. At approximately 6:30 pm, a presentation was made by County and consultant staff, followed by a Question-and-Answer session. The meeting ended around 7:15 pm.

There were a total of six display boards (two Access Management, two Typical Sections, one Safety Measure Recommendations, and one Gateway Features) along with roll plots, and community survey results on display.

A total of 35 community members not associated with the County or consultant staff were in attendance.

1. Meeting Introduction

- a. Introduction - Brian Sanders, Orange County
- b. Sunshine Statement - Vanessa Lewis, Aide to Commissioner Nelson
- c. Comments
 - i. Commissioner Victoria Siplin
 - ii. Commissioner Bryan Nelson
- d. Staff Introductions – Brian Sanders, Orange County
- e. Project Introduction – Anoch Whitfield, Orange County

2. PowerPoint Presentation (included at the end of minutes)

- a. Anoch Whitfield, Orange County, provided a presentation summarizing an overview of the Pine Hills Road Safety Study. The first 20 slides reviewed the Meeting Agenda, Study Overview, Study Schedule, Public Involvement, Community Survey, and Existing Conditions.
 - i. Ms. Whitfield clarified that this Pine Hills Road Pedestrian/Bicycle Safety Study is one of three projects that are part of the County's Walk-Ride-Thrive! Initiative. The other projects are the UCF Pedestrian and Bicycle Safety Study and the Oak Ridge Road Pedestrian & Bicycle Safety Study.
 - ii. Ms. Whitfield outlined the key focus areas of the Pine Hills Road Study including access management, lighting, pedestrian crossings, travel lane widths, landscaping, signage and way-finding, and Gateway options at the Pine Hills Road/Silver Star Road intersection.

- iii. Ms. Whitfield noted that as part of the study's public involvement activities, a Community Survey was conducted, receiving 161 responses and a variety of suggestions.
- iv. Ms. Whitfield summarized the findings of the Existing Conditions Report, including roadway features, pedestrian/bicycle facilities, traffic volumes, traffic speed, transit facilities, lighting, crash history, and observed pedestrian/bicycle traffic volumes.
- b. Greg Smith, Consultant Project Manager with WSP, presented Slides 21-33, which highlighted existing conditions and proposed access management options. He also presented Potential Safety Countermeasures, Potential Gateway Features, the Proposed Pine Hills Trail improvements, and Alternative Typical Sections for the study.
 - i. Mr. Smith summarized the benefits of medians and noted that medians can result in lower crash experience.
 - ii. Mr. Smith provided an overview of ten potential safety measures being evaluated as part of the study, including improved lighting, median treatments, flashing pedestrian signals, and other measures.
 - iii. Mr. Smith summarized the proposed gateway features at the Pine Hills Road/Silver Star road intersection and the realignment of the Pine Hills Phase II Trail to the east side of Pine Hills Road north of Silver Star Road.
 - iv. Mr. Smith presented the proposed typical sections along the Pine Hills Road corridor, highlighting the changes made from the existing typical sections.
- c. Anoch Whitfield, Orange County, presented Slides 34-37, which highlighted Public Outreach, the Study Schedule, and Study Contacts.
 - i. Ms. Whitfield summarized the study public outreach efforts to date, including the Community Survey as well as meetings with various stakeholders and agencies affected by the proposed improvements.
 - ii. Ms. Whitfield emphasized that County staff is available to meet with any individual or group to answer questions or provide study updates upon request and that the final approving authority is the Board of County Commissioners at a public hearing.

3. Question-and-Answer Session

- a. Question #1: This project examines lighting issues on Pine Hills Road from Colonial Drive to Silver Star Road, but what about lighting from Silver Star Road north to Clarcona-Ocoee Road?
 - i. Anoch Whitfield, Orange County: The County currently has lighting improvements programed for Pine Hills Road north of Silver Star Road.
- b. Question #2: Who will be responsible for maintaining the median?
 - i. Anoch Whitfield, Orange County: The County will typically maintain the medians consisting of sod and some trees. For enhanced landscaping, the County would generally look to local partners such as the PHNID to maintain and assume responsibility for the higher level of landscaping.
- c. Question #3: At the opening of Evans High School, there were banners placed along Pine Hills Road to identify the area and create a culture. Will any banners be placed along Pine Hills Road as part of this study?
 - i. Anoch Whitfield, Orange County: At the Pine Hills Road/Silver Star Road intersection, potential gateway improvements may include banners, sign tower, and low walls with the Pine Hills slogan etched into the concrete. The PHNID is concerned about increasing visual clutter in the area.

- d. Question #4: Why has it taken so long for there to be safety improvements made to Pine Hills Road, particularly the segment south of Silver Star Road? The area has several issues related to lighting, crosswalks, transit stops, and high crime.
 - i. Commissioner Nelson: The desire for safety improvements along Pine Hills Road highlights the necessity for this study, and its timeliness.
 - ii. Renzo Nastasi, Orange County: The County recognizes the safety issues with Pine Hills Road and is moving forward with this study.
- e. Question #5: Is there opportunity for painted bicycle lanes to be used along Pine Hills Road to improve visibility?
 - i. Renzo Nastasi, Orange County: At this point, the study is evaluating all alternatives. However, since painted bicycle lanes are relatively new (FDOT just began approving their use), there will be some additional consideration given to them. One concern would be the potential for increased maintenance costs.
- f. Question #6: At the Pine Hills Road/Balboa Drive intersection, there are safety issues that could be helped with a “No Right Turn on Red” sign.
 - i. Renzo Nastasi, Orange County: We will take this comment into consideration and look at this intersection in detail.
- g. Question #7: Why has the Pine Hills Trail Phase 2 been realigned to run along Pine Hills Road instead of the Duke Energy Easement?
 - i. Commissioner Nelson: The County encountered some difficulties with Duke Energy during the Phase 1 Trail construction, and Duke Energy was not amenable to using their right-of-way to continue the Phase 2 Trail.
 - ii. Brian Sanders, Orange County: The Coast-to-Coast Trail was recently moved from off-street to on-street, north of Silver Star Road. To make sure a connection can be made, it would be prudent to align the Pine Hills Trail Phase 2 also along Pine Hills Road. In addition, this alignment would save on property acquisition costs which would allow the project to be constructed earlier as well.
- h. Question #8: If a different alignment of the Pine Hills Trail Phase 2 is selected, could that speed up the process?
 - i. Brian Sanders, Orange County: Yes, if Pine Hills Trail Phase 2 is realigned to run along the east side of Pine Hills Road instead of an off-street location, Mr. Sanders indicated that time could be shaved off of the schedule to build the path by not having to acquire ROW.
- i. Question #9: Considering the recent Governor’s veto list, how does the potential veto action affect the funding for this project going forward?
 - i. Anoch Whitfield, Orange County: When the County funded this project, the grant was not included, so there is no financial impact to this project. Before any major construction can take place, the study recommendations need to be approved by the County Board. There may be minor improvements that can proceed, i.e. addressing needed sidewalk repair, removing overgrown trees/landscaping, repainting worn striping, putting in variable speed detection signs, etc., in coordination with Public Works. However, the education component can be implemented right away through the Mayor’s Walk, Ride, Thrive! Program.
- j. Question #10: Is there any concern for additional stormwater runoff issues on the east side of Pine Hills Road as a result of these improvements?
 - i. Anoch Whitfield, Orange County: In this case, the removal of the center two-way left turn lane and installation of the grass median would likely result in a net decrease in impervious surface.
- k. Question #11: What is the timeline of this study?
 - i. Anoch Whitfield, Orange County: This Study should be completed by December 2017/January 2018.

- I. Question #12: Resident concern over existing traffic lane markings at the Pine Hills Road/Silver Star Road intersection.
 - i. Brian Sanders, Orange County: We will talk with County Public Works to potentially repaint those lines.
- m. Question #13: When would the recommended improvements be constructed in the corridor?
 - i. Anoch Whitfield, Orange County: From the Board approval date, construction could occur as soon as a few years afterwards in a best case scenario, with all other things in place.
- n. Question #14: If flashing pedestrian crosswalk signs will be implemented along the corridor, will they use LED bulbs? If so, how many bulbs? Will there be multiple units?
 - i. Greg Smith, WSP: Yes, the crosswalk signs would use LED with side by side flashing units.
- o. Question #15: A grassy median is proposed here, but what about a hardscaped median to discourage pedestrians from continuing to cross and wait in the median?
 - i. Brian Sanders, Orange County: Ultimately, it comes down to cost including both installation costs as well as maintenance costs. One option the County is considering is to use pedestrian fencing coupled with landscaping in the median to focus pedestrians to designated crosswalks.
- p. Question #16: Could a roundabout be considered at the Pine Hills Road/Silver Star Road intersection?
 - i. Anoch Whitfield, Orange County: At the Pine Hills Road/Silver Star Road intersection, a roundabout is not being considered due to the number of travel lanes, traffic volumes, vehicle speeds, and the function of the roadway.
- q. Question #17: How much public input has already been completed?
 - i. Anoch Whitfield, Orange County: Thus far, our team has had two Study Agency Coordination Meetings with FDOT, LYNX, OCPS, Best Foot Forward, and PHNID. The Community Survey was developed in three languages (English, Spanish, and Haitian-Creole), was made available online and in hard copy for 1.5 months, and 161 responses were received.
 - ii. Public Involvement occurs throughout the course of the study, and County staff is available to meet with community members. Just tell the County when and where, and they will be there.
- r. Question #18: What does LPA stand for? How will FDOT be involved with this project?
 - i. Anoch Whitfield, Orange County: In this case, LPA stands for "Local Planning Agency." FDOT will be involved with respect to improvements/modifications to Silver Star Road and the Pine Hills Road/Silver Star Road intersection (not the remainder of the Pine Hills Road corridor as it is a County facility).
- s. Question #19: Have you considered having a series of smaller workshops instead of formal public meetings, where you can hear feedback from residents or business owners?
 - i. Anoch Whitfield, Orange County: What you see here tonight is not a "done deal". These recommendations have been developed from professional/technical staff evaluations based on a comprehensive review of the data (traffic, crash history, applicable standards/guidelines, transit ridership, observed pedestrian crossing behavior, and the survey results). The County will be considering the feedback from this meeting as the recommended improvements are refined. The public can send in comments and County staff is available to meet with residents. The project will not be finalized until the County Board action.
 - ii. Commissioner Nelson: The County requested the audience to have their friends review the proposed changes, take the survey, and offer comments.

- t. Question #20: When have other public meetings been held so far?
 - i. Anoch Whitfield, Orange County: This is the first public workshop. The Pine Hills Council and PHNID have been included in the Agency Coordination Meetings, and we could be available to present or provide additional updates to the NID and Council.
 - ii. Brian Sanders, Orange County: The County is here to listen to you - feel free to reach out to any of us to schedule a personal meeting.
- u. Question #21: If flashing pedestrian crosswalk signs were approved, how long would it take to have them implemented?
 - i. Brian Sanders, Orange County: Locations for the flashing pedestrian crosswalk signs would require further evaluation by Orange County Traffic Engineering. If the Board approves the study recommendations, and those recommendations include the flashing pedestrian crosswalk signs at mid-block locations, then there would be further evaluations and refinements conducted during the design phase.
- v. Question #22: Concern over the high traffic volumes on Pine Hills Road during not only the morning and evening peak hours, but also the mid-day traffic. Where is this traffic coming from?
 - i. Greg Smith, WSP: Since Pine Hills Road is a major arterial roadway, the combination of business and school traffic feeds the mid-day traffic.
- w. Question #23: Has your public involvement process included school- age children?
 - i. Anoch Whitfield, Orange County: Our team has reached out to Maynard Evans High School, based on guidance from the Pine Hills Community Center director. We also reached out to individuals who worked specifically with the youth such as Ms. Lisa Williams, who works with a group of young girls who bicycle regularly and the Urban League. The County can conduct presentations and workshops with young people in the area, but we need help in organizing and making contacts to push those forward.
- x. Question #24: One member of the audience challenged County staff to participate in weekly Saturday morning workshops.
 - i. Renzo Nastasi, Orange County. The County is available to participate in one Saturday workshop.

4. Additional Comments During Question and Answer Session

- a. Comment #1: Community member expressed support for off-street bicycle lanes within the Pine Hills Road corridor as opposed to on-street bicycle lanes, for ease of use and bicyclist comfort.

5. Conclusion

- a. Anoch Whitfield, Orange County, concluded the meeting and encouraged attendees to fill out the paper surveys in the front of the room or take the online survey.

6. One-on-One Discussions with Attendees Prior to or After the Presentation

- a. Two attendees asked about access management changes near Van Aken Drive and the presented changes were discussed including the need to make U-turns, provisions for flares or bulb-outs, and the corresponding potential right-of-way takes and impacts. Neither attendee expressed concern regarding these changes.
- b. One gentleman asked why the widened sidewalk/multi-use path was only proposed north of Silver Star Road. It was explained that the available sidewalk in this area could be widened within the existing right-of-way without encroaching into private property,

- whereas the typical roadway section south of Silver Star Road would not support this widening.
- c. The Silver Star Road intersection was discussed with one woman who was familiar with the heavy pedestrian usage during the afternoon Evans High School dismissal hours. It was mentioned that one of the proposed improvements is to reconstruct the curbs at this intersection resulting in wider sidewalk landings at the corners.
 - d. One gentleman was particularly interested in the proposed mid-block pedestrian crossings, and after reviewing the locations, he indicated he had a better understanding.
 - e. Spoke with Chad Lingenfelter, FDOT 5, regarding the potential for an all-red phase at Silver Star Road. Mr. Lingenfelter suggested that the County consider maintaining the same amount of green time for Silver Star Road, and taking the needed green time from Pine Hills Road to provide the all-red phase. He also suggested the County send the results of this analysis to the Department for further consideration.
 - f. One attendee was happy to hear about the proposed lighting improvements, and indicated that the road is generally dark in areas, particularly on the north end of the project.
 - g. Another attendee expressed concern about speeding traffic on Pine Hills Road. It was explained that one of the proposed improvements will be to add medians and reduce the lane widths which can have a traffic calming effect and may result in reduced speeds.
 - h. A few individuals asked if they could receive copies of the presentation boards. These materials will be posted to the County's Pine Hills Road Safety Study web site after the meeting.



Pine Hills Road Pedestrian/Bicycle Study Community Workshop #1 June 8, 2017

Thank you for attending tonight's Community Workshop for the Pine Hills Road Pedestrian/Bicycle Safety Study. Please sign in. Your email address will be used to provide updates on the study.

Name	Street Address	Phone	Email Address	How did You Hear about the Meeting?
SAM GALLAHER	33 W Grant St., Orl. 32806	407 864 6462	Samuel.gallagher@gmail.com	Facebook
E. André Robison	4500 Silver Star Rd. #118-193 32803	813 447 9114	andrerob25@yahoo.com	Orange Florida
Sheila Reavis	3118 Crooked Oak Ct 32808	407 233-9880	—	Friend.
MICHAEL STRYKORU	6001 SILVER STAR RD	917 539 5401		Pine Hills MID
Tony Lulu	29 E. Pine St. Orlando 32801	407-423-5055		
Chad Zingelbiller	719 S Woodland Blvd Deland	386 943 5336	chad.zingelbiller@dot.state.fl.us	Orange County
Shannon Brinson	7919 Western Willow Terrace Deland 32608	407-879-7419	brinson_shannon@yahoo.com	Facebook
Allison Rice		407-856-5621	Allison.Rice@ocfl.net	
Patricia Rumph			prumph7@gmail.com	PHCC
Jacqoui Chandler		407-907-8533	c.jacqoui@gmail.com	Event



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Name	Street Address	Phone	Email Address	How did You Hear about the Meeting?
Jeff Reine	499 N Garland Ave ^{Orlando, FL 32801}	407.2546046	jreine@golynx.com	invite - county
KENNETH DWYER	4601 MBLARES ST 32808	407-299-6260	KBNCHRIS02@MSN.COM	PITSNP MBBTH
MICHELE RUTH	12012 MURRAY RD CLERMONT FL 34711	352-394-0430	ruthfamily@yahoo.com	internet
Alex Shumraevsky	6408 Yennings Rd 32818	407-254-9107	alexander.shumraevsky@aol.net	we hosted meetings
Willveda Yarborough	5200 Van Aken Dr. 32808	407 295 2893	wwy@aol.com	mail flyer
Cedric Muffett	706 Poinciana	407 484 - 0708	cederico@psycho.com	word
MIGUEL WILSON	250 S. ORANGE AVE SUITE 200 ORLANDO, FL 32801	407-4815672 318	MWILSON@METROPLANORLANDO.ORG	work
Jody Mahonik	1440 Portline Ct 32808	407 297 9746	jodymahonik@aol.com	cc
Rose Nancy Joseph	BCC DG			
Kea Overfrere	901 Fernand Dr.	(407) 836-6207	Kea.chrifre@aol.net	work
CHRIS WILSON	3118 CROOKED OAK G	407-896-6600	TECH@PGXEL.COM	EMAIL
Justin Fortune	6520 Moore St.	407-482-0460	jai.fortune@gmail.com	FACEBOOK



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Name	Street Address	Phone	Email Address	How did You Hear about the Meeting?
CHRISTINE J DWYER	4801 MALABRKEY ST 32809	407-538-6102	chriscd@cfl.rr.com	safe neighborhoods
M. Perez	201 S. Rosalind Ave 4 th Fl	407-836-7300		
Heather Strong	29 E Pine St Orlando 32801	407 84238055	htecadmin@htec-fl.com	involvement
Paul H Knox,	29 E. Pine St, Orl, 32801	407-423-8055	Paul @ LTEC-FL.com	involvement
Vanessa Lewis	201 S. Rosalind Ave.	407-836-5850	Vanessa.Lewis@cfl.net	
Cathy Evansco	4200 S John Young Parkway 32839	407-836-8034	Cathy.Evansco@cfl.net	My Boss
GERALD MARKS	4200 S. JYP 32839	407-836-0231	GERALD.MARKSJR@cfl.net	
Sophia Glover		407967 9834	Sophiaglover51@gmail.com	Involvement
CELESTIN PIERRE	1229 VIZ CAYA LAKE R	954-839-0868	CELESTIN.PIERRE@OCFL.NET	COUNTY EMPLOYEE.
Sarah Elbadri	335 N Magnolia Ave #1509 Orlando FL 32801	850 316 1167	sarahelbadri@gmail.com	WSP
Judith Lisensby	5201 Doolan Ct. Orlando, FL 32808	407-297-6420	J.Lisensby@cfl.rr.com	MAIL
A. KATH LISANSBY	5201 DOOLAN CT. ORLANDO FL 32808	407-297-6420	KATHLISANSBY@cfl.rr.com	MAIL
PINKIE FREEMAN	1308 Katy Mill Ct 32816	407 898-1273	pfreem93948@aol.com	
Michelle Owens	901 Ferrand Dr 32808	407-836-6266	michelle.owens@cfl.net	email



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Thank you for attending tonight's Community Workshop for the Pine Hills Road Pedestrian/Bicycle Safety Study. Please sign in. Your email address will be used to provide updates on the study.

Name	Street Address	Phone	Email Address	How did You Hear about the Meeting?
Chelsea Young	1240 Saint James Rd Orlando, FL 32808	954-514-7483	helpnowchelsea@gmail.com	Facebook
PEACE on the Streets	1007 Lake Biscayne Way	321 438 8312	PEACE on the streets, Gmb	
Mike Armstrong	5101 Clarion Oaks Dr	407-925-7299	gomike04@hotmail.com	Pine Hills M.F.D.



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Name	Street Address	Phone	Email Address	How did You Hear about the Meeting?
Kardalia Bryan	6017 Ambassador Dr.	407-283-3875	Dalia.Diamond@aol.com	organization
Mary Wigmore	1628 Pontiac Ct.	407-295-7374		
Pamela Newton		407-445-5313	Pamela.Newton@myfloridahouse.gov	Email
COMMISSIONER VICTORIA SIDLIN	" "	407-836-5860	" "	
GARY SIDLIN	1320 N PINE HILLS ROAD	407-802-2400	-	-
Esther Fernandez	1208			
Roberto Hernandez		407-402-0868		
H. RICHARD RUTH	ORLANDO PD 1250 W South ST	407-246-2342	richard.ruth@cityoforlando.net	internet



Comment Form

Pine Hills Pedestrian/Bicycle Safety Study

Community Workshop #1

June 8, 2017 from 6:00 – 8:00 pm

Maynard Evans High School Cafeteria

Please select all that apply to you as it relates to the study area.

- Live within the study area.
- Work within the study area.
- Own/rent property or business within the study area.
- Travel through the study area
- Travel within the study area
- Improvements along the corridor do not affect me.

Your comments are important!

Please use the space below to express your input about this project.

- * EXTREME ENHANCED STREET LIGHTING FROM SILVER STAR RD TO CLARONA - DECAF RD.
- X TO MANY PEOPLE HAVE TO WALK ALONG THIS ROADWAY ON SIDEWALKS, WHICH LIVE IN HOUSES & APARTMENTS, WHICH WALK TO STORES SUCH AS WINDY DIXIE, 7-11 STORE, WILLMAY ETC. ALONG PINE HILLS RD.
- * INCREASE POLICE PATROLS FOR A MORE EFFECTIVE "COMMUNITY POLICING" INSTEAD OF CONSTANTLY RESPONDING TO "SERVICE CALLS", AND CHASING DOWN "DRUG DEALER SUSPECT"
- * ADDITIONAL & ENHANCED POLICE OFFICERS - OPD & OSO UNITS TO CREATE A "HIGHER VISIBILITY" AND POSSIBLY ESTABLISH A "COMMUNITY POLICING UNIT" TO PATROL BUSINESSES, ROADWAYS & RESIDENTIAL AREAS.
- * ADDING ENHANCEMENTS & ENHANCED PEDESTRIAN TRAFFIC WITHOUT PROPER "PROTECTION" ONLY SERVES TO INCREASE DANGEROUS CONDITIONS.

Name: HUGH KEITH LISENSY
 Company: _____
 Address: 5901 DOOLAN CT.
 City/State/Zip: ORLANDO FL 32808
 Email: KEITHLISANSBY@CFL.PR.COM
 Phone: 407-295-6400

Please place this form in the "Comment" box or mail before June 15 to:
 Anoch P. Whitfield, AICP
 Orange County Project Manager
 4200 S. John Young Parkway
 Orlando, Florida 32839

- * "BICYCLE SAFETY PROGRAMS" IN ALL SCHOOLS SHOULD BE IMMEDIATELY INSTITUTED.
- * SCHOOL SAFETY PROGRAMS SHOULD BE CREATED FOR WILLING STUDENTS & SPECIALLY TRAINED "RESOURCE OFFICERS" CAN CONDUCT PROGRAM & OVERSEE PROGRESS



Comment Form

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- * MANY PEOPLE WALK THIS ROADWAY ON SIDE WALKS THAT LIVE IN APARTMENTS AND TRAVEL TO STORES (WITH DIXIE - 7-11 & OTHER STORES ALONG PINE HILLS RD.
- * INCREASED POLICE PATROLS TO CREATE A "HIGH VISIBILITY" EFFECT & MONITOR ACTIVITY IN STUDY AREA.
- POLICE - BOTH OPD & OCSO UNITS ARE CONSTANTLY "RESPONDING" TO SERVICE CALLS AND CANNOT "PATROL AREA" EFFECTIVELY.
- * MORE POLICE - OCSO & OPD OFFICERS. A COMMUNITY PATROL UNIT SHOULD BE CREATED & ESTABLISHED TO ASSIST RESIDENTS & WORK TO REDUCE CRIME INCIDENTS
- * HIGHER "VISIBILITY" OF POLICE UNITS ON PATROL -

Name: JUDITH LISENBY
 Company: _____
 Address: 5201 BOULAN CT.
 City/State/Zip: ORLANDO FL 32808
 Email: JLISENBY@CFL.RR.COM
 Phone: 407-297-6420

Please place this form in the "Comment" box or mail before June 15 to:

Anoch P. Whitfield, AICP
 Orange County Project Manager
 4200 S. John Young Parkway
 Orlando, Florida 32839



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- Improvements along the corridor do not affect me.

Your comments are important!

Please use the space below to express your input about this project.

We need this project to include from Silver Star to Claracona on Silver Star Road. Better lighting. Fix our sidewalks. We need to keep our crosswalks and open put more in for our safety. Clean up and more beautification.

Name: Loudalia Bryan
 Company: _____
 Address: 6017 Ambassador Dr.
 City/State/Zip: Orlando FL 32808
 Email: Dalia.Diamond@ocfl.com
 Phone: 407-283-3875

Please place this form in the "Comment" box or mail before June 15 to:

Anoch P. Whitfield, AICP
 Orange County Project Manager
 4200 S. John Young Parkway
 Orlando, Florida 32839



Comment Form

Pine Hills Pedestrian/Bicycle Safety Study

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Your comments are important!

Please use the space below to express your input about this project.

I think this Meeting is one sided.
 All of Pine Hills Rd Needs work not just part of it.
 You have families walk those streets and its A High Crime area. There is more meaning to people lives than beautification.
 From Indian Hill down to Clercona Ocaez Rd. Needs Better lighting and Side walks. I would like to see the needs of the Families that live in the area addressed.
 If you Really want to help fix whats truly needs to be fixed and stop making excuse

Name: Sophia Glover
 Company: Organize Florida
 Address: 134 N. Colonial DR
 City/State/Zip: Orlando FL
 Email: Sophia@organizeflorida.org
 Phone: 321 800 2095

Please place this form in the "Comment" box or mail before June 15 to:
 Anoch P. Whitfield, AICP
 Orange County Project Manager
 4200 S. John Young Parkway
 Orlando, Florida 32839



Comment Form

Pine Hills Pedestrian/Bicycle Safety Study

Community Workshop #1

June 8, 2017 from 6:00 – 8:00 pm

Maynard Evans High School Cafeteria

Please select all that apply to you as it relates to the study area.

- Live within the study area.
- Work within the study area.
- Own/rent property or business within the study area.
- Travel through the study area
- Travel within the study area
- Improvements along the corridor do not affect me.

Your comments are important!

Please use the space below to express your input about this project.

School crossing guards are kind in the area.
Traffic lights that meet the
safety protocol for late night traffic
is also requested.
I am a long term resident in this
community.

Name: Adam Scott Green
Company: _____
Address: Green
City/State/Zip: _____
Email: adamscottgreen@gmail.com
Phone: _____

Please place this form in the "Comment" box or mail before June 15 to:

Anoch P. Whitfield, AICP
Orange County Project Manager
4200 S. John Young Parkway
Orlando, Florida 32839



**Pine Hills Road Pedestrian/Bicycle Safety Study
Senior Staff Meeting
August 15, 2017**

Date: August 15, 2017 at 1:30PM

Subject: Pine Hills Road Pedestrian/Bicycle Safety Study – Alternatives Review Meeting

Attendees: Jerald Marks, Jr. (Orange County), Ian Phyers (Orange County), Brian Sandars (Orange County), Joe (Orange County), Renzo Natasi (Orange County), Mark Massaro (Orange County), Christy L (Orange County), Christina (Orange County), Greg Smith (WSP), Daniel Kins (WSP)

Author: Daniel Kins (WSP)

Meeting Minutes

Before going through the Agenda items, a discussion between WSP and the County ensued regarding the project at-large.

Access management was the first topic of the meeting. WSP provided design recommendations pertaining to concerns voiced in previous meetings. The first concern was the continuous median length from Elinore Dr. to Ferdinand Dr. WSP recommended a full median opening be constructed in between the two roads to provide an intermediate point for travelers to make a U-turn. The second recommendation made by WSP was to construct a directional median opening from northbound Pine Hills Road to Via Maior. The last recommendation that WSP made was to not create a median opening connecting northbound Pine Hills Road to Silver Hill Shopping Center.

Three additional midblock crosswalks were also evaluated by WSP. A crosswalk was deemed necessary just at Fir Drive due to high pedestrian crossing volumes. It was determined that adding a midblock crosswalk between Silver Star Road and Belco Drive would cause more problems than alleviate them. WSP recommended leaving that area without a midblock crosswalk. It was recommended that the midblock crosswalk south of Ferdinand be moved so the crosswalk won't be in the auxiliary lane. There was some discussion as to the use of RFB's vs. HAWK's at the midblock crosswalks. It was determined that the decision did not have to be made now and it could be pushed to a later stage in the design process. There was also some discussion as to how to dissuade pedestrians from crossing Pine Hills Road between Silver Star Road and Belco Drive. Possible deterrents included pedestrian fencing, additional landscaping, a breakaway barrier, high tension cable barrier and a concrete barrier wall with crash cushions. In the end, WSP felt that none of those options would successfully deter enough pedestrians from crossing in that location so it recommended that none of those countermeasures be implemented in that location.

The only comment that the county had during the typical section review was about the pavement markings. WSP answered by stating that the entire road would be milled and resurfaced with new pavement markings being placed.

During the potential safety measure review questions about the light pole locations were brought up, it was determined that the current light pole placement in the back of the sidewalk would be sufficient. WSP recommended that the lighting be upgraded to LED lights and to decrease the spacing between light poles to meet current FDOT design standards. WSP is under the impression that the lighting improvements along the corridor are already being worked on. Orange County would not be responsible for that initial cost, only the

normal monthly fee that is required by the power company, Duke. The county also asked about the possibility of upgrading all the LYNX bus stations to the latest shelter design including lighting in the bus shelter.

Orange County brought up concerns about the funding for maintenance. If PHNID can come up with the required maintenance budget the county would be willing to take responsibility for the original costs of constructing the Gateway improvements at the intersection of Pine Hills Road and Silver Star Road along with county standard median landscaping. WSP has talked with Michelle Owens of the PHNID. As of the meeting she had \$25,000 of the \$40,000 required for annual maintenance and felt confident that the rest of the money would be able to be budgeted.

WSP discussed briefly an overview of cost estimates and benefit/cost ratios as displayed on the Safety Matrix board. WSP explained the methodology in proposing safety recommendations in Option #1 (lighting) and Option #2 (south of Silver Star Road) and Option #3 (north on Silver Star Road) as it relates to the benefit/cost ratio.

The County inquired on status of PHNID maintenance expenditures on Silver Star Road and available annual budget for maintenance of proposed safety improvements along Pine Hills Road. WSP had been in touch with PHNID and updated the County on the figures. Michelle Owens, PHNID, indicated that PHNID had budgeted \$4,000 for Silver Star Road and had an addition annual budget of \$25,000, potentially to be used on Pine Hills Road improvements.

WSP discussed each Agenda item, mentioning it briefly before moving on unless the item required further comment or discussion.

1. Access Management

- a. South and north segments
 - i. Reduce conflict points with raised curb median
- b. South Segment
 - i. Convert to Class 7 with raised medians
 - ii. Substantial driveway and small businesses
 - iii. Minimum signal spacing = 1,320'
 - iv. Min Full Openings = 660', Min Directional Openings = 330'
 - v. Request to Provide Opening Between Elinor Drive and Ferdinand
 - Recommended adding full median opening between Elinore Dr. and Ferdinand Dr.
- c. North Segment
 - i. Convert to Class 5 with Raised Median
 - ii. Fewer Driveways and Small Businesses
 - iii. Min Signal Spacing = 1,320'
 - iv. Min Full Openings = 1,320', Min Directional Openings = 660'
 - v. Providing Directional Opening at Via Maior
 - Recommended adding a directional median opening at Via Maior for NB Pine Hills Rd. turning movements.
 - vi. Request to Provide Median Opening to Silver Pines Shopping Center
 - Median opening to Silver Pines Shopping center not recommended due to loss in queuing length for turning movements onto Silver Star Road and Belco Drive.

2. Typical Sections

- a. South Segment
 - i. Provide 23' Raised Curbed Median with County Standard Landscaping
 - All proposed work to be done within existing curbed section.
 - ii. Narrow Traffic Lanes to 11' as Traffic Calming Measure
 - Mill and resurface before placing final pavement markings.
 - iii. Increase Bicycle Widths to 7'
 - iv. Provides Connection to Pine Hills Trail Via Dolores Drive Spur
 - v. Option – Add Median Landscaping
 - vi. Option – Add Median Fencing
- b. North Segment
 - i. Provide 16' Raised Curbed Median with County Standard Landscaping
 - All proposed work to be done within existing curbed section.
 - ii. Narrow Traffic Lanes to 11' as Traffic Calming Measure
 - Mill and resurface before placing final pavement markings.
 - iii. Widen East Sidewalk to Accommodate Pine Hills Trail, Phase 2, future LYNX SuperStop, and Connection to Florida's Coast to Coast Trail
 - iv. Option – Add Median Landscaping
 - v. Option – Add Median Fencing

3. Potential Safety Measures and Improvements

- a. Improve street lighting
 - i. Improve Lighting to LED lighting.
 - ii. Decrease spacing between light poles to meet standards.
 - iii. Lighting from Silver Star Road to Bonnie Brae Circle being addressed under another county contract.

- iv. possible power line conflicts were located.
- b. Replace center travel lane with raised curb median and county landscaping
- c. Reduce travel lanes to 11 feet wide
 - i. Mill and resurface before placing final pavement markings.
- d. Improve intersection characteristics at Silver Star Road
- e. Relocate existing LYNX bus stops
 - i. Include latest bus shelter design that includes lighting in the bus shelter.
- f. Widen existing sidewalk north of Silver Star Road to provide 12-foot multi-use path
- g. Use flashing signals at designated crosswalks
 - i. RRFB's or HAWK's, no decision has been made yet.
- h. Provide pedestrian educational programs
 - i. Target group for educating is the school children.

4. Pedestrian Crossing

- a. Maintain all existing pedestrian crossings.
- b. Additional crosswalk justified north of Fir Drive.
 - i. Crosswalk approved.
- c. Additional crosswalk justified between Silver Star Road and Belco Drive
 - i. Additional crosswalk deemed a hazard by Orange County, Crosswalk was not approved.
 - ii. To deter pedestrians from crossing between Silver Star Road and Belco Drive several additions to the median were discussed. Pedestrian fencing, additional landscaping, a breakaway barrier, high tension cable barrier and a concrete barrier wall with crash cushions. It was agreed that none of the countermeasures would improve the safety of the pedestrians while improving aesthetics of the corridor.

5. Rectangular Rapid Flashing Beacons (RRFB), HAWK Signals

- a. Study Justified the Use of Either Device at Figwood Lane, Fir Drive, and at Mid-Block Between Silver Star Road and Belco Drive
 - i. While the importance of some sort of signal for pedestrian crosswalks was deemed necessary, a consensus of which one could not be reached.

6. Potential Gateway Features

- a. Total Estimated Gateway Costs (Not Including New Signals) = \$587K
- b. Tier 1
 - i. Enhanced crosswalk markings and curb reconstruction (Est construction cost \$189k)
 - ii. Landscaping (Construction cost \$89k)
- c. Tier 2
 - i. Sign tower, low wall, wayfinding signage (Est construction cost \$309k)
- d. Tier 3
 - i. Mast arm signals (Est construction cost \$375k)
- e. Maintenance Costs
 - i. PHNID currently spends \$2,000 annually for Silver Star Road maintenance (budget is \$4,000)
 - ii. PHNID indicates approximately \$25k is available for annual maintenance, though they believe more funding may be available from the county
 - Orange county is willing to cover the initial cost of construction for all tiers of improvements if PHNID is able to cover all of the maintenance costs associated with the special improvements.

7. Study Recommendations and Discussion

- a. Build option #1
 - i. Upgrade lighting Colonial Drive to Silver Star Road
- b. Build option #2
 - i. Colonial Drive to Silver Star Road improvements
- c. Build option #3
 - i. Silver Star Road to Bonnie Brae Circle improvements
- d. Orange county was interested in pursuing all three build options at once, upgrading the corridor from Colonial Drive to Bonnie Brae Circle.

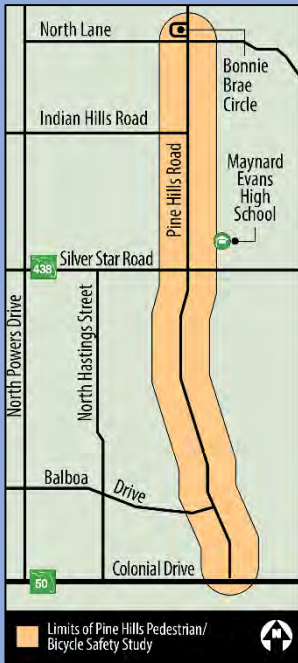
8. Upcoming Meetings

- a. CBW #2 Community Meeting: Thursday, August 24, 2017, from 6pm to 8pm at Evans High School (Cafeteria)
- b. LPA Workshop: September 21, 2017
- c. LPA Hearing: October 19, 2017
- d. BCC Hearing: December 12, 2017

Action Items:

- Make discussed changes to Access Management boards
- Change “Options” to “Phase” on Recommended Safety Improvement board
- Change all references of “median fencing” to “pedestrian channeling devices”
- In the PowerPoint presentation:
 - Highlight changes that came from previous public meeting
 - On the access management slide, replace whole access management board with a blown-up section.
 - Add all red signal phase on off peak hours
 - Make pictures on Proposed Safety Measures board larger, stager if necessary.
 - Include lighting, Gateway improvements and signal mast arms in Phase I on Recommended Safety Improvement Initiatives board.

Please Join Us at
Community Workshop #2
 to Provide Your Input on
 Recommended Safety
Measures!



Pine Hills Road

**Pedestrian/Bicycle Safety Study
 Community Workshop #2**

**Peaton/Bicicleta Seguridad Estudio
 Comunitario Taller #2**

**Etid sou Sekirite Pyeton/Bisiklèt Atelye
 Kominotè #2**

Project website:

<http://ocfl.net/TrafficTransportation/PineHillsPedestrianBicycleSafetyStudy.aspx>



Orange County Community, Environmental
 and Development Services Department
 Transportation Planning Division
 4200 S. John Young Parkway
 Orlando, FL 32839

**You're Invited!
 Estás Invitado!
 W Ap Envite!**

Community Workshop #2
 Thursday, August 24, 2017
 6 – 8 p.m.

Maynard Evans High School Cafeteria
 4949 Silver Star Road
 Orlando, FL 32808

On behalf of Orange County Mayor Teresa Jacobs, District 2 Commissioner Bryan Nelson, and District 6 Commissioner Victoria P. Siplin, Orange County is pleased to invite you to attend Community Workshop #2 for the **Pine Hills Road Pedestrian/Bicycle Safety Study**. The second workshop is being held to present the recommended Safety Improvement Plan Alternatives and Benefit/Cost evaluation along Pine Hills Road to the community for public input based on data and feedback received at Community Workshop #1.

En nombre de la alcaldesa del Condado de Orange, Teresa Jacobs, Bryan Nelson, Comisionado del Distrito 2, y la Comisionada del Distrito 6, Victoria P. Siplin, Condado de Orange, le invitamos a asistir al Taller Comunitario # 2 para el **Estudio de Seguridad de Peatones / Bicicletas**. El segundo taller se llevará a cabo para presentar el Plan de Mejora de Seguridad recomendado y la evaluación de Beneficios / Costos a lo largo de Pine Hills Road a la comunidad para el aporte público basado en los datos y comentarios recibidos en el Taller Comunitario # 1.

Nan non Majistra Konte Orange Teresa Jacobs, Distrik 2 Komisyonè Bryan Nelson, ak Distri 6 Komisyonè Victoria P. Siplin, Orange County kontan envite ou ale nan Atelye Kominote # 2 pou Pyeton nan Pine Hills Road / Bisiklèt Sekirite Etid. se atelye nan dezyèm te kenbe yo prezante rekòmmande Sekirite Amelyorasyon Plan Alternatives a ak Benefis / evalyasyon Pri ansanm Pine Hills Road nan kominote a pou D 'piblik ki baze sou done ak remak resevwa nan Atelye Kominote 1 #.

We Need Your Input on How to Improve Pedestrian and Bicyclist Safety On Pine Hills Road!

Based on feedback from Community Workshop #1 and further refinement of the potential safety countermeasures, draft recommendations have been developed to improve pedestrian and bicycle safety along Pine Hills Road. A second workshop is being held to present the recommended Safety Improvement Plan Alternatives and Benefit/Cost evaluation along Pine Hills Road to the community for public input based on data and feedback received at Community Workshop #1. The County encourages you to attend the community meeting and provide your comments.

Sobre la base de la retroalimentación del Taller Comunitario # 1 y el perfeccionamiento de las posibles contramedidas de seguridad, se han desarrollado recomendaciones preliminares para mejorar la seguridad de peatones y bicicletas a lo largo de Pine Hills Road. Se llevará a cabo un segundo taller para presentar el Plan de Mejora de Seguridad recomendado, Alternativas y Evaluación de Beneficios / Costos a lo largo de Pine Hills Road a la comunidad para el aporte del público basado en los datos y comentarios recibidos en el Taller Comunitario # 1. El Condado le anima a asistir a la reunión de la comunidad y proporcionar sus comentarios.

Baze sou ki Feedback soti nan Atelye Kominote # 1 ak plis revizyon nan mezi yo sekirite potansyèl, rekòmandasyon bouyon te devlope yo amelyore pyeton ak sekirite bisiklèt ansanm Pine Hills Road. Yon atelye dezyèm te kenbe yo prezante rekòmande Sekirite Amelyorasyon Plan Alternatives a ak Benefis / evalyasyon Pri ansanm Pine Hills Road nan kominote a pou D 'piblik ki baze sou done ak remak resevwa nan Atelye Kominote 1 #. Konte an ankouraje w patisipe nan reyinyon an kominote epi yo bay kòmantè ou.

Contact Us Contácteno Kontakte Nou

Jerald Marks, Jr. – Project Manager

Email: gerald.marksjr@ocfl.net, Phone: 407-836-0231

Greg Smith, P.E. – Consultant Project Manager

Email: greg.smith@wsp.com, Phone: 407-587-7801

Esther M. Fernández Cañizares – Engineer II

Email: esther.fernandez@ocfl.net, Phone: 407-836-7982

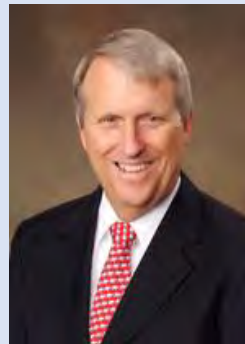
Celestin Pierre – Assistant Project Manager

Email: celestin.pierre@ocfl.net, Phone: 407-836-7873

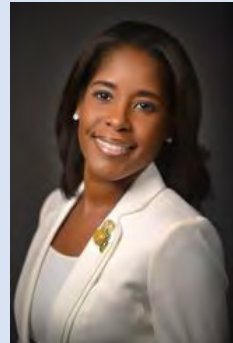
Project Website - <http://www.ocfl.net/TrafficTransportation/PineHillsPedestrianBicycleSafetyStudy.aspx>



Honorable Teresa Jacobs
Orange County Mayor



Bryan Nelson
District 2 Commissioner



Victoria P. Siplin
District 6 Commissioner

Additional Information Información Adicional Lòt Enfòmasyon

Public participation is solicited without regard to race, color, national origin, age, sex, religion, income, disability or familial status. Persons who require language translation or interpretation services, which are provided at no cost, should contact Orange County Title VI/ Nondiscrimination Coordinator Ricardo Daye at 407-836-5825 or ricardo.daye@ocfl.net at least seven (7) days prior to the workshop. Persons requiring special accommodations under the Americans with Disabilities Act of 1990 (ADA) may request assistance by contacting County ADA Coordinator Dianne Arnold at 407-836-7588 or dianne.arnold@ocfl.net at least seven (7) days prior to the meeting.

La participación pública se solicita sin tener en cuenta raza, color, nacionalidad de origen, edad, sexo, religión, ingresos, discapacidad o estado familiar. Las personas que requieran servicios de traducción o interpretación de idiomas; los cuales son proveídos sin costo alguno, deberían contactar en Orange County al Coordinador para el "Title VI/ Nondiscrimination", Coordinador de imparcialidad o no discriminación del Condado Orange Ricardo Daye al teléfono 407-836-5825 o al correo electrónico ricardo.daye@ocfl.net por lo menos siete (7) días antes del taller. Las personas que requieran alojamientos especiales bajo la Ley de Americanos con Discapacidades de 1990 (ADA) pueden solicitar asistencia contactando a la Coordinadora de la ADA Dianne Arnold al 407-836-7588 o dianne.arnold@ocfl.net por lo menos siete (7) días antes de la reunión.

Patisipasyon nou an mas se sa nèt, san nou pa gade sou ras, koulè, orijin nasyonal, laj, sèks, relijyon, revni, andikap, oubyen kondisyon famiyal. Moun ki bezwen tradiksyon lang oswa sèvis entèprèt, ki ap disponib gratis, yo ta dwe kontakte Tit VI Orange County Koòdonatè / Diskriminasyon Ricardo Daye nan 407-836-5825 oswa ricardo.daye@ocfl.net omwen sèt (7) jou anvan atelye a. Moun ki gen nesesite tretman espesyal nan kad Rezolisyon 1990 (ADA) pou Ameriken ki Andikape kapab rive jwenn asistans si yo kontakte Kowòdonatè Konte ADA Dianne Arnold nan 407-836-7588 oswa dianne.arnold@ocfl.net omwen sèt (7) jou anvan reyinyon an.

**PUBLIC MEETING – PINE HILLS
ROAD PEDESTRIAN/BICYCLE
SAFETY STUDY**

Date: Thursday, August 24, 2017

Time: 6-8 p.m.

**Location: Maynard Evans High School Cafeteria
4949 Silver Star Road, Orlando, FL 32808**

Orange County is conducting the Pine Hills Road Pedestrian/Bicycle Safety Study, which extends from SR 50 (Colonial Drive) to Bonnie Brae Circle. The study seeks to develop viable solutions that improve pedestrian/bicycle safety along the Pine Hills Road corridor.

The County is hosting the second of two public meetings to obtain community input on recommended safety improvement alternatives along the Pine Hills Road Corridor. Orange County encourages you to attend and provide feedback on these alternatives.

The meeting will begin with an open house at 6 p.m. At 6:30 p.m., there will be a formal presentation followed by a question-and-answer forum.

For more information on the project, please visit the project website at <http://ocfl.net/TrafficTransportation/PineHills/PedestrianBicycleSafetyStudy.aspx>.

Public participation is solicited without regard to race, color, national origin, age, sex, religion, income, disability or family status. Persons who require language translation or interpretive services, which are provided at no cost, should contact Ricardo Daye, Orange County Title VI/ Nondiscrimination Coordinator, at 407-836-5825 or by email at ricardo.daye@ocfl.net at least seven (7) days prior to the meeting.

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If you have any questions regarding the study or public meeting, please contact:

Jerald Marks, Jr., Project Manager
4200 South John Young Parkway
Orlando, Florida 32839
Phone: 407-836-0231
Email: gerald.marksjr@ocfl.net

Para Información en Español llame a:
Sra. Esther Fernández-Cañizares, Engineer II
Public Works Department
Engineering Division
4200 South John Young Parkway

Orlando, Florida 32839

Teléfono: 407-836-7982

Correo electrónico: esther.fernandez@ocfl.net

Pou plis enfòmasyon an kreyòl, tanpri kontakte:

Celestin Pierre, Assistant Project Manager

Public Works Department

Roads and Drainage Division

4200 South John Young Parkway

Orlando, Florida 32839

teléfono li se: 407-836-7873

imel ba li nan adrès imel li: celestin.pierre@ocfl.net



_____ August 24, 2017

Doreen Overstreet, Public Information Officer
407-836-5301; doreen.overstreet@ocfl.net

Orange County is hosting the second of two public meetings to obtain community input on pedestrian/bicycle safety along Pine Hills Road.

Orange County – Orange County is conducting the Pine Hills Road Pedestrian/Bicycle Safety Study, which extends from SR 50 (Colonial Drive) to Bonnie Brae Circle. The study seeks to develop viable solutions that improve pedestrian/bicycle safety along the corridor.

The County is hosting the second of two public meetings to obtain community input on recommended safety improvement alternatives along the Pine Hills Road Corridor. Orange County encourages you to attend and provide feedback on these alternatives.

The meeting will be at 6 p.m. on Thursday, August 24 at the Maynard Evans High School Cafeteria located at 4949 Silver Star Road in Orlando, Florida 32808. The meeting ends at 8 p.m.

For more information on the project, please visit the project website at <http://ocfl.net/TrafficTransportation/PineHillsPedestrianBicycleSafetyStudy.aspx>.

Public participation is solicited without regard to race, color, national origin, age, sex, religion, disability or family status. Persons wishing to express their concerns relative to Orange County compliance with Title VI may do so by contacting Ricardo Daye, Orange County Title VI Coordinator by phone at 407-836-5825 or via email at ricardo.daye@ocfl.net.

Persons with disabilities who require special accommodations under the Americans with Disabilities Act of 1990 (ADA) or persons who require translation services (free of charge) should contact County ADA Coordination Dianne Arnold at 407-836-7588 or via email at dianne.arnold@ocfl.net at least seven (7) days prior to the meeting. If you are hearing or speech impaired, please contact us by using the Florida Relay Service, 1-800-955-8771 (TDD) or 1-800-955-8770 (Voice).

For media inquiries, contact Jerald Marks, Jr. Project Manager, 4200 S. John Young Parkway, Orlando, FL 32839, by phone at 407-836-0231 or via email at gerald.marksjr@ocfl.net.

Para información en Español, llame a Sra. Esther Fernandez-Cañizares, Orange County Public Works, Engineering Division, 4200 S. John Young Parkway, Orlando, FL 32839. Teléfono: 407-836-7982; Correo Electrónico: esther.fernandez@ocfl.net.

Pou plis enfòmasyon an kreyòl, tanpri kontakte: Celestin Pierre, Assistant Project Manager, Public Works Department, Roads and Drainage Division, 4200 S. John Young Parkway, Orlando, Florida 32839. Telefòn li se: 407-836-7873; imel ba li nan adrès imel li: celestin.pierre@ocfl.net.

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About Orange County Government: Orange County Government strives to serve its citizens and guests with integrity, honesty, fairness and professionalism. Located in Central Florida, Orange County includes 13 municipalities and is home to world-famous theme parks, the nation's second-largest convention center, and a thriving life science research park. Seven elected members make up the Board of County Commissioners including the Mayor who is elected countywide. For more information, visit www.ocfl.net or go to the Orange County Facebook and Twitter pages.



Meeting Minutes

Date: August 24, 2017 at 6:00 PM
Subject: Pine Hills Road Pedestrian/Bicycle Safety Study – CBW #2
Author: Daniel Kins, WSP

On August 24, 2017, CBW #2 was held in the Maynard Evans High School Cafeteria, beginning at 6:00 pm. At approximately 6:30 pm, a presentation began by County and consultant staff, followed by a Question-and-Answer session. The meeting ended around 7:30 pm.

There were a total of seven boards on display (two Access Management, two Typical Sections, one Safety Measure Recommendations, one Safety Measure Recommendations with Benefit/Cost Ratio, and one Gateway Features). Roll plots and community survey results were also available.

A total of 11 community members not associated with the County or consultant staff were in attendance.

1. Meeting Introduction

- a. Introduction - Brian Sanders, Orange County
 - i. Comments by Orange County Commissioner Bryan Nelson
- b. Staff Introductions – Jerald Marks, Orange County
- c. Project Presentation – Jerald Marks, Orange County

2. PowerPoint Presentation (included at the end of minutes)

- a. Jerald Marks, Orange County, along with Greg Smith, WSP, provided a presentation summarizing an overview of the Pine Hills Road Safety Study. The first 13 slides reviewed the Meeting Agenda, Study Overview, Community Survey, and Existing Conditions.
 - i. Mr. Marks clarified that this Pine Hills Road Pedestrian/Bicycle Safety Study is a project that is part of the County's Walk-Ride-Thrive! Initiative.
 - ii. Mr. Marks stated the project limits and reiterated the goal of the study which is to identify opportunities for implementing safety improvements for people walking, bicycling, driving or taking the bus.
 - iii. Mr. Marks outlined the key focus areas of the Pine Hills Road Study including access management, lighting, pedestrian crossings, travel lane widths, landscaping, signage and way-finding, and gateway options at the Pine Hills Road/Silver Star Road intersection.
 - iv. Mr. Marks noted that as part of the study's public involvement activities, a Community Survey was conducted, receiving 161 responses and a variety of suggestions.
 - v. Mr. Marks summarized the findings of the Existing Conditions Report, including roadway features, pedestrian/bicycle facilities, traffic volumes, traffic speed, transit facilities, lighting, crash history, and observed pedestrian/bicycle traffic volumes.

- b. Greg Smith, Consultant Project Manager with WSP, presented Slides 14-23, which highlighted Access Management, Potential Gateway Features, Proposed Street Typical Sections, Potential Safety Countermeasures, and a Cost Benefit Analysis.
 - i. Mr. Smith reviewed the results of the spot speed study and the luminosity study. The latter study indicated that current lighting does not meet FDOT standards and there is a relatively high amount of night crashes.
 - ii. Mr. Smith reviewed the crash data which indicated pedestrians under the age of 18 years were involved in 36% of the crashes. Pedestrian education programs are recommended to address this issue.
 - iii. The current five-lane undivided roadway produces multiple conflict points and as a result, changes in the typical section are recommended for safety purposes. The proposed access management would consist of a raised median to reduce the number of conflict points.
 - iv. A gateway study was undertaken in conjunction with the Pine Hills community and several gateway features are proposed at the Pine Hills Road/Silver Star Road intersection including wider crosswalks, new signals, and signage.
 - v. Phase 1 of the Pine Hills Trail has been completed to Silver Star Road. In lieu of continuing the second phase along the Duke Power easement, Phase 2 of the trail work will be shifted easterly to Pine Hills Road and utilize a proposed multi-use path to be constructed along the east side of Pine Hills Road north of Silver Star Road.
 - vi. Mr. Smith presented the recommended proposed typical sections along the Pine Hills Road corridor, highlighting the changes made from the existing typical sections.
 - vii. Recommended safety measures were reviewed including street lighting from Colonial Drive to Silver Star Road, replacing the continuous center two-way left turn lane with curbed grass median, providing landscaping and pedestrian channelizing devices in curbed median at selective locations, reducing the travel lanes to 11-foot wide, improving the intersection characteristics at Silver Star Road, relocating the existing LYNX bus stops, widening the existing sidewalk north of Silver Star Road to accommodate Phase 2 of Pine Hills Trail, providing flashing signals and pedestrian warning signs at mid-block pedestrian crossings, and providing pedestrian/bicycle safety educational programs.
 - viii. Benefit and cost data for the above improvements were also provided to the audience.

3. Question-and-Answer Session

- a. Question #1: Would it be possible to install a traffic signal to access the shopping center (in the southwest quadrant of Pine Hills Road and Silver Star Road) near Figwood Lane? Concern was expressed that a lack of signals affect mobility and access to the retail businesses in the center since customers may have difficulty leaving the center to get out and onto Pine Hills Road.
 - i. Brian Sanders, Orange County: Brian Sanders responded that the County is aware of this request and is reviewing possible measures to address this matter.
- b. Question #2: Why are the bus stops moving and can they be closer to intersections.
 - i. Brian Sanders, Orange County: The bus stops are being moved to where there are high pedestrian movements.
- c. Question #3: Neighborhoods have requested that LYNX move the bus stops because car traffic may not see around busses when they were loading/unloading passengers.
 - i. Brian Sanders, Orange County: The County has requested that LYNX move the bus stops as close as possible to the crosswalks to encourage pedestrian use of the crosswalks which would aid safe crossing of the road. Car traffic may have to exercise

patience as the buses may be stopped for a period of time. The County will talk to LYNX about bus station locations.

- d. Question #4: As a bus rider, I feel that the bus stops at Silver Star Road and Pine Hills Road are too far back. The closest two bus stops are too far from the intersection.
 - i. Brian Sanders, Orange County: This is a major intersection and there is a high volume of traffic flowing through that area. The County will continue to work with LYNX to arrive at the best and safest possible location of the stops.

- e. Question #5: I am concerned that cars turning from eastbound Silver Star Road onto northbound Pine Hills Road do not yield to pedestrians crossing Pine Hills Road. Would a delay in the traffic light phasing (leading pedestrian phase) be possible so that pedestrians have a little more time to safely cross Pine Hills Road.
 - i. Brian Sanders, Orange County: There is no leading pedestrian phase at the intersection of Pine Hills Road and Silver Star Road. That is something FDOT would have to approve before making any changes to the signal phasing. Provisions of a leading pedestrian phase may affect the level of service at the intersection.

- f. Question #6: What type of education options are being suggested? The community member suggested videos on LYNX buses and in the schools.
 - i. Renzo Nastasi, Orange County: The County would like to work with the school system, the NID, etc. and prepare an informational pamphlet on what to do and what not to do. Potentially, a video may be made for the school system at a later date.

- g. Question #7: I am concerned about the location of the Pine Hills Trail where it crosses Pine Hills Road.
 - i. Brian Sanders, Orange County: The Trail is not a priority for the Parks Department right now, so there is still time to determine the best location for the trail crossing the road.

- h. Question #8: I would like to see a midblock crosswalk between the McDonalds and the Pizza Hut on Silver Star Road that would make the area safer. There is a high number of pedestrians crossing the road in that location.
 - i. Brian Sanders, Orange County: That location is too close to the intersection and would not be able to safely implement a midblock crosswalk. A possible fix would be a pedestrian channelizing devices to deter people from crossing at that location.

- i. Question #9: Will the residents at Emerald Villas have direct access to Pine Hills Road.
 - i. Brian Sanders, Orange County: There will be a directional median opening that will give traffic traveling on northbound Pine Hills Road direct access to the Emerald Villas, though leaving traffic will only be able to make a right turn out from the apartments.

- j. Question #10: What is a pedestrian channelizing device?
 - i. Brian Sanders, Orange County: The FDOT has several types of devices, one being a loop rail and another being a picket style rail. It is something placed in the median to discourage pedestrians from crossing at that location.

- k. Question #11: Where will the budget for maintenance for the pedestrian channelizing devices come from?
 - i. Brian Sanders, Orange County It is a little early in the process to start accounting for individual budgets for the project, but the budget will become a high priority later in the design process.
- l. Question #12: I would like to confirm that a separate meeting is going to be held with the County, PHNID and neighborhood about adding a traffic light to the shopping center near Figwood Lane.
 - i. Renzo Nastasi, Orange County: The County will set up that meeting within the next couple of weeks.

4. Additional Comments Received Prior to or After the Question and Answer Session

- a. Comment #1: A comment was raised by a member of the community about concerns that trash would build up at the intersection because of bus stop moves.
- b. Comment #2: A comment was raised about cars still attempting to make left turns from Belco Drive onto Pine Hills Road, even after the proposed, future raised median is constructed.
- c. Comment #3: Cherelle Colin, Property Manager at Emerald Villas Apartments, indicated her management was not in favor of the current Via Maior directional median opening, though she herself was not opposed to the proposed arrangement.

5. Conclusion

- a. Brian Sanders, Orange County, concluded the meeting at approximately 7:30 pm.



Comment Form

Pine Hills Pedestrian/Bicycle Safety Study

Community Workshop #2

August 24, 2017 from 6:00 – 8:00 pm

Maynard Evans High School Cafeteria

Please select all that apply to you as it relates to the study area.

- Live within the study area.
- Work within the study area.
- Own/rent property or business within the study area.
- Travel through the study area
- Travel within the study area
- Improvements along the corridor do not affect me.

Your comments are important!

Please use the space below to express your input about this project.

I would like to see timing of walk signal at Belco Drive & Pine Hills Rd set so pedestrians aren't trying to cross at the same time cars turn left from Belco onto Pine Hills. If the green light on Belco could be delayed 30 seconds similar to the walk light set up at Silver Star/Pine Hills drivers wouldn't ignore traffic rules despite the fact they are supposed to yield to pedestrians.

There is a bright "Yield to Peds" sign above Belco, but apparently drivers don't care about pedestrians. One of these days a student or senior citizen (I saw a man with a walker last week almost get hit by a left-turning car) is going to be hurt or killed

Name: John Balderson
 Company: _____
 Address: 5223 Grandview Dr
 City/State/Zip: Orlando FL 32808
 Email: winko@geek@gmail.com
 Phone: (727) 641-8069

Please place this form in the "Comment" box or mail before September 1 to:
 Brian Sanders, Chief Planner
 Orange County Project Manager
 4200 S. John Young Parkway
 Orlando, Florida 32839



Comment Form

Pine Hills Pedestrian/Bicycle Safety Study

Community Workshop #2

August 24, 2017 from 6:00 – 8:00 pm

Maynard Evans High School Cafeteria

Please select all that apply to you as it relates to the study area.

- Live within the study area.
- Work within the study area.
- Own/rent property or business within the study area.
- Travel through the study area
- Travel within the study area
- Improvements along the corridor do not affect me.

Your comments are important!

Please use the space below to express your input about this project.

① Need lights on Dolores Dr

② Need posts / raised barriers b/t Future
Stops and Pontiac Ct as well as b/t
Pontiac Ct and Balboa Dr on Dolores Dr.
People currently drive cars on the trail
spur in this area. Also signs for "no
motorized"

③ Plant trees between road and trail
on Dolores because people park on the
grass on weekends

Name: Jody Mahanik
 Company: Property owner
 Address: 1640 Pontiac Ct
 City/State/Zip: Orlando, FL 32808
 Email: jody.mahanik@earthlink.net
 Phone: (407) 297-9746

Please place this form in the "Comment"
 box or mail before September 1 to:
 Brian Sanders, Chief Planner
 Orange County Project Manager
 4200 S. John Young Parkway
 Orlando, Florida 32839



FOR COUNTY USE ONLY

Initials: _____ Resp: Y N Ad

ACTION REQUEST FORM

NAME: Jody Mahonik PHONE: 407-297-9746

ADDRESS: 1640 Portiac Ct
(number and street)
ORL, FL 32808
(city, state) (zip code)

Location of Action Requested Fill in pot holes

Description of Action Desired (i.e. resurfacing, traffic signal retimings, signs, etc.)

① Road Balsan near Golf Club Dr.

② Reinforce "trucks entering highway" and
whenever the other big Orange sign is on
Portiac Ct (1620 3 1672 (3))



APPENDIX B

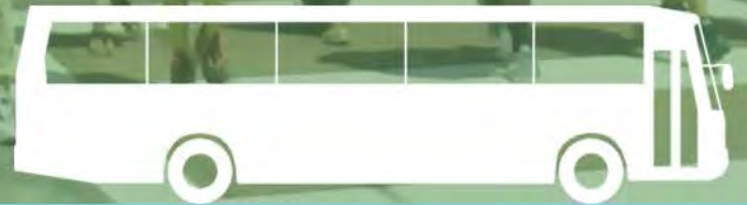
TECHNICAL MEMORANDUM 2: EVALUATION OF EXISTING PLANS AND STUDIES



Pine Hills Road Pedestrian/Bicycle Safety Study

Evaluation of Existing Plans and Studies

Technical Memorandum No. 2



Pine Hills Road Pedestrian/Bicycle Safety Study

On behalf of Orange County Mayor Teresa Jacobs, District 2 Commissioner Bryan Nelson and District 6 Commissioner Victoria P. Siplin, Orange County is pleased to present this Public Involvement Plan (PIP) to guide the public outreach efforts for the Pine Hills Road Pedestrian/Bicycle Safety Study. The study limits are from Colonial Drive (State Road (SR) 50) to Bonnie Brae Circle, a distance of approximately 3.6 miles.

This Pine Hills Road corridor has been identified as a high crash corridor for pedestrian and bicycle crashes. In addition, there are a variety of land uses along the corridor including multiple schools, residential, retail and office land uses, as well as heavily used transit routes, which result in a truly multi-modal corridor.

The Pine Hills Road Pedestrian/Bicycle Safety Study is a comprehensive review of the Pine Hills Road corridor which will investigate various measures to provide a safe integration of walkers and bicyclists with other modes of transportation. This study is a result of Mayor Jacobs' "Walk-Ride-Thrive!" and "INVEST in Our Home for Life" initiatives to make Orange County roads safer for all pedestrians and bicyclists.



Honorable Teresa Jacobs
Orange County Mayor



Bryan Nelson
Orange County District 2 Commissioner



Victoria P. Siplin
Orange County District 6 Commissioner



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1.1 Overview

Technical Memorandum #2 (TM #2) documents a literature review of existing plans and studies that relate to the Pine Hills Road corridor. The purpose of TM#2 is to review various documents that identify improvements for roadways, intersections, pedestrian and bicycle facilities, transit services, roadway lighting and other features along the Pine Hills Road corridor study area. This memorandum summarizes the research of documents completed by the following agencies:

- Orange County
- Pine Hills Road Neighborhood Improvement District
- LYNX
- MetroPlan Orlando
- Florida Department of Transportation
- American Association of State Highway and Transportation Officials (AASHTO)
- Federal Highway Administration (FHWA)

1.2 Planned and programmed improvements

1.2.1 ORANGE COUNTY

Orange County has a number of programs related to transportation. Some of the reference materials and documents reviewed include the Capital Improvements Plan (CIP), the Long Range Transportation Plan (LRTP), Orange County's Walk-Ride-Thrive! Program, and the Multi-Modal Corridor Plan. The following is a summary of those plans and programs. See Appendix A for additional detailed information.

CAPITAL IMPROVEMENT PROGRAM (CIP) & LONG RANGE TRANSPORTATION PLAN (LRTP)

The CIP January 2017 Monthly Report includes this study as beginning in January 2017. There are two projects of particular note. The first project is the Pine Hills Trail from Alhambra Drive to Silver Star Road, which is now under construction with completion scheduled in 2018. The trail project includes a spur branch to Barnett Park and crosses Pine Hills Road utilizing Dolores Drive. A signal is planned for this trail crossing. A second phase of the trail project will begin at Silver Star Road and extend north to the Clarcona-Ocoee Road. The second project of note, is roadway lighting improvements for Pine Hills Road from Silver Star Road to North Lane with design listed as 50% complete. No start date for the implementation of these lighting improvements is listed in the CIP report. The Study will consider the impacts of these capital projects in developing the recommendations (See Appendix A).

Orange County Walk-Ride-Thrive! Program (2015) (WRT!)

The Walk-Ride-Thrive! (WRT!) Program is an initiative started by Orange County Mayor Jacobs to address Orange County's pedestrian and bicycle safety issues. The WRT! Program envisioned pedestrian and bicycle safety improvements for the Pine Hills Road corridor, and as a result, the County has embarked on this study to develop recommendations for safety improvements and countermeasures for pedestrians and cyclists using the corridor.

Multi Modal Corridor Plan

In June 2014, Phase 1 of the Corridor Plan was completed, and identified Pine Hills Road from North Lane to SR 50 as well as Silver Star Road from Hiwassee to Pine Hills Road as a corridor in need of

safety improvements based on crash data analysis. Pine Hills Road from Silver Star Road to SR 50 was identified as a Livability Corridor in the plan. Livability corridors are targeted for transition from auto-dominated roadways to roads that include more shared-use facilities and are made more attractive to multiple modes of travel through context sensitive infill development, landscaping, and other amenities that support transit, walking, and bicycling (See Appendix A). Section 1.4 of this Tech Memo addresses the state and national resources available to help guide and evaluate potential safety counter measures that will support the County's Multi-Modal Corridor Plan recommendations for Pine Hills Road.

Orange County ADA Transition Plan

Orange County adopted the ADA Transition Plan in April 2016. The Plan spells out how current ADA needs on existing facilities will be addressed over a 30-year period based on prioritized rankings of existing facilities – curbs, ramps, pedestrian signal heads, sidewalks, etc. The plan also details an implementation and monitoring program that ensures that all projects in the public rights of way address accessibility and are ADA compliant. While nothing specific was identified for the Pine Hills Road corridor, the ADA mitigation measures and other requirements set out in the plan will be incorporated into the study recommendations as appropriate.

Orange County Development Projects

A review of recent development projects in the Pine Hills Road corridor revealed two projects that may have an effect on the Study. The first project is the Silver Pines Planned development (CDR-17-01-005), a 15 acre site located at 5300 Silver Star Road at the Southwest corner of Silver Star Road and Pine Hills Road. The project proposes 120 senior adult multi-family units and is scheduled to go before the Board of County Commissioners meeting on March 21st. The second project is the proposed Pine Hills Superstop which was formerly part of the Pine Hills Center PD (CDR-15-08-226) which amended the permitted land uses from 'community park' to 'commercial' to allow for the development of a bus transfer station on a portion of parcel A. The plan was approved by the County Commission on November 17th, 2015.

1.2.2 LYNX

LYNX is the regional transit provider for Orange, Seminole, and Osceola counties. As part of this review, information was obtained from the LYNX 2015-2024 Transit Development Plan (TDP), the 2014 Comprehensive Operation Analysis (COA) as well as the official LYNX website (www.golynx.com). Selected pages from key documents are included in Appendix B.

Transit stop, ridership, and schedule data were reviewed and included in the existing conditions report. Recommendations from the COA will be used to inform the study team of potential improvements related to ADA accessibility, pedestrian safety, and improved transit service in the corridor. Links 48 and 49 are identified in the TDP as being adjusted in future years to become circulators serving the Pine Hills area. Changes are also anticipated to Direct Service Routes 301 and 302.

Additionally, the COA references the development of a superstop in the Pine Hills area as a result of the closing of the Park Promenade Superstop in 2011. LYNX secured funding through a Federal Transit Administration (FTA) Bus Ladders of Opportunity Grant in 2014 for the construction of a bus transfer center in the Pine Hills area. Since the award, LYNX has identified a site off of Belco Drive north of Silver Star Road, west of Pine Hills Road and adjacent to the planned Pine Hills Trail, which is currently under construction for Phase 1.

1.2.3 METROPLAN ORLANDO TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

MetroPlan Orlando is the Metropolitan Planning Organization (MPO) for Orange, Osceola, and Seminole Counties. The MPO coordinates the Long Range Transportation Plan (LRTP) for the region (Blueprint 2040) and the 5-year Transportation Improvement Plan (TIP). MetroPlan Orlando also adopted a Pedestrian Safety Action Plan in 2012 to address the region's pedestrian safety issues. The document provides an outline for identifying and prioritizing pedestrian safety projects. MetroPlan Orlando also provides a Pedestrian Safety and Mobility Assessment Tool (PSMAT) to assist FDOT and local governments in measuring present and potential pedestrian safety and mobility conditions, and identifying roadway characteristics that might be changed to improve pedestrian safety and mobility. In the 2040 LRTP, the intersection of SR 438/Silver Star Road and Pine Hills Road is listed as priority number 32 on the Project Priority List of Transportation Systems Management and Operations (TSM&O) projects. No specific projects were identified in the TIP or the Pedestrian Safety Action Plan for Pine Hills Road (See Appendix C).

1.3 Pine Hills Community Plan and Guidance Documents

1.3.1 PINE HILLS NEIGHBORHOOD IMPROVEMENT DISTRICT PLANNING DOCUMENTS

The Pine Hills Road Neighborhood Improvement District (PHNID) adopted a 2015-2045 Neighborhood Improvement Plan to address a variety of needs of the Pine Hills community to make it a more livable and vibrant community. This plan specifically identifies the Pine Hills Road corridor for safety, pedestrian, bicycle, aesthetic and parking improvements. The plan also discusses improving livability by slowing car speeds and improving connectivity. This plan also calls out the intersection of Pine Hills Road and Silver Star Road for special treatment as a town center for the community. These policies are highlighted in Appendix D.

1.3.2 PINE HILLS: MANY CULTURES, ONE BRIGHT FUTURE CPAT REPORT

The American Planning Association (APA) Community Planning Assistance Team (CPAT) performed a multi-day community workshop in 2013 to develop a land use plan for a town center at the intersection of Pine Hills Road and Silver Star Road. The final report outlined a master plan for the town center area, a brand guide, gateway features, typical sections for minor arterials (e.g. Silver Star Road and Pine Hills Road) as well as internal streets for the town center. Recommendations from this document such as a new logo design, banners, enhanced signage, etc will be incorporated into the gateway study as appropriate to create a unified brand identity for the corridor and support the recommendations in the CPAT Report (See Appendix D).

1.4 State and Federal Guidance Documents and Best Practices

There are a variety of state and federal documents that guide the engineering and design of roadways. These guidelines, where applicable, will be incorporated into the study recommendations as appropriate.

1.4.1 FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT)

FDOT publishes several documents that will guide pedestrian and bicycle safety improvement measures included in the study. The FDOT 2014 Median Handbook, 2012 Florida Strategic Highway Safety Plan, State of Florida 2016 Highway Safety Plan, 2016 Traffic Engineering Manual (revised on 2016), FDOT Plans Preparation Manual, FDOT Complete Streets Policy, and access management information include recommendations and best practices guidance that can be applied to this corridor study.

The FDOT Complete Streets Handbook is expected to be released in April 2017. As part of the FDOT's Complete Streets Implementation Plan, the Department references the use of Chapter 21 of the Plans Preparation Manual, specifically referencing Table 21-A which addresses appropriate techniques for livable design by corridor type, 21-B which highlights techniques to reduce speed or traffic volumes by corridor type, Table 21-C which identifies techniques to encourage multimodal travel by corridor type, and Table 21-D which addresses transportation network techniques for livable/walkable communities.

The Department also references Chapter 19 of the Florida Green Book for further support of Complete Streets guidance. This chapter addresses Traditional Neighborhood Development, highlighting the application and design elements of transportation networks in traditional neighborhood development. Techniques and design standards within the Green Book, the Plans Preparation Manual, and other FDOT documents that may be applied to the Pine Hills Road corridor may include narrowing lane widths to reduce travel speeds, replacing the two-way left center turn lanes with closed medians, access management controls for full and directional intersections, and high emphasis cross walk treatments are a few of the measures that will be explored during this study. Section 3.8 of the FDOT Traffic Engineering Manual specifically addresses crosswalk design which will be useful in determining the appropriateness of potential mid-block crossings in the corridor. See Appendix E for highlighted information from these documents as reference.

1.4.2 AMERICAN ASSOCIATION OF HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO is a nonprofit, nonpartisan association representing highway and transportation departments in the US represents all five transportation modes: air, highways, public transportation, rail, and water. AASHTO has prepared the 2004 Guide for the Planning Design, and Operation of Pedestrian Facilities, 1st Edition and the 2012 Guide for the Development of Bicycle Facilities. Both the 2004 Guide and the 2012 Guide apply specifically to the Pine Hills Road Study in terms of guiding principles which include appropriate methods to accommodate pedestrians based on type of roadway and facility type, and the identification of effective measures for accommodating bicycle and pedestrian users on public rights of way. These documents are guidelines by which FDOT develops the various standards and manuals that apply within the state. FDOT's manuals and guidance documents supersede the AASHTO guidebook.



1.4.3 FEDERAL HIGHWAY ADMINISTRATION (FHWA)

The FHWA provides stewardship over the construction, maintenance and preservation of the nation's highways, bridges, and tunnels. FHWA also conducts research and provides technical assistance to state and local agencies in an effort to improve safety, mobility, and livability, and to encourage transportation innovation. The current Bicycle and Pedestrian Program and the Crash Modification Factor Clearinghouse (CMF)/Crash Reduction Factor (CRF) provides information that aids state and local jurisdictions in developing effective counter measures to increase pedestrian and bicycle safety. The study team will use the crash reduction factor tables to evaluate the mitigation measures and improvements identified through the Pine Hills Road Study to determine the cost benefit ratio and level of effectiveness of the recommended improvements. Guidance and additional resources are included in Appendix F.





APPENDIX B-1

TECHNICAL MEMORANDUM 2: EVALUATION OF EXISTING PLANS AND STUDIES

Orange County Documents



Roadway Capital Improvement Program

Public Works Engineering and Highway Construction

January 2017 Monthly Report

PROJECT				CURRENT			CONSTRUCTION			
TYPE	DIST	PROJECT NAME	PROJECT LOCATION		PHASE	%	PHASE COMP.	START	COMPLETE	PROJECT MANAGER
			From:	To:						
Intersection	1	Vineland Avenue	SR 535		Design	60	Mar 2017	TBD	TBD	Kenneth Leeming
Intersection	1	Wallace Road	Dr. Phillips		Design	100	Apr 2017	Oct 2017	Oct 2018	Kenneth Leeming
Roadway	2	All American Boulevard	Clarcona-Ocoee Rd	Kennedy Blvd	ROW	64	Jan 2017	Jul 2019	Jul 2021	Kenneth Leeming
Roadway	4	Boggy Creek Road - North	South Access Rd	Wetherbee Rd	Design	90	Feb 2017	May 2018	Dec 2019	Roberto Ng
Roadway	4	Boggy Creek Road - South	Osceola County Line	SR 417 (Greene Way)	Design	90	May 2017	Oct 2018	Oct 2020	Roberto Ng
Roadway	3	Chickasaw Trl. Extension	SR50	1300 North	Design	45	May 2017	TBD	TBD	Abdul Azim
Roadway	1	Connector Road (Fenton Street)	Palm Parkway	Apopka Vineland Rd	Design	100	Apr 2019	Oct 2017	Oct 2019	Cathy Evangelo
Roadway	5	Dean Road	University Blvd	McCulloch Rd	RCA	100	Sep 2014	TBD	TBD	Cathy Evangelo
Roadway	6	Destination Parkway IB/IIA	Tradeshow Blvd	E. of Lake Cay	Construction	0	Jun 2018	Jan 2017	Jun 2018	Julie Naditz
Roadway	3	Econlockhatchee Trail	Lake Underhill Rd	N. of SR 408	Design	95	Jul 2017	Jul 2018	Jul 2020	Cathy Evangelo
Roadway	2	Edgewater Drive	Pine Hills Rd	Clarcona-Ocoee Rd	Design	100	Feb 2015	TBD	TBD	Kenneth Leeming
Roadway	1	Ficquette Road Segment G,H-1 & H	S of Ingelnook Dr.	S of Reams Rd.	RFP	20	Mar 2017	Mar 2022	Mar 2024	Abdul Azim
Roadway	1	Hamlin Grove Trail Ext. Ph. 1	N of New Independence		Construction	100	Dec 2016	Sep 2015	Dec 2016	Julie Naditz
Roadway	6	Holden Ave.	John Young Pkwy	Orange Blossom Trail	ROW	90	Mar 2017	Sep 2017	Sep 2019	Cathy Evangelo
Roadway	6	I Drive Transit Lanes	Destination Pkwy	Sand Lake Rd	Design	30	Jan 2017	Jul 2017	Jul 2019	Cathy Evangelo
Roadway	1	International Drive	S. Westwood Blvd	N. Westwood Blvd	Construction	42	Sep 2017	Sep 2015	Sep 2017	Julie Naditz
Roadway	6	John Young/Sand Lk Interchange	Commodity Cr	Florida's Turnpike	Construction	7	Aug 2019	Aug 2016	Aug 2019	Julie Naditz
Roadway	2	Kennedy Boulevard-East	E. of Forest City Rd	Wymore Rd	Design	90	Dec 2017	Jun 2018	Jun 2020	Kenneth Leeming
Roadway	2	Kennedy Boulevard-West	W. of Forest City Rd.	2300 E. of Fores City Rd	Design	90	Jun 2017	Jun 2018	Jun 2020	Kenneth Leeming
Roadway	3,4	Lake Underhill Road	E. of Econlockhatchee Tr	W. of Rouse Road	Design	50	Feb 2018	Sep 2019	Sep 2021	Abdul Azim
Roadway	6	Pine Hills Rd.	SR 50	Bonnie Brae Cir	Study	10	Jul 2017	TBD	TBD	Anoch Whitfield
Roadway	1	Reams Road	Summerlake Park Blvd.	Taborfield Ave.	RCA	5	Oct 2017	TBD	TBD	Blanche Hardy
Roadway	1	Reams Road	Taborfield Ave.	Delmar Ave.	Bid	50	Feb 2017	Mar 2017	Jul 2018	Kenneth Leeming
Roadway	3,5	Richard Crotty Parkway - Seg 1A	Semorán Blvd	Goldenrod Rd	Design	90	Dec 2017	Oct 2019	Oct 2021	Roberto Ng
Roadway	3,5	Richard Crotty Pkwy - Seg1B	Goldenrod Rd	Harrell Rd	Design	90	Dec 2017	TBD	TBD	Roberto Ng
Roadway	3,5	Richard Crotty Parkway - Seg 2	Harrell Rd	Dean Rd	Design	91	Jun 2017	TBD	TBD	Roberto Ng
Roadway	1	Sand Lake Rd.	Apopka-Vineland Rd.	Turkey Lake Rd.	RCA	10	Jul 2017	Jul 2016	Jul 2017	Brian Sanders
Roadway	1	Seidel Road Phase 2A	E of SR 429	Summerlake Park Blvd	Construction	50	Sep 2017	Sep 2016	Sep 2017	Julie Naditz
Roadway	1	Seidel Road Phase 3A	E of SR 429	Summerlake Park Blvd	Construction	50	Sep 2017	Sep 2016	Sep 2017	Julie Naditz
Roadway	1	Seidel Road Phase 3B	E of SR 429	Summerlake Park Blvd	Construction	95	Apr 2017	Jul 2015	Apr 2017	Julie Naditz
Roadway	1	Seidel Road Phase 4A	E of SR 429	Summerlake Park Blvd	Construction	90	May 2017	Jun 2016	May 2017	Julie Naditz
Roadway	1	Seidel Road Phase 4B	E of SR 429	Summerlake Park Blvd	Construction	94	Apr 2017	Aug 2015	Apr 2017	Julie Naditz
Roadway	4	Taft-Vineland Road - Seg 1	Orange Blossom Tr	Bachman Rd.	Design	90	Dec 2017	Mar 2019	Mar 2021	Roberto Ng
Roadway	4	Taft-Vineland Road - Seg 2	Bachman Rd	Orange Ave	Design	90	Dec 2017	TBD	TBD	Roberto Ng

Roadway Capital Improvement Program

Public Works Engineering and Highway Construction

January 2017 Monthly Report

PROJECT					CURRENT			CONSTRUCTION		
TYPE	DIST	PROJECT NAME	PROJECT LOCATION		PHASE	%	PHASE COMP.	START	COMPLETE	PROJECT MANAGER
			From:	To:						
Roadway	6	Texas Avenue-South	S. of Oak Ridge Rd	S. of Americana Blvd	Negotiations	90	Jan 2017	TBD	TBD	Abdul Azim
Roadway	6	Texas Avenue-North	S. of Americana Blvd	S. of Holden Ave.	Negotiations	90	Jan 2017	Jun 2018	Jun 2020	Abdul Azim
Roadway	3	Valencia College Lane	Goldenrod Rd	William C. Coleman Dr	Design	100	Apr 2015	TBD	TBD	Abdul Azim
Sidewalk	2	Dr. Love Road - North Side	90' E of Michelle Ave	Lockhart Elem. School	Design	90	Feb 2017	TBD	TBD	Teresa Cruz
Sidewalk	5	Econlockhatchee Trail - W. Side	417	University Blvd	Design	100	Jul 2015	TBD	TBD	Teresa Cruz
Sidewalk	5	Fleet Cir.	Loubet St.	Loubet St.	Construction	100	Dec 2016	Sep 2016	Dec 2016	Julie Naditz
Sidewalk	3	Forester Ave.	Boice St.	Brockbank Dr.	Construction	100	Jan 2017	Dec 2016	Jan 2017	Julie Naditz
Sidewalk	3	Galsworthy Ave.	Boice St.	Brockbank Dr.	Construction	100	Dec 2016	Nov 2016	Dec 2016	Julie Naditz
Sidewalk	3	Hawkes Ave.	Boice St.	Brockbank Dr.	Construction	100	Dec 2016	Oct 2016	Dec 2016	Julie Naditz
Sidewalk	3	Keats Ave.	Boice St.	Brockbank Dr.	Construction	90	Jan 2017	Nov 2016	Jan 2017	Julie Naditz
Sidewalk	5	Moselle Avenue - West Side	Old Cheney Hwy	Turin St	Design	90	Feb 2017	TBD	TBD	Teresa Cruz
Sidewalk	3	Nela Avenue - South Side	Orange Ave	Matchett Rd	Design	90	Feb 2017	TBD	TBD	Teresa Cruz
Sidewalk	3	Office Court	Sand Lake Rd Sunrail Sta	S Orange Ave.	Permitting	0	TBD	TBD	TBD	Julie Naditz
Sidewalk	1	Reams Rd.	Existing E of New Market	Existing W of Via Trieste	Construction	50	Dec 2016	Nov 2016	Dec 2016	Julie Naditz
Sidewalk	4	S. Alafaya Trail - West Side	Lake Underhill Rd	Existing N. of 408	Design	90	Nov 2017	TBD	TBD	Teresa Cruz
Sidewalk	4	S. Alayafa Trail - West Side	Ex 1050' S of Curry Ford Rd	Ex 650' S of Curry Ford Rd	Design	0	Nov 2017	TBD	TBD	Teresa Cruz
Sidewalk	2	S. Binion Road	Ocoee Apopka Road	Trail Crossing @ Magnolia Park	Design	10	TBD	TBD	TBD	Teresa Cruz
Sidewalk	2	Suncrest Dr/Rossmann Dr-N Side	Dead End	Ext 255 LF W of OBT	Design	0	TBD	TBD	TBD	Teresa Cruz
Sidewalk	5	Bacon Street	Rutledge	Murdock	Construction	90	Feb 2017	Jan 2017	Feb 2017	Julie Naditz
Sidewalk	6	West Lancaster Road	Lake Ellenor Dr	S. Orange Blossom Trl	Construction	0	Mar 2017	Feb 2017	Mar 2017	Julie Naditz
Sidewalk	5	Churchill Street	Rutledge Street	Murdock Blvd.	Construction	50	Jan 2017	Dec 2016	Jan 2017	Julie Naditz
Sidewalk	6	Woodway Dr.	Central FL. Pkwy.	Fawn Dr.	Construction	0	TBD	TBD	TBD	Julie Naditz
Stormwater	5	Bithlo South Drainage Improv	12th Street	14th Street	Design	90	Apr 2017	TBD	TBD	Kenneth Leeming
Trails	6	Pine Hills Trail	Silver Star Rd	Alhambra Dr	Construction	25	Jan 2018	Jul 2016	Jan 2018	Julie Naditz
Trails	6	Shingle Creek Trail Ph 1 Seg 1	Sand Lake Rd	Destination Pkwy	Bid	25	Jan 2017	Sep 2017	Sep 2018	Kenneth Leeming
Trails	6	Shingle Creek Trail Ph 1 Seg 2	Destination Pkwy	SR 528	ROW	50	Apr 2017	Nov 2017	Nov 2018	Kenneth Leeming
Trails	1	Shingle Creek Trail Ph 1 Seg 3	SR 528	Taft-Vineland Rd	Design	90	Jul 2017	Feb 2018	Dec 2018	Kenneth Leeming
Trails	1	Shingle Creek Trail Ph 2	Taft-Vineland Rd	Town Loop Blvd.	Design	100	Jan 2017	TBD	TBD	Kenneth Leeming
Trails	1	Shingle Creek Trail Ph 3	Town Loop Blvd.	Osceola County Line	Negotiations	0	Aug 2017	TBD	TBD	Kenneth Leeming
Lighting	2	Pine Hills Road	Silver Star Road	North Lane	Design	50	TBD	TBD	TBD	Frank Yokiell
Lighting	2	Clarcona-Ocoee Road	SR 429	Clark Road	Construction	100	Oct 2016	TBD	TBD	Frank Yokiell
Lighting	2	Clarcona-Ocoee Road	Clark Road	Hiawassee Road	Construction	100	Oct 2016	TBD	TBD	Frank Yokiell
Lighting	2	Clarcona-Ocoee Road	Ocoee-Apopka Road	SR 429	Construction	100	Oct 2016	TBD	TBD	Frank Yokiell
Lighting	3	Econlockatchee Trail	SR50	Trevarthon Road	Construction	50	Nov 2016	Apr 2015	Nov 2016	Frank Yokiell

Orange County Multimodal Corridor Plan Phase I



**Transportation Planning Division
Community, Environmental, and
Development Services Department
June 5, 2014**

Summary and Recommended Safety Corridors

Safety corridors have been identified and listed below based on findings of the crash data analysis. Generally, the selected corridors are located on functionally-classified roads maintained by the County. Safety corridors should be appropriately prioritized in the County's Capital Improvements Program and evaluated for implementation of FHWA recommended countermeasures (see sidebar) and other safety improvements. They also highlight opportunities for targeted enforcement of pedestrian safety laws.

Below is a summary of Safety recommendations from this section in support of planning, construction, and maintenance of Orange County's transportation network:

- Develop and maintain a current inventory of priority safety projects and study needs to pursue funding through MetroPlan Orlando and federal grant sources
- Revise the RCA process to incorporate more multimodal and Complete Streets considerations, informed by the HUD Sustainable Communities Grant project and the recent FDOT Multimodal Planning Guidebook
- Evaluate the potential adoption of an Orange County Complete Streets policy to guide design of new roadway projects and associated features, such as transit facilities
- Evaluate ADA compliance in resurfacing costs and the ability to access additional state and federal funds through MetroPlan Orlando or grant development (ex. through the federal Transportation Alternatives Program)
- Ensure funding is maintained and efforts continue to scan "as built" plans for Orange County roadways to facilitate evaluations and safety retrofits, as needed
- Develop or access training modules for ADA compliance, including new PROWAG standards being implemented by FDOT, for Public Works staff, including inspectors of development-provided infrastructure
- Conduct recommended pedestrian planning activities, as determined by County priorities and budget, as part of the emerging Orange County pedestrian and bicycle safety program
- Complete a Road Safety Audit or Pedestrian Road Safety Audit for identified "clusters" of high-crash locations, as noted in the Safety section
- Conduct initial engineering and planning evaluation, including crash data analysis, on County roadways with posted speeds above 45 miles per hour to determine if MUTCD and Ch. 316, Florida Statutes, criteria may be met for re-evaluation of posted speed
- Draft Safety Corridors in the following table were selected in Phase I based on Phase I analysis of three-year crash data and include high-crash segments and intersections, as well as additional corridors connecting high-crash locations. These corridors and potential other candidates identified in Phase II will be evaluated as part of Phase II network development.

Safety Corridor	From	To
World Center Drive	Kissimmee Vineland Road	Buena Vista Drive
S. Apopka-Vineland Road	Hotel Plaza Boulevard	Winter Garden - Vineland Road
Sand Lake Road	Dr. Phillips Boulevard	Interstate 4
International Drive	Kirkman Road	SR 528
Universal Boulevard	International Drive	Sand Lake Road
Kirkman Road	Winter Garden Road	Vineland Road
Old Winter Garden Road	Kirkman Road	SR 408
Pine Hills Road	North Lane	SR 50
Silver Star Road	Hiawassee Road	Pine Hills Road
Hiawassee Road	Balboa Drive	SR 50
Beggs Road	Pine Hills Road	Rose Avenue
Rose Avenue	US 441	Clarcona Ocoee Road
US 441	Central Florida Parkway	Wetherbee Road
US 441	Sand Lake Road	Landstreet Road
Oak Ridge Road	Florida's Turnpike	Orange Avenue
US 441	Americana Boulevard	Oak Ridge Road
Americana Boulevard	Interstate 4	US 441
Honour Road	Texas Avenue	Rio Grande Avenue
Holden Avenue	Texas Avenue	US 441
US 441	Holden Avenue	LB McLeod
Michigan Street	US 441	Orange Avenue
Orange Avenue	Gore Street	Michigan Street
US 441	Gore Street	Kaley Street
Kaley Street	US 441	Interstate 4
SR 50	Interstate 4	Orange Avenue
SR 50	Bennett Road	SR 436
SR 436	University Boulevard	Hoffner Boulevard
University Boulevard	SR 436	Goldenrod Road
Alafaya Trail	University Boulevard	SR 50
SR 50	Rouse Road	Alafaya Trail

Sources:

Federal Highway Administration (FHWA). (2009). How to Develop a Pedestrian Safety Action Plan. Revised March 2009.

Retrieved from http://safety.fhwa.dot.gov/ped_bike/ped_focus/docs/fhwasa0512.pdf.

Florida Department of Transportation (FDOT). (2013). Construction Costs website.

Retrieved from <http://www.dot.state.fl.us/specificationsoffice/Estimates/>

HistoricalCostInformation/HistoricalCost.shtm.

Orange County Government. (2006). Invest in Orange County: Our Children's Legacy

Technologies for Pedestrian Safety

Orange County also uses technology to make pedestrian crossings safer and has opportunities to use additional technologies to expand these opportunities, as well as to ensure that non-motorized transportation (pedestrian and bicycle) counts are conducted efficiently to identify additional needs. Currently, Orange County provides signalized pedestrian crossings at traffic signals, many with pedestrian countdown clocks, the new standard for installation in Orange County to assist safe pedestrian crossings. Several Orange County signalized intersections also have audible pedestrian signal timers or blank-out signs prohibiting vehicular turns in conflict with high volume pedestrian crossings during certain periods. Also, at residents' request, Orange County provides neighborhoods the use of a speed trailer or a portable radar unit to educate drivers on their compliance with speed limits, and the County is evaluating the larger permanent deployment of these speed signs throughout Orange County.

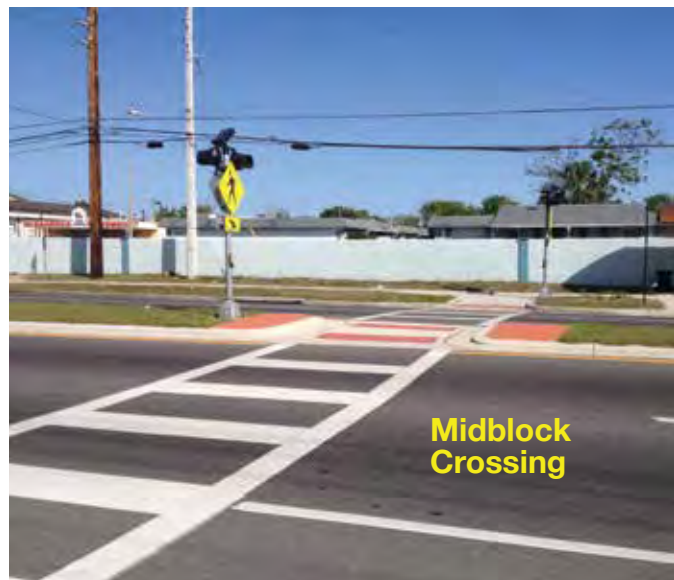
See 11"x17" Gatefold Page 9

- Flashing School and Pedestrian Beacons

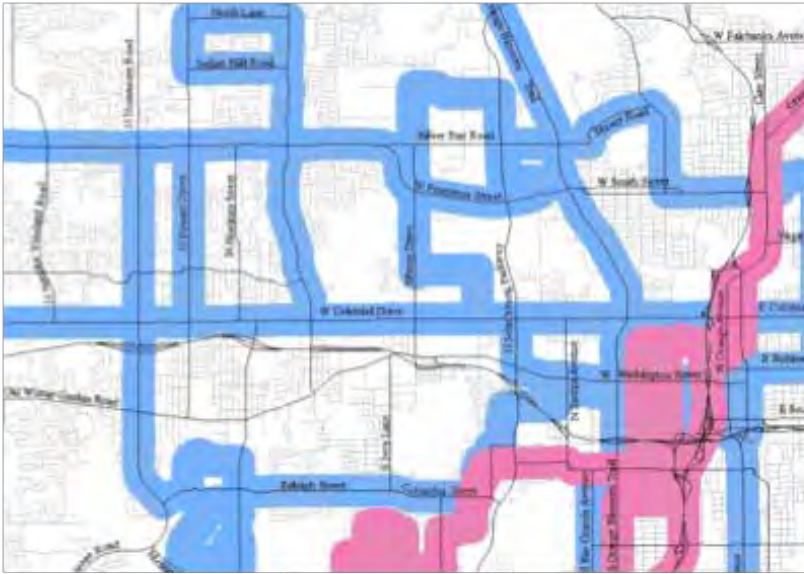
Beacons and Midblock Crossings

Orange County's current pedestrian safety projects include annual installation and/or maintenance of sidewalks, school flashing beacons, school safety assessments, and pedestrian crossing upgrades. Currently, Orange County has 290 school flashers and 85 flashing beacons as part of its system, which are deployed throughout Orange County. In several areas of the County with identified pedestrian safety issues, the County also has built non-signalized crosswalks at the following locations:

- Oak Ridge Road at Magic Way
- Oak Ridge Road at Texas Avenue
- Waterford Lakes Parkway at Coquina Rock Street
- Woodbury Road at Mallory Circle
- Pine Hills Road at El Trio Way
- Pine Hills Road at Pipes O' the Glen Way
- Old Winter Garden Road at Hudson Street



TECHNOLOGY



Potential High Quality Transit Areas based on Frequency

Buses that offer frequent service should be considered part of a High Quality Transit network that promotes livability. Infill projects should be expedited within these areas to incentivize transit supportive development. Development, while not as intense as that supporting fixed guideway transit, will contribute significantly to ridership. Special attention to the pedestrian environment is also important in these

areas, as every transit trip begins with a walking trip. Sidewalks and street trees should be provided, at a minimum, to make this a safe, comfortable walking environment. Mixed-use development – either vertical or horizontal – should be encouraged in areas served by transit to maximize the internal capture of trips. Whether these trips are on alternative modes or shortened auto trips, the benefits to the overall transportation network are significant. This type of development will create opportunities for shorter auto trips or alternative modes of travel within these districts.

Summary and Recommended Livability Corridors

Orange County roads should, in the future, experience a transition from auto-dominated roadways to a network of roads that include more shared-use facilities that promote livability. In conjunction with infill development, the existing roads can be transformed into thoroughfares that are attractive for multiple modes of travel. Landscaping will make them more pleasant for walking and biking, and local destinations will provide services that can be easily accessed. Corridors that will help characterize the full range of features that improve livability have been identified and listed below in anticipation of further study in Phase II. In addition to County roads, several state roads for which the Florida Department of Transportation plans to conduct multimodal corridor feasibility studies, similar to the Alafaya Trail and Orange Avenue studies, and that are identified in the MetroPlan Orlando Prioritized Project List for this purpose are included in the Livability Corridor list.

Recommendations

- Evaluate municipal land development codes of municipalities within Orange County to make recommendations regarding sidewalk widths and pedestrian connectivity requirements
- Implement the recommendations of the Trees in the Right of Way Group regarding measures

to prevent root damage to infrastructure such as root barriers, steel reinforcement of sidewalks and other actions as appropriate

- Conduct a pilot study of a long-term University Boulevard cross-section reassessment based on the findings of Technical Memorandum 2, the recent GMB/Traffic Engineering study of this corridor, and the land use context, site development standards, transit service, and parallel facilities that would need to be present in the long-term for corridor transition
- Once recommended pedestrian/bicycle data are available, evaluate appropriateness of “bicycle boulevard” prototypes to assess if any suitable locations and projects can be determined
- Draft Livability Corridors in the following table were selected in Phase I for state roadways included in MetroPlan Orlando’s Prioritized Project List for Multimodal Corridor Feasibility Studies, with the addition of SR 50 based on current Alternatives Analysis project and Pine Hills Road and Balboa Drive to serve Pine Hills. These corridors and potential other candidates identified in Phase II will be evaluated as part of Phase II network development.

Livability Corridor	From	To
SR 50	SR 429	SR 417
Balboa Drive	Clarke Road	Pine Hills Road
Pine Hills Road	Silver Star Road	SR 50
Kirkman Road	Old Winter Garden Road	Sand Lake Road
US 441	SR 50	Sand Lake Road
Orange Avenue	Gore Street	Taft-Vineland Road
Sand Lake Road	US 441	Orange Avenue
Oak Ridge Road	Winegard Road	Orange Avenue
SR 436	Orange County Line	Hoffner Avenue
Goldenrod Road	University Boulevard	Lake Underhill Road
Aloma Avenue	Lakemont Avenue	Hall Road
Alafaya Trail	Orange County Line	SR 50

Source

Federal Highway Administration (FHWA). (n.d.) Evaluation of Lane Reduction “Road Diet” Measures on Crashes. Highway Safety Information System Summary Report FHWA-HRT-10-053.

Transportation Research Board (TRB). (1994). Highway Capacity Manual, Special Report 209, pp. 3-15.



Program Summary

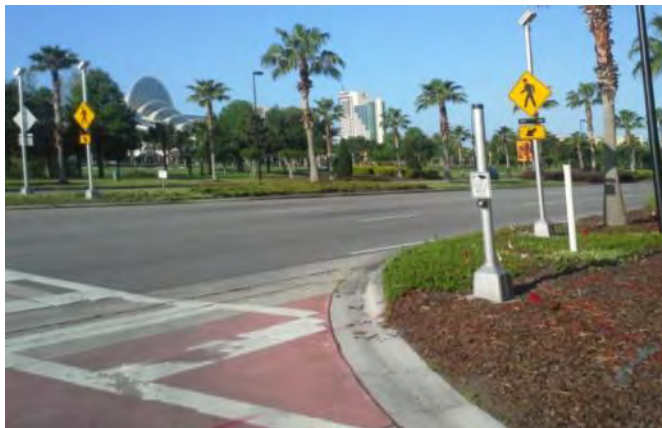
August 2015



Safety Project Highlights

International Drive

The County has initiated the International Drive Visioning project (12-18 months process), which includes a Walkability Analysis. This study describes the pedestrian facilities and environment, identifies aspects of the area that enhance its walkability, as well as specific elements that detract from walkability, and suggests opportunities for improvement. The County will adopt a Master Visioning Plan for International Drive, which will outline future strategies and the implementation approach.

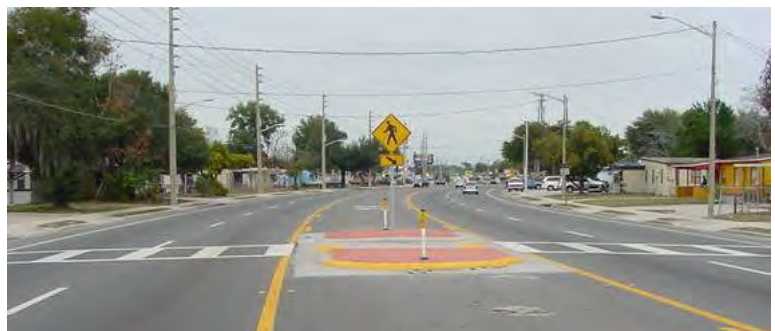


Universal Boulevard

The County recently installed Rectangular Rapid Flashing Beacons (RRFBs) in high pedestrian traffic areas with funding from the International Drive CRA. These have provided safer pedestrian crossings and increased driver yield rates. Orange County recently installed another set of RRFBs on Universal Boulevard at the Rosen School of Hospitality. This particular mid-block crossing is heavily used by students and faculty of the school.

Pine Hills Road

Based on a Pedestrian Crossing Safety Evaluation for Pine Hills Road, a Preliminary Engineering project is planned from Alhambra extending north to Bonnie Brae Circle (north of North Lane). A median will take up the existing continuous center turn lane providing a refuge for pedestrians crossing the roadway. The median will have turn storage lanes for each intersection along Pine Hills Road and 6 midblock pedestrian crossings equipped with RRFBs. There will be a signalized crossing on Pine Hills Road for a trail crossing.



Budget FY 2015-2016

Pedestrian/Bicycle Safety Action Plan	\$25,000
Pedestrian/Bicycle Data Collection	\$15,000
Pine Hills Road Preliminary Engineering	\$300,000
UCF Area Preliminary Engineering	\$357,000
Oak Ridge Road Preliminary Engineering	\$300,000

Budget FY 2016-2017

Pine Hills Road Final Engineering	\$500,000
Oak Ridge Road Final Engineering	\$500,000
UCF Area Final Engineering	\$500,000

Budget FY 2017-2018

Pine Hills Road Construction	\$1,200,000
Oak Ridge Road Construction	\$1,200,000

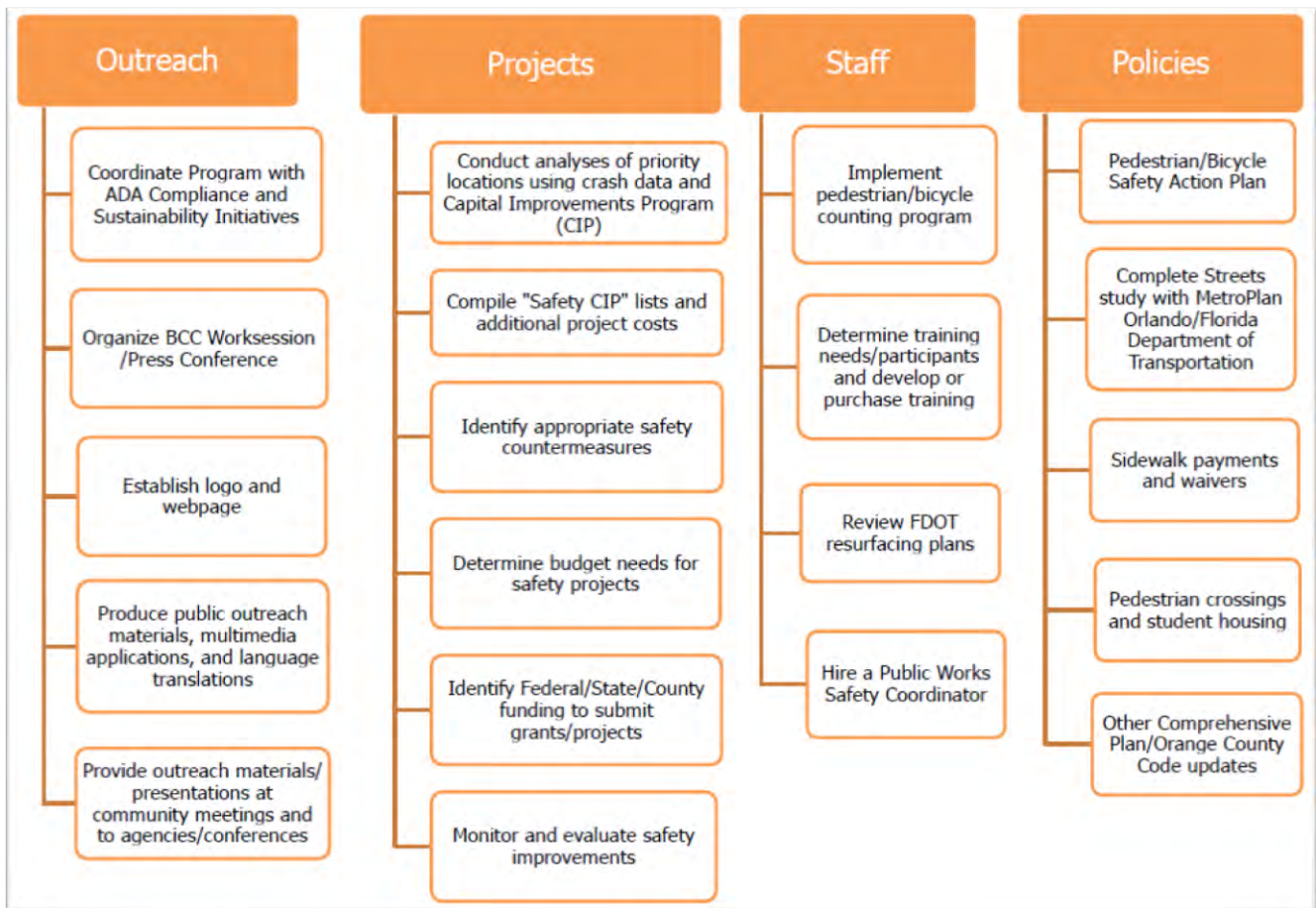
Budget FY 2018-2019

UCF Area Construction	\$3,500,000
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Implementation

The Orange County Walk Ride Thrive! Program will be implemented with a combination of outreach, capital projects, staff resources, and policies. Engineering and Planning studies are in process, as are coordination efforts with program partners. Outreach materials and other program elements are now in development for release to the public. The “Safety CIP,” a new Safety coordinator, and a Pedestrian/Bicycle Safety Action Plan are planned for budget allocations in FY 15-16. Coordination with USDOT’s Mayor’s Challenge will continue through March 2016.



Pine Hills Road

Additional lanes between Pine Hills Road, Silver Star Road and North Lane.

SCOPE

The project is on Pine Hills Road between Silver Star Road and North Lane.

THINKING IT THROUGH

Under consideration are additional lanes and possible median changes to help with congestion in the area

MAKING THE DECISION

Orange County involves citizens by asking for their input. Public meetings, outreach, newsletters, websites and direct contact with the project managers are all part of engaging our citizens.

WHAT ELSE IS CONSIDERED?

Some of the Concerns are:

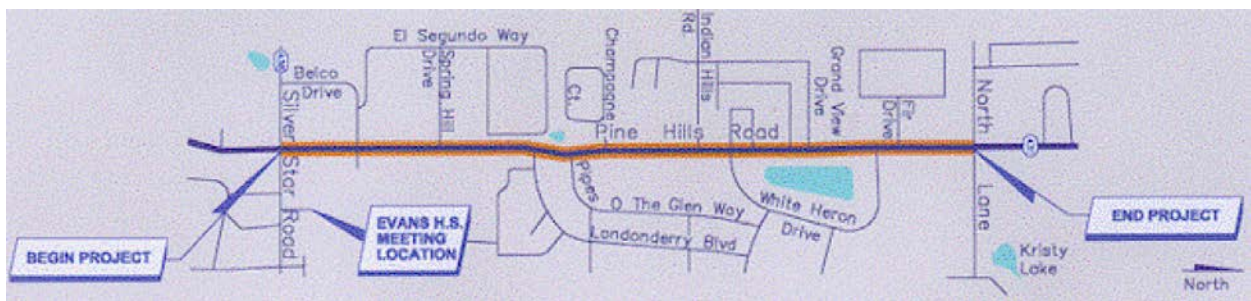
- Is the work needed or necessary?
- How will it impact on neighborhoods?
- How much will it cost?
- Any environmental impacts?
- What's the best solution?

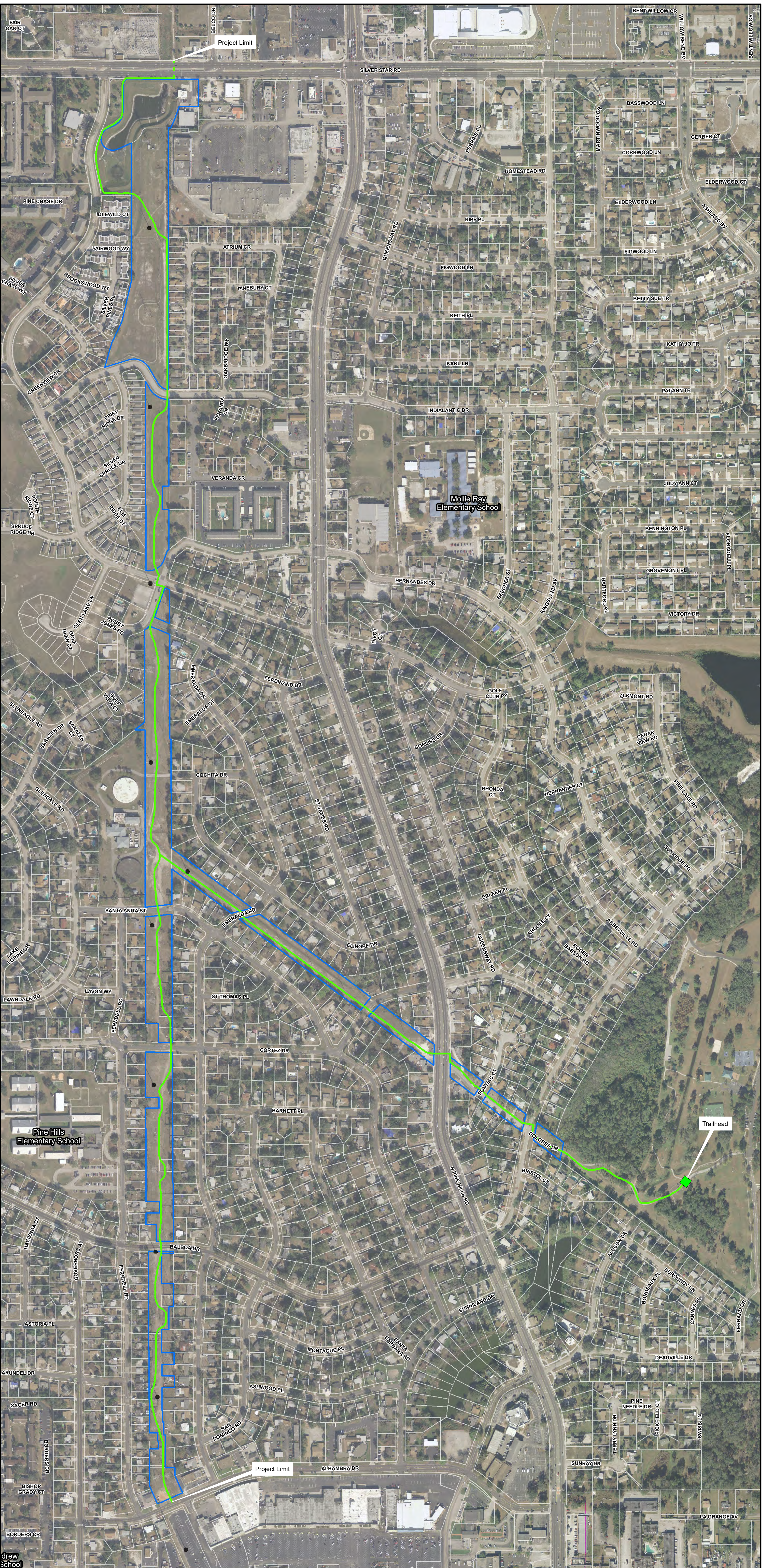
CONTACT US

Orange County Transportation Planning
4200 S. John Young Pkwy.
Orlando, FL. 32839

Phone: (407) 836-8070

Fax: (407) 836-8079





Pine Hills Multi-Use Trail (Phase I)





APPENDIX B-2

TECHNICAL MEMORANDUM 2: EVALUATION OF EXISTING PLANS AND STUDIES

LYNX Documents



Transit Development Plan

**Annual Update and Progress Report
Covering FY 2015-2024**



Central Florida Regional Transportation Agency

Initial Draft – April 2014

Revised – August 2014

Final – November 2014



Kissimmee Intermodal Station

The Kissimmee Intermodal Station (KIS), which is located next to the historic Kissimmee Amtrak station, officially opened on February 27, 2014. This eight bay transfer facility now serves as the hub for all transit services in Osceola County. The multi-modal uses of this facility have had an immediate impact as passengers can now connect with Amtrak, Greyhound and on-street transfer opportunities. Additional connections will occur once Phase II of SunRail is extended to the adjacent train station. The multimodal center was developed to house five 40-foot buses and three 60-foot, articulated buses. Additional amenities include closed circuit television, 14 solar-lit bus shelters and drought tolerant landscaping, bringing the total cost of construction to approximately \$1.2 million.



Construction of the visitor parking lot north of LYNX Central Station commenced in June 2014.

LYNX Central Station

Construction of the visitor parking lot north of LYNX Central Station commenced in June 2014.

BUS STOP FACILITY DATABASE AND ACCESSIBILITY STUDY

LYNX contracted with Data Transfer Solutions, Inc. on December 14, 2012 to complete an inventory of existing bus stop facilities, document existing conditions, and prepare a database system synchronized with a fixed asset management system and LYNX’s scheduling software. The database will include an inventory of shelters, amenities, and accessibility features. The database will allow LYNX to track bus stop assets and identify any ADA accessibility concerns; track work orders; and identify capital improvement needs for budgeting and work program purposes. The study is still underway as of April 2014.

FLEXBUS

LYNX is working with the cities of Altamonte Springs, Casselberry, Longwood and Maitland to deploy a test of a local circulator system supported by technology to provide trips that are responsive to the needs of riders. Vehicles will provide transportation between stations in the service area which will be located within a short walk of major destinations including SunRail stations. The system, known as “FlexBus,” is in a 60-day testing period as of April 1, 2014. 12 stations were identified for use during the testing period; two vehicles are being used for the demonstration.

COMPREHENSIVE OPERATIONAL ANALYSIS

The Comprehensive Operations Analysis (COA) is the means of adjusting and adapting LYNX operations to improve efficiency and more closely achieve the objectives identified in the major 2013-2022 TDP update and the Vision 2030 Long Range Plan. LYNX



recently completed their COA (adopted in 2014) which included an analysis of the route network; recommended short-term and long-term modifications; and led to the adoption of new service guidelines. The findings and recommendations from the recently completed COA inform the service planning discussion in this TDP update.

PREMIUM TRANSIT STUDIES

LYNX recently lead two major transit studies aimed at identifying and analyzing options for providing premium transit service along two of the most heavily-congested corridors in the service area.

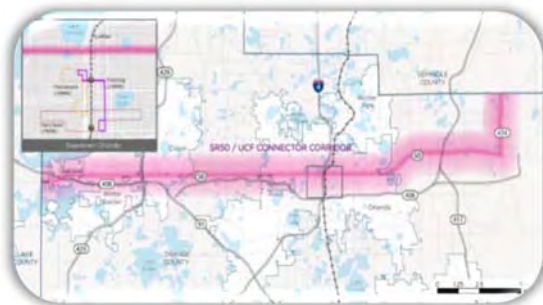
US 192 Alternatives Analysis (AA)

The US 192 AA kicked off in March 2012. The study focused on exploring and recommending the role that premium transit should play along the US 192 corridor from east of Kissimmee to US 27 in south Lake County, and along US 441 and John Young Parkway from the planned Osceola Parkway SunRail station to Pleasant Hill Road. The study included extensive coordination between LYNX, Osceola County, the City of Kissimmee, and FDOT. The study was completed in Fall 2013 and resulted in a locally recommended set of transportation improvements to be advance for further review. The locally preferred alternative (LPA) has been adopted by LYNX, the City of Kissimmee, Osceola County, and the West 192 Community Redevelopment Agency (CRA).



SR 50/UCF Connector Alternatives Analysis

The SR 50/UCF Connector AA is focused on identifying the issues, opportunities, and recommended improvements related to transportation in the SR 50 Corridor, with a particular focus on transit. The study covers a two-mile wide east-west corridor following State Road 50, from the Orange County/Lake County line on the west side to Alafaya Trail (State Road 434) to the east. The study area also includes a two-mile wide north-south corridor along Alafaya Trail north of SR 50, extending up to UCF and ending at the Seminole County Line. When complete, this study will provide a clear understanding of the transit needs, the range of potential solutions, and the locally preferred alternative solutions for addressing the corridor’s transit needs. The study commenced in 2013 and is currently underway; it is anticipated to be completed in 2015.



FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) CORRIDOR STUDIES

FDOT is also leading two major transit studies aimed at identifying options for providing premium transit service within the LYNX service area; a brief summary of each is provided on the following page.



Link	Service	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
29	E. Colonial Dr/ Goldenrod Road				Route realignment – Link 29 Circulator	Route realignment – restructure to remove Goldenrod section					
34	Sanford/Goldsboro	Maintain schedule to serve SunRail									
40	Americana Blvd/Universal Orlando		Route realignment								
42	Int'l Drive/Orlando Int'l Airport	Maintain schedule to serve SunRail									
45	Lake Mary	Maintain schedule on Link 45 Extension to serve SunRail			Route realignment – Link 45 Extension						
46E	SR 46/Midway	Maintain schedule to serve SunRail									
46W	SR 46/Seminole Towne Center	Maintain schedule to serve SunRail									
48	W. Colonial Drive/Pine Hills – 48				Route realignment – Link 48 Circulator						
49	W. Colonial Drive/Pine Hills - 49				Route realignment – Link 49 Circulator						
102	Orange Ave/South US 17-92				Schedule/route adjustment	Eliminate service					
103	N US 17-92 Sanford					Schedule/route adjustment					
104	East Colonial		Route realignment to join Link 104 & Link 105			Increase frequency					
105	West Colonial		Route realignment to join Link 104 & Link 105			Increase frequency					
111	OIA/Sea World	Maintain schedule to serve SunRail									



LYNX

Comprehensive Operational Analysis of LYNX Transit Route Network

Final Report

January 2014



Table ES-1: Summary of LYNX Service Guidelines

	Guideline	Metric																									
Route Design Guidelines	Fixed Route Network Spacing In Residential Areas	<ul style="list-style-type: none"> Routes should be spaced between ¼ and 1 mile apart, based on population density and percent of households without automobiles When planning for service, every attempt should be made to locate routes on roads that are appropriate for reliable operations. These include roads with TSP and/or synchronized signal progression based on posted speed limits. When planning for service, every attempt should be made to locate routes on roads with appropriate amenities (sidewalks/crosswalks/ pedestrian signals). <table border="1"> <thead> <tr> <th>Percent of Households without Autos</th> <th>Over 10 (Urban)</th> <th>7 to 10 (High Density Suburban)</th> <th>4 to 6.9 (Low Density Suburban)</th> <th>Under 4 (Rural)</th> </tr> </thead> <tbody> <tr> <td>Over 15.0</td> <td>1,300 Feet (1/4 Mile)</td> <td>1,300 Feet (1/4 Mile)</td> <td>1,300 Feet (1/4 Mile)</td> <td>2,600 Feet (1/2 Mile)</td> </tr> <tr> <td>10.0 to 15.0</td> <td>1,300 Feet (1/4 Mile)</td> <td>1,300 Feet (1/4 Mile)</td> <td>2,600 Feet (1/2 Mile)</td> <td>5,280 Feet (1 Mile)</td> </tr> <tr> <td>5.0 to 9.9</td> <td>1,300 Feet (1/4 Mile)</td> <td>2,600 Feet (1/2 Mile)</td> <td>5,280 Feet (1 Mile)</td> <td>*</td> </tr> <tr> <td>Below 5.0</td> <td>2,600 Feet (1/2 Mile)</td> <td>5,280 Feet (1 Mile)</td> <td>*</td> <td>*</td> </tr> </tbody> </table> <p>* These areas should be served with NeighborLink</p>	Percent of Households without Autos	Over 10 (Urban)	7 to 10 (High Density Suburban)	4 to 6.9 (Low Density Suburban)	Under 4 (Rural)	Over 15.0	1,300 Feet (1/4 Mile)	1,300 Feet (1/4 Mile)	1,300 Feet (1/4 Mile)	2,600 Feet (1/2 Mile)	10.0 to 15.0	1,300 Feet (1/4 Mile)	1,300 Feet (1/4 Mile)	2,600 Feet (1/2 Mile)	5,280 Feet (1 Mile)	5.0 to 9.9	1,300 Feet (1/4 Mile)	2,600 Feet (1/2 Mile)	5,280 Feet (1 Mile)	*	Below 5.0	2,600 Feet (1/2 Mile)	5,280 Feet (1 Mile)	*	*
	Percent of Households without Autos	Over 10 (Urban)	7 to 10 (High Density Suburban)	4 to 6.9 (Low Density Suburban)	Under 4 (Rural)																						
	Over 15.0	1,300 Feet (1/4 Mile)	1,300 Feet (1/4 Mile)	1,300 Feet (1/4 Mile)	2,600 Feet (1/2 Mile)																						
	10.0 to 15.0	1,300 Feet (1/4 Mile)	1,300 Feet (1/4 Mile)	2,600 Feet (1/2 Mile)	5,280 Feet (1 Mile)																						
	5.0 to 9.9	1,300 Feet (1/4 Mile)	2,600 Feet (1/2 Mile)	5,280 Feet (1 Mile)	*																						
	Below 5.0	2,600 Feet (1/2 Mile)	5,280 Feet (1 Mile)	*	*																						
Fixed Route Network Spacing In Commercial and Other Areas	Criteria for extending or adding transit service to major commercial and institutional uses based on overall square footage and/or number of employees.																										
Bus Stop Spacing Guidelines	<ul style="list-style-type: none"> There should be an average of 4 bus stops per mile when population density is over 10 households per acre. There should be an average of 2 bus stops per mile when population density is from 4 to 9.9 households per acre. There should be an average of 1 bus stop (as needed) per mile when population density is 4 households per acre. FastLink service should have an average of 1 bus stop per mile where the route overlays with local service. 																										
Guideline for Serving a Park and Ride Directly	<ul style="list-style-type: none"> Direct service should be provided to park and rides that attract over 150 daily passengers (weekday). Park-and-ride facilities should be provided at appropriate stops on rapid and express services to serve transit users from Low and High density residential areas. 																										
Overall Directness of Route Guideline	Fixed Route diversions should be allowed only when they are less than 10-15 percent of the overall route length.																										
Bus Rapid Transit Design Guideline	Bus Rapid Transit (BRT) routes should be designed consistent with the Federal Transit Administration’s guidelines on the development of BRT routes. These guidelines include defined stations, traffic signal priority for public transportation vehicles, short headway bidirectional services for a substantial part of weekday and weekend days.																										
Schedule Design Guidelines	Frequency of Service	<ul style="list-style-type: none"> Bus service should be scheduled to allow for loading on the vehicle with no standees during the off-peak and to allow for 1.25 passengers per seat during the peak hour. Routes which are experiencing capacity issues for a single trip should be candidates for articulated buses rather than increased frequency. NeighborLink service should operate at a minimum headway of one hour. XpressLink bus service should be scheduled to allow for no standees at all times. FastLink service should be scheduled based on the demand of a FastLink route or the combined FastLink and local bus service demand. 																									
	Policy Headway Guideline	<ul style="list-style-type: none"> Local Service should be scheduled at a policy headway of 30 minutes or better. BRT service should be scheduled at a policy headway of 15 minutes or better. FastLink service should be scheduled at a policy headway of 15 minutes or better. 																									
	Guideline for enhancing headway on routes with “Plug Buses”	If plug buses are used more than twice in one week or more than three times in one month to address crowding, a route should be examined for enhanced headways.																									
Schedule Design Guidelines	Guideline for Span of Service	<ul style="list-style-type: none"> Base hours of service should be between 6:00 AM and 10:00 PM on weekdays. Expansion of the span of service should occur when ridership is such that it begins to exceed the off-peak service guideline in the first or last hours of service. 																									

Table ES-1: Summary of LYNX Service Guidelines

	Guideline	Metric
	Guideline wait time for transferring between services	Routes should be scheduled so that the wait time for transferring passengers is no more than ½ the headway of the connecting service.
Economic and Productivity Guidelines	Guideline for Route Investigation based on Farebox Recovery	Routes that are in the lowest quartile (25%) of farebox recovery for their route type should be examined for improvements that might increase ridership or lower costs.
	Guideline for Route Investigation based on Passengers per Vehicle Hour and Vehicle Mile	Routes that are in the lowest quartile (25%) for all routes ranked by passengers per vehicle hour and/or passengers per vehicle mile should be examined for potential operating improvements.
	Guideline for Route Investigation based on Ratio of Non-Revenue to Revenue Miles	Routes that are in the lowest quartile for all routes as ranked by the ratio of non-revenue to revenue miles should be examined for potential operating improvements including interlining and utilizing satellite operating centers to reduce non-revenue miles.
Service Delivery Guidelines	Guideline for Route Investigation based on On-Time Performance	Routes which are in the bottom ten percent for this metric (buses arriving earlier than scheduled or over five minutes after schedule) should be examined further for potential improvements.
	Guideline for Route Investigation based on Average Speed	Routes with runtime more than twice the runtime for a single occupancy vehicle should be examined for potential speed improvements.
	Guideline for Route Investigation based on Trips Operated and Trips Completed	<ul style="list-style-type: none"> Any route that has a missed trip average 20 percent or greater than the system average should be investigated for potential improvements. Maintenance staff should be alerted during any month where the mean distance between failures is below 19,000 miles to identify potential causes of breakdowns.
	Guideline for Route Investigation based on Passenger Complaints	Routes that are in the top quartile (25%) for all routes ranked by number of passenger complaints should be examined for potential operating improvements.
	Guideline for Amenities at Bus Stops	<ul style="list-style-type: none"> Bus stops with 25 average daily boardings should be prioritized for shelters and benches. Bus stops with 15 average daily boardings should be prioritized benches. Facilities should follow applicable codes of governing jurisdictions. Co-location of non-LYNX facilities should be avoided unless expressly requested by governing jurisdiction or partner.
<ul style="list-style-type: none"> The purpose of the service guidelines is to provide LYNX with a framework for continuous improvement. They are not ranked, and one guideline is not more important than any other. They have been designed to balance the competing needs of the LYNX system, which seeks to optimize network coverage, financial efficiency and customer mobility. These guidelines provide LYNX staff and the community targets which to work toward over time. The guidelines may be modified from time to time at the discretion of the LYNX Board of Directors. These guidelines will be used by the transit agency to conduct an annual overall performance assessment of existing routes and anticipated performance of proposed routes. LYNX staff will work in collaboration with regional partners to prioritize implementation of recommended changes or improvements based on available financial resources. Guidelines apply to fixed route service only. The service guidelines can be divided into two categories: fixed and rolling. Fixed service guidelines have a definite pass/fail metric. Routes that fail can be improved, however improvements are subject to funding availability and consideration of other system needs. Rolling guidelines rank each route relative to each other. There will always be routes at the bottom of the list. LYNX staff and regional partners must use professional judgment how best to invest limited resources to work toward the goals outlined in the service guidelines. The 30 minute policy headway is a guideline for new routes only, and will be applied to existing routes as resources are available. 		

Short-term and Long-term Service Improvements

The following section presents the recommended service improvements for the LYNX system over the next thirty years. The organization of the recommendations is by service type. LYNX routes are listed in order. Table ES-4 summarizes the changes proposed for each existing route while Table ES-5 summarizes the recommendations for new routes.

A few geographic locations are proposed for significant improvement through multi-route restructurings. These locations were identified by LYNX staff and through the analysis of all of the data as needing a better route network in order to accommodate the existing and projected demand. These route restructurings are called “packages” in this COA. The following is a summary of the recommended packages. All of the route changes proposed in a particular package must be implemented together to achieve the full benefit of the restructuring.

East Orlando Package

The East Orlando package of improvements seeks to improve the financial performance of routes in this area and to improve overall network readability (by eliminating multiple branches, and removing one-way loops). This package includes the following routes: Link 3, Link 6, Link 15, Link 29 and the new Goldenrod route.

Sanford Package

The Sanford package of improvements seeks to improve transit operations and expand network coverage. This package includes the following routes: Link 34, Link 45, Link 46E/W and two new NeighborLinks.

Pine Hills Package

The Pine Hills package of improvements seeks to improve safety, transit operations and customer convenience by rerouting bus service to different SuperStops due to the closure of the Park Promenade Plaza SuperStop. This package includes the following routes: Link 37, Link 44, Link 9, Link 49, Link 48, Link 443.

Link 125 Package

The Link 125 package of improvements seeks to improve transit routing by providing a more direct connection between the Silver Star area and downtown Orlando, and the financial viability of routes in the area. This package includes the following routes: Link 1, Link 14, Link 125.

Limited Directs Package

Ridership on the Limited Direct routes has increased significantly. To re-distribute the loads between the various Limited Direct Routes, a restructuring of four of the routes (Link 301, Link 302, Link 304 and Link 305) is proposed, along with a new route that would help alleviate this situation.

Kissimmee Intermodal Facility (KIF) Package

The Kissimmee Intermodal Facility (KIF) plan in the COA would re-route bus service in Kissimmee to serve the newly completed Kissimmee Intermodal Facility. This package includes the following routes: Link 4, 10, 18, 26, 55, 56, and 441.

With the completion of KIF in late 2013, LYNX and Osceola County have agreed to implement the reroute of Links 4 (now 107), 10, 26, 55, 57 and 441 to KIF in January 2014. Link 56 will continue to serve the Osceola Square Mall. This COA recommends that in 2015 Link 56 be rerouted to KIF and Link 57 be returned to Osceola Square Mall.

A review of the *LYNX 2030 Vision Plan* and the *LYNX Transit Development Plan 2013-22* along with demographic forecasts provided by LYNX for the year 2030 were reviewed to develop long-term recommendations. The long-term improvements are detailed in are based on a review of the future land use and demographic data included in the *Vision Plan* as well as other recommendations made in this COA and other planning documents like the *SunRail Feeder Bus Plan*. The recommendations are focused on primary corridors identified by LYNX staff and the community as part of the *Vision Plan*. Service types were made based on the data available.

SunRail

As part of the planning efforts for the start of SunRail, FDOT has developed a feeder bus plan to provide intermodal connectivity along the corridor. Feeder bus service would be paid for in part through funds reimbursed by Florida Department of Transportation. As of December 2013, the FDOT-proposed SunRail feeder plan is generally consistent with the proposed recommendations in this COA.

SuperStops

As part of this analysis, two potential changes to existing SuperStops (Park Promenade and Central Florida Greeneway) were identified, and a new SuperStop location (International Drive) was also identified.

Table ES-4: Link Specific Recommendations (Local and Express) (Continued)

Link	Route Name	Description	Change Type
29	W. Colonial Drive/Goldenrod	Restructure route to remove Goldenrod Section (East Orlando Package)	Routing Changes
		Reduce evening span of service	Service Span Improvements
34	Sanford/Goldsboro	Restructure route to serve French Ave. and Central Florida Regional Hospital and remove from Airport Blvd. (Sanford Package)	Routing Changes
36	Lake Richmond	Reduce stop spacing	Bus Stop Spacing
		Reduce evening span of service	Service Span Improvements
		Remove running time from schedule	Schedule Improvements
37	Pine Hills/Florida Mall	Restructure route (Pine Hills Package)	Routing Changes
		Increase headway between 5AM and 9AM in the southbound direction	Headway Improvements
		Increase headway between 4AM and 8AM in the northbound direction	Headway Improvements
38	Downtown Orlando/International Drive	Increase span of service to all day	Service Span Improvements
40	Americana Boulevard/Universal Orlando	Expand morning span of service	Service Span Improvements
		Reduce stop spacing	Bus Stop Spacing
41	SR 436 Crosstown	Reduce stop spacing	Bus Stop Spacing
		Expand morning span of service	Service Span Improvements
		Increase headway around 3PM in the westbound direction	Headway Improvements
		Split Route to improve reliability	Schedule Improvements
42	International Drive/Orlando Airport	Extend route to Premium Outlets (part of Link 8/42 swap)	Routing Changes
		Increase headway between 10AM and 5PM in the eastbound direction	Headway Improvements
		Increase headway between 6AM and 3PM in the westbound direction	Headway Improvements
44	Hiawasse Road/Zellwood	Restructure route (Pine Hills Package)	Routing Changes
		Adjust time points	Schedule Improvements
45	Lake Mary	Extend route on the east to Central Florida Greenway, and on the west to International Parkway and C.R. 46A (Sanford Package)	Routing Changes
46 E	West SR 46/Seminole Town Center/Downtown Sanford	Extend route to Central Florida Greenway via Melonville and Sanford Ave. Remove from French Avenue (Sanford Package)	Routing Changes

Table ES-4: Link Specific Recommendations (Local and Express) (Continued)

Link	Route Name	Description	Change Type
46 W		Extend route to Sand Pond Road, remove from French Avenue (Sanford Package)	Routing Changes
		Restructure route (Pine Hills Package)	Routing Changes
48	W. Colonial Drive/Pine Hills	Reduce evening span of service	Service Span Improvements
		Increase headway between 6AM and 10AM in the eastbound direction	Headway Improvements
49	W. Colonial Drive/Pine Hills Road	Restructure route (Pine Hills Package)	Routing Changes
50	Downtown Orlando/Magic Kingdom	Remove route from SeaWorld	Routing Changes
51	Conway Road/Orlando International Airport	Expand the morning span of service	Service Span Improvements
54	Old Winter Garden Road	Eliminate Saturday service	Service Span Improvements
55	West US 192/Four Corners	Restructure route as part of the KIF Package	Routing Changes
56	West US 192/Magic Kingdom	Expand morning span of service	Service Span Improvements
		Restructure route as part of the KIF Package	Routing Changes
58	Shingle Creek Circulator	Eliminate Route	Routing Changes
103	North 17-92 Sanford	Increase headway around between 6AM and 10AM in the northbound direction	Headway Improvements
104	East Colonial	Increase headway to 15 minutes throughout the day	Headway Improvements
111	SeaWorld/Orlando International Airport	Extend to Walt Disney World	Routing Changes
125	Silver Star Road Crosstown	Restructure route to serve downtown Orlando (Link 125 Package)	Routing Changes
301	Limited Direct - Pine Hills/Animal Kingdom	Restructure route	Routing Changes
302	Limited Direct - Rosemont/Magic Kingdom	Restructure route (Limited Directs Package)	Routing Changes
304	Limited Direct - Rio Grande/Visitana Resort	Restructure route (Limited Directs Package)	Routing Changes
305	Limited Direct - Metrowest/All Star Resorts	Restructure route (Limited Directs Package)	Routing Changes
319	Richmond Heights	Reduce evening span of service	Service Span Improvements
405	Apopka Circulator	Eliminate Route	Routing Changes
426	Poinciana Circulator	Expand morning span of service	Service Span Improvements
441	Kissimmee/Downtown Orlando	Expand span of service	Service Span Improvements
443	Lee Road Crosstown	Reroute (Pine Hills Package)	Routing Changes
445	Apopka/West Oaks Mall	Adjust time points	Schedule Improvements

Table ES-5: Proposed New Local Routes

Description
Add new neighborlink on Celery Ave
Create New Circulator/Neighborlink in Lake Mary
Create new Goldenrod Route
Create new KIF to Lake Nona and OIA Route
Create new Kissimmee to International Drive route
Convert new Downtown Orlando to Lake Nona route (Service Grant) into a Downtown Orlando to OIA to Lake Nona XpressLink
Create new Celebration circulator
Create new Kissimmee circulator
Create new Baldwin Park Circulator
Create new LCS - Universal/SeaWorld Route
Create a new Limited Direct route to Buena Ventura Lakes
Create a new Limited Direct route in Pine Hills
Connects Oviedo and Altamonte Springs via Red Bug Lake Road and Semoran Blvd.
Create new Sanford SunRail Airport Blvd Route
Create new West Town Center to Maitland SunRail Local Route
Create new John Young Parkway Circulator Route
Create new Orlovista Circulator Route
Create new XpressLink along SR 50 between West Oaks and UCF
Create new Xpress Link along SR 423 from Downtown to I-Drive
Create new XpressLink from Apopka to Altamonte SunRail Station
Create New XpressLink from UCF to Downtown
Create new FastLink along SR 527 from Downtown to Sand Lake SunRail Station
Create new Xpress Link from Sanford to Oveido to UCF
Create new Xpresslink from UCF to Innovation Way
Create new FastLink from Fern Park to OIA
Create new XpressLink from Oviedo to Downtown
Create new BRT along US 192 from Lake County to Kissimmee
Create new BRT along US 192 from Disney to Kissimmee
Create new BRT along 435 from Park Promenade to I-Drive
Create new BRT from Winter Park to Downtown
Create new BRT from Downtown to Florida Mall

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described in FTA Circulars 5010 and 9300.1B. In cases where the allocation amount is less than the proposer's requested amount, grantees should work with the Regional Office to reduce scope or scale the project such that a complete phase or project is accomplished. Grantees are reminded that program requirements such as cost sharing or local match can be found in the NOFA. A discretionary project identification number has been assigned to each project for tracking purposes and must be used in the TEAM application. Selected projects are eligible for pre-award authority no earlier than September 25, 2014. Pre-award authority is also contingent upon Federal requirements, such as planning and environmental requirements, having been met. For more about FTA's policy on pre-award authority, please see the FTA Fiscal Year 2014 Apportionments, Allocations, and Program notice found in 77 FR 13461 (March 10, 2014). Post-award reporting requirements include submission of the Federal Financial Report and Milestone reports in TEAM as appropriate (see

FTA Circulars 5010.1D and 9030.1E). Grantees must comply with all applicable Federal statutes, regulations, executive orders, FTA circulars, and other Federal requirements in carrying out the project supported by the FTA grant.

FTA emphasizes that grantees must follow all third-party procurement guidance, as described in FTA Circular 4220.1F. Funds allocated in this announcement must be obligated in a grant by September 30, 2017.

Due to the volume of unfunded project proposals, FTA is unable to conduct individual debriefs with unsuccessful applicants. FTA can, however offer the following feedback to strengthen proposals when responding to other future discretionary opportunities:

- Submit new and carefully conceived proposals that directly reflect the requirements contained in the Notice of Funding Availability (NOFA).
- Contact FTA staff, regional and Headquarters, to discuss eligibility of your project before submitting the proposal.

• Address, clearly and thoroughly, all of the criteria outlined in the NOFA, to include why the investment it is needed and how it will meet the need, and accomplish or meet the intent of the program/opportunity to which you are applying.

• If a project is scalable, include both the scalable amount and an explanation of what can/will be funded with the scalable amount and how the benefits of the project may be scaled as a result of lesser funding.

• Ensure supporting documentation and attachments are clearly referenced in the application, and that they are relevant for the criteria.

• Ensure that qualitative and quantitative data provided in response to the criteria is project specific or specific to the targeted service area.

• Check numbers for the local match and ensure the budget shows the required match or accounts for the use of in-kind match that is equal to or more than the required local share.

Therese W. McMillan,
Acting Administrator.

TABLE I—FY 2014 BUS LADDERS OF OPPORTUNITY INITIATIVE PROJECT SELECTIONS

State	Recipient	Project ID	Project description	Allocation
AK	State of Alaska Department of Transportation and Public Facilities.	D2014-BUSP-00001	Bus Shelters	\$82,318
CA	Los Angeles County Metropolitan Transportation Authority.	D2014-BUSP-00002	Bus Stop Improvements	1,668,557
CA	San Diego Metropolitan Transit System	D2014-BUSP-03001	Bus Replacements	18,054,003
CA	San Francisco Municipal Transportation Agency	D2014-BUSP-00003	Buses for Service Expansion	8,995,226
CO	Mesa County	D2014-BUSP-00004	Bus Replacements	432,000
CO	Regional Transportation District	D2014-BUSP-03002	Priority Signalization & Service Enhancement.	4,999,000
FL	Central Florida Regional Transportation Authority (LYNX).	D2014-BUSP-97001 D2014-BUSP-04001	Bus Transfer Center; Compressed Natural Gas Articulated Buses.	1,000,000; 8,390,860
IA	Ames Transit Agency	D2014-BUSP-04002	Buses for Expansion of Service	2,550,000
IL	Bloomington-Normal Public Transit System (Connect Transit).	D2014-BUSP-10001	Bus Replacements	2,040,000
IL	Springfield Mass Transit District (SMTD)	D2014-BUSP-06001	Expanded Bus Service (Bus Purchase).	762,400
KS	Sac and Fox Nation of Missouri	D2014-BUSP-06002	Vans for New Service	66,308
KY	Transit Authority of River City	D2014-BUSP-06003	Replacement Buses	8,700,000
MI	City of Detroit Department of Transportation	D2014-BUSP-05001 (\$20,325,548); D2014-BUSP-01001 (\$5,600,000)	Replacement Buses	25,925,548
MN	Metropolitan Council—Metro Transit	D2014-BUSP-07001	Bus Stop Improvements	3,260,000
MO	Kansas City Area Transportation Authority	D2014-BUSP-07002	Transit Access Improvements	1,200,000
NE	City of Lincoln, Nebraska	D2014-BUSP-02003	Replacement Buses	2,014,496
OK	Oklahoma Department of Transportation	D2014-BUSP-07003	Replacement Buses	4,082,400



APPENDIX B-3

TECHNICAL MEMORANDUM 2: EVALUATION OF EXISTING PLANS AND STUDIES

MetroPlan Orlando Documents





metroplan orlando

A REGIONAL TRANSPORTATION PARTNERSHIP

**Orlando Urban Area
FY 2021/22 – 2039/40
Prioritized Project List**

Adopted by the MetroPlan Orlando Board
on September 14, 2016

September 2016

MetroPlan Orlando
FY 2021/22-2039/40 Prioritized Project List
Transportation Systems Management & Operations Projects

Priority Number	Jurisdiction	Project Name or Designation	From	To	Length (Miles)	Work Description	Latest Project Phase Funded	Project Phase(s) Remaining Unfunded	Estimated Remaining Cost (Present-Day)
19	Kissimmee	City of Kissimmee ATMS Phase 1				15 ATMS traffic signals	---	CST	\$2,000,000
20	Orange Co.	Sadler Rd.	at US 441			Improve intersection	---	CST	\$360,000
21	Orange Co.	Texas Ave.	at Rio Grande Ave.			Improve intersection	---	CST	\$960,000
22	Orange Co.	Woodbury Rd.	at Waterford Lakes Pkwy.			Improve intersection	---	PE CST	\$75,000 \$150,000
23	Orange Co.	Woodbury Rd.	at Golfway Blvd.			Improve intersection	---	PE CST	\$200,000 \$480,000
24	Orange Co.	Woodbury Rd.	at SR 50			Improve intersection	---	PE CST	\$150,000 \$360,000
25	Orange Co.	Sand Lake Rd.	at Sandpoint Blvd.			Improve intersection	---	PE	\$150,000
26	Orange Co.	Turkey Lake Rd.	at Vineland Rd.			Improve intersection	---	PE CST	\$150,000 \$500,000
27	Seminole Co.	SR 436	at Montgomery Rd.			Exten EB dual left turn lanes	---	PE CST	\$100,000 \$400,000
28	Seminole Co.	Dike Rd.	at Lake Howell HS			Additional turn lanes	---	PE CST	\$100,000 \$400,000
29	Seminole Co.	SR 419	at US 17/92			Additional turn lanes	---	PE CST	\$150,000 \$650,000
30	Orange Co.	University Blvd.	at Dean Rd.			Improve intersection	---	PE ROW CST	\$400,000 \$250,000 \$1,500,000
31	Orange Co.	SR 438/Silver Star Rd.	at Hiawasse Rd.			Improve intersection	---	PE CST	\$250,000 to be determined
32	Orange Co.	SR 438/Silver Star Rd.	at Pine Hills Rd.			Improve intersection	---	PE CST	\$250,000 to be determined
33	Orlando	Fiber Optic Extension Dowden Rd.	at Narcoossee Rd.			Extend RCSS to Randal Park, SR 417, Innovation Way	---	CST	\$250,000
34	Kissimee	ATMS Phase 2				Expansion of ATMS	---	CST	\$1,800,000
35	Osceola Co.	Osceola Pkwy.	at US 441			Add lanes/Improve intersections	---	PE CST	\$134,600 \$1,650,000

MetroPlan Orlando
FY 2021/22-2039/40 Prioritized Project List
Transit Projects

Project Ranking	Project Description	Estimated Remaining Cost (Present-Day)	Funding Sources	Responsible Agency	Consistent with Transit Development Plan?	DDR Eligible?	Comments
Category A: Premium Transit Projects							
1	SunRail Phase 3 <i>Project Development</i> <i>Design</i> <i>Construction</i>	TBD TBD \$225,000,000	FTA/FDOT/Local	FDOT	Yes	Yes	Rail connection from the SunRail Main Line south of the Sand Lake Road station to OIA. Project development underway. Design funded in FY 2016/17.
2	OIA Bus Rapid Transit ^① <i>Project Development</i> <i>Design</i> <i>Construction</i>	\$3,000,000 \$24,000,000 \$200,000,000	FTA/FDOT/Local	LYNX/Orange Co.	Yes	TBD	BRT from Orlando International Airport to the Convention Center. PD&E funded in FY 2017/18.
3	US 192 Bus Rapid Transit <i>Design</i> <i>Construction</i>	\$15,600,000 \$120,000,000	FTA/FDOT/Local	LYNX/Osceola	Yes	Yes	BRT on US 192 from US 27 to Shady Lane (Florida's Turnpike). Partial project development funded in FY 2016/17.
4	SR 50 Bus Rapid Transit <i>Project Development Phase</i> <i>Design</i> <i>Construction</i>	\$540,000 \$4,320,000 \$36,000,000	FTA, FDOT, LF	LYNX	Yes	Yes	BRT on SR 50 from Powers Drive to Goldenrod Rd & Express Bus system from Downtown Orlando to UCF. Alternative Analysis with a selected LPA was adopted in March 2015.
5	Downtown Orlando Bus Rapid Transit <i>Project Development Phase</i> <i>Design</i> <i>Construction</i>	\$480,000 \$3,520,000 \$32,000,000	FTA/FDOT/Local	LYNX	Yes	Yes	North/South expansion of the Lymmo system in downtown Orlando. LPA adopted in 2012.
6	ITS Enhanced Transit ^② <i>Capital & Operations</i>	TBD	FDOT/Local/Private	Altamonte Springs Casselberry Longwood Maitland	Yes	TBD	Capital & operation of expansion of ITS enhanced transit service within the 4-city service area.
Category B: Projects Requiring Transit Planning/Feasibility Studies							
1	SR 436 Corridor Premium Transit/Complete Streets <i>Feasibility Study</i>	\$1,250,000	FDOT/Local	LYNX/FDOT	Yes	TBD	Feasibility study of potential forms of mobility (ie. BRT, LRT, etc.) in the SR 436 corridor from SR 434 to Orlando International Airport.
2	Innovation Way Corridor <i>Feasibility Study</i>	TBD	FDOT/FTA/Local/Private	FDOT	Yes	TBD	Corridor Study of the proposed leg of an enhanced transit system from International Drive to the Innovation Way/Lake Nona/Medical City/Osceola Co. NE District corridor.15.

Note: The transit projects in the new PPL have been divided into four categories and ranked separately based on their status. The 13 prioritized transit projects are in Categories A through C, with those projects in Category A being premium transit projects eligible for DDR operating funds. The ongoing federal formula transit projects are in Category D and are unranked.

① The Locally Preferred Alternative (LPA) for the OIA Bus Rapid Transit project has not been adopted.

② Planning studies for the ITS Enhanced Transit project were completed in previous years. This project is included under Category A as a premium transit project pending further clarification by the sponsoring municipalities on the specific operational characteristics of the project.

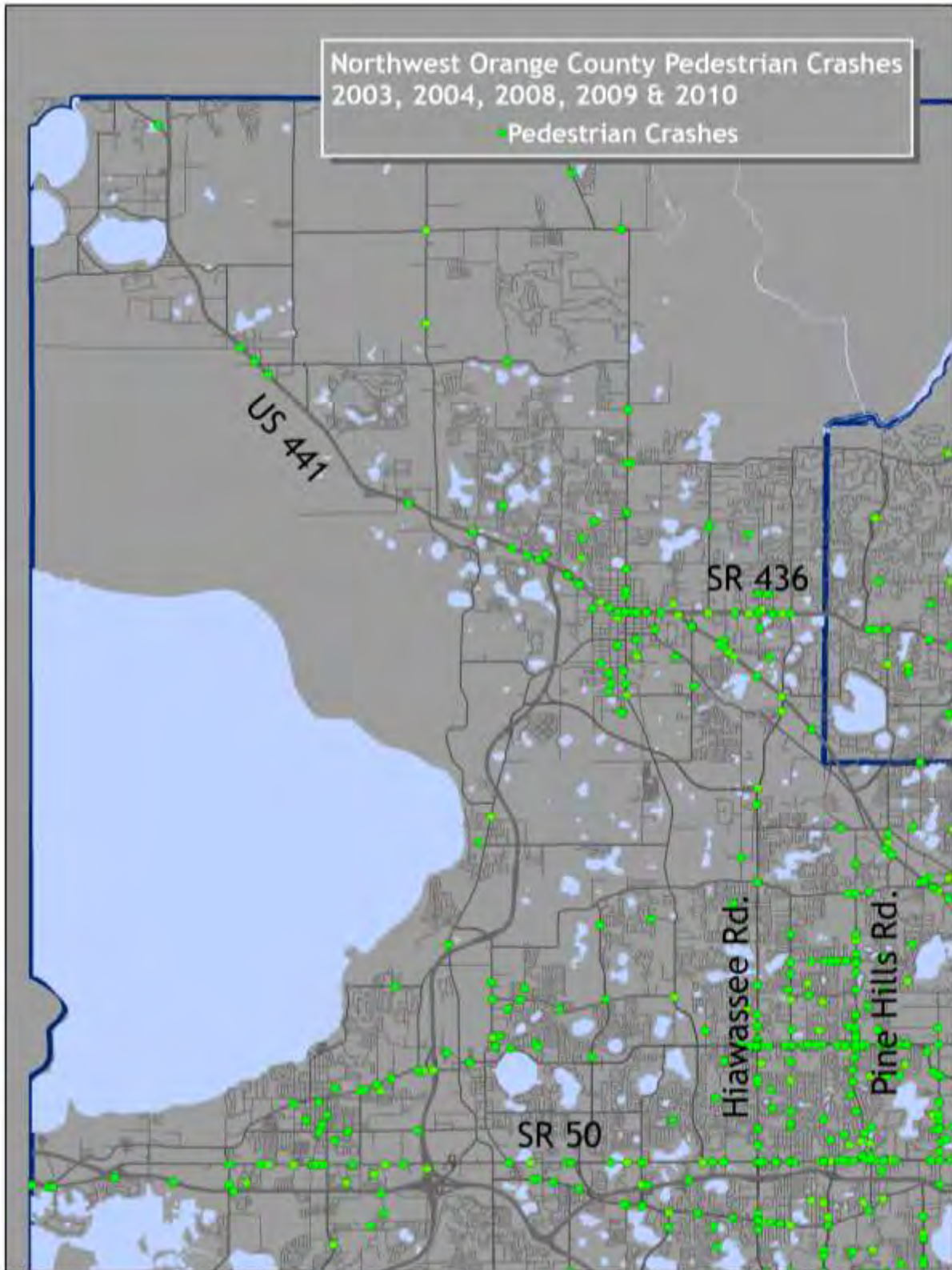
Pedestrian Safety Action Plan

Adopted July 11, 2012



MetroPlan Orlando | www.metroplanorlando.com | (407) 481-5672
315 E. Robinson Street, Suite 355, Orlando, Florida 32801

FIGURE 4



consider. The detailed prompt lists cover the same issues as the master prompt list, but are more specific things to look for during the field review. Taken together, these prompt lists should empower users with different levels of expertise on pedestrian safety issues to conduct successful RSAs.

Through mapping and analysis of pedestrian crashes, MetroPlan Orlando and the local governments have identified 17 corridors with significant numbers of pedestrian crashes and/or concerns over future crash potential (Table 7). The corridors are ranked based on the number of pedestrian crashes and fatalities, with fatal crashes given extra weighting. Pedestrian Roadway Safety Audits are expected to cost approximately \$20,000 per corridor; studies for the 17 corridors listed would then cost approximately \$340,000. MetroPlan Orlando, FDOT and the local governments will identify funding to conduct Pedestrian RSAs for these corridors.

Pedestrian Safety Improvements Priority List

Recommendations for engineering solutions from the RSAs will be used to develop a Pedestrian Safety Prioritized Project List. FDOT, MetroPlan Orlando committees, LYNX, and local governments will then collaborate to ensure these priorities are funded and constructed. As new crash data becomes available through the MetroPlan Orlando Crash Database System, new corridors can be identified for Pedestrian RSAs and the countermeasures can be analyzed for effectiveness.

Funding of these prioritized safety needs will be directed collaboratively by the following agencies:

- FDOT - the department administers studies and programming for federal highway safety funds
- City and County Governments - local governments may provide pedestrian safety improvements solely with their own funds, or in cooperation with other agencies
- MetroPlan Orlando - various committees and subcommittees advise the MetroPlan Orlando board on which projects to fund, including:
 - Transportation Technical Committee - develops prioritized project list with input from the Plans and Programs Subcommittee and the Management and Operations Subcommittee; projects are funded with Surface Transportation Program (STP) funds
 - Bicycle & Pedestrian Advisory Committee - develops a list of pedestrian and bicycle projects; projects are funded with federal Enhancement funds and a 15% set-aside of STP funds
- LYNX - the transit agency can use federal transit accessibility funds to improve safe access to bus stops

Pedestrian Safety and Mobility Assessment Tool (PSMAT)

MetroPlan Orlando has developed an assessment tool to assist FDOT and local governments in measuring present and potential pedestrian safety and mobility conditions, and identifying characteristics that might be changed to improve pedestrian safety and mobility.

This tool may be used during Efficient Transportation Decision-Making studies (ETDM), Project Development & Environmental studies (PD&E), and comparable local government project studies. It can also be used for Resurfacing, Rehabilitation & Restoration (3R) projects. Local governments may find it useful in assessing the walkability of new developments. The PSMAT is intended to be used only for non-limited-access projects within the urban service area.

The tool measures characteristics of each intersection, and of mid-block conditions between intersections. Scores for conditions are weighted in order to produce scoring scales of zero to 100 for each element. There are six resulting scores from this data:

1. **Individual Intersection Score** - the total of all scored intersection characteristics
2. **Block Walkability Score** - the total of all mid-block walkability characteristics
3. **Mid-Block Crossing Score** - the total of mid-block characteristics that pertain to the relative ease or difficulty of crossing the roadway at a non-intersection location
4. **Block Intersection Score** - the averaged score of intersections along the block
5. **Total Crossing Score** - the combined average of the Mid-Block Crossing Score and the Block Intersection Score
6. **Pedestrian Trip Potential** - a score estimating the relative potential for pedestrian trips in the block, based on land use and transit boardings

For more information on the PSMAT, contact MetroPlan Orlando at 407-481-5672.

Multi-Modal Corridors

MetroPlan Orlando also has the broader goal of moving more people by transit and other modes. Effective transit depends on a good walking environment. Making this shift entails a very different approach to designing and building streets. The most effective method to improve pedestrian safety is to completely redesign the road environment and adjacent land uses to support and encourage safe walking. Lowering vehicular speeds is the most effective way to reduce pedestrian fatalities. Reducing vehicular speeds involves building setbacks, providing street trees and on-street parking.

MetroPlan Orlando has developed a list of priority projects to convert existing streets into multi-modal corridors. This list (Table 10) is of Project Development and Environmental (PD&E), Preliminary Engineering (PE) and Alternatives Analysis (AA) studies. Projects on this list include studies for conventional widening projects, intersection improvements, multi-modal and context-sensitive improvements, Bus Rapid Transit (BRT) projects, and streetcar projects. Multi-modal enhancements could include bus bays, transit shelters, wider



APPENDIX B-4

TECHNICAL MEMORANDUM 2: EVALUATION OF EXISTING PLANS AND STUDIES

Pine Hills Neighborhood Improvement District Documents





2015 - 2045
Neighborhood Improvement Plan
Many Cultures, One Bright Future!

Measurement #1: Establish and maintain a business watch program for the district.

Measurement #2: Maintain an active business watch participation rate of 85% for the district.

Measurement #3: Create a tracking tool that actively measures the working and professional relationship between law enforcement and businesses and gauges public perceptions regarding that relationship.

Objective #2: *Work in conjunction with Orange County Sheriff's Department to develop and implement a public safety strategy that is designed to significantly increase public safety opportunities within the district.*

Measurement #1: Implement and maintain Crime Prevention Through Environmental Design best management practices within the district.

Measurement #2: Significantly improve existing infrastructure to increase opportunities for enhanced public safety within the district such as improved lighting, pedestrian-friendly designs and best management design standards.

Measurement #3: Work with the Sheriff's Department to enhance and maintain a strong business security patrol program during traditional business and evening hours to improve public safety and security within the district.

Goal #4: *Develop attractive and functional community corridors.*

Objective #1: *Develop and implement master plans for the Pine Hills Road and Silver Star Road corridors.*

Measurement #1: Actively engage Orange County's Community Planning Division to build support for the development of a master plan for the Pine Hills Road and Silver Star Road Corridors.

Measurement #2: Develop and implement a master plan for the Pine Hills Road corridor.

Measurement #3: Develop and implement a master plan for the Silver Star Road corridor.

Objective #2: *Review all county land use and development policies to determine their suitability for sustaining vibrant, attractive and functional corridors.*

Measurement #1: Conduct a review of all county land-use and development policies and make recommended changes to the appropriate governing authority as needed.

Objective #3: *Make recommendations for appropriate policy changes to ensure the sustainability of vibrant, attractive and functional corridors and encourage streamlining of the development process.*

Measurement #1: Make recommendation to the BCC regarding policy changes as needed.

Measurement #2: Develop and implement Urban Design Standards for the district that includes new architectural standards for commercial buildings and signage.

Objective #4: Invest in public infrastructure to improve and enhance aesthetics within the district.

Measurement #1: Develop and implement capital improvements plan for the district.

Objective #5: Encourage property owners to improve and enhance aesthetics of private properties by creating streamlined opportunities that facilitate such investment within the district.

Measurement #1: Continuously promote NPRDs Business Assistance for Neighborhood Corridors (BANC) Program to area businesses and strongly encourage their participation in the program.

Measurement #2: Develop and maintain a Commercial Beautification Award Program for the district.

Objective #6: Enhance effective and efficient code enforcement within the community.

Measurement #1: Actively engage Orange County Code Enforcement to develop and maintain an active partnership to ensure the effective and efficient implementation of code enforce activities within the district.

Goal #5: Establish effective multi-modal connections.**Objective #1: Develop and implement a multi-modal transportation strategy for the district.**

Measurement #1: Actively engage MetroPlan, Lynx, FDOT and Orange County Public Works to develop partnerships for promoting and developing multi-modal transportation policies that positively impact the district.

Measurement #2: Actively promote the development of pedestrian and bicycle facilities throughout the district including walking and bike trails that enhance the safety and well-being of the traveling public.

Measurement #3: Review all county land use and development policies to determine their suitability for sustaining effective multi-modal connections and streamlines the development process.

Measurement #4: Make recommendations for appropriate policy changes to ensure the sustainability of multi-modal connections within the district.

Objective #2: Invest in public infrastructure to improve and enhance multi-modal mobility including access and signage within the district.

Measurement #1: Develop and implement a capital improvement plan for the district.

Goal #6: Develop a vibrant mixed-use Town Center for Pine Hills.**Objective #1: Develop and implement a master plan for the four quadrants of the Silver Star Road and Pine Hills intersection and develop into a sustainable mixed-use town center environment.**

Measurement #1: Actively engage Orange County's Community Planning Division to build support for the development of a master plan for the Town Center area.

Measurement #2: Develop and implement a master plan for the Town Center Area.

Implementation Strategies

- 👉 Designate area as an Urban Infill and Redevelopment Area under Florida Statute 163.2517 and/or a Dependent Special District under 189.4041
- 👉 Develop a Master Plan for the Town Center Area that integrates CPTED, land use planning and water, sewer, stormwater and multi-modal transportation infrastructure planning
- 👉 Update existing land use and development regulations to accommodate desired changes
 - Develop and implement urban design guidelines including architectural and site
 - design guides for redevelopment and renovation projects within the area
 - Develop and implement an Infill Development ordinance
 - Develop and implement street/inter-parcel connectivity requirements for new developments
 - Modify Stormwater Management Ordinance to allow for shared and off-site detention
 - Modify Buffer, Landscape and Tree Ordinance
 - Modify Parking Regulations and Zoning to allow for shared parking and encroachment into adjacent residential lots behind Pine Hills Road parcels
 - Modify existing Zoning Ordinance to allow for mixed uses and multi-story structures
 - Examine use of Transfer of Development Rights (TDR) within District
- 👉 Examine the potential use of nationwide tax incentive programs and similar tools to encourage and promote development and redevelopment opportunities in the area
- 👉 Review and modify, if necessary, code enforcement policies to strengthen and enhance enforceability for code violations within the district
- 👉 Create an expedited review process for projects that comply with area master planning
- 👉 Integrate CPTED and infrastructure planning into the land use decision-making process
- 👉 Establish cultural destination centers within the Town Center area

Pine Hills Road Corridor

The Pine Hills Road Corridor describes the portion of the District that encompass Pine Hills Road from Colonial Drive north to approximately Champaign Circle. This area serves as the gateway to the Pine Hills community. It is predominately commercial in nature, but includes some residential land uses.

Desired Development Patterns

The development pattern in this corridor should seek to:

- Promote redevelopment of existing properties into a traditional business and gateway corridor

- Create a unique sense of place for the area through the use of new architectural and landscape design criteria
- Redevelop blighted properties and require streetscaping that enhances the aesthetics of the area
- Accommodate infill development that compliments the scale, setbacks and style of a modern mixed-use business environment
- Encourage master planning of mixed-uses that blend walkable communities with neighborhoods, schools, parks, recreation, businesses and services that are linked in a compact pattern
- Promote street designs that slow traffic and increase pedestrian safety, such as narrower streets and vegetated medians and right-of-ways
- Promote lot designs that encourage inter-parcel connectivity and shared parking
- Provide for pedestrian and bicycle facilities with connectivity into surrounding neighborhoods
- Encourage existing property owners to rehabilitate/renovate/replace existing structures that have fallen into disrepair or have architectural features that do not conform to the desired character of the area Promote consolidation of parcels within the district

Primary Land Uses

The following types of development are encouraged within this corridor:

- Mixed-use commercial (when part of a master planned development or subarea master plan)
- Professional offices
- Public/Institutional

Implementation Strategies

- 👉 Designate area as an Urban Infill and Redevelopment Area under Florida Statute 163.2517 and/or a Dependent Special District under 189.4041
- 👉 Develop a Master Plan for the Pine Hills Road Corridor that integrates CPTED, land use planning and water, sewer, stormwater and multi-modal transportation infrastructure planning
- 👉 Update existing land use and development regulations to accommodate desired changes
 - Develop and implement urban design guidelines including architectural and site design guides for redevelopment and renovation projects within the area
 - Develop and implement an Infill Development ordinance
 - Develop and implement street/inter-parcel connectivity requirements for new developments

- Modify Stormwater Management Ordinance to allow for shared and off-site detention
 - Modify Buffer, Landscape and Tree Ordinance
 - Modify Parking Regulations and Zoning to allow for shared use facilities
 - Modify Buffer, Landscape and Tree Ordinance
 - Modify existing zoning regulations to allow use of lots abutting Pine Hills Road parcels for the purpose of parking and vegetated buffering. These lots would have restricted access from Pine Hills Road only.
 - Modify existing Zoning Ordinance to allow for mixed uses and multi-story structures
 - Examine use of Transfer of Development Rights (TDR) within District
- 👉 Examine the potential use of nationwide tax incentive programs and similar tools to encourage and promote development and redevelopment opportunities in the area
 - 👉 Review and modify, if necessary, code enforcement policies to strengthen and enhance enforceability for code violations within the district
 - 👉 Create an expedited review process for projects that comply with area master planning
 - 👉 Integrate CPTED and infrastructure planning into the land use decision-making process

Silver Star Road Corridor

The Silver Star Road Corridor describes the portion of the District that encompass Silver Star Road from the town center area west to Hiawassee Road. It also includes small portions of Hastings Street, Powers Drive and N. Hiawassee Road. This area serves as a major business corridor for the Pine Hills community and includes a both commercial, institutional and residential land uses.

Desired Development Patterns

The development pattern in this corridor should seek to:

- Promote redevelopment of existing properties into a traditional business and gateway corridor
- Create a unique sense of place for the area through the use of new architectural and landscape design criteria
- Redevelop blighted properties and require streetscaping that enhances the aesthetics of the area
- Accommodate infill development that compliments the scale, setbacks and style of a modern mixed-use business environment
- Encourage master planning of mixed-uses that blend walkable communities with neighborhoods, schools, businesses and services that are linked in a compact pattern



- 👉 Actively utilize social media to monitor communications regarding the community and promote the positive stories that are occurring
- 👉 Actively engage media outlets throughout central Florida to actively combat negative news coverage and share positive stories of Pine Hills
- 👉 Develop economic development related materials such as information brochures, booklets and other tools and resources regarding benefits of investing in Pine Hills
- 👉 Actively engage local, state and federal agencies to promote investment in the community
- 👉 Actively engage builders, developers and investors through various means to promote the community for investment opportunities
 - Develop an active database of potential investors/developers/builders and send regular communications regarding local investment opportunities
 - Host an annual builders/developers/investors expo to highlight and promote the community

Public Safety and Business Security

Public Safety and business security is the most important component of the District's efforts. The Pine Hills community has struggled severely with negative perceptions and stereotypes as a direct result of crime and perceived crime. For redevelopment and revitalization efforts to be successful, the Orange County Sheriff's Department and the District must work in conjunction to develop a strategy that enhances public safety, eliminates violent crimes and marginalizes crimes against businesses. Furthermore, it is critical for the District to build a network of community business leaders who can lead efforts to strengthen working relations with area law enforcement and actively promote business responsibility in protecting themselves and their customers.

Implementation Strategies

- 👉 Develop and implement a comprehensive public safety strategy for the District and Pine Hills utilizing Crime Prevention Through Environment Design (CPTED) best management practices
- 👉 Develop and implement a comprehensive business safety and security program (aka, business watch) for the District
- 👉 Develop and implement a business security patrol program for the District
- 👉 Develop and implement a business safety and security grant for the District
- 👉 Install security cameras along the Pine Hills Trail
- 👉 Improve existing infrastructure to better promote public safety within the district including security lighting, pedestrian-friendly designs and other related best management practices

-  Work with Orange County Sheriff’s Department to actively track and report public safety statistics and promote positive news coverage regarding significant changes in criminal activity
-  Actively work to improve public safety perceptions about the District and the Pine Hills community through a strong marketing strategy

30-Year Investment Strategy Summary

The following information summarizes the District’s investment strategy for the area. It contains a list of recommended planning actions, public policy changes, programs and services to be offered and capital improvements to be made during the 30-year horizon of this plan. Items listed as short-term will be completed within 1-5 years. Mid-term will be completed in 6-10 years. Long-term will be completed in 11+ years.

Recommended Policy Actions

Action/Implementation Strategy	Priority	Funding Source	OC Division Partner
Designate District area as an Urban Infill and Redevelopment Area under FL Statute 163.2517	Short-term	County	NPRD & Planning
Develop & implement urban design guidelines including architectural & site design guides	Short-term	County	NPRD & Planning
Develop & implement Infill Development ordinance	Short-term	County	NPRD & Planning
Modify Stormwater Management ordinance	Short-term	County	Planning & PW
Modify Buffer, Landscape and Tree ordinance	Short-term	County	Zoning
Develop & implement street/interparcel connectivity requirements for new developments	Short-term	County	Planning & PW
Review and modify, if necessary, county code enforcement policies and implement a new enforcement program	Short-term	County	NPRD & Code Enf.
Modify Existing Parking Regulations and Zoning to allow encroachment into adjacent residential lots behind Pine Hills Road Corridor	Short-term	County	Zoning
Modify existing land use regulations to allow more mixed uses along Pine Hills Road & Silver Star Road	Short-term	County	NPRD & Planning
Study successful Transfer of Development Rights (TDR) programs and evaluate its potential use in the district.	Short-term	County	NPRD & Planning
Create expedited review process for qualified projects in district	Short-term	County	Planning
Integrate strategic infrastructure planning into the land use decision-making process	Short-term	County	Planning
Integrate Crime Prevention Through Environmental Design planning into the development review process	Short-term	County	NPRD & Planning
Research and analyze the use of various nationwide tax incentive programs for promoting new growth & development for potential use in the district	Short-term	County	NPRD, Planning & OETD

Recommended Program and Service Actions

Action/Implementation Strategy	Cost Estimate	Funding Priority	Funding Source	OC Division Partner
Develop Pine Hills Road Corridor Master Plan (includes CPTED, land use and water, sewer, stormwater, and transportation infrastructure)	\$200,00.00	Short-term	State/Federal Grants	Planning, PW, Utilities & OUC
Develop Silver Star Road Corridor Master Plan (includes CPTED, land use and water, sewer, stormwater and transportation infrastructure)	\$350,000.00	Mid-term	State/Federal Grants	Planning, PW, Utilities & OUC
•Silver Star and Pine Hills Road Node				
•Silver Star and Powers Drive Node				
•Silver Star and Hiawassee Road Node				
Develop and implement strategic plan for intergovernmental coordination issues	\$0.00	Short-term	County/PHNID	NPRD & Planning
Work with local chambers of commerce and development authorities to promote new business investment	\$2,500.00	Short-term	County/PHNID	WOCOC, OETD
Develop and implement a comprehensive economic development program for Pine Hills	\$500,00.00	Mid-term	State/Federal County/PHNID	OETD
Pine Hills Business Association/Business Watch Program	\$120,000.00	Short-term	County/PHNID	PHNID
“Shop Pine Hills” Program and Business Directory	\$200,000.00	Mid-term	County/PHNID	PHNID
Develop and implement a public safety and business security program in partnership with OCSO	\$500,000.00	Mid-term	State/Federal/County/PHNID	OCSO
Develop and implement a business and safety and security grant	\$200,000.00	Mid-term	State/Federal Grants	OCSO
Remove or trim back trees along corridor	\$50,000.00	Short-term	County/PHNID	OUC, Duke Energy, PW
Commercial Beautification Award	\$5,000.00	Short-term	County/PHNID	PHNID
Landscaping maintenance program	\$140,000.00	Mid-term	County/PHNID	PHNID, PW
Anti-Litter Campaign Initiatives	\$110,000.00	Short-term	County/PHNID	PHNID
Pine Hills Pillars Initiative	\$25,000.00	Short-term	County/PHNID	PHNID & BCC
30-Year Investment Program Funding Total	\$2,402,500.00			

In addition to these recommended programs, the District strongly supports the Business Assistance for Neighborhood Corridors (BANC) Grant Program currently funded by Orange County. This program is managed by the Orange County Neighborhood Preservation and Revitalization Division and is separate from the PHNID. The District urges Orange County to continue funding this program long-term to further support the revitalization of our business corridors.

Recommended Capital Improvements

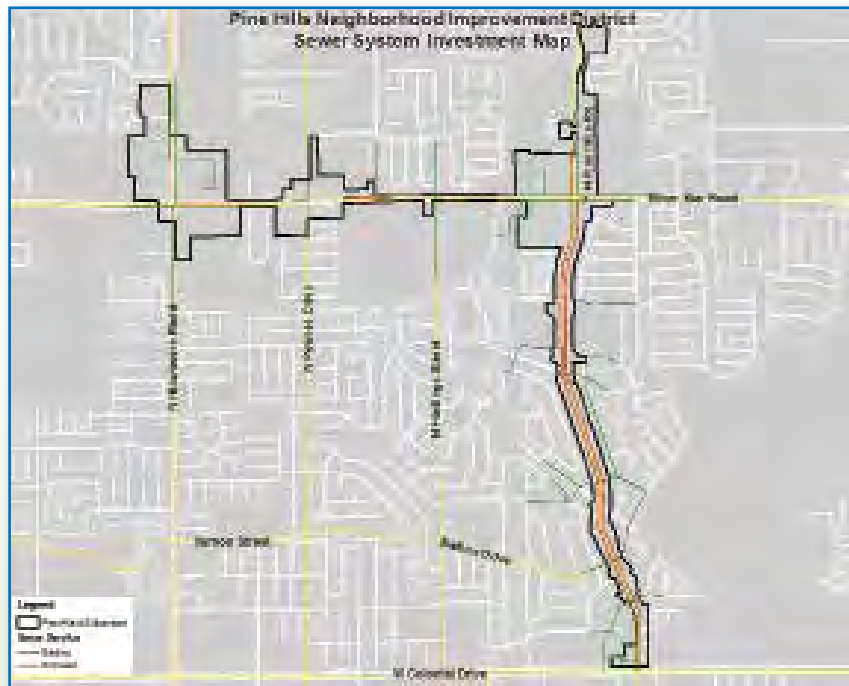
Action/Implementation Strategy	Cost Estimate	Funding Priority	Funding Source	OC Division Partner
Town Center Redevelopment Land Bank - Phase 1 NE Quadrant	\$3,000,000.00	Short-term	State/Federal Grants	OC Property
Town Center Redevelopment Land Bank - Phase 2 SW Quadrant	\$6,000,000.00	Mid-term	State/Federal Grants	OC Property
Town Center Redevelopment Land Bank - Phase 3 NW Quadrant	\$7,500,000.00	Long-term	State/Federal Grants	OC Property
Pine Hills Road Corridor Land Bank	\$1,700,000.00	Short-term	State/Federal Grants	OC Property
Silver Star Road Corridor Land Bank	\$1,000,000.00	Long-term	State/Federal Grants	OC Property
Create a demolition and environmental mitigations bank	\$5,000,000.00	Mid-term	State/Federal Grants	OC Property
Install security cameras along Pine Hills Trail	\$3,500,000.00	Mid-term	State/Federal Grants	OCSO
Place decorative directional signs for pedestrians and motorists (signage on 408 and PH Trail)	\$100,000.00	Mid-term	County/State	OC Public Works
Pine Hills Road sewer system upgrades	\$5,360,000.00	Short-term	State/Federal Grants	OC Utilities
Silver Star Road sewer system upgrades	\$4,290,000.00	Mid-term	State/Federal Grants	OC Utilities
Pine Hills Road Streetscape	\$6,500,000.00	Mid-term	State/Federal Grants	OC Public Works
Silver Star Road Streetscape	\$2,500,000.00	Mid-term	State/Federal Grants	OC Public Works
Silver Star Road Pedestrian Bridge @ Town Center	\$9,500,000.00	Mid-term	State/Federal Grants	OC Public Works
Pine Hills Road Pedestrian Bridge @ Town Center	\$8,500,000.00	Long-term	State/Federal Grants	OC Public Works
Widen Powers and Silver Star intersection (add thru and turn lanes for both directions on Powers Drive)	\$350,000.00	Mid-term	State/Federal Grants	OC Public Works
Install Mast Arms at all intersections along Pine Hills Road and Silver Star Road Corridors	\$2,400,000.00	Mid-term	County	OC Public Works
Pine Hills Multi-use Trail System Phase 2 - Silver Star to Clarcona-Ocoee Road	\$3,000,000.00	Short-term	State/Federal/ County	OC Public Works
30-Year Investment Program Funding Total	\$70,200,000.00			

Map 5.1: Capital Improvements Map – Transportation Infrastructure



Source: Orange County Fiscal & Operational Support Division, GIS Unit, October 2014.

Map 5.2: Capital Improvements Map – Sewer Infrastructure



Source: Orange County Fiscal & Operational Support Division, GIS Unit, October 2014.

In addition to these recommended investments, the District strongly supports the following programs and projects for potential long-term investment in the area:

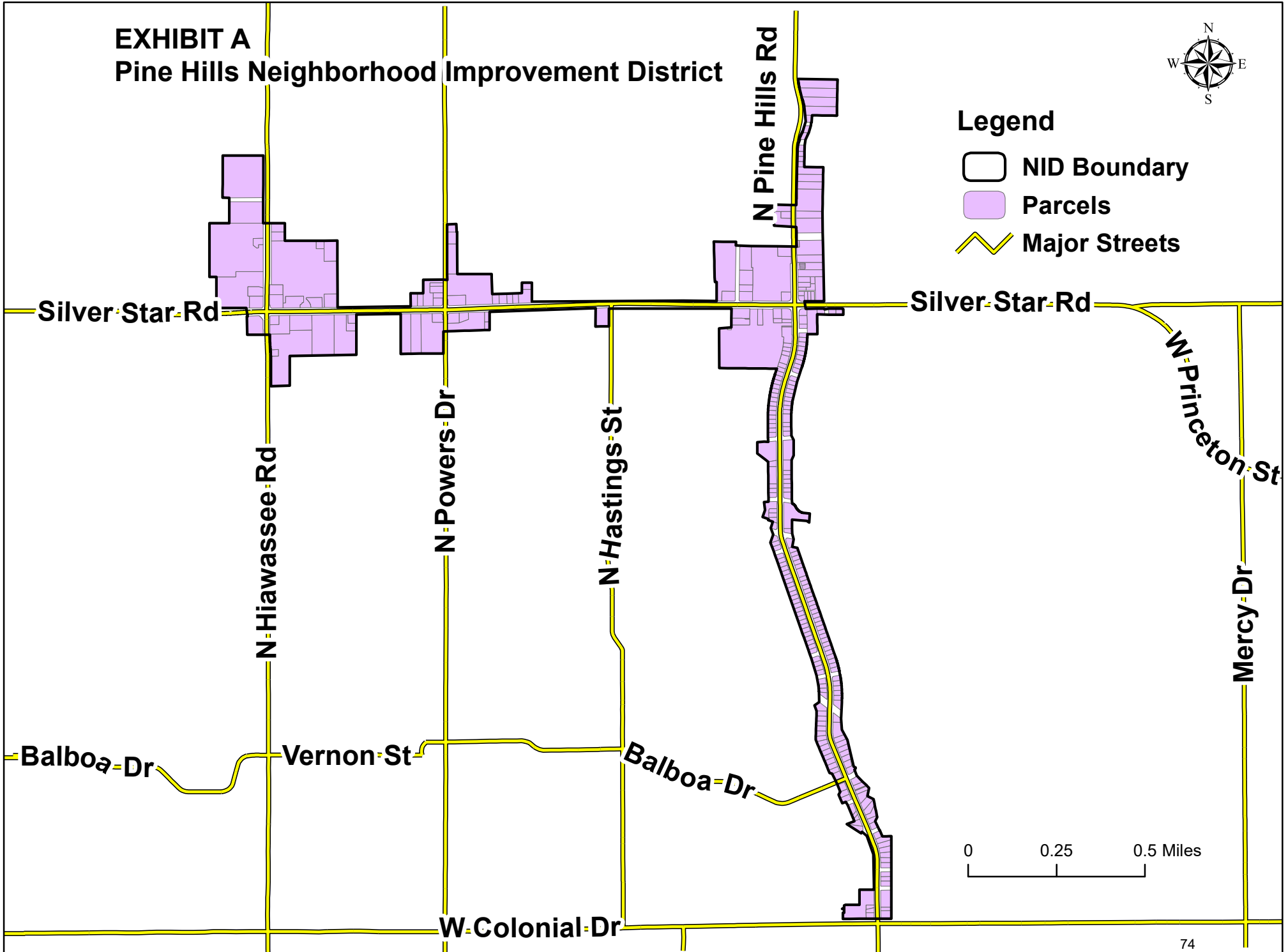
Other Potential Programs/Projects

Other Potential Programs/Projects	Cost Estimate	Funding Source	OC Division Partner
Develop regional urban stormwater collection system to eliminate on site detention in district	Unknown	State/Federal Grants with County Match (80/20)	Public Works - Stormwater
Pine Hills Multi-use Trail System - Phase 3 - Claracona-Ocoee Road to Seminole County Line	\$9,948,000.00	State/Federal/County	Parks & Rec, Public Works - Transportation
Construct senior service and community arts program facility within Town Center	Unknown	State/Federal Grants with County Match (80/20)	OC Facilities/OC Senior Services/OC Cultural Arts
Install security street cameras along Pine Hills Road	Unknown	State/Federal Appropriation & Grants	OCSO
Install security street cameras along Silver Star Road	Unknown	State/Federal Appropriation & Grants	OCSO
Relocate utility lines away from major corridors	Unknown	State/Federal Appropriation & Grants	OUC and Duke Energy
BANC Grant Program	Unknown	County	NPRD

EXHIBIT A Pine Hills Neighborhood Improvement District



- Legend**
- NID Boundary
 - Parcels
 - Major Streets





COMMUNITY PLANNING ASSISTANCE TEAMS

PINE HILLS: MANY CULTURES, ONE BRIGHT FUTURE

Pine Hills
Orlando, Florida
Final Report
August 15, 2014



American Planning Association
Making Great Communities Happen

Pine Hills Town Center Master Plan: Final Recommendation



Map 14: Following additional feedback on the initial concept plan from Pine Hills residents and stakeholders, the team revised the concept showing greater detail. Created by team member, Claire Hempel, AICP



Image 13: Dimensions of a 120-foot right-of-way. Created by CPAT member, Claire Hempel, AICP

BRAND RECOMMENDATIONS

The brand attributes above form the foundation of the brand itself and can be used to deploy a series of marketing recommendations that follow.

Short Term

A. Recommendation: Adopt the brand statement and brand system.

A brand statement is different from a mission statement. A brand statement is an explanation of a place that should resonate with local residents (most importantly), citizens of the greater region, and local businesses. The brand statement is the “message” and foundation of the brand system that allows Pine Hills to deploy a set of tools to market and promote the community.

A brand style guide has been provided to as part of the CPAT project. It provides guidance on proper usage of the identity system, color specifications in RGB, CMYK and Pantone, a copyright release allowing the client to modify and use the system as needs evolve. Finally, a complete file system with all logos, ad templates, type-faces, and support graphics is included as part of the deliverables for this effort.

B. Recommendation: Host a brand forum with Pine Hills partner agencies.

This can be in the form of a soft “brand launch event”, although the primary purpose of the forum will be to outline the management of the brand and determine responsibilities. Pine Hills is unique in that it is not a governmental entity. As such, it does not need to communicate the functions of an official body, but rather promote the character and identity of Pine Hills inside and outside of the community. Because of this, there are a number of important stakeholders in marketing Pine Hills. It is anticipated that the Pine Hills Neighborhood Improvement District will be the official manager of the brand, but partner agencies like the Pine Hill Community Council, Pine Hill Safe Neighborhoods Partnership, and even Orange County should have clear responsibilities and cooperatively work to promote the community.

C. Recommendation: Extend the brand identity to partner agencies.

It is critical that each entity is on the same page in terms of message, but also graphics. An effective community brand builds equity when the messages are connected. Graphic elements of the primary Pine Hills logo were extended to the Pine Hills Neighborhood Improvement District and other entities.

E. Recommendation: Create banners and install along Silver Star and Pine Hills Road.

Banners can be installed throughout the community as a way to showcase the brand and delineate the Pine Hills neighborhood. Banners are attractive and can add color to the streetscape within the neighborhood, but also improve safety. Installed along Silver Star and Pine Hills Road, banners can help slow down traffic and make motorists more generally aware of the pedestrian character of the neighborhood. Along Silver Star in particular, they can be strategically placed to identify safe crossing zones.

Next Steps

F. Recommendation: Create Ads with the Brand Statement.

Advertisements showcasing the brand statement and Pine Hills' Neighborhood values can be used to promote the positive elements of the community. These "ads" can be placed in the windows of area businesses, along the halls of Evans High School, and in the area community centers and parks. On occasion, they can be placed in area media to highlight a particular event or business.



Many Flavors, One Delicious Community



We are Pine Hills, Florida. Developed in the early 50s as one of Orlando's first suburbs, Pine Hills has a heritage that continues to grow more rich with each passing year. Today we are proud to say that people from all walks of life and ethnic groups call Pine Hills home. Whether black or white, Caribbean, Asian, South Pacific Islander, Hispanic or Eastern European, the citizens of Pine Hills enjoy a life that is defined by family, faith, pride, and resiliency. We are striving to make each generation have a better life than the one they follow. We are nurturing a younger population that will go forward to enrich Pine Hills and other places they may call home. This can be seen and heard in the halls of Evans High School, where Trojan Pride has become the heart and soul of our community and the anchor of our neighborhood. We are strong. We are a family. One that includes not only our brothers and sisters, but also our next door neighbors, classmates, and simply those who are in need. We celebrate our diversity, and our character is a rich tapestry of many cultures, all bound by a common passion for the Pine Hills community. We are taking ownership of our future, one filled with brightness that blends culture, creativity, education, and safe neighborhoods. We are Pine Hills, Florida. Many cultures, one bright future.



Many Players, One Powerful Icon



We are Pine Hills, Florida. Developed in the early 50s as one of Orlando's first suburbs, Pine Hills has a heritage that continues to grow more rich with each passing year. Today we are proud to say that people from all walks of life and ethnic groups call Pine Hills home. Whether black or white, Caribbean, Asian, South Pacific Islander, Hispanic or Eastern European, the citizens of Pine Hills enjoy a life that is defined by family, faith, pride, and resiliency. We are striving to make each generation have a better life than the one they follow. We are nurturing a younger population that will go forward to enrich Pine Hills and other places they may call home. This can be seen and heard in the halls of Evans High School, where Trojan Pride has become the heart and soul of our community and the anchor of our neighborhood. We are strong. We are a family. One that includes not only our brothers and sisters, but also our next door neighbors, classmates, and simply those who are in need. We celebrate our diversity, and our character is a rich tapestry of many cultures, all bound by a common passion for the Pine Hills community. We are taking ownership of our future, one filled with brightness that blends culture, creativity, education, and safe neighborhoods. We are Pine Hills, Florida. Many cultures, one bright future.

G. Recommendation: Create the Shop Pine Hills card.

The Pine Hills Community Council has already established a local loyalty program whereby shoppers can save at participating neighborhood businesses and services. This program should continue, but utilize new cards that include the new brand identity.



H. Recommendation: Install new gateway signs at entrances to the neighborhood.

The existing gateway sign into Pine Hills actually has a deciduous tree on it as opposed to a pine tree. More importantly, the sign is old and weathered. The Pine Hills NID and Orange County should install new gateway signs utilizing the new brand identity.



I. Recommendation: Establish a regular event to celebrate the community.

Pine Hills biggest asset is its cultural diversity. The community can celebrate this heritage but also introduce them to the greater Orlando area with a regular event. We recommend the Pine Hills International Bazaar, a monthly multicultural event that showcases the neighborhood's ethnic foods, products, music and art. The event would be similar in scale to farmers markets seen in other places, but provide an opportunity for area businesses to sell their goods and services.



Ongoing Long-Term

J. Recommendation: Expand wayfinding signage system.

Directional and destination signs for parks, community centers, and the high school can be created as part of a unified system. This would include signs for the new Pine Hills Trail, and perhaps even at bus kiosks.





APPENDIX B-5

TECHNICAL MEMORANDUM 2: EVALUATION OF EXISTING PLANS AND STUDIES

FDOT Documents



Florida Department of Transportation
Complete Streets Tenets
04.25.16

The tenets for Complete Streets provide a common language and set of values for the Florida Department of Transportation (FDOT). These tenets provide the foundation to test Complete Streets-related transportation procedures, programs, and standards against the goals outlined in the Florida Transportation Plan (2016) and the FDOT Complete Streets Policy (adopted September 2014).

These tenets are not intended to be a checklist, but to guide the implementation of the Complete Streets Policy. The Policy states that “It is the goal of the Department of Transportation to implement a policy that promotes safety, quality of life, and economic development in Florida. To implement this policy, the Department will routinely plan, design, construct, reconstruct and operate a context sensitive system of Complete Streets.” The Department specifically recognizes Complete Streets are context-sensitive and require transportation system design that considers local land development patterns and built form.

Revised Complete Streets Tenets:

1. **Safety Always:** Develop and implement solutions that support the safety and comfort of all users of all ages and abilities, including but not limited to cyclists, freight handlers, motorists, pedestrians, and transit riders.
2. **Support the Context:** Plan and design for the existing and future transportation, land use and environmental context.
3. **Enhance All Modes:** Provide high-quality options for walking and bicycling and improve the efficiency and convenience of connections to and among local transit systems.
4. **Enhance System Performance:** Increase efficiency and reliability of all modes.
5. **Connect Community Centers:** Connect to employment centers and visitor destinations to support community economic development.
6. **Create Quality Places:** Integrate land use and transportation solutions that create quality places to live, work, and play.
7. **Invest in Existing and Emerging Communities:** Plan and develop transportation systems that reflect regional and community visions while preserving environmental resources.

Chapter 21

Transportation Design for Livable Communities

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Exhibit 21-A Corridor Techniques

TECHNIQUE	SIS		SHS URBAN	SHS RURAL	NON-SHS
	LIMITED ACCESS	CONTROLLED ACCESS			
Improved location, oversized or redundant directional signs	A	A	M	M	M
Use of route markings/ signing for historical and cultural resources	M	A	A	A	A
Increased use of variable message signing	A	A	M	M	M
Landscaping	M	M	M	M	M
Sidewalks or wider sidewalks	NA	M	A	M	M
Street furniture	NA	M	M	M	M
Bicycle lanes	NA	M	M	M	M
Shared Use Paths	NA	M	M	M	M
Conversion to/from one-way street pairs	NA	M	M	NA	M
Alternative paving materials	NA	NA	M	NA	M
Pedestrian signals, midblock crossings, median refuge areas	NA	M	A	M	M
Parking modifications or restoration	NA	NA	M	M	M
Safety and personal security amenities	M	M	M	M	M
Street mall	NA	NA	NA	NA	M

- A "Appropriate"--Techniques which should be included on all TDLC projects unless there are compelling reasons not to do so.
- M "May be Appropriate"--Techniques which should be employed, but must be evaluated relative to context of the particular project.
- NA "Not Appropriate"--Techniques which need not be considered for TDLC projects.

Exhibit 21-B Techniques To Reduce Speed Or Traffic Volume

TECHNIQUE	SIS		SHS URBAN	SHS RURAL	NON-SHS
	LIMITED ACCESS	CONTROLLED ACCESS			
Lower speed limits	NA	NA	NA	NA	N
Increase use of stop or multi-way stop signs	NA	NA	NA	NA	N
Speed humps/tables	NA	NA	NA	NA	M
On-street parking to serve as buffer between travel lanes and pedestrian areas	NA	NA	M	M	M
Curb bulb-outs at ends of blocks	NA	NA	M	M	M
Traffic “chokers” oriented to slowing traffic	NA	NA	NA	NA	M
“Compact” intersections	NA	A	A	A	A
Traffic roundabouts to facilitate intersection movement	NA	M	M	M	M
Curvilinear alignment (with redesign, chicanes, winding paths, etc.)	NA	NA	M	NA	M
Street closing or route relocation	NA	NA	M	NA	M

- A “Appropriate” --Techniques which should be included on all TDLC projects unless there are compelling reasons not to do so.
- M “May be Appropriate”--Techniques which should be employed, but must be evaluated relative to context of the particular project.
- NA “Not Appropriate”--Techniques which need not be considered for TDLC projects.

Exhibit 21-C Techniques to Encourage Multimodal Travel

TECHNIQUE	SIS		SHS URBAN	SHS RURAL	NON-SHS
	LIMITED ACCESS	CONTROLLED ACCESS			
Sidewalks	NA	M	A	M	M
Pedestrian friendly intersection design	NA	M	A	M	M
Midblock pedestrian crossings	NA	M	M	M	M
Illuminated pedestrian crossings	NA	M	M	M	M
Bicycle lanes/paved shoulders	NA	M	A	A	M
Independent Shared Use Path	NA	M	M	M	M
Bicycle friendly design and parking	NA	M	A	A	A
Transit system amenities	NA	M	A	M	M
Transit user amenities	NA	M	A	M	M
Exclusive transit lanes	M	M	M	M	M
Linking modal facilities	A	A	A	A	A
Lower speed limits	NA	NA	NA	NA	NA
Removal of street parking	NA	NA	M	M	M

- A “Appropriate”--Techniques which should be included on all TDLC projects unless there are compelling reasons not to do so.
- M “May be Appropriate” --Techniques which should be employed, but must be evaluated relative to context of the particular project.
- NA “Not Appropriate” --Techniques which need not be considered for TDLC projects.

Exhibit 21-D Network Techniques

TECHNIQUE	SIS		SHS URBAN	SHS RURAL	NON-SHS
	LIMITED ACCESS	CONTROLLED ACCESS			
Design the street network with multiple connections and relatively direct routes	NA	NA	A	M	M
Space through-streets no more than a half mile apart.	NA	NA	A	M	M
Use traffic calming measures	NA	M	M	M	M
Limit local speed to 20 mph	NA	NA	NA	NA	M
Limit lanes	M	M	M	M	M
Align streets to give buildings energy-efficient orientations	NA	NA	M	NA	M
Avoid using traffic signals wherever possible. Space them for good traffic progression	NA	M	M	M	M
Incorporate pedestrian and bicyclist design features	NA	A	A	A	A
Incorporate transit-oriented design	M	A	A	A	A
Design attractive greenway corridors	A	A	A	A	A
Design attractive storm water facilities	A	A	A	A	A

- A “Appropriate”--Techniques which should be included on all TDLC projects unless there are compelling reasons not to do so.
- M “May be Appropriate”--Techniques which should be employed, but must be evaluated relative to context of the particular project.
- NA “Not Appropriate”--Techniques which need not be considered for TDLC projects.

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1 **B APPLICATION**

2 A project or community plan may be considered a TND when at least the first seven of
3 the following principles are included. The design criteria in this chapter shall only be
4 applicable within the area defined as TND.

- 5 1. Has a compact, pedestrian-oriented scale that can be traversed in a five to
6 ten-minute walk from center to edge.
- 7 2. Is designed with low speed, low volume, interconnected streets with short
8 block lengths between 150 to 500 feet, and cul-de-sacs only where no
9 alternatives exist. Cul-de-sacs, if necessary, should have walkway and
10 bicycle connections to other sidewalks and streets to provide connectivity
11 within and to adjacent neighborhoods.
- 12 3. Orients buildings at the back of sidewalk, or close to the street with off-street
13 parking located to the side or back of buildings, as not to interfere with
14 pedestrian activity.
- 15 4. Has building designs that emphasize higher intensities, narrow street
16 frontages, connectivity of sidewalks and paths, and transit stops to promote
17 pedestrian activity and accessibility.
- 18 5. Incorporates a continuous bike and pedestrian network with wider sidewalks
19 in commercial, civic, and core areas, but at a minimum has sidewalks of at
20 least five feet wide on both sides of the street. Accommodates pedestrians
21 with short street crossings, which may include mid-block crossings, bulb-outs,
22 raised crosswalks, specialty pavers, or pavement markings.
- 23 6. Uses on-street parking adjacent to the sidewalk to calm traffic, and offers
24 diverse parking options, but planned so that it does not obstruct access to
25 transit stops.
- 26 7. Varies residential densities, lot sizes, and housing types, while maintaining an
27 average net density of at least eight dwelling units per acre, and higher
28 density in the center.
- 29 8. Integrates in the plan at least ten percent of the developed area for
30 nonresidential and civic uses, as well as open spaces.
- 31 9. Has only the minimum rights of way necessary for the street, median, planting
32 strips, sidewalks, utilities, and maintenance that are appropriate to the
33 adjacent land uses and building types.
- 34 10. Locates arterial highways, major collector roads, and other high-volume
35 corridors at the edge of the TND and not through the TND.

1 **E DESIGN ELEMENTS**

2 The criteria provided in this chapter shall require the approval of the maintaining
3 authority's designated Professional Engineer representative with project oversight or
4 general compliance responsibilities.

5 The criteria provided in this chapter are generally in agreement with AASHTO
6 guidelines with a special emphasis on urban, low-speed environments. Design
7 elements within TND projects not meeting the requirements of this chapter are subject
8 to the requirements for Design Exceptions found in Chapter 14 of this manual.

9 **E.1 Design Controls**

10 **E.1.a Design Speed**

11 The application of design speed for TND communities is philosophically
12 different than for conventional transportation and CSD communities.
13 Traditionally, the approach for setting design speed was to use as high a
14 design speed as practical.

15 In contrast to this approach, the goal for TND communities is to establish
16 a design speed that creates a safer and more comfortable environment for
17 pedestrians and bicyclists, and is appropriate for the surrounding context.

18 Design speeds of 20 to 35 mph are desirable for TND streets. Alleys and
19 narrow roadways intended to function as shared spaces may have design
20 speeds as low as 10 mph.

21 **E.1.b Movement Types**

22 Movement types are used to describe the expected driver experience on a
23 given thoroughfare, and the design speed for pedestrian safety and
24 mobility established for each of these movement types. They are also
25 used to establish the components and criteria for design of streets in TND
26 communities.

27 **Yield:** This type has a design speed of less than 20 mph. Drivers must
28 proceed slowly with extreme care, and must yield to pass a parked car or
29 approaching vehicle. This is the functional equivalent of traffic calming.
30 This type should accommodate bicycle routes through the use of shared
31 lanes.

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TRAFFIC ENGINEERING MANUAL



TEM
Traffic Engineering Manual
January 2012



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3.8.5 INSTALLATION CRITERIA AND CONSIDERATIONS

- (1) Placement of marked crosswalks should be based upon an identified need and not used indiscriminately. Important factors that should be considered when evaluating the need for a marked crosswalk include:
 - (a) Proximity to significant generators
 - (b) Pedestrian demand
 - (c) Pedestrian-vehicle crash history
 - (d) Distance between crossing locations
- (2) To be considered for a marked pedestrian crosswalk, an uncontrolled approach location shall meet all the criteria in **Sections 3.8.5(3) and 3.8.5(4)**. An exception to this criterion is within a school zone, where there is no minimum pedestrian volume for a school crossing.
- (3) Minimum Levels of Pedestrian Demand
 - (a) Any uncontrolled location under consideration for a marked crosswalk should exhibit (1) a well-defined spatial pattern of pedestrian generators, attractors, and flow (across a roadway) between them or (2) a well-defined pattern of existing pedestrian crossings. Generators and attractors should be identified over an aerial photograph to illustrate potential pedestrian routes in relation to any proposed marked crosswalk location.
 - (b) Sufficient demand should exist that meets or exceeds the thresholds for three days of data collection within a seven day period. An average day is generally considered a non-holiday weekday without a special event. Data collection should be based upon pedestrian volumes observed crossing the roadway outside a crosswalk at or in the vicinity of the proposed location, or at an adjacent (nearby) intersection. A bicyclist can be counted as a pedestrian if appropriate for the crossing.

The following minimum thresholds should be met when considering a new marked crosswalk at an uncontrolled approach:

- 20 or more pedestrians during a single hour (any four consecutive 15-minute periods) of an average day, or
- 18 or more pedestrians during each of any two hours of an average day, or
- 15 or more pedestrians during each of any three hours of an average day.

Some locations experience challenges related to pedestrians with slower crossing speeds. In those cases, children, older adults, and pedestrians with physical disabilities may be counted twice (2x) toward these volume thresholds. Judgment and care should be applied when estimating pedestrian categories. Children are generally under age 12 while older adults are typically 65 years or older.

(c) **Multi-Use Trail Crossings**

In order to promote the use of multi-use paths and reduce the impacts roadway crossings can create for pedestrians and bicyclists, crossing locations connecting a multi-use path on each side of a roadway are not subject to minimum pedestrian volume criteria listed above.

Proposed locations where a trail or multi-use path ends on one side of a roadway and a sidewalk or similar facility exists on the other side of the roadway must meet 50% of the minimum pedestrian volume threshold for installation. Such crosswalks are subject to removal if pedestrian volumes fall below half of this reduced threshold.

Care should be given to selecting the appropriate location and crossing treatments for multi-use trails.

(4) Minimum Location Characteristics

- (a) A minimum vehicular volume of 2,000 Average Daily Traffic (ADT) along the roadway segment.
- (b) Minimum distance to nearest alternative crossing location is 300 feet per the [Department's Plans Preparation Manual, Vol. 1, Section 8.3.3.2.](#) An alternative pedestrian crossing location may be considered to be any controlled location with a STOP sign, traffic signal, or a grade-separated pedestrian bridge or tunnel that accommodates pedestrian movement across the subject roadway. A proposed crossing location that falls between 100 and 300 feet from an alternative existing crossing may be considered if more practical for pedestrian use; this justification must be documented in an engineering report.
- (c) Marked crosswalks should not be installed mid-block where the spacing between adjacent intersections is less than 660 feet, consistent with the [Department's Plans Preparation Manual, Vol. 1, Section 8.3.3.2.](#)
- (d) The proposed location must be outside the influence area of adjacent signalized intersections, including the limits of the auxiliary turn lanes. Where an adjacent intersection is signalized, the design must ensure that the ends of standing queues do not extend to the proposed marked crosswalk location.

(5) Safety Considerations

For any proposed marked crosswalk, the location should be conducive to providing a sufficient level of pedestrian safety. The following conditions should be satisfied for existing crosswalks or, if not, should be achieved in conjunction with any implementation of the proposed marked crosswalk:

- (a)** The location for a marked crosswalk must provide adequate stopping sight distance. The [*Department's Plans Preparation Manual, Vol. 1, Section 2.7*](#) provides additional information for identifying appropriate stopping sight distance. Parking restrictions in the vicinity of the marked crosswalk may be necessary to meet required sight distance. Other optional treatments, including curb extensions, may also be considered for improving sight distance and reducing pedestrian crossing distance.
- (b)** If sidewalks connecting the crosswalk to established pedestrian generators and attractors are not already present, they should be provided. The [*Department's Plans Preparation Manual, Vol. 1, Section 8.3.1*](#) provides additional sidewalk design considerations.
- (c)** Crosswalk illumination shall be provided at all newly constructed uncontrolled approach crosswalks. However, there may be locations such as environmentally-sensitive areas or crosswalks serving facilities that are open only during daylight hours, where lighting may be omitted.
- (d)** At uncontrolled approach locations with vehicular volumes greater than 12,000 ADT or where crossing distances exceed 60 feet, a refuge island or raised median should be considered. Provide documentation where physical constraints prevent the accommodation of a median refuge. Roadway and safety conditions shall be taken into consideration in identifying whether the location is appropriate for a marked crosswalk. Median refuge areas shall meet Americans with Disabilities Act (ADA) requirements and the [*Department's Design Standards, Index No. 304*](#).
- (e)** Consideration should be given to the location of nearby bus stops when locating a proposed pedestrian crossing. Marked crosswalk placement should seek to minimize conflicts with transit vehicles. Bus stops on the far side of a marked crossing are preferred. If feasible, bus stops can be relocated to better align with a proposed pedestrian crossing.

3.8.6 PEDESTRIAN CROSSING TREATMENTS

- (1) Ten-foot wide minimum Special Emphasis Crosswalk markings shall be used for all marked crosswalks at uncontrolled approaches, as shown in the [Department's Design Standards, Index No. 17346](#).
- (2) For many situations, a marked crosswalk alone may not be sufficient. Signs and pavement markings alone will not make crossings safer, nor will they necessarily result in more vehicles stopping for pedestrians. Other facility enhancements should be considered in conjunction with a marked crosswalk such as curb extensions, raised crosswalks, speed reduction treatments, additional signing and marking, flashing beacons, or signalized control. The [Department's Design Standards, Index No. 17346](#) provides three possible configurations of treatments for midblock crossings. Additional guidance on the application of selected signing, marking, and control treatments is provided through the remainder of this section. Additional treatments, not included in this section, may also be appropriate depending upon the individual site characteristics.
- (3) For locations where signal warrants are met, consideration may be given to providing a pedestrian bridge or tunnel in lieu of an at-grade marked crossing. For further information, refer to the [AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities](#).

This approach may be appropriate at trail crossings where high volumes of recreational pedestrians and cyclists conflict with high speed vehicular volumes, as grade separation would significantly decrease delay and conflict points for all users.

- (4) Pedestrian Traffic Control Signal
 - (a) When pedestrian volumes are of a sufficient level to meet signal warrants, a pedestrian traffic control signal may be installed to serve this demand. Applicable pedestrian signal warrants and installation guidelines are identified in [Section 4C.05 of the MUTCD](#). Considerations for a pedestrian traffic control signal at a new location should include distance to adjacent signals and availability of adequate gaps for pedestrians to cross the roadway. In some cases a pedestrian signal may not be needed at the study location if adjacent coordinated traffic control signals consistently provided gaps of adequate length for pedestrians to cross the roadway. The [Department's MUTS](#) provides additional guidance on conducting Pedestrian Group Size and Vehicle Gap Size studies.
 - (b) For locations where signalized control is selected for the pedestrian crossing, additional coordination for the crossing location is recommended with the District Access Management Review Committee and the District Traffic Operations Engineer.

-
- (c) For six-lane roadways or crossing distances exceeding 80 feet, a two-stage pedestrian crossing should be considered where the proposed crossing will be controlled by a warranted pedestrian signal. A two-stage pedestrian crossing may have a lesser impact to vehicle delay (compared to a single crossing) since the signal serves each direction independently while the median serves as a refuge area for pedestrians to wait prior to completing their crossing.
 - (d) At locations where pedestrian compliance is of concern, feedback devices may be installed with the pedestrian signal button to provide pedestrians with confirmation of the call.
- (5) Pedestrian Hybrid Beacon
- (a) A possible alternative to the pedestrian traffic signal is the Pedestrian Hybrid Beacon. [Chapter 4F of the MUTCD](#) provides volume warrants and additional guidance on the use of Pedestrian Hybrid Beacon where pedestrian volumes do not meet the warrants for a pedestrian traffic signal under [Section 4C.05 of the MUTCD](#). This device is not intended for use at intersections or driveways, as MUTCD recommends maintaining a distance of 100 feet from side streets or driveways controlled by Stop or Yield signs.
 - (b) For six-lane roadways or crossing distances exceeding 80 feet, a two-stage pedestrian crossing should be considered where the proposed marked crossing will be controlled by a warranted pedestrian hybrid beacon. A two-stage pedestrian crossing may have a lesser impact to vehicle delay (compared to a single crossing) since the signal serves each direction independently while the median serves as a refuge area for pedestrians to wait prior to completing their crossing.



APPENDIX B-6

TECHNICAL MEMORANDUM 2: EVALUATION OF EXISTING PLANS AND STUDIES

FHWA Documents



Toolbox of Countermeasures and Their Potential Effectiveness for Pedestrian Crashes



Introduction

This issue brief documents estimates of the crash reduction that might be expected if a specific countermeasure or group of countermeasures is implemented with respect to pedestrian crashes. The crash reduction estimates are presented as Crash Reduction Factors (CRFs). As some studies reviewed included bicycle crashes in their analysis, some of the crash reduction estimates include bicyclists.

Traffic engineers and other transportation professionals can use the information contained in this issue brief when asking the following types of question: Which countermeasures might be considered at the signalized intersection of Maple and Elm streets, an intersection experiencing a high number of pedestrian crashes? What change in the number of pedestrian crashes can be expected with the implementation of the various countermeasures?

Crash Reduction Factors

A CRF is the percentage crash reduction that might be expected after implementing a given countermeasure. In some cases, the CRF is negative, i.e. the implementation of a countermeasure is expected to lead to a percentage increase in crashes.

One CRF estimate is provided for each countermeasure. Where multiple CRF estimates were available from the literature, selection criteria were used to choose which CRFs to include in the issue brief:

- Firstly, CRFs from studies that took into account regression to the mean and changes in traffic volume were preferred over studies that did not.
- Secondly, CRFs from studies that provided additional information about the conditions under which the countermeasure was applied (e.g. road type, area type) were preferred over studies that did not.

Where these criteria could not be met, a CRF may still be provided. In these cases, it is recognized that the reliability of the estimate of the CRF is low, but the estimate is the best available at this time. The CRFs in this issue brief may be periodically updated as new information becomes available.

The *Desktop Reference for Countermeasures* includes most of the CRFs included in this issue brief, and adds many other CRFs available in the literature. A few CRFs found in the literature were not included in the *Desktop Reference*. These CRFs were considered to have too large a range or too large a standard error to be meaningful, or the original research did not provide sufficient detail for the CRF to be useful.

A CRF should be regarded as a generic estimate of the effectiveness of a countermeasure. The estimate is a useful guide, but it remains necessary to apply engineering judgment and to consider site-specific environmental, traffic volume, traffic mix, geometric, and operational conditions which will affect the safety impact of a countermeasure. Actual effectiveness will vary from site to site. The user must ensure that a countermeasure applies to the particular conditions being considered. The reader is also encouraged to obtain and review the original source documents



for more detailed information, and to search databases such as the National Transportation Library (ntlsearch.bts.gov) for information that becomes available after the publication of this issue brief.

Presentation of the Crash Reduction Factors

In the Tables presented in this issue brief, the crash reduction estimates are provided in the following format:

$$\text{CRF}(\text{standard error})^{\text{REF}}$$

The CRF is the value selected from the literature.

The standard error is given where available. The standard error is the standard deviation of the error in the estimate of the CRF. The true value of the CRF is unknown. The standard error provides a measure of the precision of the estimate of the true value of the CRF. A relatively small standard error indicates that a CRF is relatively precisely known. A relatively large standard error indicates that a CRF is not precisely known.

The REF is the reference number for the source information.

As an example, the CRF for the countermeasure *convert unsignalized intersection to roundabout* is:

$$\mathbf{27}(12)^2$$

The following points should be noted:

- The CRF of 27 means that a 27% reduction in pedestrian crashes is expected after converting the unsignalized intersection to a roundabout.
- This CRF is bolded which means that a) a rigorous study methodology was used to estimate the CRF, and b) the standard error is relatively small. A CRF which is not bolded indicates that a less rigorous methodology (e.g. a simple before-after study) was used to estimate the CRF and/or the standard error is large compared with the CRF.
- The standard error for this CRF is 12.
- The reference number is 2 (De Brabander, B. and Vereeck, L., as listed in the References at the end of this issue brief).

Using the Tables

The CRFs for pedestrian crashes are presented in three tables which summarize the available information. The Tables are:

Table 1: Signalization Countermeasures

Table 2: Geometric Countermeasures

Table 3: Signs/Markings/Operational Countermeasures

The following points should be noted:

- Where available, separate CRFs are provided for different crash severities. The crash severities are: all, fatal/injury, fatal, or injury. The categories depend on the approach taken by the original study. For example, some studies referred to fatal/injury (fatal and injury crashes combined). Some distinguished fatal from injury. "All" is used for CRFs from studies which did not specify the severity. "All" is also used for CRFs that refer to the total number of crashes, including pedestrians.
- The CRF listed under the pedestrian column refers to the reduction in crashes involving pedestrians crossing the street, unless otherwise specified.
- Blank cells mean that no information is reported in the source document.
- For additional information, please visit the FHWA Office of Safety website (safety.fhwa.dot.gov).

Legend

CRF(standard error)^{REF}

CRF is a crash reduction factor, which is an estimate of the percentage reduction that might be expected after implementing a given countermeasure. A number in bold indicates a rigorous study methodology and a small standard error in the value of the CRF.

Standard error, where available, is the standard deviation of the error in the estimate of the CRF.

REF is the reference number for the source information.

Table 1: Signalization Countermeasures

Countermeasure(s)	Crash Severity	Left-Turn Crashes	Pedestrian
Add exclusive pedestrian phasing	All		34 ⁴
Improve signal timing [to intervals specified by the ITE <i>Determining Vehicle Change Intervals: A Proposed Recommended Practice (1985)</i>]	Fatal/Injury		37 ⁸
Replace existing WALK / DON'T WALK signals with pedestrian countdown signal heads	All		25 ⁵
Modify signal phasing (implement a leading pedestrian interval)	All		5 ⁴
Remove unwarranted signals (one-way street)	All		17 ⁷
Convert permissive or permissive/protected to protected only left-turn phasing	All	99 ¹⁰	
Convert permissive to permissive/protected left-turn phasing	All	16 ¹⁰	

Table 2: Geometric Countermeasures

Countermeasure(s)	Crash Severity	All Crashes	Pedestrian
Convert unsignalized intersection to roundabout	Fatal/Injury		27 (12) ²
Install pedestrian overpass/underpass	Fatal/Injury		90 ³
	All		86 ³
Install pedestrian overpass/underpass (unsignalized intersection)	All		13 ⁴
Install raised median	All		25 ³
Install raised median (marked crosswalk) at unsignalized intersection	All		46 ⁹
Install raised median (unmarked crosswalk) at unsignalized intersection	All		39 ⁹
Install raised pedestrian crossing	All	30(67) ¹	
	Fatal/Injury	36(54) ¹	
Install refuge islands	All		56 ⁴
Install sidewalk (to avoid walking along roadway)	All		88 ⁶ *
Provide paved shoulder (of at least 4 feet)	All		71 ³ *
Narrow roadway cross section from four lanes to three lanes (two through lanes with center turn lane)	All	29 ¹⁰	

* This only applies to "walking along the roadway" type crashes

Table 3: Signs/Markings/Operational Countermeasures

Countermeasure(s)	Crash Severity	All Crashes	Pedestrian
Add intersection lighting	Injury	27 ¹⁰ *	
	All	21 ¹⁰ *	
Add segment lighting	Injury	23 ¹⁰ *	
	All	20 ¹⁰ *	
Improve pavement friction (skid treatment with overlay)	Fatal/Injury		3 ³
Increase enforcement **	All		23 ¹¹
Prohibit right-turn-on-red	All	3 ¹⁰	
Prohibit left-turns	All		10 ³
Restrict parking near intersections (to off-street)	All		30 ³

* This applies to nighttime crashes only

** This applies to crash reduction on corridors where sustained enforcement is used related to motorist yielding in marked crosswalks combined with a public education campaign

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Safety

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Resources

Crash Modification Factors Clearinghouse

The [Crash Modification Factors \(CMF\) Clearinghouse](#) is an online repository of CMFs, along with supporting documentation, to help transportation engineers identify the most appropriate countermeasure for their safety needs.

The Crash Modification Factors (CMF) Clearinghouse provides transportation professionals:

- A regularly updated, online repository of CMFs,
- A mechanism for sharing newly developed CMFs, and
- Educational information on the proper application of CMFs.

The CMF Clearinghouse brochure provides general information related to the Clearinghouse, and can be used to promote this valuable resource to state and local transportation professionals.

CMF Clearinghouse Brochure [[HTML](#), [PDF 2.27 MB](#)]

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Publications

CMFs in Practice **NEW!**

Crash modification factors (CMFs) support a number of safety-related activities in the project development process. The CMFs in Practice Series includes five separate guides that identify opportunities to consider and quantify safety in specific activities, including roadway safety management processes, road safety audits, design decisions and exceptions, development and analysis of alternatives and value engineering. The purpose of the CMFs in Practice series is to illustrate the value of CMFs in these five activities and demonstrate practical application of CMFs.

A Guide to Developing Crash Modification Factors

The purpose of this guide is to provide direction to agencies interested in developing crash modification factors (CMFs). Specifically, this guide discusses the process for selecting an appropriate evaluation methodology and the many issues and data considerations related to various methodologies.

Desktop Reference for Crash Reduction Factors

FHWA has developed a set of resources to assist practitioners in their decision-making process. These resources are developed around FHWA's Office of Safety focus areas of intersection safety, pedestrian safety and roadway departure safety.



Intersection Safety:

- [Issue Brief: Traffic Signals](#)
- [Issue Brief: Toolbox of Countermeasures and Their Potential Effectiveness for Intersection Crashes](#)

Pedestrian Safety:

- [Issue Brief: Toolbox of Countermeasures and Their Potential Effectiveness for Pedestrian Crashes](#)

Roadway Departure Safety:

- o [Issue Brief: Toolbox of Countermeasures and Their Potential Effectiveness for Roadway Departure Crashes](#)

The CRFs presented in the Desktop Reference are a compilation of all the CRF information available to date; whereas, the CRF's contained in the "Toolbox of Countermeasures" for intersection, pedestrian and roadway departure crashes contain the "best" available information on countermeasure effectiveness in terms of CRF's.

The Desktop Reference for Crash Reduction Factors will NOT be updated in the future to reflect new CRFs. All CRFs in the Desktop Reference are reflected in the CMF Clearinghouse at <http://www.CMFclearinghouse.org>. All newly developed CMFs/CRFs will be added to the CMF Clearinghouse on a regular basis (at least quarterly).

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Tools to Diagnose and Solve the Problem

A critical first step towards improving non-motorist safety is to identify the problem. There are many different safety problems that pedestrians and bicyclist's experience, and a safety countermeasure that works at one location may not address the problem at another location. If the safety problem can be identified, it may be easier to recommend solutions. The FHWA's goal is to develop methods to make it easier to determine the true nature of a pedestrian or bicyclist safety problem and to focus in on the most appropriate countermeasures.

Tools:

Bikesafe 2014: Bicycle Safety Guide and Countermeasure Selection System

First developed in 2005, **Bikesafe** is an expert system that allows the user to select treatments (mainly engineering with some enforcement and education activities) that help mitigate a known crash problem or help achieve a specific performance objective.

REVISED Pedsafe 2013: Pedestrian Safety Guide and Countermeasure Selection System

First developed in 2003, **Pedsafe** is an expert system that allows the user to select treatments (mainly engineering with some enforcement and education activities) that help mitigate a known crash problem or help achieve a specific performance objective.

Bicycle Road Safety Audit Guidelines and Prompt Lists

Provides information on how to conduct an RSA and effectively assess the safety of cyclists. These Guidelines provide an overview of the Road Safety Audit process, as well as an overview of basic safety principles and potential hazards affecting cyclists. Prompt lists are provided to assist RSA team members in considering general issues when performing a BRSA. Contact Gabriel Rousseau at gabe.rousseau@dot.gov or Becky Crowe at rebecca.crowe@dot.gov for more information regarding the use of BRSAs in your state, region or community.

Pedestrian and Bicyclist Crash Analysis Tool is a software application intended to assist state and local pedestrian and bicycle coordinators, planners, and engineers in addressing pedestrian and bicyclist crash problems by allowing them to enter and analyze their crash data.

Pedestrian Road Safety Audit Guidelines and Prompt Lists

The document and prompt lists were developed for local and state governments to use in help solving their pedestrian safety problems. The purpose of a pedestrian road safety audit (PRSA) is to provide a multi-disciplinary team approach to solving pedestrian safety issues within a roadway corridor or intersection environment.

Pedestrian Road Safety Audits

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Resources:

Pedestrian Hybrid Beacon Guide—Recommendations and Case Study (FHWA-SA-14-014):

The Federal Highway Administration (FHWA) strongly encourages the use of pedestrian hybrid beacons (also known as the High intensity Activated crossWalk (or HAWK)—a pedestrian-activated warning device located on the roadside or on mast arms over midblock pedestrian crossings. This document expands on the FHWA guidance memo detailed here: <http://safety.fhwa.dot.gov/provencountermeasures/> and offers a case study of a location that successfully used PHB to solve a safety problem.

A Guide for Maintaining Pedestrian Facilities for Enhanced Safety

The guide identifies best practices and barriers for sidewalk/ shared use path maintenance: what works and what does not work based on experience from State and local agencies. The guide also provides examples and experiences from jurisdictions that have developed effective policies for selecting and maintaining pedestrian facilities in terms of responsibilities, enforcement, allocation of costs, and related issues.

Guide for Maintaining Pedestrian Facilities for Enhanced Safety Research Report

The research report includes a literature review, review of local maintenance programs including discussions with 50 municipalities and state agencies, and an overall assessment of the current practice of pedestrian facility maintenance.

Evaluation of Pedestrian Countermeasures in Three Cities: San Francisco, Las Vegas and Miami

FHWA awarded grants to the cities of San Francisco, Las Vegas and Miami in 2003 to develop plans for deploying and

evaluating various pedestrian safety countermeasures in high crash "zones" and locations. The purpose of the project was to demonstrate how a city could improve pedestrian safety by performing a detailed analysis of its pedestrian crash problem, identifying and evaluating high crash locations, observing factors such as driver and pedestrian behavior, and deploying various lower cost countermeasures tailored to the site. An independent evaluation was also conducted to compare the countermeasure deployment across the three cities.

Pedestrian Countermeasure Policy Best Practice Report (FHWA-SA-11-017)

This report highlights State departments of transportation (DOTs) that have developed policies related to medians, walkways, and shoulders.

Proven Countermeasures for Pedestrian Safety

This article documenting FHWA's promotion of medians/pedestrian refuge areas, sidewalks, and shoulders to increase pedestrian safety was published in the March/April 2012 Edition of *Public Roads Magazine*.

Safety Benefits of Raised Medians and Pedestrian Refuge Areas—Booklet (FHWA-SA-10-020)

The Federal Highway Administration (FHWA) strongly encourages the use of raised medians (or refuge areas) in curbed sections of multi-lane roadways in urban and suburban areas, particularly in areas where there are mixtures of a significant number of pedestrians, high volumes of traffic (more than 12,000 vehicles per day) and intermediate or high travel speeds. This document expands on the FHWA guidance memo detailed here: <http://safety.fhwa.dot.gov/policy/memo071008/>.

Hardcopies can be ordered [here](#).

Safety Benefits of Raised Medians and Pedestrian Refuge Areas—Tri-Fold Brochure (FHWA-SA-10-031)

The Federal Highway Administration (FHWA) strongly encourages the use of raised medians (or refuge areas) in curbed sections of multi-lane roadways in urban and suburban areas, particularly in areas where there are mixtures of a significant number of pedestrians, high volumes of traffic (more than 12,000 vehicles per day) and intermediate or high travel speeds. This document expands on the FHWA guidance memo detailed here: <http://safety.fhwa.dot.gov/policy/memo071008/>.

Hardcopies can be ordered [here](#).

Safety Benefits of Walkways, Sidewalks, and Paved Shoulders—Booklet (FHWA-SA-10-022)

Annually, around 4,500 pedestrians are killed in traffic crashes with motor vehicles in the United States. Pedestrians killed while "walking along the roadway" account for almost 8 percent of these deaths. Many of these tragedies are preventable. Providing walkways separated from the travel lanes could help to prevent up to 88 percent of these "walking along roadway crashes. This document expands on the FHWA guidance memo detailed here: <http://safety.fhwa.dot.gov/policy/memo071008/>.

Hardcopies can be ordered [here](#).

Safety Benefits of Walkways, Sidewalks, and Paved Shoulders—Tri-Fold Brochure (FHWA-SA-10-021): Annually, around 4,500 pedestrians are killed in traffic crashes with motor vehicles in the United States. Pedestrians killed while "walking along the roadway" account for almost 8 percent of these deaths. Many of these tragedies are preventable. Providing walkways separated from the travel lanes could help to prevent up to 88 percent of these "walking along roadway crashes. This document expands on the FHWA guidance memo detailed here: <http://safety.fhwa.dot.gov/policy/memo071008/>. **Hardcopies can be ordered [here](#).**

State Best Practice Policy for Medians (FHWA-SA-11-019)

This flyer highlights three agencies that have implemented policies and plans that promote the inclusion of raised medians.

State Best Practice Policy for Shoulders and Walkways (FHWA-SA-11-018)

This flyer highlights three agencies that have implemented policies and plans that promote the inclusion of paved shoulders and walkways.

Toolbox of Countermeasures and Their Potential Effectiveness for Pedestrian Crashes

This "toolbox" documents estimates of the crash reduction that might be expected if a specific countermeasure or group of countermeasures is implemented with respect to pedestrian crashes. The crash reduction estimates are presented as Crash Reduction Factors (CRFs). Traffic engineers and other transportation professionals can use the information contained in this toolbox when trying to figure out which countermeasures would be effective in improving safety at a certain type of locations (such as a signalized intersection).

Resources from other Agencies

[A Technical Guide for Conducting Pedestrian Safety Assessments](#)

[A Technical Guide for Conducting Bicycling Safety Assessments](#)

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