

CITY OF MANDEVILLE TRANSPORTATION PLAN REFINEMENT BICYCLE & PEDESTRIAN

December 2012

Prepared for:

The Regional Planning Commission for

Jefferson, Orleans, Plaquemines, St. Bernard and St. Tammany Parishes

and

CITY OF MANDEVILLE

Donald J. Villere, Mayor



Prepared by:

MEYER ENGINEERS, LTD.
4937 Hearst Street, Suite 1B
Metairie, LA 70001

State Project No. H.971845.1
RPC Contract No. MC-5.12
Meyer Engineering, LTD. Project No. 20-1149



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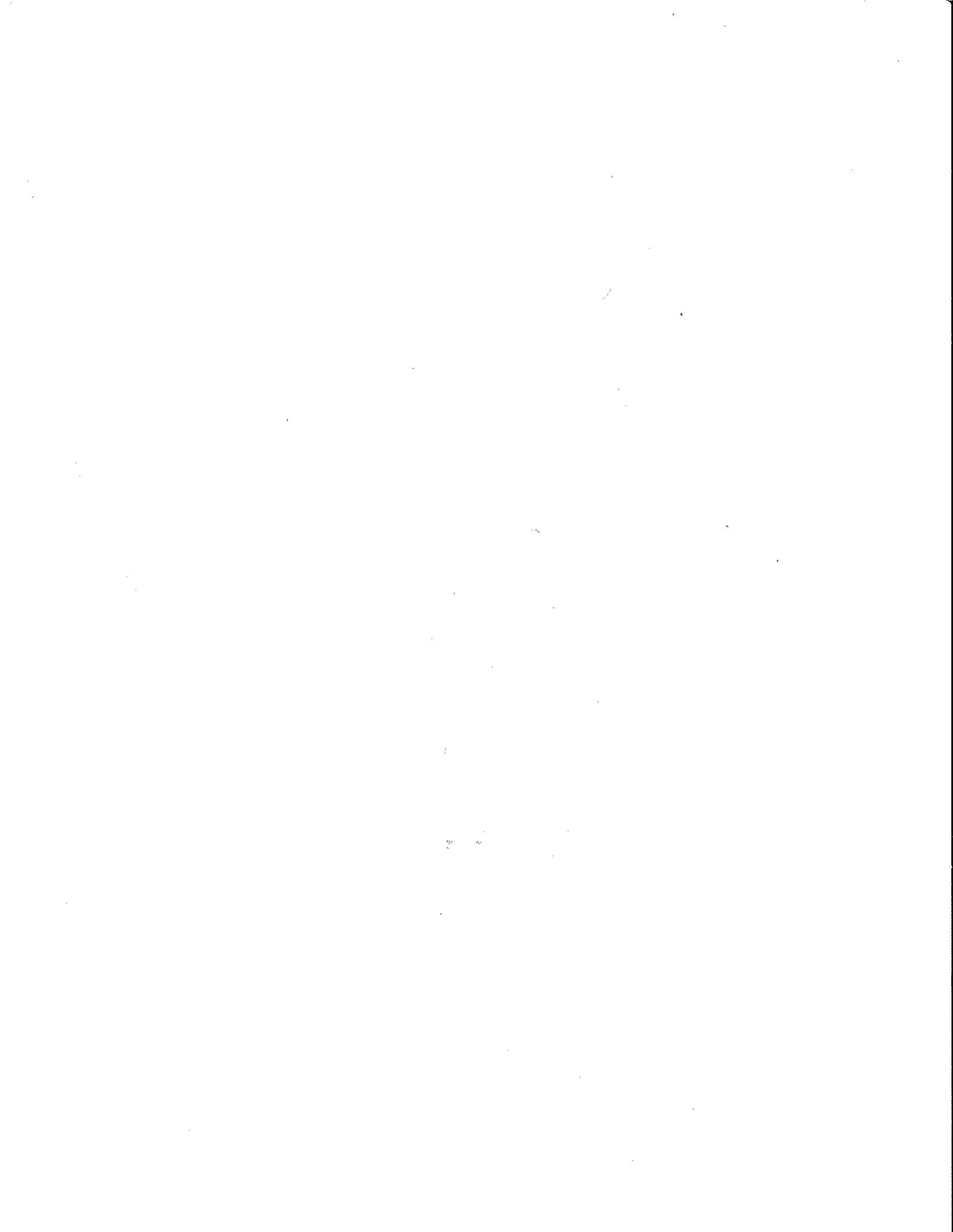


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CITY OF MANDEVILLE
TRANSPORTATION PLAN REFINEMENT-BICYCLE AND PEDESTRIAN
FINAL REPORT; DECEMBER 2012
TASK MC-5.12; FY-12 UPWP

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I. EXECUTIVE SUMMARY

Meyer Engineers, Ltd. received authorization from the Regional Planning Commission (RPC) in December 2011 to proceed with an evaluation of bike and pedestrian connectivity for the City of Mandeville, Louisiana. The City of Mandeville is approximately 6.8 square miles and is located in southeastern Louisiana in St. Tammany Parish. Large lot development and rapid population growth in this bedroom community have occurred steadily over the last 30 years resulting in an auto centric transportation system with a fragmented bicycle and pedestrian network.

Mandeville adopted a Bike and Pedestrian Plan in 1998 and the plan was updated in 2007. Some of the recommended projects have been implemented by the City but choke points and incomplete connectivity remain a concern. The purpose of this study is to present conceptual plans for a few of the missing links needed to connect the bike and pedestrian network on the west side of the City. The scope of work for this study consisted of gathering existing information, conducting site visits, holding a public meeting to gather community input, and coordinating with RPC, Mandeville and the Greater New Orleans Expressway Commission (GNOEC). In order to provide bike and pedestrian connectivity, this study considered existing paths, land use, traffic conditions, land ownership, and right-of-way availability.

Missing links at West Causeway Approach and Monroe Street at North Causeway Approach were analyzed in order to provide connectivity. Intersection improvements and three alternate routes at Monroe Street were analyzed as described below:

A. Monroe Street at North Causeway Approach Intersection Improvements

A bike/pedestrian path is required along Monroe Street at North Causeway Approach in order to connect the existing bike/pedestrian routes on the west and east sides of Mandeville. On the east side of the city there is an existing sidewalk along Monroe Street and under the Causeway overpass. On the west side of the city along West Causeway Approach, a pedestrian bridge was recently constructed near the intersection of Sandra Lee Drive. A link is needed to connect these two areas from the existing sidewalk under the Causeway overpass to the residential street of Sandra Lee Drive at the West Causeway Approach Service Road. There is a considerable amount of vehicular and truck traffic exiting the West Causeway Approach at a speed of 45 miles per hour onto the West Causeway Approach Service Road. The traffic turns through the intersection to continue under the Causeway overpass towards the east side of the city.

churches, businesses and neighborhoods in that area. A two stage push button signalized crossing in the vicinity of Mary Queen of Peace is recommended because it will reduce vehicular wait time. The crossing design is off-set on an angle to the road so non-motorized users face traffic before they cross which increases visibility and communication between motorized and non-motorized system users.

The Greater New Orleans Expressway Commission is in support of providing connectivity in Mandeville in this area. The West Causeway Approach crossing is estimated to cost approximately \$158,000.

C. W. Causeway Approach North Side Path – Moores Road to Shadow Oaks Lane

The 10' wide asphalt path along the north side of West Causeway Approach would be approximately 1 mile long stretching from Moores Road to Shadow Oaks Lane and is estimated to cost \$530,000.

Recommended next steps for the City of Mandeville are to seek funding from multiple sources and develop construction plans for the recommended projects.

II. BACKGROUND

The City of Mandeville is working to make their community bicycle and pedestrian friendly. It was a stated goal in the 1989 "City of Mandeville Comprehensive Land Use Plan". It was reinforced in 1998 with the adoption of the "City of Mandeville Bicycle and Pedestrian Master Plan." That plan incorporated public participation in several ways by forming an advisory committee, conducting a public survey, coordinating with local civic associations and running clubs as well as holding public meetings. Based on the steering efforts of overwhelming public participation, numerous actions, projects and policies were recommended, and goals were implemented. In 2007, the advisory committee came back together to update the Bicycle and Pedestrian Master Plan. Many of the recommended projects have been built or implemented. Mayor Donald Villere initiated discussions with the RPC seeking support to carry the work forward. In December 2011, the RPC authorized this Feasibility Study for a Transportation Plan in the Mandeville area to analyze critical locations identified as potential choke points or key bicycle and pedestrian connectors within the City of Mandeville boundaries.

Six initial study locations were identified and reviewed. Of the six, four were found to be underway by others and thus dismissed from the scope of this study. The dismissed projects include A, B, E and F described below. The resulting evaluation concentrated on movements at,

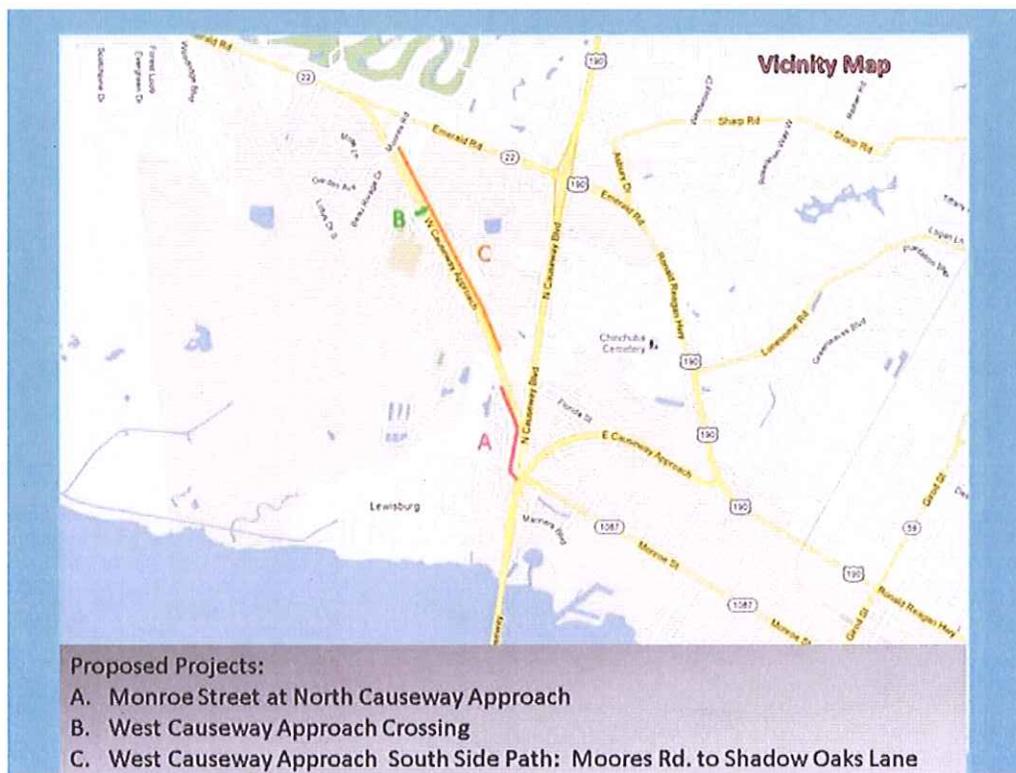
near or across the West and North Causeway Approaches (project C and D). These roads are two of the major arteries of the Causeway Bridge. The GNOEC has authority, ownership and maintenance over these roads.

Initial Scope:

- A. U.S. 190 sidewalk- Lonesome Street to St. Ann (Final plans were prepared by others and shall bid soon.)
- B. LA 22- Frontage Road to Dalwill Drive (Preliminary plans were prepared by others and plan-in-hand shall be held soon.)
- C. Monroe Street at East Causeway Approach (Preliminary plans were prepared by others. Proposed project for this study changed to Monroe Street at North Causeway Approach)
- D. West Causeway Approach area
- E. New connections to Madisonville via LA22- Bon Temp Roulle to Heavens Drive (Preliminary plans were completed by others which revealed major drainage work would be needed in order to incorporate a path. Extensive utility relocation would also be required. Therefore, this project was removed from the scope of this study.)
- F. Extension to Pelican Park- (Improvements are under construction at this time.)

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This evaluation identifies feasible alternatives and makes recommendations and preliminary statements of probable cost for Monroe Street at North Causeway Approach and the West Causeway Approach area. A site investigation for each location was conducted with RPC and City of Mandeville administration in order to gather information and arrive at the recommended projects. A public meeting was held to present the alternative scenarios, conditions, pros and cons for each project or alternative, provide preliminary statements of probable cost and collect comments and recommendations from the public in order to arrive at final project recommendations.



III. EVALUATION

A. Methodology

1. Concept

In order to evaluate the bike and pedestrian network of Mandeville, a field review of existing conditions for six initial study locations was completed with representatives from the RPC, Mandeville, GNOEC and Meyer Engineers, Ltd. This field analysis dismissed four areas from further consideration for this scope of work. The remaining two areas along West and North Causeway Approach were studied. Observation of traffic volumes, posted speed limits, school zones, commuter traffic impact, apparent right-of-way and existing geometry led to discussions with GNOEC and their engineer, GEC Engineering. The general consensus was connectivity was needed within this area. Therefore, conceptual ideas would be presented to in a public meeting.

2. Estimated Cost

Estimated opinions of probable construction costs for each conceptual option were developed. These estimated construction costs were derived from approximating roadway and related infrastructure quantities based on LADOTD standard pay items and recorded LADOTD weighted

average unit prices. Costs include a 15% contingency for unforeseen conditions during construction. Architectural/Engineering administration, testing, surveying, environmental services, geotechnical engineering, construction engineering and inspection or other construction support tasks are not included but may be as high as 20% of the estimated cost.

B. Land Use

The general land use in the project vicinity is predominantly single family residential with interspersed commercial, retail, and office spaces, schools and churches. Key destinations on the west side of the city in close proximity to the project areas are Mary Queen of Peace School and Church, Tchefuncte Middle School, Pontchartrain Elementary School, Mandeville High School, and commercial strip mall establishments along Dalwill Drive, LA22 and West Causeway Approach. Numerous large lot subdivisions surround these destinations and include The Shadows, Weldon Park, Old Golden Shores, Fountainbleau, Woodstone, and the Sanctuary. The high volume arterials (LA 22, West Causeway Approach and U.S.190/North Causeway Approach) are significant barriers to biking and walking between these destinations.

A safe crossing on West Causeway Approach will link key destinations on the west side of the city. Provision of a safe intersection and link at Monroe Street will connect the west and east sides of the city. At a broader level, these connections and paths will become part of the ring-around-the-lake route.

C. Non-Motorized Considerations and Techniques

In order to incorporate paths for pedestrians and cyclists, safety and comfort of the various levels and types of non-motorized users were taken into consideration. Paths and sidewalks for crossing the street need to be close enough to the intersection where vehicles will be stopping in order to safely cross. Pedestrians and cyclists need to be readily seen by motorized traffic and the non-motorized users need to be alerted to the fact that they may be encountering vehicular traffic. Therefore, pedestrians and cyclists need to enter the street at extremely visible crossings where highly visible paint is on the concrete, and signs are posted. Where traffic and speed warrants it, a signal is added for safe crossing. A staggered crossing design forces the non-motorized users to face the oncoming traffic to safely cross the street. Two-stage push button signals create a safer environment for the non-motorized user to cross the street because they break a long complex crossing into two simpler crossings and optimize the flow of traffic.

The pedestrian can safely cross halfway and enter an island in the median before crossing the other half of the street. Advanced stop bars are used to prevent multiple threat crashes so vehicles stop further back in order to create a greater line of sight for the adjacent lane of traffic and the non-motorized user. Along the non-motorized path, directional signage and way-finding signage will be added to inform the users of the location and distance to key destinations.

D. Findings

The findings of this evaluation resulted in the following recommended projects based on careful evaluation of the pros and cons of each route, the short and long term feasibility of each project, the estimated cost, potential impact of the project on traffic and surrounding land use/public, and the project's ability to meet the goals of the City of Mandeville.

Project List Summary			
No.	Proposed Plan	List of Improvements	Construction Estimate
A Alt. 1	Monroe at N. Causeway/ Monroe to W. Causeway: Shared Use Path on West Causeway Service Road	-Shared Use Symbols on W. Causeway Service Rd -Connect to new non-motorized bridge on W. Causeway - Impr. ped. crossing at Monroe/N. Causeway intersec.	\$ 61,000
A Alt. 2	Monroe at N. Causeway/ Monroe to W. Causeway: Separate Path next to West Causeway Service Road	-10' wide separate path for bikes and pedestrians -Modify drainage for path -Connect to new non-motorized bridge on West Causeway - Impr. ped. crossing at Monroe/N. Causeway intersec.	\$ 368,000
A Alt. 3	Monroe at N. Causeway/ Monroe to W. Causeway: Shared Use Path on Monroe Street & Sandra Lee Drive	-Shared Use Symbols on Monroe Street -Shared Use Symbols on Sandra Lee Drive -Impr. ped. crossing at Monroe/N. Causeway intersec.	\$ 66,000
B	West Causeway Approach Crossing	-Two stage bike/pedestrian crossing on W. Causeway - Connect existing separate path on the south side to proposed separate path on the north side	\$ 158,000
C	West Causeway Approach North Side	-10' wide separate path for bikes and pedestrians on the north side of West Causeway Approach	\$ 530,000

A. Monroe St. at N. Causeway Approach- Intersection Improvements

In order to connect the east and west sides of the City, divided by North Causeway, the intersection at North Causeway and Monroe Street needs to be improved and a link provided to connect the pedestrian bridge and path along West Causeway Approach to the existing sidewalk along Monroe Street. This intersection was identified as the second priority in the Bicycle and Pedestrian Master Plan Update in 2007. On the east side of North Causeway Approach at the intersection of Monroe Street and East Causeway Approach, intersection improvements have been

designed by others. These improvements include providing a handicapped ramp and striping along Monroe Street crossing East Causeway Approach and along East Causeway Approach crossing Monroe Street. There are future plans being discussed for pedestrians and cyclists to continue along the shoulder of East Causeway Approach to the east side of the city.

In order for pedestrians and cyclists to venture to the west side of the city, pedestrians would cross East Causeway Approach and follow the existing sidewalk along Monroe Street under the elevated Causeway section. Intersection upgrades consisting of sidewalk, pedestrian crossing striping, and median modifications have been identified in order to cross the West Causeway Approach Service Road and then cross Monroe Street. Once the pedestrian/cyclist approaches the northwest quadrant of this intersection at the gas station, there are three alternates considered in order to get to the existing pedestrian bridge along West Causeway Approach:

1. Alternate No. 1 – Shared Use on W. Causeway
Service Road

The first alternate considered was providing an on-street design for bikes/shared use path along West Causeway Approach Service Road. Bike and chevron markers would be added along the West Causeway Approach Service Road just north of the gas station. Appropriate signage to clarify use of the street would be added for the benefit of the vehicular traffic as well as the cyclists. Directional and destination signs for the cyclists would inform them of the directions and distances to key destinations within the community. The advantages to this alternate are utilizing an existing roadway and adding markings and signs in order to utilize this same roadway as a path for cyclists. This is a cheaper alternative than building a separate path and is a good option for the experienced cyclist. The service road has a relatively low volume of traffic as it is mainly used by the businesses that front along the road and the local neighborhood. The West Causeway Approach Service Road ends at Sandra Lee Drive and provides

the connection to the existing path and pedestrian bridge recently opened along West Causeway Approach. The disadvantages to this alternate are the fact that utilizing the existing roadway does not provide a separate path for pedestrians. Crossing in front of the gas station is a disadvantage for this alternate because there is no driveway at the gas station. Cars can enter and exit anywhere along the curb creating a very long area for the cyclist to safely cross. Through the entire front of the gas station, highly visible paint would be added in order that vehicles and cyclists would be made aware of the potential conflicts. This 2,500' long route may already be in use by experienced cyclists. The shared use path along the West Causeway Approach Service Road and the intersection improvements at Monroe Street/ West Causeway Service Road are estimated to cost approximately **\$61,000**. The public was in favor of this alternate for the more experienced cyclists, however, did not like the fact that there was no separate route for pedestrians.

2. Alternate No. 2 – Separate Path next to West Causeway Service Road

The second alternate considered was providing a separate 10' wide asphalt path in the green space in between the West Causeway Service Road and the down ramp along the West Causeway Approach. The pedestrians and cyclists would cross West Causeway Service Road just north of the gas station to get on the proposed path in the grassy area. Directional and destination signs for the pedestrians and cyclists would inform them of the directions and distances to key destinations within the community. The shared use path would end at Sandra Lee Drive and tie into the existing path and pedestrian bridge along West Causeway Approach. This recommended alternate will create a continuous trail connection for both cyclists and pedestrians. Providing a separate path makes the path more usable by cyclists of all skill levels as well as pedestrians. These advantages are offset by the disadvantages of being rather costly to construct and maintain a separate path. Building a separate path in the grassy area in between the down

ramp and the service road will impact the lights, drainage and curb thereby increasing the cost of this alternative in order to relocate these utilities. This project is a major step to linking the two halves of the City and is the safest way to facilitate this much needed link. The estimated total project cost for the intersection improvements at Monroe Street/West Causeway Approach, the 2,500' long separate path from Monroe Street to West Causeway Approach, relocating lights and drainage as well as providing a landscape buffer is approximately **\$368,000**. The public was in favor of this alternate because it seems to be the safest proposed connection and dual purpose for cyclists and pedestrians as well. However, the cost may not make it the most desirable from a funding standpoint.

3. Alternative No. 3 – Shared Use on Monroe Street and Sandra Lee Drive

The third alternate considered was providing an on-street design for bikes/shared use path along Monroe Street and Sandra Lee Drive. This route was the recommended route in the previous master plan

adopted by the City in 1998 and updated in 2007. Bike and chevron markers would be added along Monroe Street and along Sandra Lee Drive. Appropriate signage to clarify use of the street would be added for the benefit of the vehicular traffic as well as the cyclists. Directional and destination signs for the cyclists would inform them of the directions and distances to key destinations within the community. The advantages to this alternate are utilizing an existing roadway and adding markings and signs in order to utilize this same roadway as a path for cyclists. This is a cheaper alternative than building a separate path and is a good option for the less experienced cyclist. These residential streets have an extremely low volume of traffic as they are minor streets used by the local neighborhood. Sandra Lee Drive provides the connection to the existing path and pedestrian bridge recently opened along West Causeway Approach. The disadvantages to this alternate are the fact that utilizing the existing roadway does not provide a path for pedestrians. Sidewalks are not feasible to add along Monroe

Street and Sandra Lee Drive because of the drainage ditches and existing property line locations. Acquiring property along the streets in order to put in the sidewalks would probably not be supported by the homeowners. Providing a path on the Monroe Street side of the gas station is a little easier for this alternate because there is a single driveway. At the Monroe Street driveway crossing, highly visible paint and truncated domes would be added in order that vehicles, cyclists and pedestrians would be made aware of the potential conflicts. This 2,750' long route may already be in use by less experienced cyclists. The shared use path along Monroe Street and Sandra Lee Drive as well as the intersection improvements at Monroe Street/West Causeway Service Road are estimated to cost approximately **\$66,000**. The public was in favor of this route for the less experienced cyclists, however, did not like the fact that there was no separate route for pedestrians.

B. West Causeway Approach Area – A path exists along the south side of West Causeway Approach from Garden Avenue to Sandra Lee Drive. A crossing and a path on the north side of West Causeway Approach are needed in order to link the residential areas with schools, churches and the commercial areas. Mandeville's Bicycle and Pedestrian Master Plan, dated 2007, also identified the need for a path along the north side and two (2) crossings across West Causeway Approach.

1. West Causeway Approach Crossing

This Transportation Refinement Plan recommends a two stage pedestrian/bicycle crossing signal with a pedestrian push button to control the traffic in one direction in order to safely cross to a raised, staggered, landscaped median. Then, the pedestrian/cyclist will activate another pedestrian push button to control the traffic in the other direction to safely cross to the opposite side. A two stage pedestrian crossing signal disrupts the traffic less and is more effective in traffic safety. An advanced stop line thirty feet (30') in front of the pedestrian crossing shall be required to provide a safe stopping distance in order that the vehicles in the adjacent lane can see

crossing pedestrians and cyclists. The Greater New Orleans Expressway Commission is in favor of connectivity, but would prefer not to add another traffic signal along West Causeway Approach because they do not want to adversely impact the flow of commuter traffic. However, a twenty-five (25) mile per hour school zone is in place for the majority of the West Causeway Approach from Dalwill Drive to Mandeville High Boulevard during the hours of 7-9 A.M. and 2-4:30 P.M. Monday through Friday. Therefore, there should be minimal impact to the commuters in the morning because they are already adversely impacted by the 25 mile per hour school zones. Mandeville administration is not in favor of putting a pedestrian bridge across the road, and they are seldom used by pedestrians and cyclists because they normally tend to take the most direct route to cross even though it may not be the safest. A tunnel within the right-of-way is not feasible because of the large drainage ditches within the right-of-way. Therefore, the recommendation of this plan is to add a two stage pedestrian crossing near Mary Queen of

Peace where it will connect to the existing path on the south side and the existing path along the western side of Mary Queen of Peace. The 300' long two stage crossing is estimated to cost approximately **\$158,000**. The public is in favor of this proposed project because there is no other pedestrian crossing along West Causeway Approach.

2. West Causeway Approach North Side Path- Moores Road to Shadow Oaks Lane

The proposed path along the north side of West Causeway Approach is recommended to extend from Moores Road to Shadows Oak Lane with a 10' wide asphalt path. The path is proposed to be located on the back side of the ditch for a distance of approximately one (1) mile. Minor miscellaneous drainage modification shall be required along the path, and the path shall meander around any significant trees. Striping at driveway crossings and miscellaneous signage shall be required along the path to alert the pedestrian/cyclist to the destinations along the route. This proposed path shall provide a much needed link for an estimated cost of **\$530,000**.

The public is in favor of this proposed project in order to provide connectivity through Mandeville and a path that could be used by both pedestrians and cyclists of all skill levels.

IV. FUNDING AND COLLABORATION

All projects enjoyed some public support and participating agencies are working together in a positive way to incorporate the projects within their programs. Implementation is contingent on funding availability and approval by Greater New Orleans Expressway Commission to build improvements on their right-of-way. Discussions with GNOEC staff indicate initial acceptance, acknowledging Board approval is necessary.

The total cost of all projects is estimated at \$1,097,000. The RPC, City of Mandeville and GNOEC are working together on a funding strategy to seek Transportation Alternatives funds (state competitive program) for Project C, the West Causeway Approach North Side Path from Moores Rd to Shadow Oaks Lane. Surface Transportation Program (STP) funds and City of Mandeville funding are also possible funding sources. Some design and engineering elements may possibly be incorporated under GNOEC engineering responsibilities.

V. CONCLUSION

These projects offer the City of Mandeville the connectivity needed to provide a safe passage for pedestrians and cyclists between residential subdivisions and destination nodes. It will provide connections between the west and east sides of the City and help connect all residents to the St. Tammany Trace recreation facility. The City is divided by major roadway arteries which act as barriers for non-motorized system users. These projects will expand public access to recreation and transportation and will be a lasting community asset and safety enhancement.

APPENDIX A

CITY OF MANDEVILLE
TRANSPORTATION PLAN REFINEMENT BICYCLE AND PEDESTRIAN ELEMENTS
PRELIMINARY STATEMENTS OF PROBABLE COST
A/E Project No. 20-1149 December 2012

A. Monroe Street @ W. Causeway Service Road Intersection Improvements

	<u>AMOUNT</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>COST</u>
Concrete Path, 10' wide x 330' long	400	SY	\$70	\$28,000
Pedestrian Crossing Striping	1	LS	\$10,000	\$10,000
Traffic Controls (during construction)	1	LS	\$5,000	<u>\$5,000</u>
INTERSECTION TOTAL				<u>\$43,000</u>

1. Alternate No. 1 - Monroe St. to W. Causeway Appr. Shared Use on W. Causeway Service Road

	<u>AMOUNT</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>COST</u>
Shared Use Path Striping & Signage	1	LS	\$15,000	\$15,000
Traffic Controls (during construction)	1	LS	\$3,000	<u>\$3,000</u>
ALTERNATE NO. 1 PATH TOTAL				<u>\$18,000</u>
INTERSECTION TOTAL				<u>\$43,000</u>
TOTAL INTERSECTION AND ALTERNATE NO. 1				<u><u>\$61,000</u></u>

2. Alternate No. 2 - Monroe St. to W. Causeway Appr. Separate Path next to W. Causeway Service Road

	<u>AMOUNT</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>COST</u>
Asphalt Path, 10' wide with Base	2,500	LF	\$70	\$175,000
Curb	2,500	LF	\$30	\$75,000
Striping & Signage	1	LS	\$10,000	\$10,000
Modify Drainage/Fill	1	LS	\$25,000	\$25,000
Landscape Buffer	1	LS	\$35,000	\$35,000
Traffic Controls (during construction)	1	LS	\$5,000	<u>\$5,000</u>
ALTERNATE NO. 2 PATH TOTAL				<u>\$325,000</u>
INTERSECTION TOTAL				<u>\$43,000</u>
TOTAL INTERSECTION AND ALTERNATE NO. 2				<u><u>\$368,000</u></u>

3. Alternate No. 3 - Monroe St. to W. Causway Appr. Shared Use on Monroe Street and Sandra Lee Drive

	<u>AMOUNT</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>COST</u>
Shared Use Path Striping & Signage	1	LS	\$20,000	\$20,000
Traffic Controls (during construction)	1	LS	\$3,000	<u>\$3,000</u>
ALTERNATE NO. 3 PATH TOTAL				<u>\$23,000</u>
INTERSECTION TOTAL				<u>\$43,000</u>
TOTAL INTERSECTION AND ALTERNATE NO. 3				<u><u>\$66,000</u></u>

NOTE: All costs include 15% construction contingency. (A/E Administration, Testing, etc. is not included)

B. West Causeway Approach Crossing

	<u>AMOUNT</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>COST</u>
Asphalt Path, 10' wide w/ base	200	LF	\$70	\$14,000
Pedestrian Crossing Signals	1	EA	\$80,000	\$80,000
Median Island	1	LS	\$24,000	\$24,000
Striping, Signage, Advance Stop Lines & Lights	1	LS	\$15,000	\$15,000
Extend Culvert	1	LS	\$10,000	\$10,000
Traffic Controls (during construction)	1	LS	\$15,000	\$15,000

W. CAUSEWAY APPROACH CROSSING TOTAL **\$158,000**

C. W. Causeway Approach North Side Path - Moores Rd. to Shadow Oaks Lane

	<u>AMOUNT</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>COST</u>
Asphalt Path, 10' wide w/ base	6,600	LF	\$70	\$462,000
Striping and Signage	1	LS	\$8,000	\$8,000
Miscellaneous Drainage	1	LS	\$30,000	\$30,000
Utilities	1	LS	\$30,000	\$30,000

W. CAUSEWAY APPROACH SOUTH SIDE PATH TOTAL **\$530,000**

TOTAL W. CAUSEWAY APPROACH AREA **\$688,000**

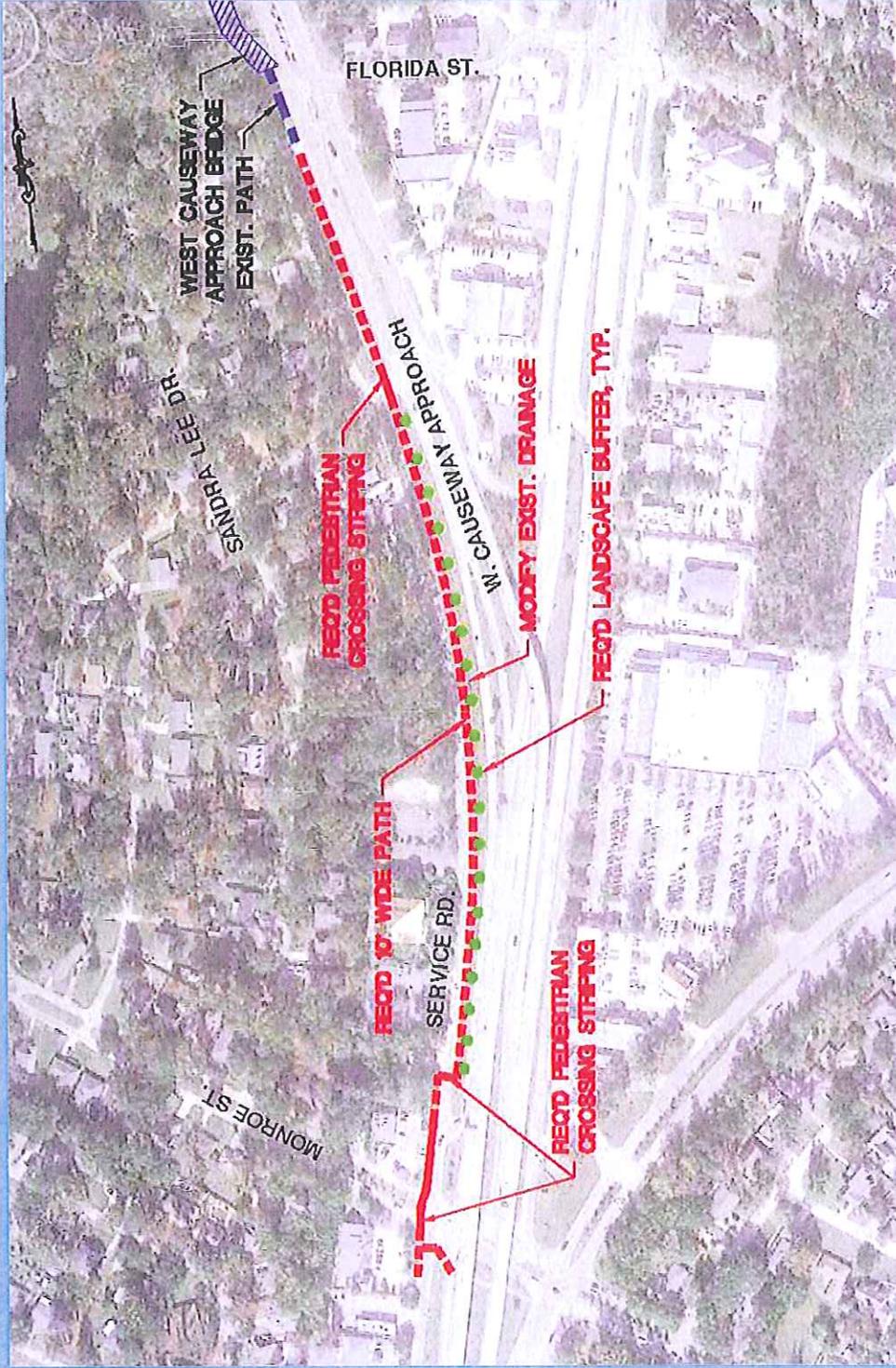
NOTE: All costs include 15% construction contingency. (A/E Administration, Testing, etc. is not included)

Monroe St. at N. Causeway Approach

Alt. 1: Monroe St. to W. Causeway Appr. - Shared Use on W. Causeway Service Rd.
Conceptual Image



Monroe St. at N. Causeway Approach
 Alt. 2: Monroe St. to W. Causeway Appr.- Path Next to W. Causeway Service Rd.



Project Description:

Monroe intersection upgrade with separate path in green space next to down ramp along the West Causeway Service Road ending at Sandra Lee Drive

- 2,500 feet in length
- Estimate Cost \$368,000

Monroe St. at N. Causeway Approach
Alt. 2: Monroe St. to W. Causeway Appr.- Path Next to W. Causeway Service Rd.
Conceptual Image



Monroe St. at N. Causeway Approach
 Alt. 3: Monroe St. to W. Causeway Appr.-
 Shared Use on Monroe St. and Sandra Lee Dr.



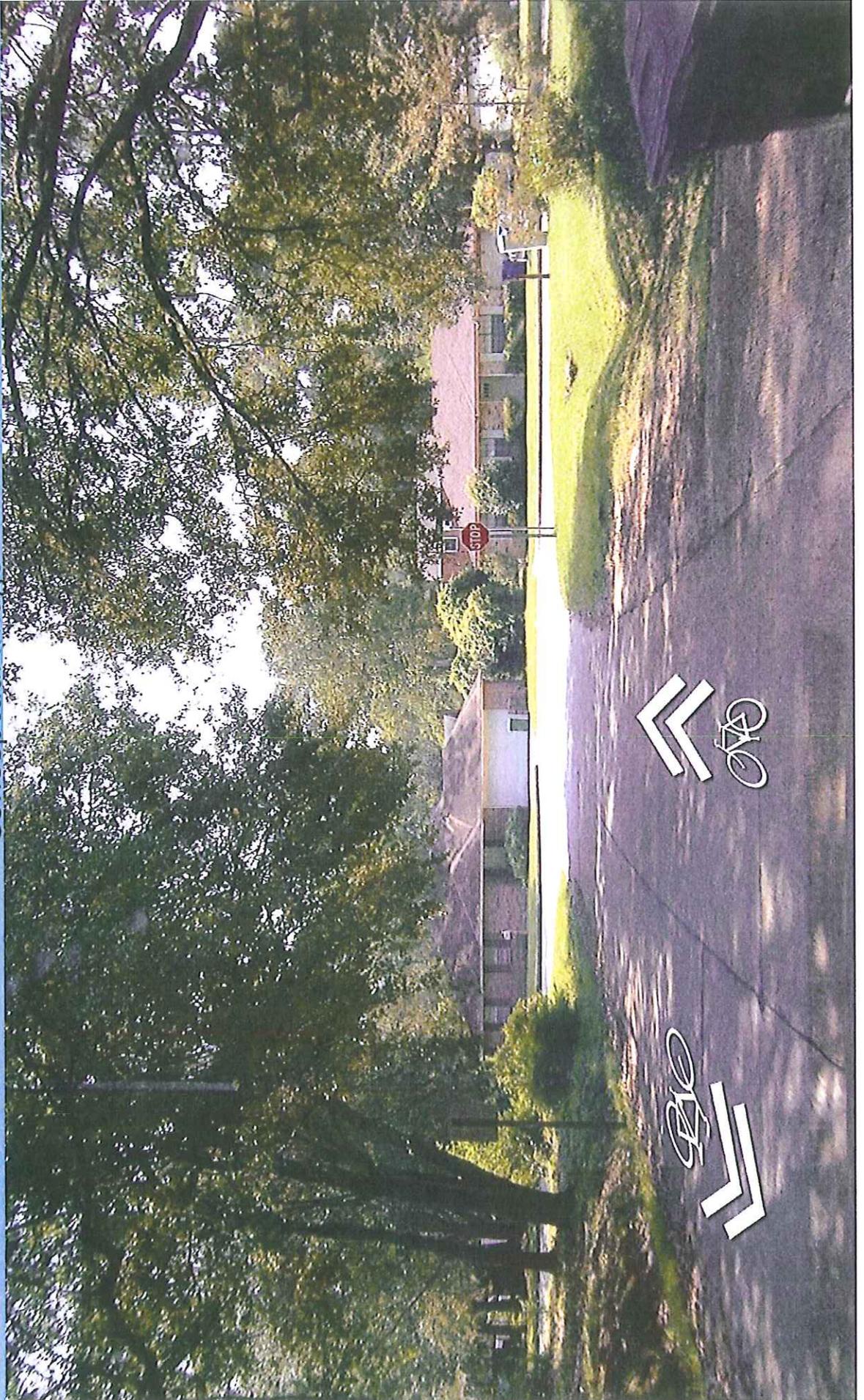
Project Description:

Monroe intersection upgrade;
 On street route using bike and chevron
 pavement markings on Monroe St. to Sandra
 Lee; Sandra Lee to West Causeway Approach

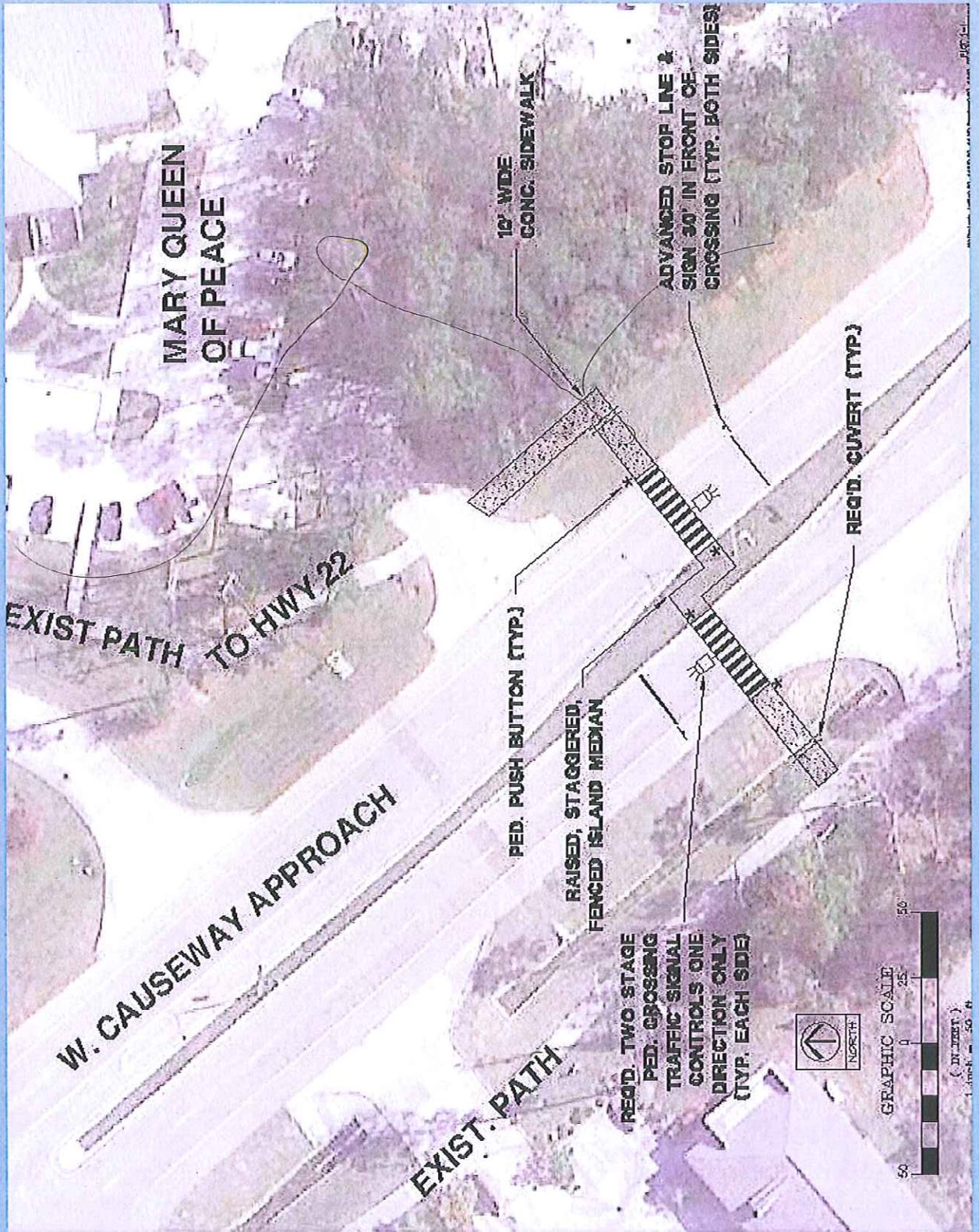
- 2,750 feet in length
- Estimated Cost \$66,000

Monroe St. at N. Causeway Approach
Alt. 3: Monroe St. to W. Causeway Appr.-
Shared Use on Monroe St. and Sandra Lee Dr.

Conceptual Image



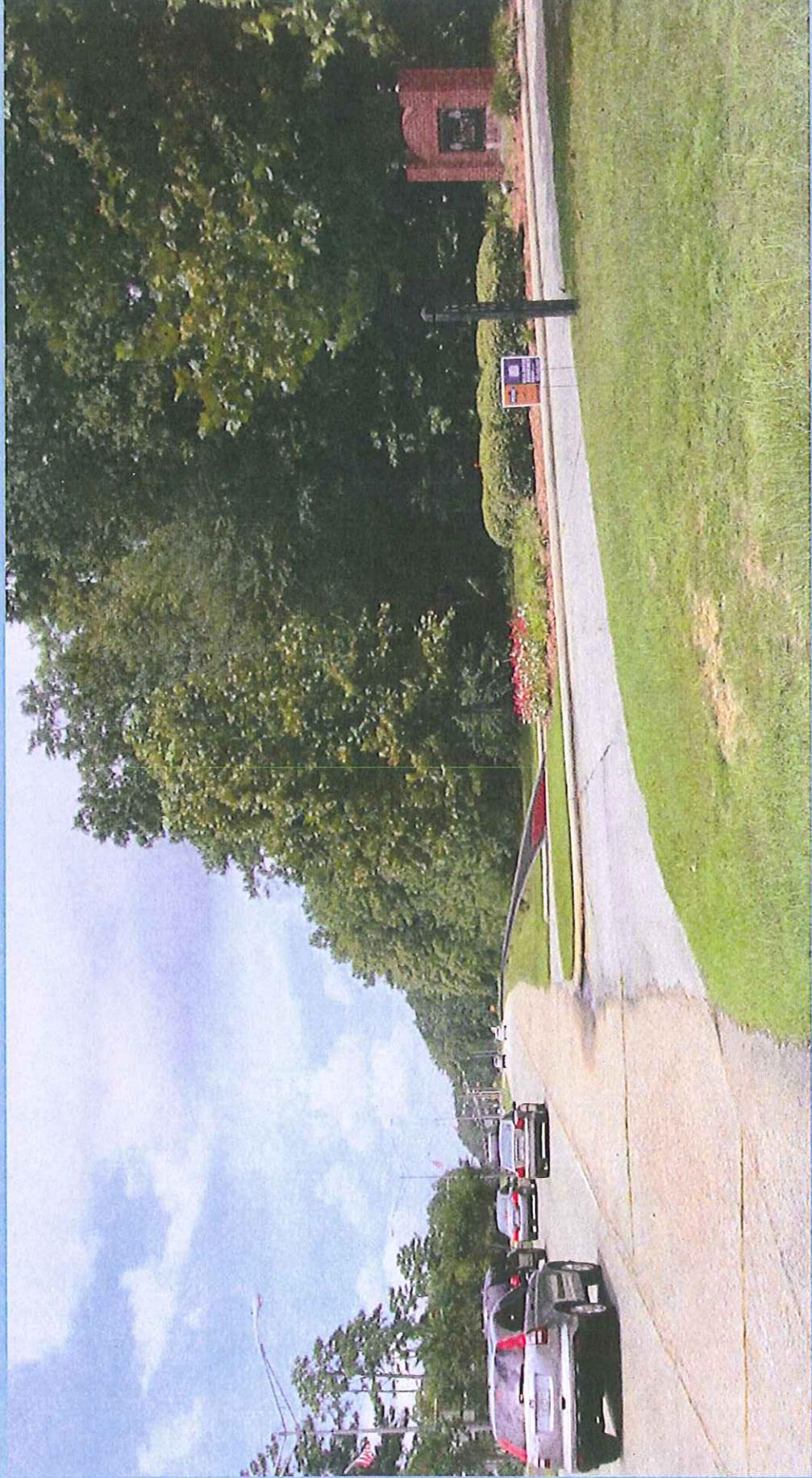
West Causeway Approach Crossing- Plan View



West Causeway Approach Crossing: Conceptual Image



West Causeway Approach North Side Path:
Moore's Rd. to Shadow Oaks Ln.
Conceptual Image



Looking from Shadow Oaks Lane towards LA 22

APPENDIX B

MEYER ENGINEERS, LTD.

MEMORANDUM

PROJECT NO: 20-1149

PROJECT NAME: Mandeville Bike & Pedestrian Refinement

DATE: October 1, 2012 BY: Ann Theriot

PHONE CALL: MEETING:

NUMBER: _____ LOCATION: Mandeville City Hall

FROM: _____ ATTENDING: Mayor Villere, Louissette Kidd, David deGeneres, Mandeville Councilmembers, Nixon Adams, Karen Parsons, Carlton Dufrecheau, Cary Bourgeois, Paul Anderson, David Dupre, Ann Theriot and the Public

COMMENTS: I gave the attached presentation at the public meeting. The following items were discussed:

1. Mayor Villere stated that a Beau Rivage resident approached the City about connecting sidewalks and providing paths on the west side of the City, so the Mayor approached the Regional Planning Commission (RPC) to come up with a Preliminary Plan.
2. The public agreed that alternate 2 for the path from Monroe to W. Causeway Bridge is the most desirable but the most costly. Most bikers probably cut through the neighborhood now.
3. Councilman Buckholz is also concerned about connecting paths and sidewalks on E. Approach however, that was not in our scope of work.
4. The elected officials will gather input from their constituents and get back with the Mayor.

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5. Planning and Zoning will put amending the 2007 Bike Master Plan on their next agenda.
6. Possible funding sources for projects are:
 - A. DOTD Enhancement Grant
 - B. Local Road Safety
 - C. RPC Federal Funds
7. LA 22 is also a concern for bikers/pedestrians. Heavens Drive has a wide right-of-way to connect bikers and pedestrians to LA 22. This was outside of our scope of work too.
8. Meyer Engineers, Ltd. will send a downloadable link to Mandeville so they can access the presentation.

DISTRIBUTION:

CEM
RCM

DHD

TRANSPORTATION PLAN REFINEMENT BICYCLE
AND PEDESTRIAN
CITY OF MANDEVILLE

PREPARED BY
MEYER ENGINEERS, LTD.

FOR

REGIONAL PLANNING COMMISSION
OCTOBER 2012



History

- 1998 Mandeville Bike and Pedestrian Plan
- 2007 Update to Mandeville Bike/Ped Plan
- 2012 Analysis and conceptual plans for three projects that provide improved connectivity

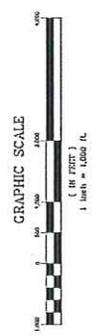
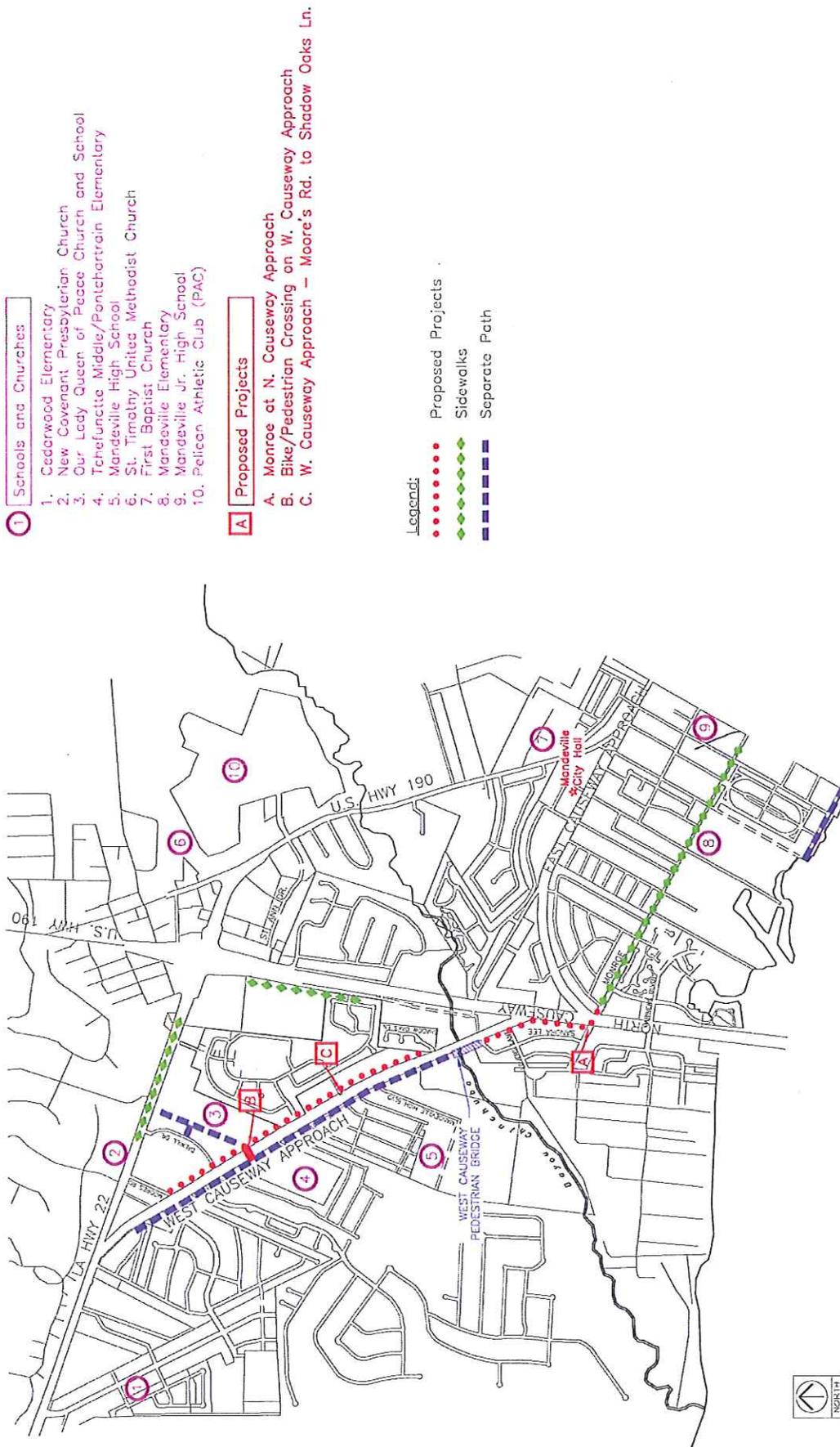
Goals

- Provide new and improved bicycle/pedestrian facilities
- Address traffic safety and operational improvements
- Implement connections and linkages in the bicycle and pedestrian network that were identified in the 2007 Bike/Ped Plan Update
- Engage the community in the planning process

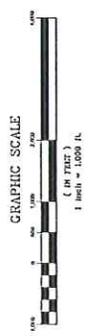
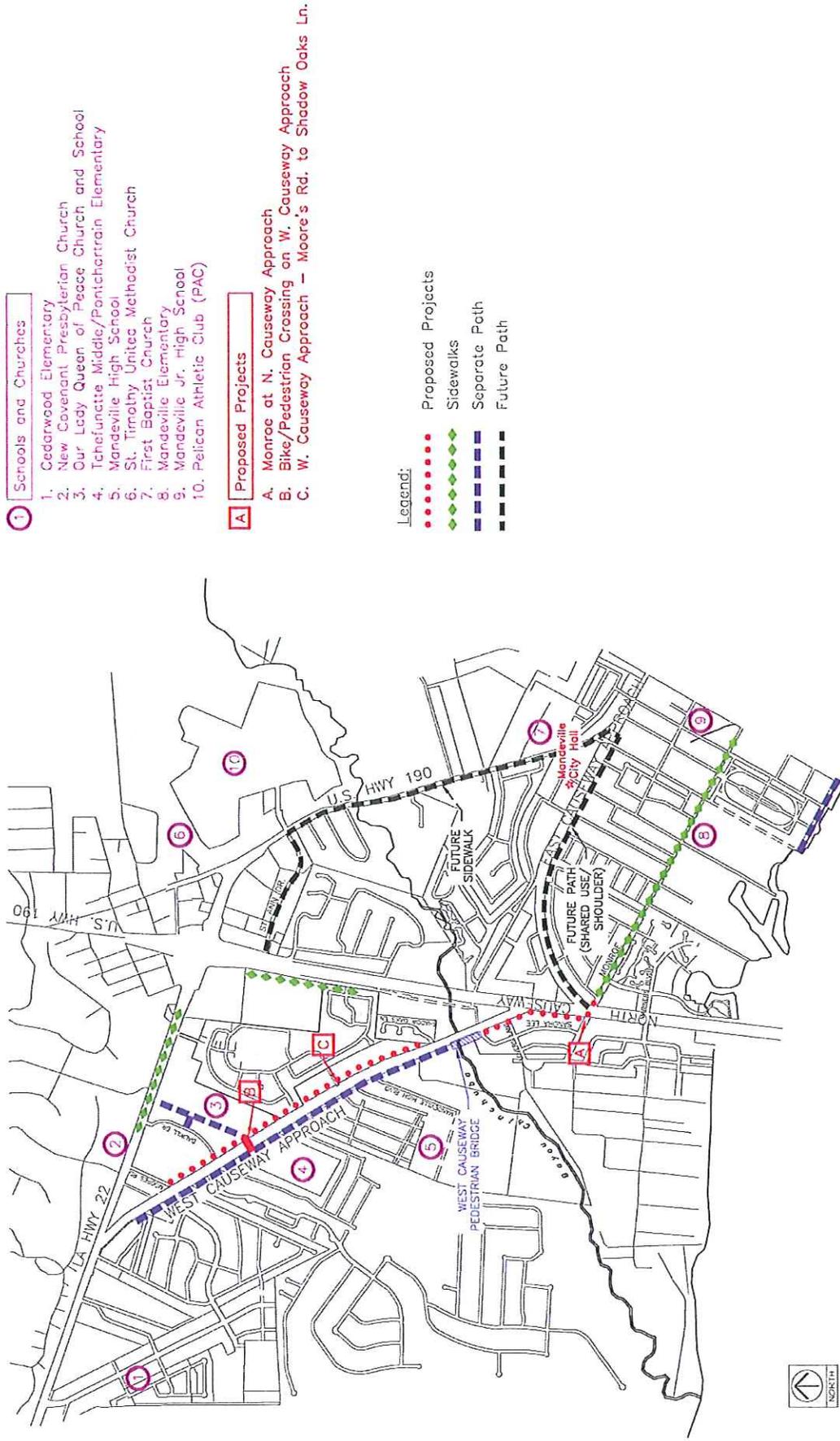
Purpose of Study

- Develop overall conceptual plans
- Identify impediments and problems
- Recommend improvements
- Estimate cost of recommended improvements
- Receive community input on conceptual designs

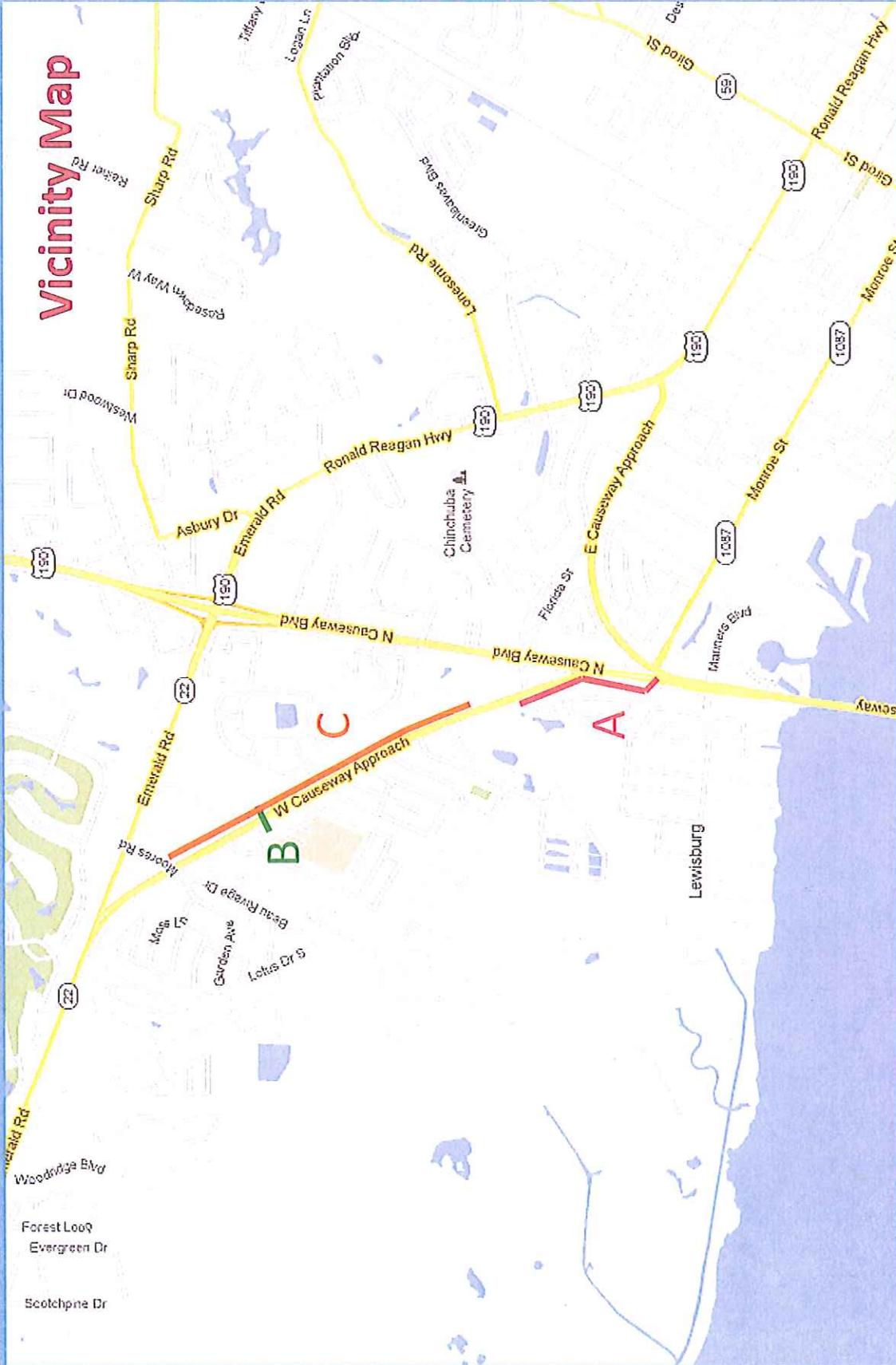
Bike/ Pedestrian Circulation Routes & Destinations: Proposed



Bike/ Pedestrian Circulation Routes & Destinations: Future



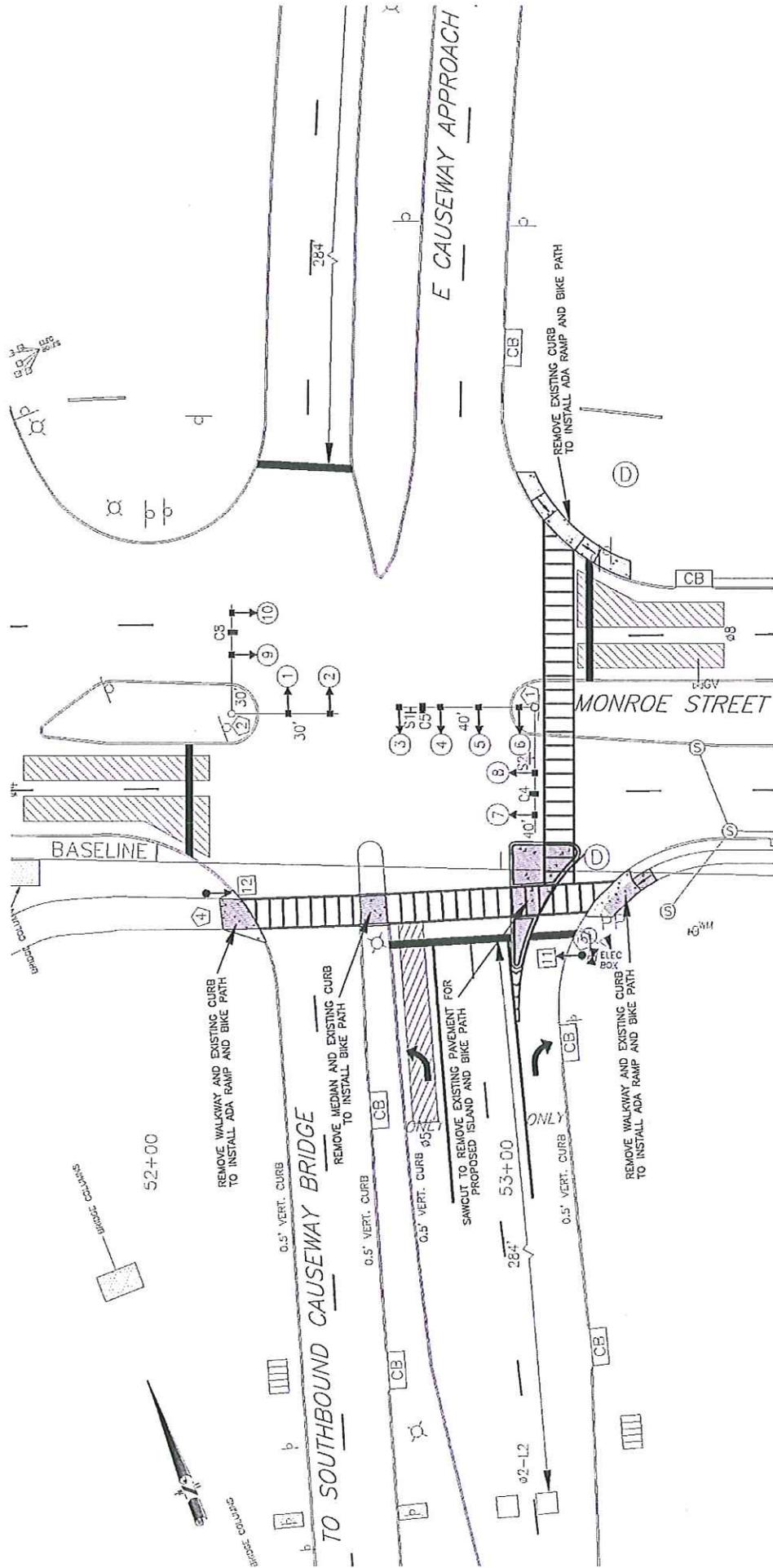
Vicinity Map



Proposed Projects:

- A. New Path from Monroe St. at N. Causeway Approach to W. Causeway Bridge
- B. Bike/Pedestrian Crossing of W. Causeway Approach near Mary Queen of Peace
- C. West Causeway Approach Separated Path: Moore's Rd. to Shadow Oaks Lane

Monroe St. at E. Causeway Proposed Signal and Pedestrian Improvements



Conceptual Drawings

Monroe St. at N. Causeway Approach

Alt. 1: On-street design for bikes/shared use on Service Rd.



Project Description:

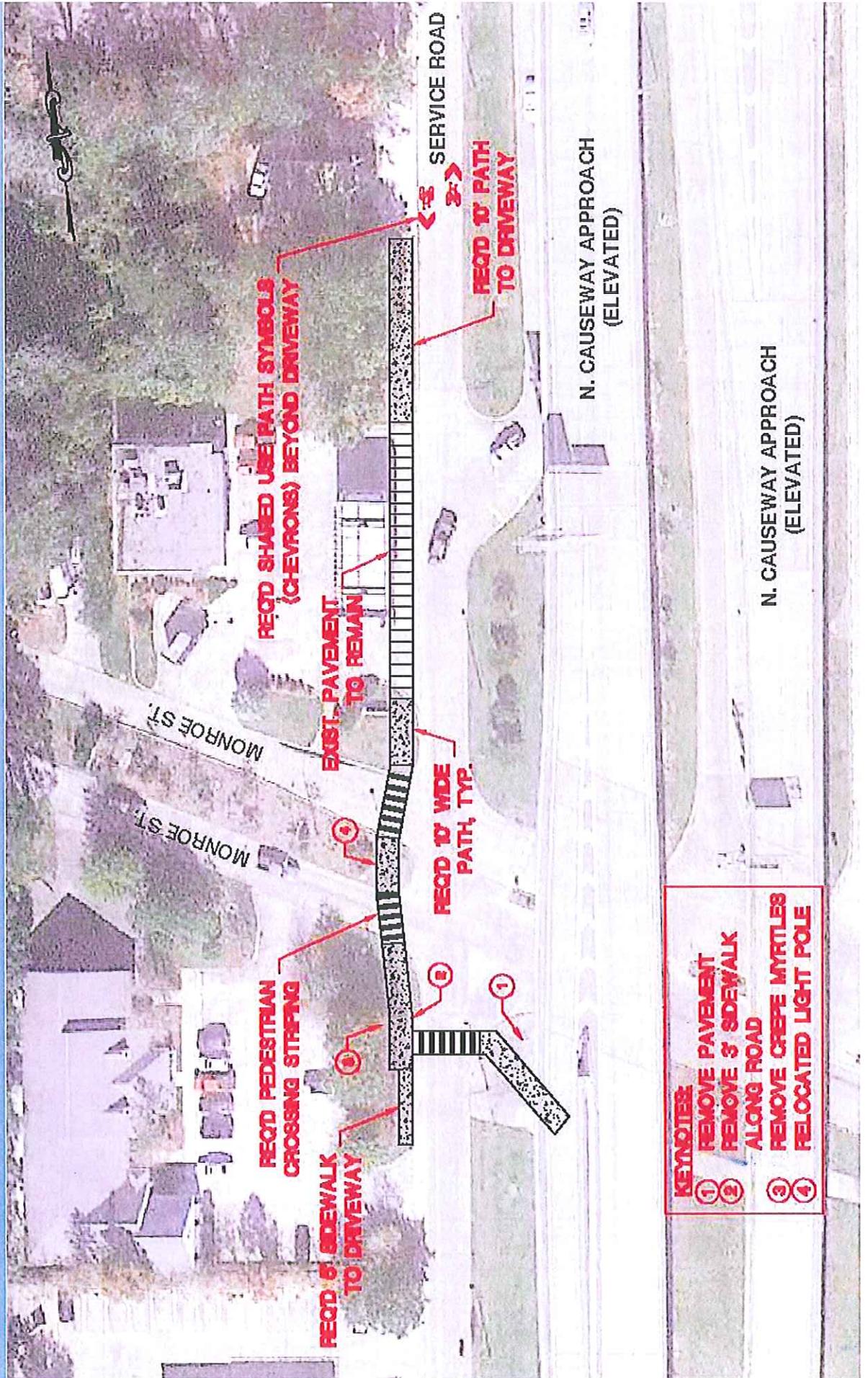
Monroe intersection upgrade & combination of off-street and on-street treatments from Monroe to Sandra Lee along the west service road; Bike and chevron

- 2,500 feet in length
- Estimated cost \$61,000

Monroe St. at N. Causeway Approach
Alt. 1: On-street design for bikes/shared use on Service Rd.



Monroe St. at N. Causeway Approach
 Alt. 1: On-street design for bikes/shared use on Service Rd.



Monroe St. at N. Causeway Approach
Alt. 1: On-street design for bikes/shared use on Service Rd.
Conceptual Image



Monroe St. at N. Causeway Approach
Alt. 1: On-street design for bikes/shared use on Service Rd.
Conceptual Image



Monroe St. at N. Causeway Approach
Alt. 1: On-street design for bikes/shared use on Service Rd.
Conceptual Image



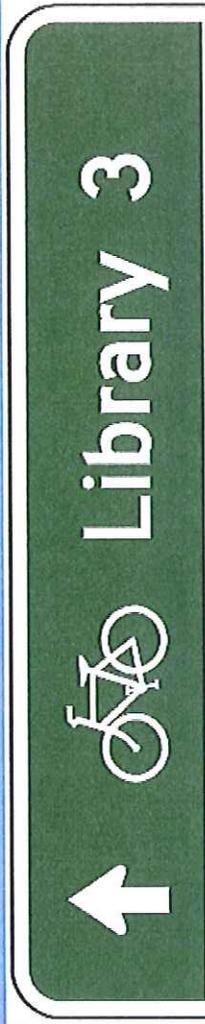
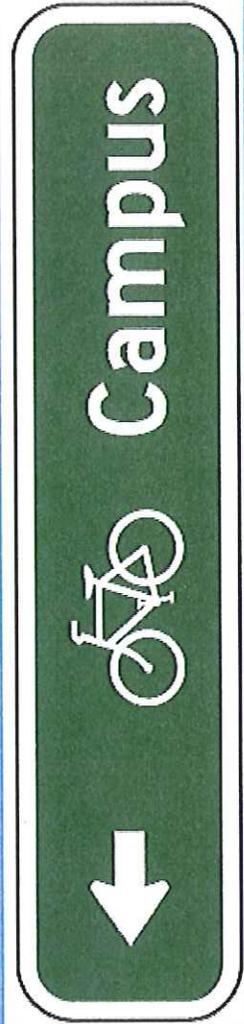
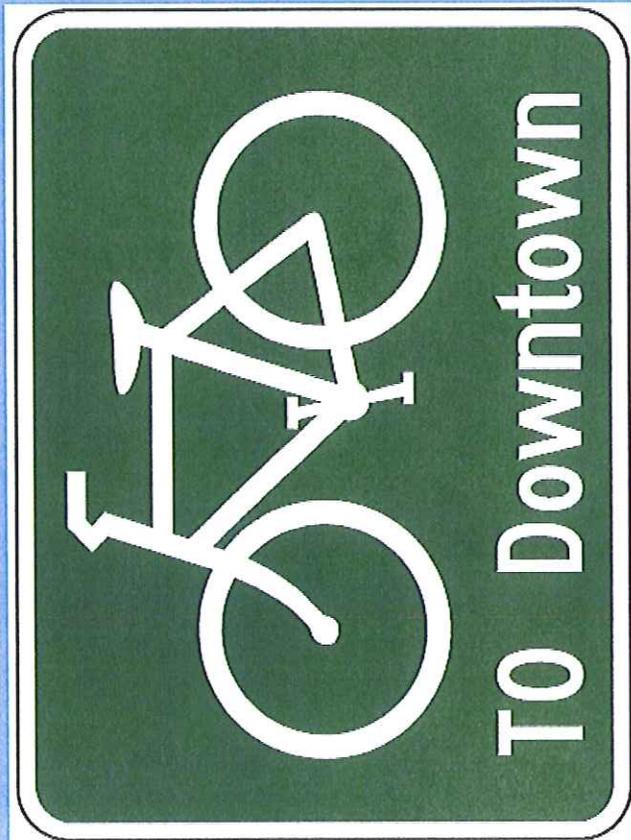
Bike and Chevron/Shared Lane Marking Placement



- Center of lane works well (supports law, reduces wear)
- If parallel parking, 11' minimum from the curb
- If no parking, 4' minimum from the curb or pavement edge
- Place after each intersection and no more than 250' apart
- Not recommended on roads with speed limits of 40 mph and above



**Clarifies where cyclists can ride (R4-11)
(2009 MUTCD Section 9B.06)**



Directional and destination signs will guide users to area destinations

Monroe St. at N. Causeway Approach

Alt. 1: On-street design for bikes/shared use on Service Rd.

Pros:

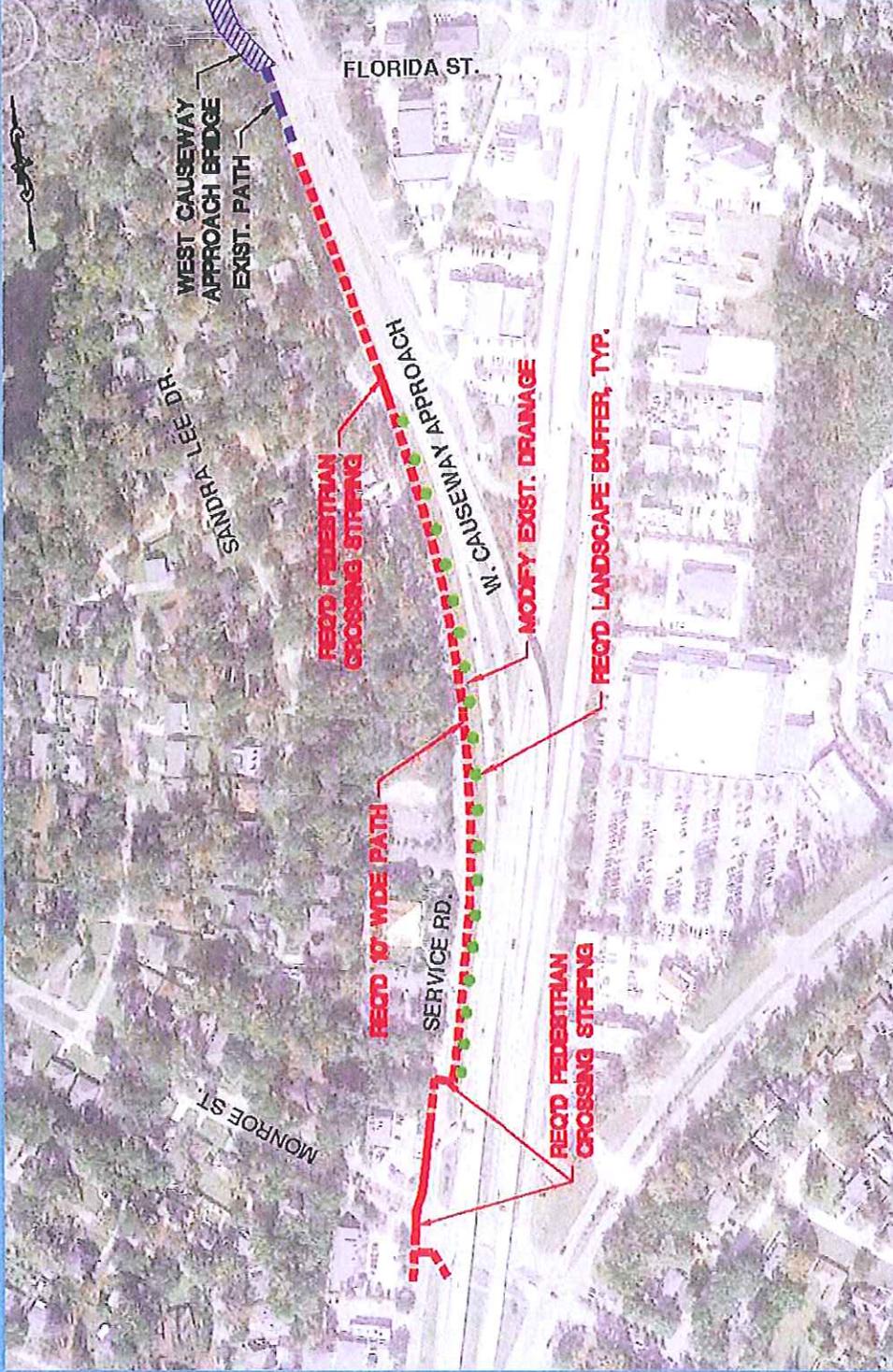
- Realign crosswalk closer to intersection – better visibility
- High Visibility Crosswalk
- Bikes use service road/low-volume
- Connects to new W. Causeway Approach bridge
- Avoids vehicle/bike conflicts at down ramp
- Less costly than separated 10' path

Cons:

- Car/Bike/Ped Conflicts with Gas Station traffic
- No sidewalk provided for pedestrians along service road

Monroe St. at N. Causeway Approach

Alt. 2: Separate bike and pedestrian path – W. Causeway/Service Rd.

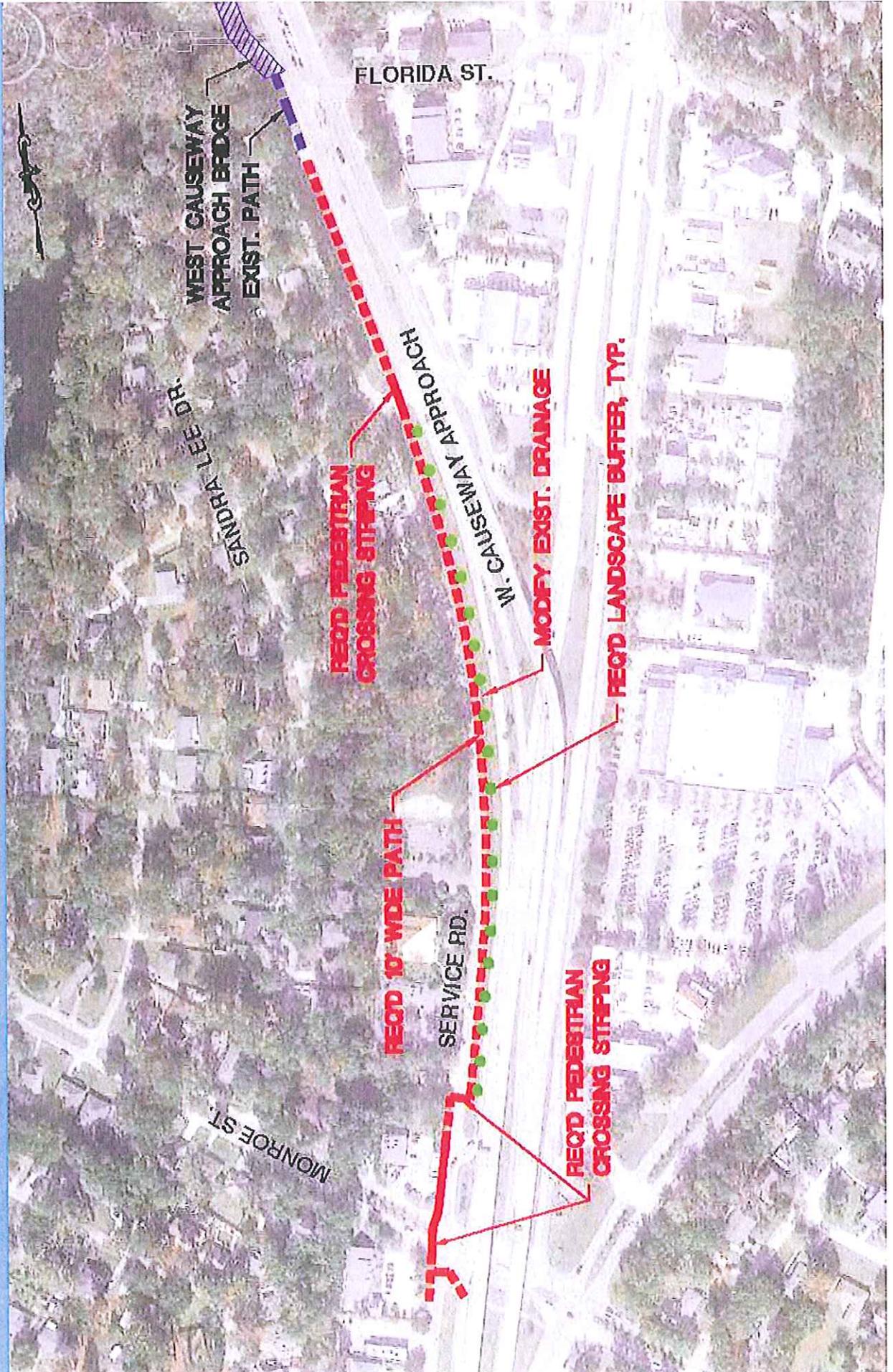


Project Description:

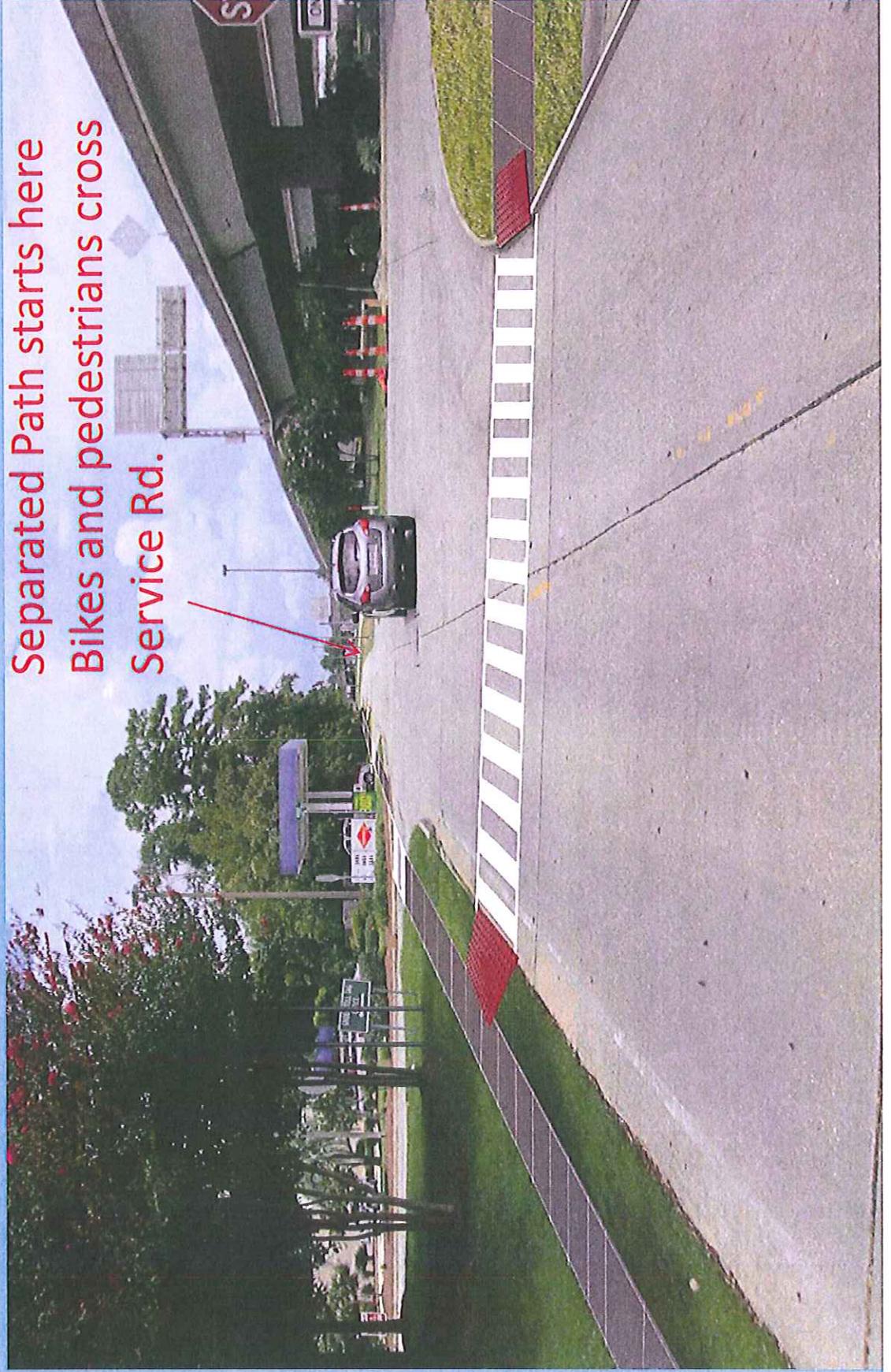
- Monroe intersection upgrade with separated trail in green space next to down ramp along the west service road ending at Sandra Lee
- 2,500 feet in length
- Estimate Cost \$368,000

Monroe St. at N. Causeway Approach

Alt. 2: Separate bike and pedestrian path – W. Causeway/Service Rd.



Monroe St. at N. Causeway Approach
Alt. 2: Separate bike and pedestrian path –
W. Causeway/Service Rd.



Monroe St. at N. Causeway Approach

Alt. 2: Separate bike and pedestrian path – W. Causeway/Service Rd.



Monroe St. at N. Causeway Approach

Alt. 2: Separate bike and pedestrian path – W. Causeway/Service Rd.



Monroe St. at N. Causeway Approach
Alt. 2: Separate bike and pedestrian path –
W. Causeway/Service Rd.

Pros:

- Enhances pedestrian safety at Monroe intersection (same intersection upgrade as Alternate 1)
- Bikes AND pedestrians are separated from roadway traffic on shared use path
- Provides continuous trail connectivity by linking to new W. Causeway non-motorized bridge on a designated path

Cons:

- Conflicts with vehicle traffic at gas station
- More costly to design and construct
- Must adjust light pole locations and drainage
- Safety barrier and speed reduction on down ramp

Monroe St. at N. Causeway Approach

Alt. 3: Sandra Lee Route W. Causeway/Service Rd.



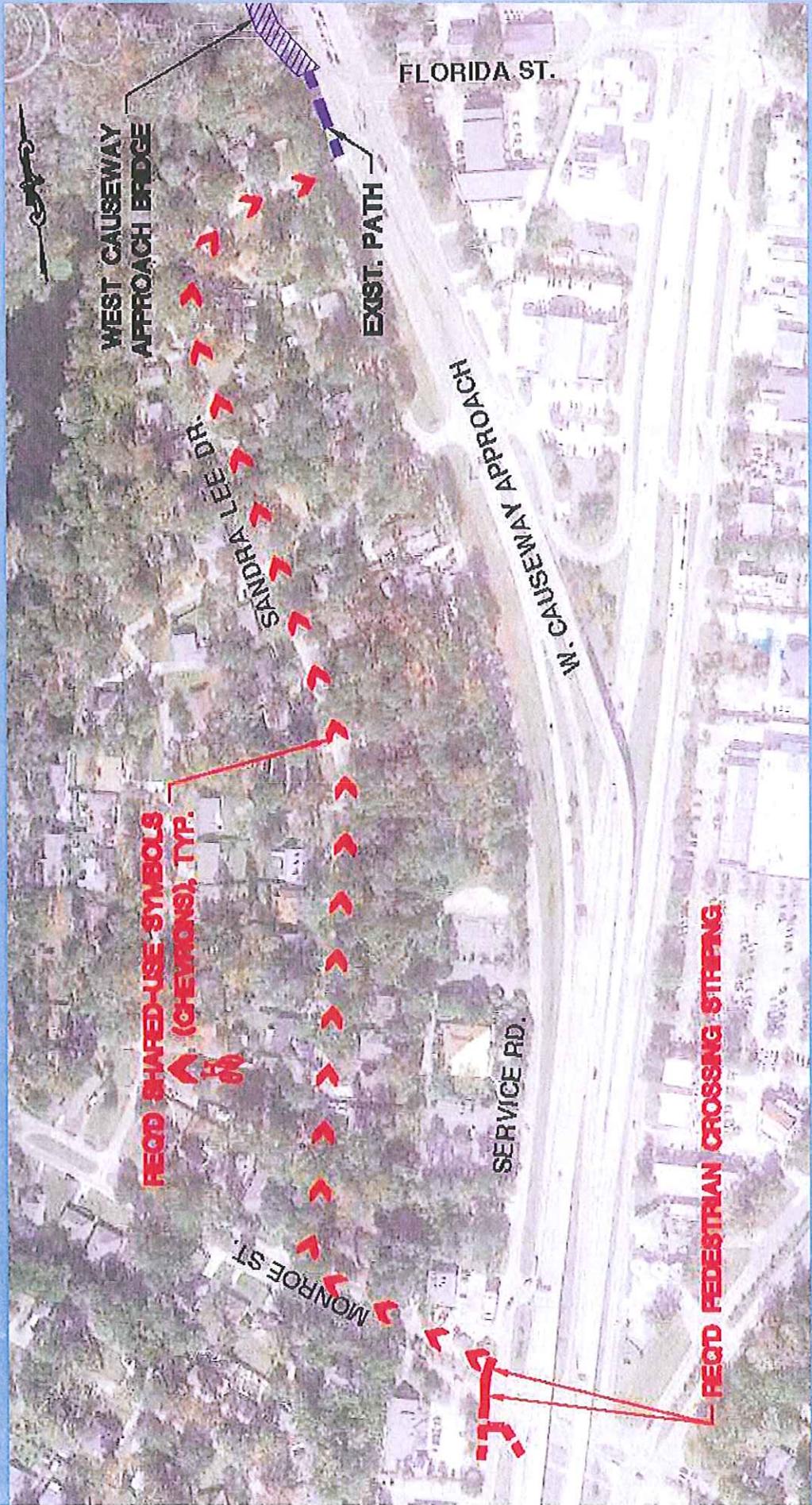
Project Description:

Same intersection improvement as Alt 1 and Alt 2; on street route using bike and chevron pavement markings on Monroe to Sandra Lee; Sandra Lee to W Service Rd.

- 2,750 feet in length
- Estimated Cost \$66,000

Monroe St. at N. Causeway Approach

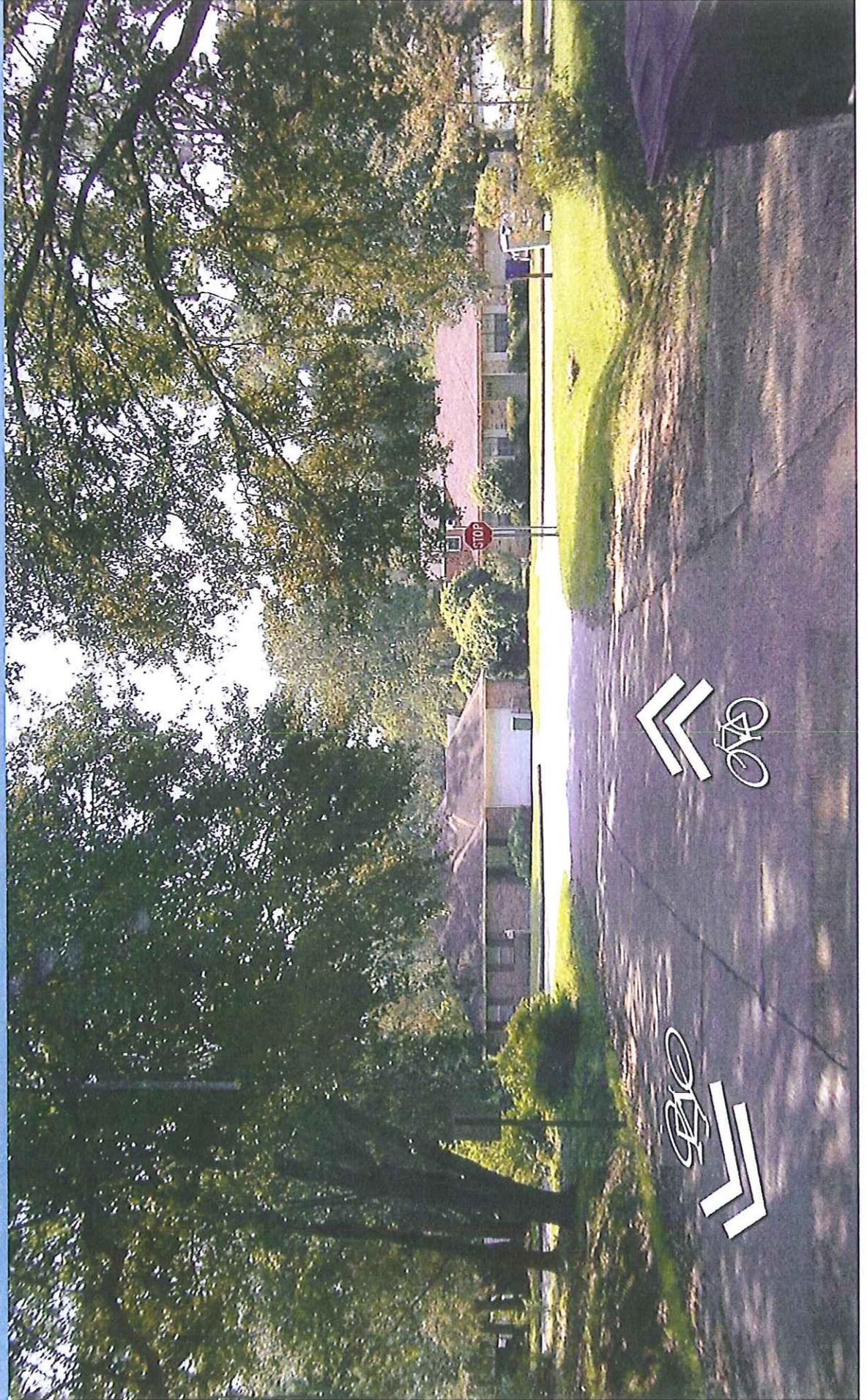
Alt. 3: Sandra Lee Route W. Causeway/Service Rd.



Monroe St. at N. Causeway Approach
Alt. 3: Sandra Lee Route W. Causeway/Service Rd.



Monroe St. at N. Causeway Approach
Alt. 3: Sandra Lee Route W. Causeway/Service Rd.



Monroe St. at N. Causeway Approach

Alt. 3: Sandra Lee Route W. Causeway/Service Rd.

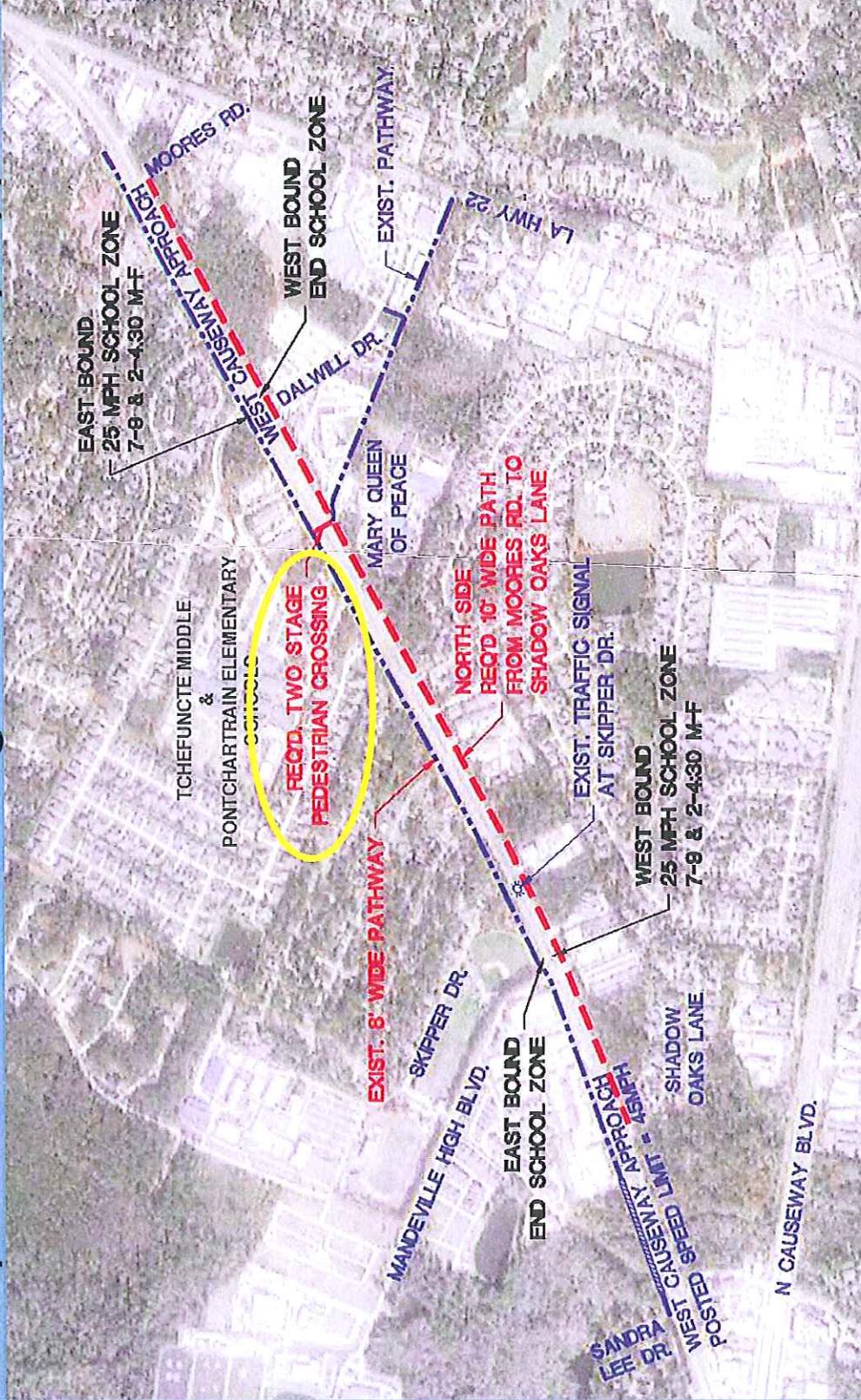
Pros:

- Realign crosswalk closer to intersection – better visibility
- High Visibility Crosswalk
- Bikes use residential street/lower traffic volume
- Connects to new W. Causeway Approach bridge
- Avoids vehicle/bike conflicts at gas station and down ramp
- Less costly than separated 10' path

Cons:

- No sidewalk provided for pedestrians along street

Bike/Pedestrian Crossing on W. Causeway Approach

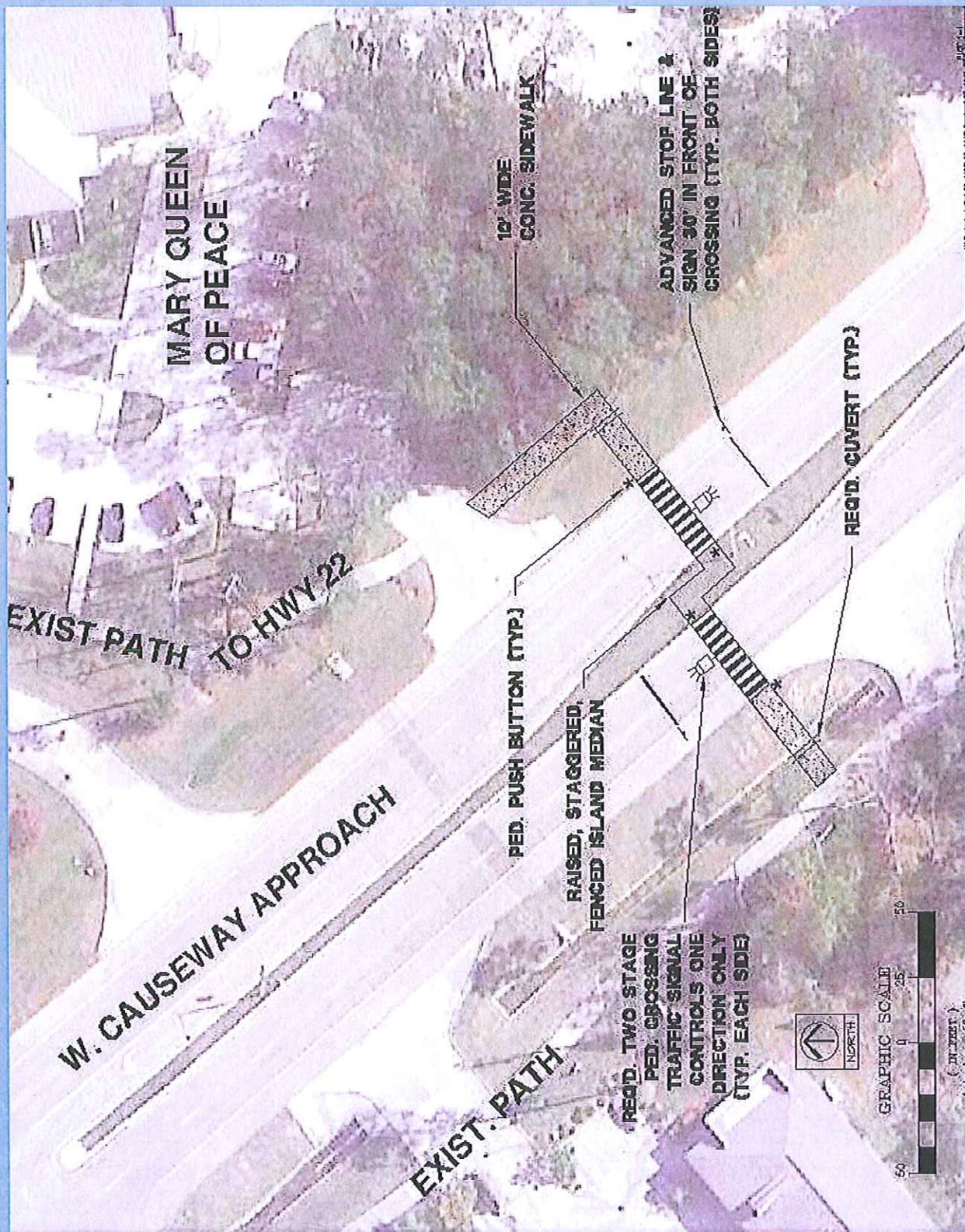


Project Description:

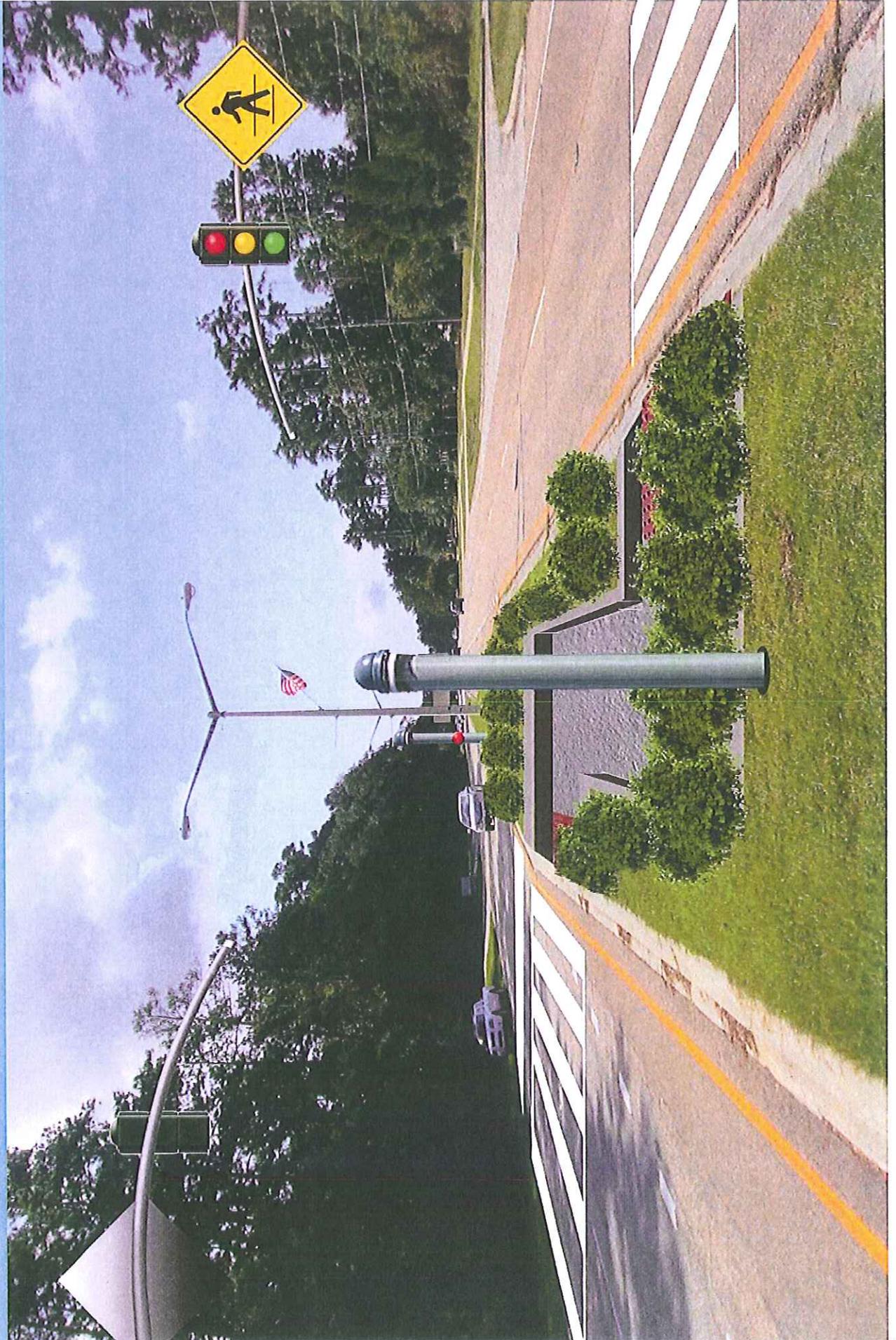
Staggered highly visible crossing exclusively for non-motorized traffic near Mary Queen of Peace on West Causeway Approach

- 300' length
- Estimate Cost \$158,000

Bike/Pedestrian Crossing on W. Causeway: Plan View



Bike/Pedestrian Crossing on W. Causeway: Conceptual Image



Bike/Pedestrian Crossing on W. Causeway

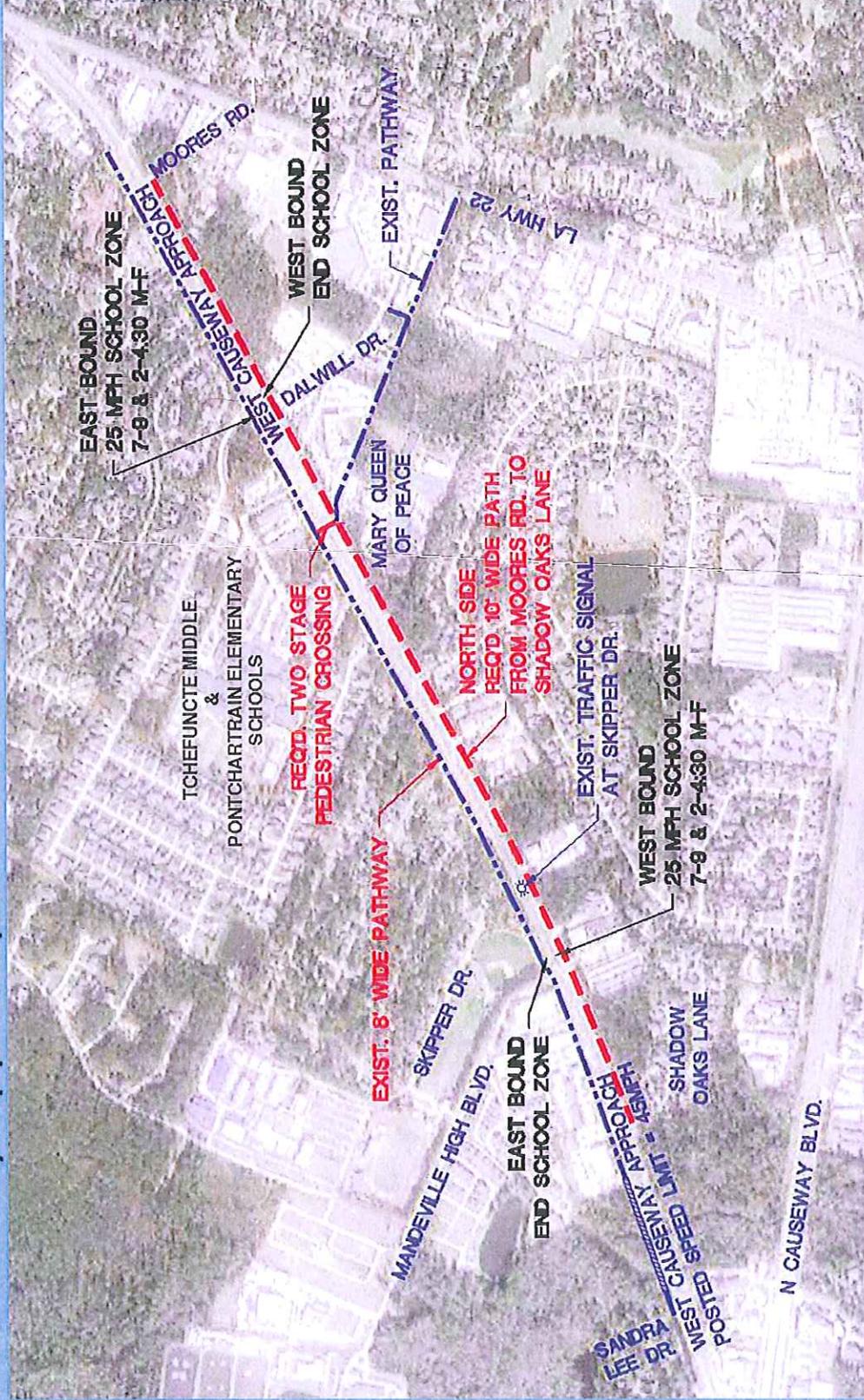
Pros:

- Links existing south side path along W. Causeway to proposed path along the north side
- Two stage pedestrian crossing signal with a pedestrian push button
- Optimizes flow of traffic; Activated only on “As Need” Basis
- Connectivity to schools, businesses, etc.
- Safely accommodates bikes and pedestrians
- Peak AM commuter traffic coincides with school zone for minimal impact to traffic
- Designed so pedestrians see oncoming traffic/motorists see pedestrians

Cons:

- Minor disruption to commuter traffic

W. Causeway Appr. Separate Path: Moores Rd. to Shadow Oaks Ln.



Project Description:

10' asphalt path on the north side of West Causeway Appr. set back from roadway from Moores Rd. to Shadow Oaks Ln.

- 0.95 miles in length
- Estimated Cost \$530,000

W. Causeway Approach Separate Path:
Moores Rd. to Shadow Oaks Ln.
Conceptual Image



Looking from Shadow Oaks Lane towards LA 22

W. Causeway Approach Separate Path:
Moore's Rd. to Shadow Oaks Ln.
Conceptual Image



Looking from Moore's Rd. towards Lake Pontchartrain

W. Causeway Approach Separate Path: Moores Rd. to Shadow Oaks Ln.

Pros:

- Links residential areas with schools, churches, and commercial areas
- Provides separate path for bikes and pedestrians
- Two directions
- Accommodates children, less experienced riders
- Local access to services
- Greatest amount of separation

Cons:

- Fearless riders will prefer shoulder/too much slow traffic

Project List Summary

No.	Proposed Plan	List of Improvements	Construction Estimate
A Alt. 1	Monroe at N. Causeway: On-Street Design	<ul style="list-style-type: none"> -Shared Use Symbols on Service Rd -Connect to new non-motorized bridge on W. Causeway - Improve pedestrian crossing at intersection 	\$ 61,000
A Alt. 2	Monroe at N. Causeway: Separate Path – W. Causeway/ Service Rd.	<ul style="list-style-type: none"> -10' wide separate path for bikes and pedestrians -Modify drainage for path -Connect to new non-motorized bridge on W. Causeway - Improve pedestrian crossing at intersection 	\$ 368,000
A Alt. 3	Shared Use Path on Monroe St. and on Sandra Lee Dr.	<ul style="list-style-type: none"> -Shared Use Symbols on Monroe St. -Shared Use Symbols on Sandra Lee Dr. 	\$ 66,000
B	W. Causeway Pedestrian Crossing	<ul style="list-style-type: none"> -Connect existing separate path on the south side to proposed separate path on the north side -Two stage bike/pedestrian crossing on W. Causeway 	\$ 158,000
C	W. Causeway Separate Path: Moores Rd. to Shadow Oaks Ln.	<ul style="list-style-type: none"> -10' wide separate path for bikes and pedestrians on the north side of W. Causeway -Provide needed access on the north side for bikes and pedestrians 	\$ 530,000

Questions Comments