

**District 7 - Road Safety Assessment
Team Findings Summary**

**SR 60 (Gulf to Bay Boulevard)
at
CR 501 (S Belcher Road)**

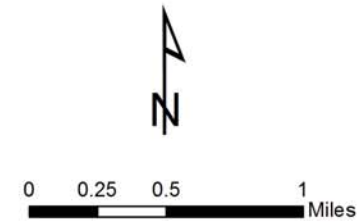
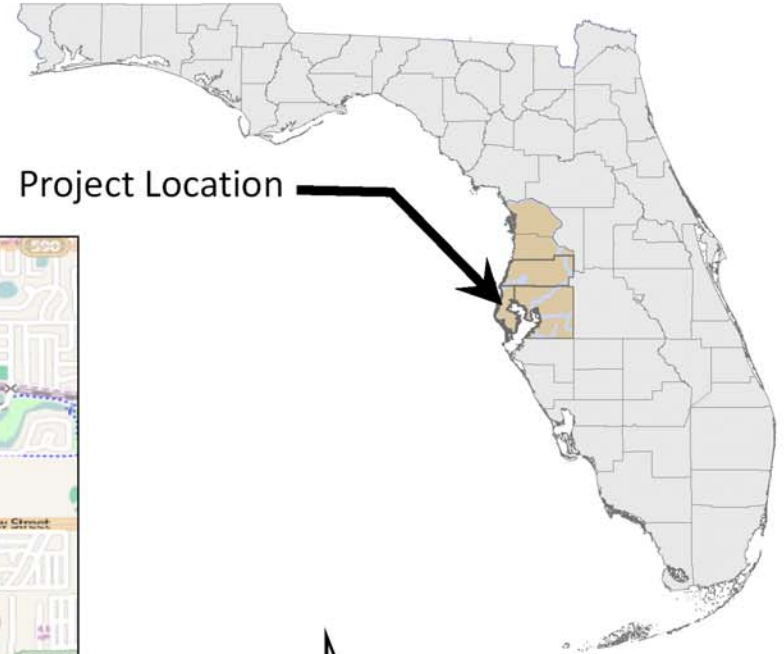
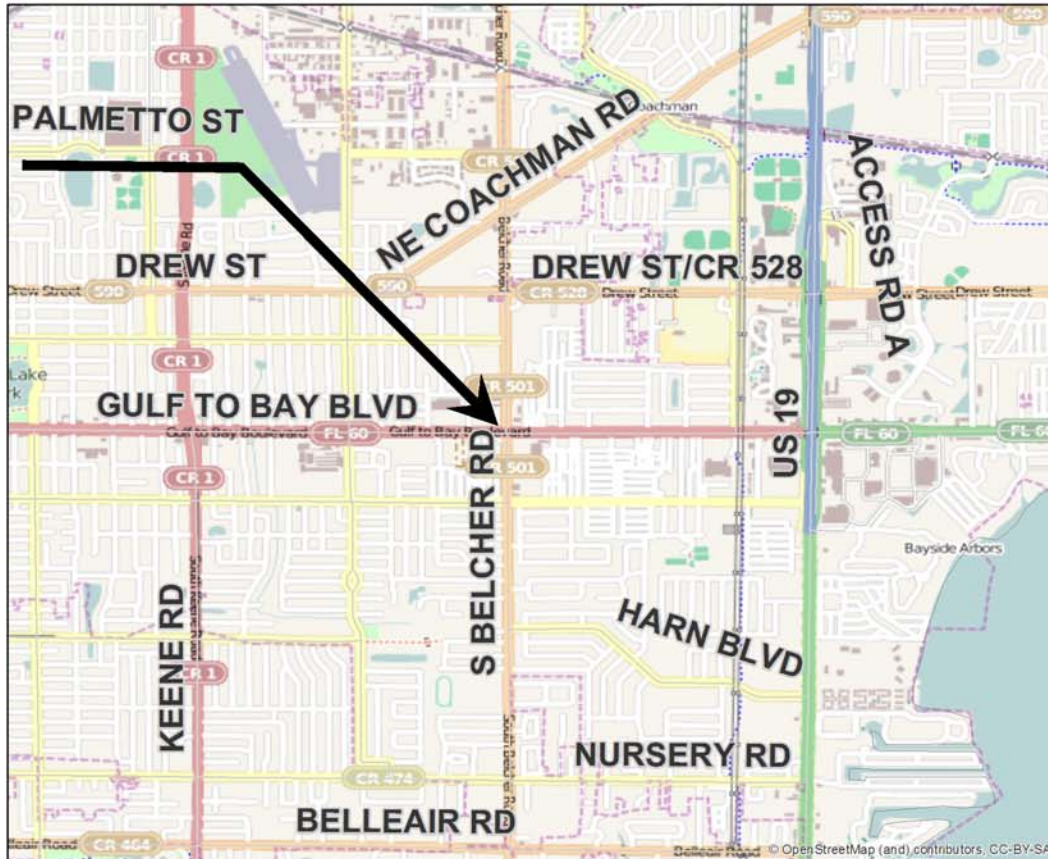
Section: 15 040 000 MP: 3.441



July 2014

Section: 15 040 000
Mile Post: 3.441

Project Location



The Federal Highway Administration's (FHWA) Safety Office has established the Road Safety Audits (RSA) process as way to further enhance the overall safety performance of roadways for all users. An RSA is the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in Engineering, Education, Enforcement, and Emergency response to improve safety for all road users. The goal of an RSA is to save money and time and reduce the number and severity of crashes. The RSAs are a low-cost, proactive approach to safety that considers all road users and identifies opportunities to enhance safety and reduce the number and severity of crashes.

Road safety audits can be used in any phase of project development from planning and preliminary engineering, design and construction. The RSAs may also be used on any sized project from minor intersection and roadway retrofits to mega-projects.

Road Safety Audit Process: Typical RSA Steps Include:

- Step 1: Identify project or road in-service to be audited.
- Step 2: Select RSA team.
- Step 3: Conduct a pre-audit meeting to review project information.
- Step 4: Perform field observations under various conditions.
- Step 5: Conduct audit analysis and prepare report of findings.
- Step 6: Present audit findings to Project Owner/Design Team.
- Step 7: Project Owner/Design Team prepares formal response.
- Step 8: Incorporate findings into the project when appropriate.

This RSA, at the intersection of SR 60 (Gulf to Bay Boulevard) and Belcher Road, was conducted because of its crash history, new land development, and planned engineering improvements. SR 60 (Gulf to Bay Boulevard) is maintained by the Florida Department of Transportation (FDOT), whereas Belcher Road is maintained by Pinellas County.

The RSA at Gulf to Bay Boulevard and Belcher Road was conducted in order to:

- Evaluate all roadway and roadside features, design elements and local conditions (glare, night visibility, adjacent land uses, etc.) that would increase the likelihood and severity of a crash.
- Review firsthand the interaction of the various design elements with each other and the surrounding road network.
- Observe how road users are interacting with the road facility and other road users.
- Determine if the needs of all road users have been adequately and safely met.
- Explore emerging operational trends and/or safety issues at that location.

The objective of this RSA was to answer the following questions:

- What environmental, design, and behavioral elements present potential safety concerns at this location; to what extent, to which roadway users, and under what circumstances?
- What engineering, education and enforcement opportunities exist to eliminate or mitigate identified safety concerns?

The core RSA team members included:

- Rudolph Umbs, P.E. - Tindale-Oliver & Associates, Inc.
- Anthony Chaumont, P.E. - Tindale-Oliver & Associates, Inc.
- George Edmiston, Enforcement - Tindale-Oliver & Associates, Inc.

The RSA participants included:

- David Skrelunas P.E. – FDOT Traffic Ops
- Kris Carson – FDOT
- Chris Gregory – FDOT (Pinellas)
- Ed Hooper – FL House Representative
- Heather Sobush – PSTA
- Michael Walek – Clearwater PD
- Himanshu Patni – City of Clearwater
- Cory Martens – City of Clearwater
- Tom Washburn – Pinellas Traffic
- Brent Hall – Pinellas County Engineering
- Sara Perch – Pinellas MPO
- Marc Hanger – MPO / CTST
- Gena Harvey - Pinellas MPO
- WT Bowman, P.E - Tindale-Oliver & Associates, Inc.
- James Fogarty, P.E. – Tindale-Oliver & Associates, Inc.
- Gareth Klotz – Cumbey & Fair
- Tim Bourne – Cumbey & Fair

A Pre-Audit meeting was conducted on July 8, 2014 at 9 AM in the Pinellas County Metropolitan Planning Organization's (MPO) conference room located at 310 Court Street in Clearwater, Florida. The Pre-Audit meeting was used to familiarize the participants on the RSA process and outcomes, and also provided the participants an opportunity to exchange information, ideas, and to ask questions of one another. The FDOT's Traffic Operations staff coordinated personnel from all participating agencies, the media, and elected officials to come together for this RSA pre-meeting and perform field observations at the intersection and approaches.

In addition to the core RSA team, participants in the Pre-Audit meeting included representatives from various FDOT offices (Design, Public Information, Traffic and Safety, Maintenance and Permits), Pinellas Suncoast Transit Authority, City of Clearwater (Traffic Office and Police Department), Pinellas County (Traffic Engineering and Engineering), Pinellas County (MPO), the media, and State Representative Ed Hooper. These individuals also participated in the field observations. See the RSA team member list.

During the Pre-Audit meeting, the Core Team presented an overview of the RSA process and of the crash history at this location. Tindale-Oliver staff provided an overview of an on-going FDOT transit access study that is concurrently reviewing this intersection. FDOT Design staff provided an overview of the proposed resurfacing (3R) and signal work scheduled to begin approximately January 2016. The project manager for the project is Manuel Santos (813) 975-6166 manuel.santos@dot.state.fl.us. The City of Clearwater provided background information on the intersection, including efforts to obtain right-of-way on the northeast corner for a right-turn lane. The City also discussed a new adaptive signal software scheduled to be deployed the end of August, 2014. The City of Clearwater Police Department discussed the general crash patterns, videos of red-light-running crashes, and its on-going enforcement activities and issues. There was a question and answer discussion session facilitated by a Core Team member. A comment was made during the Pre-Audit meeting that the south west quadrant development will create 10,000 trips per day. The existing intersection of Gulf to Bay Boulevard and Belcher Road carries approximately 38,000 vehicles per day.

For the Pre-Audit meeting each participant received a packet of information including the Agenda, RSA PowerPoint presentation, Collision Diagram, draft summary of crash analysis, traffic volumes, signal timing, aerials of the surrounding development, and draft plans for a right turn lane at the north west corner.

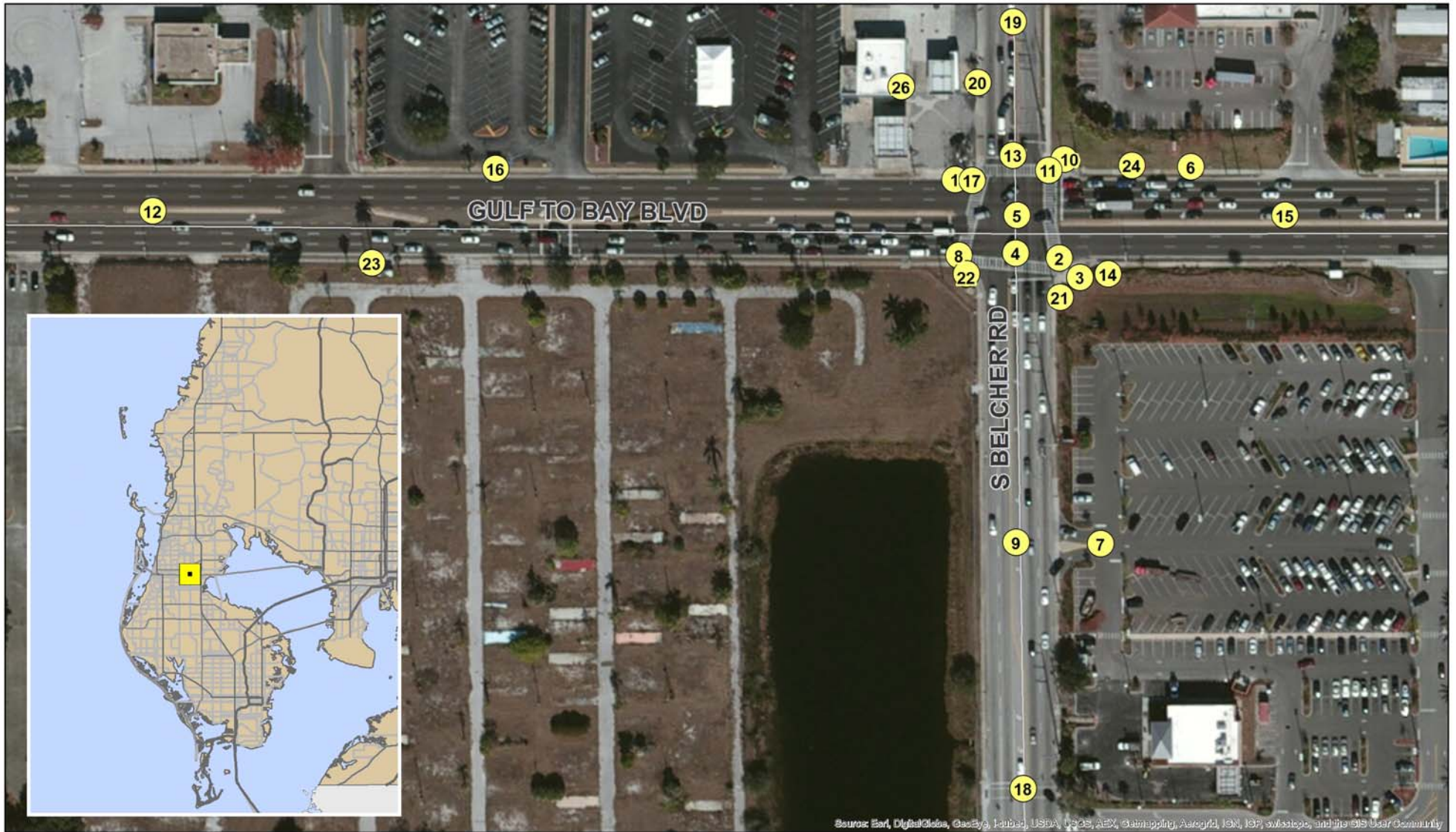
The RSA team and participants conducted the site visit immediately following the Pre-Audit meeting. Each participant was provided with six aerial worksheets and a RSA prompt list for note taking. The participants were divided into three teams each facilitated by a member of the RSA Core Team members.

Following the field review, the RSA team reconvened on the site for post-assessment debriefing at which field observations and recommendations were exchanged. The note-taker reviewed the team's observations as the RSA team augmented the annotations with their own recollections, such that each observation and suggestion was fully documented. Tindale-Oliver & Associates, Inc. subsequently compiled the notes and comments gathered during the RSA into this Team Findings Summary.

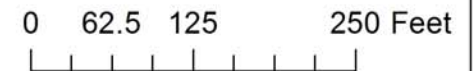
ID	Location Description:	Observation Overview:	Suggestions for Consideration:	Assigned to:	Action:
1	Edge line on north side of west leg	Worn edge line markings	Refurbish the pavement markings	FDOT	Maintenance office will address.
2	Crosswalks	Incomplete restriping of crosswalk and stop bar	Complete the markings	FDOT	Maintenance office will address.
3	Southeast quadrant	Pedestrian indication rotated	Align with crosswalk	City of Clearwater	FDOT will coordinate the improvement with the City of Clearwater.
4	Signal Operation	Protected / permissive left-turn phases	Replace 5-section head with flashing yellow 4-section head	FDOT	FDOT will coordinate the improvement with the City of Clearwater.
5	Signal timing	Long cycle lengths	Optimize cycle length	FDOT	Traffic Operations will evaluate/study the cycle lengths and adjust as necessary.
6	Eastbound and westbound approaches	Photo enforcement signs	Increase the conspicuity of the signs	FDOT	FDOT will review and adjust location of signs or add additional signs as needed.
7	Publix driveway	No turn restrictions	Provide right-turn only sign	City of Clearwater	Pinellas County will coordinate with the City of Clearwater.
8	All four quadrants	School crossing signs	Replace with turning vehicles yield to pedestrians (R10-15)	FDOT	Will obtain confirmation from the School Board of the zoning / busing change. Will review the intersection during the school year.
9	Publix entrance along Belcher Road	Left turns being made into the right-in / right-out driveway	Prohibit southbound left-turns	Pinellas County and City of Clearwater	Pinellas County will coordinate with the City of Clearwater.
10	Northeast quadrant	Pedestrian crossing signal sign is confusing	Replace pedestrian crossing sign	FDOT	FDOT will coordinate with the City of Clearwater.
11	Northeast ramp	No truncated domes	Provide tactile surface pad	FDOT	Maintenance office will address.
12	Intersection approaches	No advance street name signs	Provide advance street name signs	FDOT & Pinellas County Traffic	FDOT will coordinate sign installations with Pinellas County Traffic.

<i>ID</i>	<i>Location Description:</i>	<i>Observation Overview:</i>	<i>Suggestions for Consideration:</i>	<i>Assigned to:</i>	<i>Action:</i>
13	Northbound and southbound approaches	No back plates on signal heads	Provide retro-reflective back plates	FDOT & City of Clearwater	FDOT will coordinate with the City of Clearwater for installation.
14	Southeast quadrant	Red light enforcement lights below signal heads need replaced	Upgrade the enforcement lights to LED	FDOT	FDOT will coordinate with City of Clearwater.
15	Westbound approach	Left-turn queue spills out into thru lanes	Extend the length of the left-turn	FDOT	FDOT to address in upcoming resurfacing project.
16	Bus stops	Bus stops are located too far from signalized crossings	Relocate closer to signalized crossings	PSTA	FDOT will coordinate with Pinellas Suncoast Transit Authority.
17	Northeast and northwest quadrant	Low drainage capacity	Upgrade for improved drainage	FDOT	FDOT will evaluate the drainage improvement as part of the upcoming resurfacing project.
18	Signalized Publix entrance	Protected only phasing for southbound left green arrow only	Will be converted to protected/permissive green arrow and green ball	City of Clearwater	FDOT has coordinated with the City to make the conversion to protected / permissive.
19	Southbound approach	Long queue spills into thru lanes	Provide positive lane assignment guidance	Pinellas County	Pinellas County will coordinate improvements with the City of Clearwater.
20	Sidewalk on west side of Belcher on north leg of the intersection	Not up to ADA standard	Upgrade to meet standard	Pinellas County	Pinellas County will coordinate with the City of Clearwater for improvements.
21	Southeast quadrant	Narrow sidewalk	Widen sidewalk	FDOT	To be evaluated with the upcoming resurfacing project.
22	Southwest quadrant	No overhead lighting	Provide luminaire	FDOT	Developer will be contacted to determine if they can include. If not, FDOT will evaluate as part of the upcoming resurfacing project.
23	Walmart driveway	Mid-block pedestrian crossings and left-turns through queue	Pedestrian crossing study	FDOT	FDOT will conduct a pedestrian study upon build out of the nearby parcels. The City and FDOT to coordinate on providing access and circulation in advance of the redevelopment of the northwest quadrant.

ID	Location Description:	Observation Overview:	Suggestions for Consideration:	Assigned to:	Action:
24	Westbound right-turn	There is no right-turn lane	Provide a right-turn lane	FDOT	FDOT will evaluate the feasibility with the upcoming resurfacing project.
25	Southwest Quadrant	Redevelopment	Consider additional traffic that will be generated	City of Clearwater	FDOT will coordinate improvement with the City of Clearwater.
26	Northwest quadrant	Driveways near the intersection	Close driveways concurrent with future redevelopment	City of Clearwater	FDOT will coordinate improvement with the City of Clearwater.



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Team Findings Report



ID	Location Description:	Observation Overview:	Suggestions for Consideration:
1	Edge line on north side of west leg	Worn edge line markings	Refurbish the pavement markings



Observation Details:

The edge line along the westbound leg on the northwest quadrant is worn.

Suggestion Details:

Refurbish the section of worn pavement markings.

<i>Assigned to:</i>	<i>Agency:</i>	<i>Email:</i>
	FDOT	

Action:

Maintenance office will address.

<i>Time Frame:</i>	<i>Level of Effort:</i>	<i>Improvement Type:</i>
Short Term	Low	Maintenance, Markings

<i>Improvement Status:</i>	<i>Expected Completion:</i>	<i>EEE:</i>
		Maintenance

Improvement Status Comment:



2 Crosswalks

Incomplete restriping of crosswalk and stop bar

Complete the markings



Observation Details:

The crosswalk at the east leg of the intersection appears to have been re-surfaced; the southern most section was not re-striped. The north most section of the stop bar for the westbound was not re-striped concurrent with the recent pavement marking refurbish.

Suggestion Details:

Refurbish the section of worn pavement markings.

Assigned to:

Agency:

Email:

FDOT

Action:

Maintenance office will address.

Time Frame:

Level of Effort:

Improvement Type:

Short Term

Low

Markings

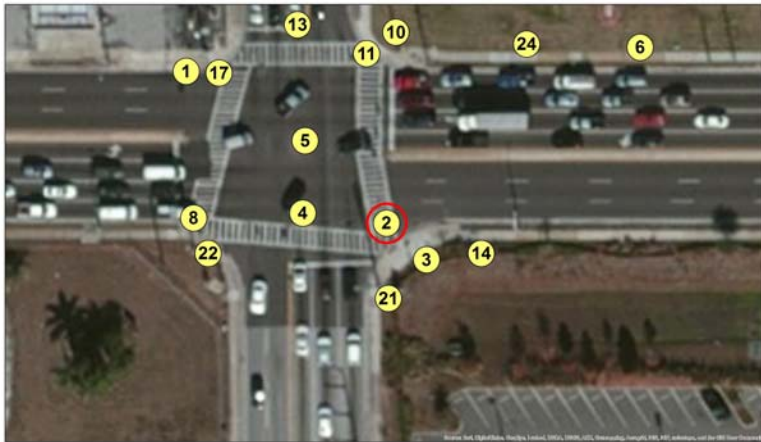
Improvement Status:

Expected Completion:

EEE:

Maintenance

Improvement Status Comment:



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3 Southeast quadrant

Pedestrian indication rotated

Align with crosswalk



Observation Details:

The pedestrian signal indication located in the southeast quadrant of the intersection is not properly aligned with the south leg crosswalk. It appears that either the post was knocked off center during a collision, or that the pedestrian indication was not re-aligned concurrent with the installation of the eastbound right-turn lane, which shifted the sidewalk to the south along the southwest quadrant.

Suggestion Details:

Re-align the pedestrian indications with the crosswalk on the south leg of the intersection for the west to east pedestrian crossing.

Assigned to: Agency: Email:

City of Clearwater

Action:

FDOT will coordinate the improvement with the City of Clearwater.

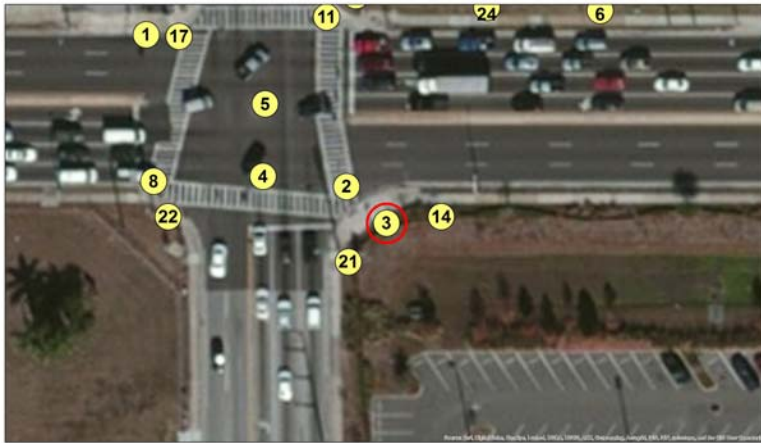
Time Frame: Level of Effort: Improvement Type:

Short Term Low Signal

Improvement Status: Expected Completion: EEE:

Engineering

Improvement Status Comment:



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0 15 30 60 Feet



Observation Details:

The protected-permissive left-turn (green arrow and green ball) phases allow for possible pedestrian / vehicle conflicts during the permissive (green ball) left-turn signal phase.

Suggestion Details:

Replace the 5-section head with a 4-section head with a flashing yellow arrow. Also study the intersection to determine feasibility of converting the left-turn phases to protected only by time of day in order to reduce possible conflicts with turning vehicles and pedestrians during the peak times.

Assigned to:

Agency:

Email:

FDOT

Action:

FDOT will coordinate the improvement with the City of Clearwater.

Time Frame:

Level of Effort:

Improvement Type:

Short Term

Low

Signal

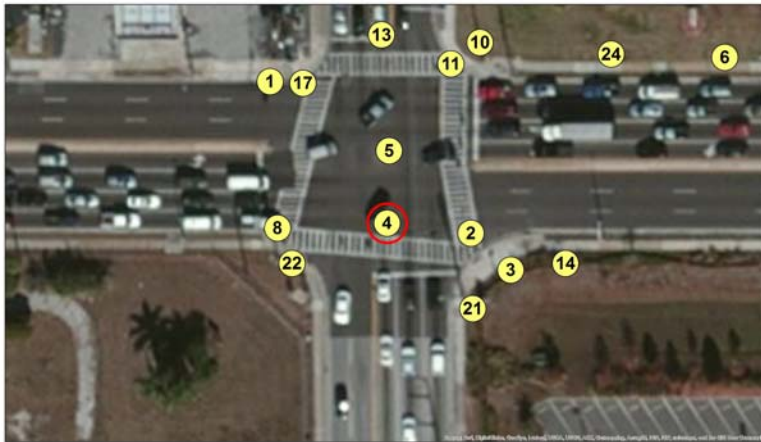
Improvement Status:

Expected Completion:

EEE:

Engineering

Improvement Status Comment:



5 Signal timing

Long cycle lengths

Optimize cycle length



Observation Details:

Pedestrians were observed pushing the pedestrian button at the intersection and completing their crossing against the do not walk before their walk phase comes up. The walk phase across Belcher Road is on minimum pedestrian recall.

Suggestion Details:

Evaluate the signal operation to determine the optimal cycle length for all users. Adjust the cycle length accordingly.

Assigned to:

Agency:

Email:

FDOT

Action:

Traffic Operations will evaluate/study the cycle lengths and adjust as necessary.

Time Frame:

Level of Effort:

Improvement Type:

Short Term

Low

Signal

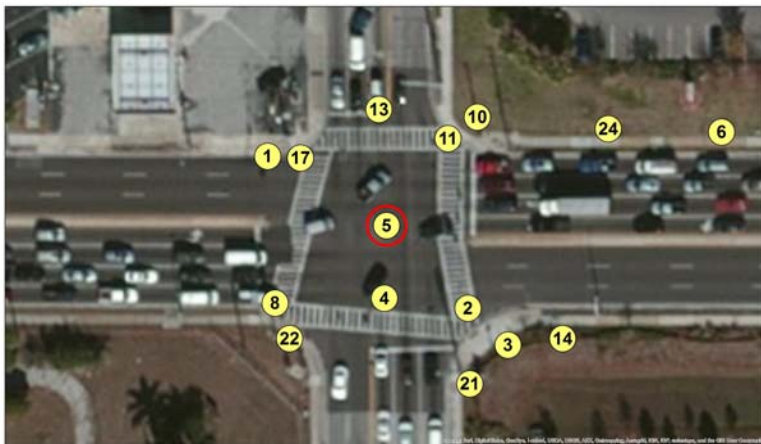
Improvement Status:

Expected Completion:

EEE:

Engineering

Improvement Status Comment:



ID Location Description:

6 Eastbound and westbound approaches

Observation Overview:

Photo enforcement signs

Suggestions for Consideration:

Increase the conspicuity of the signs



Observation Details:

The photo enforcement signs on the eastbound and westbound approaches are located near the enforcement cameras.

Suggestion Details:

Better advanced notification of the red light cameras at this intersection needs to be provided.

Assigned to:

Agency:

Email:

FDOT

Action:

FDOT will review and adjust location of signs or add additional signs as needed.

Time Frame:

Level of Effort:

Improvement Type:

Short Term

Low

Signs

Improvement Status:

Expected Completion:

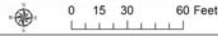
EEE:

Engineering

Improvement Status Comment:



Florida Department of Transportation
Road Safety Audit/Assessment
Team Findings Report



7 Publix driveway

No turn restrictions

Provide right-turn only sign



Observation Details:

The team observed that there are no turn restriction signs at the right-in / right-out driveway for Publix along Belcher Road south of Gulf to Bay Boulevard.

Suggestion Details:

Provide right-turn only signs.

Assigned to:

Agency:

Email:

City of Clearwater

Action:

Pinellas County will coordinate with the City of Clearwater.

Time Frame:

Level of Effort:

Improvement Type:

Short Term

Low

Signs

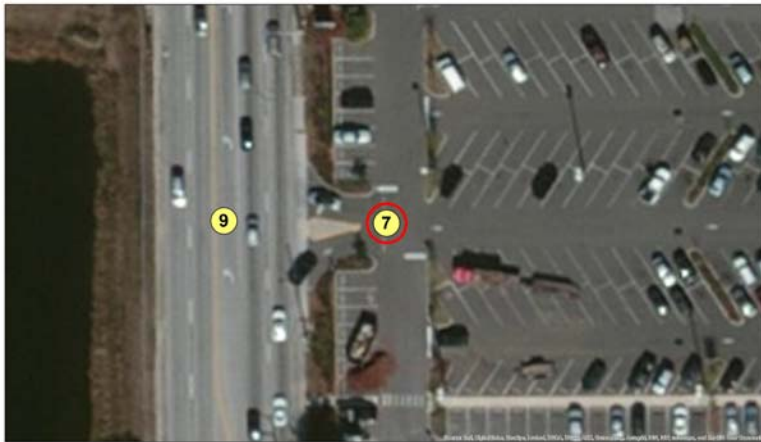
Improvement Status:

Expected Completion:

EEE:

Engineering

Improvement Status Comment:



Florida Department of Transportation
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Team Findings Report

0 15 30 60 Feet

8 All four quadrants

School crossing signs

Replace with turning vehicles yield to pedestrians (R10-15)



Observation Details:

There are school pedestrian crossing signs at the intersection. City of Clearwater staff informed the team that students will no longer be permitted to cross at this intersection, and will be bused instead in the interest of safety. There will no longer be an official school crossing at the intersection and the crossing guards will be removed.

Suggestion Details:

Observe the crossings at the signal during the school year to ensure there are no students crossings. If there are none, replace the school crossing signs with R10-15 (turning vehicles yield to pedestrian) signs.

Assigned to:	Agency:	Email:
	FDOT	

Action:
Will obtain confirmation from the School Board of the zoning / busing change. Will review the intersection during the school year.

Time Frame:	Level of Effort:	Improvement Type:
Short Term	Low	Signs, Study

Improvement Status:	Expected Completion:	EEE:
		Engineering

Improvement Status Comment:



Florida Department of Transportation
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Team Findings Report

0 15 30 60 Feet

9	Publix entrance along Belcher Road	Left turns being made into the right-in / right-out driveway	Prohibit southbound left-turns
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Observation Details:

Southbound vehicles were observed making left-turns into the Publix driveway along Belcher Road; the driveway is intended to operate as a right-in / right-out driveway with a raised separator. Southbound left-turns stopping in the thru lane to turn left into the shopping plaza create friction with other southbound vehicles.

Suggestion Details:

Evaluate strategies to prohibit left-turn access including but not limited to providing no left-turn (R3-2) signs along the southbound leg along Belcher Road and/or provide a traffic separator.

Assigned to:	Agency:	Email:
	Pinellas County and City of Clearwater	

Action:

Pinellas County will coordinate with the City of Clearwater.

Time Frame:	Level of Effort:	Improvement Type:
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Short Term	Low	Signs, Construction
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Improvement Status:	Expected Completion:	EEE:
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		Engineering
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Improvement Status Comment:



Florida Department of Transportation
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Team Findings Report

0 15 30 60 Feet



Observation Details:

Pedestrians and bicyclist were observed pushing both push buttons when waiting to cross either Gulf to Bay Boulevard or Belcher Road. Some pedestrians indicated that due to the proximity of the buttons, they do not know which button to push.

Suggestion Details:

In the short term, separate the bush buttons and signs on the existing signal pole. Concurrent with the signal rebuild, replace the single push button instruction sign with separate buttons and signs denoting the name of the intersection that each button controls respectively. Also consider installing feedback push buttons to reassure that buttons have been activated.

Assigned to:

Agency:

Email:

FDOT

Action:

FDOT will coordinate with the City of Clearwater.

Time Frame:

Level of Effort:

Improvement Type:

Short Term

Medium

Pedestrian

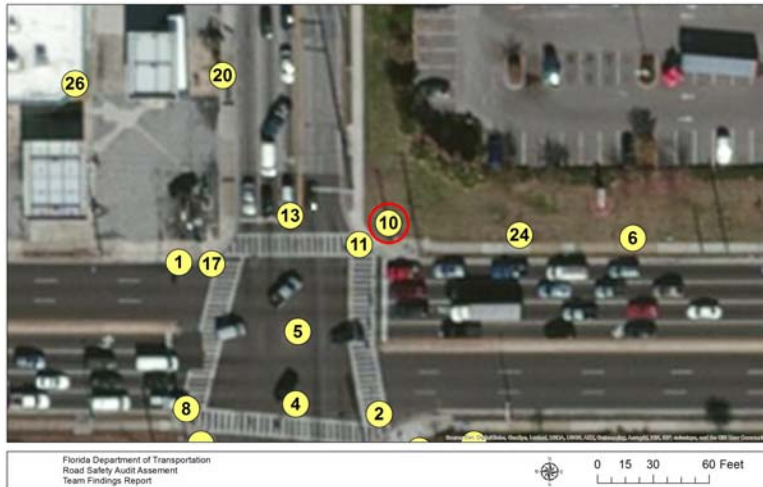
Improvement Status:

Expected Completion:

EEE:

Engineering

Improvement Status Comment:



11 Northeast ramp

No truncated domes

Provide tactile surface pad



Observation Details:

The ramp at the northeast leg of the intersection does not have a tactile surface pad. There is also a utility access panel at the ramp.

Suggestion Details:

General ADA issues will be addressed by upcoming FDOT resurfacing (3R) project. In the short term, provide a truncated dome pad at the ramp.

Assigned to:

Agency:

Email:

FDOT

Action:

Maintenance office will address.

Time Frame:

Level of Effort:

Improvement Type:

Short Term

Medium

Pedestrian

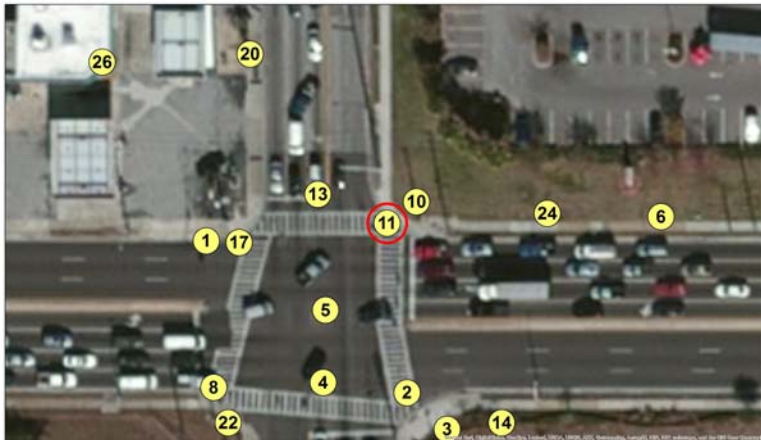
Improvement Status:

Expected Completion:

EEE:

Engineering

Improvement Status Comment:



Florida Department of Transportation
Road Safety Audit Assessment
Team Findings Report

0 15 30 60 Feet

12 Intersection approaches

No advance street name signs

Provide advance street name signs



Observation Details:

An advanced intersection sign for Belcher Road exists heading westbound. However, similar signs are not present heading eastbound, northbound, or southbound approaching this intersection.

Suggestion Details:

Provide advance street name signs for all approaches.

Assigned to:	Agency:	Email:
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FDOT & Pinellas County Traffic

Action:

FDOT will coordinate sign installations with Pinellas County Traffic.

Time Frame:	Level of Effort:	Improvement Type:
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Short Term	Medium	Signs
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Improvement Status:	Expected Completion:	EEE:
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Engineering

Improvement Status Comment:



Florida Department of Transportation
Road Safety Audit/Assessment
Team Findings Report



ID	Location Description:	Observation Overview:	Suggestions for Consideration:
13	Northbound and southbound approaches	No back plates on signal heads	Provide retro-reflective back plates



Observation Details:

There are no back plates for the traffic signal heads on the northbound and southbound approaches.

Suggestion Details:

Short term provide retro-reflective back plates on all signal heads for all approaches. In the long term, the signal may be converted to mast arms.

Assigned to:

Agency:

Email:

FDOT & City of Clearwater

Action:

FDOT will coordinate with the City of Clearwater for installation.

Time Frame:

Level of Effort:

Improvement Type:

Mid Term

Low

Signal

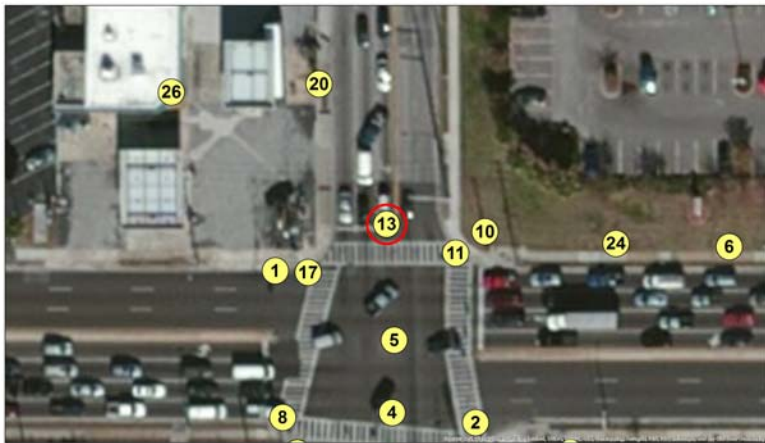
Improvement Status:

Expected Completion:

EEE:

Engineering

Improvement Status Comment:



Florida Department of Transportation
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0 15 30 60 Feet

14 Southeast quadrant

Red light enforcement lights below signal heads need replaced

Upgrade the enforcement lights to LED



Observation Details:

The police officers indicated that the limited right-of-way and curbs make it challenging to do safe red light running enforcement at this intersection; there is nowhere to safely park. There are incandescent enforcement lights mounted near the pedestrian signal heads on the signal poles.

Suggestion Details:

Upgrade the enforcement lights to white LED to improve visibility.

Assigned to:

Agency:

Email:

FDOT

Action:

FDOT will coordinate with City of Clearwater.

Time Frame:

Level of Effort:

Improvement Type:

Mid Term

Low

Signal

Improvement Status:

Expected Completion:

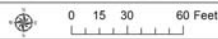
EEE:

Enforcement

Improvement Status Comment:



Florida Department of Transportation Road Safety Audit Assessment Team Findings Report



15 Westbound approach

Left-turn queue spills out into thru lanes

Extend the length of the left-turn



Observation Details:

Vehicles were observed unable to access the left-turn lane due to queue from the thru lane.

Suggestion Details:

Evaluate strategies to provide better utilization of the left-turn lane including but not limited to extending the storage of the left-turn lane for the westbound approach to the signal and/or providing lag left-turn phasing.

Assigned to:

Agency:

Email:

FDOT

Action:

FDOT to address in upcoming resurfacing project.

Time Frame:

Level of Effort:

Improvement Type:

Mid Term

Medium

Construction

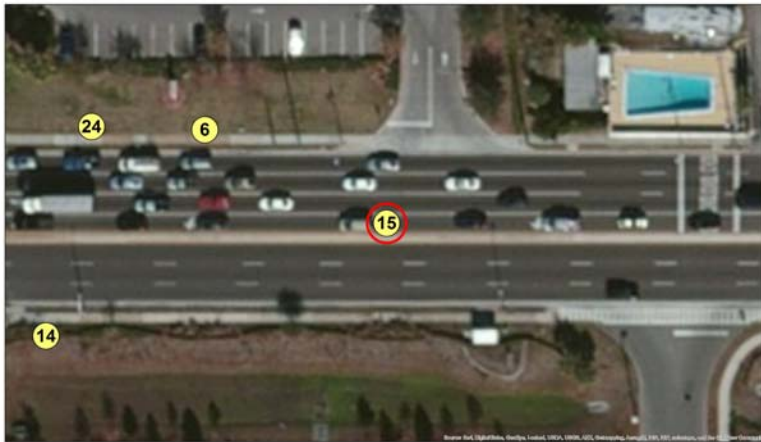
Improvement Status:

Expected Completion:

EEE:

Engineering

Improvement Status Comment:



Florida Department of Transportation
Road Safety Audit Assessment
Team Findings Report

0 15 30 60 Feet

ID Location Description:

16 Bus stops

Observation Overview:

Bus stops are located too far from signalized crossings

Suggestions for Consideration:

Relocate closer to signalized crossings



Observation Details:

Pedestrians were observed crossing mid-block at the transit stops located away from the signalized intersection of Gulf to Bay Boulevard and Belcher Road.

Suggestion Details:

Coordinate with the transit agency to review the bus stop locations and determine if they can be relocated closer to the protected pedestrian crossings at the signalized intersection; doing so may encourage pedestrians crossing the road to utilize the crosswalks.

Assigned to:

Agency:

Email:

PSTA

Action:

FDOT will coordinate with Pinellas Suncoast Transit Authority.

Time Frame:

Level of Effort:

Improvement Type:

Mid Term

Medium

Other

Improvement Status:

Expected Completion:

EEE:

Engineering

Improvement Status Comment:



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17 Northeast and northwest quadrant

Low drainage capacity

Upgrade for improved drainage



Observation Details:

Ponding was observed at the intersection while it rained during a field review; the drainage appears to be inadequate to handle heavy rainfall. Additionally, the drainage location near the apex of the curb prevent two pedestrian ramps from being built.

Suggestion Details:

Evaluate the drainage as part of the upcoming resurfacing (3R) project. Upgrade the drainage and inlets to improve the drainage capacity as needed. And consider opportunities to provide separate crosswalks as part of this if drainage is relocated.

Assigned to:

Agency:

Email:

FDOT

Action:

FDOT will evaluate the drainage improvement as part of the upcoming resurfacing project.

Time Frame:

Level of Effort:

Improvement Type:

Mid Term

Medium

Other

Improvement Status:

Expected Completion:

EEE:

Engineering

Improvement Status Comment:



Florida Department of Transportation
Road Safety Audit Assessment
Team Findings Report

0 15 30 60 Feet

18 Signalized Publix entrance	Protected only phasing for southbound left green arrow only	Will be converted to protected/permissive green arrow and green ball
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Observation Details:

The signalized intersection south of Gulf to Bay Boulevard and Belcher Road has protected only (green arrow only) phases for the southbound left-turn. The team noted sufficient gaps during for the opposing thru movements that a permissive (green ball) left-turn could have been made.

Suggestion Details:

City staff indicated that the operation of the southbound left-turn will be converted from protected only to protected / permissive left-turns. The conversion will have the added benefit of reducing the delay at the intersection thus encouraging southbound left-turns currently being made into the right-in / right-out driveway to the north to utilize the traffic signal.

Assigned to: _____ **Agency:** _____ **Email:** _____

City of Clearwater

Action:

FDOT has coordinated with the City to make the conversion to protected / permissive.

Time Frame:	Level of Effort:	Improvement Type:
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Mid Term	Medium	Signal
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Improvement Status:	Expected Completion:	EEE:
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Engineering

Improvement Status Comment:



Florida Department of Transportation
Road Safety Audit/Assessment
Team Findings Report

0 15 30 60 Feet



Observation Details:

The beginning of the left-turn lane is not very clearly defined causing driver confusion. Unnecessary lane changes were observed by southbound drivers.

Suggestion Details:

Evaluate strategies to more clearly denote the lane use including but not limited to provide ground mounted or overhead lane use signs and traffic separator (north from the signalized intersection to the beginning for turn lane) to prohibit turns from the gas station across Belcher Road. When the resurfacing (3R) project rebuilds the signal, coordinate with Pinellas County to accommodate possible future widening along Belcher Road that would provide dual left-turn lanes northbound and southbound.

Assigned to:	Agency:	Email:
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Pinellas County

Action:

Pinellas County will coordinate improvements with the City of Clearwater.

Time Frame:	Level of Effort:	Improvement Type:
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Mid Term

Medium

Signs

Improvement Status:	Expected Completion:	EEE:
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Engineering

Improvement Status Comment:



Florida Department of Transportation
Road Safety Audit Assessment
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0 15 30 60 Feet

20	Sidewalk on west side of Belcher on north leg of the intersection	Not up to ADA standard	Upgrade to meet standard
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Observation Details:

The sidewalk along the west side of the north leg of the intersection does not appear to be up to ADA standards. The truncated dome pads along the sidewalk at driveways along the segment denote that the intersection of the sidewalk with the driveway is dominated by the driveway; that it is intended for vehicles. A preferable configuration has the sidewalk extending through the driveway.

Suggestion Details:

This segment on Belcher Road to the north of Gulf to Bay Boulevard should be upgraded to meet current ADA standards; particular the cross slopes and surface texture at the driveways. Bring the sidewalk up to grade (this will either require an easement to re-align the sidewalk or to re-profile the sidewalk) and remove the truncated dome pads at the driveways; it should appear as if the sidewalk traverses through the driveway denoting that pedestrians are intended to walk there. The water main access on the sidewalk needs to be addressed.

Assigned to:	Agency:	Email:
	Pinellas County	

Action:
Pinellas County will coordinate with the City of Clearwater for improvements.

Time Frame:	Level of Effort:	Improvement Type:
Mid Term	High	Construction
Improvement Status:	Expected Completion:	EEE:
		Engineering

Improvement Status Comment:



Florida Department of Transportation
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0 15 30 60 Feet

21 Southeast quadrant

Narrow sidewalk

Widen sidewalk



Observation Details:

The sidewalk narrows due to utility poles on the southeast quadrant. Also, there are ruts in the sidewalk, its condition appears to be deteriorating.

Suggestion Details:

Replace the deteriorating sidewalk segment in poor condition and widen the sidewalk, in the long term, to provide the minimum required width per ADA standards.

Assigned to:

Agency:

Email:

FDOT

Action:

To be evaluated with the upcoming resurfacing project.

Time Frame:

Level of Effort:

Improvement Type:

Mid Term

High

Construction

Improvement Status:

Expected Completion:

EEE:

Engineering

Improvement Status Comment:



Florida Department of Transportation
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Observation Details:

It was noted during the nighttime review that three of the four quadrants have luminaries.

Suggestion Details:

Provide a luminaire on the southwest quadrant to enhance the lighting at the crosswalk and ensure the minimum 1.5 foot-candles are provided.

Assigned to:

Agency:

Email:

FDOT

Action:

Developer will be contacted to determine if they can include. If not, FDOT will evaluate as part of the upcoming resurfacing project.

Time Frame:

Level of Effort:

Improvement Type:

Long Term

Medium

Construction

Improvement Status:

Expected Completion:

EEE:

Engineering

Improvement Status Comment:



Florida Department of Transportation
Road Safety Audit/Assessment
Team Findings Report

0 15 30 60 Feet

ID Location Description:

23 Walmart driveway

Observation Overview:

Mid-block pedestrian crossings and left-turns through queue

Suggestions for Consideration:

Pedestrian crossing study



Observation Details:

Pedestrians were observed crossing Gulf to Bay Boulevard mid-block to the east of the right-in / right-out entrance to Walmart Market. Also, westbound left-turn movements into this same driveway were observed turning though the stopped eastbound traffic queue at this signal.

Suggestion Details:

After the redevelopment projects on the southwest quadrant completes, a detailed pedestrian study is needed to address pedestrian crossings at this location and along Gulf to Bay Boulevard including the bus stops.

Assigned to:	Agency:	Email:
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FDOT

Action:

FDOT will conduct a pedestrian study upon build out of the nearby parcels. The City and FDOT to coordinate on providing access and circulation in advance of the redevelopment of the northwest quadrant.

Time Frame:	Level of Effort:	Improvement Type:
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Long Term

Medium

Study

Improvement Status:	Expected Completion:	EEE:
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Engineering

Improvement Status Comment:



Florida Department of Transportation
Road Safety Audit Assessment
Team Findings Report

0 15 30 60 Feet



Observation Details:

Although westbound right-turn volumes exceed 100 vehicles per hour during peak travel periods, there is no westbound right-turn lane at this intersection. Right-turning vehicles turning out of the shared thru-right lane may turn at greater speeds out of concern for rear-end crash conflicts and therefore be less able to yield to pedestrians crossing the north leg of the intersection. Drivers following too closely to right-turning vehicles may cause rear-end crashes—especially if a driver stops short to yield to a pedestrian and/or may cause sideswipe crashes if they change lanes unexpectedly to avoid leading vehicles that are slowing to turn.

Suggestion Details:

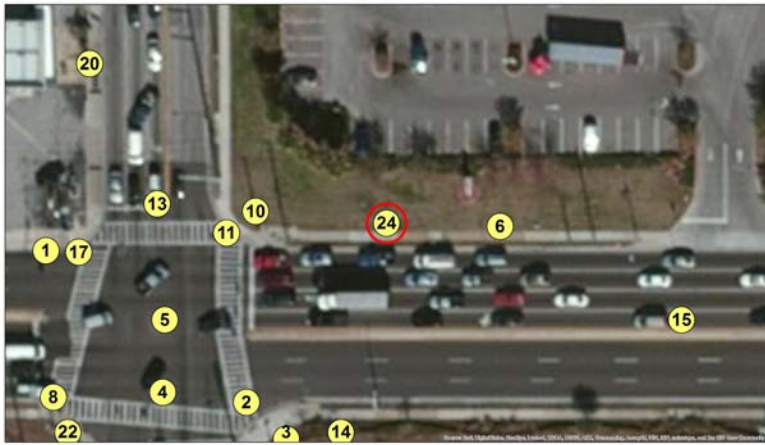
Based on visual inspection of the area, it appears feasible to construct a west-bound right turn lane approximately 200ft in length (including taper). During higher-volume periods of the day, traffic will be blocked from entering this lane by the thru queues limiting the capacity benefit; however, the lane will provide a space for turning vehicles to safely decelerate before turning onto northbound Belcher Road which is the primary purpose of the lane from a safety perspective. As noted in the Observations above, the ability to decelerate to a safe turning speed without concern of being rear-ended by thru traffic will help right-turning drivers to be more conscious of pedestrians crossing Belcher. Installation of R10-15 (right turn yield to pedestrian) signs and or staggered stop bar will help to reinforce this behavior.

Concerns related to providing a right turn lane include: costs associated with right-of-way acquisition and utility re-location, the need to introduce a skew into the crosswalk across Belcher Road (north leg of the intersection) and increasing the number of lanes that must be crossed by a pedestrian crossing Gulf-to-Bay (east leg of the intersection). If deemed cost-feasible by a detailed engineering analysis, the benefits to reduce rear-end, sideswipe, and right-turn-on-green pedestrian conflicts on-balance suggest a net safety benefit.

Assigned to:	Agency:	Email:
	FDOT	

Action:
 FDOT will evaluate the feasibility with the upcoming resurfacing project.

Time Frame:	Level of Effort:	Improvement Type:
Long Term	High	Construction



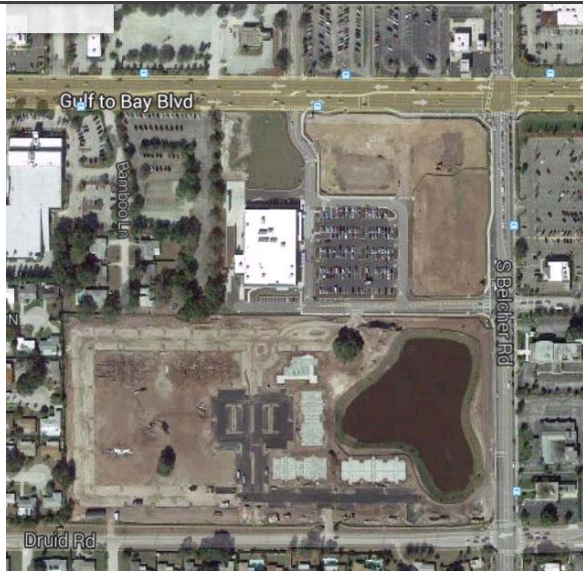
Florida Department of Transportation
Road Safety Audit Assessment
Team Findings Report

0 15 30 60 Feet

Improvement Status: Expected Completion: EEE:

Engineering

Improvement Status Comment:



Observation Details:

The southwest quadrant is under construction.

Suggestion Details:

Conduct post analysis for additional traffic at Gulf to Bay Boulevard and Belcher Road intersection as redevelopment completes.

Assigned to:

Agency:

Email:

City of Clearwater

Action:

FDOT will coordinate improvement with the City of Clearwater.

Time Frame:

Level of Effort:

Improvement Type:

Future

Medium

Other

Improvement Status:

Expected Completion:

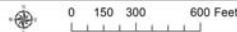
EEE:

Engineering

Improvement Status Comment:



Florida Department of Transportation
Road Safety Audit/Assessment
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Observation Details:

Egress and ingress through the driveways for the gas station on the northwest quadrant of the intersection creates friction at the signalized intersection due to their near proximity to the signal. The parcel does not have access to the adjacent parcels; it's only access is from Gulf to Bay Boulevard and Belcher Road.

Suggestion Details:

Evaluate the crashes at the intersection to determine the potential safety benefit of future closing of the driveways closest to the intersection along Belcher Road and Gulf to Bay Boulevard. This would require coordination with the property owners to provide access along adjacent parcels, like the southwest quadrant's corner parcel, concurrent with a future re-development.

Assigned to:

Agency:

Email:

City of Clearwater

Action:

FDOT will coordinate improvement with the City of Clearwater.

Time Frame:

Level of Effort:

Improvement Type:

Future

High

Land Development Review

Improvement Status:

Expected Completion:

EEE:

Engineering

Improvement Status Comment:



Florida Department of Transportation
Road Safety Audit Assessment
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