

US 19 Pedestrian and Bicycle Safe Access to Transit Corridor Study

Summary Report

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Prepared for:



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Introduction

The US 19 Pedestrian and Bicycle Safe Access to Transit Corridor Study is a coordinated effort among the Florida Department of Transportation (FDOT), the Pinellas County Metropolitan Planning Organization (now known as Forward Pinellas), and the Pinellas Suncoast Transit Authority (PSTA) and is aimed at exploring opportunities to improve safety and accessibility for pedestrians, bicyclists, and transit users along US 19 in central and northern Pinellas County.

Due to longstanding safety and congestion issues, FDOT has been making traffic safety and congestion improvements to the US 19 corridor. Consistent with the Metropolitan Planning Organization's (MPO) 2040 Long Range Transportation Plan (LRTP), these improvements include converting large segments of the corridor into a controlled-access facility with grade-separated intersections and frontage roads through northern Pinellas County. The MPO's LRTP also identifies transit improvements that include increased frequencies along the US 19 corridor and potential bus rapid transit (BRT) service. Funding for these improvements was contingent on approval of the Greenlight Pinellas referendum in 2014. Although voters did not approve the referendum, PSTA and the MPO still recognize the need for long-term transit solutions on the corridor that can serve existing and future travel demand.

PSTA's Route 19 serves as the north-south spine for the Pinellas County transit network and provides regional transit connections to bus service in Pasco County to the north. Transit improvements, particularly premium transit service, could increase pedestrian and bicycle activity along the corridor by attracting more transit customers to US 19.

Purpose

Balancing mobility demands along US 19 requires cooperation to ensure that all users have safe and reasonable access to the roadway. With the pending reconstruction of portions of the corridor and the long-term plan for transit enhancements, the multimodal needs of the corridor must be addressed to ensure that all users can safely travel through the study area. The information derived from this study will be used to demonstrate how the US 19 corridor could be configured to provide safe pedestrian and bicycle access to existing and potentially enhanced transit service and will identify strategies for incorporating safety improvements into existing and planned US 19 configurations. One important note about this study is that its intention is not to rethink the design of US 19, but to identify opportunities within the current and planned design of US 19 to improve pedestrian and bicycle safety and transit access.

Summary Report

The US 19 Pedestrian and Bicycle Safe Access to Transit Corridor Study comprises a series of technical reports; this summary report provides an overview of the efforts that went in to the study. More detail on the items discussed in this report can be found in corresponding technical memoranda.

Study Area

As shown in Map 1, the US 19 corridor study area runs along US 19 from north of the Pinellas Park Transit Center, located just south of the Shoppes at Park Place, to the Pinellas-Pasco county line. For analysis purposes, a 1-mile buffer (½ mile on each side) around US 19 was used as the corridor study area.



Map 1: Corridor Study Area

Baseline Conditions and Data Collection

The baseline conditions and data collection efforts of the study were completed to document and evaluate the existing and proposed transportation, land use, and safety environment of the US 19 corridor. These efforts included a review, evaluation, and analysis of the following information:

- Existing and planned roadway conditions (e.g., traffic conditions, physical conditions, etc.)
- Land use and socioeconomic/demographic conditions
- Analysis of recent crash history, including a detailed review of pedestrian and bicycle crashes
- Surveys of pedestrian activity at select locations
- Existing and planned transit service and transit activity
- Inventory of existing and planned multimodal facilities

The majority of the information collected and evaluated as a part of this effort was used to inform the development of potential alternatives and strategies aimed at improving pedestrian and bicycle safety and access to transit along US 19. An overview of the baseline conditions and data collection efforts is provided in the following pages; more detail can be found in Technical Memorandum #1 of this study.

Roadway Conditions

Construction of US 19 began in the late 1940s and, by the 1970s, motorists were confronted with traffic congestion and extended delays at the major intersections. In the 1970s, interchanges were constructed at SR 60 and Gandy Boulevard as a way to help manage the increasing travel demands along US 19. In the late 1980s, a project development and engineering (PD&E) study was conducted to identify improvements to the US 19 corridor through central and northern Pinellas County. Since then, US 19 has continued to evolve as the main connection between Pinellas and Pasco counties and as the primary commercial corridor in Pinellas County. Reconstruction of US 19, based on re-evaluated findings from the original PD&E study, has allowed the corridor to safely and efficiently accommodate more vehicular traffic while maintaining access to the land uses along the corridor through the use of grade-separated interchanges and frontage roads. However, even with the reconstruction of the US 19 corridor, providing accessible and safe transportation options for users, such as pedestrians and bicyclists, continues to be a challenge. A review of past, current, and projected roadway conditions, including traffic characteristics and multimodal facilities, was conducted to create a better understanding of the multimodal opportunities within the corridor.



Existing roadway conditions along US 19 near Enterprise Rd

Land Use, Demographics, and Socioeconomic Data

Existing land uses, future land use, and redevelopment plans were reviewed along the corridor. The Pinellas Planning Council’s (PPC) Countywide Plan Strategies (2015) anticipate increased redevelopment activity within the county while recognizing the need for it to occur in appropriate locations. The Countywide Plan introduces the Transit-Oriented Land Use Vision Map that is used to guide land use decisions by directing the future location of transit-oriented densities and intensities. According to the Countywide Plan, future development within the identified transit-oriented areas should be more conducive to transit and multimodal uses. The Plan identifies US 19 as a primary multimodal corridor and identifies several activity centers along and adjacent to the corridor

Along with land use changes, projected population and employment changes were evaluated along the corridor. Population and employment densities often are used to help identify areas that may have an increased demand for multimodal travel options. Understanding current and projected densities, especially higher-density areas, can help in the identification of areas that may have increased multimodal travel demands.

The corridor study included an evaluation of key socioeconomic and demographic indicators, including income and age. Similar to population and employment densities, socioeconomic indicators often have a strong correlation with transit use and dependence on non-automobile forms of transportation. Evaluating these data provided an indication of locations along the corridor where multimodal activity and potential transportation disadvantaged populations are concentrated. Some of these locations include the area around the intersections of US 19 and Gandy Boulevard/Park Boulevard, Sunset Point Road, Alderman Road, and near Tarpon Avenue.

The study also looked at data related to primary commute modes to locate areas along the corridor that have higher percentages of workers walking, biking, or using transit as their primary means to travel to work. Figure 1 shows the composition of primary travel modes to work for workers who reside within the general corridor study area based on data collected through the U.S. Census Bureau’s American Community Survey (ACS). Corridor-wide, 3.8% of the surveyed workers reported walking, biking, or public transportation as their primary means of travel for work. Although the overall percentage of workers walking, biking, and using transit as their mode to work is fairly low, there are some clusters throughout the corridor that have higher percentages of workers using transit, walking, or biking to work. These are near the intersections of US 19 and SR 60/Gulf to Bay Boulevard, Ulmerton Road, Gandy Boulevard/Park Boulevard, and SR 580/Main Street.

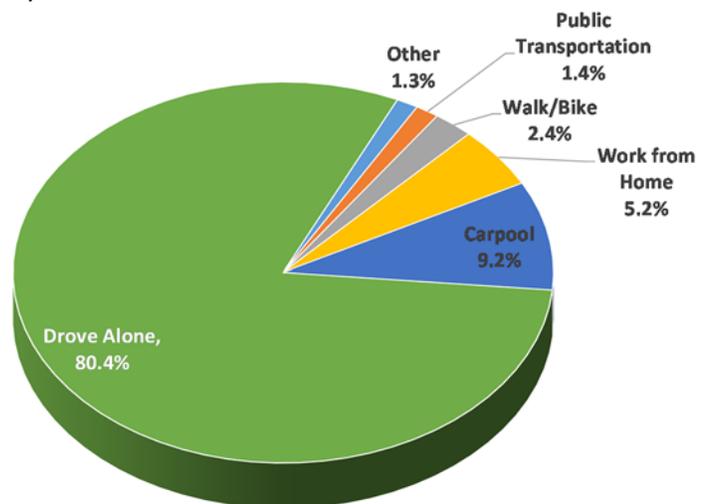


Figure 1: Mode of Transportation to Travel to Work

Crash History Analysis

FDOT and the Pinellas County MPO have made a commitment to improve safety and reduce crashes along US 19. An understanding of the crash history, including trends, crash locations, crash types, crash severity, and other causal factors, aids in recognizing potential strategies that can be used to improve safety within the corridor. A five-year crash history (2010–2014) was used to evaluate a wide range of safety and crash-related factors. Included in this evaluation was a review of the type of crashes that have occurred within the corridor.

Figure 2 shows the percentage of total crashes by associated crash type. The most common occurring crash type along the corridor were rear-end collisions, which accounted for 45.4% of the total crashes, followed by angle/left-turn crashes at 21.6%.

Although it is important to focus on reducing the overall number of crashes within the corridor, identifying the location and causes of the most severe (incapacitating injury and fatal) crashes helps in identifying and prioritizing safety concerns and mitigation strategies within the corridor.

Between 2010 and 2014, there were 51 fatal crashes within the corridor, with approximately 37% involving either a pedestrian or bicyclist, making up the crash type with the highest frequency of fatal crashes, followed by angle and left-turn crashes at nearly 26%.

Since the primary focus of this study is to identify strategies to improve pedestrian and bicycle safety and mobility, and pedestrian and bicycle crashes are the crash type associated with the most fatal crashes in the corridor, understanding the location and causes of those crashes is a key component of the study. To gain a better understanding of the causes of these crashes, crash reports of the pedestrian and bicycle crashes were reviewed in detail, and pedestrian and bicycle crash diagrams depicting the location, action/movement, and direction of travel for involved parties was created for the entire corridor (see example in Figure 4). From the crash diagrams, it was determined that 60% of the pedestrian and bicycle crashes involved pedestrians and bicyclists traveling north/south along US 19, and nearly half of all crashes occurred at either a driveway or side street. Another observation from the crash diagrams was that 77.5% of the bicycle crashes involved bicyclists riding along US 19 on the sidewalk and that no bicycle crashes occurred within the bicycle lanes. Technical Memorandum #2 contains additional information derived from the crash reviews and the pedestrian and bicycle crash diagram for the entire corridor.

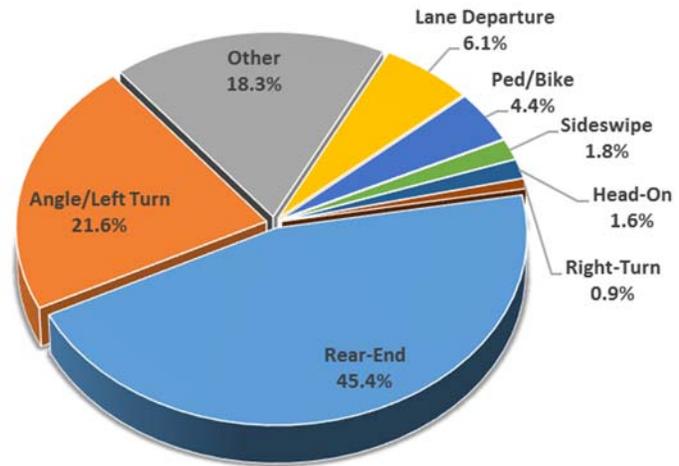


Figure 2: Total Crashes by Crash Type (2010–2014)

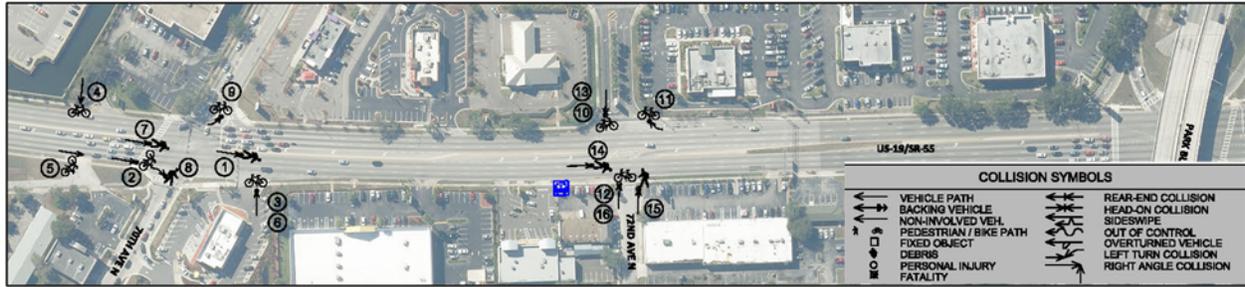


Figure 3: Example from US 19 Pedestrian and Bicycle Crash Diagram

Transit

PSTA Route 19 operates along US 19 and is the highest route by ridership in Pinellas County. It operates seven days per week. Monday through Friday it operates between 5:30 AM and 11:30 PM, with 20-minute frequencies during the AM and PM peaks and 30-minute frequencies through most of the rest of the day. According to data from the PSTA Fiscal Year 2016–2025 Transit Development Plan (TDP), Route 19 currently serves approximately 6,250 riders per average weekday. By 2025, that number is projected to increase by 10.5% to approximately 6,900 riders. According to the TDP’s alternative funding scenarios, if additional funding sources for transit investment (increased frequency, extended service, and/or introduction of premium transit) in the corridor are identified and implemented, the projected ridership within the corridor could be significantly higher. To understand current ridership demand and behaviors, a wide range of data was reviewed that included existing and planned transfer points, existing stop-level average daily boardings and alightings by bus stop, and average passenger load by bus stop. Map 2 shows the average daily stop-level boardings and alightings for the northbound stops along US 19. Bus stop-level ridership shows where there are higher levels of bus stop activity and where there may be an increased demand/desire for crossing US 19. The bus stop ridership map shows that the higher-ridership bus stops are concentrated mainly near signalized intersections that, for the most part, provide transfer opportunities with transit routes that operate along the cross streets.

Pedestrian and Bicycle Activity Data Collection

A series of eight-hour pedestrian and bicycle counts was completed at key locations to evaluate the current level of pedestrian and bicycle activity along and across US 19. In addition to these counts, data from recently completed pedestrian and bicycle counts were compiled and incorporated into the study. The counts showed that there are several locations, particularly near major east-west thoroughfares, that have higher levels of pedestrian and bicycle activity compared to the remainder of the corridor. Table 1 provides a summary of the pedestrian and bicycle counts that were collected and compiled for this study.

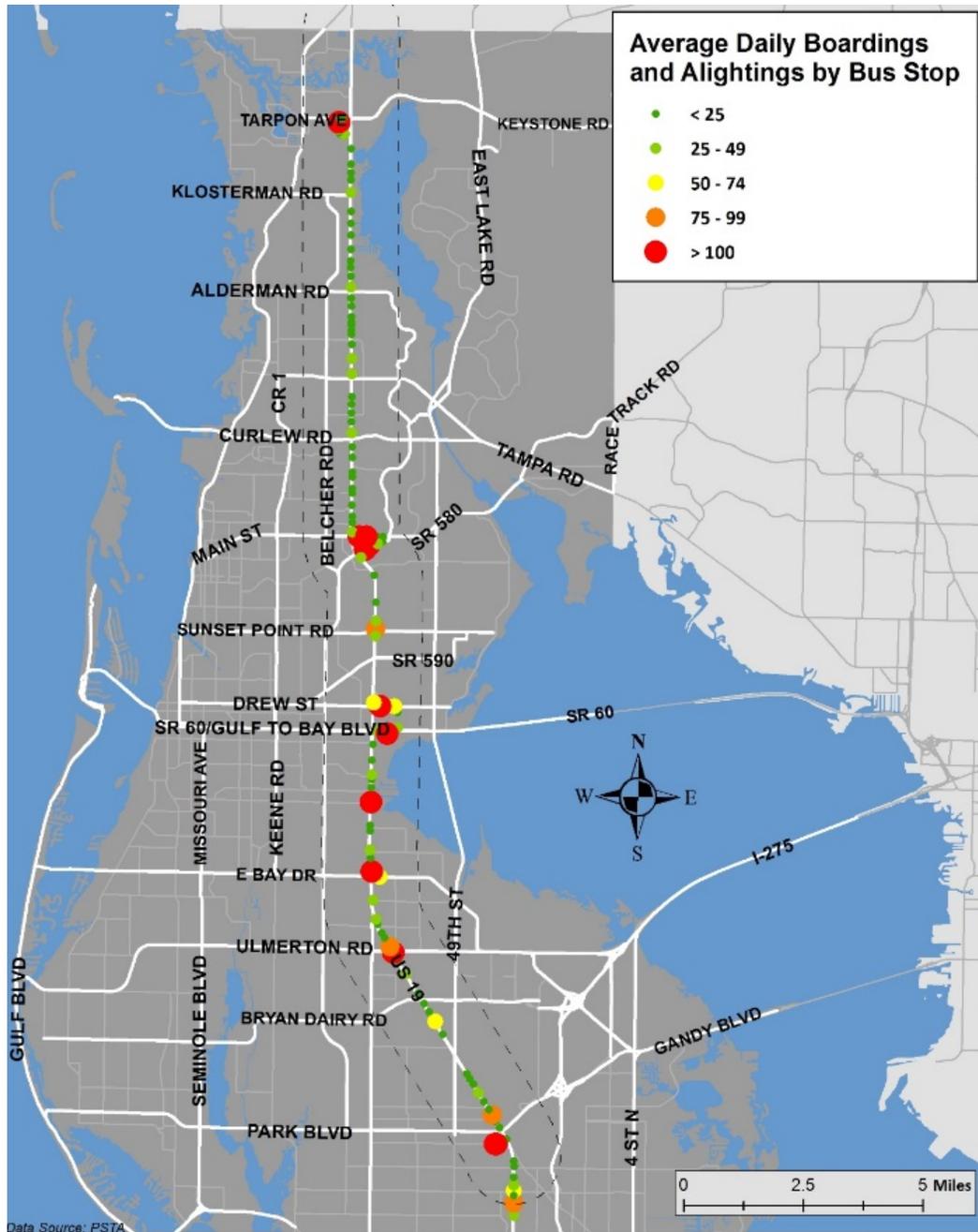


Table 1: Summary of Pedestrian and Bicycle Counts

Location	Date Counted	AM	Mid- Day	PM	Total
Pinellas Trail	4/8/2015	70	55	45	170
Tarpon Ave*	4/15/2015	2	8	9	19
Klosterman Rd*	3/25/2015	8	13	9	30
Innisbrook Dr*	3/31/2015	10	8	15	33
Alderman Rd*	3/31/2015	8	25	24	57
Highlands Blvd*	4/1/2015	9	1	8	18
Nebraska Ave*	4/1/2015	17	15	30	62
Coral Landings Blvd*	4/7/2015	0	1	4	5
Tampa Rd**	8/21/2014	11	18	32	61
CR 95	8/19/2014	3	2	3	8
1000' N of Curlew	8/19/2014	0	0	0	0
Curlew Rd**	8/19/2014	26	15	25	66
Congress Ave*	8/19/2014	2	7	2	11
Northside Dr*	8/21/2015	5	1	3	9
Riviera Dr/Via Granada*	8/21/2015	0	5	1	6
Estancia Blvd/Silk Oak*	8/20/2014	0	2	0	2
Republic Dr**	8/20/2014	15	7	3	25
Evans Rd*	8/20/2014	0	0	0	0
Mainlands Blvd W	12/3/2015	34	14	42	100
Gateway Center Blvd	12/10/2015	22	9	14	45
80 th Ave N	12/1/2015	50	41	67	158
Duke Energy Trail	4/9/2015	6	13	18	37
Ream Wilson Trail	4/22/2015	43	30	26	99

Notes: The morning (AM) period begins at 7:00 AM and ends at 9:00 AM, the mid-day period begins at 11:00 AM and ends at 2:00 PM, and the afternoon (PM) period begins at 3:00 PM and ends at 6:00 PM. No abnormal weather events occurred while counts were completed.

*Bike and pedestrian activity at this location includes an area of just under 1,000 ft along the highway, generally centered on the cross street listed.

**Bike and pedestrian activity at this location was included in vehicle turning movement counts and includes only activity crossing at the intersection.

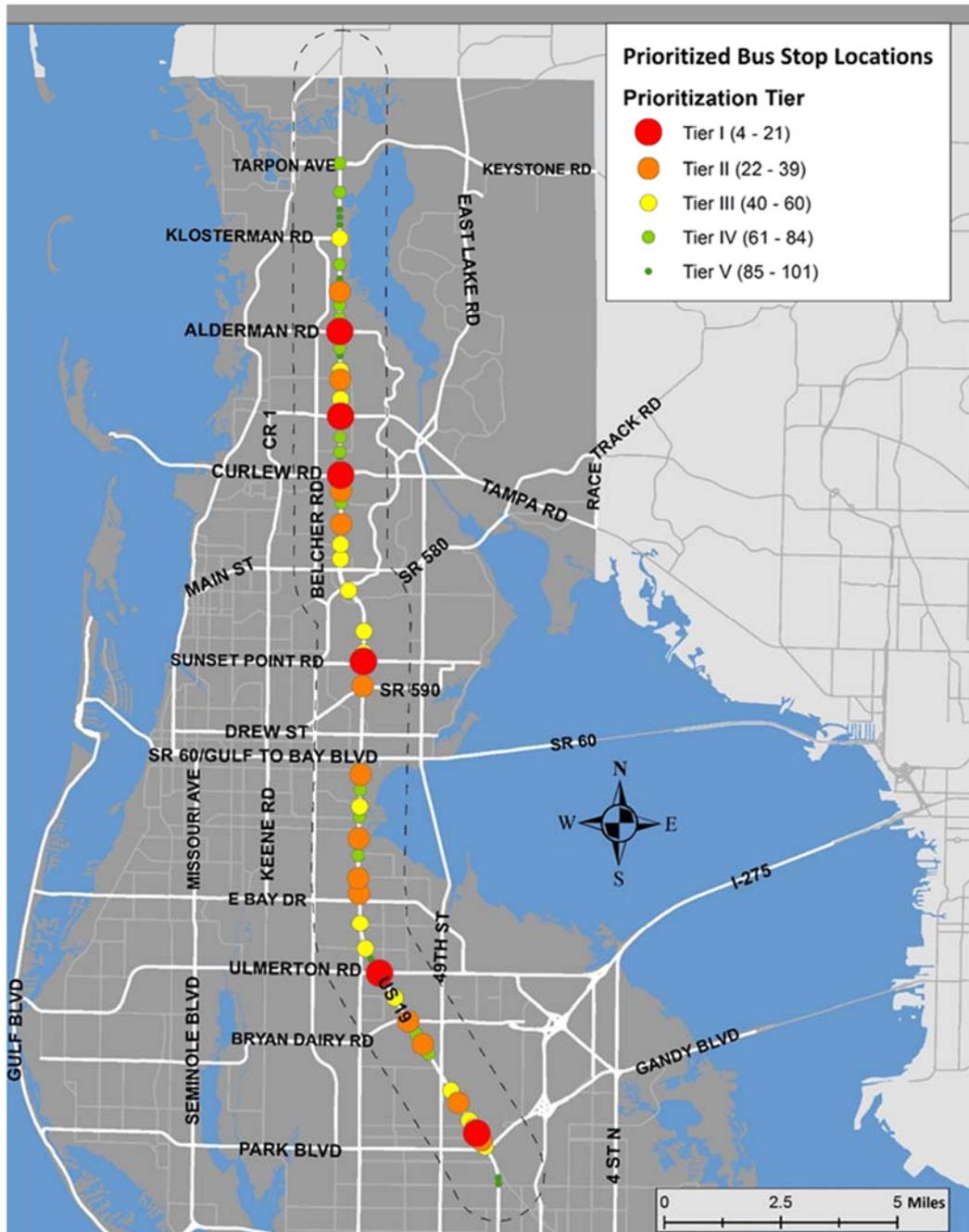
Active Stop Reviews

A field review of the five highest non-designated transfer location ridership stops was conducted, including the two stops along US 19 closest to Ulmerton Road, the two stops along US 19 closest to Belleair Road, and one stop along US 19 near Drew Street, to determine the generation of transit ridership in these areas. The site visits involved observing bus rider general origins and destinations and a review of the surrounding areas and neighborhoods to identify potential ridership sources that might not be immediately adjacent to the stops. The stop reviews provided the project team with additional information on transit generators and rider behavior that can be used in future discussions on safety and access and in the development of alternative strategies to enhance access to transit within the corridor. Technical Memorandum #3 provides additional detail on the observations from the stop reviews.

Priority Locations

The US 19 Study focuses primarily on corridor-wide strategies to enhance pedestrian and bicycle safety and access to transit, as opposed to specific, more immediate recommendations. To address more immediate safety and access concerns, a framework for identifying and prioritizing locations along the corridor for additional analysis and/or evaluation was developed. The method of identifying these locations consisted of grouping bus stops that are within close proximity to each other and then ranking those groups based on combined daily stop-level ridership and the number of pedestrian and bicycle crashes that occurred near the bus stop group. Each bus stop grouping was then given a composite score based on the area's ridership and crash ranking. The composite scores were used to develop five priority tiers that were applied to each bus stop group.

An important note about this process is that this methodology was used to identify areas along the corridor that have both higher transit ridership activity and a history of a higher frequency of pedestrian and bicycle crashes. Through continued coordination among FDOT, the MPO, and other appropriate agencies many of the locations, especially those within the top tiers, will be evaluated in greater detail outside of this study to identify opportunities for enhancing pedestrian and bicycle safety and access to transit. Map 3 illustrates the bus stop group locations by priority ranking tier. Information on the priority ranking process and locations can be found in Technical Memorandum #4 of this study.



Map 3: Prioritized Locations for Short-Term Reviews

Outreach and Coordination

Project Advisory Committee

The Pinellas County MPO established a Project Advisory Committee (PAC) to facilitate feedback and provide a point of collaboration with local governments and other stakeholders. The PAC met four times. At each meeting the PAC was presented with periodic updates on the study and provided with an opportunity to provide input and comments on the key components of the study. Throughout the study process, the PAC provided valuable insight and input that aided in the development of the alternative strategies for enhancing safety and access to transit along US 19.

Focus Groups

Four focus-group discussions were held to obtain input from community stakeholders representing varied interests along the corridor. The groups included business owners, students, residents, and local government planning and engineering staff. The meetings provided the stakeholders with an opportunity to discuss their experiences and opinions related to US 19. They helped to provide a community perspective of issues related to safe access to transit and multimodal transportation on US 19.

Several themes were noted from input received from the workshop participants, most of whom were not regular bus riders. In addition to safety concerns, most saw the significant difference in travel time vs. drive time as a primary reason for not using the bus on a regular basis. In general, there was a positive reaction to the recent road capacity improvements that have been made along US 19 through Clearwater. The majority of participants drove the corridor regularly and considered the improved travel times and ease of use for the new lanes to be community benefits. Safety for walkers and bikers along the corridor was a key concern for many of the participants, as was the practicality of accessing transit stops along the grade-separated segments where there are no safe crossing options.

Route 19 On-Board Survey

An on-board survey was conducted on PSTA Route 19 buses to collect information on the travel behavior of bus riders (for example, trip origins and destinations) and to solicit rider opinions on possible bus stop and route improvements. The on-board surveys were conducted in-person on the bus, and a total of 65 surveys were completed. The on-board survey questions were organized into the two main categories shown below.

- Travel Characteristics – individual trip attributes
- Service Improvements – potential service and capital improvements

Some general takeaways from the on-board survey results include the following:

- The majority of trips on PSTA Route 19 are commute-based trips (home-to-work or work-to-home), followed by trips from/to home to shopping and for errand purposes.
- Walking is the primary mode used to access bus stops, and a majority of respondents indicated that they walk 6 blocks or less to access their bus stops.
- The most frequently-cited need for improvements was for improved lighting and roadway (US 19) crossings.

- The most commonly-suggested service improvements were to increase bus frequency and to expand service hours, including expanded weekend service.

Operator Interviews

Interviews of Route 19 bus operators also provided valuable insight into the behavior of riders as well as other issues they experienced. Some key takeaways from the bus operator interviews include the following:

- The schedule on Route 19 is tight, and it is sometimes difficult to make the time points. Additional schedule time for the route would help, particularly during rush hours.
- The bus generally “owns” the right lane during non-peak periods, so it stays fairly open to traffic—motorists expect the bus to go slower, so through traffic avoids the right lane, except for when making right turns.
- Operators consistently witness patrons crossing US 19 away from marked crossings, including climbing over the physical barriers in the reconstructed sections.
- The section between Curlew Road and Tampa Road seems to be the most dangerous section for transit users crossing US 19.
- The route needs to be faster. It takes a bus more than 2.5 hours to traverse one-way compared to 45 minutes to drive the entire corridor. Splitting the route, adjusting the schedule, adding an express overlay, adding limited stop service, consolidating some stops, providing signal priority, or including treatments to reduce dwell time and increase average bus speed were suggested.

Project Coordination

Meetings with the FDOT project management team involved with the design of the planned improvements north of SR 580 provided a unique opportunity to incorporate additional transit access consideration into the reconstruction plans. However, it should be noted that as the design stages of the various US 19 segments progress, it may be necessary to update and review the data to ensure that the proposed enhancements are still valid and are being considered in areas where they are needed. Some of the attributes noted by the FDOT project management team for inclusion in the roadway design are listed below. Additional data, including the data tables, can be found in Technical Memorandum #1.

- Pedestrian and bicycle crash history – emphasis placed on locations with a history of severe injury and fatal crashes.
- Existing stop-level ridership statistics –volume of transit ridership at locations along the corridor.
- Socioeconomic/demographic data – indicating areas with concentrations of potential transit riders.
- Distance to current and planned (where applicable) crosswalks.
- Existing and future land use designations supporting transit use, including the multimodal corridor designation.

Defining Potential Alternatives and Strategies

Purpose and Need Statement

Following extensive data collection and analysis, a purpose and need statement for the US 19 corridor was developed. The purpose and needs statement is intended to be a living document, capable of serving and adapting to a dynamic and evolving community, that can be used by various agencies in the evaluation of mobility or multimodal improvements along the corridor. The statement is intended, in part, to help build a consensus on the role of the corridor and what needs to be considered during the development of alternatives and strategies to improve pedestrian and bicycle safety and access to transit within the corridor. The components of the purpose need and statement were developed during a project team meeting that included representatives from FDOT, the Pinellas County MPO, and PSTA. Following is an overview of the statement developed for the corridor. More details on this can be found in Technical Memorandum #5.

Purpose – Provide a safe and efficient transportation facility that accommodates regional travel and local access while meeting the existing and future transportation demand for all modes.

Need – The needs identified along the US 19 corridor are summarized as follows:

Traffic Demand – Ensure that the US 19 corridor will be able to meet future traffic demand.

Traffic Safety – Improve overall traffic safety while focusing on reducing the most severe crash types along the corridor.

Transit Accessibility and Connectivity – Current and projected ridership, along with US 19 serving a regional transit connection with Pasco County, suggests a need for improved transit access and connectivity along the US 19 corridor.

Pedestrian and Bicycle Safety and Accessibility – Pedestrian and bicycle safety, mobility, and accessibility need to be improved along the US 19 corridor.

Regional Connections and Linkages – The need to maintain and improve regional connections and linkages will ensure an efficient regional transportation system.

Promote Economic Growth – Providing increased mobility options through transportation infrastructure along the corridor could help promote economic growth, development, and land use changes to support the goals and visions of the surrounding communities.

Potential Crossing Alternatives

Along most of US 19 north of Gandy Boulevard (both reconstructed and at-grade sections), pedestrians trying to cross the road must walk between interchanges/intersections that may be 0.5–1.5 miles apart to get to a marked roadway crossing. These distances discourage pedestrians from using the signalized crosswalks, and the overpass and interchange improvements on US 19 have created mainline travel lanes that are either physically separated by a barrier or are fully grade-separated. Although this roadway design allows US 19 to continue to meet the vehicle demand of the corridor in a relatively safe and efficient manner, it creates extremely challenging conditions for pedestrians. Therefore, additional crossing opportunities would most likely need to be grade-separated (over or under) from the mainline travel lanes

of US 19. With the associated costs of providing grade-separated crossings, the number of potential crossing locations is limited, and additional crossings will need to be well planned and positioned at key locations along the corridor. Listed below are crossing alternatives that could be considered along the US 19 corridor. More information on the potential crossing alternatives can be found in Technical Memorandum #6.

No-Build/Status Quo – assumes maintaining the current and planned/anticipated configuration of US 19 with no adjustments to the physical pedestrian and bicycle infrastructure or transit operating environment along the corridor beyond what is currently planned or being planned.

Roadway Overpass – would provide crossing opportunities to both motorized and non-motorized travelers by means of a roadway connection over US 19.

Roadway Underpass – would provide crossing opportunities to both motorized and non-motorized travelers by means of a non-interchange roadway crossing under the mainline travel lanes of US 19; most likely, these would be in locations at which the mainline travel lanes are already elevated or are planned to be elevated.

Pedestrian Overpass – would provide pedestrians and bicyclists with a grade-separated and safe crossing over the travel lanes of US 19.

Pedestrian Underpass – would allow for the uninterrupted flow of pedestrian movement underneath vehicle traffic; may be a more attractive alternative in locations at which the mainline lanes are already elevated.

Transit Circulator – alternative to constructing a foot crossing; uses existing highway interchanges and underpasses to provide connectivity by means of a transit circulator operating on frontage roads. A circulator service along US 19 could transport riders from one bus stop to another on opposite sides of US 19 via a U-turn at an adjacent interchange. To ensure that every passenger has the opportunity to navigate to/from bus stops and make connections to the bus, a circulator service would need to operate slightly beyond the service span of Route 19. Also, to achieve the frequencies needed to provide convenient service across US 19 and given the length of the US 19 corridor, multiple circulator services would be necessary to serve the entire corridor.

Transit Service Alternative Scenarios

The MPO’s 2040 LRTP includes a Transit Vision Plan that connects bus service to major activity centers while increasing frequencies and hours of service. This Vision Plan is based on the Community Bus Plan adopted by the PSTA Board in 2014. The Community Bus Plan recommended implementation of a bus rapid transit service for US 19, but it was contingent upon a proposed sales tax that was defeated by the voters in 2014. Although there are no cost feasible transit improvements for US 19 identified in the LRTP or Community Bus Plan, it is shown as a core route in the PSTA system. Therefore, it will be a priority for route enhancements as funding becomes available.

A set of potential transit service alternatives for the corridor was developed as part of this study to demonstrate how the integration of previously-identified crossing alternatives could provide enhanced access to transit within the corridor. The transit service alternatives discussed below are for example and

discussion purposes only and should not be construed as recommendations for transit enhancements within the corridor.

Status Quo Alternative –would provide local fixed-route service along US 19 frontage roads similar to what is being provided today. Although the service and function of transit would remain relatively the same as it is today (operating along the frontage roads), there may be potential for some route/service modifications along the corridor, such as splitting the existing Route 19, changes to frequencies and service spans, and/or moving or consolidating bus stops.

Local Route with Circulator Route Service Alternative – assumes operation of a local transit route similar to the status quo alternative, with additional circulator route service operated along the entire corridor or limited to focus/key areas; could provide additional circulation opportunities and additional connectivity at key locations along the corridor and could help support future land use goals at various locations along the corridor.

Local Route with Express Bus Service Alternative – assumes operation of local transit along the frontage roads along with additional express bus service; when feasible, express would use mainline US 19 and service stops or stations at key points along the corridor via the frontage roads.

Mainline Bus with Mainline Shoulder Stops Alternative – would allow bus service to operate along the mainline travel lanes of US 19 and serve strategic stops/stations located along the mainline shoulder. This would reduce the need for bus operation along the frontage road portion of US 19, and, depending upon the service (e.g., express bus service), may eliminate the need for operations along the frontage roads. Additionally, local or circulator bus service could be maintained along the frontage roads to provide additional route coverage and circulation. This alternative could be implemented incrementally and in conjunction with any identified crossing alternative.

Enhanced Mainline Transit with Median Stop/Station Alternative – assumes a higher-investment transit service (such as bus rapid transit [BRT]) operating exclusively within the mainline travel lanes of US 19. Transit service in this alternative could serve transit stations located either along the shoulders of the mainline travel lanes or within the median envelop. Depending on the cross-section, median stations could be located at the same grade as the mainline travel lanes or could be accessed via bus-only ramps and a cross-connecting roadway bridge or underpass. To accommodate median stations, especially if at the same grade as the travel lanes, some segments of US 19 may require modification to accommodate the needed right-of-way for either a station or bus-only ramps. Generally, this alternative is viewed as a longer-term option that would require a higher level of investment, agency coordination, and effort to implement.

Additional information on the transit service alternatives can be found within Technical Memorandum #7.

[Transit Access Alternatives](#)

Potential scenarios were developed to demonstrate how the crossing and transit alternatives could be integrated to improve transit access and are described on the following pages. More information on the transit access scenarios can be found within Technical Memorandum #7.

Roadway Overpass with Frontage Road Bus Stops – transit operating along frontage roads serving curbside stop locations, similar to current transit service; could accommodate premium service that could divert from mainline to serve stops on frontage roads; pedestrians and vehicles cross via a roadway bridge.



Pedestrian Overpass (entire span) with Frontage Road Bus Stops – transit operates along frontage roads serving curbside stop locations, similar to current transit service; could accommodate premium service that could divert from mainline to serve stops on frontage roads; pedestrians would cross via pedestrian overpass.



Roadway Overpass with Mainline Shoulder Bus Stops – transit operates along mainline serving shoulder stop locations; would be ideal for more premium service; pedestrians use crosswalk of frontage road to reach sidewalk; pedestrians and vehicles cross via bridge.



Pedestrian Overpass (entire span) with Shoulder Bus Stops – transit operates along mainline serving shoulder stop locations; would be ideal for more premium service; pedestrians use crosswalk of frontage road to reach sidewalk and pedestrian bridge to cross corridor.



Roadway Overpass with Mainline Median Transit Stop/Station – transit operates along mainline serving stations in median, accessing bus stops/stations via ramps; could accommodate more premium service and allow for transfers and other transit routes to potentially access and egress of corridor.



Phasing Strategy

The phasing strategy component of the US 19 study is intended to identify potential strategies for enhancing pedestrian and bicycle safety and access to transit that could be considered along the corridor under both existing and planned conditions. A critical element of any successful strategy is continued multi-jurisdictional coordination of planning efforts and on implementing enhancements. This coordination allows for an open discussion and understanding of potential issues and a consensus on approaches to mitigate those issues. An example phasing strategy (Figure 4) was developed to illustrate how a process of ongoing strategies could be followed to identify, address, and implement various safety improvements, transit alternatives, transit access alternatives, and decisions related to pedestrian and bicycle safety and transit access along the US 19 corridor.

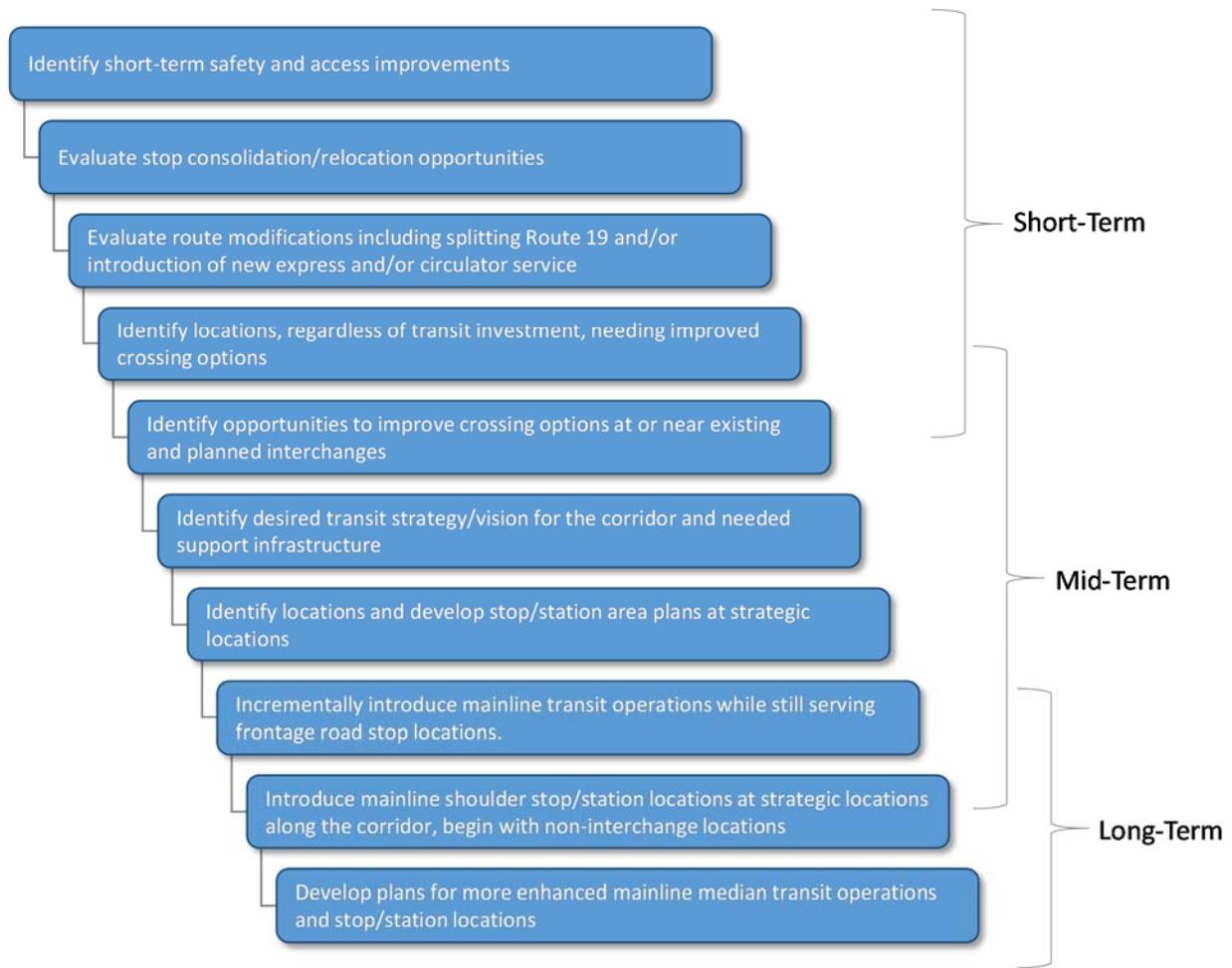


Figure 4: Phasing Strategy Example

Methodology for Evaluating Benefits and Costs

A methodology to evaluate the benefits and costs of various crossing alternatives that could be implemented along US 19 was developed to aid in future planning and decision-making. It is not intended to define a preferred crossing alternative for any specific location along the corridor as any proposed crossing alternative should be identified and evaluated on an individual site-specific basis to accurately determine the associated benefits and costs. Also, it should be recognized that the benefit and cost evaluation should be considered with other analysis and decision-making criteria. Technical Memorandum #6 provides additional detail on the development of the benefits and costs methodology along with an example of its application.

Conclusion

Much of the US 19 Pedestrian and Bicycle Safe Access to Transit Corridor Study was focused on identifying the need for enhancements based on a data driven approach and on the development of longer-term alternatives and strategies. To achieve the desired results of the alternatives and strategies, continued coordination among the partner agencies (FDOT, MPO, PSTA, and others) will be needed. This study was

designed to help guide future discussions and provide some context to potential alternatives and strategies aimed at improving pedestrian and bicycle safety and access to transit within the US 19 corridor. The following considerations should be contemplated as next steps:

- Collaborate to evaluate and identify shorter-term enhancements within the corridor. A potential mechanism that could be employed to identify potential enhancements is the use of road safety audits or other field reviewed safety assessments.
- Continue coordination and discussion of opportunities to provide increased access across US 19 as FDOT designs the segments for reconstruction. The conversation on incorporating additional crossing opportunities into the ongoing design process for the northern portions of US 19 that began as a part of this study should continue and should be considered and coordinated into transit and land use planning efforts along the corridor.
- Coordinate further evaluation of the existing reconstructed segments of US 19 for opportunities to implement enhanced cross-corridor access. An example of this is the work that is being done to potentially provide a pedestrian overpass across US 19 near the intersection of Harn Boulevard.
- Continue exploring opportunities to improve pedestrian and bicycle connections to parallel facilities and trails.
- Coordinate with partner agencies to develop a transit vision for the corridor that includes a discussion on access to transit strategies specific to US 19. Depending on the established transit vision, details regarding stop/station locations, access to/from the stops and surrounding land uses, and access across the corridor should be established during the initial planning phases.
- Coordinate with partner agencies and jurisdictions to identify land use strategies that complement the planned roadway design and support the envisioned transit access goals for the corridor.