

BICYCLE PEDESTRIAN COORDINATING COMMITTEE

10:00 a.m., Tuesday, March 26, 2013
City of Cape Coral Annex, Room A200
815 Nicholas Parkway E., Cape Coral
239-244-2220



AGENDA

Call to Order/Roll Call

Member Introductions

1. *Approval of the January 29, 2012 BPCC Meeting Minutes
2. *Approval of the February 26, 2013 BPCC Meeting Minutes
3. Public Comments on Items on the Agenda

New Business

4. *Review and Approval of Scope for MAP 21 Project Funding and Prioritization (Don Scott)
5. +Presentation on proposed US 41 Pedestrian Traffic Islands (Kellie Spurgeon)
6. Update on the Bicycle Pedestrian Safety Action Plan (Don Scott)
7. Discussion on SR 80 Before/After Evaluation of Median Traffic Separator (FDOT)
8. Presentation on Safe Street Activities (Dan Moser)

Other Business

9. Public and Member Comments on Items not on the Agenda
10. Local Government Reports on Bicycle Pedestrian Related Projects
11. LeeTran Report
12. FDOT Report
13. Announcements
14. Information and Distribution Items

Adjournment

* Action Items + May Require Action

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**MINUTES OF THE LEE COUNTY MPO BICYCLE PEDESTRIAN
COORDINATING COMMITTEE**

Held on January 29, 2013

The meeting of the Bicycle Pedestrian Coordinating Committee was held on January 29, 2013 at the Lee County Tax Collector Building, 2480 Thompson Street, Fort Myers.

Those in attendance included:

Linda Carter	CAC
Stephanie Smith	City of Cape Coral
Jeff Davis	City of Bonita Springs
Dan Moser	Injury Prevention Coalition
Mike Tisch	Lee County DOT
Steve Jansen	Lee County CTST
Wayne Gaither	LeeTran
Dawn Huff	Lee County School District
Dru Doyle	At-Large Member
Dan Calvert	Lee County Parks and Recreation
Josh Overmyer	Town of Fort Myers Beach
Karen Solgard	At-Large Member
Reed Jarvi	Collier County Growth Management Department

Others in attendance included Don Scott, Ron Gogoi and Brian Raimondo with the Lee County MPO; Sarah Layman with Collier MPO; Russ Muller with FDOT; and Darla Letourneau of BikeWalkLee;

CALL TO ORDER

Chairman Calvert called the meeting to order at 10:05 am.

Mr. Gogoi called the roll and announced that a quorum was present.

APPROVAL OF MINUTES

**AGENDA ITEM #1 – APPROVAL OF THE DECEMBER 17, 2012 BPCC MEETING
MINUTES**

**MOTION BY MR. OVERMYER TO APPROVE THE NOVEMBER 27,
2012 BPCC MEETING MINUTES. SECONDED BY MR. JANSEN.
MOTION CARRIED UNANIMOUSLY.**

AGENDA ITEM #2 - PUBLIC COMMENTS ON ITEMS ON THE AGENDA

None.

AGENDA ITEM #3 – ELECTION OF NEW OFFICERS

Mr. Gogoi stated that it was the tradition with the BPC that the Vice Chairman becomes the next Chairman. Since Mr. Moser was the current Vice Chairman, he called for nominations for the Chair.

MOTION BY MR. OVERMYER TO NOMINATE DAN MOSER AS THE CHAIRMAN. SECONDED BY MS HUFF. MOTION CARRIED UNANIMOUSLY.

Mr. Gogoi asked for nominations for Vice Chairman and called out the names of the eligible members.

MOTION BY MR. TISCH TO NOMINATE STEVE JANSEN AS THE VICE CHAIRMAN. SECONDED BY MR. OVERMYER. MOTION CARRIED UNANIMOUSLY.

AGENDA ITEM #4 – REVIEW AND COMMENT ON THE YEAR ENDING BICYCLE PEDESTRIAN REPORT

Mr. Gogoi gave a presentation on the year ending bicycle report. He stated that this was a recommendation from the MPO Bicycle Pedestrian Master Plan. He was also taking the opportunity to highlight the achievements of the Lee County MPO some of which actually met the recommendations from the Master Plan. He also highlighted the individual bicycle pedestrian achievements of the local government jurisdictions and then proceeded to highlight the recommendations that were met and some that were partially met.

AGENDA ITEM #5 – REPORT ON THE BICYCLE PEDESTRIAN ACTION PLAN

Mr. Scott provided an update of the MPO's Bicycle Pedestrian Action Plan. He mentioned that there were more fatalities and incapacitating injuries on state highways. On the ensuing discussion regarding less crashes on certain types of roadways like Tree Line, Mr. Jansen pointed out that there is less exposure to bicyclists and pedestrians than there is on roadways in downtown Fort Myers or MLK Jr. Boulevard.

AGENDA ITEM #6 – PRESENTATION ON CMP ANALYSIS SCOPE PHASE II

Mr. Gogoi mentioned that this was an informational item and that the scope was approved by the Lee County MPO at its December 14, 2012 meeting. Phase I was completed by the consultant. Mr. Gogoi proceeded to highlight the tasks in the scope for Phase II.

AGENDA ITEM #7 – PRESENTATION ON SAFE STREET ACTIVITIES

This item was tabled to the next regular BPC meeting.

AGENDA ITEM #8 – UPDATE ON TAP AND MPO MULTIMODAL ENHANCEMENT BOX FUND PRE-APPLICATIONS

Mr. Gogoi provided an update on the TAP and Multimodal Enhancement Box Fund Pre-applications that were prepared and submitted for FDOT review during this funding cycle. The TAC comments on the Cape’s proposed Great Circle Bike Route was also reported to the BPCC. The comments called for the development of a planning study instead of actual project implementation as it will not get funded as it has been submitted.

AGENDA ITEM #9 – DISCUSS POSSIBLE ITEMS FOR THE UPCOMING JOINT LEE COLLIER BPCC MEETING

The committee called out possible items for the joint Lee Collier BPCC/PAC meeting including the approval of the regional pathways priorities, an update on the River of Grass Greenway and an update on the Vanderbilt Shared Use Pathway. Mr. Moser, talking about the upcoming Estero Boulevard meeting, noted that a roundabout at the intersection of 5th Street and San Carlos Boulevard has not been pursued in the proposed improvements and suggested the online commenting could be an opportunity to get the Town to take notice.

AGENDA ITEM #10 – PUBLIC AND MEMBER COMMENTS ON ITEMS NOT ON THE AGENDA

Ms. Doyle reported that she has taken on the responsibility, on behalf of BikeWalkLee, to work with VCB on creating a web page that focusses on bicycling and hiking to attract visitors to Lee County. She will be reporting the progress at the next BPCC meeting. Ms. Letourneau informed the committee that there is an online opportunity to comment on the Estero Boulevard improvements through a mind mixer program.

AGENDA ITEM #9 – LOCAL GOVERNMENT REPORTS ON BICYCLE PEDESTRIAN RELATED PROJECTS

None.

AGENDA ITEM #11 – LEETRAN REPORT

Mr. Gaither reported that LeeTran continues its trend in increased ridership. In the 1st quarter ridership numbers hit 1 million, which is the first time in LeeTran history where ridership usually peaks during the season. Mr. Moser reported that LeeTran was moving along with the next step of transit task force with products developed now approved by the Lee County Management and Planning committee. Mr. Gogoi reported that staff was developing a scope on bus pullouts and another on queue jumps and will be bringing them for review to the committee.

AGENDA ITEM #10 – FDOT REPORT

None.

AGENDA ITEM #11 – ANNOUNCEMENTS

None.

AGENDA ITEM #12 – INFORMATION AND DISTRIBUTION ITEMS

None.

ADJOURNMENT

The meeting was adjourned at 12 noon.

**JOINT LEE/COLLIER METROPOLITAN PLANNING ORGANIZATION (MPO)
BICYCLE PEDESTRIAN COORDINATING COMMITTEE (BPCC) AND
PATHWAYS ADVISORY COMMITTEE (PAC) MEETING**

**Estero Community Park & Recreation Center
9200 Corkscrew Boulevard, Room 102A
Estero, Florida**

9:30 A.M.

February 26, 2013 Joint Lee-Collier BPCC/PAC Meeting Minutes

1. Call to Order/Roll Call

The meeting was called to order at approximately 9:30 a.m. Ms. Kristin Campos, Collier MPO Administrative Secretary, called the roll for the Collier MPO PAC and the Lee County MPO BPCC and announced that both counties' committees had attained quorums. Those in attendance were as follows:

Lee County MPO BPCC Members Present:

Linda Carter, Citizens Advisory Committee (CAC)

Jeff Davis, City of Bonita Springs

Steve Jansen, Community Traffic Safety Team (CTST)

Dan Moser, Injury Prevention Coalition (IPC)

Dawn Huff, Lee County School District

Wayne Gaither, LeeTran

Mark Tesoro, Lee Memorial Health System

Avelino Cancel, City of Fort Myers

Mike Tisch, Lee County Department of Transportation

Karen Solgard, At-Large

Pat Young, At-Large

Reed Jarvi, Collier County Growth Management Division (GMD) Transportation Planning Department, non-voting

Lee County MPO Staff Present:

Don Scott, Executive Director

Ron Gogoi, Transportation Planning Administrator

Collier MPO PAC Members Present:

Dayna Fendrick, Chairwoman, At-Large

Alan Musico, Vice-Chairman, At-Large

Joe Bonness, At-Large

Jim Klug, At-Large

Michael Dolan, At-Large

Collier MPO Staff Present:

Sue Faulkner, Principal Planner

Sarah Layman, Planner

Kristin Campos, MPO Administrative Secretary

Others Present:

Trinity Scott, Collier County Alternative Transportation Modes (ATM) Department

Russ Muller, FDOT

Maureen Bonness, River of Grass Greenway (ROGG)

Patty Huff, ROGG

Stacy Revay, Collier County GMD Transportation Planning Department

Darla Letourneau, Bike Walk Lee

Deborah McCormick, Naples Pathway Coalition

2. Election of a Chairperson

MR. BONNESS MOTIONED TO NOMINATE MR. MOSER AS CHAIR. MS. CARTER SECONDED. MOTION CARRIED UNANIMOUSLY.

3. Public Comments

Ms. Faulkner introduced Ms. McCormick, Naples Pathways Coalition, to give a presentation on the proposed Rookery Bay Greenway. Ms. McCormick gave a brief PowerPoint presentation. Ms. McCormick stated that meetings had taken place 3 to 4 times last year and Naples Pathways Coalition had funded a feasibility study with Terrell & Associates. Ms. McCormick stated that she had met with FP&L about 2 years ago to discuss whether to build the pathway straight up to US 41 or whether to build the pathway leading to Bayshore Road. She stated that for safety purposes, the plan was to move forward with a connection to Bayshore Road. Ms. McCormick explained that the Botanical Gardens on Bayshore Road have agreed to be a partner.

Ms. McCormick stated that the grant application has begun for Phase 1 of the project. Ms. McCormick stated that Terrell & Associates is working with FP&L to be able to utilize the easement of the FP&L power line.

Ms. Faulkner discussed FP&L line on Livingston Road on the adopted regional network map that was placed at Committee members' seats. She stated that a part of the Rookery Bay Greenway had been shown in not only the regional network map adopted by the Joint MPOs on March 18, 2011, but also was shown in the Statewide Trails Opportunities map that was developed in 2012.

4. Approval of the Agenda

MS. CARTER MOTIONED TO APPROVE THE AGENDA. MS. FENDRICK SECONDED. MOTION CARRIED UNANIMOUSLY.

5. Action Items

A. MPO Recommendations of Joint Regional Pathways Priorities

Mr. Gogoi presented the item and stated that the number one Joint Regional Pathways Priority was ROGG. Mr. Gogoi stated that the project limits of ROGG are US 41 from CR 92 to Marsh Trail Trailhead. Mr. Gogoi discussed the Joint Regional Pathway Priorities in order of the staff proposed priorities:

1. US 41 from CR 92 to Marsh Trail Trailhead
2. Abel Canal PD&E Study from Joel Boulevard to Harnes Marsh
3. Winkler Canal Feasibility Study from McGregor Avenue to Cleveland Avenue

Mr. Gogoi stated that the Abel Canal Greenway PD&E request will allow the planning, design and public input processes for a proposed high-quality, off-road multi-use pedestrian/bicycle facility on an existing East County Water Control District right-of-way along the Abel Canal. Mr. Gogoi stated that the project is approximately 5 ½ miles.

Mr. Gogoi stated that staff is proposing that ROGG remain number one in the Joint Regional Enhancement Pathway Priorities.

Chairman Moser questioned why the SR 78 Shared Use Path and Bike Lanes project between East of Park 78 Drive and Durrance Road disappeared from the Joint Regional Enhancement Priorities list. Mr. Scott explained that there were right-of-way issues on SR 78 east of I-75 and that the project will compete against the Lee MPO's highway capacity projects for the County's share of District 1 allocated STP and State funds.

MR. MUSICO MOTIONED TO APPROVE THE JOINT REGIONAL ENHANCEMENT PRIORITIES. MS. CARTER SECONDED THE MOTION.

Ms. Letourneau stated that when the Joint Regional Enhancement Priorities List was brought before the Collier MPO Board and the Lee MPO Board, both Boards were concerned about the lack of projects on the list. Ms. Letourneau stated that after discussions with FDOT, she was told that the Abel Canal PD&E Study might be funded in July 2013. She questioned if all the projects on the Joint Regional Enhancement Priority List would be potentially funded in July. Mr. Gogoi explained that staff has an alternative strategy to use Lee MPO's sub-allocation of local TAP funds to fund the Abel Canal PD&E. Mr. Gogoi stated that he is not aware if Collier MPO has an alternative strategy for funding ROGG.

Chairman Moser asked about the Vanderbilt Drive Pathways project and its status. Ms. Faulkner explained that the Vanderbilt Drive project is a Collier County project, not an MPO project.

Mr. Tesoro questioned if the Abel Canal would connect with any existing multi-use facility. Discussion ensued regarding the Abel Canal PD&E Study. Mr. Gogoi stated that the Abel Canal would connect with existing roadways and pedestrian facilities. Mr. Gogoi explained that the Abel Canal Corridor could potentially connect residents who live within a quarter mile to multiple parks, schools, churches and medical offices.

MOTION CARRIED UNANIMOUSLY

6. Reports and Presentations

A. Update on the River of Grass Greenway Project

Ms. Bonness presented a brief PowerPoint presentation regarding the River of Grass Greenway (ROGG). Ms. Bonness explained that ROGG is a proposed non-motorized transportation, educational and recreation corridor, extending 75 miles across the Everglades from Krome Avenue to the western edges of Collier-Seminole State Park.

Ms. Bonness gave an overview of the corridor. Ms. Bonness stated that currently there is a PD&E Study in ROGG West which is from 6 L's Farm Road to SR 29 and was funded through a FDOT Regional Transportation Enhancement grant. Ms. Bonness stated that ROGG East limits are from Collier County Line to Krome Avenue which expands 26.2 miles in length. Ms. Bonness explained that a design study is programmed by FDOT in 2015 for ROGG East. Ms. Bonness stated that the design phase of the 2.3 mile segment immediately west of CR 92 was advanced to 2013/14 and the design phase east of CR 92 was not advanced however this project was the Joint PAC's top priority project for Regional Transportation Enhancement Grant.

Ms. Bonness explained that the Feasibility Study & Master Plan that is currently happening for the entire length of the trail which was funded by Sarbanes Transit in Parks Grant from Federal Transit Administration (FTA). Ms. Bonness stated that the Master Plan for ROGG is to provide a shared-use pathway extending greater than 70 miles through 70 miles along US 41. Ms. Bonness stated that the Feasibility Study includes an assessment of corridor and public involvement to determine pathway details. She further explained the schedule and stated that hopefully by March 2014, ROGG Feasibility Study would be complete.

Ms. Bonness discussed the public involvement for ROGG. Ms. Bonness explained that the Conceptual Visioning is happening now and clarified that ROGG is accepting public input through the website and public workshops. Ms. Bonness stated that as of February 2013, the ROGG website has had over 6,000 page views and 1,962 visitors. Ms. Bonness explained the

Regional Work Sessions and stated that the ROGG West had a 5 day Workshop from January 29 to February 2. She further clarified the next Workshops for ROGG Central would be in Everglades City from February 26 to March 2 and ROGG East would be held in Miami at FIU from March 12 to March 16.

Ms. Carter questioned if Miami-Dade County would be funding ROGG Central. Ms. Bonness explained that ROGG Central received two federal grants for approximately \$500,000 and \$1 million. Ms. Bonness stated that the first federal grant paid for the Master Study and when ROGG applied for the second grant, Miami-Dade is not just a recipient of the grant but Miami-Dade also supplied a professional grant writer. Ms. Bonness explained that the grant money went towards the preliminary work before the PD&E for ROGG Central. She further explained that an Efficient Transportation Decision Making Process (ETDM) would have to be completed for ROGG East.

Chairman Moser questioned if the Army Corp of Engineers were partnering with ROGG. Ms. Bonness stated that the Army Corp of Engineers is not part of the Steering Committee but ROGG is in communication with them. Ms. Bonness stated that the Army Corp of Engineers has a very important role in ROGG East for the reason that they have 4 water control structures near the Miccosukee Village where there is no shoulder on the road. Ms. Bonness stated that ROGG has to somehow get around the water control structure to the other end since it is Army Corp of Engineers property.

Ms. Bonness announced that it would be the first ever National Everglades Day on April 7, 2013 and there will also be a bicycle ride called the Everglades Ride 2013 held the same day beginning at McLeod Park. Ms. Bonness stated that if anyone is interested in the bike ride to please check the ROGG website for more details.

B. Presentation on the Status of the Lee County Bicycle Pedestrian Safety Action Plan

Mr. Scott presented a presentation on the Status of the Lee County Bicycle Pedestrian Safety Action Plan. Mr. Scott stated that the purpose of the Bicycle Pedestrian Safety Action Plan is to identify actions needed to reduce bicycle and pedestrian fatalities and serious injuries in Lee County.

Mr. Scott explained that Lee County is in the top 10 in Florida for bicycle and pedestrian fatalities therefore the Safety Action Plan is being addressed. Mr. Scott addressed the Major Tasks and the scope which included:

- Stakeholder and Staff Training
- Bicycle and Pedestrian Crash Data Analysis
- Stakeholder and Public Workshops
- Development of Infrastructure, Outreach and Coordination Strategies
- Documentation and Presentation

Mr. Scott stated that stakeholder and staff training was held on December 11th and December 12th in which crash data was analyzed to help identify strategies for implementation. Mr. Scott stated that a Technical Stakeholder Workshop included a discussion on results of a preliminary crash analysis, survey results, the development of a mission statement, goals for the reduction in fatalities and injuries and the discussion on infrastructure and outreach strategies. Mr. Scott stated that Lee County is working on coordination activities and began review of action items.

Mr. Scott explained that the crash data that is being utilized is from 2007 – 2010 and stated that the reason is ~~for the reason~~ that the crash data forms have changed and the crash data from 2011 is not as useful.

Mr. Scott discussed Bicycle Crash maps and Pedestrian Crash maps from 2007 – 2010. Ms. Carter stated that there has to be a common denominator that is being over-looked with all of the accidents and fatalities in Lee County. Mr. Scott explained that most pedestrian accidents and fatalities occur when the pedestrian crosses the street and not along the street itself. He further explained that most bicycle accidents and fatalities occur when the bicyclist is riding the wrong way on the roadway or crossing a driveway.

Mr. Scott discussed Pedestrian Crash Trends which included:

- Most pedestrian crashes occur during daylight hours but greater percentage of night-time crashes result in severe injury
- A majority of crashes occur when attempting to cross the road
- A common crash type is crossing the roadway at night
- Over-represented when compared with state averages is white males

Mr. Scott discussed Bicycle Crash Trends which included:

- Most bicycle crashes occur during daylight hours
- High number of crashes occur when riding against traffic either in road or on sidewalk
- Most bicycle crashes occur when a cyclist is crossing a roadway or in a driveway
- Over-represented when compared to state averages is older drivers and bicyclists 51 to 65 and over 65

Mr. Scott explained the Next Steps that Lee County MPO would be reviewing which included:

- Further analysis of corridor limits
- Analysis of SR 80 before/after median installation
- Identification and review of action items
- Identification of targeted programs
- Additional agency coordination
- Review and input through stakeholders/committees

Ms. Faulkner stated that Collier County is drafting a scope to implement a Bicycle Pedestrian Safety Action Plan at the March Collier PAC meeting. Ms. Faulkner stated that there was a request from the Collier PAC to attend the Lee BPCC meetings to better understand what the Lee BPCC is working on. Mr. Scott stated that the Lee BPCC would send notifications when the BPCC is planning to bring certain items to the Committees.

Mr. Scott discussed the Draft Action Items that was placed at Committee members' seats. Mr. Scott explained that developing a press conference kit to support law enforcement and other agencies in responding to media inquiries associated with bicycle and pedestrian crashes that attract a lot of media attention. He stated that the purpose of the press kit is to leverage moments of high visibility when media attention is focused on a recent crash.

Mr. Scott stated that the second Action Item would be to develop a Bicycle and Pedestrian Safety Outreach Education Campaign within the Lee County area including the municipalities. He suggested structuring a leadership program similar to other successful programs that have been implemented in Florida.

Mr. Scott suggested identifying potential corridors for "Road Diets" and stated that by targeting multi-lane arterial corridors with bicycle/pedestrian crash problems that are underutilized and have excess capacity.

Ms. Solgard suggested targeting the seasonal population that is here part-time with the Florida Drivers Handbook. Mr. Scott stated that discussions have taken place to target hotels and ways to reach the visitors in Fort Myers Beach and Naples.

Mr. Scott stated that the Lee MPO would be pursuing grants for overtime enforcement and partner with law enforcement agencies, especially in high crash areas.

7. Florida Department of Transportation

Mr. Muller announced that Mr. Limbaugh from FDOT had resigned from his position.

8. Transit Update

Mr. Gaither reported that LeeTran has been able to purchase 24 vehicles in which some were replacement vehicles with over 1 million miles.

Ms. Scott presented a PowerPoint presentation on Collier Area Transit (CAT). Ms. Scott explained that the difference in Paratransit trips between FY12 and FY13 and stated that in FY12 Collier County was the Medicaid provider. She further stated that in FY13 Collier County is no longer the Medicaid provider.

Ms. Scott discussed the average cost per passenger trip for Paratransit. Ms. Scott stated that in FY13 the average cost including fuel is \$34.19 and without fuel is \$29.41.

Ms. Scott stated that the MPO Board had a comment regarding establishing a Transit Advisory Committee and CAT staff is moving forward with that. Ms. Scott stated that the role of the Transit Advisory Committee would be to advise staff on improving the operations and how to make the system more efficient. Ms. Scott stated that the Transit Advisory Committee would also be discussing a redesign of the bus shelters. Ms. Scott stated that the Transit Advisory Committee would also discuss the appeal to have buses look different from typical transit buses.

Ms. Scott discussed the Electronic Fareboxes. Ms. Scott stated that the Electronic Fareboxes validates all bills and coins that are put in to the box and there is a display screen to show how much money the passenger put into the farebox. She noted that CAT has transitioned into a smart code reader card and bar code reader on their transit passes as well.

9. Members Comments

Chairman Moser presented the contents of a CD called Understanding Bicyclists and Pedestrians.

Chairman Moser suggested that the CD be passed on to the Traffic Unit at the Collier County Sheriff's Office. Chairman Moser stated that if the Traffic Unit has questions to contact him or the Florida Bicycle Association.

Chairman Moser announced that there is an open house on Thursday, February 28, 2013 from 4:30 p.m. to 6 p.m. at St. Peters Lutheran Church regarding how to improve Estero Boulevard and Fort Myers Beach.

10. Information Items

There were no Informational Items.

11. Adjournment of Meeting

MS. CARTER MOTIONED TO ADJOURN. MR. MUSICO SECONDED. MOTION CARRIED UNANIMOUSLY

Having no further business, the Joint BPCC/PAC meeting was adjourned at approximately 11:15 p.m.

REVIEW AND APPROVAL OF THE SCOPE FOR MAP 21 PROJECT FUNDING AND PRIORITIZATION

RECOMMENDED ACTION Review and comment on the **attached** scope for MAP 21 project funding and prioritization.

Feeding off of previous BPC discussions at various meetings on project prioritization, funding and implementing the Bicycle Pedestrian Master Plan, one of our GPC consultants developed a scope of work to address the various issues. The scope includes tasks addressing the development of bicycle pedestrian performance measures, overhauling existing Transportation Enhancement Criteria to prioritize projects submitted for Transportation Alternative Program funds and a task to include methods for maximizing state and federal funding opportunities available under MAP 21 for implementation. Additional tasks have also been included for consideration that includes grant writing, demand/benefits analysis, marketing and project financing analysis. At its March 26th meeting, the BPC will be asked to review and provide comment on the scope. A preliminary budget of \$45,000 has been identified in the MPO's budget for undertaking this project.

Project Understanding

Lee County has made substantial progress in advancing bicycle- and walk-friendliness over the last decade. The community has constructed new sidewalks, bike lanes, and shared-use paths, maintained annual funding for bicycling and walking infrastructure, launched a targeted campaign for bicyclists and pedestrian safety, among other successes. In 2009, both the Lee County regional MPO and Lee County adopted Complete Streets Resolutions. Both entities have a bicycle and pedestrian advisory commission focused on advancing the biking and walking agendas of the MPO and the County, respectively. Lee County Administration earned the local 2011 “Complete Streets Champion of the Year” Award in recognition for its efforts to implement its complete streets policy. The active efforts of advocacy such as BikeWalkLee and Cape Coral Bike Ped demonstrate public support for improving walking and bicycling conditions. In addition, the advocacy of the Sanibel Bicycle Club over the past ten years has resulted in lots of improvements in the bicycle and pedestrian infrastructure of Sanibel Island.

In May 2011, Lee County MPO adopted the *Lee County MPO Bicycle Pedestrian Plan*. The plan is a result of a collaborative public process, and includes an analysis of existing conditions and bicycle and pedestrian safety network recommendations, and project prioritization. The final prioritization and cost estimates for the primary bicycle and pedestrian network (which accounts for arterial and collector roads) includes a total of \$84.42 million in *unfunded* infrastructure needs and, by facility type, total costs for both funded and unfunded projects of:

- \$12.42 million in priority sidewalk facility needs
- \$22.89 million in priority bike lane needs
- \$80.57 million in priority shared-use path needs

The bicycle and pedestrian needs of local roads, such as neighborhood roads that provide access to schools and parks, are not included in these budget totals.

The Plan offers a vision for the development of a connected bicycle and pedestrian network throughout the region, including strategies for securing funding for the recommended infrastructure. However, with the passage of the federal transportation bill *Moving Ahead for Progress in the 21st Century* in July 2012, (known as MAP-21), the funding mechanisms, prioritization criteria, and eligibilities for Plan implementation have substantially changed, potentially resulting in a need to strategically adjust the priority of project recommendations to ensure that the new criteria are met, rather than relying on the previous prioritization based on Transportation Enhancement criteria.

MAP-21 replaces the prior transportation funding bill, known as SAFETEA-LU (*Safe Accountable Flexible Efficient Transportation Equity Act – A Legacy for Users*), which dictated funding from 2005-September 2012. MAP-21 will remain in effect until September 2014, with the potential to be extended beyond that date (similar to what occurred with SAFETEA-LU, which was extended by Congress multiple times). On September 25, 2012, the Federal Highway Administration (FHWA) released guidance regarding the new funding provisions, excepting the Transportation Alternatives program and Federal Lands programs.

In contrast to the funding guidelines established and expanded upon since the passage of the federal transportation bill ISTEA (*Intermodal Surface Transportation Efficiency Act*) in 1991, MAP-21 is a game changer for MPOs working to identify and implement bicycle and pedestrian projects and programs. Communities that

have learned the ins and outs of programs such as Transportation Enhancements (which has been replaced with a new program called Transportation Alternatives), Recreational Trails, Congestion Mitigation and Air Quality, Safe Routes to School, and others, now find a substantially altered framework of federal funding for bicycle and pedestrian projects in MAP-21. The changes are significant and present a number of new opportunities on which MPOs and local governments can capitalize. For example, MAP-21 doubles the size of the Highway Safety Improvement Program (HSIP) and for the first time, requires states to establish performance measures. Changes such as this have important implications for MPOs and municipalities as they seek to secure funding for implementation of active transportation plans. Bicycle and pedestrian projects can now compete for mainstream transportation funds and local agencies must be equipped to do so. Additionally, the Florida Department of Transportation opted out of Recreational Trails funding, which may have negative implications for recreational trails projects, but could boost available funding for on-street bicycle and pedestrian facilities. Clearly identifying what funds are available for what purposes will be a crucial step in strategically advancing Lee County's bicycle and pedestrian network.

In light of the new funding bill and federal guidance for funding, Lee County MPO will benefit from an updated analysis of funding opportunities and the associated eligibility criteria for each, as well as an updated prioritization of proposed bicycle and pedestrian projects based on those criteria. Additionally, Lee County MPO has retained a consultant to develop a *Bicycle and Pedestrian Safety Action Plan*. That Plan will require similar assessments of relevant funding opportunities and their criteria for bicycle and pedestrian safety projects, as well as an implementation strategy for delivering recommended safety improvements based on MAP-21 funding priorities.

It is imperative that Lee County MPO not lose an opportunity to participate in new funding streams for bicycle and pedestrian projects. The following proposed scope of work presents our approach to incorporating the new realities of MAP-21 funding into the adopted recommendations of the *Lee County MPO Bicycle Pedestrian Plan* and the recommendations of the *Bicycle and Pedestrian Safety Action Plan* currently underway.

Project Approach

Proposed Scope of Work

Task 1 – Assessment of MPO Existing Funding Priorities and Processes

The *Lee County MPO Bicycle Pedestrian Plan* states that the MPO allocates approximately \$3 million per year to transportation projects through a standardized prioritization process. The Plan notes that the MPO recently developed an integrated list of prioritized projects that includes all transportation modes in an effort to ensure that projects funded by FDOT will result in the highest mobility yield for the County.

These existing processes for project prioritization and funding allocation will be affected by changes in MAP-21. As FDOT responds to the new requirements of MAP-21 funding programs, Lee County MPO will need to respond as well. For example, under MAP-21, programs such as the HSIP will require an evaluation of the cost effectiveness of a proposed project's ability to reduce serious injuries and fatalities. By establishing tools for evaluating projects using the criteria identified in MAP-21, Lee County MPO will have a clear understanding of the most fundable projects listed in the *Bicycle Pedestrian Plan* and be readied to accept available funding and move forward with implementation. Lee County will remain competitive in securing federal and state funds as other MPOs in Florida adjust their strategic approach to securing funding.

This task will include a summary of state and federal funding opportunities and a review of existing planning and policy documents of Lee County MPO relevant to the administration of federal and state funds and the prioritization of bicycle and pedestrians projects. Our team will also conduct interviews with up to four (4) MPO and FDOT staff members to gain clarity regarding current internal processes at each agency, decision-making boards and commissions, and existing channels of communication and coordination.

Task 1 Deliverables –

Interviews with up to four (4) MPO and FDOT staff members and review of relevant MPO planning/policy documents

Working Paper #1 – Summary of State and Federal Funding Opportunities

Working Paper #2 – Assessment of Existing MPO Funding and Prioritization Processes

Task 2 – Recommendations for MPO Prioritization Processes

Through Task 1, our team will determine funding opportunities for bicycle and pedestrian projects of Lee County MPO as well as key changes that the MPO can make to match the priorities of those funding avenues. Task 2 will describe an appropriate strategy for synchronizing the MPO prioritization process with the prioritization requirements and preferences of MAP-21 and, in particular, its Transportation Alternatives program. This will involve moving beyond the Transportation Enhancement prioritization criteria and establishing a new set of prioritization criteria that are locally-appropriate (consistent with the goals of the *Bicycle Pedestrian Plan*) and federally-relevant (consistent with MAP-21 priorities). The recommendations will be tailored to FDOT's new processes for funding and prioritization, including state-administered grant programs (as determined in Task 1).

Task 2 Deliverables –

Working Paper #3 – Recommendations for MPO Prioritization Processes

Task 3 – Implementation Guidance for Local Jurisdictions

The capacity of local municipalities to assess project feasibility and take the necessary steps to establish a project as “shovel-ready” is central to the long-term success of this prioritization and funding process. This task will include clear criteria for identifying “shovel-ready” projects and action steps for local municipalities to use in advancing priority projects to the “shovel-ready” stage.

Task 3 Deliverables –

Working Paper #4 – Municipal guide to shovel-ready projects

Task 4 – Prioritization and Evaluation Criteria for Proposed Bicycle and Pedestrian Network Projects

The implementation recommendations of the *Lee County MPO Bicycle Pedestrian Plan* highlight the need to:

- Identify projects “such as those included in the Prioritized Spot Improvements list, that can be done quickly and in a cost-effective manner,”
- Develop “an annual work plan of priority projects and action items, including funding possibility for the upcoming year”
- “Re-evaluate priorities and make adjustments as needed,”
- Assess progress in implementing the Plan by identifying measurable tasks

This task will address each of those action steps. Our team will also address the relevant action steps of the *Bicycle and Pedestrian Safety Action Plan*, which is now underway. Through coordination with MPO and municipality staff, our team will identify the most feasible recommended bicycle and pedestrian projects based on MAP-21 funding criteria and other relevant factors (as determined by the consultant). We will provide Lee County MPO with a framework for developing a realistic and fundable annual work plan of priority projects and action items.

Task 4 Deliverables –

Working Paper #5 – Evaluation criteria and project prioritization, including a list of top twenty (20) priority projects, and a framework for creating a 2014 annual work plan

Task 5 –Performance Measures

Communities around the country are prioritizing bicycle and pedestrian infrastructure development and benchmarking the success of those projects. The Alta team will research the tested strategies of other MPOs in Florida and around the country to assess how those agencies are using performance measurements for bicycle and pedestrian projects currently and how those practices might change in light of the new funding context. This task will include a white paper on the state of the practice of bicycle and pedestrian performance measurements for MPOs and relate those findings to the local context of the Lee County MPO. This task will also include the development of performance measures for benchmarking progress in implementing the recommendations of both Plans and for evaluating the impact of projects implemented with MAP-21 funding.

Task 5 Deliverables –

Working Paper #6 – Best practices in MPO bicycle and pedestrian performance measurements

Working Paper #7 - Measurable benchmarks for Plan implementation, and performance measures for implemented projects

Optional Tasks for Additional Fee

Task A – Grant Writing

Alta staff have assisted jurisdictions across the country in winning over \$100 million in grant funding. Funding sources range from federal TIGER grants and SAFETEA-LU funds to state, regional, local, and private sources. Alta staff can complete a range of tasks for your project, from full-fledged preparation of the grant application to writing portions of the scope, providing mapping and graphics assistance, assisting with document review and quality control, and preparing environmental documentation and preliminary design.

Task B – Demand and Benefits Analysis

Investments in bicycle pedestrian and greenway facilities yield economic, environmental, health, and quality of life benefits. A demand and benefit analysis for each priority bicycle and pedestrian project will provide Lee County MPO with a clear assessment of the value of new facilities and provide usable localized data of active transportation traffic volume, trip reduction impacts, and mode share. The analysis includes specific projections of bicycle and pedestrian commuter volumes based on Alta's National Bicycle & Pedestrian Documentation Project Demand Model methodology. This methodology has been accepted nationally and is the only model available today that is based on actual empirical count and survey data from over 200 communities, and field tested for accuracy. The model has been used by FHWA, State DOTs, and agencies nationwide, and is considered the most accurate model available today.

Additionally, Alta has developed a trip reduction methodology for the bicycle and pedestrian modes that is now being used around the country. Using results of the demand analysis, U.S. Census figures, and adjustment factors for Lee County, a long term estimate of bicycle and pedestrian mode split can be made and translated into reduced vehicle trips, saved parking spaces, and reduced air pollution. The analysis provides a strong basis for financing and grant solicitation efforts to fund bicycle and pedestrian projects.

Task C – Bicycle Route Marketing

Signing and promoting bicycle friendly routes and established bikeways are a proven tool for increasing bicycling activity and encouraging bicycle tourism. The Alta team will develop a marketing plan for identified bike routes in the Lee County MPO area including a bicycle route brand, wayfinding signage concepts, guidelines for installation of wayfinding signage, and recommended strategies for promoting the signed routes.

Task D – Project Financing Analysis

Strategies for financing priority projects are critical for implementation. Financing opportunities may involve programming of capital improvement funds, identifying the 20 percent local match required for federally funded projects, or establishing new revenue generating streams. For example, Charleston County, South Carolina has employed a 25-year sales tax program that will generate \$250 million for park, open space and trail conservation and facility development. Alta helped to analyze how the County could maximize the value of this sales tax and, through the issuance of bonds, gain access to all of the sales tax proceeds within the first seven years of the program.

Using local financial budgeting and revenue information, this task will provide an assessment of financing opportunities and constraints for priority bicycle and pedestrian projects of Lee County MPO. The report will look at opportunities for revenue generation and how these revenues can be applied to capital improvements, recommended bicycle and pedestrian safety measures, and operations regionally. We will also identify other funding sources that can be used to support projects on a case-by-case basis.

Task	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Notice to Proceed						
Task 1						
Task 2						
Task 3						
Task 4						
Task 5						
Final Draft Report						

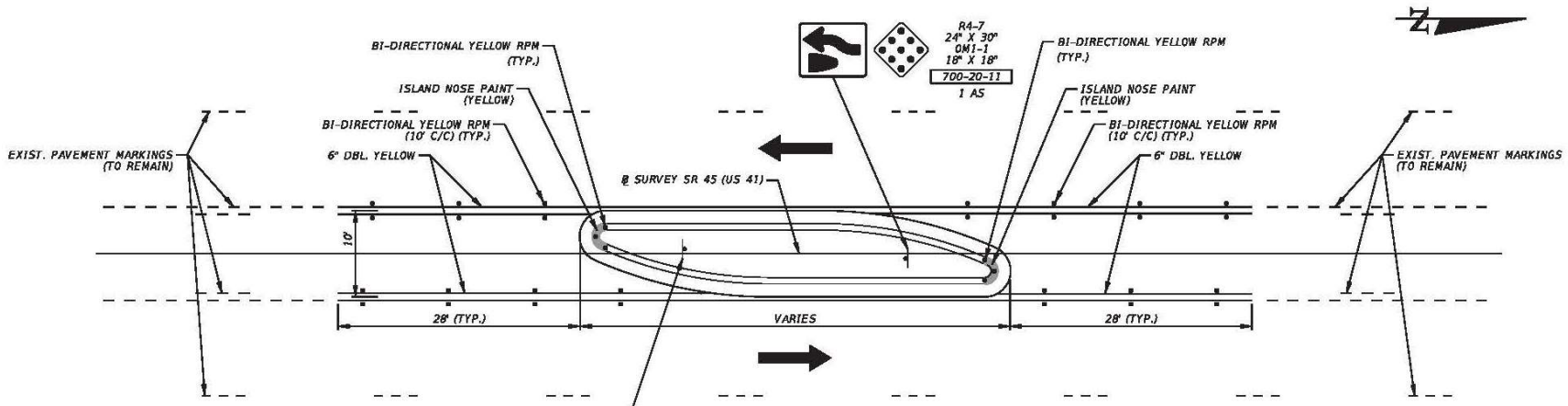
PRESENTATION ON THE PROPOSED US 41 PEDESTRIAN TRAFFIC ISLANDS

RECOMMENDED ACTION Provide input on the proposed US 41 Pedestrian Traffic Islands and take any action, if necessary

The current FDOT Work Program includes a pedestrian improvement project on US 41 from Hanson Street to SR 82 with construction programmed in FY 2013/14. The project came from the 2010 ADA Audit conducted on US 41 by FDOT within the same project limits. The design is currently underway with 60% of the design (Phase II) now complete. As part of the design, pedestrian traffic islands are proposed in the center two-way left turn lane of US 41 at 6 locations where pedestrians have been observed to frequently cross the roadway. These locations are as follows:

- South of the US 41 and Hoople Street intersection
- South of the US 41 and Lafayette Street intersection
- South of the US 41 and Franklin Street intersection
- South of the US 41 and Jeffcott Street intersection
- South of the US 41 and Katherine Street intersection
- Immediately south of the Sunoco Gas Station at the NE corner of US 41 and Linhart Avenue

At the March 26th BPC meeting, Ms. Kellie Spurgeon with FDOT will provide a presentation on the proposed traffic islands and will be seeking committee input. A signing and pavement marking detail of a typical pedestrian traffic island is **attached**.



R4-7
24" X 30"
OM1-1
18" X 18"
700-20-11
1 AS



SIGNING AND PAVEMENT MARKING DETAIL
NTS

- NOTES:
1. SEE ROADWAY PLAN SHEETS FOR THE LOCATION OF THE SIGN ASSEMBLIES.
 2. SEE ROADWAY PLAN SHEETS FOR LOCATIONS WITH 18" YELLOW STRIPING.

**PEDESTRIAN TRAFFIC ISLAND DETAIL
(AKA SURFBOARD)**

UPDATE ON THE BICYCLE PEDESTRIAN SAFETY ACTION PLAN

INFORMATION AND DISCUSSION ITEM

An update on the ongoing Lee County MPO Bicycle Pedestrian Safety Action Plan will be provided at the March 26th BPCC meeting. Bicycle and pedestrian safety issues at the intersection of Old 41 and Terry Street will be also discussed under this item. The intersection was recently modified by the City of Bonita Springs to add dual left and right turn lanes.

DISCUSSION ON SR 80 BEFORE/AFTER EVALUATION OF MEDIAN TRAFFIC SEPARATOR

INFORMATION AND DISCUSSION ITEM

In July 2008, FDOT installed a median traffic separator on SR 80 (Palm Beach Boulevard) from Seaboard Street to I 75 to address traffic crashes occurring in this corridor. Improvements to the corridor were based off on an Access Management Plan. Consistent with this Plan, several intersection openings were closed off discontinuing the operation of two way left turns, while at some they were converted to only allow directional left turns. In December 2012, a Before/After Study was conducted on this corridor to examine the effectiveness of the median in reducing crash frequency and crash rates through the comparison of crash data for “before” and “after” time periods. Crash data for years 2004 to 2006 were considered as “before” data and crash data for years 2009 to 2011 were considered as “after” data. The analysis has revealed that overall crashes dropped from 169 per year in the “before” period to 68 per year in the “after” period. At midblock and unsignalized locations crashes dropped from 124 per year in the “before” period to 48 per year in the “after” period, while at signalized intersections they dropped from 45 per year to 20 per year. Rear end, angle, left turn, sideswipe and pedestrian crashes have also considerably dropped at these locations. The Before/After Evaluation Report is attached. A discussion on the results of this analysis will be held at the March 26th BPCC meeting.



**BEFORE/AFTER EVALUATION OF
MEDIAN TRAFFIC SEPARATOR**

DRAFT

**SR 80 (PALM BEACH BOULEVARD)
FROM SEABOARD STREET TO I-75**

FM No. 40922413290
Contract No. C-9430

December 2012

PREPARED FOR

Florida Department of Transportation, District 1
Project Manager: Michael Kautz

PREPARED BY

HNTB Corporation
Project Manager: Sergio Quevedo, P.E., PTOE



**BEFORE/AFTER EVALUATION OF
MEDIAN TRAFFIC SEPARATOR**

**SR 80 (PALM BEACH BOULEVARD)
FROM SEABOARD STREET TO I-75**

FM No. 40922413290
Contract No. C-9430

December 2012

PREPARED FOR

Florida Department of Transportation, District 1

Project Manager: Michael Kautz
801 N. Broadway Street
Bartow, Florida 33830



EXECUTIVE SUMMARY

Florida Department of Transportation (FDOT), as part of the Districtwide Safety Studies Contract, retained HNTB Corporation to conduct a Before/After Study along a segment of SR 80 (Palm Beach Boulevard) to examine the effectiveness of a median traffic separator constructed as part of the FDOT project (FPID No. 413943-1) that was completed in July 2008. The primary purpose of this study is to determine the effectiveness of a median traffic separator in reducing crash frequency and crash rates through the comparison of crash data for “before” and “after” periods. For the purpose of this analysis, crash data for years 2004 to 2006 were considered as “before” data and crash data for years 2009 to 2011 were considered as “after” data. The analysis methods used in conducting this study are consistent with those set forth in the Federal Highway Administration’s (FHWA’s) Highway Safety Evaluation Procedural Guide (FHWA-TS-81-219), and the Florida Department of Transportation’s (FDOT’s) Manual on Uniform Traffic Studies (MUTS).

State Road 80 (Palm Beach Blvd) is identified as section 12020000 on the State Highway System (SHS). The study segment extends from Seaboard Street (MP 1.711) to I-75 (MP 5.391) with five signalized intersections and forty-six unsignalized side streets within the project limits. SR 80 is a northeast/southwest, divided urban principal arterial with a raised grass median. SR 80 is a four-lane divided roadway from Seaboard Street to Ortiz Avenue and a six-lane divided roadway from Ortiz Avenue to I-75. SR 80, within the study limits, is classified as an “Urban Principal Arterial” based on the functional classification of roads published by the FDOT Transportation Statistics Office. The posted speed limit within the project limits is 45 mph. Along the study segment there are 12-foot wide travel lanes and a 16-foot wide lawn median traffic separator with curb and gutter. The study segment is currently designated as Access Class 5 roadway.

The installation of a median traffic separator is expected to have impacts on traffic safety. The most direct measures of traffic safety are crash frequency or crash rate. A comparison between the number of crashes before and after the installation of the median separator would provide such a direct measure. One of the primary expected benefits of the median separator is a reduction in the number of mid-block crashes. Consequently, comparisons were made between mid-block crashes that occurred before and after the installation of the median separator. It is anticipated that the installation of the median separator could also impact crash severity at the study location, both in terms of overall fatal crashes and injury crashes. In addition, the presence of a median separator is expected to reduce specific types of severe crashes, such as angle, head on, and left turn crashes.

It is customary to use statistical analysis to evaluate the effectiveness of the roadway improvement. Such analysis ensures that the observed differences in the “before/after” conditions are in fact due to the



treatment/countermeasure, in this case a median separator, and not due to chance. A Poisson Test was utilized to determine if differences in the “before” and “after” crash frequencies are significant. The Poisson Test is conducted by plotting expected crash frequency without treatment (refers to the condition without installation of the median separator) versus the percent change for a specified level of confidence (90% or 95%). The actual data point being tested must fall above the specified level of confidence curve in order to be considered significant. If the result is significant, then the null hypothesis stating that there was no difference in crash frequency would be rejected, indicating a significant difference in crash frequencies for the “before” and “after” conditions. In order to conduct the Poisson Test, it was assumed that the data follows Poisson distribution and the average crash frequency for the “before” period represents the sample crash frequency for the three-year period from 2004 to 2006.

Based on a general comparison of the crash frequencies between the “before” period and the “after” period the overall crash frequency has reduced from 169 crashes per year for the “before” period to 68 crashes per year for the “after” period. Major crash types such as rear end, angle and left turn crashes also have reduced considerably between the “before” and “after” period. Injury/fatal crashes, sideswipe crashes, pedestrian crashes, and head-on crashes have reduced considerably between the “before” and “after” period.

At the midblock and unsignalized locations, the overall crash frequency has reduced from 124 crashes per year for the “before” period to 48 crashes per year for the “after” period. Rear end, angle, left turn, sideswipe, pedestrian, head-on, and hit tree/shrub crashes have reduced considerably between the “before” and “after” period.

At the signalized intersections, the overall crash frequency has reduced from 45 crashes per year for the “before” period to 20 crashes per year for the “after” period. Rear end, angle, left turn, sideswipe, and pedestrian crashes have reduced considerably between the “before” and “after” period.

The Poisson Test was utilized to examine differences in crash frequencies for total, rear end, angle, left turn, sideswipe, pedestrian, and head-on crashes between the “before” and “after” periods. Based on the statistical evaluation it appears that there was a significant reduction in crashes due to the construction of the median separator as part of the FDOT project (FPID No. 413943-1).



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INTRODUCTION

Roadways with two-way left-turn lanes (TWLTL) have no physical restriction on vehicular movements and are typically locations with numerous and repeated conflicts between turning vehicles and crossing vehicles. The lack of a restrictive median at such locations may subject motorists to risks associated with angle crashes involving vehicles entering and exiting cross streets and driveways. In an effort to reduce angle crashes, the Florida Department of Transportation (FDOT), District One has installed a median separator along SR 80 (Palm Beach Boulevard) from Seaboard Street (MP 1.711) to I-75 (MP 5.391). FDOT's median modification project (FPID No. 413943-1) that was completed in July 2008 implemented an access management plan to include a median traffic separator along SR 80. The study segment is located in the City of Fort Myers, Lee County, Florida. A location map of the study segment is shown in Figure 1.

The FDOT, as part of the Districtwide Safety Studies Contract, retained HNTB Corporation to conduct a Before/After Study along the subject study segment to examine the effectiveness a median traffic separator. The primary purpose of this study is to determine the effectiveness a median traffic separator in reducing crash frequency and crash rates through comparison of crash data for "before" and "after" periods. For the purpose of this analysis, crash data for years 2004 to 2006 were considered as "before" data and crash data for the years 2009 to 2011 were considered as "after" data. The analysis methods used in conducting this study are consistent with those set forth in the Federal Highway Administration's (FHWA's) Highway Safety Evaluation Procedural Guide (FHWA-TS-81-219), and the Florida Department of Transportation's (FDOT's) Manual on Uniform Traffic Studies (MUTS).

"BEFORE" CONDITION

State Road 80 (Palm Beach Blvd) is identified as section 12020000 on the State Highway System (SHS). As mentioned earlier, the study segment extends from Seaboard Street (MP 1.711) to I-75 (MP 5.391). Before the installation of the median separator, SR 80 was a northeast/southwest roadway that ranged from five to seven lanes with a center two-way left-turn lane with five signalized intersections and forty-six unsignalized side streets within the project limits. FDOT developed an access management plan along the study segment that was implemented as shown in Table 1.

"AFTER" CONDITION

Currently, within the study limits, SR 80 is an northeast/southwest, four-lane and six-lane, divided principal urban arterial with five signalized intersections, ten full median openings and six directional median openings within the project limits. SR 80, within the study limits, is classified as an "Urban Principal Arterial" based on the functional classification of roads published by the FDOT Transportation



Statistics Office. The posted speed limit along the study segment is 45 mph. There are 12-foot wide travel lanes with a 16-foot wide median traffic separator with curb and gutter.

Within the study limits, the various land uses along SR 80 consist primarily of commercial developments. A majority of the side streets intersecting SR 80 within the study limits provide access to single-family and multi-family residential communities. Sidewalks exist on both sides of SR 80. Conventional street lighting is provided along both sides of SR 80.

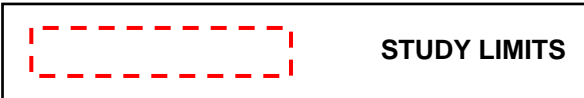
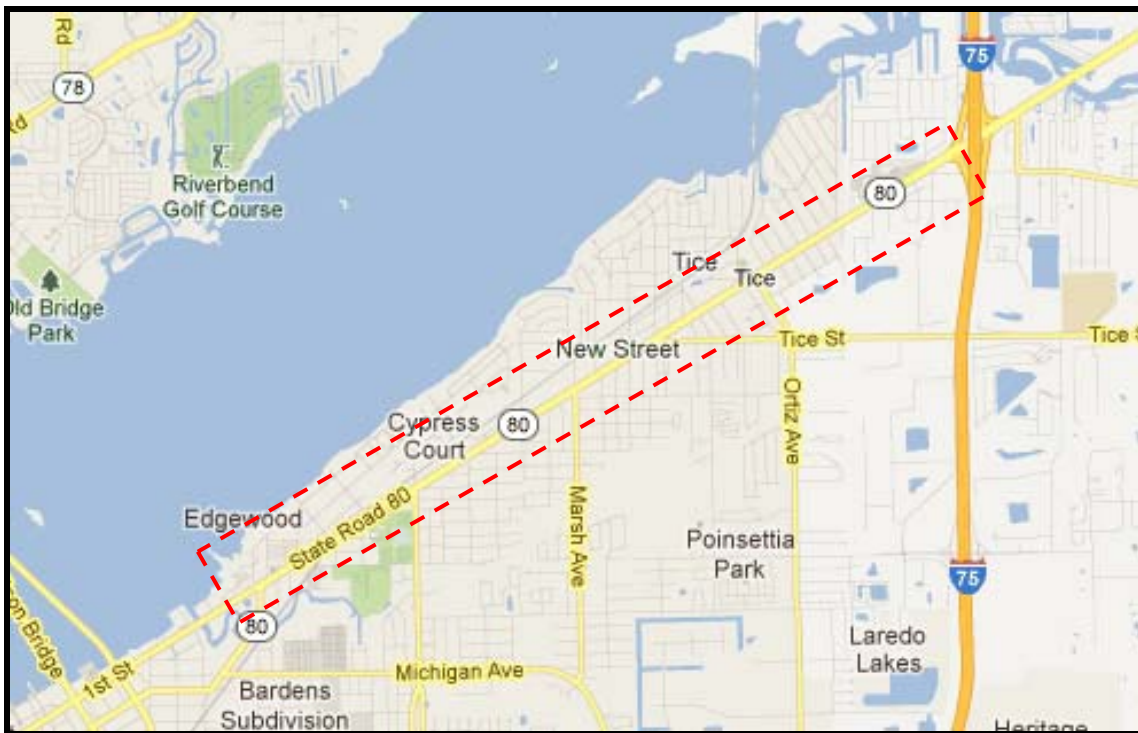


Figure 1 – Location Map
SR 80 (Palm Beach Boulevard) from Seaboard Street to I-75
Before/After Evaluation of Median Separator



Table 1 – Access Management Plan

Cross Street	Milepost	'Before' Opening Type	'After' Opening Type	Proposed Spacing	New Criteria (feet)	Deviation From Standard (%)
Seaboard St	1.711	TWLTL	Closed	---	---	---
Allen St	1.753	TWLTL	WB Directional	---	---	---
Marion St	1.802	TWLTL	Closed	---	---	---
Williams St	1.819	TWLTL	Closed	---	---	---
Marion St	1.864	TWLTL	Closed	---	---	---
Superior St	1.895	TWLTL	Full	750	660	0%
Freemont St	2.056	TWLTL	Closed	---	---	---
Short St	2.070	TWLTL	Closed	---	---	---
Royalston Ave	2.092	TWLTL	Closed	---	---	---
Terry Ave	2.214	TWLTL	Full	1684	1320	0%
Tarpon St	2.259	TWLTL	Full	238	1320	82%
Veronica S Shoemaker Blvd	2.506	Signal	Signal	1304	1320	1%
Washington Ave	2.538	TWLTL	Closed	---	---	---
Desoto Ave	2.649	TWLTL	Closed	---	---	---
Polk St	2.800	TWLTL	Full	1552	1320	0%
Woodside Ave	2.838	TWLTL	Closed	---	---	---
Harney Pl	2.913	TWLTL	Closed	---	---	---
Home Pl	3.004	TWLTL	EB Directional	1077	660	0%
Van Buren St	3.093	TWLTL	Full	470	660	29%
Oleander Ave	3.214	TWLTL	Closed	---	---	---
Pine St	3.280	TWLTL	EB Directional	987	660	0%
Marsh Ave	3.382	Signal	Signal	539	660	18%
Fairview Ave	3.504	TWLTL	Closed	---	---	---
Fairview Ave	3.527	TWLTL	Closed	---	---	---
Adams Ave	3.600	TWLTL	Full	1151	1320	13%
Prospect Ave SE	3.674	TWLTL	Closed	---	---	---
Wood Ave	3.748	TWLTL	Closed	---	---	---
New York Dr	3.821	Signal	Signal	1167	1320	12%
Johnson Ave	3.913	TWLTL	Full	486	1320	63%
Wilma Ave	3.973	TWLTL	Closed	---	---	---
Waverly Ave	3.995	TWLTL	Closed	---	---	---
Tyrone Ave/Baltimore Ave	4.048	TWLTL	Closed	---	---	---
Mississippi Ave	4.100	TWLTL	Full	987	1320	25%
Carolina Ave	4.167	TWLTL	Closed	---	---	---
Royal Palm Park Blvd	4.268	TWLTL	EB Directional	887	660	0%
Figuera Ave	4.302	TWLTL	Closed	---	---	---
Ortiz Ave/Florence Ave	4.364	Signal	Signal	507	660	23%
Flamingo Cir	4.427	TWLTL	Closed	---	---	---
Fairfax Dr	4.489	TWLTL	Closed	---	---	---
Bellair Rd	4.552	TWLTL	Closed	---	---	---
Buena Vista Blvd	4.612	TWLTL	Full	1309	1320	1%
Balboa Ave	4.679	TWLTL	Closed	---	---	---
Miramar Rd	4.739	TWLTL	WB Directional	671	660	0%
Kingston Dr	4.816	TWLTL	Closed	---	---	---
Alta Vista Ave	4.830	TWLTL	Closed	---	---	---
Alameda Dr	4.894	TWLTL	EB Directional	818	660	0%
Underwood Dr/Morse Shores Dwy	5.002	Signal	Signal	818	660	0%
Richmond Ave	5.053	TWLTL	Closed	---	---	---
Morse Shores Dwy	5.123	TWLTL	Closed	---	---	---
Kingston Dr E	5.209	Full	Closed	---	---	---
Lexington Ave/Morse Dwy	5.297	Full	Full	570	1320	57%



The study segment is currently designated as an Access Class 5 roadway. The minimum spacing requirements pertinent to median openings for Access Class 5 roadways are as follows:

- Directional median opening → 660 feet
- Full median opening → 1,320 feet
- Signal → 1,320 feet

The five (5) signalized intersections along SR 80 within the study limits are at the following locations:

- Veronica S Shoemaker Blvd (MP 2.506)
- Marsh Ave (MP 3.382)
- New York Dr (MP 3.821)
- Ortiz Ave/Florence Ave (MP 4.364)
- Underwood Dr/Morse Shores Dwy (MP 5.002)

In addition, the sixteen (16) unsignalized median openings are located within the study limits along SR 80. These median openings align with the cross-streets/driveways as follows:

- Allen St (MP 1.753)
- Superior St (MP 1.895)
- Terry Ave (MP 2.214)
- Tarpon St (MP 2.259)
- Polk St (MP 2.800)
- Home Pl (MP 3.004)
- Van Buren St (MP 3.093)
- Pine St (MP 3.280)
- Adams Ave (MP 3.600)
- Johnson Ave (MP 3.913)
- Mississippi Ave (MP 4.100)
- Royal Palm Park Blvd (MP 4.268)
- Buena Vista Blvd (MP 4.612)
- Miramar Rd (MP 4.739)
- Alameda Dr (MP 4.894)
- Lexington Ave/Morse Dwy (MP 5.297)



FIELD REVIEW

A field review was performed by qualified traffic engineers to include a general reconnaissance of the study area to verify if the existing median openings are consistent with the proposed median modifications as presented in the roadway plans for FDOT project 413943-1. One of the primary effects of the installation of the median separator is an increase in u-turn activity. The field review was focused on observing traffic conflicts due to the u-turn activity. In general, the signalized intersections did not have much apparent u-turn activity during the observed peak time periods. However, there seemed to be increased u-turn activity at the unsignalized median openings.

STUDY METHODOLOGY

The installation of a median separator is expected to have impacts on traffic safety. The most direct measures of traffic safety are crash frequency or crash rate. A comparison between the number of crashes before and after the installation of the median separator would provide such a direct measure.

One of the primary expected benefits of the median separator is a reduction in the number of angle crashes occurring in areas other than the signalized intersections. Consequently, comparisons were made between mid-block crashes occurring before and after the installation of the median separator. It is anticipated that the installation of a median separator could also impact crash frequency at the study location, both in terms of overall crashes and injury crashes. In addition, the presence of a median separator is expected to reduce specific types of severe crashes, such as head-on, angle, and left turn crashes. Comparisons were made between “before” and “after” crash frequencies for these crash types.

Thus, the proposed measures of effectiveness (MOEs) for the “before” and “after” evaluation study were as follows:

- Change in total crash frequency
- Change in injury/fatal crash frequency
- Change in mid-block and unsignalized intersection crash frequency
- Changes in angle, left turn and rear end crash frequencies

In order to evaluate the effectiveness of the installation of the median separator, a “Before/After” evaluation method was utilized. The “before” period is defined as the period prior to the installation of the median separator while the “after” period refers to the period following the installation of the median separator. A “Before/After” evaluation plan, shown in Figure 2, was used to determine whether or not the median separator was effective in reducing the frequency or severity of crashes.

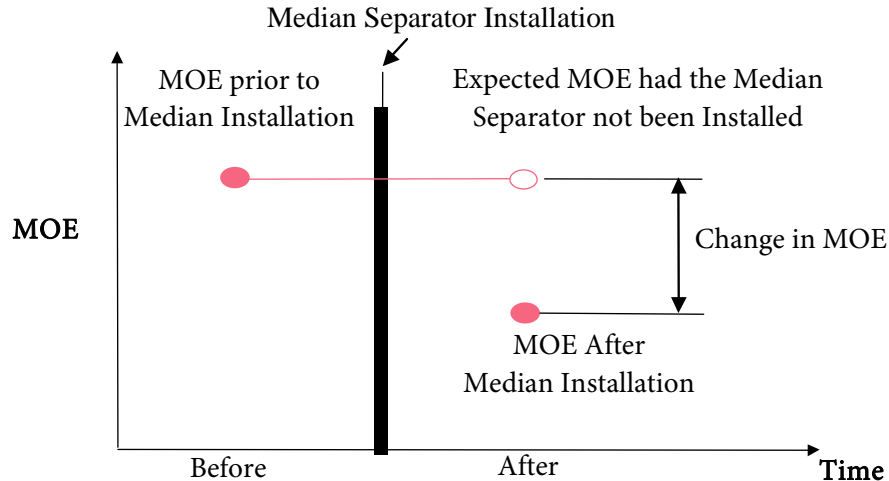


Figure 2 – Before/After Evaluation Plan

It is customary to use a statistical analysis to evaluate the effectiveness of the roadway improvement. Such analysis ensures that the observed differences in the “before” and “after” conditions are in fact due to the treatment/countermeasure, in this case, a median traffic separator, and not due to chance.

A Poisson Test was utilized to determine if differences in “before” and “after” crash frequencies are significant. The Poisson Test is conducted by plotting expected crash frequency without treatment (refers to the condition without a median traffic separator) versus the percent change for a specified level of confidence (90% or 95%). The actual data point being tested must fall above the specified level of confidence curve in order to be considered significant. Poisson Curves, excerpted from the document FHWA-TS-81-219, page 114 used for this analysis are included as Figure 3. If the result is significant, then the null hypothesis stating that there was no difference in crash frequency would be rejected, indicating a significant difference in crash frequencies for the “before” and “after” conditions. In order to conduct the Poisson Test, it was assumed that the data follows Poisson distribution and the average crash frequency for the “before” period represents the sample crash frequency for the three-year period.

The expected crash frequency (E_F) is calculated by the equation:

$$E_F = B_F \left(\frac{AADT_{after}}{AADT_{before}} \right) \left(\frac{T_A}{T_B} \right)$$

Where,

E_F = Expected crash frequency at the test site if no improvement had been made.

B_F = The “before” crash frequency at the test site

T_A = Length of time of the “after” period



T_B = Length of time of the “before” period

$AADT_{after}$ = Annual Average Daily traffic at the test site for the “after” period

$AADT_{before}$ = Annual Average Daily traffic at the test site for the “before” period

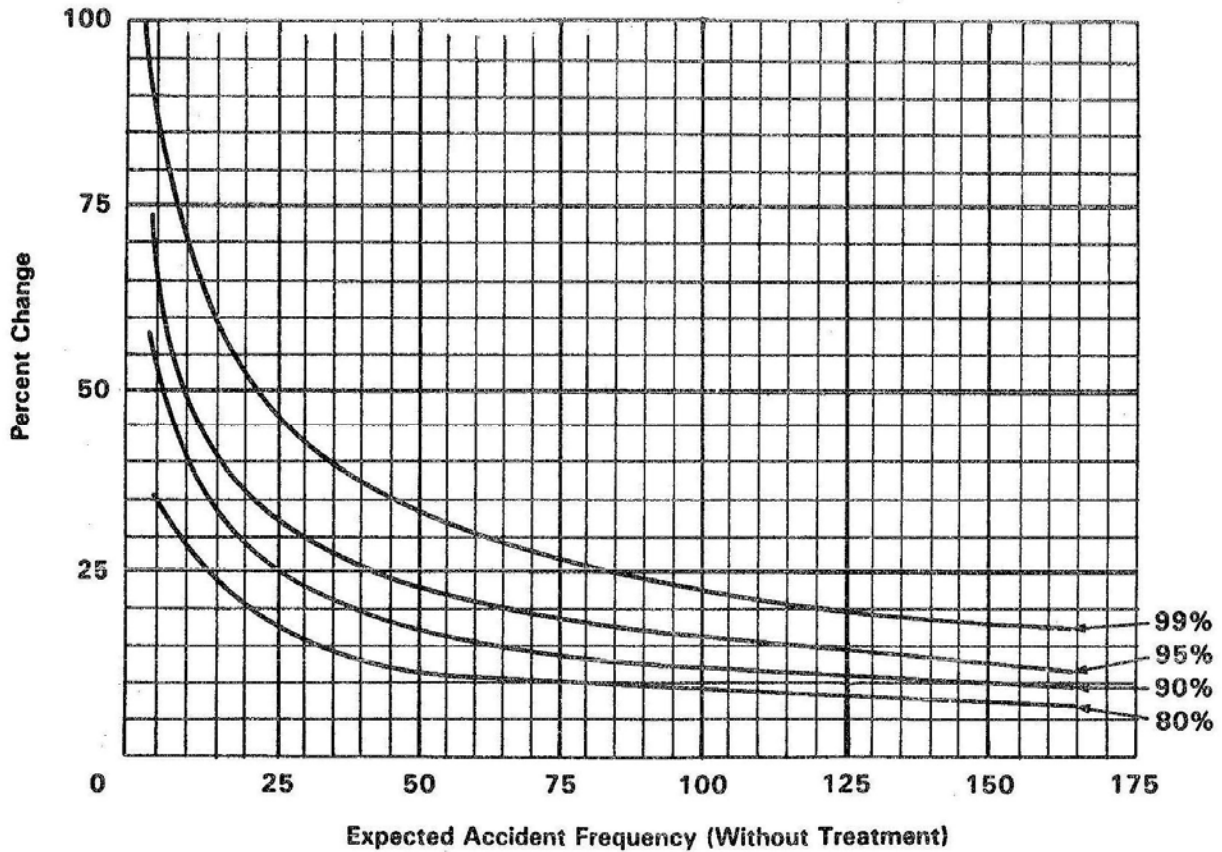


Figure 3 – Poisson Curves

CRASH ANALYSIS

The Crash Analysis Reporting System (CARS) data was retrieved for the years 2004 to 2006 for the “before” study period and years 2009 to 2011 data for the “after” period. This data only includes long form crash reports submitted to FDOT by local enforcement agencies. Based on the crash data, crash summary tables were developed for the “before” and “after” periods.

A review of the crash summary tables provides an insight into the crash pattern along the study segment. Tables 2 through 4 provide a summary of crashes by type of crash for the entire segment, the mid-block and unsignalized locations only, and signalized intersections only. Tables 5 through 7 provide a summary of crashes by contributing cause for the entire segment, the mid-block and unsignalized locations only, and signalized intersections only.



Table 2 – Summary of Crashes by Type

Study Segment: SR 80 from Seaboard St to I-75								
County: Lee								
Section: 12020000 from MP 1.711 to MP 5.391								
CRASH TYPE	BEFORE				AFTER			
	2004	2005	2006	Average	2009	2010	2011	Average
Rear End	39	40	31	36.7	12	21	9	14.0
Angle	32	37	32	33.7	18	10	10	12.7
Left Turn	13	17	17	15.7	6	4	3	4.3
Sideswipe	17	18	20	18.3	5	6	0	5.5
Collision W/Pedestrian	10	13	11	11.3	3	4	1	2.7
Collision W/Bike	3	3	10	5.3	3	4	3	3.3
Head-On	6	5	5	5.3	1	2	1	1.3
Right Turn	0	3	0	1.0	3	4	0	2.3
Backed Into	3	2	2	2.3	0	0	0	0.0
Parked Car	1	2	4	2.3	2	0	0	0.7
Overtaken	0	0	0	0.0	0	0	1	0.3
Median Crossover	0	0	0	0.0	0	0	2	0.7
Hit Fixed Object	3	1	2	2.0	1	1	2	1.3
Hit Tree/Shrub	3	6	6	5.0	4	3	3	3.3
Hit Fence	2	0	0	0.7	0	0	0	0.0
Ran Into Ditch	0	0	1	0.3	0	0	0	0.0
Hit Sign/Sign Post	1	1	1	1.0	2	2	0	1.3
Hit Utility Pole	2	1	2	1.7	1	0	1	0.7
Hit Crash Attenuators	0	0	0	0.0	0	0	4	1.3
Separation of Units	0	0	0	0.0	0	0	4	1.3
Cargo Loss	0	0	1	0.3	1	0	0	0.3
Unknown	28	20	30	26.0	15	14	8	12.3
TOTAL	163	169	175	169.0	77	75	52	68.0



**Table 3 – Summary of Crashes by Type
Mid-block and Unsignalized Intersections**

Study Segment: SR 80 from Seaboard St to I-75								
County: Lee								
Section:12020000 from MP 1.711 to MP 5.391								
CRASH TYPE	BEFORE				AFTER			
	2004	2005	2006	Average	2009	2010	2011	Average
Rear End	17	22	25	21.3	9	12	6	9.0
Angle	26	29	27	27.3	12	8	9	9.7
Left Turn	7	14	14	11.7	4	2	2	2.7
Sideswipe	14	13	15	14.0	2	4	0	2.0
Collision W/Pedestrian	8	10	8	8.7	3	3	0	2.0
Collision W/Bike	1	3	8	4.0	2	4	2	2.7
Head-On	5	4	4	4.3	1	1	1	1.0
Right Turn	0	3	0	1.0	2	4	0	2.0
Backed Into	2	2	1	1.7	0	0	0	0.0
Parked Car	0	2	1	1.0	2	0	0	0.7
Overtuned	0	0	0	0.0	0	0	1	0.3
Median Crossover	0	0	0	0.0	0	0	2	0.7
Hit Fixed Object	3	0	0	1.0	1	1	2	1.3
Hit Tree/Shrub	3	6	6	5.0	3	3	1	2.3
Hit Fence	2	0	0	0.7	0	0	0	0.0
Ran Into Ditch	0	0	1	0.3	0	0	0	0.0
Hit Sign/Sign Post	1	1	1	1.0	2	0	0	0.7
Hit Utility Pole	2	0	1	1.0	1	0	1	0.7
Hit Crash Attenuators	0	0	0	0.0	0	0	3	1.0
Separation of Units	0	0	0	0.0	0	0	3	1.0
Cargo Loss	0	0	1	0.3	0	0	0	0.0
Unknown	18	18	22	19.3	6	12	6	8.0
TOTAL	109	127	135	123.7	50	54	39	47.7



**Table 4 – Summary of Crashes by Type
Signalized Intersections**

Study Segment: SR 80 from Seaboard St to I-75								
County: Lee								
Section: 12020000 from MP 1.711 to MP 5.391								
CRASH TYPE	BEFORE				AFTER			
	2004	2005	2006	Average	2009	2010	2011	Average
Rear End	22	18	6	15.3	3	9	3	5.0
Angle	6	8	5	6.3	6	2	1	3.0
Left Turn	6	3	3	4.0	2	2	1	1.7
Sideswipe	3	5	5	4.3	3	2	0	1.7
Collision W/Pedestrian	2	3	3	2.7	0	1	1	0.7
Collision W/Bike	2	0	2	1.3	1	0	1	0.7
Head-On	1	1	1	1.0	0	1	0	0.3
Right Turn	0	0	0	0.0	1	0	0	0.3
Backed Into	1	0	1	0.7	0	0	0	0.0
Parked Car	1	0	3	1.3	0	0	0	0.0
Overtuned	0	0	0	0.0	0	0	0	0.0
Median Crossover	0	0	0	0.0	0	0	0	0.0
Hit Fixed Object	0	1	2	1.0	0	0	0	0.0
Hit Tree/Shrub	0	0	0	0.0	1	0	2	1.0
Hit Fence	0	0	0	0.0	0	0	0	0.0
Ran Into Ditch	0	0	0	0.0	0	0	0	0.0
Hit Sign/Sign Post	0	0	0	0.0	0	2	0	0.7
Hit Utility Pole	0	1	1	0.7	0	0	0	0.0
Hit Crash Attenuators	0	0	0	0.0	0	0	1	0.3
Separation of Units	0	0	0	0.0	0	0	1	0.3
Cargo Loss	0	0	0	0.0	1	0	0	0.3
Unknown	10	2	8	6.7	9	2	2	4.3
TOTAL	54	42	40	45.3	27	21	13	20.3



Table 5 – Summary of Crashes by Contributing Cause

Study Segment: SR 80 from Seaboard St to I-75								
County: Lee								
Section:12020000 from MP 1.711 to MP 5.391								
CONTRIBUTING CAUSE	BEFORE				AFTER			
	2004	2005	2006	Average	2009	2010	2011	Average
No Improper Driving	27	39	30	32.0	6	11	10	9.0
Careless Driving	48	50	47	48.3	21	16	13	16.7
Failed to yield right-of-way	25	40	44	36.3	25	20	11	18.7
Disregarded Traffic Signal	3	1	0	1.3	2	2	0	1.3
Improper Turn	6	3	2	3.7	6	0	1	2.3
Improper Lane Change	6	5	6	5.7	2	2	0	1.3
Driving Wrong Side/Way	0	0	1	0.3	0	0	0	0.0
Followed too Closely	5	8	5	6.0	1	3	4	2.7
Drove Left of Center	0	0	1	0.3	0	0	0	0.0
Exceeded Safe Speed Limit	1	0	2	1.0	1	0	0	0.3
Failed to Maintain Equipment	0	2	2	1.3	0	0	0	0.0
Disregarded Traffic Control	2	2	2	2.0	1	3	1	1.7
Improper Passing	1	1	1	1.0	0	0	0	0.0
Obstructing Traffic	0	0	1	0.3	0	0	0	0.0
Alcohol/Drugs-Under Influence	11	2	3	5.3	2	2	0	1.3
Improper Backing	2	1	2	1.7	2	1	2	1.7
Improper Load	0	0	0	0.0	1	0	0	0.3
Fleeing Police	1	0	0	0.3	0	0	0	0.0
Driver Distraction	0	0	3	1.0	2	2	0	1.3
Unknown	25	15	23	21.0	5	13	10	9.3
Total	163	169	175	169.0	77	75	52	68.0
BY LIGHTING CONDITION, ROAD SURFACE CONDITION, AND SEVERITY								
CONDITION/SEVERITY	2004	2005	2006	Average	2009	2010	2011	Average
Number of Daylight Crashes	94	96	97	95.7	50	40	34	41.3
Number of Dark Crashes	65	70	77	70.7	25	32	18	25.0
Number of Dry Crashes	131	148	150	143.0	70	69	50	63.0
Number of Wet Crashes	26	18	22	22.0	5	6	2	4.3
Number of Injury/Fatal Crashes	85	76	89	83.3	39	38	31	36.0



**Table 6 – Summary of Crashes by Contributing Cause
Mid-block and Unsignalized Intersections**

Study Segment: SR 80 from Seaboard St to I-75								
County: Lee								
Section:12020000 from MP 1.711 to MP 5.391								
CONTRIBUTING CAUSE	BEFORE				AFTER			
	2004	2005	2006	Average	2009	2010	2011	Average
No Improper Driving	20	28	24	24.0	4	10	6	6.7
Careless Driving	27	35	37	33.0	15	8	9	10.7
Failed to yield right-of-way	21	37	36	31.3	17	16	11	14.7
Disregarded Traffic Signal	0	0	0	0.0	0	1	0	0.3
Improper Turn	5	2	1	2.7	4	0	1	1.7
Improper Lane Change	6	4	6	5.3	2	2	0	1.3
Driving Wrong Side/Way	0	0	1	0.3	0	0	0	0.0
Followed too Closely	3	4	3	3.3	0	3	3	2.0
Drove Left of Center	0	0	0	0.0	0	0	0	0.0
Exceeded Safe Speed Limit	1	0	1	0.7	1	0	0	0.3
Failed to Maintain Equipment	0	1	0	0.5	0	0	0	0.0
Disregarded Traffic Control	2	1	2	1.7	1	3	1	1.7
Improper Passing	0	1	1	0.7	0	0	0	0.0
Obstructing Traffic	0	0	1	0.3	0	0	0	0.0
Alcohol/Drugs-Under Influence	7	2	1	3.3	0	1	0	0.3
Improper Backing	2	1	1	1.3	1	1	2	1.3
Improper Load	0	0	0	0.0	0	0	0	0.0
Fleeing Police	0	0	0	0.0	0	0	0	0.0
Driver Distraction	0	0	2	0.7	2	1	0	1.0
Unknown	15	11	18	14.7	3	8	6	5.7
Total	109	127	135	123.7	50	54	39	47.7
BY LIGHTING CONDITION, ROAD SURFACE CONDITION, AND SEVERITY								
CONDITION/SEVERITY	2004	2005	2006	Average	2009	2010	2011	Average
Number of Daylight Crashes	66	71	75	70.7	29	32	25	28.7
Number of Dark Crashes	41	53	59	51.0	20	20	14	18.0
Number of Dry Crashes	86	112	113	103.7	45	49	37	43.7
Number of Wet Crashes	19	12	19	16.7	3	5	2	3.3
Number of Injury/Fatal Crashes	52	54	68	58.0	24	29	24	25.7



**Table 7 – Summary of Crashes by Contributing Cause
Signalized Intersections**

Study Segment: SR 80 from Seaboard St to I-75								
County: Lee								
Section:12020000 from MP 1.711 to MP 5.391								
CONTRIBUTING CAUSE	BEFORE				AFTER			
	2004	2005	2006	Average	2009	2010	2011	Average
No Improper Driving	7	11	6	8.0	2	1	4	2.3
Careless Driving	21	15	10	15.3	6	8	4	6.0
Failed to yield right-of-way	4	3	8	5.0	8	4	0	4.0
Disregarded Traffic Signal	3	1	0	1.3	2	1	0	1.0
Improper Turn	1	1	1	1.0	2	0	0	0.7
Improper Lane Change	0	1	0	0.3	0	0	0	0.0
Driving Wrong Side/Way	0	0	0	0.0	0	0	0	0.0
Followed too Closely	2	4	2	2.7	1	0	1	0.7
Drove Left of Center	0	0	1	0.3	0	0	0	0.0
Exceeded Safe Speed Limit	0	0	1	0.3	0	0	0	0.0
Failed to Maintain Equipment	0	1	2	1.0	0	0	0	0.0
Disregarded Traffic Control	0	1	0	0.3	0	0	0	0.0
Improper Passing	1	0	0	0.3	0	0	0	0.0
Obstructing Traffic	0	0	0	0.0	0	0	0	0.0
Alcohol/Drugs-Under Influence	4	0	2	2.0	2	1	0	1.0
Improper Backing	0	0	1	0.3	1	0	0	0.3
Improper Load	0	0	0	0.0	1	0	0	0.3
Fleeing Police	1	0	0	0.3	0	0	0	0.0
Driver Distraction	0	0	1	0.3	0	1	0	0.3
Unknown	10	4	5	6.3	2	5	4	3.7
Total	54	42	40	45.3	27	21	13	20.3
BY LIGHTING CONDITION, ROAD SURFACE CONDITION, AND SEVERITY								
CONDITION/SEVERITY	2004	2005	2006	Average	2009	2010	2011	Average
Number of Daylight Crashes	28	25	22	25.0	50	40	34	41.3
Number of Dark Crashes	26	17	18	20.3	27	35	18	26.7
Number of Dry Crashes	45	36	37	39.3	70	69	50	63.0
Number of Wet Crashes	7	6	3	5.3	5	6	2	4.3
Number of Injury/Fatal Crashes	33	21	18	24.0	15	9	7	10.3



For the “before” period, based on the crash data reviewed, a total of 507 crashes were documented along the study segment during the referenced three-year period (2004-2006) with 163 crashes in 2004, 169 crashes in 2005 and 175 crashes in 2006. Based on the crash severity, of the 507 crashes reported 250 (49%) resulted in an injury/fatality and 257 (51%) were property damage only crashes. A total of 212 (42%) night/dusk/dawn crashes were reported, which is higher than the statewide average (for all roadways) of 34%. Sixty-six (13%) of the total crashes reported occurred under wet/slippery pavement conditions, which is lower than the statewide average (for all roadways) of 14%. Among the contributing causes documented in the crash data, careless driving was the highest (145 crashes – 29%) followed by failed to yield right-of-way (109 crashes – 21%).

For the “after” period, based on the crash data reviewed, a total of 204 crashes were documented along the study segment during the referenced three-year period (2009-2011). Based on the crash severity, of the 204 crashes reported, 108 (53%) resulted in an injury/fatality and 96 (47%) were property damage only crashes. A total of 75 (37%) night/dusk/dawn crashes were reported, which is higher than the statewide average (for all roadways) of 34%. Thirteen (6%) of the total crashes reported occurred under wet/slippery pavement conditions, which is lower than the statewide average (for all roadways) of 14%. Among the contributing causes documented in the crash data, failed to yield right-of-way was the highest (56 crashes – 27%) followed by careless driving (50 crashes – 25%).

Based on a general comparison of the crash frequencies between the “before” period and the “after” period the overall crash frequency, has reduced from 169 crashes per year for the “before” period to 68 crashes per year for the “after” period. Major crash types such as rear end, angle and left turn crashes also have reduced considerably between the “before” and “after” period. Sideswipe crashes, pedestrian crashes, and head-on crashes have reduced considerably between the “before” and “after” period.

At the midblock and unsignalized locations, the overall crash frequency has reduced from 124 crashes per year for the “before” period to 48 crashes per year for the “after” period. Rear end, angle, left turn, sideswipe, pedestrian, head-on, and hit tree/shrub crashes have reduced considerably between the “before” and “after” period.

At the signalized intersections, the overall crash frequency has reduced from 45 crashes per year for the “before” period to 20 crashes per year for the “after” period. Rear end, angle, left turn, sideswipe, and pedestrian crashes have reduced considerably between the “before” and “after” period.

As previously mentioned, based on the implemented access management plan, there are twenty-one (21) median openings, five (5) signalized and sixteen (16) unsignalized. A comparison of crash frequency was made between the “before” and “after” conditions for crashes occurring at the signalized intersections, mid-block locations and unsignalized median openings. Figure 4 presents this comparison in a graphical format.

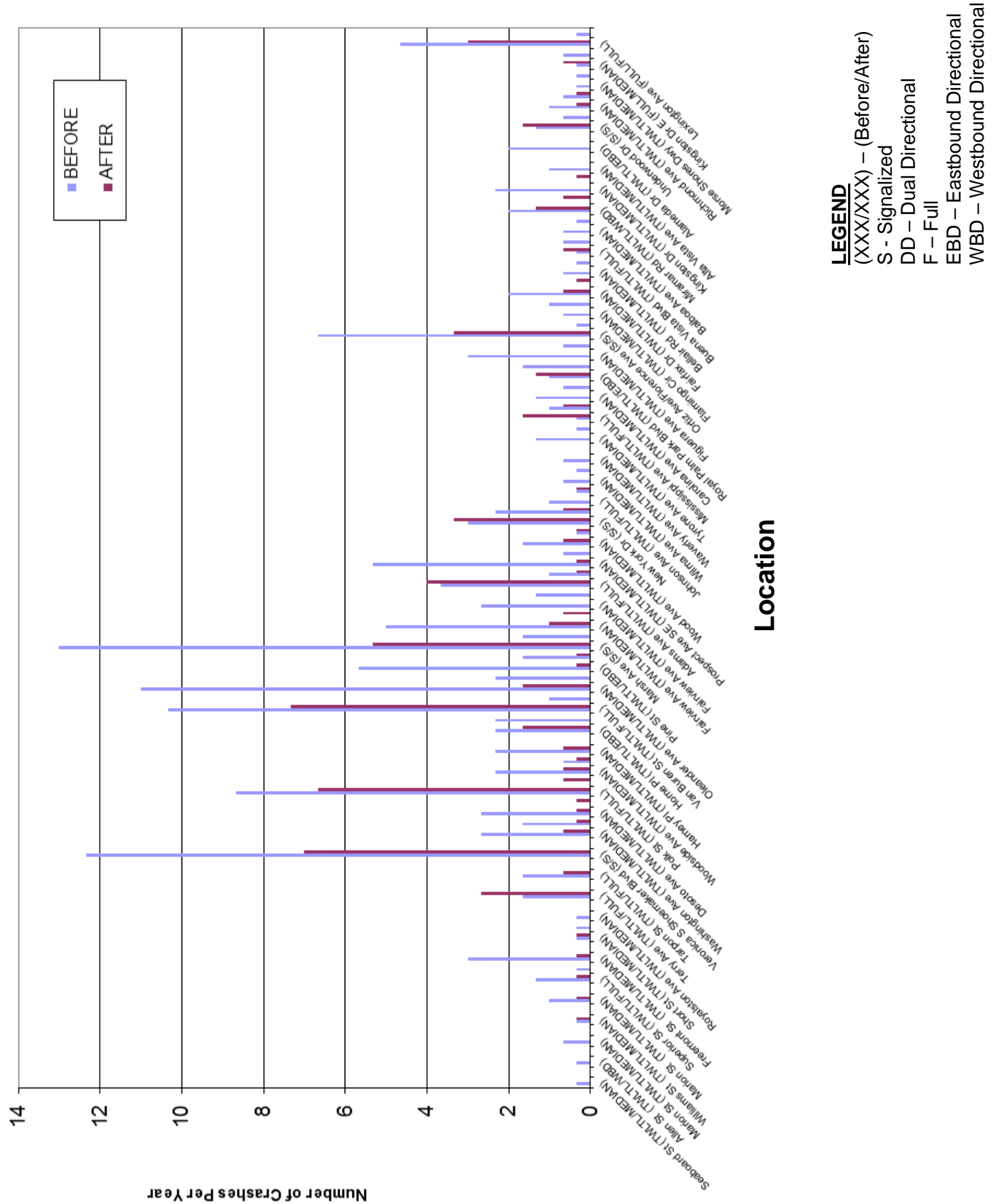


Figure 4 –Crashes Before/After Installation of the Median Separator



STATISTICAL EVALUATION

This section of the report documents the statistical evaluation conducted as part of this study to determine the significance of the changes in the crash frequencies due to the installation of the median separator.

As mentioned previously, a Poisson Test was performed to analyze the significance of the differences in crash frequency between the “before” and “after” periods. The expected “after” period crash frequency was calculated using the E_F (expected crash frequency) calculations described in the Study Methodology section. A “before” period AADT of 30,012 and an “after” period AADT of 21,618 was used in these calculations. The percent change between the expected and actual “after” crash frequencies were calculated. The Poisson Test plots expected crash frequency without treatment (installation of the median separator) versus the percent change at the same location/time frame with treatment, for a specified level of confidence. The Poisson Test was utilized to examine differences in crash frequencies for total, injury/fatal, rear end, head-on, angle, left turn, sideswipe, and pedestrian crashes between the “before” and “after” periods. The results of the analysis are summarized in Table 8 and plotted in Figures 5 and 6.

Table 8 – Percentage Change in Crash Frequency

Type of Crash	2004	2005	2006	Three Year Total	Expected Frequency	2009	2010	2011	Three Year Total	Percentage Change
All Crashes	163	169	175	507	365.2	77	75	52	204	-44%
Rear End	39	40	31	101	79.2	12	21	9	42	-47%
Head-On	6	5	5	16	11.5	1	2	1	4	-65%
Angle	32	40	31	110	72.8	18	10	10	38	-48%
Left Turn	13	17	17	47	33.9	6	4	3	13	-62%
Sideswipe	17	18	20	55	39.6	5	6	0	11	-72%
Collision w/ Pedestrian	10	13	11	34	24.5	3	4	1	8	-67%
Injury/Fatal Crashes	85	76	89	250	180.1	39	38	31	108	-40%

Mid-block and Unsignalized Intersections

All Crashes	109	127	135	371	123.7	50	54	39	143	-46%
Rear End	17	22	25	64	46.1	9	12	6	27	-41%
Head-On	5	4	4	13	9.4	1	1	1	3	-68%
Angle	26	29	27	82	59.1	12	8	9	29	-51%
Left Turn	7	14	14	35	25.2	4	2	2	8	-68%
Sideswipe	14	13	15	42	30.3	2	4	0	6	-80%
Collision w/ Pedestrian	8	10	8	26	18.7	3	3	0	6	-68%
Injury/Fatal Crashes	52	54	68	174	125.3	24	29	24	77	-39%

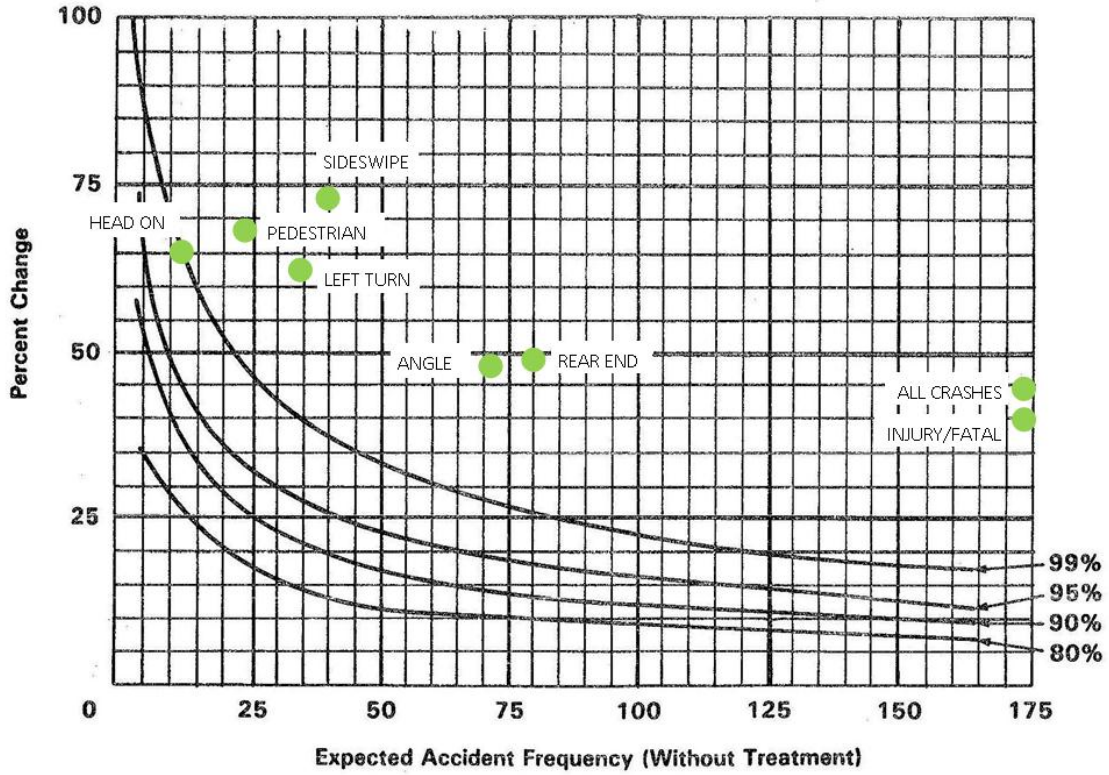


Figure 5 – Poisson Test Plots

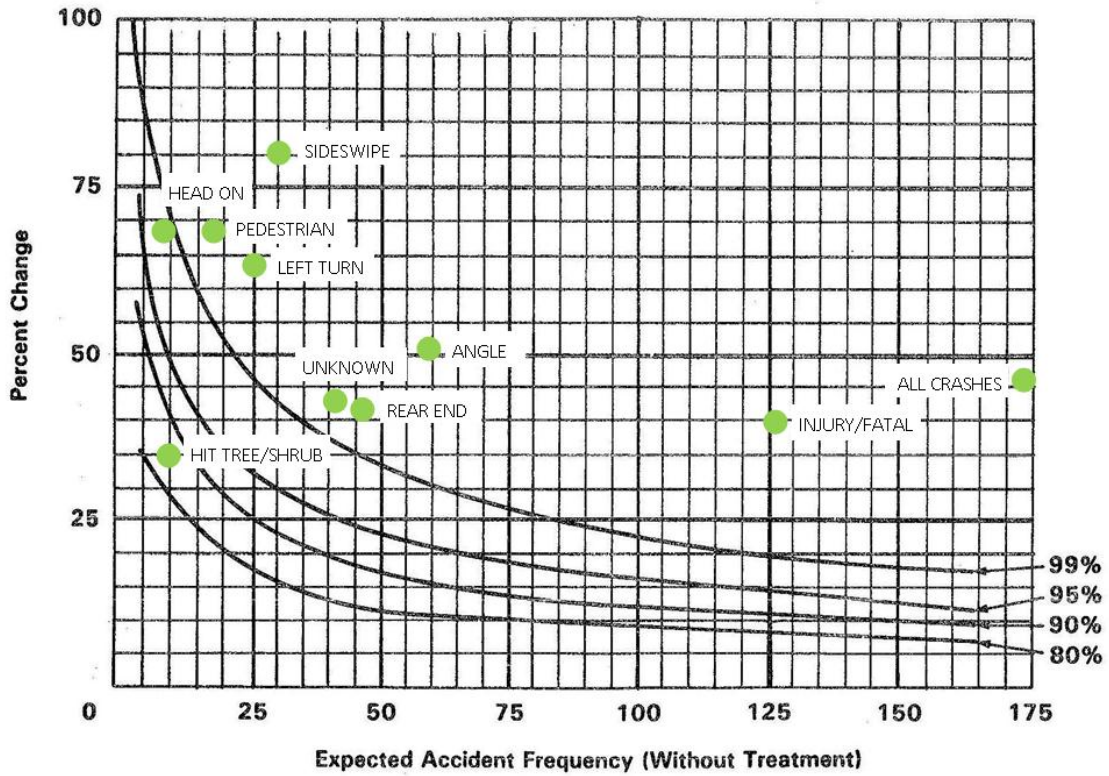


Figure 6 – Poisson Test Plots (Mid-block and Unsignalized Intersections)



Table 8 and Figures 5 and 6 show that there is a significant reduction in the crash frequencies for total, injury/fatal, rear end, angle, left turn, sideswipe, and pedestrian crashes with at least a 99 percent confidence, and a significant reduction in the crash frequencies for head-on crashes with at least a 95 percent confidence.

CONCLUSIONS

Based on the statistical evaluation it appears that there was a significant reduction in crashes due to the construction of a median separator as part of the FDOT project (FPID No. 413943-1). It can be concluded with 99% confidence that the total number of crashes, injury/fatal crashes, rear end, angle, left turn, sideswipe, and pedestrian crashes have decreased. It can also be concluded with 95% confidence that head-on crashes have also decreased within the study limits.

PRESENTATION ON THE SAFE STREET ACTIVITIES

INFORMATION ITEM

Dan Moser who is a member of Streets Alive will give a short presentation on the history of Streets Alive program (formerly known as Fit Friendly Southwest Florida), its function, and ongoing projects undertaken by the group.