

# APPENDIX A PERFORMANCE REPORT



## PERFORMANCE MEASURES AND TARGETS

The Federal Highway Administration (FHWA) requires MPOs to adopt performance targets for defined measures, including for safety, transit asset management, system performance, bridge condition and pavement condition. Forward Pinellas must demonstrate progress towards meeting defined targets through the projects programed for funding in the LRTP, so each section contains representative examples of projects that will help make progress towards the established targets.

## SAFETY MEASURES

In 2017, FDOT set a statewide target of zero traffic deaths and injuries. While this is an aspirational goal that Forward Pinellas supports, the FHWA has encouraged the MPOs to set realistic, data-driven targets for all performance measures.

Safety performance targets are required to be adopted on an annual basis. FDOT, in August of each calendar year, will report the following year's targets in the Highway Safety Improvement Program (HSIP) Annual Report. After FDOT adopts the targets, Forward Pinellas is required to either adopt FDOT's targets or establish its own targets by the following February. Forward Pinellas has chosen to set slightly aspirational targets for safety performance measures, targeting the percent difference between a trendline projection to the lowest annual average from the previous five years.

On February 14, 2018, the Forward Pinellas Board adopted safety performance targets for the five categories of fatality and serious injury data. These categories and corresponding targets are listed below:

- Number of fatalities : 21.6% decrease
- Number of serious injuries: 8.6% decrease
- Rate of fatalities: 19.1% decrease
- Rate of serious injuries: 6% decrease
- Number of non-motorized fatalities and serious injuries: 9.995% decrease

On February 13, 2019, the Forward Pinellas Board reevaluated the performance targets and the progress being made towards those targets. Over the previous five years, Pinellas County has seen the following progress towards the safety performance measures:

- Average annual fatalities increase 3.6%
- Average annual serious injuries decreased 4.7%
- Average annual fatality rate has increased 1.7%
- Average annual serious injury rate has decreased 6.3%
- Average annual pedestrian and bicyclist fatalities and serious injuries have decreased 2.6%

The years 2014-2019 performance data show the following numbers for Pinellas County.

Performance Measures	Years 2014-2019	% Change	2 Year Target Set 2018	Recommended 2 Year Target for 2019
Average Annual Fatalities	111.0	1.46%	-21.60%	-10.80%
Average Annual Serious Injuries	1,045.1	-6.68%	-8.60%	-17.70%
Average Annual Fatality Rates	1.377	3.53%	-19.10%	-10.70%
Average Annual Serious Injury Rates	12.632	-7.57%	-6%	-19.80%
Average Annual Pedestrian and Bicyclist Fatalities and Serious Injuries	215.8	0.37%	-9.995%	-1.70%

All numbers are in 5 year rolling averages.

Given that there is still much progress to be made to improve the safety of the transportation network, the board took action to update the performance targets using the most recent data available. Taking a similar approach to the prior year, the board adopted the performance targets listed below, looking at the percent difference between the highest annual average and the lowest annual average from the most recent five years and the two year trendline.

- Number of fatalities : 10.8% decrease; 97.4
- Number of serious injuries: 17.7% decrease; 895.14
- Rate of fatalities: 10.7% decrease; 1.18
- Rate of serious injuries: 19.8% decrease; 10.55
- Number of non-motorized fatalities and serious injuries: 1.7% decrease; 206.6

## TRANSIT ASSET MANAGEMENT MEASURES

Forward Pinellas has coordinated with the Pinellas Suncoast Transit Authority to develop targets for transit asset management measures.

The targets for 2017 are as follows:

- Rolling Stock – Percent of revenue vehicles that have met or exceeded their useful life benchmark:
- Over the road bus: 100%
  - Bus: 7.8%
  - Cutaway: 0%
- Equipment – Percent of service vehicles that have met or exceeded their useful life benchmark:
  - Automobiles: 24%
  - Trucks and other Rubber Tire Vehicles: 29%
- Facility – Percent of facilities rated below 3 on the condition scale:
  - Passenger/Parking Facilities: 25%
  - Administrative/Maintenance Facilities: 0%

Forward Pinellas includes funding for a variety of transit projects in the LRTP including for the replacement of vehicles, facility repair and service development programs.

- Over the road bus: coach style bus used on express routes
- Cutaway: smaller bus used on connector, circulator, or other neighborhood oriented routes
- Passenger/parking facilities: transfer centers, park & ride lots

## PAVEMENT AND BRIDGE CONDITION PERFORMANCE MEASURES

In January 2017, USDOT published the Pavement and Bridge Condition Performance Measures Final Rule, which is also referred to as the PM2 rule.

This rule establishes the following six performance measures:

1. Percent of Interstate pavements in good condition;
2. Percent of Interstate pavements in poor condition;
3. Percent of non-Interstate National Highway System (NHS) pavements in good condition;
4. Percent of non-Interstate NHS pavements in poor condition;
5. Percent of NHS bridges (by deck area) classified as in good condition; and

6. Percent of NHS bridges (by deck area) classified as in poor condition.

For the pavement measures, five pavement metrics are used to assess condition:

- International Roughness Index (IRI) - an indicator of roughness; applicable to all asphalt and concrete pavements;
- Cracking percent - percentage of the pavement surface exhibiting cracking; applicable to all asphalt and concrete pavements;
- Rutting - extent of surface depressions; applicable to asphalt pavements;
- Faulting - vertical misalignment of pavement joints; applicable to certain types of concrete pavements; and
- Present Serviceability Rating (PSR) - a quality rating applicable only to certain lower speed roads.

For each pavement metric, a threshold is used to establish good, fair, or poor condition. Pavement condition is assessed for each 0.1 mile section of the through travel lanes of mainline highways on the Interstate or the non-Interstate NHS using these metrics and thresholds. A pavement section is rated as good if all three metric ratings are good, and poor if two or more metric ratings are poor. Sections that are not good or poor are considered fair.

The good/poor measures are expressed as a percentage and are determined by summing the total lane-miles of good or poor highway segments and dividing by the total lane-miles of all highway segments on the applicable system. Pavement in good condition suggests that no major investment is needed and should be considered for preservation treatment. Pavement in poor condition suggests major reconstruction investment is needed due to either ride quality or a structural deficiency.

The bridge condition measures refer to the percentage of bridges by deck area on the NHS that are in good condition or poor condition. The measures assess the condition of four bridge components: deck, superstructure, substructure, and culverts. Each component has a metric rating threshold to establish good, fair, or poor condition. Each bridge on the NHS is evaluated using these

ratings. If the lowest rating of the four metrics is greater than or equal to seven, the structure is classified as good. If the lowest rating is less than or equal to four, the structure is classified as poor. If the lowest rating is five or six, it is classified as fair.

The bridge measures are expressed as the percent of NHS bridges in good or poor condition. The percent is determined by summing the total deck area of good or poor NHS bridges and dividing by the total deck area of the bridges carrying the NHS. Deck area is computed using structure length and either deck width or approach roadway width.

A bridge in good condition suggests that no major investment is needed. A bridge in poor condition is safe to drive on; however, it are nearing a point where substantial reconstruction or replacement is needed.

Federal rules require state DOTs and MPOs to coordinate when setting pavement and bridge condition performance targets and monitor progress towards achieving the targets. States must establish:

- Four-year statewide targets for the percent of interstate pavements in good and poor condition;
- Two-year and four-year targets for the percent of non-Interstate NHS pavements in good and poor condition; and
- Two-year and four-year targets for the percent of NHS bridges (by deck area) in good and poor condition.

MPOs must set four-year targets for all six measures. MPOs can either agree to program projects that will support the statewide targets, or establish their own quantifiable targets for the MPO's planning area.

On May 20, 2018, FDOT set targets for the performance measures related to pavement and bridge condition. Forward Pinellas evaluated those targets against the role the agency plays as the MPO for Pinellas County and the fact that the condition of the National Highway System roadways in Pinellas County mostly fall within the statewide targets set by FDOT. At their meeting on November

14, 2018, the Forward Pinellas Board took action to support the statewide targets for pavement and bridge condition. Those measures and targets are as follows:

- % of Interstate pavements in Good condition
  - 2 year target: n/a
  - 4 year target: >60%
- % of Interstate pavements in Poor condition
  - 2 year target: n/a
  - 4 year target: <5%
- % of non-Interstate NHS in Good condition
  - 2 year target: >40%
  - 4 year target: >40%
- % of non-Interstate pavements in Poor condition
  - 2 year target: <5%
  - 4 year target: <5%
- 5 of NHS bridges classified as in Good condition by deck area
  - 2 year target: >50%
  - 4 year target: >50%
- % of NHS bridges classified as in Poor condition by deck area:
  - 2 year target: <10%
  - 4 year target: <10%

## SYSTEM PERFORMANCE AND FREIGHT MEASURES

In January 2017, USDOT published the System Performance/Freight/CMAQ Performance Measures Final Rule to establish measures to assess passenger and freight performance on the Interstate and non-Interstate National Highway System (NHS), and traffic congestion and on-road mobile source emissions in areas that do not meet federal National Ambient Air Quality Standards (NAAQS). The rule, which is referred to as the PM3 rule, requires state DOTs and MPOs to establish targets for the following six performance measures:

### National Highway Performance Program (NHPP)

1. Percent of person-miles on the Interstate system that are reliable, also referred to as Level of Travel Time Reliability (LOTTR);
2. Percent of person-miles on the non-Interstate NHS that are reliable (LOTTR); National Highway Freight Program (NHFP)

Performance Measure	2 Year Target	4 Year Target	Pinellas County 2017 Conditions
% of Interstate pavements in Good condition	n/a	> 60%	33.40% (Note*)
% of Interstate pavements in Poor condition	n/a	< 5%	0.70%
% of non-Interstate NHS in Good condition	> 40%	> 40%	43.10%
% of non-Interstate NHS in Poor condition	< 5%	< 5%	1.20%
% of NHS bridges classified as in Good condition by deck area	> 50%	> 50%	85%
% of NHS bridges classified as in Poor condition by deck area	< 10%	< 10%	0%
% of person-miles traveled on the Interstate that are reliable	75%	70%	85%
% of person-miles traveled on the non Interstate NHS that are reliable	n/a	50%	82%
Truck travel time reliability ratio (TTR) on the Interstate	1.75	2	1.4

Note\*: Pinellas County is below the statewide target.

3. Truck Travel Time Reliability index (TTTR); Congestion Mitigation and Air Quality Improvement Program (CMAQ)
4. Annual hours of peak hour excessive delay per capita (PHED);
5. Percent of non-single occupant vehicle travel (Non-SOV); and
6. Cumulative 2-year and 4-year reduction of on-road mobile source emissions (NOx, VOC, CO, PM10, and PM2.5) for CMAQ funded projects.

In Florida, only the two LOTTR performance measures and the TTTR performance measure apply. Because all areas in Florida meet current NAAQS, the last three listed measures above pertaining to the CMAQ Program do not currently apply in Florida. A description of the applicable measures follows.

#### LOTTR MEASURE

the LOTTR performance measures assesses the percent of person-miles traveled on the Interstate or the non-Interstate NHS that are reliable. LOTTR is defined as the ratio of longer travel times (80th percentile) to a normal travel time (50th percentile) over of all applicable roads, across four time periods between the hours of 6 a.m. and 8 p.m. each day. The measure is expressed as the percent of person-miles traveled on the Interstate or Non-Interstate NHS system that are reliable. Person-miles take into account the number of people traveling in buses, cars, and trucks over these roadway segments.

#### TTTR MEASURE

The TTTR performance measure assesses the reliability index for trucks traveling on the interstate. A TTTR ratio is generated by dividing the 95th percentile truck travel time by a normal travel time (50th percentile) for each segment of the Interstate system over specific time periods throughout weekdays and weekends. This is averaged across the length of all Interstate segments in the state or metropolitan planning organization (MPO) planning area to determine the TTTR index.

Federal rules require state DOTs and MPOs to coordinate when setting LOTTR and TTTR performance targets and monitor progress towards achieving the targets. States must establish:

- Two-year and four-year statewide targets for percent of person-miles on the Interstate system that are reliable;
- Four-year targets for the percent of person-miles on the non-Interstate NHS that are reliable; and
- Two-year and four-year targets for truck travel time reliability

MPOs must establish four-year targets for all three measures. MPOs can either agree to program projects that will support the statewide targets, or establish their own quantifiable targets for the MPO's planning area.

On May 20, 2018, FDOT set targets for the performance measures related to the performance of the transportation system. Forward Pinellas evaluated those targets against the role the agency plays as the MPO for Pinellas County and the fact that the performance of the National Highway System roadways in Pinellas County mostly fall within the statewide targets set by FDOT. At their meeting on November 14, 2018, the Forward Pinellas Board took action to support the statewide targets for system performance. Those measures and targets are as follows:

- % of person miles traveled on the Interstate that are reliable
  - 2 year target: 75%
  - 4 year target: 70%
- % of person miles traveled on the non-Interstate NHS that are reliable
  - 2 year target: n/a
  - 4 year target: 50%
- Truck travel time reliability ratio on the Interstate
  - 2 year target: 1.75
  - 4 year target: 2

# APPENDIX B FORWARD PINELLAS GOALS, OBJECTIVES AND POLICIES



Forward Pinellas utilizes these goals, objectives and policies as guidelines as we address transportation and land use policy decisions. These guidelines were developed with extensive input from citizens, technical staff and the Forward Pinellas Board.

## **GOAL 1 - CREATE AND SUSTAIN ATTRACTIVE AND UNIQUE DESTINATIONS**

**Objective 1.1 - Create 20-minute neighborhoods that support walking and bicycling as a realistic travel choice for daily activities.**

**Policy 1.1.1:** Forward Pinellas shall assist local governments in creating and sustaining mixed use, walkable neighborhoods, centers and districts that serve the surrounding population.

**Policy 1.1.2:** Forward Pinellas shall work with local agencies to identify and address gaps and barriers to safe walking and biking.

**Policy 1.1.3:** Forward Pinellas supports the installation of protected bicycle lanes as the preferred option for bicycle facilities on roads where posted vehicle speed limits exceed 35 mph.

**Policy 1.1.4:** Forward Pinellas shall prioritize implementation of a corridor-based, nonmotorized transportation strategy that achieves the goals of the Pinellas County Active Transportation Plan.

**Policy 1.1.5:** Forward Pinellas shall review roadway design plans for resurfacing and reconstruction projects to ensure the needs of all roadway users, including pedestrians and bicyclists, are sufficiently addressed.

**Policy 1.1.6:** The Active Transportation Plan shall be used as the resource to establish the vision and identify strategic priorities for shared use path facilities and connections throughout Pinellas County and to neighboring counties.

**Policy 1.1.7:** Forward Pinellas supports improved connectivity between neighborhoods and commercial destinations to improve safe accessibility for motorized and nonmotorized travel.

**Policy 1.1.8:** Forward Pinellas shall work with local governments to ensure that mobility, economic development and redevelopment strategies are compatible and mutually supportive.

**Policy 1.1.9:** Forward Pinellas shall seek balance between vehicle capacity and the need to provide safe access for all users of the transportation network while also protecting community interests in the development and implementation of the Transportation Improvement Program and the Long Range Transportation Plan, including techniques to manage vehicle speeds in appropriate locations.

**Objective 1.2 - Consider facilities for, and the connectivity between, all modes in the planning, design and construction of transportation projects.**

**Policy 1.2.1:** Forward Pinellas shall encourage local governments and the development community to include transit-friendly and supportive design standards in the land development process to create a more walkable environment for transit users between bus stops and proximate buildings.

**Policy 1.2.2:** Forward Pinellas shall facilitate and enable local efforts involving regulatory reform to encourage desired private sector development that meets affordable housing, mixed use redevelopment and complete streets goals within defined investment corridors.

**Policy 1.2.3:** Forward Pinellas shall encourage local regulations requiring sidewalk connections between bus stops, sidewalks and proximate buildings, including clearly delineated or buffered walkways traversing through parking areas.

**Policy 1.2.4:** Forward Pinellas shall promote the development of complete streets where public rights of way are planned, designed, constructed, operated and maintained for the safety and mobility of pedestrians, bicyclists, motorists, transit riders, freight carriers, emergency responders and adjacent land users, regardless of age or ability.

**Policy 1.2.5:** Forward Pinellas supports the Florida Department of Transportation's Complete Streets Policy and Context Classification System that correlates roadway design with the surrounding land use context essential to the accessibility and mobility needs of all users.

**Policy 1.2.6:** Forward Pinellas shall utilize its Complete Streets Program to fund complete streets projects that support transformative changes in land use, street design and economic development that benefits communities.

**Policy 1.2.7:** Forward Pinellas shall support local land development regulations that require joint access with neighboring properties and access to secondary streets and service roads, where feasible.

**Policy 1.2.8:** Forward Pinellas shall work with appropriate agencies through the use of software applications to develop and test scenarios addressing transportation and land development considerations.

**Policy 1.2.9:** Forward Pinellas shall support activities at the local, regional and state level to facilitate better integration of transportation and land use planning.



**Objective 1.3 - Align transportation investments with local community and cultural development initiatives, including public art installations and roadway treatments that improve visibility and destination accessibility.**

**Policy 1.3.1** Forward Pinellas shall support and encourage the efforts of state and local agencies to include landscaping, art work and other aesthetic features in transportation projects.

**Policy 1.3.2:** Forward Pinellas shall pursue and support development and promotion of the county's cultural assets and opportunities through its transportation and land use planning activities.

**Policy 1.3.3:** Forward Pinellas supports appropriate use of high visibility intersection and pavement markings at key locations to reduce traffic speeds and draw attention to neighborhood character and the presence of nonmotorized travel activity.

**Policy 1.3.4:** Forward Pinellas recognizes Alternate US 19 between Largo and Tarpon Springs as a Cultural Corridor and will work with local and state agencies, the arts community and non-profit organizations to develop specific plans, programs and projects to activate and sustain the cultural arts in the corridor as a key part of achieving economic development and improved quality of life.

**GOAL 2 - DEVELOP AND SUSTAIN A RESILIENT COMMUNITY**

**Objective 2.1 - Improve the performance of the transportation system through more efficient use of existing facilities and investments in technology.**

**Policy 2.1.1:** Forward Pinellas shall identify and prioritize lower cost operational and small-scale physical improvements and transit and transportation demand management strategies, through the Congestion Management Process (CMP) to mitigate traffic congestion on the major road network.

**Policy 2.1.2:** Forward Pinellas shall monitor transportation system performance and identify improvement needs using the most appropriate measures for a redeveloping community.

**Policy 2.1.3:** Forward Pinellas shall produce transportation performance data that tracks progress towards achieving defined targets for established measures through the TIP.

**Policy 2.1.4:** Forward Pinellas shall work with FDOT and other partners to develop and track one or more performance measures and targets related to greenhouse gas emissions and impact on climate/ sea level rise.

**Policy 2.1.5:** Forward Pinellas shall provide a dedicated

source of funding for the implementation of CMP strategies through the TIP development process. Between \$1-5 million annually shall be dedicated for such projects.

**Policy 2.1.6:** Forward Pinellas shall support efforts by local and regional transit providers to improve operations and attract new riders by using transit signal priority and other technological investments to enhance travel time savings.

**Policy 2.1.7:** Forward Pinellas shall support the use of smart technology to reduce crashes and improve transportation system performance.

**Policy 2.1.8:** Forward Pinellas shall provide assistance to local and regional partners in the deployment of real time information related to traffic incident management and special events.

**Objective 2.2 - Maintain transportation infrastructure in a state of good repair.**

**Policy 2.2.1:** Forward Pinellas shall support and assist local and state agencies in maintaining adequate funding programs for the operation and maintenance of the transportation system, including roads, bridges, transit and bicycle and pedestrian facilities to ensure a state of good repair.

**Policy 2.2.2:** Forward Pinellas shall ensure that adequate operations and maintenance funds are identified when determining the cost feasibility of projects included in the LRTP and TIP.

**Policy 2.2.3:** Forward Pinellas supports a "fix it first" approach to investment in roadway infrastructure by placing priority on adequately maintaining and reinforcing existing assets before considering additional or expanded facilities.

**Objective 2.3 - Facilitate the timely implementation of projects.**

**Policy 2.3.1:** Forward Pinellas shall coordinate with agency partners to ensure that all regionally significant transportation projects are included in the LRTP, as defined by 23 CFR 450.104, so as not to delay the funding and implementation of a project.

**Policy 2.3.2:** Forward Pinellas shall ensure that the LRTP includes clear project descriptions.

**Policy 2.3.3:** Forward Pinellas shall ensure timely review and consideration of redevelopment implications of TIP and LRTP amendments.

**Policy 2.3.4:** Forward Pinellas supports inter-agency partnerships and flexible funding strategies to leverage local, state and federal revenue sources necessary for expediting needed transportation improvements.

**Objective 2.4 - Assess the environmental impacts of every project in the LRTP and mitigate as appropriate.**

**Policy 2.4.1:** Forward Pinellas shall encourage and support state and local efforts to reduce the adverse impacts of vehicle emissions on the environment and to conserve energy.

**Policy 2.4.2:** Forward Pinellas shall ensure consistency of the LRTP and TIP with the Clean Air Act Amendments.

**Policy 2.4.3:** Forward Pinellas shall coordinate air quality planning efforts with public and private agencies (e.g. private utilities) in the region, as appropriate.

**Policy 2.4.4:** Forward Pinellas shall evaluate the effects of projects considered for the LRTP relative to historic, natural, cultural and community resources in coordination with federal, state and local agencies and the public, and through participation in the Florida Efficient Transportation Decision Making (ETDM) Process.

**Policy 2.4.5:** Forward Pinellas shall prioritize funding to improve the resiliency and reliability of the transportation network through measures that harden existing assets and mitigate stormwater impacts on the transportation network.

**Objective 2.5 - Plan for, and adapt to, the potential impacts of climate change, including rising sea levels, on the transportation system.**

**Policy 2.5.1:** Forward Pinellas shall coordinate with Pinellas County, the State of Florida, municipalities and other local and regional agencies to assess and evaluate the impacts of climate change, including sea level rise, and to identify strategies to help mitigate these impacts.

**Policy 2.5.2:** Forward Pinellas shall prioritize and help to secure funding for adaptation and mitigation measures for critical infrastructure projects needed to protect the transportation system from the impacts of climate change.

**Policy 2.5.3:** Forward Pinellas shall work with local government and agency partners at all levels to pursue additional funding sources to conduct robust vulnerability assessments and develop effective adaptation plans.

**GOAL 3 - INVEST IN TRANSPORTATION PROJECTS THAT PROMOTE SAFE AND HEALTHY COMMUNITIES**

**Objective 3.1 - Incorporate a Health in All Policies framework in the evaluation of planned transportation projects.**

**Policy 3.1.1:** Forward Pinellas shall participate on behalf of local governments and other appropriate

partners to develop criteria and facilitate the implementation of Health in all Policies on selected transportation projects.

**Objective 3.2 - Equity will be recognized as a primary consideration in all plans and programs of Forward Pinellas.**

**Policy 3.2.1:** Forward Pinellas recognizes the role of transportation access and housing choice in fostering an equitable and inclusive society that enables economic stability and opportunity for everyone. Forward Pinellas will work with its partners and community stakeholders to ensure countywide transportation investments and land use decisions enable people of different racial, ethnic and economic conditions to participate, prosper, and reach their full potential.

**Policy 3.2.2:** Forward Pinellas will prioritize equity in the development and implementation of its plans and programs and in the allocation of resources.

**Policy 3.2.3:** Ensure that benefits and impacts of transportation investments are equitably distributed.

**Policy 3.2.4:** With the development of the LRTP, Forward Pinellas shall use the best available data to identify areas with high concentrations of traditionally underserved populations. This data will be used to analyze the projects included in the LRTP and placed on the multimodal priority list to ensure the benefits and impacts of these projects are equitably distributed.

**Policy 3.2.5:** Forward Pinellas shall target outreach to traditionally underserved populations to engage them in the transportation planning process and ensure the agency's plans and programs reflect their input.

**Policy 3.2.6:** Forward Pinellas will undertake actions to address the inequities of safety and mobility needs of environmental justice communities.

**Objective 3.3 - Provide better transit access for those who are transit dependent, including low income elderly, and/or disabled people who do not have access to a vehicle.**

**Policy 3.3.1:** Forward Pinellas shall continue to ensure that economically disadvantaged and physically impaired citizens of Pinellas County have access to cost-effective and efficient transportation services.

**Policy 3.3.2:** Forward Pinellas supports the expansion of regional transportation options that address the intercounty transportation needs of disadvantaged citizens.

**Objective 3.4 - Make the transportation network safer for all users through community and engineering design, public policy, law enforcement, education and funding.**

**Policy 3.4.1:** Forward Pinellas shall adopt targets for the reduction of fatal and serious injury crashes for all modes of travel.

**Policy 3.4.2:** Forward Pinellas shall engage a broad coalition of partners to enhance safety for vulnerable communities and users of the transportation system.

**Policy 3.4.3:** Forward Pinellas shall support and participate in the activities of the Community Traffic Safety Team.

**Policy 3.4.4:** Forward Pinellas shall support the installation of street lighting on the arterial and collector road network where needed based on safety assessments and considering the lighting needs for users of the transportation network.

**Policy 3.4.5:** Forward Pinellas shall continue to advocate for pedestrian safety through public awareness, education and outreach.

**Policy 3.4.6:** Forward Pinellas shall identify high crash locations and prioritize improvements by working with relevant agency partners.

**Policy 3.4.7:** Forward Pinellas shall maintain a countywide crash database to monitor, analyze and report on crash occurrences and trends, and to assist in the identification of effective countermeasures.

**Policy 3.4.8:** Forward Pinellas shall develop and adopt a Vision Zero Action Plan and initiate the necessary mechanisms to carry out its recommendations in partnership with countywide stakeholders.

**Policy 3.4.9:** Forward Pinellas shall support the maintenance of safe access for all transportation users affected by transportation construction and maintenance projects.

**Policy 3.4.10:** Forward Pinellas shall participate in the development of the Florida Transportation Plan and the Florida Strategic Highway Safety Plan, and support policies and strategies to improve the safety of Florida's surface transportation system.

**Objective 3.5 - Provide for efficient emergency evacuation that responds to threats to Pinellas County and the Tampa Bay area.**

**Policy 3.5.1:** Forward Pinellas shall consider emergency evacuation in the project prioritization process.

**Policy 3.5.2:** Forward Pinellas will work with local government partners to ensure adequate provision of shelters, or other appropriate hazard mitigation strategies in response to development and redevelopment in Pinellas County, particularly as

applied to development projects in the coastal high hazard area (CHHA).

**Policy 3.5.3:** Forward Pinellas shall discourage transportation investments and increases in residential density, without appropriate mitigation, in the coastal high hazard area.

**Policy 3.5.4:** Forward Pinellas shall provide data to local, regional and state transportation and emergency management partners that identifies vulnerable assets, adaptation or mitigation strategies, and effective planning strategies in order to plan for an appropriate and coordinated response to emergencies.

**Policy 3.5.5:** Forward Pinellas shall encourage committed and sustained efforts to achieve federal, state and local security objectives through engineering, enforcement, education and emergency response.

**Policy 3.5.6:** Forward Pinellas shall maintain and annually update its Continuity of Operations Plan (COOP).

**Policy 3.5.7:** Forward Pinellas shall support active coordination and effective working relationships for safety, security improvements and solutions among agency partners at the federal, state and local levels, private sector and the general public.

**Objective 3.6 - Facilitate safe travel to and from school.**

**Policy 3.6.1:** Forward Pinellas shall work with the Pinellas County School District, Pinellas County, FDOT and local municipalities to ensure safe access to and around schools.

**Policy 3.6.2:** Forward Pinellas shall support school safety programs such as walking school buses, bike rodeos, school pools, and others sponsored by the Pinellas School District and other partner agencies.

**Policy 3.6.3:** Forward Pinellas shall promote safe walking and bicycling access to schools to facilitate better health outcomes.

**GOAL 4 - SUPPORT PROJECTS THAT PROVIDE FOR STRONG ECONOMIC OPPORTUNITY**

**Objective 4.1 - Identify the impacts of tourism on Pinellas County's transportation needs and work with partners to develop and fund specific plans, programs and projects to address those needs.**

**Policy 4.1.1:** Forward Pinellas will work with its state and local government partners, chambers of commerce and economic development organizations to enhance access to beach communities and regional tourist destinations for workers, visitors and residents.

**Objective 4.2 - Ensure Activity Centers and Multimodal Corridors provide a diversity of jobs, transportation and housing options.**

**Policy 4.2.1:** Forward Pinellas will work with its partners to identify and implement transportation and land use strategies within 'investment corridors' to link housing, jobs and workforce development.

**Policy 4.2.2:** Forward Pinellas will prioritize investments in corridors where there is a demonstrated local government commitment to housing that is affordable, provides a mix of complimentary uses and enhances multimodal connectivity.

**Policy 4.2.3:** Forward Pinellas will work with its partners at the state, local and regional level to establish roles and responsibilities and measures of effectiveness to achieve desired outcomes for investment corridors.

**Policy 4.2.4:** Forward Pinellas will work in partnership with local governments to establish a value capture strategy to enable sustained private sector investment within areas designated in the Countywide Plan as activity centers and multimodal corridors.

**Objective 4.3 - Develop and sustain Activity Centers and Multimodal Corridors as the primary focus of redevelopment efforts in Pinellas County.**

**Policy 4.3.1:** Forward Pinellas shall work with local and regional partners to advance transportation projects, programs and strategies that strengthen and sustain employment centers in the Tampa Bay region.

**Policy 4.3.2:** Forward Pinellas will prioritize funding for intermodal center development and support land use and redevelopment activities in activity centers and multimodal corridors that reinforce the functionality of these uses.

**Policy 4.3.3:** Forward Pinellas shall consider Florida's Strategic Intermodal System Plan, as necessary, in establishing planning and funding priorities.

**Policy 4.3.4:** Forward Pinellas shall work with airport and seaport authorities in the region to ensure coordinated planning, including the improvement of and access to such facilities.

**Objective 4.4 - Leverage private sector investment in the development and operation of transportation services.**

**Policy 4.4.1:** Forward Pinellas shall encourage employer, developer and business participation in meeting the mobility needs of county residents, visitors and employees.

**Policy 4.4.2:** Forward Pinellas will work with the business community to determine transportation

project needs that support expansion of manufacturing and other targeted industries for economic growth in Pinellas County and enhanced global competitiveness.

**Policy 4.4.3:** Forward Pinellas will support the establishment and sustained commitment of Transportation Management Organizations (TMOs), as appropriate, to provide an employer-based solution to improved mobility and accessibility.

**Policy 4.4.4:** Forward Pinellas shall encourage the development of telecommunication infrastructure and business-led telecommunication strategies to reduce travel demand and improve the efficiency of the transportation system.

**Policy 4.4.5:** Forward Pinellas will work with stakeholders and private entities, as appropriate, on connected and autonomous vehicle deployments that show promise of improving safety, decreasing per capita transportation costs, reducing traffic congestion and increasing economic opportunity.

**Policy 4.4.6:** Forward Pinellas shall work with transportation related agencies and local governments to help employers take advantage of Internal Revenue Code deductions allowed under Section 132(f) for providing transportation benefits to their employees.

**Policy 4.4.7:** Forward Pinellas will work with its partners to identify and facilitate public-private partnerships (P3s) to link transportation and infrastructure investment, workforce development, employment land uses, and target employment industries to strengthen the Pinellas County and Tampa Bay economy.

**Objective 4.5 - Improve roadway and intermodal operations for the efficient movement of goods.**

**Policy 4.5.1:** Forward Pinellas shall assist the state and local governments in the prioritization of projects to address needs for freight movement and to enhance the global competitiveness of the local economy.

**Policy 4.5.2:** Forward Pinellas shall maintain a current map of designated truck routes while ensuring that it continues to balance the delivery needs of local businesses with the interests of residential communities.

**Policy 4.5.3:** Forward Pinellas shall support the implementation of the Tampa Bay Strategic Freight Plan.

**Policy 4.5.4:** Forward Pinellas shall consider the movement of freight in the review of roadway design plans.

**Policy 4.5.5:** Forward Pinellas shall support the goals of the Florida Freight Mobility and Trade Plan.

**Policy 4.5.6:** Forward Pinellas will work with state, local and private sector partners to advance technologies for efficient regional freight mobility and local delivery.

**GOAL 5 - ACHIEVE THE LAND USE AND ECONOMIC DEVELOPMENT VISION OF THE PINELLAS COUNTYWIDE PLAN AND THE VISION OF OTHER REGIONAL PLANS RELATED TO ECONOMIC DEVELOPMENT, CLIMATE/ENVIRONMENT AND LAND USE THROUGH STRATEGIC, COLLABORATIVE, AND SUSTAINABLE INVESTMENTS IN THE TRANSPORTATION NETWORK.**

**Objective 5.1 - Coordinate and collaborate with transportation partners to provide for multimodal options for local and regional travel.**

**Policy 5.1.1:** Forward Pinellas shall regularly engage local governments, other agency partners and the public in the development, implementation, evaluation and modification, as necessary, of the Countywide Plan as a guide for transportation projects and priorities.

**Policy 5.1.2:** Forward Pinellas shall support the Chairs Coordinating Committee (CCC), the Transportation Management Area (TMA) Leadership Group and other formal and informal efforts to achieve regional consensus on transportation priorities that support regional or countywide goals throughout the Tampa Bay region.

**Policy 5.1.3:** Forward Pinellas shall participate in the Tampa Bay Regional Transportation Analysis as a regional forum for collecting and analyzing data and collaborating on regionally significant studies and projects through the Technical Review Team.

**Policy 5.1.4:** Forward Pinellas supports the development and implementation of regional transit projects that offer competitive travel times to connect the counties within the Tampa Bay region and beyond.

**Policy 5.1.5:** Forward Pinellas will advocate for the inclusion of transit as an integral part of the Strategic Intermodal System (SIS) and eligibility for SIS funding.

**Policy 5.1.6:** Forward Pinellas shall work in partnership with and provide support to the Tampa Bay Area Regional Transit Authority to plan, design and implement regional transit solutions, appropriate for surface, water or aerial travel.

**Policy 5.1.7:** Forward Pinellas shall work with airport and seaport authorities in the region, including Port Tampa Bay and the Tampa International Airport, to ensure coordinated planning and improvement of regional intermodal facilities.

**Policy 5.1.8:** Forward Pinellas shall coordinate its long range planning activities with federal, state tribal and local land use, land management, economic development, growth management and

regulatory agencies.

**Objective 5.2 - Provide opportunities to engage citizens, particularly the traditionally underserved populations, in the development of Forward Pinellas plans and programs.**

**Policy 5.2.1:** Forward Pinellas shall maintain, implement and evaluate its Public Participation Plan, in accordance with Section 450.316, U.S. Code.

**Policy 5.2.2:** Forward Pinellas shall provide public forums for cooperative decision making by local government officials and other agencies with regard to countywide transportation and land use plans, policies and programs.

**Policy 5.2.3:** Forward Pinellas shall create opportunities to expand the participation of the private sector in the planning, design and implementation of transportation projects and programs.

**Policy 5.2.4:** Forward Pinellas shall include the public, local governments, the private sector, nonprofit agencies and PSTA in the development of plans addressing the needs of transportation disadvantaged populations.

**Policy 5.2.5:** Forward Pinellas shall target traditionally underserved communities to engage them in the transportation planning process and meet the requirements of its Title VI Plan, which ensures the MPO's compliance with nondiscrimination laws and environmental justice in minority and low income populations.

**Objective 5.3 - Consider and respond, as appropriate, to all comments received.**

**Policy 5.3.1:** Forward Pinellas shall develop a network of public, private and business contacts, including representatives of traditionally under-served population groups, for periodic communication, coordination and involvement in transportation-related discussions, activities and decisions.

**Policy 5.3.2:** Forward Pinellas shall use an assortment of public involvement tools, tailored to the different needs of various audiences, to provide opportunities for public input and feedback on countywide and regional transportation plans, programs and issues.

**Policy 5.3.3:** Forward Pinellas shall provide opportunities for public input during the development of the LRTP, TIP, PPP and Unified Planning Work Program, in accordance with the procedures outlined in the PPP.

**GOAL 6 - ACHIEVE AN EFFICIENT, EFFECTIVE, EQUITABLE, SAFE AND COMPLEMENTARY MULTIMODAL TRANSPORTATION NETWORK IN PINELLAS COUNTY AND THROUGHOUT THE TAMPA BAY REGION THAT PROVIDES VIABLE TRAVEL OPTIONS FOR ALL TRANSPORTATION USERS.**

**Objective 6.1 - Provide improved mobility and accessibility for everyone by better connecting people to places, eliminating transportation barriers to expanded economic opportunity and enhancing community quality of life.**

**Policy 6.1.1:** Forward Pinellas shall prioritize transportation projects that reduce single-occupant vehicle trips.

**Policy 6.1.2:** Forward Pinellas will work in partnership with state, regional and local agencies to implement improved transit services that meet the strategic goals of the LRTP.

**Policy 6.1.3:** Forward Pinellas shall support context-sensitive bicycle and pedestrian facilities that are designed respective to the characteristics of the roadway or corridor and its adjacent land use activity.

**Policy 6.1.4:** Forward Pinellas supports the implementation of access management strategies through local site plan review processes.

**Policy 6.1.5:** Forward Pinellas shall assist and encourage the implementation of transportation demand management (TDM) strategies that promote alternatives to SOV travel, such as carpooling, vanpooling, transit use, walking, bicycling, telecommuting and variable work schedules.

**Policy 6.1.6:** Forward Pinellas shall work with transportation agencies and local governments to encourage members of the public to use public transportation and ridesharing whenever possible.

**Policy 6.1.7:** Forward Pinellas will work with local governments to reform parking regulations to eliminate minimum parking standards when transit and other travel alternatives are available and to include pricing, adaptive reuse, shared parking standards, and other management strategies that support walkable communities.

**Policy 6.1.8:** Forward Pinellas shall provide policy guidance, coordination assistance, and funding, as available, to state, regional and local partners to improve the reliability of regional travel in regionally significant corridors.

**Policy 6.1.9:** Forward Pinellas supports technology innovations and micro-mobility strategies to strengthen first-mile/ last-mile connections between transit stops or station areas and travelers' origins and destinations

**Policy 6.1.10:** Forward Pinellas recognizes the importance of meeting the travel needs of tourists and tourism in a safe, efficient and reliable manner, and will work with public and private sector partners to define, advance and implement effective mobility solutions that enhance the tourist experience and reinforce tourism's

long-term economic benefits to Pinellas County and the region.

**Policy 6.1.11:** Forward Pinellas shall identify transportation projects and programs that enhance the user experience of tourists seeking access to and from major destinations in the county.

**Objective 6.2 - Increase transit mode share and overall ridership by providing frequent, fast and reliable service.**

**Policy 6.2.1:** Forward Pinellas shall continue to work with local governments, communities and PSTA to identify and assess transit needs in the county.

**Policy 6.2.2:** Forward Pinellas will integrate the metropolitan planning process and the Transit Development Plan (TDP) to achieve long term shared goals and measurable objectives through defined short term actions and strategies that meet the needs of Pinellas County.

**Policy 6.2.3:** Forward Pinellas shall continue to work with PSTA, the Board of County Commissioners and the business community to implement a long term sustainable funding strategy for transit.

**Policy 6.2.4:** Forward Pinellas, in partnership with PSTA and TBARTA, shall seek opportunities to expand premium transit and bus rapid transit services and shall evaluate design elements within investment corridors. These elements could include, but are not limited to, transit signal priority, queue jump lanes, shoulder running buses and bus bypass lanes. Forward Pinellas will seek opportunities to advance such efforts through road construction and resurfacing projects.

**Policy 6.2.5:** Recognizing that traditional roadway level of service standards perpetuates automobile-oriented solutions to traffic congestion, Forward Pinellas shall work with local government partners to define appropriate transportation performance measures that also consider other travel modes and safety and that support the transportation and land use needs of a redeveloping county.

**Policy 6.2.6:** Forward Pinellas recognizes the opportunity for waterborne transportation to facilitate connectivity and access to destinations that reduces demand on the roadway network, particularly during peak tourist season. Forward Pinellas supports the continued development and expansion of waterborne transportation options throughout coastal Pinellas County and the Tampa Bay region.

# APPENDIX C

## COST FEASIBLE BALANCE SHEET



**Advantage Pinellas Cost Feasible Balancing Table**

<b>Project Name and Limits</b>	<b>Project Sponsor</b>	<b>2019 Cost Estimate</b>	<b>Potential Funding Source</b>	<b>Timing</b>	<b>YOES</b>
Starkey Rd from Flamevine Ave to Bryan Dairy Rd	County	\$16,560,000	Penny for Pinellas	2026-2030	\$21,929,326
East Lake Rd from Tampa Rd to Pasco (50% in 2026-2030)	County	\$16,000,000	OA	2026-2030	\$21,187,755
East Lake Rd from Tampa Rd to Pasco (50% in 2031-2035)	County	\$16,000,000	OA	2031-2035	\$24,903,970
Starkey Rd from Ulmerton Rd to Bryan Dairy Rd	County	\$10,380,000	OA	2026-2030	\$13,745,556
62nd Ave N from US 19 to 49th St	County	\$16,764,000	OA	2026-2030	\$22,199,470
Starkey Rd from East Bay Dr to Ulmerton Rd	County	\$13,350,000	Penny for Pinellas	2031-2035	\$20,779,250
Starkey Rd from 54th Ave N to 84th Ave N	County	\$8,939,560	Penny for Pinellas	2031-2035	\$13,914,408
Belcher Rd from 38th Ave N to 54th Ave N	County	\$10,105,904	Penny for Pinellas	2036-2045	\$20,132,849
Belcher Rd from NE Coachman to Druid Rd	County	\$13,050,000	Penny for Pinellas	2026-2030	\$17,281,262
Forest Lakes Blvd from SR 580 to SR 584	County	\$6,900,000	OA	2026-2030	\$9,137,219
22nd Ave S from 58th St to 34th St	County	\$22,615,728	Penny for Pinellas	2026-2030	\$29,948,531
Highland Ave from East Bay Dr to Belleair Rd	County	\$11,285,456	OA	2031-2035	\$17,565,792
Belleair Rd from US 19 to Keene Rd	County	\$5,379,076	Penny for Pinellas	2026-2030	\$7,123,159
28th St from 38th Ave N to 54th Ave N	County	\$8,735,728	OA	2031-2035	\$13,597,145
126th Ave N 34th ST to US 19	County	\$3,588,468	OA	2026-2030	\$4,751,974
		\$32,296,213	OA	2031-2035	\$50,268,996
16th Ave SE from Lake Ave to Starkey Rd	County	\$1,688,617	Penny for Pinellas	2031-2035	\$2,628,329
102nd Ave from 113th St to Seminole Blvd	County	\$4,600,000	Penny for Pinellas	2036-2045	\$9,164,059
142nd Ave N from Belcher Rd to Starkey Rd	County	\$16,099,467	Penny for Pinellas	2036-2045	\$32,073,145
62nd Ave N from 49th St to 66th St	County	\$9,300,000	Penny for Pinellas	2036-2045	\$18,527,338
16th Ave SE from Seminole Blvd to Donegan Rd	County	\$2,085,983	Penny for Pinellas	2031-2035	\$3,246,829
28th St from 58th Ave N to 62nd Ave N	County	\$2,899,292	Penny for Pinellas	2036-2045	\$5,775,931
142nd Ave N from 66th St N to Belcher Rd	County	\$4,254,685	Penny for Pinellas	2031-2035	\$6,622,409
Nursery Rd from Highland Ave to Belcher Rd	County	\$9,932,936	Penny for Pinellas	2036-2045	\$19,788,264
16th Ave SE from Donegan Rd to Lake Ave	County	\$1,351,680	Penny for Pinellas	2031-2035	\$2,103,887
Nursery Rd from Belcher Rd to US 19	County	\$4,556,821	Penny for Pinellas	2036-2045	\$9,078,040
102nd Ave N from 18th St N to Hallkey Roberts Pl N	County	\$60,000,000	OA	2036-2045	\$119,531,210
US 19 (SR 55) from S of Timberlane Rd to S of Lake St (new interchange/frontage road)	SIS	\$145,601,179	SIS	2031-2035	\$145,601,179
US 19 (SR 55) from N of Nebraska Ave to S of Timberlane Rd (new interchange/frontage road)	SIS	\$157,003,697	SIS	2026-2030	\$157,003,697
SR 686 / Roosevelt Blvd from I-275/ SR 93 to W of 9th St N/MLK St N	State	\$199,497,000	OA	2036-2045	\$199,497,000
Gandy Blvd (4th St to W of Gandy Bridge)	State	\$131,214,743	OA	2026-2030	\$173,759,111



**Advantage Pinellas Cost Feasible Balancing Table**

<b>Project Name and Limits</b>	<b>Project Sponsor</b>	<b>2019 Cost Estimate</b>	<b>Potential Funding Source</b>	<b>Timing</b>	<b>YOES</b>
Tyrone Blvd Overpass Removal/ Trail Overpass Construction	State	\$18,934,080	OA	2036-2045	\$37,720,225
SR 590/NE Coachman Rd Drew St to McMullen-Booth Rd	State	\$9,298,234	OA	2036-2045	\$18,523,819
SR 694 (Gandy Blvd) US 19 (SR 55) to W of I-275	State	\$25,740,000	OA	2025	\$31,047,187
I-275 S of Roosevelt to N of 4th Street N - Add 1 additional toll express lane in each direction	SIS	\$141,779,260	SIS	2025	\$141,779,260
US 19 (SR 55) N of CR 95 to S of Pine Ridge Way S (new interchange/frontage road)	SIS	\$111,936,674	SIS	2025	\$111,936,674
US 19 from 66th Ave N to 118th Ave N	State	\$26,636,296	OA	2031-2035	\$41,459,345
Park St - Tyrone Blvd to 54th Ave	County	\$2,475,000	Penny for Pinellas	2031-2035	\$3,852,333
Sunset Pt Rd from Kings Hwy to Keene Rd Roadway Improvements	County	\$8,625,000	Penny for Pinellas	2036-2045	\$17,182,612
Indian Rocks Rd. from Walsingham Rd to West Bay Dr	County	\$26,992,404	Penny for Pinellas	2036-2045	\$53,773,913
102nd Ave from 137th St to 113th St Roadway Improvements	County	\$4,625,000	Penny for Pinellas	2031-2035	\$7,198,804
46th Ave N from 49th St N (CR 611) to 38th St N Roadway Improvements	County	\$2,525,000	Penny for Pinellas	2025	\$3,045,616
54th Ave N Roadway Improvements from 49th St N to 34th St N	County	\$5,450,000	Penny for Pinellas	2025	\$6,573,705
Fisher Rd from Curlew Rd to CR 39	County	\$2,525,000	Penny for Pinellas	2025	\$3,045,616
Future Technology Needs		\$1,000,000	TMA	All - Annual	
Complete Streets		\$1,000,000	TMA	All - Annual	
Transit Capital		\$1,500,000	TMA	All - Annual	
Regional Transit Investments		\$500,000	TMA	All - Annual	
Bike & Ped		\$61,259,000	TMA		
Overpasses (ea)		\$6,000,000	TMA		

**Advantage Pinellas Cost Feasible Balancing Table**

Tier	Approximate Cost by Priority (YOE\$)		Timing	Inflation Factor	
1	\$297,428,058		2025	1.21	
2	\$478,067,060		2026-2030	1.32	
3	\$353,742,675		2031-2035	1.56	
4	\$560,768,405		2036-2045	1.99	
<b>Total</b>	<b>\$1,690,006,198</b>				

Available funding by bucket (excludes transit)	1 2025	2 2026-2030	3 2031-2035	4 2036-2045	Total 2025-2045
Strategic Intermodal System	\$253,715,934	\$157,003,697	\$145,601,179	\$0	\$556,320,810
Other Arterial & Construction	\$37,748,000	\$247,280,000	\$273,430,000	\$575,730,000	\$1,134,188,000
Transportation Management Area	\$13,462,000	\$67,310,000	\$67,310,000	\$134,620,000	\$282,702,000
Penny for Pinellas	\$13,826,238	\$76,395,479	\$90,765,081	\$225,638,921	\$406,625,718
<b>Total</b>	<b>\$318,752,172</b>	<b>\$547,989,176</b>	<b>\$577,106,260</b>	<b>\$935,988,921</b>	<b>\$2,379,836,528</b>

Funds Expended					
SIS	\$253,715,934	\$157,003,697	\$145,601,179	\$0	\$556,320,810
OA	\$31,047,187	\$244,781,084	\$147,795,247	\$375,272,255	\$798,895,773
TMA	\$0	\$0	\$0	\$0	\$0
TMA Other:					
“Off the top”	\$4,824,738	\$26,484,693	\$31,129,963	\$79,687,474	\$142,126,867
Future technology needs	\$1,206,184	\$6,621,173	\$7,782,491	\$19,921,868	\$35,531,717
Complete Streets	\$1,206,184	\$6,621,173	\$7,782,491	\$19,921,868	\$35,531,717
Transit Capital	\$1,809,277	\$9,931,760	\$11,673,736	\$29,882,803	\$53,297,575
Regional Transit Investments	\$603,092	\$3,310,587	\$3,891,245	\$9,960,934	\$17,765,858
Overpasses	\$7,237,107	\$7,945,408	\$9,338,989	\$11,953,121	\$36,474,624
Bike/Ped	\$738,897	\$32,448,516	\$25,744,370	\$39,052,600	\$97,984,383
Penny for Pinellas	\$12,664,936	\$76,282,279	\$60,346,249	\$185,496,151	\$334,789,615
<b>Total</b>	<b>\$310,228,798</b>	<b>\$544,945,678</b>	<b>\$419,955,997</b>	<b>\$691,461,599</b>	<b>\$1,966,592,073</b>

Remaining Funding					
SIS	\$0	\$0	\$0	\$0	\$0
OA	\$6,700,813	\$2,498,916	\$125,634,753	\$200,457,745	\$335,292,227
TMA	\$661,259	\$431,382	\$1,096,678	\$3,926,806	\$6,116,125
Penny for Pinellas	\$1,161,301	\$113,200	\$30,418,832	\$40,142,770	\$71,836,103
<b>Total</b>	<b>\$8,523,373</b>	<b>\$3,043,498</b>	<b>\$157,150,263</b>	<b>\$244,527,321</b>	<b>\$413,244,455</b>

Bike/Ped	1%	40%	27%	32%	100%
Overpasses	1	1	1	1	

**District 7 SIS Projects - 2045 Cost Feasible Plan**

FPN	FACILITY	FROM	TO	Improvement TYPE	PE			ROW			CST			
					PE YR	PDC	PE YOY	ROW YR	PDC	ROW YOY	CST YR	PDC	INF	CST YOY
424501-4	I-275	S of Roosevelt	N of 4th St N	Add 1 additional toll express lane in each direction	2021-2025	\$ 1,381,070	\$ 1,381,070	--	--	--	2021-2025	\$ 123,932,920	1.144	\$ 141,779,260
424501-5	I-275	S of 54th Ave S	S of Roosevelt	Lane continuity and 2 express toll lanes in each direction (from I-375)	TIP	\$ 5,506,521	\$ 5,506,521	TIP	\$ 27,544,900	\$ 27,544,900	TIP	\$ 275,735,843	1.000	\$ 275,735,843
256998-1	SR 686/ Roosevelt	W of I-275	W of 9th St N/ MLK N	New access ramps	TIP	\$ 8,401,547	\$ 8,401,547	TIP	\$ 897,590	\$ 897,590	unfunded	\$ 100,395,929		
435914-2	US 19 (SR 55)	66th Ave N	118th Ave N/ SR690	Corridor operational improvements	TIP	\$ 5,943,110	\$ 5,943,110	TIP	\$ 12,292,233	\$ 12,292,233	--	--	--	--
256774-2	US 19 (SR 55)	N of SR 580 (Main St)	Northside Dr	Add lanes & Reconstruct	TIP	\$ 8,367,813	\$ 8,367,813	TIP	\$ 10,760,329	\$ 10,760,329	TIP	\$ 84,968,158	1.000	\$ 84,968,158
256774-3	US 19 (SR 55)	Northside Dr	N of CR 95	New interchange/ frontage Rd	TIP	\$ 9,808,719	\$ 9,808,719	--	--	--	TIP	\$ 92,372,162	1.000	\$ 92,372,162
433799-1	US 19 (SR 55)	N of CR 95	S of Pine Ridge Way S	New interchange/ frontage Rd	TIP	\$ 10,301,270	\$ 10,301,270	TIP	\$ 25,992,700	\$ 25,992,700	2021-2025	\$ 111,936,674	1.144	\$ 128,055,555
433797-1	US 19 (SR 55)	N of Nebraska Ave	S of Timberlane Rd	New interchange/ frontage Rd	TIP	\$ 7,617,691	\$ 7,617,691	TIP	\$ 10,871,900	\$ 10,871,900	2026-2030	\$ 117,429,841	1.337	\$ 157,003,697
433796-1	US 19 (SR 55)	S of Timberlane Rd	S of Lake St	New interchange/ frontage Rd	TIP	\$ 6,322,705	\$ 6,322,705	TIP	\$ 13,408,100	\$ 13,408,100	2031-2035	\$ 92,562,733	1.573	\$ 145,601,179
433798-1	US 19 (SR 55)	S of Lake St	Pinellas Trail (Tarpon Interchange)	New interchange/ frontage Rd	2031-2035	\$ 8,860,000	\$ 8,860,000	--	--	--	unfunded	\$ 87,955,000		
256931-4	Gandy Blvd	4th St	W of Gandy Bridge	Add 2 additional lanes in each direction/ overpasses/frontage road/trail	TIP	\$ 5,864,522	\$ 5,864,522		\$ 33,334,500	\$ 33,334,500	unfunded	\$ 131,214,743		
257086-1	SR 694/ Gandy Blvd	E of US 19	E of I-275	4 to 6 lanes	TIP	\$ 5,013,372	\$ 5,013,372	TIP	\$ 174,372	\$ 174,372	--	--	--	--
<b>\$ 83,388,340</b>								<b>\$ 135,276,624</b>			<b>\$ 1,025,515,855</b>			

comments	
FPN	
424501-4	TBNext Section 2.
424501-5	TBNext Section 2.
256998-1	Connection between Gateway Exp and Roosevelt.
435914-2	Project has been removed from SIS. CST funded with Non-SIS.
257086-1	Project has been removed from SIS. CST funded with Non-SIS.

**District 7 Non-SIS Projects - 2045 Cost Feasible Plan**

FPN	FACILITY	FROM	TO	Improvement TYPE	PE			ROW			CST			
					PE YR	PDC	PE YOY	ROW YR	PDC	ROW YOY	CST YR	PDC	INF	CST YOY
430500-1	SR 687/4th St N	S of Big Island Gap	S of I-275/ SR 93	Bridge replacement	TIP	\$ 503,369	\$ 503,369	--	--	--	TIP	\$ 8,964,304	1	\$ 8,964,304
435914-2	US 19 (SR 55)	66th Ave N	118th Ave N/ SR690	corridor operational improvements	--	--	--	--	--	--	unfunded	\$ 29,166,743		
257086-1	SR 694/ Gandy Blvd	E of US 19	E of I-275	4 to 6 lanes	--	--	--	--	--	--	unfunded	\$ 54,588,957		

comments	
FPN	
430500-1	Limits shown here are different from Reeval spreadsheet.
435914-2	Project has been removed from SIS. PE and ROW funded with SIS.
257086-1	Project has been removed from SIS. PE and ROW funded with SIS.

# APPENDIX D

## TRANSPORTATION IMPROVEMENT PROGRAM





**FORWARD PINELLAS SERVES AS THE METROPOLITAN PLANNING ORGANIZATION AND  
PLANNING COUNCIL FOR PINELLAS COUNTY**

## **TRANSPORTATION IMPROVEMENT PROGRAM**

**FISCAL YEARS  
2019/20 - 2023/24**

**Adopted June 12, 2019**

***Forward Pinellas  
310 Court Street  
Clearwater, FL 33756  
Phone: (727) 464-8250***

**Forward Pinellas Web Site: <http://www.forwardpinellas.org>**

This project has been developed in compliance with Title VI of the Civil Rights Act of 1964 and other federal and state nondiscrimination authorities. Neither FDOT nor this project will deny the benefits of, exclude from participation in, or subject anyone to discrimination the basis of race, color, national origin, age, sex, disability, or family status.

Funding for this report may have been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

**INTEGRATING LAND USE & TRANSPORTATION**

# APPENDIX E

## SOCIOECONOMIC DATA METHODOLOGY

## Forward Pinellas County 2045 Socioeconomic Data Methodology Summary

### Population

2015: 937,325

2045: 1,030,000 (92,675 increase – 9.9%)

The % increase in population from 2010 to the 2045 BEBR projection (0.33%) was calculated and then applied to 2015 ACS population estimates in each TAZ and totaled to develop the control total. Additional population was added to assume for additional in-migration. The projections were adjusted to account for birth/death rate projections so that there is not a straight line projection spread over the years.

### Employment

2015: 534,900

2045: 593,799 (58,899 increase - 11%)

Two different approaches were used to develop the trend control total. First, we calculated the % increase in jobs from 2010-2040 and applied that to each TAZ for 2015 numbers. Second, Forward Pinellas took the total projected number of jobs from 2010-2040 and applied that to the 2015 numbers for each TAZ. Whichever number was greater for each TAZ was the number utilized and then all TAZs were totaled determine the control total for the county.

### TAZ Allocations

The GIS-based tool Communityviz was utilized to assist in the allocation of growth. The control totals were inputted into the tool along with a variety of GIS layers including future land uses, Coastal High Hazard Areas, flood zones, existing and planned transit services, and roadway configurations. The parcel level was used and Communityviz assigned an attractiveness to each parcel in order to allocate future growth, depending on the relative 'attractiveness' of the parcel. This growth was then allocated up to the TAZ that each parcel was located within. Forward Pinellas then took this TAZ-level allocation and met with each individual jurisdiction within the county (24 municipalities and Pinellas County government) to explain the methodology and present the allocations. Each jurisdiction then had the opportunity to review the allocations and make manual adjustments to the future growth projections based on their knowledge of their local communities and their future plans for them. Forward Pinellas collected the comments from each community and made adjustments to the growth allocations in TAZs countywide to account for the recommendations of each jurisdictions. The final allocations were then provided back to each jurisdiction for final acceptance and utilized in the regional transportation demand planning model for the development of the 2045 long range transportation plan.

# APPENDIX F

## COUNTYWIDE TRENDS AND CONDITIONS



# Countywide Trends & Conditions



Developed by Forward Pinellas in its role  
as the Metropolitan Planning Organiza  
and Planning Council for Pinellas County



## Integrating Land Use & Transportation



Adapt – Build – Connect

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*This project has been developed in compliance with Title VI of the Civil Rights Act of 1964 and other federal and state nondiscrimination authorities. Neither FDOT nor this project will deny the benefits of, exclude from participation in, or subject anyone to discrimination the basis of race, color, national origin, age, sex, disability, or family status.*

*Funding for this report may have been financed in part through grants from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.*

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## INTRODUCTION

Forward Pinellas was created by a Special Act unifying the Pinellas Planning Council (focused on land use planning) and the Pinellas County Metropolitan Planning Organization (focused on transportation planning) into one organization. This unification recognizes that land use and transportation planning do not exist independently but have a relationship in which each influences the other.

Land use and transportation both play a key role in the local and regional economy, quality of life, environment and community character. The Forward Pinellas *Countywide Trends and Conditions Report* provides a biennial snapshot of countywide land use and transportation trends and conditions in Pinellas County, Florida. This information can be used as a tool for measuring various performance metrics tied to the goals, objectives and policies of Forward Pinellas' guiding plans, Advantage Pinellas (the Long Range Transportation Plan) and the Countywide Plan.

This report is based upon transportation and land use data collected from a variety of resources, including Forward Pinellas, Federal, State and local agencies. Transportation data includes usage and crash data related to roads, transit, sidewalks, trails and bike lanes, formatted in tables, maps, and graphs. Generally, data from 2018 is used whenever available, along with a five-year timeframe for comparison, whenever available.

This report is also used for Forward Pinellas Congestion Management Process (CMP), as data compiled for this report serves as a basis for identifying where the transportation system is functioning properly and where improvements are needed. This report will be used by Forward Pinellas to help guide land use policy, identify and prioritize needed transportation improvements, analyze the effectiveness of implemented congestion and safety strategies and provide input for developing Forward Pinellas' Transportation Improvement Program (TIP), Long Range Transportation Plan (LRTP) and the Countywide Plan.

## The Pinellas Transportation System

46 centerline miles of Strategic Intermodal System corridors

589 centerline miles of monitored roadways

60 miles of existing Pinellas Trail Loop

76 miles of existing community trails

53 local & regional bus routes

3 airports

3 ferry routes

### Legend

-  Strategic Intermodal System
-  Other arterial roadways
-  Pinellas Trail Loop - Completed
-  Pinellas Trail Loop - Future
-  Community trails (including proposed trails)
-  Major/regional bus stops
-  Airports
-  Ferry service



Source: Forward Pinellas, 2019

## COORDINATING LAND USE AND TRANSPORTATION



***Transportation and land use planning do not exist independently, but have a relationship in which each influences the other.***



Source (both pages): U.S. Census Bureau, 2017 and Forward Pinellas, 2018



Land use and transportation have traditionally been treated as separate planning fields. But land use decisions affect the transportation system and can increase options for people to access destinations, goods, services, and other resources to improve the quality of their lives. In turn, transportation decisions affect land use development demand, choices, and patterns.

The Forward Pinellas *Countywide Plan for Pinellas County* integrates land use and transportation planning by guiding new population and job growth into activity centers such as historic downtowns, and multimodal corridors where walking, biking and transit are supported. A concentration of different uses allows residents to commute to work or school, visit neighbors, shop for daily needs, and travel to special events as easily as possible without an automobile. In 2019, Forward Pinellas updated the Countywide Plan to allow local governments more flexibility to develop these important places. About 5% of Pinellas residents live in designated activity centers, compared with 4% in 2015.

To maximize the number of people who live and work within convenient reach of transit, activity centers and multimodal corridors should concentrate higher-density residential, office, and retail development within easy walking distance (1/4 to 1/2 mile) of transit stops. Land use patterns that support walking, biking and transit use include an interconnected street network designed to make travel distances as short and direct as possible, with buildings oriented near the sidewalks and parking relegated to the rear of the property, to minimize conflicts with automobiles.

# Pinellas County, Florida

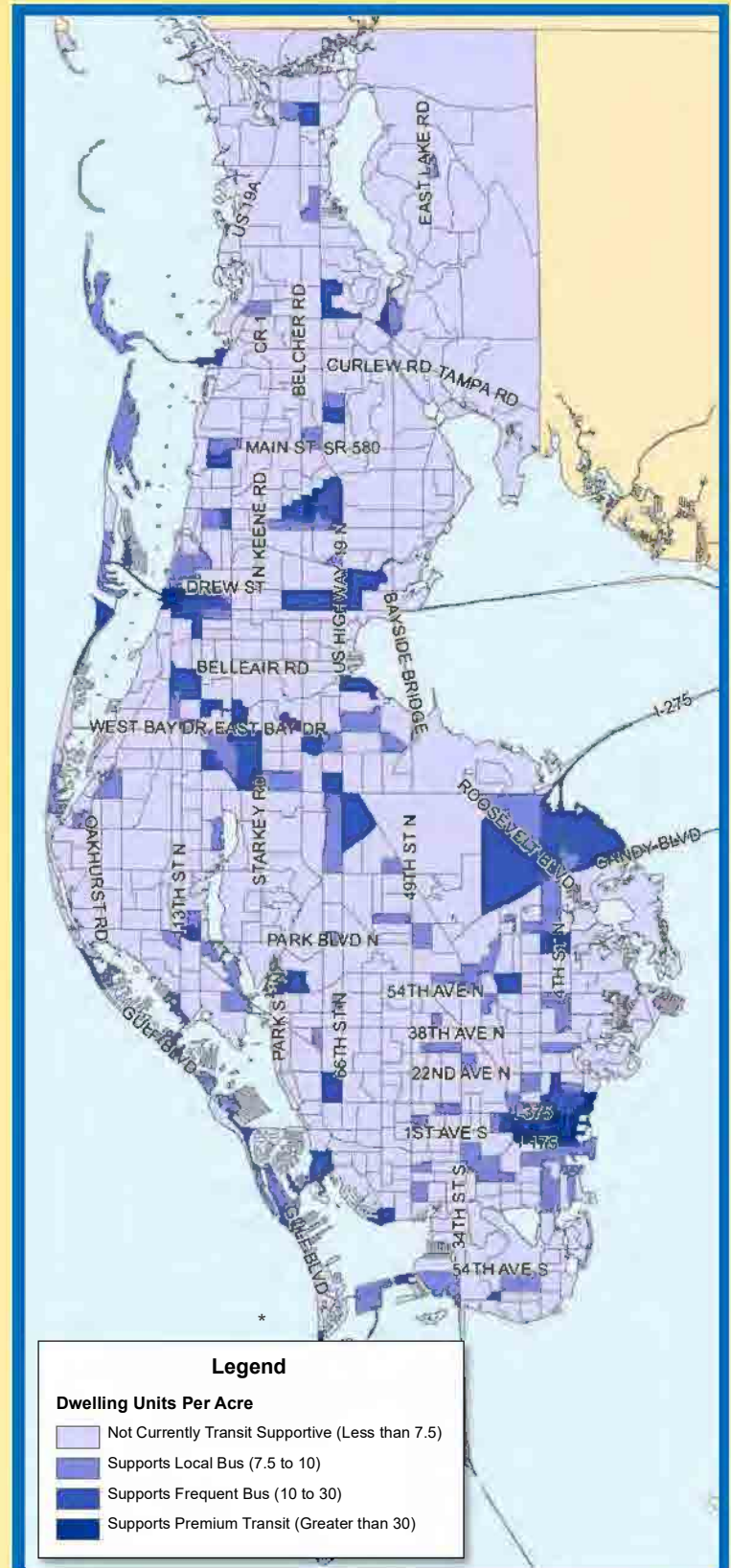
## Transit-Supportive Residential Densities (Average by Census Block Group)

As depicted on the map at right, about 14% of Pinellas households live in Census block groups with average residential densities that could, with appropriate urban design, support frequent bus service or better, increased from 13% in 2015. These locations provide opportunities for developing new centers, corridors, and other transit-supportive places.

Forward Pinellas offers both technical assistance and grants to help local governments meet these goals. Since 2017, the Forward Pinellas Complete Streets Program has awarded \$4.3 million in funding to local governments for construction and planning of streets that enable safe access for pedestrians, bicyclists, public transportation users and motorists. Since 2018, the Planning and Placemaking Program has awarded another \$150,000 to assist communities with initiatives that advance the planning and urban design principles of the Countywide Plan.

As depicted on the map at right, 13% of the Pinellas population lives in Census block groups with average residential densities that could, with appropriate urban design, support frequent bus service or better. This is an increase from 12% in 2012.

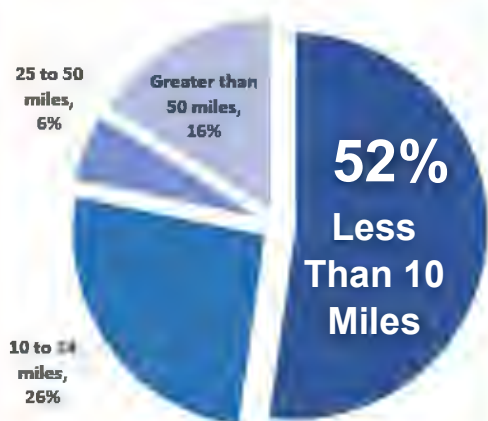
Forward Pinellas also encourages local governments to build “Complete Streets,” or streets designed and operated to enable safe access for everyone, including pedestrians, bicyclists, public transportation users and motorists. The Complete Streets approach is to view all transportation improvements as opportunities to create safer, more accessible streets for all users, not just in activity centers and multimodal corridors. Under this approach, even small projects can be an opportunity to make meaningful improvements. In 2017, the inaugural Forward Pinellas Complete Streets Program allocated \$1.1 million in funding for construction and planning along these corridors.



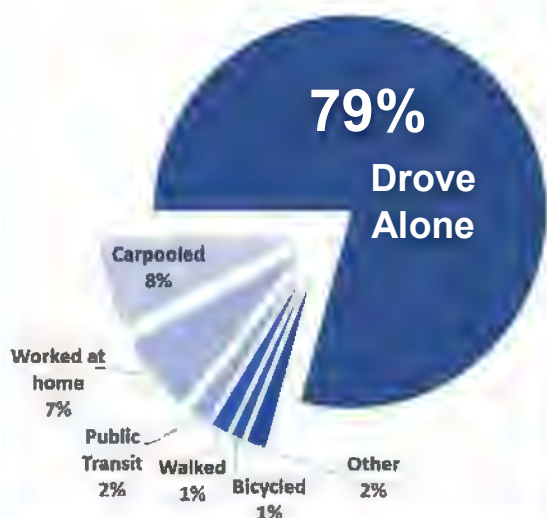
\* Based on residential land acreage within each block group. Density ranges represent typical minimums needed to support transit types, with appropriate urban design.

**Transportation connectivity and planned redevelopment are integral to the economic success of the Tampa Bay region.**

**Distance to Work for Pinellas Residents**



**Means of Transportation to Work for Pinellas Residents**



Source: U.S. Census Bureau, American Community Survey, 2017 & LODES, 2017.

## Economic Development



Transportation and land use decisions create the framework within which communities grow, influencing development, economic prosperity and quality of life. Forward Pinellas

also promotes opportunities for public-private partnerships, improving roadway operations, travel options and access to and from major activity centers. Forward Pinellas' Long Range Transportation Plan and Countywide Plan both share the goal of supporting and furthering economic development and employment opportunities within Pinellas County.

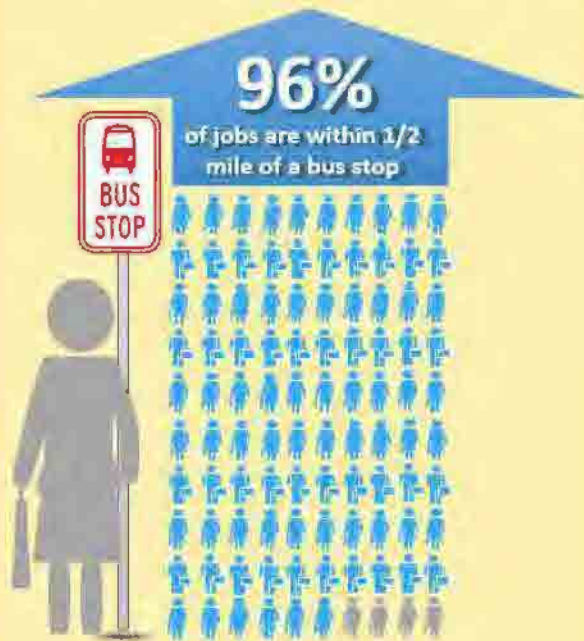
Forward Pinellas also promotes opportunities for public-private partnerships, improving roadway operations, travel options and access to and from major activity centers. Commuting to and from work is the largest component of many residents' travel, and offers significant opportunities for improving transportation choices. Land use planning can provide for residents and workplaces to be located closer to one another, with densities and land use patterns that support multimodal travel, while improved transportation infrastructure and services connect the areas where demand is greatest.





# Pinellas County, Florida

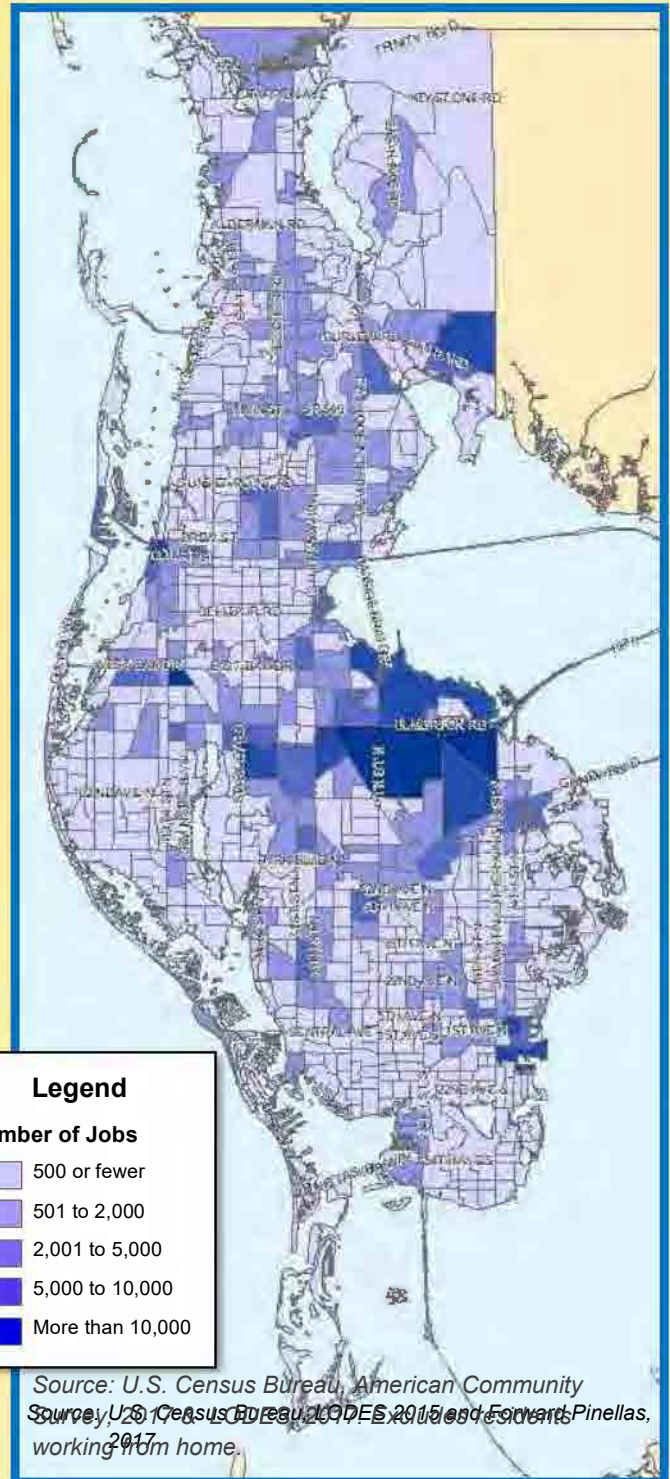
## Distribution of Jobs by Census Block Group



Source: U.S. Census Bureau LODES, 2017; Pinellas Suncoast Transit Authority, 2019

A majority of Pinellas County residents (85%) commute alone in private vehicles. This is 1% higher than in 2015. Improving transit, bicycle and pedestrian infrastructure can provide other options for commuters, particularly for those traveling shorter distances.

As noted in the infographic above, 96% of jobs are within 1/2 mile of a bus stop. Increasing the frequency of bus service along routes serving large numbers of housing and jobs could make this mode of travel a more viable option for the 52% of commuters traveling less than ten miles to work. Encouraging future population and job growth to locate within activity centers and along multimodal corridors will also allow transportation infrastructure to be placed as efficiently as possible.





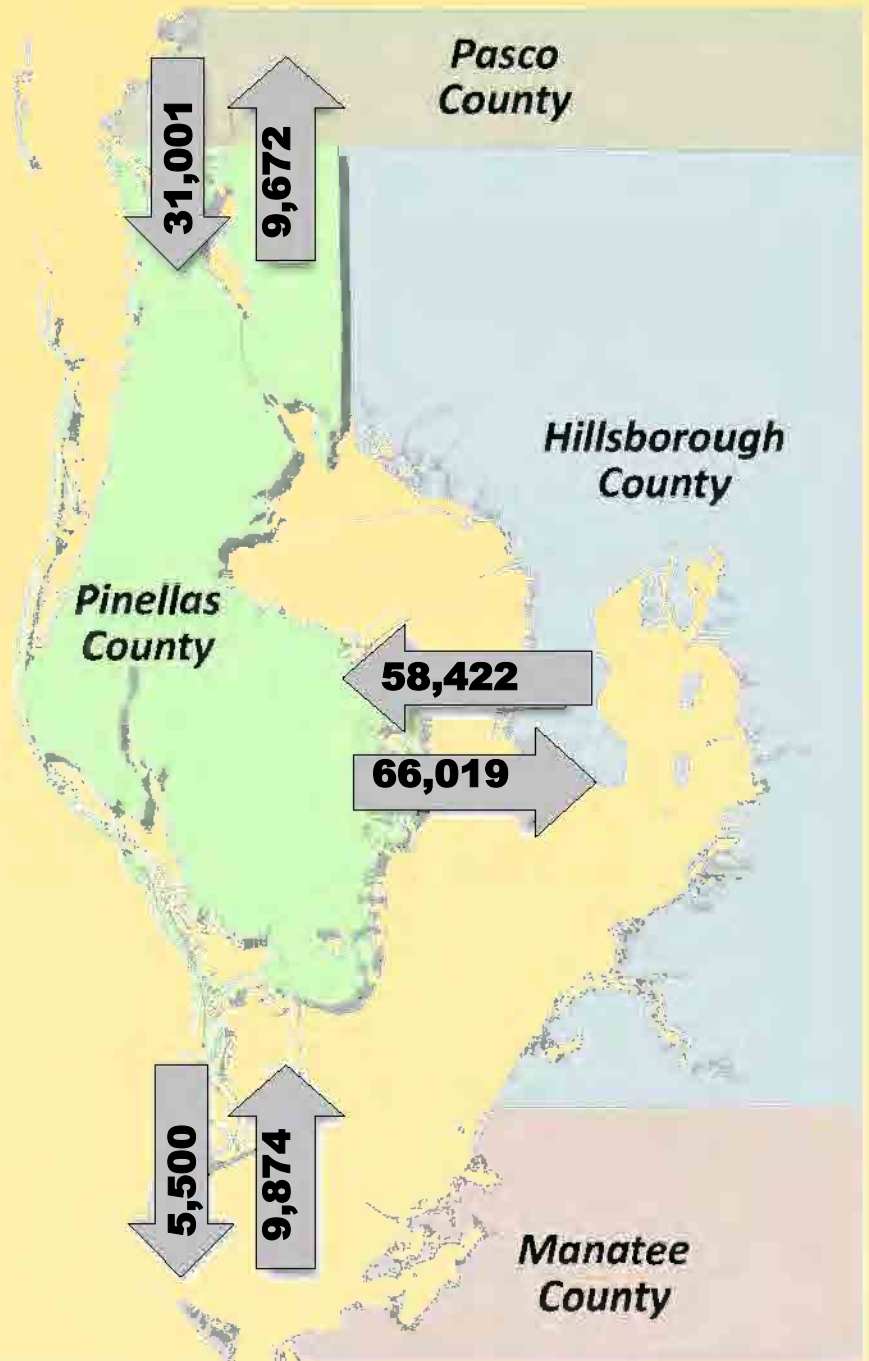
## REGIONAL TRENDS



Pinellas County is an important part of the increasingly interdependent Tampa Bay region, and is a major origin and destination for regional commuter travel. According to the U.S. Census Bureau's *Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics* (LODES) from 2017, the most current data year, about 64% of the Pinellas' 421,021 employed residents work within the county. Another 19% work in one of the three adjacent counties, and the remaining 17% travel to more distant locations. These patterns have remained stable over the past two years.

As shown on the map to the right, the majority of intercounty commuter travel is between Pinellas and Hillsborough Counties, with Pinellas sending more residents to work in Hillsborough County than the reverse. Conversely, Pasco and Manatee Counties send significantly more of their residents to work in Pinellas than Pinellas sends to those counties.

Employee Inflow/Outflow Among the Counties of the Tampa Bay Region



Source: U.S. Census Bureau LODES, 2017

# Pinellas County, Florida

Tourism is one of Pinellas County's most important industries, and arguably its most visible. Pinellas County has experienced significant growth in visitors in recent years. Visit St. Pete/Clearwater, the Convention and Visitors Bureau for Pinellas County, reported approximately 6.6 million overnight visitors in 2018, up from 6.3 million in 2016 (about 4% growth).

The increase in out-of-county and out-of-state cars, as well as rental cars, places additional demands on the area's roadway network. Peak impact is seen during the annual occurrence of Easter and spring break for schools and colleges. Traffic congestion on routes between the mainland and barrier islands, a popular draw for tourists, is particularly visible during these periods. These visitors also pay sales and gas taxes, which provide additional revenue to fund transportation projects. Direct expenditures by tourists in-

creased from about \$4.9 billion in 2016 to \$5.2 billion in 2018, or about 6% growth unadjusted for inflation, according to Visit St. Pete/Clearwater's *Annual Visitor Profile Report* for those years.

Forward Pinellas leads the way in planning for the future of critical regional assets through its Strategic Planning and Operations Topics, known as SPOTlight. These emphasis areas bring local, regional and state governments and agencies together in partnership to plan for and implement land use and transportation enhancements in key areas. Current SPOTlight emphasis areas include developing a vision for the U.S. 19 corridor, and enhancing transportation access between the mainland and beach communities. The development of a master plan for the economically important Gateway/mid-county area is slated for late 2019.



Source: Visit St. Petersburg/Clearwater, 2016 & 2018





## MANAGING CONGESTION

### What is the Strategic Intermodal System (SIS)?

The efficient movement of residents, workers, visitors and goods between Pinellas County and the rest of Tampa Bay relies on a handful of major roadways belonging to the statewide Strategic Intermodal System (SIS). The SIS is an intermodal network of high-priority transportation facilities that seamlessly flow from one mode to the next with the goal of providing mobility for people and goods traveling through the State. There are 46 centerline miles of SIS roadways in Pinellas County, including interstate highway I-275 and its spurs I-175 and I-375; portions of U.S. Highway 19; and Gandy Boulevard. The Florida Department of Transportation oversees the designation, implementation, and management of the SIS.



### Congestion Management Process

Congestion management is the use of strategies to improve transportation system performance and reliability by reducing the adverse impacts of congestion on the movement of people and goods. The congestion management process (CMP) is a systematic approach for providing safe and effective integrated management and operation of the multimodal transportation system.

The overall CMP goal is to ensure the safe and efficient movement of people and goods by successfully addressing areas of recurring and non-recurring congestion with low cost and cost effective operational and multi-modal improvements before considering any capital intensive capacity improvements.

Forward Pinellas' congestion management process for Pinellas County follows the policies and procedures in the currently-adopted *Congestion Management Process Policies and Procedures Manual* (available on our website at [forwardpinellas.org](http://forwardpinellas.org)). This manual describes the process used to respond to federal and state CMP requirements and closely follows the recommended eight step process identified in *Congestion Management Process: A Guidebook*, published by the U.S. Department of Transportation/Federal Highway Administration.

### Most Congested Roadways

Part of the congestion management process includes analyzing the most severely congested road segments. Monitored roadways are ranked based upon their volume-to-capacity ratios to determine ranked results. Ranked results show the most severely congested road segments for the longest period of time for both Strategic Intermodal System (SIS) and non-SIS roads. Rankings for the top twenty most severely congested SIS road segments are shown in the tables on the next page.

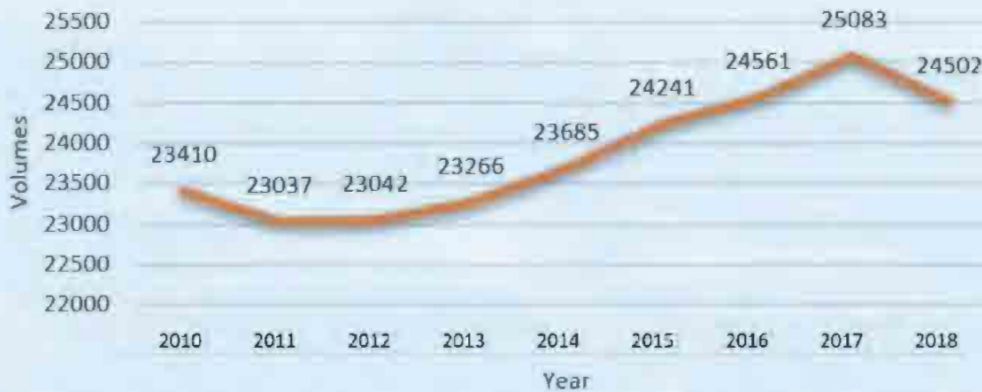
# Pinellas County, Florida

## Top 20 Most Severely Congested Facilities/Segments

NON-SIS			
RANK	ON STREET	FROM	TO
1	EAST LAKE RD	RIDGEMOOR BLVD	LANSBROOK PKWY
2	EAST LAKE RD	TARPON LAKE BLVD S	RIDGEMOOR BLVD
3	EAST LAKE RD	TARPON WOODS BLVD	TARPON LAKE BLVD S
4	EAST LAKE RD	WOODLANDS BLVD	TARPON WOODS BLVD
5	COURTNEY CAMPBELL CSWY	BAYSHORE BLVD	DAMASCUS RD
6	COURTNEY CAMPBELL CSWY	DAMASCUS RD	HILLSBOROUGH CL
7	SR 688   ULMERTON RD	ROOSEVELT BLVD	40TH ST
8	FOREST LAKES BLVD	PINE AVE	COMMERCE BLVD
9	FOREST LAKES BLVD	COMMERCE BLVD	BROOKER CREEK BLVD
10	FOREST LAKES BLVD	BROOKER CREEK BLVD	HILLSBOROUGH COUNTY LINE
11	WEST BAY DR	CLWTR-LARGO RD	4TH ST
12	WEST BAY DR	4TH ST	MISSOURI AVE
13	FOREST LAKES BLVD	SR 580	TAMPA RD
14	EAST LAKE RD	NORTH SPLIT	WOODLANDS BLVD
15	ALT US 19   BAY PINES BLVD	PARK ST	E END OF BRIDGE
16	ALT US 19   BAY PINES BLVD	E END OF BRIDGE	W END OF BRIDGE
17	ALT US 19   PALM HARBOR BLVD	CRYSTAL BEACH	ALDERMAN RD
18	ALT US 19   PALM HARBOR BLVD	NEBRASKA AVE	CRYSTAL BEACH
19	ALT US 19   PALM HARBOR BLVD	VIRGINIA AVE	NEBRASKA AVE
20	ALT US 19   PALM HARBOR BLVD	TAMPA RD	VIRGINIA AVE

SIS			
RANK	ON STREET	FROM	TO
1	US 19	NORTHSIDE DR	CURLEW RD
2	US 19	CURLEW AVE	NORTHSIDE DR
3	US 19	SR 580   MAIN ST	REPUBLIC DR
4	US 19	REPUBLIC DR	CURLEW AVE
5	US 19	HIGHLANDS BLVD	ALDERMAN RD
6	US 19	NEBRASKA AVE	HIGHLANDS BLVD
7	US 19	TAMPA RD	NEBRASKA AVE
8	I-275	22ND AVE N	38TH AVE N
9	US 19	MLK	TARPON AVE
10	US 19	KLOSTERMAN RD	MLK
11	I-275	54TH AVE N	GANDY BLVD
12	US 19	CR 39	TAMPA RD
13	US 19	CURLEW RD	CR 39
14	US 19	ALDERMAN RD	INNISBROOK DR
15	US 19	INNISBROOK DR	KLOSTERMAN RD
16	I-275	GANDY BLVD	SR 686   ROOSEVELT BLVD
17	I-275	5TH AVE N	22ND AVE N
18	I-275	I-375	5TH AVE N
19	I-275	I-175	I-375
20	I-275	38TH AVE N	54TH AVE N

**Nine Year Annual Average Daily Traffic (AADT) Comparison Chart**  
(for Monitored Roads)



### Traffic Volume and Road Capacity

Each year, Annual Average Daily Traffic (AADT) volumes are collected from counters by the Florida Department of Transportation (FDOT) and local governments. The chart to the left shows the AADT over the past nine years for monitored roads throughout Pinellas County. Countywide, the AADT decreased approximately 2.3% between 2017 and 2018.

Source: Forward Pinellas, 2019

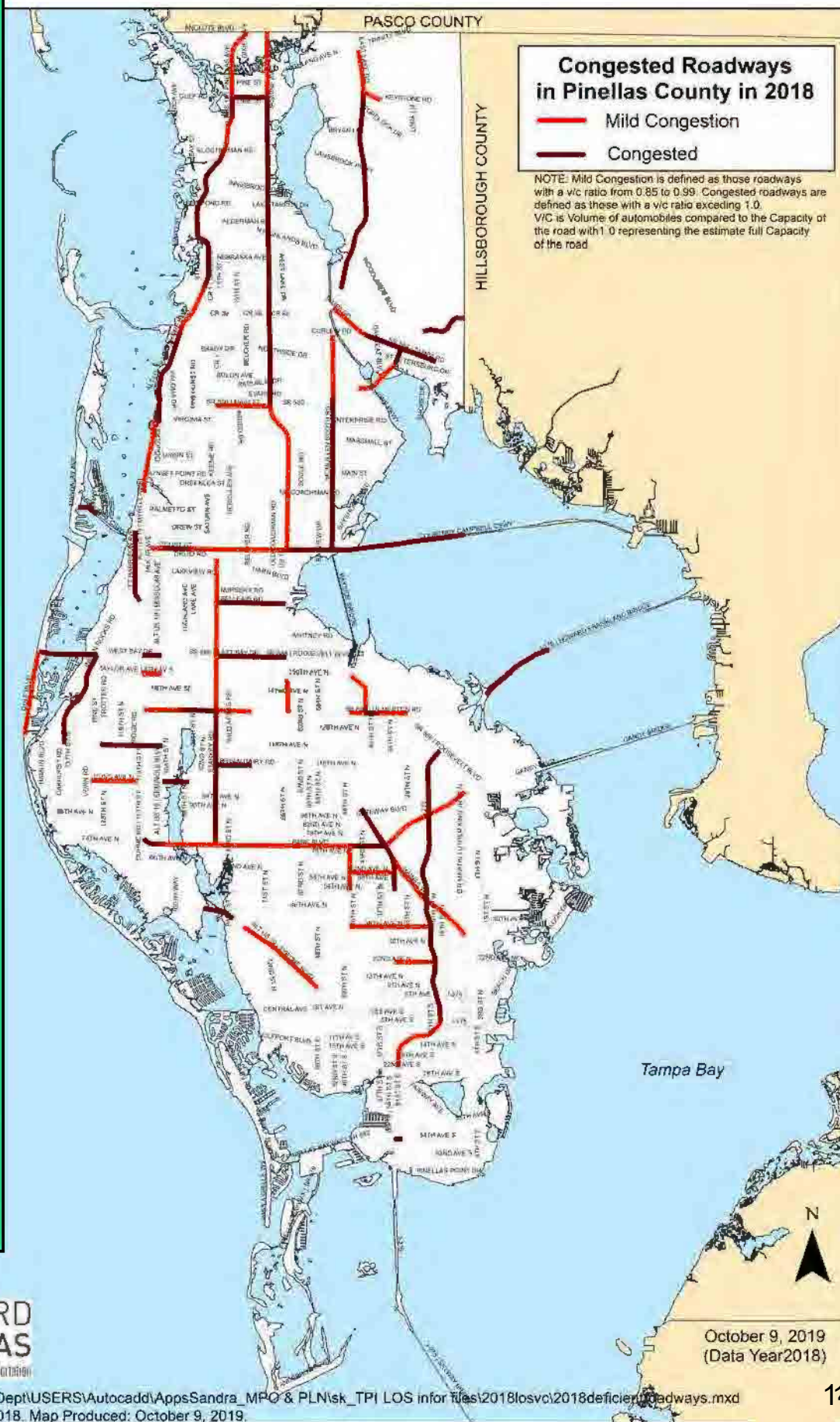
## What is Volume-to-Capacity Ratio ?

Volume-to-Capacity is a measurement of traffic volumes compared to the capacity of the road during an average day.

The map on this page identifies roadways in Pinellas County that are congested or mildly congested.

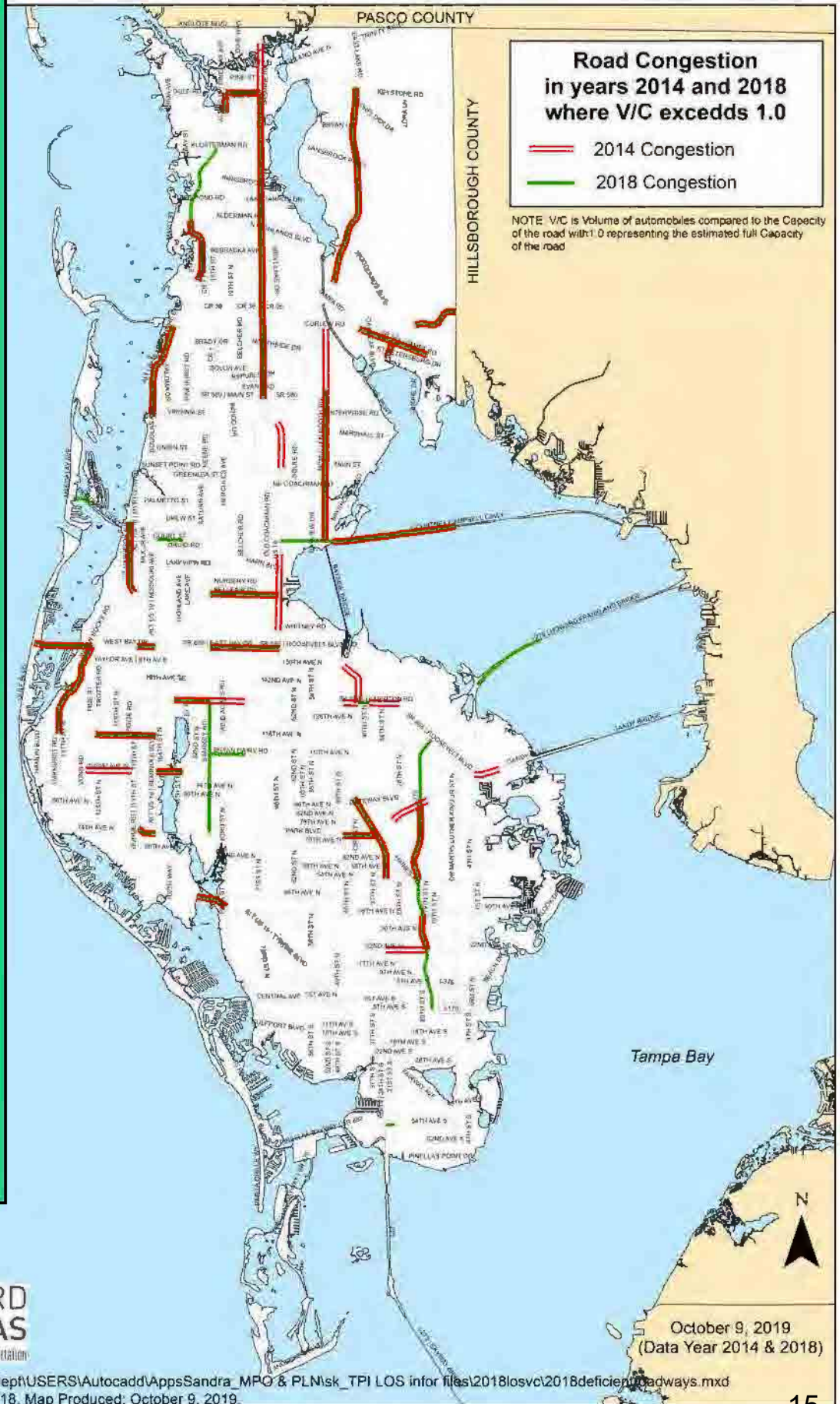
Congested roadways are defined as roadways that have a volume-to-capacity ratio of 1.0 or higher.

Roadways with mild congestion have a volume-to-capacity ratio between .85 and .99.



## Congestion Trends

The map on this page compares congested roadways over the five-year period between 2014 and 2018, which is the most recently available data year for volume-to-capacity data). Roadways that were most heavily congested in 2014 are identified with double red lines on the map. The roadways most heavily congested in 2018 are identified with solid green lines. Congested roadways for 2018 are further broken down into SIS (discussed on page 12) and non-SIS roadways on the map on the following page.

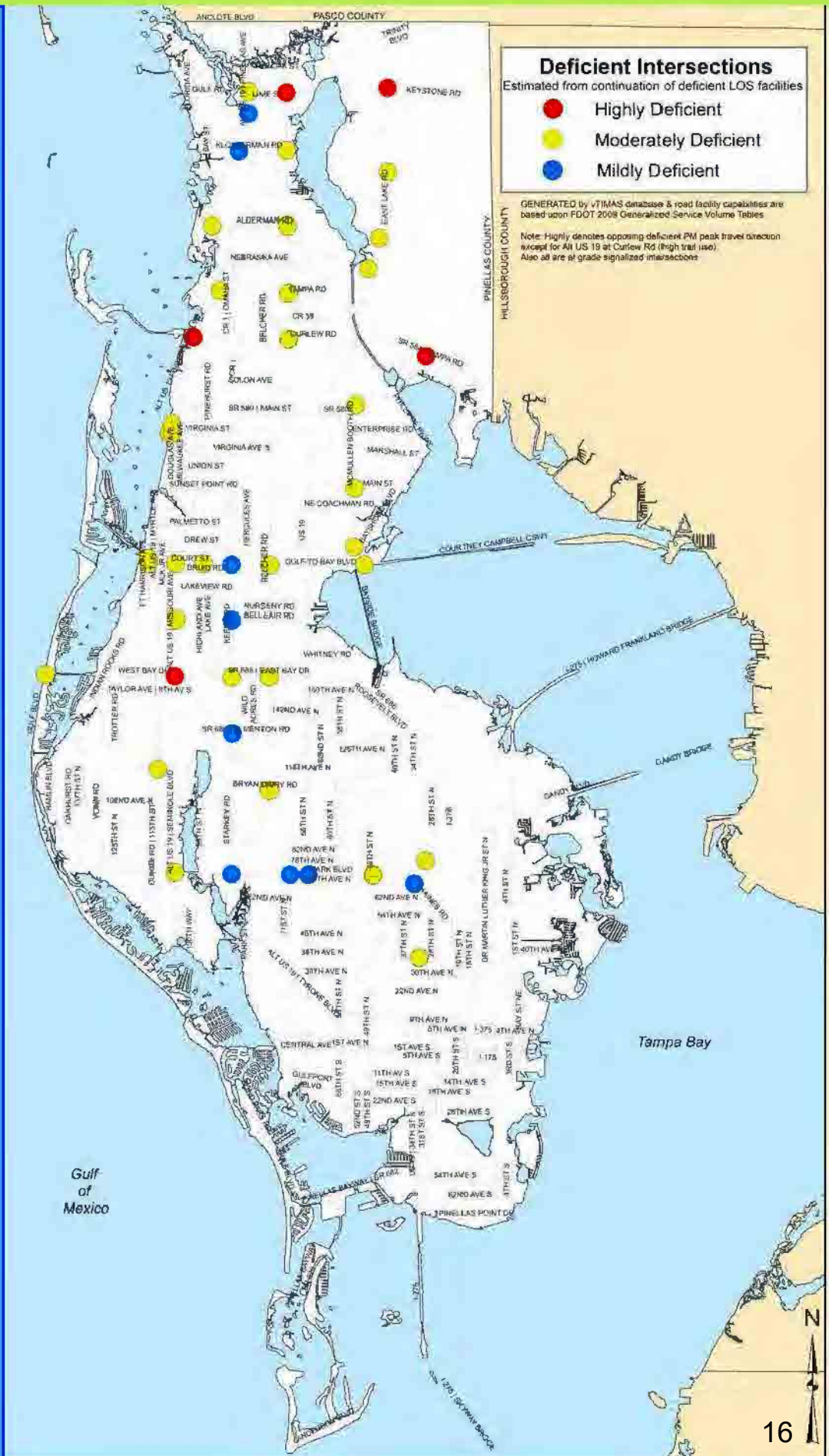


## What is a deficient intersection?

Deficient (or “saturated”) intersections are at-grade, signalized intersections where deficient level of service facilities intersect. Pinellas County’s transportation network has more than 30 such intersections. Although Intelligent transportation systems (ITS) (discussed on page 22) can provide up to 24% savings in travel time, its effectiveness is more limited along roads with deficient intersections during rush hour traffic conditions. Just as a saturated sponge cannot absorb additional water, a saturated intersection with ITS cannot provide additional savings in travel time during rush hour conditions.

Opportunities for capital improvements on roadways are severely limited due to a variety of factors including availability of land, funding, high right-of-way costs, impacts to neighborhoods, compatibility issues, property values and environmental concerns.

As additional ITS and road capacity projects reach a point of diminishing returns, it’s increasingly important for Forward Pinellas and its partners to maximize the potential of all transportation modalities, including transit, pedestrian and bicycle, in addition to roads.





## ENHANCING MOBILITY



***Providing a balanced and integrated multi-modal transportation system for local and regional travel is a goal embedded in Forward Pinellas' transportation and land use planning.***



Opportunities for adding capacity to roadways are severely limited due to a variety of factors including availability of land and funding; high right-of-way costs; concern about impacts on neighborhoods, including compatibility issues, property values and environmental concerns; and a commitment to seeking alternative solutions to congestion mitigation, such as transportation system and demand management, wherever possible and practical.

To meet the county's mobility challenges and to support quality of life, it has become increasingly important for Forward Pinellas and its partners to maximize the potential of all transportation modalities, including transit, pedestrian and bicycle, as well as the efficient movement of vehicles. Expanding modal alternatives to roadways for travel and transport, and improving the efficiency of vehicle traffic through technology, help to reduce traffic congestion.

Forward Pinellas' goal is to facilitate the enhancement of the county's land use that's coordinated with a multimodal transportation system. This goal is stated in both our Long Range Transportation Plan and Countywide Plan and reflected in our day-to-day operations. To this end, we consider all modes in the planning, design and construction of transportation projects. We coordinate and collaborate with transportation partners, the public and other stakeholders to provide for multimodal options for local and regional travel.



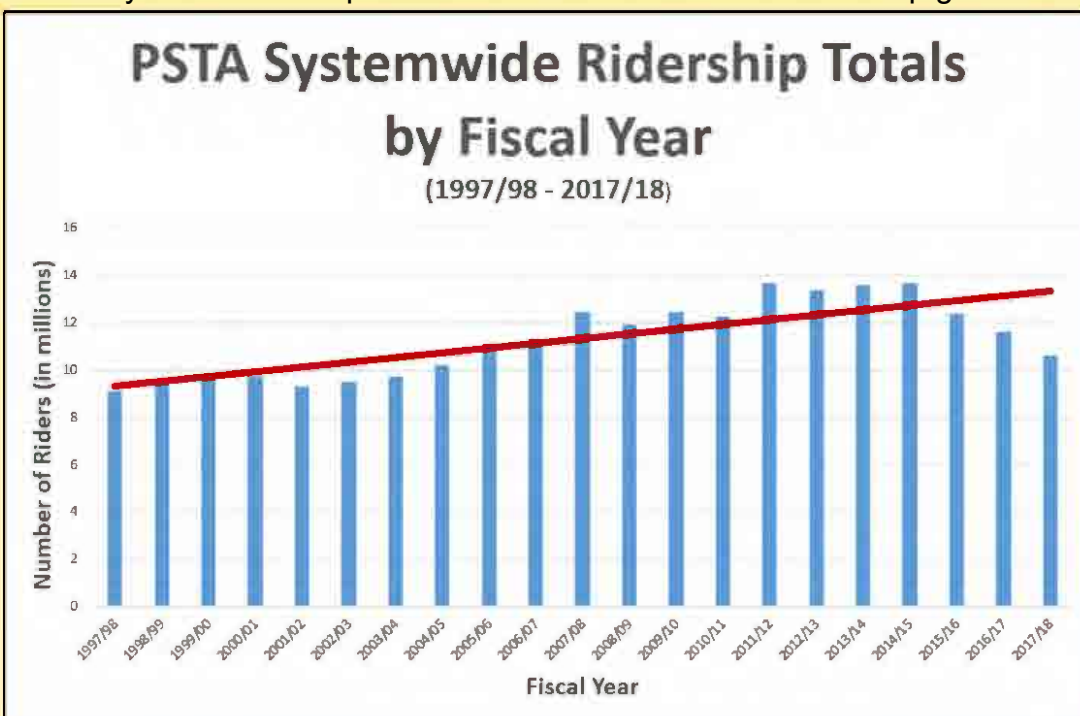
## Transit



Local and regional transit services are operated by the Pinellas Suncoast Transit Authority (PSTA). The majority of the county is served by the PSTA system, which operates more than 53 bus, trolley, and shuttle circulator routes. On most routes, departure times (headways) are one hour apart, although some routes with high ridership operate more frequently. Major bus terminals are located at Park Street in downtown Clearwater and Central Plaza in St. Petersburg. Designated park-and-ride lots are located in Largo and St. Petersburg.



A general trend of rising ridership occurred over the past two decades, notably during the Great Recession, which began in FY 07/08 and ended in FHY 09/10. More recently year-over-year decreases, such as that seen between FY 14/15 and FY 16/17 have occurred due to fare increases and service reductions implemented by PSTA and to other factors affecting ridership at transit agencies across the country. These include less shopping trips overall, more telecommuting, transportation network companies, lower gas prices, increased car ownership, and improved economy. PSTA has implemented a first/last mile service to help get riders to and from the fixed



Source: Pinellas Suncoast Transit Authority, 2019

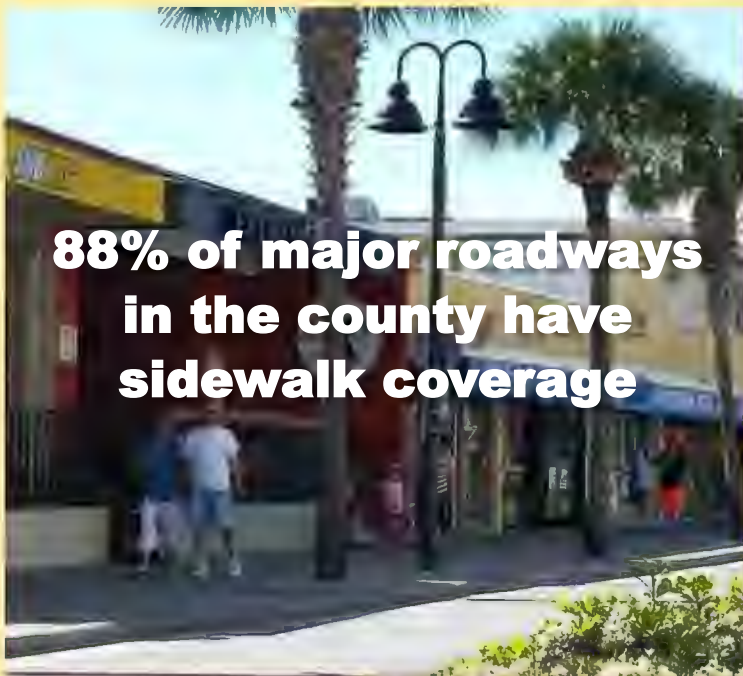
route network, as well as an overnight program for transportation disadvantaged customers who need to get to and from work when fixed route service is not running.

## Bicycle & Pedestrian Infrastructure



It is widely recognized that walking and bicycling are beneficial alternatives to private automobile travel. In addition to allowing greater mobility for residents, encouraging these modes produces less air pollution than automobiles and improves health outcomes by encouraging residents to engage in higher levels of physical activity. These modes of travel are encouraged through the development of distinct, yet complementary and interdependent networks of sidewalks, bike lanes, and trails. According to the 2017 American Community Survey, approximately 1.7% of Pinellas workers walk to work and 1.2% bike.

Many areas in the county were developed prior to the 1970s, before sidewalks were routinely required to be installed as part of the land development process. Forward Pinellas advocates for the expansion of the county's sidewalk network to fill in gaps on the major road network, and encourages local governments to identify and fill gaps on local streets. Based on centerline miles, 49% of all roads and streets, or 1,739 roadway miles, had sidewalk coverage in 2018. Major roads had 88% sidewalk coverage in 2018, up from 80% in the *2016 State of the System Report*.



Source: (both pages) *Forward Pinellas*, 2019

Trail Loop, shown on the following pages.

Bicycle lanes are on-road facilities designated for use by cyclists only, and can be added during routine resurfacing or restriping projects if sufficient lane width is available. 24% of major roadways, or about 227 miles, currently have bike lane coverage, up from 20% in 2016.



Trails are standalone, paved corridors that provide a "roadway" for the exclusive use of non-motorized transportation. The backbone of the local trail system is the popular Pinellas

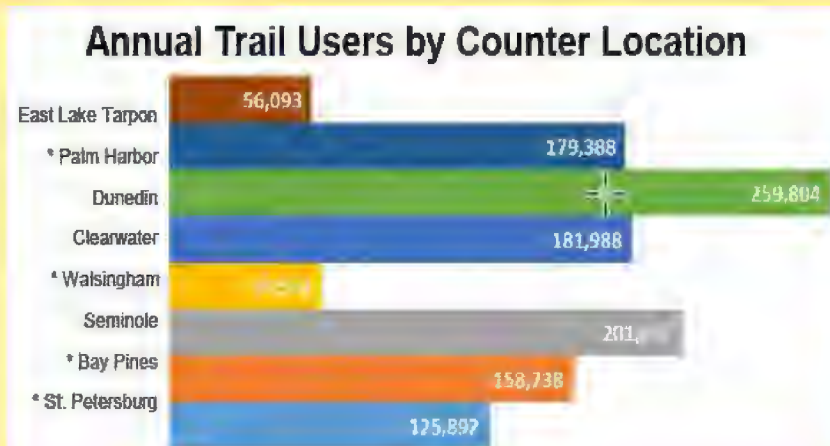
The county also contains a network of local community trails, many of which connect to the Pinellas Trail. Pinellas County added 5 miles of trails to its countywide trail network between 2017 and 2019. The countywide trail network not only includes the Pinellas Trail Loop, but also all of the community trails constructed collectively

by the 25 local

governments within Pinellas County. About 32% of Pinellas County households are located within 1/2 mile of a multiuse trail.

Data collected by automated trail counters in 2018 shows a total of 1,223,114 trail users at eight locations on the Pinellas Trail Loop. Currently, automated trail counters are only in use on the Pinellas Trail Loop and are not yet in use

throughout the rest of the countywide trail network.



\* Palm Harbor, Walsingham, Bay Pines and St. Petersburg datasets are incomplete due to various technical issues.

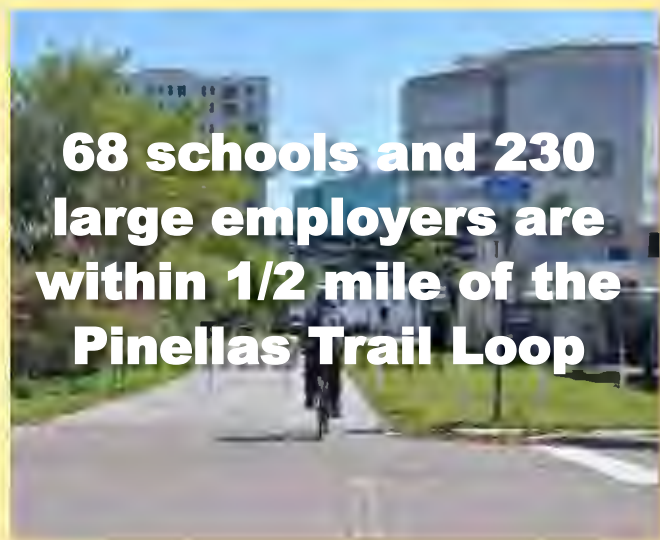
### Average Trail User Mode Split

		
East Lake Tarpon:	3%	97%
Palm Harbor: *	16%	84%
Dunedin:	19%	81%
Clearwater:	36%	64%
Walsingham: *	19%	81%
Seminole:	36%	64%
Bay Pines: *	27%	73%
St. Petersburg: *	38%	62%

Source: Forward Pinellas 2018

## Pinellas Trail Loop

Forward Pinellas is working with our local government and FDOT partners to complete the 76-mile trail known as the Pinellas Trail Loop. As of October 2019, most of the Pinellas Trail Loop (60 miles, or nearly 79%) has been constructed. Unconstructed gaps still exist, as shown in the map on page 22. The Loop connects low-income and minority areas, major employers, institutions of higher education and vocational training, schools and many other community resources through a transportation network that reduces traffic congestion while providing an option for the movement of non-motorized travelers.



Source: Pinellas County and Forward Pinellas, 2019. Large employers are those with 100 or more employees.

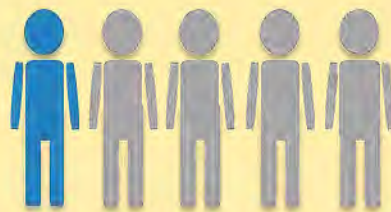
# Pinellas County, Florida

The completed Loop will also provide a regional connection to the Courtney Campbell Causeway Trail, a non-motorized bicycle and pedestrian facility that crosses Tampa Bay, connecting to the Tampa and Hillsborough County trail networks. In addition, the Pinellas Trail Loop is part of the Florida Coast-to-Coast Trail, an uninterrupted trail that, when complete, will span the entire width of the State of Florida from St. Petersburg to Titusville. 198,000 residents and 132,000 jobs are within 1/2 mile of the Pinellas Trail Loop.



The Pinellas Trail Loop:

- Provides economic opportunities by connecting residents, workers and tourists with employment, commercial and recreational destinations.
- ◆ Provides low-income and minority neighborhoods with enhanced connections to transit, schools, commercial centers, employment and recreational facilities.
- ◆ Decreases adverse environmental impacts on air quality by providing non-motorized transportation options.
- ◆ Fosters a safe, connected and accessible transportation system throughout Pinellas County.



**Nearly 1 out of 5 Pinellas County residents live within 1/2 mile of the Pinellas Trail Loop**

*Source: U.S. Census Bureau, 2017; Forward Pinellas, 2019*



## Pinellas Trail Loop

# 79% COMPLETED

**Legend**

- Existing Trails
- Funded Trails
- Trail Gaps



# & 43 TRAIL MILES ADDED

to the countywide trail network (which includes, but is not limited to, the Pinellas Trail Loop) since 2013



**FORWARD  
PINELLAS**  
Integrating Land Use & Transportation

Source: Forward Pinellas, 2019

# Pinellas County, Florida

## Intelligent Transportation Systems

Pinellas County's Intelligent Transportation System (ITS) is one of the most advanced traffic management systems in the state of Florida. ITS involves the use and coordination of traffic signal control device operations and transportation system user information from motorist, transit, pedestrians and bicyclists. Smart cities concepts are also incorporated to even further enhance the transportation system and improve safety. By integrating smart cities communication technology with various physical devices connected to the ITS network, such as Bluetooth sensors, closed circuit television (CCTV) cameras, and electronic safety devices, real-time data is collected and used to monitor and manage the transportation system, optimize signal patterns and control traffic flow. Through the use of ITS, travel time is reduced by 13 percent and drivers experience a faster and safer commute.

The County continues to implement ITS throughout the region to enhance safety, mobility and connectivity. The map at the right shows corridors where ITS improvements have been completed or are planned.



## Waterborne Transportation



Ferries and water taxis are increasingly being used to help meet the region's transportation needs. The publicly funded Cross-Bay Ferry operates between downtown St. Petersburg to downtown Tampa enjoyed a successful second season with more than 53,000 passengers in 2018. A

new season for service will begin starting November 1, 2019.

The private-sector Clearwater Ferry operates three routes connecting Clearwater Beach with downtown Clearwater and Dunedin, with up to 27 trips a day during peak season. Another private-sector provider, Tampa Bay Ferry & Water Taxi, operates two routes from Fort DeSoto to Egmont and Shell Keys, with up to five trips a day during peak season.



Source: Cross-Bay Ferry, 2019

Forward Pinellas held a Waterborne Transportation Forum in 2016, and established a working group of local planners and ferry/water taxi operators to craft a consistent set of standards for this transportation option, which is new to our area. A model ordinance created by the working group was distributed to local governments in March 2017. Given the cross-jurisdictional nature of ferry travel, the model ordinance will help ensure consistent standards across Pinellas County.



Personal watercraft are also a part of the multimodal transportation system. According to the Florida Department of Highway Safety and Motor Vehicles, there were 51,000 private vessels registered in Pinellas County in 2018, the second-highest of all Florida counties. The Pinellas County Property Appraiser's Office has identified 59 marinas in the county, and 53 boat launch

facilities have been inventoried by the Florida Fish and Wildlife Conservation Commission. The Pinellas County Parks and Conservation Resources Department has also identified 79 miles of locally designated canoe/kayak paddling trails in Pinellas County waters, including 46 miles of the statewide Florida Circumnavigational Saltwater Paddling Trail.





## ENHANCING SAFETY

### Safety Performance Measures

The Fixing America's Surface Transportation (FAST) Act requires performance-based, multi-modal planning processes to address the safety challenges on the U.S. transportation system. The FAST Act authorizes FHWA to establish safety performance measures. Forward Pinellas began reporting on these safety performance measures in its *Traffic Crash Trends and Conditions Report*, (October 2016), and continues to report on safety performance measures, which are summarized in the tables and infographics in the pages that follow.



Pinellas County Safety Performance Measures	2013	2014	2015	2016	2017	2018	2013-2017 Average	2014-2018 Average	Percent Change (from 2013-17 Avg. to 2014-18 Avg.)
Number of Motor Vehicle Crash-Related Serious Injuries	879	911	982	1,008	799	954	916	931	1.6%
Number of Motor Vehicle Crash-Related Fatalities	80	117	101	111	110	104	104	109	4.8%
Number of Serious Injury Crashes of Bicycle/Pedestrian Users	162	169	153	188	173	184	169	173	2.4%
Number of Bicycle/Pedestrian Fatalities	34	47	36	48	42	46	41	44	7.3%
Number of Serious Injury Crashes per Vehicle Miles Traveled (VMT)	41.07	41.60	43.60	43.85	33.96	40.82	40.82	40.77	-0.1%
Number of Fatalities per Vehicle Miles Traveled (VMT)	3.70	5.30	4.50	4.83	4.68	4.43	4.60	4.75	3.3%

Notes: The five-year rolling average percent change on this page for crash data is the rounded percent increase or decrease between the five-year rolling average for 2013 through 2017 and the five-year rolling average for 2014 through 2018 in Pinellas County, Florida as reported in the Forward Pinellas *Traffic Crash Trends and Conditions Report*, October 2016, and the Forward Pinellas Crash Data Management System. Crash data includes parking lot crashes. Serious injury crashes in the Forward Pinellas CDMS are "incapacitating injuries" and do not include "non-incapacitating injuries" or "possible injuries".



## Florida's Strategic Highway Safety Improvement Plan (SHSP) Performance Measures

Another element of transportation safety planning is the SHSP. The Florida Department of Transportation (FDOT) developed their SHSP in collaboration with the Departments of Education, Health, Highway Safety and Motor Vehicles, and the Florida Highway Patrol, dozens of traffic safety organizations, cities and counties, as well as private sector businesses. This effort resulted in a statewide, data-driven plan that addresses the "4-E's" of safety: engineering, enforcement, education and emergency response.

Florida's SHSP goal is to achieve at least a five percent annual reduction in the actual number of fatal and serious injury crashes in seven focus areas that are defined below.

- **Aggressive Driving** - A crash involving a driver who; failed to yield right-of-way, failed to keep in the proper lane, followed too closely, ran a red light, ran a stop sign, passed improperly, exceeded the posted speed limit, disregarded other road markings, operated a motor vehicle in an erratic or reckless manner, or who disregarded other traffic signage.
- **Intersection Crash** - A crash in which the first harmful event occurs within the limits of an intersection.
- **Vulnerable Road Users** - Pedestrians, bicyclists or motorcyclists.
- **Lane Departure Crash** - A crash where the driver's vehicle impacted a utility pole, light support, traffic sign/signal support, tree, mailbox, guardrail, fence, ditch, culvert, concrete traffic barrier, cable barrier, bridge trail, bridge pier or support. This definition also includes any vehicle sideswipe or rollover.
- **Impaired Driving** - A crash involving a person who is suspected of drug or alcohol use or is under the influence of medication.
- **At-Risk Drivers** - A crash involving a 15 to 19-year-old person or person 65 years old or older.
- **Distracted Driving** - A crash resulting from the driver being distracted by electronic communication devices (cell phones, etc.), other electronic devices (navigation device, DVD player, etc.), other distraction inside the vehicle, external distraction (outside the vehicle), texting or general inattentiveness.

# Pinellas County, Florida

The hard work and dedication of safety partners in implementing the SHSP continues to pay off. For example, Pinellas County's injury crashes due to driver impairment increased 4% and fatal lane departure crashes dropped 3%. Improvements are needed, however, especially with regard to fatal crashes involving intersections and fatal crashes involving distracted drivers. Both categories increased, on average, by an alarming 26%.

STRATEGIC HIGHWAY SAFETY PLAN FOCUS AREAS	2013	2014	2015	2016	2017	2018	2013-2017 Average	2014-2018 Average	Percent Change (from 2013-167 Avg. to 2014-18)
Serious Injury Crashes Due to Aggressive Driving	306	318	333	363	253	306	315	315	0%
Serious Injury Crashes Involving Vulnerable Users	291	297	318	342	271	323	304	310	2%
Lane Departure Serious Injury Crashes	151	141	134	156	112	159	139	140	1%
Serious Injury Crashes Due to Driver Impairment	114	79	103	90	88	105	95	93	-2%
Serious Injury Crashes Involving At-Risk Drivers	273	331	347	375	262	352	318	333	5%
Serious Injury Crashes Due to Distracted Driving	79	89	108	97	106	103	96	101	5%
Serious Injury Intersection Crashes	243	243	219	295	239	345	248	268	8%
Fatal Crashes Due to Aggressive Driving	20	38	36	27	40	39	32	36	12%
Fatal Crashes Involving Vulnerable Users	50	76	65	71	68	74	66	71	7%
Lane Departure Fatal Crashes	14	15	12	23	12	16	15	16	3%
Fatal Crashes Due to Driver Impairment	20	36	33	23	42	35	31	34	10%
Fatal Crashes Involving At-Risk Drivers	29	27	43	32	38	51	34	38	13%
Fatal Crashes Due to Distracted Driving	3	2	9	5	8	10	5	7	40%
Fatal Intersection Crashes	16	31	16	21	26	45	22	28	26%

Notes: The five-year rolling average percent change on this page for crash data is the percent increase or decrease (rounded) between the five-year rolling average for 2013 through 2017 and the five-year rolling average for 2014 through 2018 for crash data in Pinellas County, Florida as reported in the Forward Pinellas *Traffic Crash Trends and Conditions Report*, October 2016, and the Forward Pinellas Crash Data Management System (CDMS). The CDMS database categorizes crash injuries into "possible injuries", "incapacitating injuries and non-incapacitating injuries". Incapacitating injuries from the CDMS were used to populate data for the SHSP focus areas for serious injury crashes.



## Trends in Florida (2014 - 2018)

Florida is one of the most populous states in the country according to the latest population estimates from the U.S. Census Bureau, and the population is projected to continue to increase in the foreseeable future. This population growth, along with an increase in traffic congestion, the number of licensed drivers and a significant decrease in the average annual retail price of gasoline are all variables that directly impact the driving habits of Floridians.

FLORIDA TRENDS	2013	2014	2015	2016	2017	2018	5 Year Rolling Avg. (2013-2017)	5 Year Rolling Avg. (2014-2018)	5 Year Rolling Avg. Percent Change
Total Motor Vehicle Crashes <sup>1</sup>	317,259	344,478	374,511	395,606	401,318	401,851	366,634	383,553	↑ 5%
Total Injuries <sup>1</sup>	211,124	225,758	225,718	254,226	253,928	254,484	234,151	242,823	↑ 4%
Total Fatalities <sup>1</sup>	2,403	2,497	2,938	3,182	3,093	3,150	2,823	2,972	↑ 5%
Total Pedestrian Crashes <sup>1</sup>	8,422	8,845	9,086	9,092	9,392	9,307	8,967	9,144	↑ 2%
Total Pedestrian Fatalities <sup>1</sup>	498	607	632	649	650	699	607	647	↑ 7%
Total Bicycle Crashes <sup>1</sup>	6,974	7,086	7,123	6,664	6,656	6,568	6,901	6,819	↓ -1%
Total Bicycle Fatalities <sup>1</sup>	135	135	153	140	117	148	136	139	↑ 2%



<sup>1</sup> <https://www.flhsmv.gov/traffic-crash-reports/crash-dashboard/>

# Pinellas County, Florida

## Trends in Florida (2014 - 2018)

Increases in population and licensed drivers as well as an overall decrease in the average annual price of gasoline are contributing factors to the overall increase in motor vehicle use. The table on the previous page shows corresponding increases in the number of traffic crashes, injuries and fatalities in Florida during the same time frame. Based on these figures, it's clear that much work still needs to be done. There must be a continued focus on taking additional steps to improve traffic safety, including the strengthening of traffic laws, enhancing enforcement, expanding educational outreach and continuing to develop engineering solutions whenever feasible. The Florida Department of Transportation's (FDOT) *2018 Florida Strategic Highway Safety Plan (SHSP)* is the statewide plan focusing on how to accomplish the vision of eliminating fatalities and reducing serious injuries on all public roads.

## Trends in Pinellas County (2014 - 2018)

In 2018, a total of 29,656 motor vehicle crashes were reported in Pinellas County. These crashes resulted in 119 fatalities and a total of 4,229 injuries. On average, the overall trend is a 7% increase in fatalities when comparing the five-year average for 2013 through 2017 with the five-year average for 2014 through 2018. The 7% increase is generally consistent with the upward trend of traffic fatalities since 2013 as reflected in the Pinellas County crash trends table below.

PINELLAS COUNTY CRASH TRENDS	2013	2014	2015	2016	2017	2018	2013-2017 Average	2014-2018 Average	Percent Change (from 2013-17 Avg. to 2014-18 Avg.)
Total Motor Vehicle Crashes	24,624	26,580	28,501	30,135	30,194	29,656	28,007	29,013	4%
Total Injuries	4,502	4,249	4,426	4,656	4,443	4,229	4,455	4,401	-1%
PC Total Fatalities	80	117	101	118	116	119	106	114	7%
Total Pedestrian Crashes	583	571	574	660	563	596	590	593	0.4%
Total Pedestrian Fatalities	30	40	34	47	38	39	38	40	5%
Total Bicycle Crashes	544	571	471	712	687	759	597	640	7%
Total Bicycle Fatalities	5	7	5	1	4	7	4	5	9%
Total Motorcycle Crashes	622	641	671	701	587	590	644	638	-1%
Total Motorcycle Fatalities	19	30	28	25	26	28	26	27	7%

Notes: The five-year rolling average percent change on this page for crash data is the rounded percent increase or decrease between the five-year rolling average for 2013 through 2017 and the five-year rolling average for 2014 through 2018 in Pinellas County, Florida as reported in the 2018 Forward Pinellas *Traffic Crash Trends and Conditions Report*, and the Forward Pinellas Crash Data Management System, 2018.



## Vulnerable Road User Crashes



- The number of vulnerable road user crashes increased again 1.5%.
- Fatal vulnerable road user crashes increased 6%.
- Vulnerable road user deaths account for 61% of all traffic fatalities on average. This is nearly twice the national average.<sup>1</sup>
- One out of every three serious injury crashes involve vulnerable road users. Of the 954 serious injury crashes in 2018, 323 (34%) involved vulnerable road users.

**61%**  
of all **Traffic Fatalities**  
involve **Vulnerable Users (Pedestrians, Bicyclists and Motorcyclists)**

## Pedestrian Crashes



- On average, 593 crashes per year involve pedestrians.
- Injury crashes involving pedestrians increased .24%
- An average of 40 fatal crashes per year involved pedestrians, which is 35% of all traffic fatalities. This is more than twice the national average.<sup>2</sup>



## Bicycle Crashes



- The average number of bicycle crashes per year (including both fatal and non-fatal crashes) increased from 597 to 640 per year (a 7% increase).
- On average, fatal bicycle crashes account for more than 4% of all traffic fatalities.
- The average number of fatal crashes involving bicyclists increased from 4 to 5 (a 9% increase).



Notes: Unless cited otherwise, statistics that do not report a percent increase or decrease represent the five-year rolling average from 2014 to 2018. Percent increases or decreases are the rounded percent increase or decrease between the five-year rolling average for 2013 through 2017 and the five-year rolling average for 2014 through 2018 for crash data in Pinellas County, Florida as reported in the Forward Pinellas Crash Data Management System.

## Motorcycle Crashes

- The number of motorcycle crashes decreased 1% from a five-year average of 644 crashes per year (2013-2017) to 638 (2014-2018). This is an improvement compared to the trend reported last year (a .5% decrease in motorcycle crashes).
- On average, 2% of all crashes involve motorcycles.
- On average 24% of all fatal crashes involve motorcycles. This is nearly twice the national average.

Number of All Motorcycle Crashes

Down 1%

1 out of 4 fatal crashes involve motorcycles



## Teen Driver Crashes

- The number of crashes involving teen drivers increased 2.3%
- 10% of all crashes involved teen drivers between the ages of 15 and 19
- An average of 7 fatal crashes per year involved teen driving
- 6% of all traffic-related fatalities involved teen drivers
- Property damage only crashes due to teen driving up 2.4%
- Teen injury crashes up 6%

Crashes involving teens

Up 2.3%

Nearly 1 out of 3 fatal crashes involve aging drivers



## Crashes Involving Aging Drivers

Older adults are living and driving longer than ever before, and Florida has the largest number of aging road users in the nation.

- 28% of all fatal crashes involve aging drivers
- The number of crashes involving aging drivers increased 5%
- An average of 32 fatal crashes per year involved aging drivers (up 10%)
- 29% of all crashes in Pinellas involved drivers 65 or older (up from 24%).

1 out of 3 crashes involve aging drivers





## Impaired Driving Crashes

On average, nearly one out of three (31%) fatal crashes in Pinellas County involved a person who was impaired by drugs or alcohol.

- The number of all crashes involving impaired drivers decreased nearly 1%
- Fatal crashes involving impaired driving increased 10% from an average of 31 fatal crashes per year to an average of 34 per year.
- Injury crashes involving impaired driving are up 4%.

Fatal Crashes involving impaired driving



## Aggressive Driving Crashes

On average, 32% of all traffic fatalities in Pinellas County involved aggressive driving (up from last year's average of 30%). That's an average of 36 deaths per year involving aggressive driving. It's noteworthy that the intersection of US Highway 19 and Curlew Road continues to have the highest number of crashes involving aggressive drivers.

- The number of crashes involving aggressive drivers increased 5%
- 24% of all crashes involved aggressive driving (up from 23%)
- Fatal crashes involving aggressive driving are up 12% from an average of 32 to an average of 36 fatal crashes per year
- Serious injury crashes involving aggressive driving are down 6%



## Distracted Driving Crashes

We need to adapt to emerging trends that will affect land use and transportation in the future such as innovations in technology that help prevent distracted driving crashes.

- Distractions resulting from a driver's cell phone, navigation device, external distraction, general inattentiveness or other activity are responsible for an average of 3,314 crashes per year (up 10% from last year's average of 3,011).
- More than 11% of all crashes involved distracted driving.
- An average of 7 fatal crashes per year involve distracted driving (up from 5)
- An average of 6% of all fatal crashes involve distracted driving.

Notes: Unless cited otherwise, statistics that do not report a percent increase or decrease represent the five-year rolling average from 2014 to 2018. Percent increases or decreases are the rounded percent increase or decrease between the five-year rolling average for 2013 through 2017 and the five-year rolling average for 2014 through 2018 for crash data in Pinellas County, Florida as reported in the Forward Pinellas Crash Data Management System.



## TRANSPORTATION & EMERGING TECHNOLOGIES



- More Floridians work from their homes than use public transit for their commute to work. (Source: Florida Transportation Plan <http://www.floridatransportationplan.com/tech.htm>)
- Autonomous transit shuttles are currently operating in five cities in Florida. Of the more than 30,000 motor vehicle deaths in the US each year, about 94% are due to human error. According to the National Highway Traffic Safety Administration (NHTSA), automated vehicle safety technologies can potentially prevent many of the vehicle deaths that are caused by human error. Source: National Highway Traffic Safety Administration (NHTSA): <https://www.nhtsa.gov/technology-innovation/automated-vehicles>
- The global market for connected cars is expected to grow 270% by 2022. Nationally, fully electric vehicles are projected to represent 8% of the total number of automobiles sold by 2025. (Source: Florida Transportation Plan <http://www.floridatransportationplan.com/tech.htm>)
- Amazon's Prime Air Service will use drones to deliver packages to addresses within a 10 mile radius of an Amazon fulfillment center, and UPS is currently testing the deployment of drones from the tops of delivery vehicles.
- 28% of Americans age 18-29 have used on-demand ride sharing service. Frequent users are less likely to own a car and more likely to take transit, walk or ride a bicycle. (Source: Pew Research Center, 2015 as reported in the 2016 Florida Strategic Highway Safety Plan)



Integrating Land Use & Transportation



Adapt – Build – Connect

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**DRAFT**

# **Countywide Trends & Conditions Report**



Developed by Forward Pinellas in its role  
as the Metropolitan Planning Organiza  
and Planning Council for Pinellas County



## Integrating Land Use & Transportation



## Adapt – Build – Connect

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## INTRODUCTION

Forward Pinellas was created by a Special Act unifying the Pinellas Planning Council (focused on land use planning) and the Pinellas County Metropolitan Planning Organization (focused on transportation planning) into one organization. This unification recognizes that land use and transportation planning do not exist independently but have a relationship in which each influences the other.

Land use and transportation both play a key role in the local and regional economy, quality of life, environment and community character. The Forward Pinellas 2017 *Countywide Trends and Conditions Report* provides a biennial snapshot of countywide land use and transportation trends and conditions in Pinellas County, Florida. This information can be used as a tool for measuring various performance metrics tied to the goals, objectives and policies of Forward Pinellas' guiding plans, the Long Range Transportation and Countywide Plans.

This report is based upon transportation and land use data collected from a variety of resources, including Forward Pinellas, Federal, State and local agencies. Transportation data includes usage and crash data related to roads, transit, sidewalks, trails and bike lanes, formatted in tables, maps, and graphs. Data from 2016 is used, along with a five-year timeframe for comparison, whenever available.

This report is also used for Forward Pinellas' Congestion Management Process (CMP), as data compiled for this report serves as a basis for identifying where the transportation system is functioning properly and where improvements are needed. This report will be used by Forward Pinellas to help guide land use policy, identify and prioritize needed transportation improvements, analyze the effectiveness of implemented congestion and safety strategies and provide input for developing Forward Pinellas' Transportation Improvement Program (TIP), Long Range Transportation Plan (LRTP) and the Countywide Plan.

## The Pinellas Transportation System

55 centerline miles of Strategic Intermodal System corridors

588 centerline miles of monitored roadways

55 miles of Pinellas Trail Loop

62 miles of community bicycle/pedestrian trails

48 local & regional bus routes

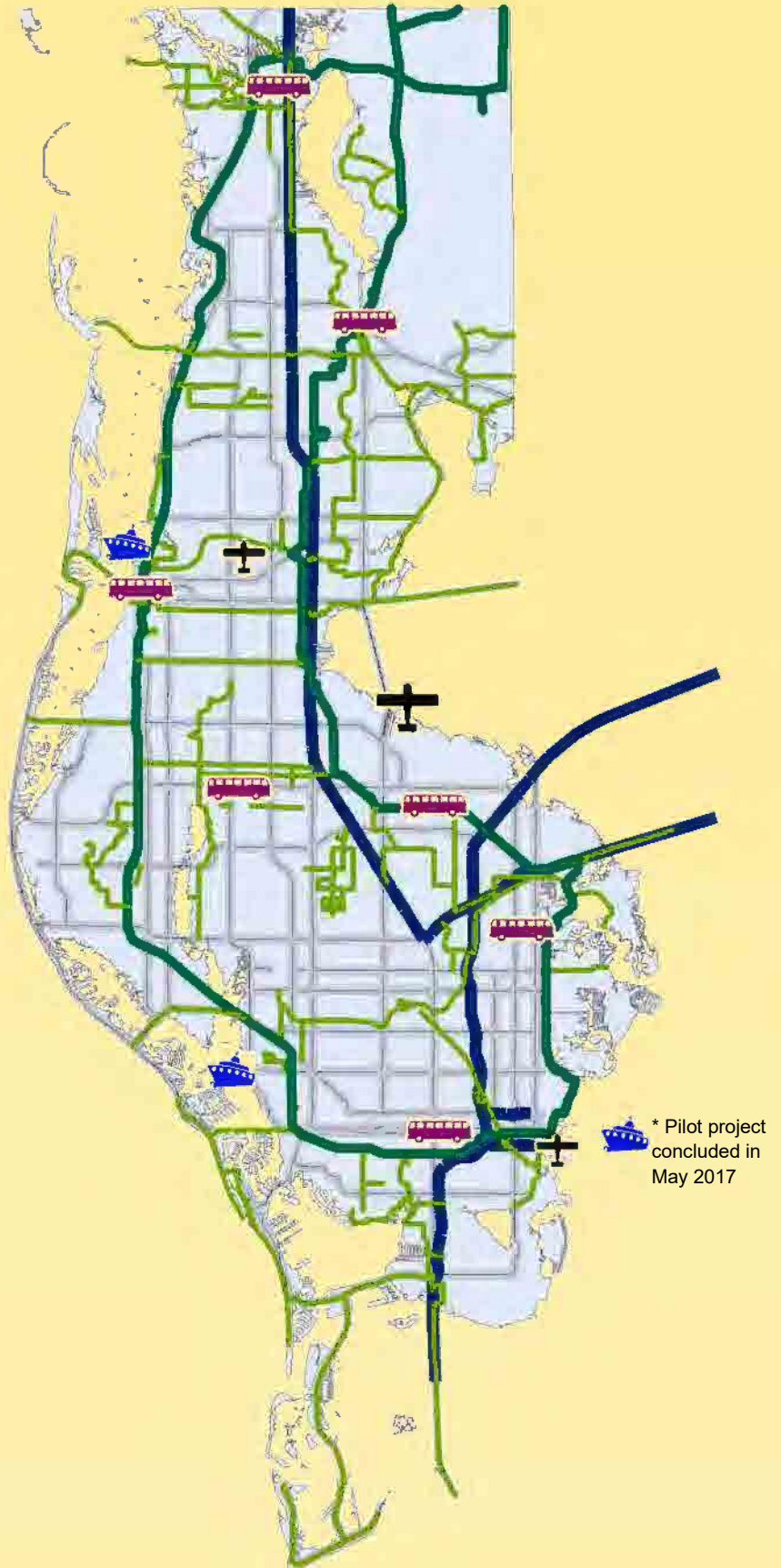
3 airports

3 ferry routes

### Legend

-  Strategic Intermodal System
-  Other arterial roadways
-  Pinellas Trail Loop
-  Community trails
-  Major/regional bus stops
-  Airports
-  Ferry service

Source: Forward Pinellas, 2017





## COORDINATING LAND USE AND TRANSPORTATION



***Transportation and land use planning do not exist independently, but have a relationship in which each influences the other.***



**4% of Pinellas County residents live in designated activity centers**



Land use and transportation have traditionally been treated as separate planning fields. But land use decisions affect the transportation system and can increase options for people to access destinations, goods, services, and other resources to improve the quality of their lives. In turn, transportation decisions affect land use development demand, choices, and patterns.

The Forward Pinellas *Countywide Plan for Pinellas County* integrates land use and transportation planning by guiding new population and job growth into activity centers such as historic downtowns, and multimodal corridors where walking, biking and transit are supported. A concentration of different uses allows residents to commute to work or school, visit neighbors, shop for daily needs, and travel to special events as easily as possible without an automobile. About 4% of residents live in designated activity centers, the same as in 2012.

To maximize the number of people who live and work within convenient reach of transit, higher-density residential, office, and retail development should be concentrated within easy walking distance (1/4 to 1/2 mile) of transit stops. Land use patterns that support walking, biking and transit use include an interconnected street network designed to make travel distances as short and direct as possible, with buildings oriented near the sidewalks and parking relegated to the rear of the property, to minimize conflicts between automobiles and other modes of travel.

Source (both pages): U.S. Census Bureau, 2016 and Forward Pinellas, 2017



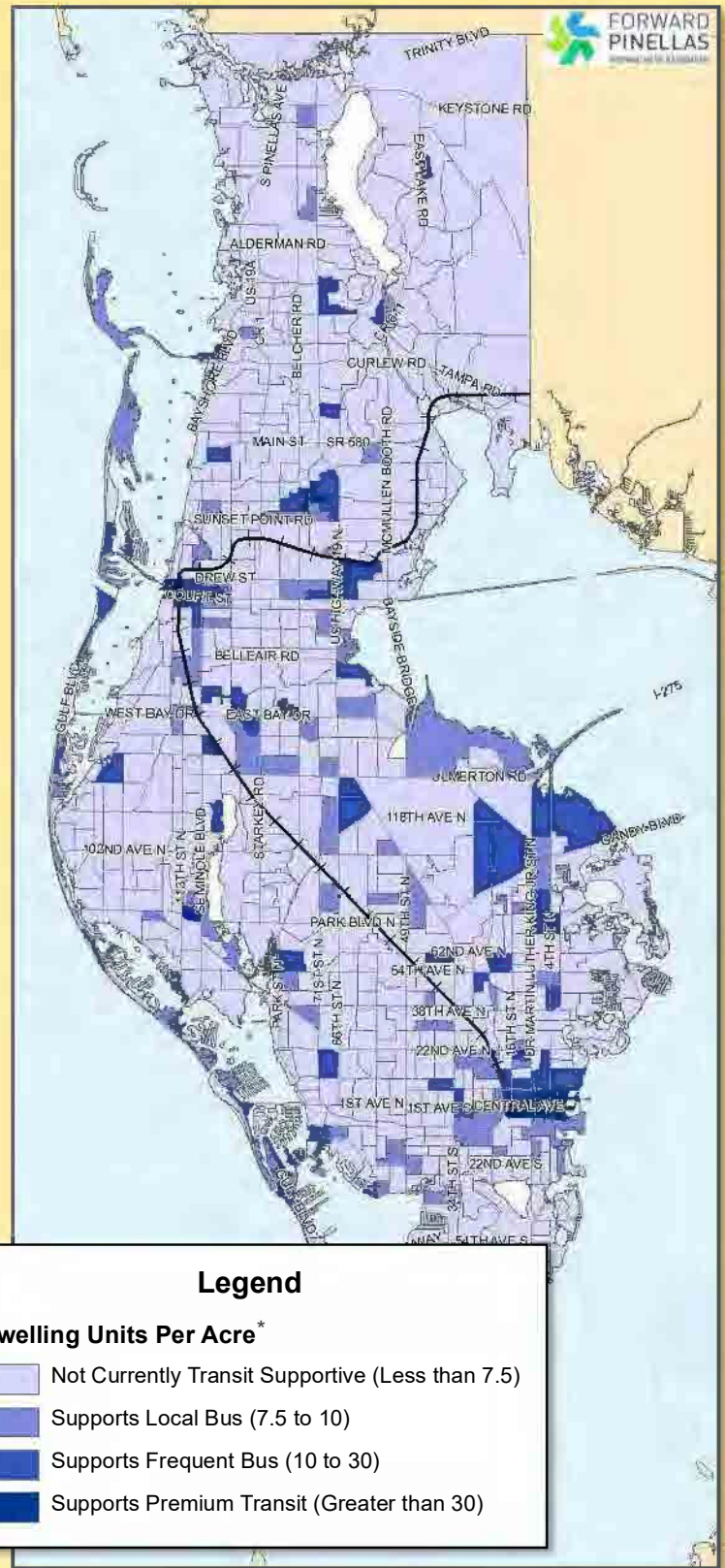
# Pinellas County, Florida



As depicted on the map at right, 13% of the Pinellas population lives in Census block groups with average residential densities that could, with appropriate urban design, support frequent bus service or better. This is an increase from 12% in 2012.

Forward Pinellas also encourages local governments to build “Complete Streets,” or streets designed and operated to enable safe access for everyone, including pedestrians, bicyclists, public transportation users and motorists. The Complete Streets approach is to view all transportation improvements as opportunities to create safer, more accessible streets for all users, not just in activity centers and multimodal corridors. Under this approach, even small projects can be an opportunity to make meaningful improvements. In 2017, the inaugural Forward Pinellas Complete Streets Program allocated \$1.1 million in funding for construction and planning along these corridors.

## Transit-Supportive Residential Densities (Average by Census Block Group)

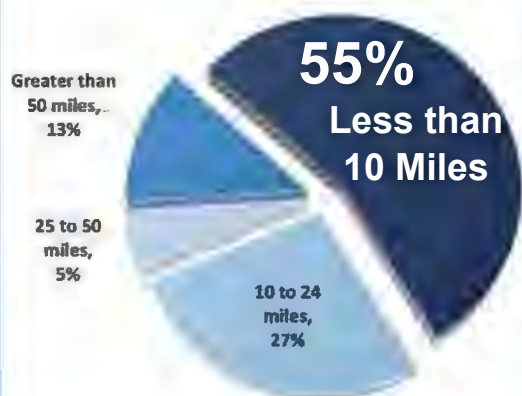


\* Based on residential land acreage within each block group. Density ranges represent typical minimums needed to support transit types, with appropriate urban design.

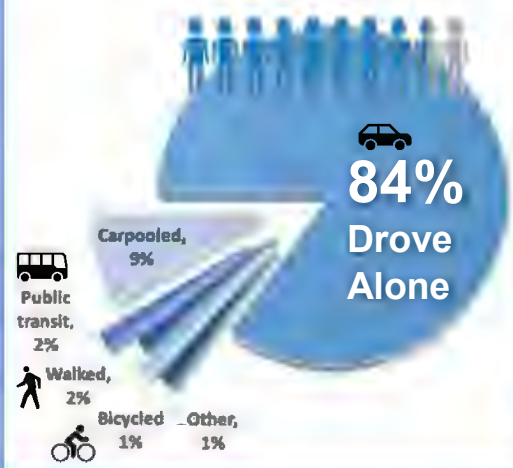


**Transportation connectivity and planned redevelopment are integral to the economic success of the Tampa Bay region.**

**Distance to Work for Pinellas Residents**



**Means of Transportation to Work for Pinellas Residents**



Source: U.S. Census Bureau, 2016 ACS 1-Year Estimates & LODES 2015. Excludes residents working from home.

## Economic Development



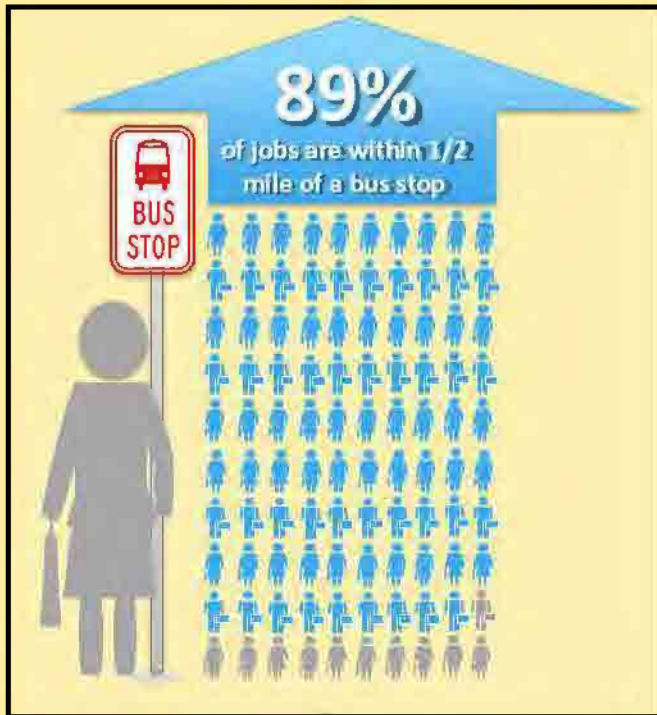
Transportation and land use decisions create the framework within which communities grow, influencing development, economic prosperity and quality of life. Forward

Pinellas' Long Range Transportation Plan and Countywide Plan both share the goal of supporting and furthering economic development and employment opportunities within Pinellas County. Forward Pinellas also promotes opportunities for public-private partnerships, improving roadway operations, travel options and access to and from major activity centers.

Commuting to and from work is the largest component of many residents' travel, and offers significant opportunities for improving transportation choices. Land use planning can provide for residents and workplaces to be located closer to one another, with densities and land use patterns that support multimodal travel, while improved transportation infrastructure and services connect the areas where demand is greatest.



# Pinellas County, Florida

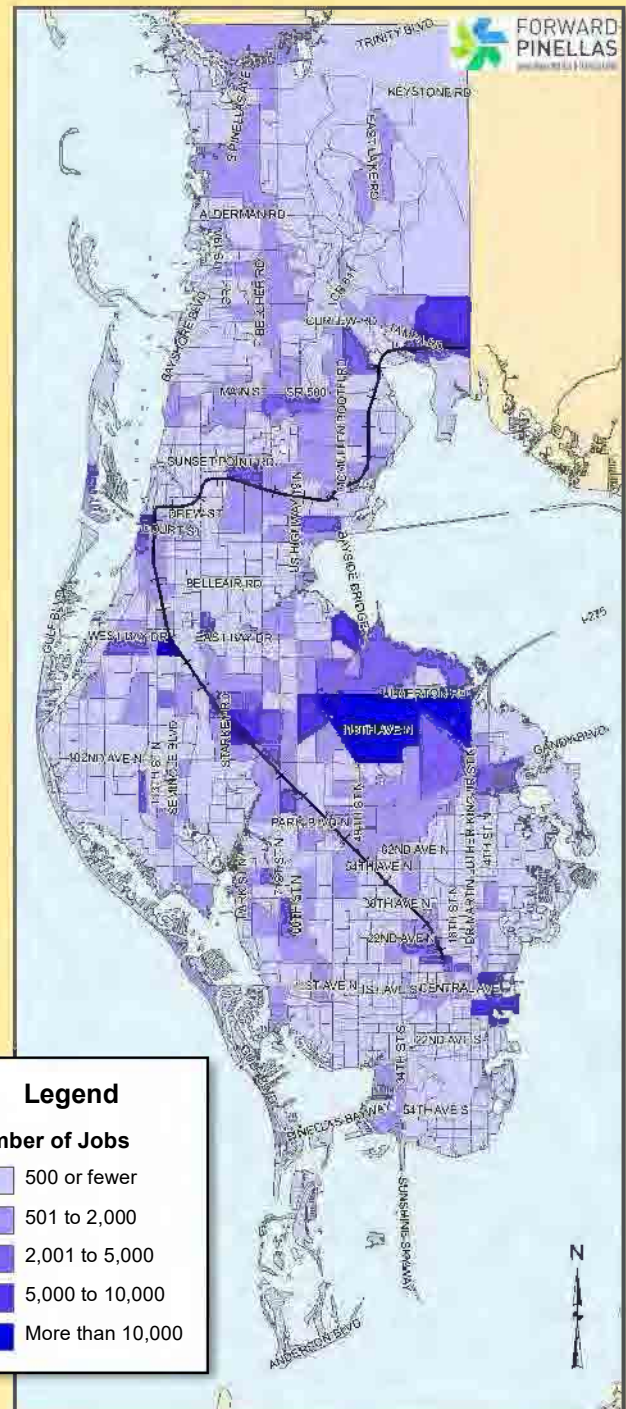


Source: U.S. Census Bureau, 2016 and Forward Pinellas, 2017

A majority of Pinellas County (84%) residents commute alone in private vehicles, unchanged since 2012. This is higher than the U.S. Census Bureau's nationwide estimate of 80% for 2016. Improving transit, bicycle and pedestrian infrastructure can provide other options for commuters, particularly for those traveling shorter distances.

As noted in the infographic above, 89% of jobs are within 1/2 mile of a bus stop. Increasing the frequency of bus service along routes serving large numbers of housing and jobs could make this mode of travel a more viable option for the 55% of commuters traveling less than ten miles to work. Encouraging future population and job growth to locate within activity centers and along multimodal corridors will also allow transportation infrastructure to be placed as efficiently as possible.

## Distribution of Jobs by Traffic Analysis Zone



Source: U.S. Census Bureau, LODES 2015 and Forward Pinellas,



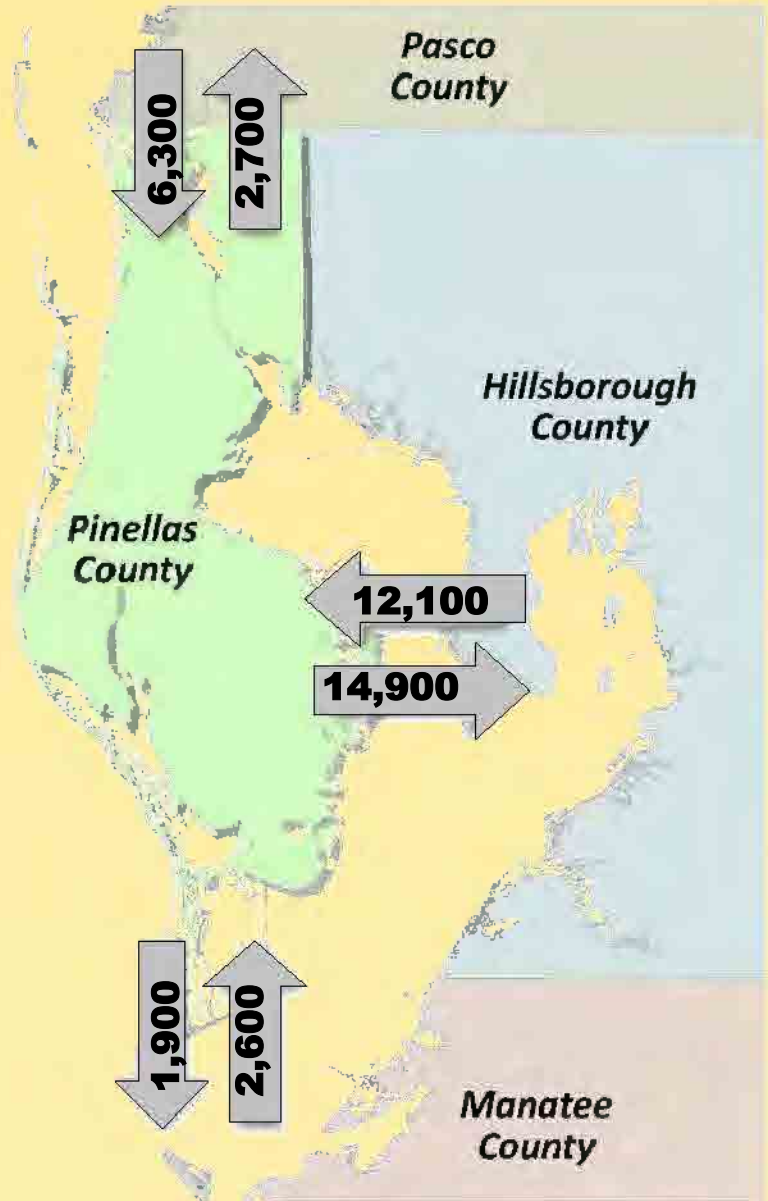
## REGIONAL TRENDS



Pinellas County is an important part of the increasingly interdependent Tampa Bay region, and is a major origin and destination for regional commuter travel. According to the U.S. Census Bureau's *Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics* from 2014 (the most current data year), about 66% of Pinellas' 396,000 residents work within the county. Another 18% work in one of the three adjacent counties, and the remaining 16% travel to more distant locations.

Forward Pinellas maintains a Transportation Planning Inventory (TPI) database to monitor detailed traffic flows on 588 centerline miles of selected roadways, including regional connections to adjacent counties. As shown on the map of A.M. peak hour traffic above, the majority of intercounty commuter travel is between Pinellas and Hillsborough Counties, with Pinellas sending more residents to work in Hillsborough County than the reverse. However, Manatee and Pasco Counties send significantly more of their residents to work in Pinellas than Pinellas sends to those counties. While the number of intercounty peak hour commuters has increased by 8% since 2012, the travel patterns among the counties remains virtually identical.

A.M. Peak Hour Traffic Volumes



Source: Forward Pinellas TPI Database - monitored roads, 2016

# Pinellas County, Florida

Tourism is one of Pinellas County's most important industries, and arguably its most visible. Pinellas County has experienced significant growth in visitors in recent years. Visit St. Pete/Clearwater, the Convention and Visitors Bureau for Pinellas County, reported approximately 5.4 million visitors in 2012, increasing to approximately 6.3 million (17% growth) in 2016.

The increase in out-of-county and out-of-state cars, as well as rental cars, places additional demands on the area's roadway network. Peak impact is seen during the annual occurrence of Easter and spring break for schools and colleges. Traffic congestion on routes between the mainland and barrier islands, a popular draw for tourists, is particularly visible during these periods. These visitors also pay sales and gas taxes, which provide additional revenue to fund transportation projects.

Tourism had a \$9.7 billion economic impact in 2016 (up 34% from 2012, unadjusted for inflation), according to Visit St. Pete/Clearwater's *Annual Visitor Profile Report* for those years.

Forward Pinellas leads the way in planning for the future of critical regional assets through its Strategic Planning and Operations Topics, known as SPOTlight. These emphasis areas bring local, regional and state governments and agencies together in partnership to plan for and implement land use and transportation enhancements in key areas. Current SPOTlight emphasis areas include developing a vision for the U.S. 19 corridor, and enhancing transportation access between the mainland and beach communities. The development of a master plan for the economically important Gateway/mid-county area is slated for 2018.



Source: Convention and Visitors Bureau for Pinellas County, (2012 - 2016)





## MANAGING CONGESTION

### What is the Strategic Intermodal System (SIS)?

The efficient movement of residents, workers, visitors and goods between Pinellas County and the rest of Tampa Bay relies on a handful of major roadways belonging to the statewide Strategic Intermodal System (SIS). The SIS is an intermodal network of high-priority transportation facilities that seamlessly flow from one mode to the next with the goal of providing mobility for people and goods traveling through the State. There are 55 centerline miles of SIS roadways in Pinellas County, including interstate highway I-275 and its spurs I-175 and I-375; portions of U.S. Highway 19; and Gandy Boulevard. The Florida Department of Transportation oversees the designation, implementation, and management of the SIS.



### Congestion Management Process

Congestion management is the use of strategies to improve transportation system performance and reliability by reducing the adverse impacts of congestion on the movement of people and goods. The congestion management process (CMP) is a systematic approach for providing safe and effective integrated management and operation of the multimodal transportation system.

The overall CMP goal is to ensure the safe and efficient movement of people and goods by successfully addressing areas of recurring and non-recurring congestion with low cost and cost effective operational and multi-modal improvements before considering any capital intensive capacity improvements.

Forward Pinellas' congestion management process for Pinellas County follows the policies and procedures in the currently-adopted [\*Congestion Management Process Policies and Procedures Manual\*](#) (available on our website at [forwardpinellas.org](http://forwardpinellas.org)). This manual describes the process used to respond to federal and state CMP requirements and closely follows the recommended eight step process identified in *Congestion Management Process: A Guidebook*, published by the U.S. Department of Transportation/Federal Highway Administration.

### Most Congested Roadways

Part of the congestion management process includes analyzing the most severely congested road segments that also have the longest duration of congestion. Monitored roadways are ranked based upon their volume-to-capacity ratios to determine ranked results. Ranked results show the most severely congested road segments for the longest period of time for both Strategic Intermodal System (SIS) and non-SIS roads. Rankings for the top twenty most severely congested SIS road segments are shown in the tables on the next page.

# Pinellas County, Florida

**Top 20 Most Severely Congested Non-SIS Facilities/Segments**

Rank	Facility	From/To
1	East Lake Rd	Woodlands Blvd to Tarpon Woods Blvd
2	Courtney Campbell Cswy	Bayshore Blvd to Damascus Rd
3	Courtney Campbell Cswy	Damascus Rd to Hillsborough county line
4	Forest Lakes Blvd	Pine Ave to Commerce Blvd
5	Forest Lakes Blvd	Commerce Blvd to Brooker Creek Blvd
6	Forest Lakes Blvd	Brooker Creek Blvd to Hillsborough county line
7	East Lake Rd	Ridgemoor Blvd to Lansbrook Pkwy
8	East Lake Rd	Tarpon Lake Blvd S to Ridgemoor Blvd
9	East Lake Rd	Tarpon Woods Blvd to Tarpon Lake Blvd S
10	SR 688/Ulmerton Rd	Lake Ave to Starkey Rd
11	SR 688/Ulmerton Rd	101st St to Lake Ave
12	SR 688/Ulmerton Rd	Starkey Rd to Tall Pines Dr
13	SR 688/Ulmerton Rd	Tall Pines Dr to Belcher Rd
14	West Bay Dr	Clearwater-Largo Rd to 4 <sup>th</sup> St
15	West Bay Dr	4th St to Missouri Ave
16	SR 688/Ulmerton Rd	34th St to Roosevelt Blvd
17	SR 688/Ulmerton Rd	40th St to 38 <sup>th</sup> St
18	SR 688/Ulmerton Rd	38th St to 34 <sup>th</sup> St
19	ALT US Hwy 19/Bay Pines Blvd	Park St to E end of bridge
20	ALT US Hwy 19/Bay Pines Blvd	E end of bridge to west end of bridge

**Top 20 Most Severely Congested SIS Facilities/Segments**

Rank	Facility	From/To
1	US Hwy 19	Northside Dr to Curlew Rd
2	US Hwy 19	Curlew Rd to Northside Dr
3	US Hwy 19	SR 580/Main St to Republic Dr
4	US Hwy 19	Republic Dr to Curlew Ave
5	Gandy Blvd	Brighton Blvd to San martin Blvd
6	US Hwy 19	CR 39 to Tampa Rd
7	US Hwy 19	Curlew Rd to CR 39
8	US Hwy 19	Highlands Blvd to Alderman Rd
9	US Hwy 19	Nebraska Ave to Highlands Blvd
10	US Hwy 19	Tampa Rd to Nebraska Ave
11	Gandy Blvd	4th St N to Brighton Blvd
12	I-275	22nd Ave N to 38th Ave N
13	US Hwy 19	MLK to Tarpon Ave
14	US Hwy 19	Klosterman Rd to MLK
15	I-275	54th Ave N to Gandy Blvd
16	Gandy Blvd	I-275 west ramps to I-275 east ramps
17	Gandy Blvd	Grand Ave/Gandy access to I-275 west ramps
18	US Hwy 19	Alderman Rd to Innisbrook Dr
19	US Hwy 19	Innisbrook Dr to Klosterman Rd
20	US Hwy 19	78th Ave N to 80th Ave N

Source (both tables): Forward Pinellas TPI Database - monitored roads, 2016

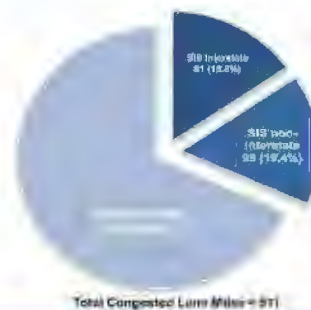
**Total Lane Miles: Uncongested and Congested Compared**



**22% of monitored lane miles are congested during PM rush hour**

**Congested conditions increased 5% between 2012 and 2016**

**Congested Lane Miles: SIS and Non-SIS Compared**



## Traffic Volume and Road Capacity

Roadways are congested if the peak rush hour traffic volume is 90% or more of the road's adopted level of service standard. More than 77% of all lane miles monitored by Forward Pinellas are uncongested, with the remaining 23% being congested during morning/evening rush hour. Congested conditions on all monitored lane miles have increased by about 5% since the 2012 *State of the System Report*. Of the 526 congested lane miles monitored, 32% are SIS and 68% are non-SIS roads, about the same as 2012.

Source: Forward Pinellas TPI Database - monitored roads, 2017

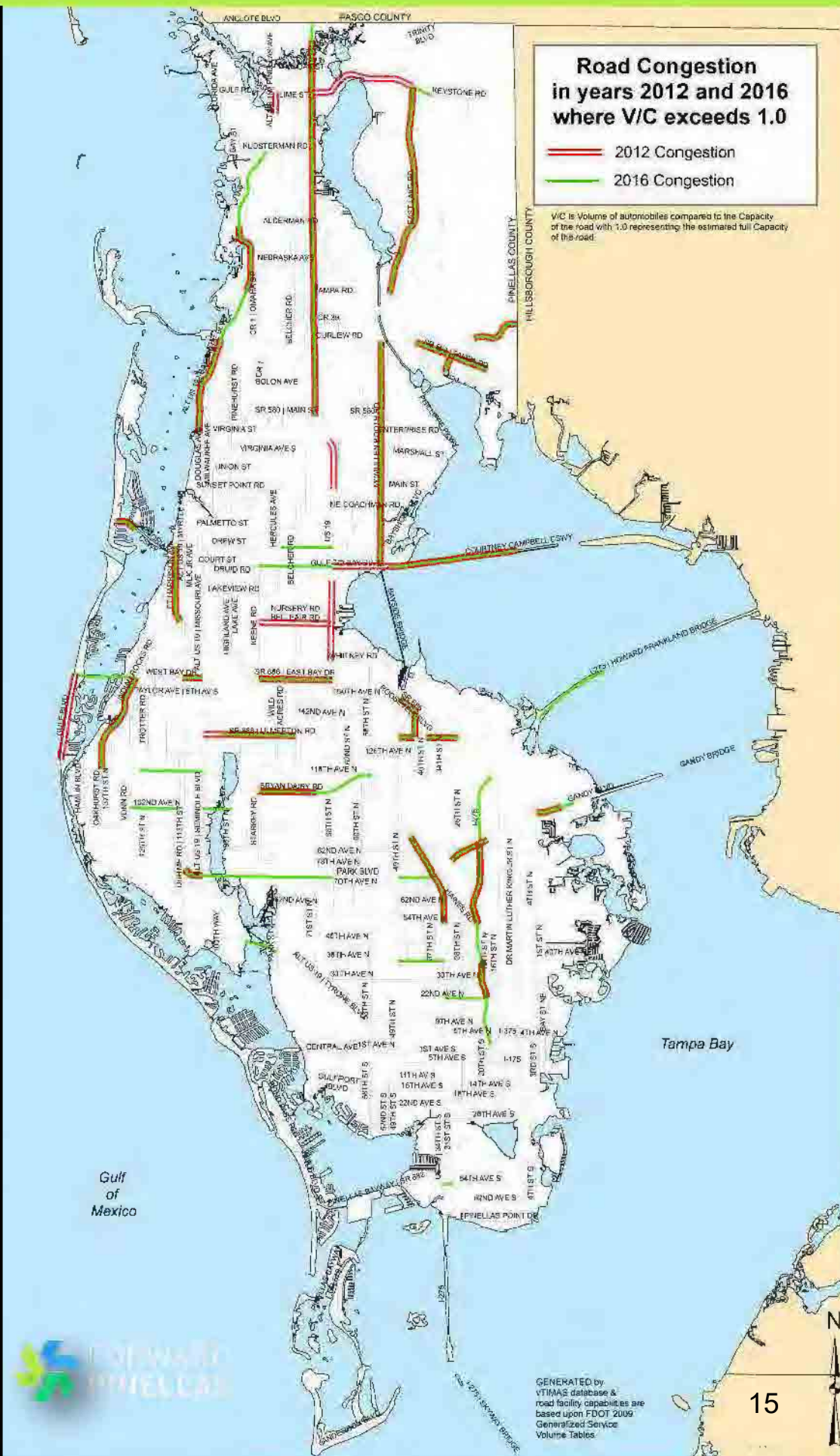




# Pinellas County, Florida

## Congestion Trends

The map on this page compares congested roadways over the five-year period between 2012 and 2016, which is the most recently available data year for volume-to-capacity data). Roadways that were most heavily congested in 2012 are identified with double red lines on the map. The roadways most heavily congested in 2016 are identified with solid green lines. Congested roadways for 2016 are further broken down into SIS (discussed on page 10) and non-SIS roadways on the map on the following page.

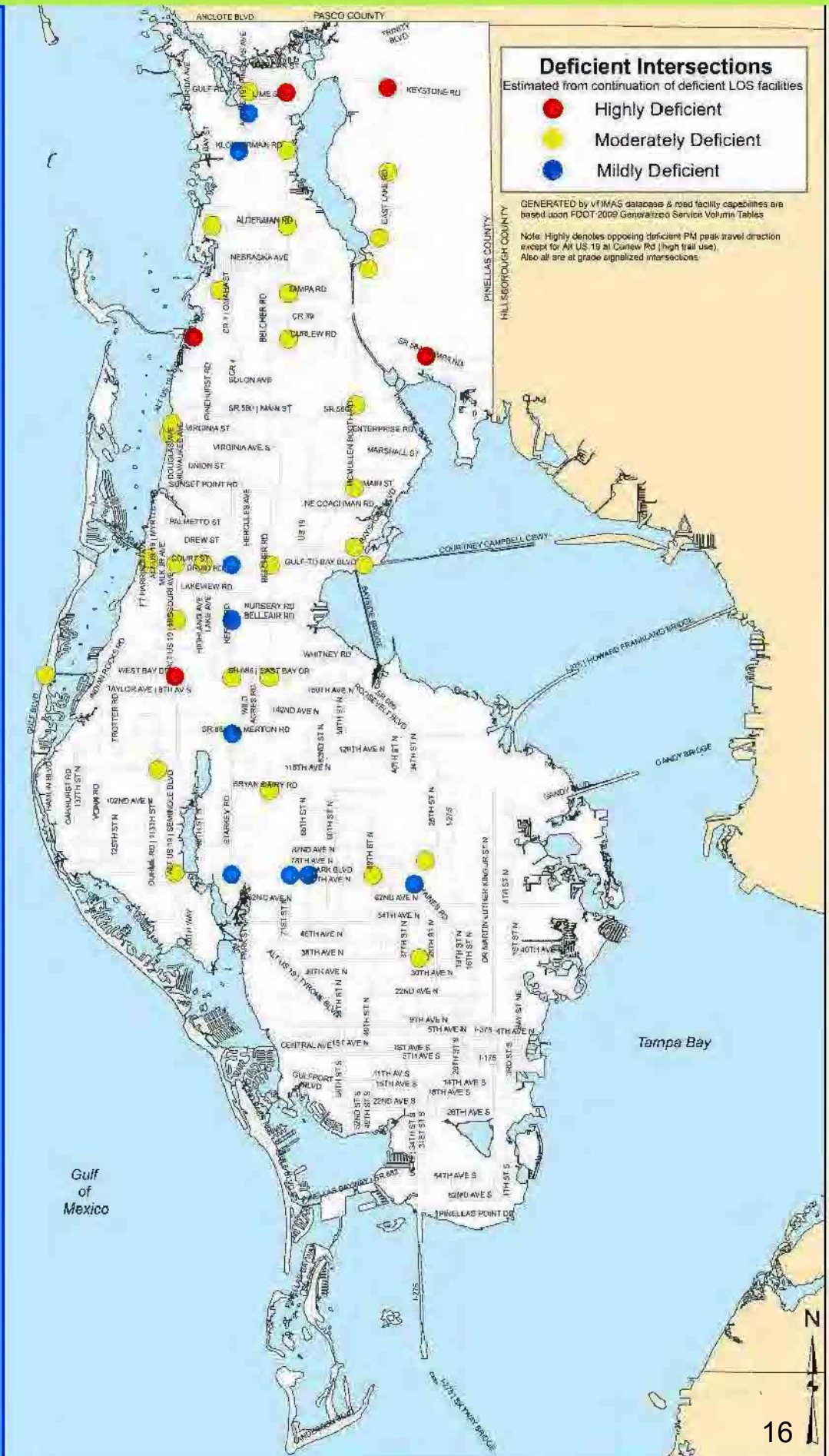


## What is a deficient intersection?

Deficient (or “saturated”) intersections are at-grade, signalized intersections where deficient level of service facilities intersect. Pinellas County’s transportation network has more than 30 such intersections. Although Intelligent transportation systems (ITS) (discussed on page 22) can provide up to 24% savings in travel time, its effectiveness is more limited along roads with deficient intersections during rush hour traffic conditions. Just as a saturated sponge cannot absorb additional water, a saturated intersection with ITS cannot provide additional savings in travel time during rush hour conditions.

Opportunities for capital improvements on roadways are severely limited due to a variety of factors including availability of land, funding, high right-of-way costs, impacts to neighborhoods, compatibility issues, property values and environmental concerns.

As additional ITS and road capacity projects reach a point of diminishing returns, it’s increasingly important for Forward Pinellas and its partners to maximize the potential of all transportation modalities, including transit, pedestrian and bicycle, in addition to roads.



## ENHANCING MOBILITY



***Providing a balanced and integrated multi-modal transportation system for local and regional travel is a goal embedded in Forward Pinellas' transportation and land use planning.***



Opportunities for adding capacity to roadways are severely limited due to a variety of factors including availability of land and funding; high right-of-way costs; concern about impacts on neighborhoods, including compatibility issues, property values and environmental concerns; and a commitment to seeking alternative solutions to congestion mitigation, such as transportation system and demand management, wherever possible and practical.

To meet the county's mobility challenges and to support quality of life, it has become increasingly important for Forward Pinellas and its partners to maximize the potential of all transportation modalities, including transit, pedestrian and bicycle, as well as the efficient movement of vehicles. Expanding modal alternatives to roadways for travel and transport, and improving the efficiency of vehicle traffic through technology, help to reduce traffic congestion.

Forward Pinellas' goal is to facilitate the enhancement of the county's land use that's coordinated with a multimodal transportation system. This goal is stated in both our Long Range Transportation Plan and Countywide Plan and reflected in our day-to-day operations. To this end, we consider all modes in the planning, design and construction of transportation projects. We coordinate and collaborate with transportation partners, the public and other stakeholders to provide for multimodal options for local and regional travel.



## Transit



Local and regional transit services are operated by the Pinellas Suncoast Transit Authority (PSTA). The majority of the county is served by the PSTA system, which operates more than 40 bus, trolley, and shuttle circulator routes. On most routes, departure times (headways) are one hour apart, although some routes with high ridership operate more frequently. Major bus terminals are located at Park Street in downtown Clearwater and Central Plaza in St. Petersburg. Designated park-and-ride lots are located in Largo and St. Petersburg.



A general trend of rising ridership occurred over the past two decades, notably during the Great Recession, which began in FY 07/08 and ended in FHY 09/10. More recently year-over-year decreases, such as that seen between FY 14\15 and FY 16\17 have occurred due to fare increases and service reductions implemented by PSTA and to other factors affecting ridership at transit agencies across the country. These include less shopping trips overall, more telecommuting, transportation network companies, lower gas prices, increased car ownership, and improved economy.

PSTA has implemented a first/last mile service to help get riders to and from the fixed route network, as well as an overnight program for transportation disadvantaged customers who need to get to and from work when fixed route service is not running.



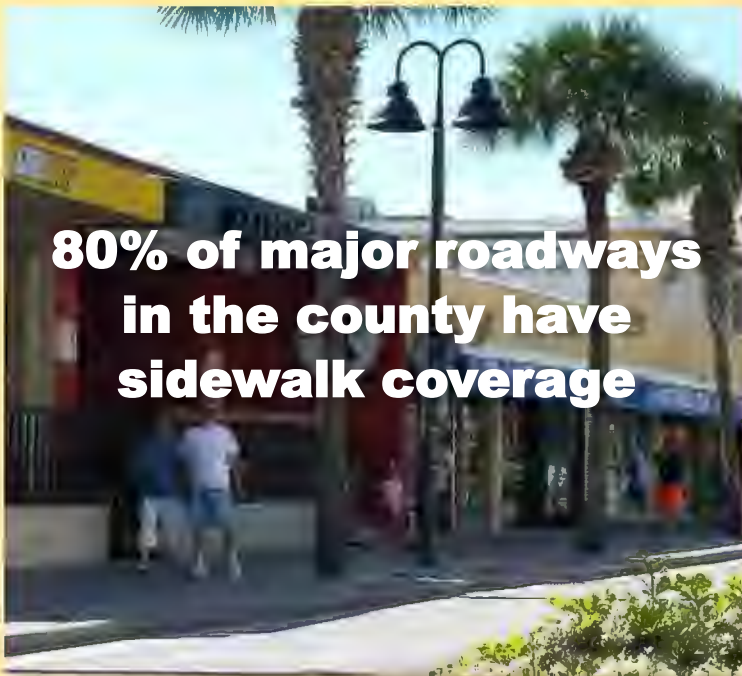
Source: Pinellas Suncoast Transit Authority, 2018

## Bicycle & Pedestrian Infrastructure



It is widely recognized that walking and bicycling are beneficial alternatives to private automobile travel. In addition to allowing greater mobility for residents, encouraging these modes produces less air pollution than automobiles and improves health outcomes by encouraging residents to engage in higher levels of physical activity. These modes of travel are encouraged through the development of distinct, yet complementary and interdependent networks of sidewalks, bike lanes, and trails. According to the 2016 American Community Survey, 1.6% of Pinellas workers walked to work and 1.1% biked to work.

Many areas in the county were developed prior to the 1970s, before sidewalks were routinely required to be installed as part of the land development process. Forward Pinellas advocates for the expansion of the county's sidewalk network to fill in gaps on the major road network, and encourages local governments to identify and fill gaps on local streets. Based on centerline miles, 44% of all roads and streets, or 1,725 roadway miles, had sidewalk coverage in 2016. Major roads had 80% sidewalk coverage in 2016, up from 73% in the *2012 State of the System Report*.



Source: (both pages) *Forward Pinellas*, 2017

Bicycle lanes are on-road facilities designated for use by cyclists only, and can be added during routine resurfacing or restriping projects if sufficient lane width is available. Twenty percent of major roadways, or about 187 miles, currently have bike lane coverage, up from 15% in 2012.



Trails are standalone, paved corridors that provide a "roadway" for the exclusive use of non-motorized trans-



portation. The backbone of the local trail system is the popular Pinellas Trail Loop, shown on the following pages.

The county also contains a network of local community trails, many of which connect to the Pinellas Trail. Pinellas County added 38 miles of trails to its countywide trail network between 2013 and 2017. The countywide trail network not only

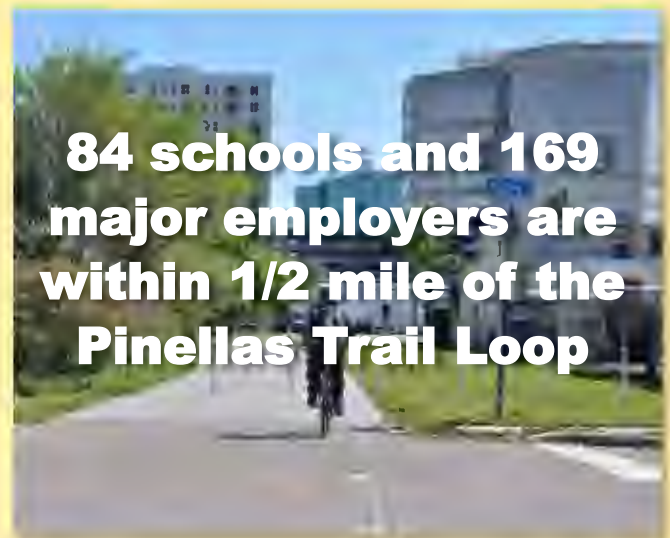
includes the Pinellas Trail Loop, but also all of the community trails constructed collectively by the 25 municipalities within Pinellas County. About 29% of Pinellas County households are located within 1/2 mile of a multiuse trail.

Data collected by automated trail counters in 2017 shows that previous Pinellas Trail use estimates may have been significantly understated. Automated trail counters counted a total of 1,458,383 trail users in 2017 at eight locations on the Pinellas Trail Loop. Currently, automated trail counters are only in use on the Pinellas Trail Loop and are not yet in use throughout the rest of the countywide trail network.



## Pinellas Trail Loop

Forward Pinellas is working with our local government and FDOT partners to complete the 76-mile trail known as the Pinellas Trail Loop. As of December 2017, most of the Pinellas Trail Loop (58 miles, or nearly 76%) has been constructed. Unconstructed gaps still exist, as shown in the map at right. The Loop connects low-income and minority areas, major employers, institutions of higher education and vocational training, schools and many other community resources through a transportation network that reduces traffic congestion while providing an option for the movement of non-motorized travelers.



Source: U.S. Census Bureau, 2016 and Forward Pinellas, 2017

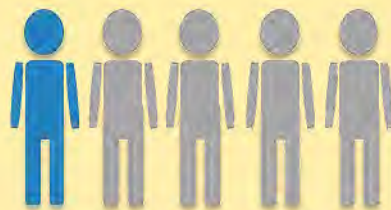
# Pinellas County, Florida

The completed Loop will also provide a regional connection to the Courtney Campbell Causeway Trail, a non-motorized bicycle and pedestrian facility that crosses Tampa Bay, connecting to the Tampa and Hillsborough County trail networks. In addition, the Pinellas Trail Loop connects to the Florida Coast-to-Coast Trail, an uninterrupted trail that, when complete, will span the entire width of the State of Florida from St. Petersburg to Titusville. 172,000 residents and 93,000 jobs are within 1/2 mile of the Pinellas Trail Loop.



The Pinellas Trail Loop:

- Provides economic opportunities by connecting residents, workers and tourists with employment, commercial and recreational destinations.
- ◆ Provides low-income and minority neighborhoods with enhanced connections to transit, schools, commercial centers, employment and recreational facilities.
- ◆ Decreases adverse environmental impacts on air quality by providing non-motorized transportation options.
- ◆ Fosters a safe, connected and accessible transportation system throughout Pinellas County.



**Nearly 1 out of 5 Pinellas County residents live within 1/2 mile of the Pinellas Trail Loop**

*Source: U.S. Census Bureau, 2016; Forward Pinellas, 2017*



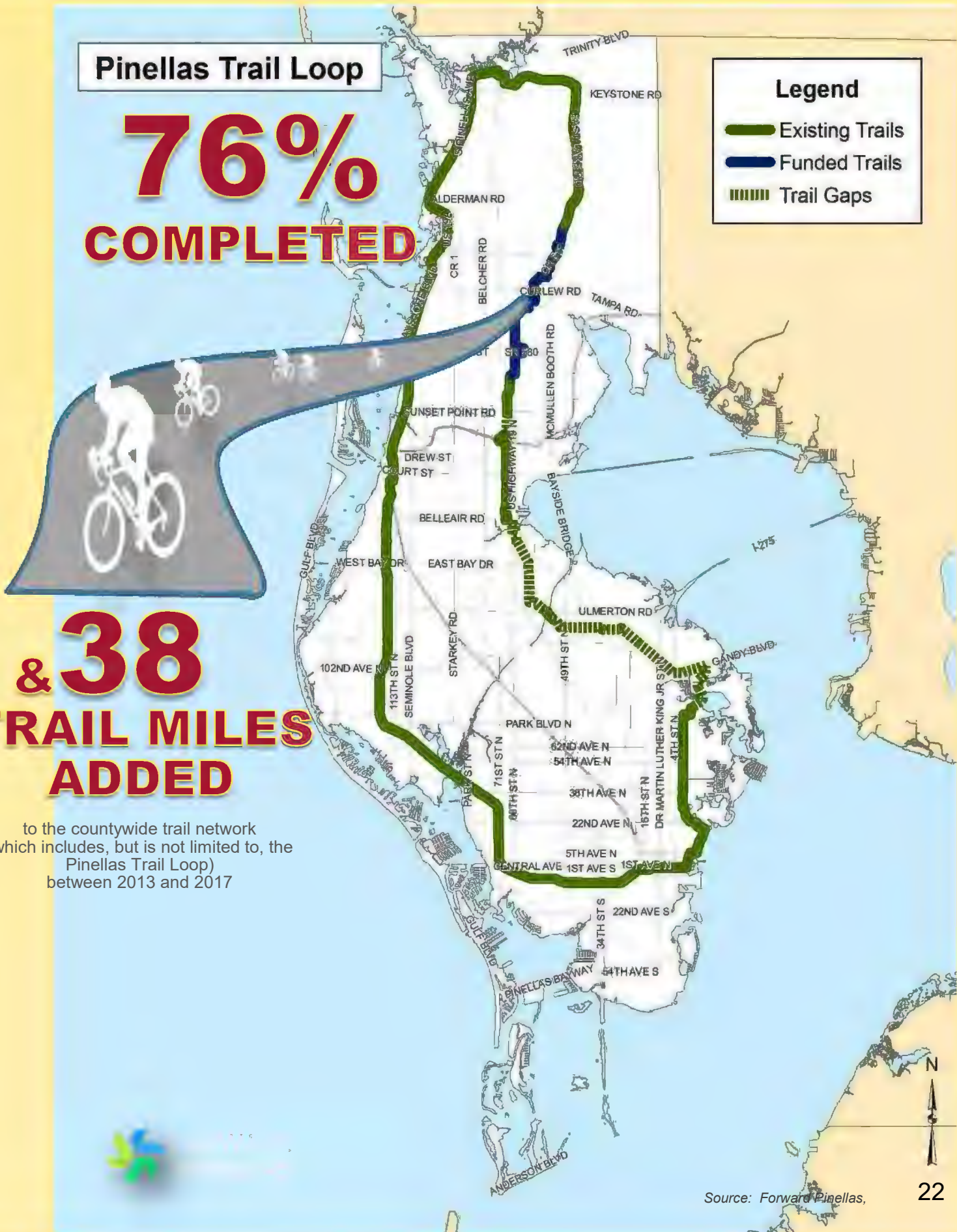
## Pinellas Trail Loop

# 76% COMPLETED

# & 38 TRAIL MILES ADDED

to the countywide trail network  
(which includes, but is not limited to, the  
Pinellas Trail Loop)  
between 2013 and 2017

Legend	
	Existing Trails
	Funded Trails
	Trail Gaps





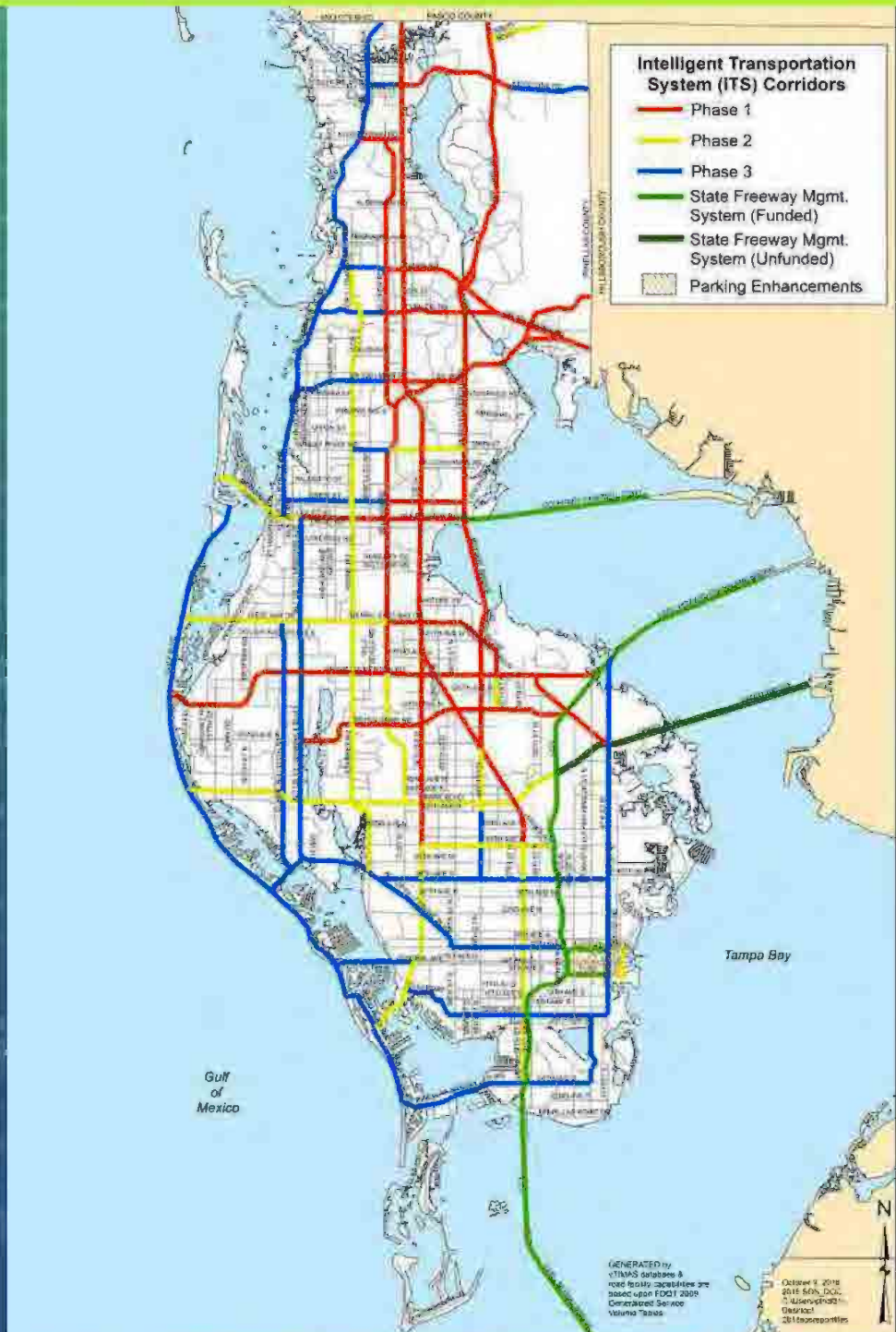
# Pinellas County, Florida



## Intelligent Transportation Systems

Pinellas County's Intelligent Transportation System (ITS) is one of the most advanced traffic management systems in the state of Florida. ITS involves the use and coordination of traffic signal control device operations and transportation system user information from motorist, transit, pedestrians and bicyclists. Smart cities concepts are also incorporated to even further enhance the transportation system and improve safety. By integrating smart cities communication technology with various physical devices connected to the ITS network, such as Bluetooth sensors, closed circuit television (CCTV) cameras, and electronic safety devices, real-time data is collected and used to monitor and manage the transportation system, optimize signal patterns and control traffic flow. Through the use of ITS, travel time is reduced by 13 percent and drivers experience a faster and safer commute.

The County continues to implement ITS throughout the region to enhance safety, mobility and connectivity. The map at the right shows corridors where ITS improvements have been completed or are planned.



## Waterborne Transportation



Ferries and water taxis are increasingly being used to help meet the region's transportation needs. The publicly funded Cross-Bay Ferry operated between downtown St. Petersburg to downtown Tampa on a successful six-month pilot program that concluded in May 2017.

The private-sector Clearwater Ferry operates a four-stop route from downtown Clearwater to Clearwater Beach up to 16 times daily. Another private-sector provider, Tampa Bay Ferry & Water Taxi operates a nine-stop route between several points in Madeira Beach, Treasure Island and St. Petersburg up to four times per day; and a separate route from Fort DeSoto to Egmont Key.



Source: City of St. Petersburg, 2017

Forward Pinellas held a Waterborne Transportation Forum in 2016, and established a working group of local planners and ferry/water taxi operators to craft a consistent set of standards for this transportation option, which is new to our area. A model ordinance created by the working group was distributed to local governments in March 2017. Given the cross-jurisdictional nature of ferry travel, the model ordinance will help ensure consistent standards across Pinellas County.



Personal watercraft are also a part of the multimodal transportation system. According to the Florida Department of Highway Safety and Motor Vehicles, there were nearly 49,800 private vessels registered in Pinellas County in 2016, a 4% increase from 2012, and the second-highest of all Florida counties.

The Pinellas County Property Appraiser's Office has identified 64 marinas in the county, and 44 boat launch facilities have been inventoried by the Florida Fish and Wildlife Conservation Commission. The Pinellas County Parks and Conservation Resources Department has also identified 79 miles of locally designated canoe/kayak paddling trails in Pinellas County waters, including 46 miles of the statewide Florida Circumnavigational Saltwater Paddling Trail.



## ENHANCING SAFETY

### Safety Performance Measures

The Fixing America's Surface Transportation (FAST) Act became law in 2015, and requires performance-based, multimodal planning processes to address the safety challenges on the U.S. transportation system. The FAST Act authorizes FHWA to establish safety performance measures. Forward Pinellas began reporting on these safety performance measures in its *Traffic Crash Trends and Conditions Report*, (October 2016), and this section of the *Countywide Trends and Conditions Report*, (October 2017), continues to report on these same safety performance measures, which are summarized in the tables and infographics in the pages that follow.



Pinellas County Safety Performance Measures	2012	2013	2014	2015	2016	2017	2012-2016 Average	2013-2017 Average	Percent Change (from 2012-16 Avg. to 2013-17 Avg.)
Number of Motor Vehicle Crash-Related Serious Injuries	925	879	911	982	1,008	799	941	916	-2.7%
Number of Motor Vehicle Crash-Related Fatalities	101	80	117	101	111	110	102	104	+2.0%
Number of Serious Injury Crashes of Bicycle/Pedestrian Users	199	162	169	153	188	173	174	169	-2.9%
Number of Bicycle/Pedestrian Fatalities	41	34	47	36	48	42	41	41	0.0%
Number of Serious Injury Crashes per Vehicle Miles Traveled (VMT)	43.40	41.07	41.60	43.60	43.85	*	42.70	42.53	-0.4%
Number of Fatalities per Vehicle Miles Traveled (VMT)	4.70	3.70	5.30	4.50	4.83	*	4.61	4.58	-0.6%

\* 2017 Vehicle Miles Traveled (VMT) data for Pinellas County was not available at the time this report was published

Notes: The five-year rolling average percent change on this page for crash data is the rounded percent increase or decrease between the five-year rolling average for 2012 through 2016 and the five-year rolling average for 2013 through 2017 in Pinellas County, Florida as reported in the Forward Pinellas *Traffic Crash Trends and Conditions Report*, October 2016, and the Forward Pinellas Crash Data Management System, 2017 and 2018. Crash data includes parking lot crashes. Serious injury crashes in the Forward Pinellas CDMS are "incapacitating injuries" and do not include "non-incapacitating injuries" or "possible injuries".



## Florida's Strategic Highway Safety Improvement Plan (SHSP) Performance Measures

Another element of transportation safety planning is the SHSP. The Florida Department of Transportation (FDOT) developed their SHSP in 2012 in collaboration with the Departments of Education, Health, Highway Safety and Motor Vehicles, and the Florida Highway Patrol, dozens of traffic safety organizations, cities and counties, as well as private sector businesses. This effort resulted in a statewide, data-driven plan that addresses the "4-E's" of safety: engineering, enforcement, education and emergency response.

Florida's SHSP goal is to achieve at least a five percent annual reduction in the actual number of fatal and serious injury crashes in seven focus areas that are defined below.

- **Aggressive Driving** - A crash involving a driver who; failed to yield right-of-way, failed to keep in the proper lane, followed too closely, ran a red light, ran a stop sign, passed improperly, exceeded the posted speed limit, disregarded other road markings, operated a motor vehicle in an erratic or reckless manner, or who disregarded other traffic signage.
- **Intersection Crash** - A crash in which the first harmful event occurs within the limits of an intersection.
- **Vulnerable Road Users** - Pedestrians, bicyclists or motorcyclists.
- **Lane Departure Crash** - A crash where the driver's vehicle impacted a utility pole, light support, traffic sign/signal support, tree, mailbox, guardrail, fence, ditch, culvert, concrete traffic barrier, cable barrier, bridge trail, bridge pier or support. This definition also includes any vehicle sideswipe or rollover.
- **Impaired Driving** - A crash involving a person who is suspected of drug or alcohol use or is under the influence of medication.
- **At-Risk Drivers** - A crash involving a 15 to 19-year-old person or person 65 years old or older.
- **Distracted Driving** - A crash resulting from the driver being distracted by electronic communication devices (cell phones, etc.), other electronic devices (navigation device, DVD player, etc.), other distraction inside the vehicle, external distraction (outside the vehicle), texting or general inattentiveness.

# Pinellas County, Florida

The hard work and dedication of safety partners in implementing the SHSP continues to pay off in that Pinellas County's fatal crashes due to driver impairment dropped 4% and fatal lane departure crashes dropped 14%. We also experienced between 4% to 8% decreases in every SHSP serious injury focus area except distracted driving (3% increase). There were increases in fatal crashes involving aggressive driving, vulnerable road users, at-risk drivers while the overall numbers for distracted driving re-

STRATEGIC HIGHWAY SAFETY PLAN FOCUS AREAS	2012	2013	2014	2015	2016	2017	2012-2016 Average	2013-2017 Average	Percent Change (from 2012-16 Avg. to 2013-17)
Serious Injury Crashes Due to Aggressive Driving	345	306	318	333	363	253	333	315	-6%
Serious Injury Crashes Involving Vulnerable Users	346	291	297	318	342	271	319	304	-5%
Lane Departure Serious Injury Crashes	169	151	141	134	156	112	150	139	-8%
Serious Injury Crashes Due to Driver Impairment	127	114	79	103	90	88	103	95	-8%
Serious Injury Crashes Involving At-Risk Drivers	341	273	331	347	375	262	333	318	-5%
Serious Injury Crashes Due to Distracted Driving	92	79	89	108	97	106	93	96	3%
Serious Injury Intersection Crashes	293	243	243	219	295	239	259	248	-4%
Fatal Crashes Due to Aggressive Driving	28	20	38	36	27	40	30	32	8%
Fatal Crashes Involving Vulnerable Users	61	50	76	65	71	68	65	66	2%
Lane Departure Fatal Crashes	24	14	15	12	23	12	18	15	-14%
Fatal Crashes Due to Driver Impairment	49	20	36	33	23	42	32	31	-4%
Fatal Crashes Involving At-Risk Drivers	28	29	27	43	32	38	32	34	6%
Fatal Crashes Due to Distracted Driving	6	3	2	9	5	8	5	5	8%
Fatal Intersection Crashes	21	16	31	16	21	26	21	22	5%

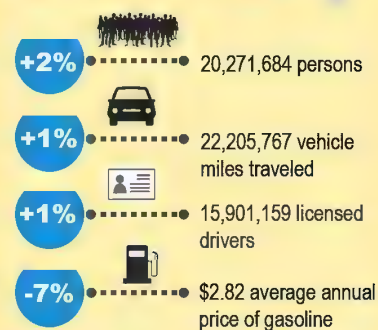
Notes: The five-year rolling average percent change on this page for crash data is the percent increase or decrease (rounded) between the five-year rolling average for 2012 through 2016 and the five-year rolling average for 2013 through 2017 for crash data in Pinellas County, Florida as reported in the Forward Pinellas *Traffic Crash Trends and Conditions Report*, October 2016, and the Forward Pinellas Crash Data Management System (CDMS) 2018 (DY 2017). The CDMS database categorizes crash injuries into "possible injuries", "incapacitating injuries and non-incapacitating injuries". Incapacitating injuries from the CDMS were used to populate data for the SHSP focus areas for serious injury crashes.



## Trends in Florida (2013 - 2017)

Florida is one of the most populous states in the country with a five-year average of 20,271,684 people (2013 -2017) according to the latest population estimates from the U.S. Census Bureau. It's projected to continue to increase in the foreseeable future. This population growth, along with an increase in traffic congestion, the number of licensed drivers and a significant decrease in the average annual retail price of gasoline are all variables that directly impact the driving habits of Floridians.

### FLORIDA TRENDS (2013-2017)



FLORIDA TRENDS	2012	2013	2014	2015	2016	2017	2012- 2016 Average	2013- 2017 Average	Percent Change (from 2012-16 Avg. to 2013-17)
Total Motor Vehicle Crashes <sup>1</sup>	283,370	317,259	344,478	374,511	395,915	401,318	343,107	366,696	7%
Total Injuries <sup>1</sup>	198,483	211,124	225,758	225,718	254,212	253,928	223,059	234,148	5%
Total Fatalities <sup>1</sup>	2,422	2,403	2,497	2,938	3,178	3,093	2,688	2,822	5%
Total Pedestrian Crashes <sup>1</sup>	8,280	8,422	8,845	9,086	9,106	9,392	8,748	8,970	3%
Total Pedestrian Fatalities <sup>1</sup>	476	498	607	632	666	650	576	611	6%
Total Bicycle Crashes <sup>1</sup>	6,442	6,974	7,086	7,123	6,671	6,656	6,859	6,902	1%
Total Bicycle Fatalities <sup>1</sup>	117	135	135	153	140	117	136	136	0%
Population <sup>2</sup>	19,317,568	19,552,860	19,893,297	20,271,272	20,656,589	20,984,400	19,938,317	20,271,684	2%
Vehicle Miles Traveled (VMT) <sup>3</sup>	21,387,550	21,460,593	21,904,344	22,470,796	22,987,334	-	22,042,123	22,205,767	1%
Licensed Drivers <sup>4,5</sup>	15,378,206	15,417,032	15,620,312	15,998,416	16,568,874	-	15,796,568	15,901,159	1%
Average Annual Retail Gasoline & Diesel Prices <sup>6</sup>	\$3.62	\$3.57	\$3.42	\$2.43	\$2.22	\$2.49	\$3.05	\$2.82	-7%

1 <https://firesportal.com/Pages/Public/QuickStats.aspx>

2 <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>

3 <http://www.fdot.gov/planning/statistics/mileage-rpts/Public16.pdf> (and earlier documents in the series)

4 <https://firesportal.com/Pages/Public/DHSMVDocuments.aspx>

5 <http://www.flhsmv.gov/pdf/driver-vehiclereports/2017annuallicenseddriverreport.pdf>

6 [https://www.eia.gov/dnav/pet/pet\\_pri\\_gnd\\_dcus\\_sfl\\_a.htm](https://www.eia.gov/dnav/pet/pet_pri_gnd_dcus_sfl_a.htm)

Notes: The five-year rolling average percent change on this page for crash data is the percent increase or decrease (rounded) between the five-year rolling average for 2012 through 2016 and the five-year rolling average for 2011 through 2015 for crash data in Pinellas County, Florida as reported in the Forward Pinellas *Traffic Crash Trends and Conditions Report*, October 2016, and the Forward Pinellas Crash Data Management System, 2017 (DY 2016).

# Pinellas County, Florida

## Trends in Florida (2013 - 2017)

Increases in population and licensed drivers as well as an overall decrease in the average annual price of gasoline are contributing factors to the overall increase in motor vehicle use. The table on the previous page shows corresponding increases in the number of traffic crashes, injuries and fatalities in Florida during the same time frame. Based on these figures, it's clear that much work still needs to be done. There must be a continued focus on taking additional steps to improve traffic safety, including the strengthening of traffic laws, enhancing enforcement, expanding educational outreach and continuing to develop engineering solutions whenever feasible. The Florida Department of Transportation's (FDOT) 2018 Florida Strategic Highway Safety Plan (SHSP). The SHSP is the statewide plan focusing on how to accomplish the vision of eliminating fatalities and reducing serious injuries on all public roads.

## Trends in Pinellas County (2013 - 2017)

In 2017, a total of 30,194 motor vehicle crashes were reported in Pinellas County. These crashes resulted in 116 fatalities, 4,443 injuries and 22,451 cases of property damage. Although the 116 fatalities in 2017 is a decrease compared to 118 in 2016, the overall trend is a 1% increase in fatalities when comparing the five-year average for 2012 through 2016 with the five-year average for 2013 through 2017. The 1% increase is generally consistent with the upward trend of traffic fatalities since 2012 as reflected in the Pinellas County crash trends table below.

PINELLAS COUNTY CRASH TRENDS	2012	2013	2014	2015	2016	2017	2012-2016 Average	2013-2017 Average	Percent Change (from 2012-16 Avg. to 2013-17 Avg.)
Total Motor Vehicle Crashes	18,071	24,624	26,580	28,501	30,135	30,194	25,582	28,007	9%
Total Injuries	3,859	4,502	4,249	4,426	4,656	4,443	4,338	4,455	3%
Total Fatalities	109	80	117	101	118	116	105	106	1%
Total Pedestrian Crashes	556	583	571	574	660	563	589	590	0.2%
Total Pedestrian Fatalities	28	30	40	34	47	38	36	38	6%
Total Bicycle Crashes	542	544	571	471	712	687	568	597	5%
Total Bicycle Fatalities	10	5	7	5	1	4	6	4	-21%
Total Motorcycle Crashes	604	622	641	671	701	587	648	644	-1%
Total Motorcycle Fatalities	20	19	30	28	25	26	24	26	5%

Notes: The five-year rolling average percent change on this page for crash data is the rounded percent increase or decrease between the five-year rolling average for 2012 through 2016 and the five-year rolling average for 2013 through 2017 in Pinellas County, Florida as reported in the Forward Pinellas *Traffic Crash Trends and Conditions Report*, October 2016, and the Forward Pinellas Crash Data Management System, 2018.



## Vulnerable Road User Crashes



- The number of vulnerable road user crashes increased 1.5%.
- Fatal vulnerable road user crashes decreased 2%.
- Nearly 70% of fatal crashes involve vulnerable users.
- Vulnerable road user deaths account for 64% of all traffic fatalities on average. This is nearly twice the national average.<sup>1</sup>

Nearly  
**70%**  
of **Fatal Crashes**  
involve Pedestrians,  
Bicyclists and  
Motorcyclists

## Pedestrian Crashes



- Fatal crashes involving pedestrians increased 6%
- Injury crashes involving pedestrians increased .24%
- An average of 38 fatal crashes per year involved pedestrians, which is 36% of all traffic fatalities. This is more than twice the national average.<sup>2</sup>



## Bicycle Crashes

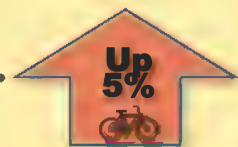


- On average (2013-2017), fatal bicycle crashes account for 4% of all traffic fatalities. This is a decrease from the 6% average for 2012-2016, which was twice the 2015 national average of 3%<sup>3</sup>, but 4% is still twice the 2016 national average of 2%<sup>3</sup>.
- The trend over the past 5 years has been a consistent decrease in the number of fatal crashes involving bicyclists. The five-year average number of fatal crashes involving bicyclists decreased from 6 (2011-2015) to 4 (2012-2016), which is a 21% decrease.
- Although the number of fatal crashes has steadily decreased, the number of bicycle crashes (including both fatal and non-fatal crashes) actually increased more than 5%.
- 5.5% of fatal crashes involved bicyclists

Fatal Crashes Involving Bicyclists



Number of All Crashes Involving Bicyclists



<sup>1</sup> The National Highway Traffic Safety Administration (NHTSA) reported that vulnerable road users accounted for 32% of all traffic fatalities nationally in 2016. NHTSA data for 2017 is not yet available.

<sup>2</sup> The National Highway Traffic Safety Administration (NHTSA) reported that pedestrian deaths accounted for 15% of all traffic fatalities nationally in 2015 and 16% in 2016. NHTSA data for 2017 is not yet available.

<sup>3</sup> The National Highway Traffic Safety Administration (NHTSA) reported that bicyclist deaths accounted for 3% of all traffic fatalities nationally in 2015 and 2% in 2016. NHTSA data for 2017 is not yet available.

Notes: Unless cited otherwise, statistics that do not report a percent increase or decrease represent the five-year rolling average from 2013 to 2017. Percent increases or decreases are the rounded percent increase or decrease between the five-year rolling average for 2012 through 2016 and the five-year rolling average for 2013 through 2017 for crash data in Pinellas County, Florida as reported in the Forward Pinellas *Traffic Crash Trends and Conditions Report*, October 2016, and the Forward Pinellas Crash Data Management System, 2018.



## Motorcycle Crashes

- The number of motorcycle crashes decreased 0.5 % from a five-year average of 648 crashes per year (2012-2016) to 644 (2013-2017). This is a significant improvement compared to the trend reported last year (a 5% increase in motorcycle crashes).
- On average, 2% (644) of all crashes (28,007) crashes involve motorcycles.
- On average 25% (26) of all fatal crashes involve motorcycles. This is nearly twice the 2016 national average of 14%<sup>1</sup>.

Number of All Motorcycle Crashes

Down 0.5%



1 out of 4 fatal crashes involve motorcycles

## Teen Driver Crashes

- The number of crashes involving teen drivers decreased 7%
- 10% of all crashes involved teen drivers between the ages of 15 and 19
- An average of 5 fatal crashes per year involved teen driving
- Property damage only crashes due to teen driving up 9%
- Teen injury crashes down 4%

Crashes involving teens

Down 7%

## Crashes Involving Aging Drivers

Older adults are living and driving longer than ever before, and Florida has the largest number of aging road users in the nation.

- 28% of all fatal crashes involve aging drivers
- The number of crashes involving aging drivers increased 11%
- An average of 29 fatal crashes per year involved aging drivers (up 8%)
- 24% of all crashes in Pinellas involved drivers 65 or older. For comparison, 21% of fatal crashes in Florida involved

Nearly 1 out of 3 fatal crashes involve aging drivers



Nearly 1 out of 4 crashes involve aging drivers



<sup>1</sup> The National Highway Traffic Safety Administration (NHTSA) reported that motorcyclists accounted for 14% of all traffic fatalities nationally in 2016. NHTSA data for 2017 is not yet available.

<sup>2</sup> TRIP national transportation research group, 2018 ([http://www.tripnet.org/docs/Older\\_Driver\\_FL\\_TRIP\\_Release\\_03-13-2018.php](http://www.tripnet.org/docs/Older_Driver_FL_TRIP_Release_03-13-2018.php))

Notes: Unless cited otherwise, statistics that do not report a percent increase or decrease represent the five-year rolling average from 2013 to 2017. Percent increases or decreases are the rounded percent increase or decrease between the five-year rolling average for 2012 through 2016 and the five-year rolling average for 2013 through 2017 for crash data in Pinellas County, Florida as reported in the Forward Pinellas *Traffic Crash Trends and Conditions Report*, October 2016, and the Forward Pinellas Crash Data Management System, 2018.



## Impaired Driving Crashes

On average, nearly one out of three (29%) fatal crashes in Pinellas County involved a person who was impaired by drugs or alcohol (down from last year's average of 32%). Notably, that there were 11.5 times as many un-helmeted motorcyclist fatalities in states without universal helmet laws as in states with universal helmet laws according to NHTSA.

- The number of all crashes involving impaired drivers decreased more than 1%
- Fatal crashes involving impaired driving continue to decrease and are down nearly 4%. On average, there are 31 fatal crashes per year involving impaired drivers.
- Serious injury crashes involving impaired driving are down 8%
- Between 2013 and 2017, an average of 29% of all fatal crashes involved impaired driving (down from the 2012-2016 average of 32%)

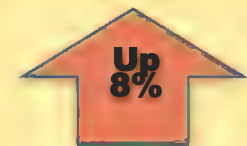
Fatal Crashes involving impaired driving



## Aggressive Driving Crashes

On average, 31% of all traffic fatalities in Pinellas County involved aggressive driving (up from last year's average of 29%). That's an average of 32 deaths per year involving aggressive driving. It's noteworthy that the intersection of US Highway 19 and Curlew Road had the highest number of crashes (152) involving aggressive drivers from 2012 through 2016. It continues that distinction with 169 crashes involving aggressive driving from 2013 through 2017.

- The number of crashes involving aggressive drivers increased 11%
- 23% of all crashes involved aggressive driving
- Fatal crashes involving aggressive driving are up 8% on average
- Serious injury crashes involving aggressive driving are down nearly 6%



Fatal Crashes involving aggressive driving

## Distracted Driving Crashes

We need to adapt to emerging trends that will affect land use and transportation in the future such as innovations in technology that help prevent distracted driving crashes.

- Distractions resulting from a driver's cell phone, navigation device, external distraction, general inattentiveness or other activity are responsible for an average of 3,011 crashes per year (up 16% from last year's average of 2,588).
- 11% of all crashes involved distracted driving (up from last year's average of 10%)
- An average of 5 fatal crashes per year involve distracted driving (same average for past two years)
- An average of 6% of all fatal crashes involve distracted driving.
- Serious injury crashes due to distracted driving are up 3%.

1 The National Highway Traffic Safety Administration (NHTSA) reported that motorcyclists accounted for 14% of all traffic fatalities nationally in 2016. NHTSA data for 2017 is not yet available.

2 The National Highway Traffic Safety Administration (NHTSA) reported that pedestrian deaths accounted for 15% of all traffic fatalities nationally in 2015 and 16% in 2016. NHTSA data for 2017 is not yet available.

3 The National Highway Traffic Safety Administration (NHTSA) reported that bicyclist deaths accounted for 3% of all traffic fatalities nationally in 2015 and 2% in 2016. NHTSA data for 2017 is not yet available.

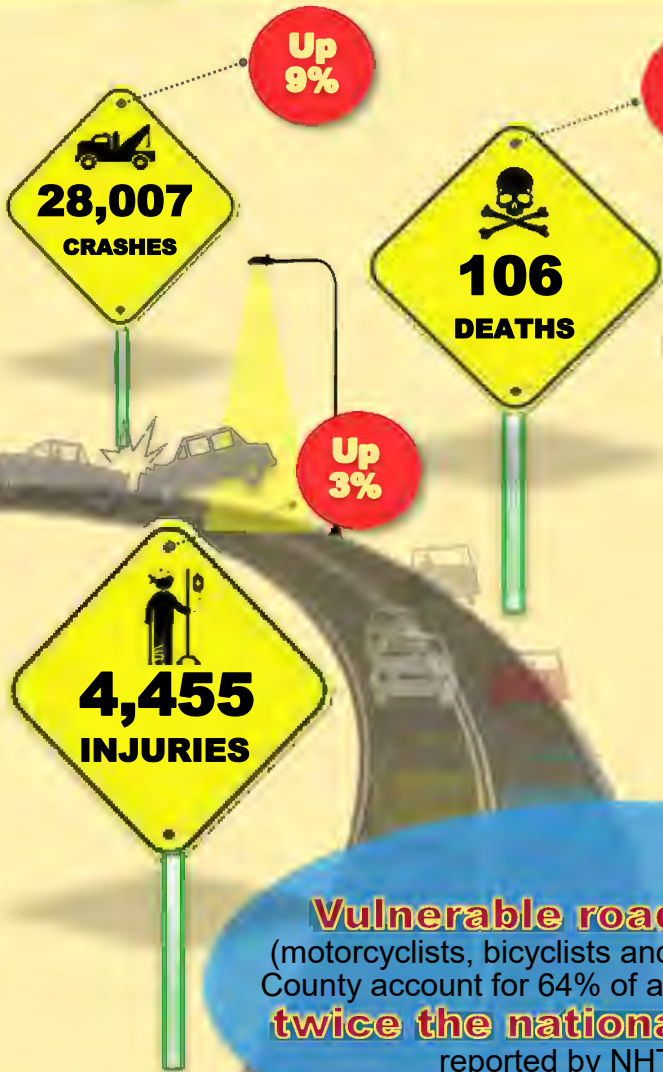
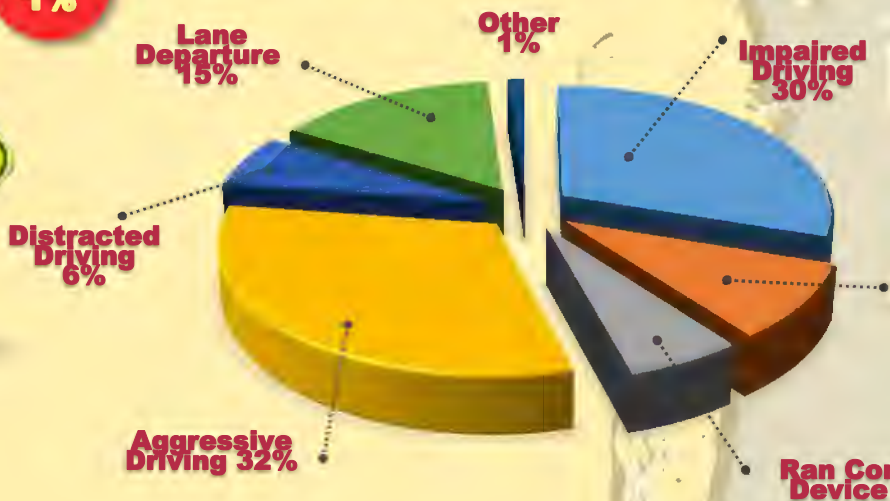
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## EMERGING TECHNOLOGIES



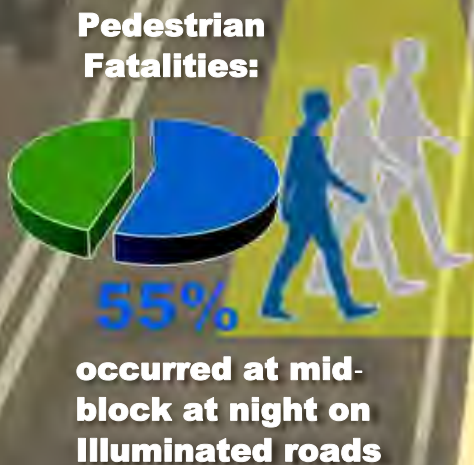
- Of the more than 30,000 motor vehicle deaths in the US each year, about 94% are due to human error. According to the National Highway Traffic Safety Administration (NHTSA), automated vehicle safety technologies can potentially prevent many of the vehicle deaths that are caused by human error. Source: National Highway Traffic Safety Administration (NHTSA): <https://www.nhtsa.gov/technology-innovation/automated-vehicles>
- Google self-driving car has autonomously driven more than 1.5 million miles nationally. (Source: Google Self-Driving Car Project, 2016 as reported in the 2016 Florida Strategic Highway Safety Plan)
- Florida is leading the way to legalize self-driving cars.  
Source: <https://qz.com/781113/how-florida-became-the-most-important-state-in-the-race-to-legalize-self-driving-cars/>
- 28% of Americans age 18-29 have used on-demand ride sharing service. Frequent users are less likely to own a car and more likely to take transit, walk or ride a bicycle. (Source: Pew Research Center, 2015 as reported in the 2016 Florida Strategic Highway Safety Plan)
- 90% of the U.S. population owns a cellphone and 20% use their phone for real time traffic or transit information. (Source: Gartner, Inc., "Predicts 2015: The Internet of Things," 2014 as reported in the 2016 Florida Strategic Highway Safety Plan)
- PSTA received national recognition for its innovative transit partnership with Uber, Lyft and United Taxi in Pinellas County to provide low-cost rides to designated bus stops to allow more citizens to access PSTA's primary bus lines. (Source: <https://www.psta.net/about-psta/press-releases/2016/psta-expands-transit-partnership-with-uber-lyft-across-pinellas-county>)

### Fatal Crashes by Cause



**Vulnerable road user deaths**  
 (motorcyclists, bicyclists and pedestrians) in Pinellas County account for 64% of all traffic fatalities, which is **twice the national average** of 32% reported by NHTSA for 2016

**Nearly 1 out of 3 fatal crashes involve aging drivers**



**Nearly 1 out of 4 fatal crashes involve motorcycles**

**Nearly 1 out of 3 fatal crashes involve pedestrians**

Vulnerable Road User	Fatal Crash Trend
	Up 5%
	Down 21%
	Up 6%

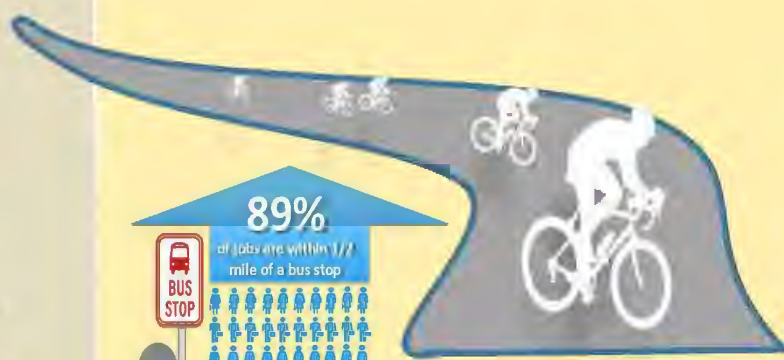
# TRAFFIC AND CONDITIONS DASHBOARD

Pinellas County, Florida



Speeding 10%

47%

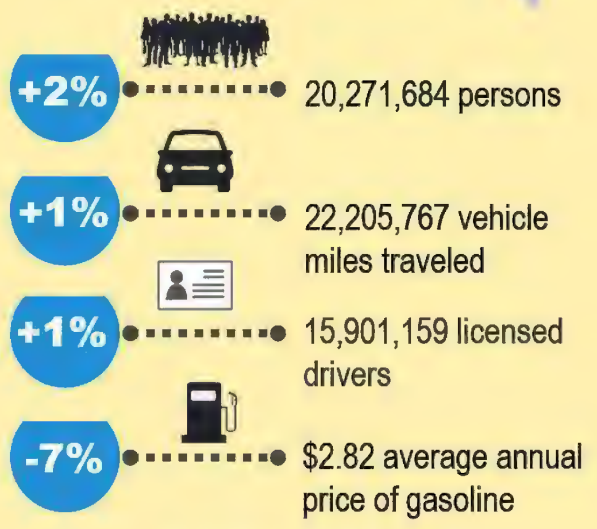


Source: U.S. Census Bureau, 2016 and Forward Pinellas, 2017

## 38 TRAIL MILES ADDED

to the countywide trail network between 2013 and 2017

### FLORIDA TRENDS (2013-2017)



**84% of Pinellas residents drive to work alone**



Source: U.S. Census Bureau,



**29% of households are within 1/2 mile of a trail**

Source: U.S. Census Bureau, 2016 and Forward Pinellas, 2017



**80% of major roadways have sidewalk coverage**

Source: Forward Pinellas, 2017



**4% of Pinellas County residents live in designated activity centers**

Source: U.S. Census Bureau, 2016 and Forward Pinellas, 2017



**The Cross-Bay Ferry carried more than 40,000 passengers in 6 months with 91% on-time departures**

Source: City of St. Petersburg, 2016

**17% Increase in Tourism**  
(in Pinellas County 2012 - 2016)



2012 2016  
Source: Convention and Visitors Bureau for Pinellas County, (2012 - 2016)

Notes (for both pages): Unless cited otherwise, crash statistics that do not report a percent increase or decrease represent the five-year rolling average from 2013 to 2017. Statistics that report percent increases or decreases are the rounded percent increase or decrease between the five-year rolling average for 2013 through 2017 and the five-year rolling average for 2012 through 2016 for crash data in Pinellas County, Florida as reported in the Forward Pinellas *Traffic Crash Trends and Conditions Report*, October 2016, and the Forward Pinellas Crash Data Management System.



Integrating Land Use & Transportation



Adapt – Build – Connect

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# APPENDIX G

## ACTIVE TRANSPORTATION PLAN





# ACTIVE TRANSPORTATION PLAN

## Summary Report

January 2020



**Advantage  
PINELLAS**

ENGAGE. ADAPT. CONNECT.





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- II Policy & Code Best Practices
- III Pedestrian & Bicycle Safety Analysis
- IV Bicycle Facility Types & Related Standards
- V Gap & Demand Analysis
- VI Project Concept Summaries

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# 01 Introduction

## Planning For Active Transportation

Pinellas County provides a strong quality of life for its residents with a low cost of living, vibrant communities, and many public parks, beaches, open space, and recreational opportunities. Forward Pinellas, Pinellas County, and the 24 municipalities are committed to protecting and improving access to these resources and opportunities. Active transportation improves conditions necessary for a healthy and economically vibrant community. A safe network of bicycle and pedestrian infrastructure is a cornerstone for ensuring these travel modes are viable alternatives to the automobile.

### ADVANTAGE PINELLAS

Forward Pinellas is a strategic stakeholder in pursuing the county's active transportation goals. As the Pinellas County **Metropolitan Planning Organization (MPO)**, Forward Pinellas is responsible for developing a *Long Range Transportation Plan (LRTP)* every five years that includes a vision, goals and objectives for advancing bicycle and pedestrian mobility. The most recent edition of the plan, "Advantage Pinellas," extends the LRTP horizon year to 2045. It was adopted by the Forward Pinellas Board on November 13, 2019. Multitmodal transportation is a key element of the Advantage Pinellas Plan particularly in the areas of safety and accessibility.



### ACTIVE TRANSPORTATION PLAN

As part of the Advantage Pinellas effort, Forward Pinellas developed a new countywide Bicycle and Pedestrian Master Plan branded as *Advantage Pinellas: Active Transportation Plan*. This plan offers actionable, multimodal strategies to achieve improved bicycle and pedestrian mobility in Pinellas County. The planning effort was undertaken to identify current conditions, gaps, and opportunities for increasing active transportation options throughout the county. The new plan was developed in partnership with local agencies to create a safer and more accessible bicycle and pedestrian network.

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## 02 Vision, Goals & Objectives

### Introduction

To assist with the development of a community supported vision, goals, and performance measures, development of the *Active Transportation Plan* relied on a variety of public engagement tools. This included online mapping, interactive polling, and three in-person work sessions to gain a better understanding of the community's priorities regarding the current and future active transportation network. This section outlines the results of the public outreach efforts and identifies a draft framework for incorporation into the new *Active Transportation Plan* and LRTP.

### Vision

Local government and other project stakeholders gathered at the Forward Pinellas Bicycle Pedestrian Advisory Committee (BPAC) and Technical Coordinating Committee (TCC) meetings on February 19<sup>th</sup>, 27<sup>th</sup>, March 18<sup>th</sup>, and May 7<sup>th</sup> to discuss bicycle and pedestrian concerns and opportunities within their respective communities. Participants submitted feedback and ideas at the meetings and online through a GIS mapping tool and Mentimeter digital polling platform. Approximately 41 respondents participated. As part of the polling exercise, the participants were asked to identify three words

Figure 1. Mentimeter Vision Exercise Word Cloud Results



demonstrating their vision for the bicycle and pedestrian network in Pinellas County.

The words identified by the participants are shown in **Figure 1**. The words appearing in the larger font size were the ones identified most frequently by the respondents. Their responses helped to articulate a vision for bicycle and pedestrian travel in Pinellas County.

### VISION STATEMENT

*Pinellas County will have a safe, connected and comfortable active transportation network, which is community fostered and in harmony with all travel modes, and that advances an efficient, productive, and healthy mobility system for all users.*

### Goals & Objectives

In addition to the word cloud, respondents were asked through an online Mentimeter survey to identify the top three objectives they believed the *Active Transportation Plan* should accomplish to meet community needs. The feedback derived from the responses included focusing on safety, comfort, and accessibility while balancing the needs of motorists, bicyclists and pedestrians. Through the review of these comments and consideration of public input collected through LRTP outreach activities, a set of active transportation goals were developed for Pinellas County.

### GOALS

Pinellas County desires a Regional Active Transportation Network that:

1. Improves safety and reduces bicycle and pedestrian conflicts;
2. Connects with destinations and integrates with other modes such as public transit;
3. Is accessible and comfortable to all users, of all abilities in all communities; and
4. Enhances the quality of life, economic condition, and health of the region.

These goals are consistent with the themes or "pillars" of the Advantage Pinellas Plan that refer to the current and desired advantages of Pinellas County. These pillars are shown below:






## 03 Performance Measures & Evaluation Criteria

The *Advantage Pinellas: Active Transportation Plan* is intended to further a countywide vision and build on the bicycle and pedestrian planning efforts of the

county's local governments. The goals, objectives and performance measures shown in **Table 1** are designed to achieve this vision.

**Table 1. Goals, Objectives & Performance Measures**

ADVANTAGE PINELLAS PILLARS	OBJECTIVE	PERFORMANCE MEASURE
<p><b>Safety:</b> <i>A regional transportation network that improves safety &amp; reduces bicycle &amp; pedestrian conflicts.</i></p>		
                    	<p><b>Three E's.</b> Work with communities to improve the safety of people bicycling and walking through engineering, education, and enforcement strategies.</p>	<ul style="list-style-type: none"> <li>- Number of collisions, injuries, fatalities within high collision, high pedestrian areas (FARS, FDOT)</li> </ul>
	<p><b>Context Sensitive Design.</b> Encourage and assist communities with implementing FDOT's Context-Sensitive design standards and policies that emphasize safety and comfort for the most vulnerable road users.</p>	<ul style="list-style-type: none"> <li>- Number of municipalities adopting context sensitive design standards and policies (baseline is number of current policies)</li> </ul>
	<p><b>Programs/Pilots.</b> Encourage communities to pilot solutions such as protected intersections and protected bicycle lanes in strategic areas to immediately study impacts and possible long term solutions.</p>	<ul style="list-style-type: none"> <li>- Number of safety improvements implemented (baseline of zero as of adoption)</li> </ul>
	<p><b>Priority Areas.</b> Help communities identify high crash corridors and perform pedestrian focused road safety audits, and assist with constructing proven safety countermeasures; help communities identify pedestrian priority zones and encourage use of strategies such as shortened signal times like pedestrian intervals and other pedestrian phases within these zones and at specific times such as peak hour.</p>	<ul style="list-style-type: none"> <li>- Number of intersection enhancements in priority/high collision locations (baseline of zero as of adoption)</li> </ul>
	<p><b>Transit Area Crashes.</b> Work with transit providers to identify alternative measures and locations of bus stops at areas with a history of crashes to better facilitate safe crossings or access destinations or other informal pedestrian paths.</p>	<ul style="list-style-type: none"> <li>- Number of bicycle or pedestrian enforcement activities / efforts complete</li> </ul>
<p><b>Safety Improvements.</b> Encourage communities to conduct safety improvements like prohibiting turning right on red in bicycle and pedestrian priority areas or lighting improvements in areas where more than 25 percent of crashes occur outside of daylight hours.</p>	<ul style="list-style-type: none"> <li>- Number of bicycle and/or pedestrian education activities completed (targeted to either bicyclists/pedestrians and/or drivers)</li> </ul>	



ADVANTAGE PINELLAS PILLARS	OBJECTIVE	PERFORMANCE MEASURE
<p><b>Integrated &amp; Connected:</b> <i>A regional transportation system that connects with regional destinations &amp; integrates with other modes such as public transit.</i></p>		
	<p><b>Destinations.</b> Work with communities to increase the amount of recreational, educational, business, and social/health destinations reached from the bicycle and pedestrian network from neighborhoods.</p> <p><b>Long Distance/Short Distance.</b> Create a hierarchical network of bicycle and pedestrian facilities for long-distance travel, short-distance travel, local access, and recreation. Also encourage communities to utilize connected, low-speed, low-volume streets and low-stress facilities as part of the bikeway network.</p> <p><b>Transit.</b> Work with providers to provide equitable integration of bicycle and pedestrian facilities into transit stations and stops such as long-term bicycle parking, bike racks, etc.</p>	<ul style="list-style-type: none"> <li>- Boardings by transit users with bicycle (number of existing PSTA monthly bicycle boardings on transit data)</li> <li>- % of proposed Pinellas County network completed (baseline of zero as of adoption)</li> <li>- % of transit stops served by walk/bike facilities (% determined by GIS model)</li> <li>- % of transit stations with secure bicycle parking (number of existing percentage of transit stations with secure parking)</li> </ul>
	<p><b>Gaps.</b> Prioritize gaps in the existing network that increase access and decrease travel distances for people riding bicycles and walking, specifically for East/West and North/South connections across the County.</p> <p><b>Bike Parking.</b> Normalize and integrate bicycle parking into development projects and temporary parking during events. Encourage the installation of new bicycle parking near businesses, transit stops, apartments, or other destinations. Encourage bicycle parking as a routine hardscape component of street and development projects.</p>	<ul style="list-style-type: none"> <li>- % of homes and jobs within 1/4 mile of a bike/ped facility (% determined by GIS model)</li> <li>- % of identified regional destinations and activity centers connected directly with bicycle and pedestrian facilities</li> </ul>
	<p><b>Travel Time.</b> Encourage communities to reduce travel times for bicyclists and pedestrians by providing more direct routes, operational improvements such as signal sensor adjustments and/or reducing wait times for pedestrians.</p> <p><b>Destination Crosswalks.</b> Work with communities to promote quality crosswalks and/or signalized intersections with crosswalks in locations that connect to key destinations.</p> <p><b>Places of Employment Support.</b> Encourage the provision of enhanced facilities or services such as bicycle lockers, bicycle repair, and showers in activity centers and workplaces.</p>	<ul style="list-style-type: none"> <li>- Number of municipalities with adopted bike parking ordinances.</li> <li>- Number of exclusive bicycle and/or pedestrian midblock crosswalks that have some form of supplemental traffic control (e.g., RRFBs, pedestrian hybrid beacon, traffic signal)</li> </ul>

ADVANTAGE  
PINELLAS  
PILLARS

OBJECTIVE

PERFORMANCE  
MEASURE

**Accessible & Comfortable:** *A regional transportation system that is accessible and comfortable to all users, all abilities, in all communities*



**ADA Needs.** Encourage each city to fund and complete an ADA transition plan to address ADA accessibility issues for pedestrian facilities in the right-of-way.

**Maintenance.** Prioritize ongoing maintenance and repair of the bikeway and pedestrian network.

**Construction.** Promote predictable maintenance of operations of the bikeway and pedestrian network during private and public construction projects and events.

**Wayfinding.** Work with communities to help current and potential bicycle riders understand how to navigate the bikeway system with directional signage and up-to-date mapping options and having materials available in multiple languages.



**Neighborhood Streets.** Encourage communities to prioritize making neighborhood streets safer and more comfortable for walking with more sidewalks, traffic calming applications, complete streets design, and dedicated walkways and bikeways.

**Amenities.** Encourage communities to incorporate other elements that improve pedestrian comfort such as creating buffers between the sidewalk and vehicle traffic on higher speed roads or providing benches or other seating along pedestrian routes. Pedestrian scale lighting and other visibility enhancements should also be considered for furniture zones. Also increase the viability of bikeways in hot weather by prioritizing shade and providing water fountains or other amenities along trails where feasible.

**Underserved Populations.** Work with communities to prioritize expanding bikeways to and within neighborhoods underserved by the current bikeway network as well as completing sidewalk networks and access to trails.



**Universal Design.** Consider the needs of participants of different ages and abilities by designing for a variety of cycle types including adult tricycles, recumbent bicycles, hand-cycles, and child-carriers.

**Active Transportation Comfort.** Encourage communities to prioritize widening of or separation of bicycle facilities from vehicle road lanes; providing alternate routes with lower vehicular traffic volumes, and Levels of Traffic Stress. For pedestrians, improvements should include reducing cross-slope, widening sidewalks, or repairing broken or uneven sidewalks.

- % of population within ¼ mile of high comfort walk and bike facilities (% determined by GIS model)
- Density of bicycling and or walking facilities (baseline facility density [centerline miles of existing facilities / centerline miles of existing roadways (for on-street) or / square mile for off-street])
- Miles of bicycling and walking facilities (baseline miles of all facility types)
- % of traditionally underserved communities (composite equity score of 5 or higher by census block) within ¼ mile of bicycle and pedestrian facilities (% determined by GIS model)
- Number of municipalities with ADA Transition Plans

ADVANTAGE PINELLAS PILLARS	OBJECTIVE	PERFORMANCE MEASURE
<p><b>Quality of Life: A regional transportation system that enhances the quality of life, economic condition, and health of the region.</b></p>		
	<p><b>Improving Health Conditions.</b> Work with communities to target active transportation improvements towards neighborhoods with populations exhibiting concentrated areas of poverty, health problems and low physical activity.</p> <p><b>Air Quality for Areas with Children.</b> Encourage communities to prioritize bicycle and pedestrian connections and networks to educational facilities, parks and other locations frequented by children.</p>	<ul style="list-style-type: none"> <li>- Number of bicycle friendly businesses (number of existing businesses who have qualified as a BFB [under LAB's standards])</li> <li>- Active transportation facility within 1/2 mile of healthcare facilities, healthy food, parks and community services (number of existing facilities within 1/2 mile of these destinations)</li> </ul>
	<p><b>Health/Air Quality.</b> Improve air quality and community health by increasing the number of people walking and biking.</p> <p><b>Bike Share.</b> Encourage more bicycle use through bike share programs in key communities.</p> <p><b>Business Support.</b> Encourage support for active transportation through the promotion of businesses to join Bicycle Friendly certification/designation programs.</p>	<ul style="list-style-type: none"> <li>- Bike share trips per year per bike (determine baseline after first full year of the bike share program)</li> <li>- Countywide bicycle and walking mode shares (ACS Commute to Work data; Regional Travel Survey data)</li> </ul>
	<p><b>Job Access.</b> Encourage development of bicycle and pedestrian facilities closer to areas of industry and activity centers.</p> <p><b>Childhood Obesity.</b> Encourage safe routes to school and walking school buses within communities exhibiting high levels of childhood obesity.</p>	<ul style="list-style-type: none"> <li>- Number of jobs within 1/2 mile of ped/bike facilities (% determined by GIS model)</li> <li>- Students walking/bicycling to school (ACS Commute to Work data; Regional Travel Survey data; Safe Routes to School hand tallies and parent surveys)</li> </ul>
	<p><b>Mode Share Shift.</b> Encourage communities to promote more pedestrian/bicycle/trail use through public events and educational campaigns.</p> <p><b>Recreation Access.</b> Encourage recreational bicycling and walking through more pedestrian/bicycle/trail connections to parks and other recreational facilities.</p> <p><b>Active Transportation Comfort.</b> Encourage communities to prioritize widening of or providing separation of bicycle facilities from vehicle road lanes or providing alternate routes with lower vehicular traffic volumes, and lower levels of Traffic Stress. For pedestrians, improvements should include reducing cross-slope, widening sidewalks, or repairing broken or uneven sidewalks.</p>	<ul style="list-style-type: none"> <li>- Minutes of physical activity from walking or bicycling (existing self-reported physical activity rates per Pinellas County Community Health Assessment)</li> <li>- Countywide childhood obesity percentage</li> <li>- Number of encouragement activities completed (bike to work, bicycle festivals, etc.)</li> <li>- Countywide Walkscore and Bikescore values</li> </ul>

## Evaluation Criteria

Consistent with the Forward Pinellas Transportation Alternatives Program evaluation criteria, a set of evaluation criteria was developed to help prioritize the improvement projects identified in the *Active Transportation Plan*. The evaluation criteria shown in

**Table 2** are linked to the goals identified on page four. Each of the evaluation criteria is weighted to provide a normalized scoring of 0 to 100. For the purposes of the safety criteria, high bicycle or pedestrian crash intensity segments or intersections are those identified in **Tech Memo III (Bicycle & Pedestrian Safety Analysis)** as being one of the top 10 crash intersections or segments in the county.

**Table 2. Evaluation Criteria**

GOAL	EVALUATION CRITERIA	SCORING
SAFETY	Project addresses an identified High Bicycle or Pedestrian Crash Intensity Segment or Intersection	<ul style="list-style-type: none"> <li>- Includes High Bike or Ped Crash Segment or Intersection - 100</li> <li>- Crosses High Bike or Ped Crash Segment - 75</li> <li>- High Bike or Ped Crash Segment or Intersection within 0.5 mile - 50</li> <li>- No High Bike or Ped Crash Segments or Intersections - 0</li> </ul>
INTEGRATED & CONNECTS	Project provides direct access to a multimodal corridor, and/or is located within or directly connects to an Activity Center (as designated on the Countywide Plan Map)	<ul style="list-style-type: none"> <li>- Multimodal Corridor &amp; Activity Center - 100</li> <li>- Multimodal Corridor Only - 50</li> <li>- Activity Center Only - 50</li> <li>- Neither - 0</li> </ul>
	Average of project bicycle & pedestrian demand scores	<ul style="list-style-type: none"> <li>- Average weighted demand score over project length, 0-100</li> </ul>
	Project connects 2 or more existing facilities (fills a gap)	<ul style="list-style-type: none"> <li>- Yes - 100</li> <li>- No - 0</li> </ul>
	Project provides direct access to transit	<ul style="list-style-type: none"> <li>- Multiple core routes or routes with headways &lt;= 30 min - 100</li> <li>- One core route or route with headway &lt;= 30 min - 60</li> <li>- No core routes, but one or more routes with headways of 45-60 min - 30</li> <li>- No access to transit - 0</li> </ul>
ACCESSIBLE & COMFORTABLE	After project completed, the level of traffic stress (LTS) for bicyclists along the project corridor: (1) All ages & abilities - 100 (2) Interested but concerned - 60 (3) Somewhat confident - 30 (4) Highly confident - 0	<ul style="list-style-type: none"> <li>- Average weighted LTS over project length, 0-100</li> </ul>
	After project is completed, sidewalk coverage (including trails) for full length of project is complete for:	<ul style="list-style-type: none"> <li>- Both sides of the street - 100</li> <li>- One side of the street only - 50</li> </ul>
	Project is included within, or provides direct access to an area with a High Composite Equity score (5 or higher) and low bicycle or pedestrian services	<ul style="list-style-type: none"> <li>- High Equity Score &amp; Low Service - 100</li> <li>- High Equity Score Only - 50</li> <li>- Low Service Area Only - 50</li> <li>- Neither - 0</li> </ul>
QUALITY OF LIFE	Project provides a direct connection to or extension of an existing recreational facility or destination	<ul style="list-style-type: none"> <li>- Yes - 100</li> <li>- No - 0</li> </ul>

## 04 Existing Conditions Summary

### Importance of Active Transportation

Active transportation includes non-motorized forms of transportation that involve physical activity such as walking or bicycling. Incorporation of active transportation into the overall transportation system is important to the quality of life of a community. Active transportation provides tangible community benefits by increasing daily physical activity levels, reducing pollution, increasing exposure to local businesses, and improving social well-being and sense of community.

Correlation between the existence of active transportation infrastructure and quality of life can be viewed directly through health, economic, and environmental impacts. Health impacts are visible within existing Pinellas County chronic disease and safety data. Economic impacts relate to business exposure and real estate trends and environmental impacts result from pollution and energy consumption. Each of these factors is discussed further in this section.

### HEALTH IMPACTS

The built environment is a key factor considered in a community's Social Determinants of Health (SDOH), identified by the Centers for Disease Control (CDC). These SDOH are used by the CDC to quantify health conditions in the places where people live, learn, work, and play. These factors directly and indirectly impact health risks and outcomes. Transportation infrastructure is an indicator of SDOH. If the bicycle and pedestrian network is deficient due, for example, to a lack of connectivity or unsafe conditions, it has a negative effect on the health of a community.<sup>1</sup>

<sup>1</sup> <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources/environmental>

### SAFETY

Another health concern is dangerous traffic and roadway conditions, especially for vulnerable users such as pedestrians and bicyclists, who are at a greater risk of death and injury resulting from crashes involving motor vehicles. Based on its Pedestrian Danger Index, Smart Growth America ranked Tampa-St. Petersburg-Clearwater as ninth most dangerous metro area for walking in the United States as reported in the 2019 edition of *Dangerous by Design*. Eight other Florida metro areas are also ranked in the top ten of the report's most dangerous metropolitan areas. Improvements are being made and additional action is needed to continue to improve safety for pedestrians in Pinellas County and the Tampa Bay region.<sup>2</sup>

### ECONOMIC IMPACTS

Built environments promoting active transportation can also help to improve local economies. Several studies have concluded that bicycle and pedestrian features make places more economically viable. For example, in a 2009 study (*Walking the Walk: How Walkability Raises Housing Values in U.S. Cities*), researchers found that improved walkability increases home values. The report looked at 94,000 real estate transactions in 15 major US markets. The study analyzed a wide range of factors affecting home sales, including a location's Walk Score. The study found that a one-point Walk Score increased home values by \$700 to \$3,000.<sup>3</sup> Additionally, having bicycle and pedestrian facilities nearby is appealing to home buyers. In 2017, the National Association of Realtors surveyed prospective home buyers and found that one in five respondents preferred to live in an attached home within a walkable community.<sup>4</sup>

<sup>2</sup> <https://smartgrowthamerica.org/dangerous-by-design/>

<sup>3</sup> [http://blog.walkscore.com/wp-content/uploads/2009/08/WalkingTheWalk\\_CEOsforCities.pdf](http://blog.walkscore.com/wp-content/uploads/2009/08/WalkingTheWalk_CEOsforCities.pdf)

<sup>4</sup> <https://www.nar.realtor/reports/nar-2017-community-preference-survey>



### HEALTH: CHRONIC DISEASE

Based on 2016 data, Pinellas County has significant rates of obesity and heart disease. In 2016 heart disease was the **number one cause of death** in the county. Active transportation encourages exercise through increased opportunities for walking and biking.

### SAFETY: PEDESTRIAN & BICYCLE

A significant number of bicycle and pedestrian fatalities have been caused by motor vehicle crashes in Pinellas County. In 2016 the county had a rate of 3.17 pedestrian deaths per 100,000 population, **higher than Florida's rate** of 2.78 per 100,000.

### ENVIRONMENT: AIR POLLUTION

Exposure to traffic emissions impacts the population throughout the county particularly those who live near busy roadways. In 2016, 13.3% of residents lived within 500 feet of a busy highway, **higher than the average rate** for Florida, which was 12.1% in the same year.

### ECONOMIC: BUSINESS EXPOSURE

There are many economic benefits to active transportation infrastructure. Studies show that customers who reach retail businesses by bicycle stop more often and spend as much or more per month as people using personal vehicles. There is greater capacity for arrival by bike where **ten cyclists can fit into just one parking space**.

## ENVIRONMENTAL IMPACTS

Environmental impacts from vehicles are visible on both a local and global level. In 2018 research from climate scientists with the United Nation's Intergovernmental Panel on Climate Change (IPCC) indicated that carbon emissions need to be cut in half by 2030 to limit global temperature rise to 1.5 degrees celsius, the goal established at the 2015 Paris Climate Accord. Reducing personal vehicle use and encouraging active transportation reduces emissions of transportation-related greenhouse gas pollutants. The IPCC considers this one of the most cost effective strategies to address global climate challenges.<sup>5</sup>

<sup>5</sup> <https://www.ipcc.ch/reports/>

## Local Approaches

Based on public survey input collected by Forward Pinellas, improving active transportation infrastructure is a goal shared by the majority of Pinellas County citizens. The existing active transportation network in Pinellas County includes over 2,047 miles of bicycle lanes, shared-use paths/trails, and sidewalks. The planning work behind the construction of these facilities was reflected in the transportation plans of the local governments and Forward Pinellas. Local plans reviewed for the *Forward Pinellas Active Transportation Plan* are listed in **Table 3**. Detailed review of these plans/programs is provided in **Tech Memo I (Existing Conditions)**.

## Bicycle & Pedestrian Network

### FACILITY TYPES

The facilities have been classified according to the following types:

- **Bike Lanes:** These are on-road facilities identified with striping, signing and pavement markings for the preferential or exclusive use of bicyclists. FDOT Design Manual (FDM) uses 5 feet as the standard minimum width for bike lanes and 7-foot buffered bike lanes as the preferred or enhanced option.
- **Shared Use Lanes/Sharrows:** The shared use of travel lanes for bicycles and motorists is designated on roads with speed limits of 35 miles per hour or less. Shared lane markings or "sharrows" are often implemented on roadways where pavement or right-of-way widths are not sufficient for designated bike lanes. The sharrow markings, which include directional chevron markings, inform bicyclists and drivers that shared use is allowed and that bicyclists should be expected on the roadway.

**Table 3. Bicycle/Pedestrian Plans and Programs Reviewed**

NAME	AGENCY
Countywide Plan	Forward Pinellas
200 Long Range Transportation Plan	Forward Pinellas
Bicycle Pedestrian Master Plan Facilities Element	Forward Pinellas
Complete Streets Grant Program	Forward Pinellas
Bike Share Feasibility Study	Forward Pinellas
Tri-County Trail Connection Study	Forward Pinellas
Comprehensive Plan	Pinellas County
Complete Streets Corridor Evaluation	Pinellas County
Linking Lealman Mobility Plan	Pinellas County
Comprehensive Plan	City of Clearwater
Shifting Gears: Bicycle and Pedestrian Master Plan	City of Clearwater
Downtown Redevelopment Plan	City of Clearwater
Complete Streets Projects	City of Clearwater
Comprehensive Plan	City of St. Petersburg
Citytrails Bicycle Pedestrian Master Plan	City of St. Petersburg
Complete Streets Implementation Plan	City of St. Petersburg
Comprehensive Plan	City of Largo
Moving Largo Multimodal Plan	City of Largo
Downtown Largo Multimodal Plan	City of Largo
Pedestrian Safety Action Plan	Florida Department of Transportation (FDOT)
Alternate US 19 North Corridor Studies	FDOT and Forward Pinellas
US 19 Pedestrian and Bicycle Safe Access to Transit Corridor Study	FDOT, Forward Pinellas, and Pinellas Suncoast Transportation Authority
Multimodal Quality of Service Analysis	City of Tarpon Springs
Downtown Palm Harbor Master Plan	Palm Harbor
Corey Avenue District Vision Plan	City of St. Pete Beach
Town Center Plan	City of Madeira Beach
Downtown Master Plan	City of Safety Harbor
Dunedin Causeway Bridges PD&E	City of Dunedin
North Marina Area Master Plan	City of Clearwater



- Trails:** Shared Use Paths or Trails are paved off-street facilities for non-motorized travel modes including bicycling and walking. They are typically bidirectional pathways separated from paved road lanes 8- to 15-feet wide. In Pinellas County there are two types of trails including community trails and regional trails. The trail system in Pinellas County is made up of regional trails and community trails. Regional trails, such as the Pinellas Trail Loop, serve as the spine of the network. Community trails provide connections between the regional trails and points of interest and neighborhoods.

## EXISTING FACILITIES

As shown in **Figure 2**, Pinellas County has existing bicycle facilities along many roadways, as well as an extensive off-street trail network.

### On-Street Bicycle Facilities

- Bike Lanes.** The majority of bicycle facilities in Pinellas County are designated bike lanes (248 miles). Bike lanes are distributed throughout the county, with concentrations occurring in the south of the county in St. Petersburg, Gulfport, and also in the north between Tarpon Springs and Dunedin. Along the west coast of the county, the beach communities (i.e., Belleair Beach, Indian Rocks Beach, Indian Shores, Redington Shores, Madeira Beach, Treasure Island, and St. Pete Beach) are linked with a bicycle lane along Gulf Boulevard.
- Sharrows.** Sharrows are the least applied bicycle facility type in the county. According to the

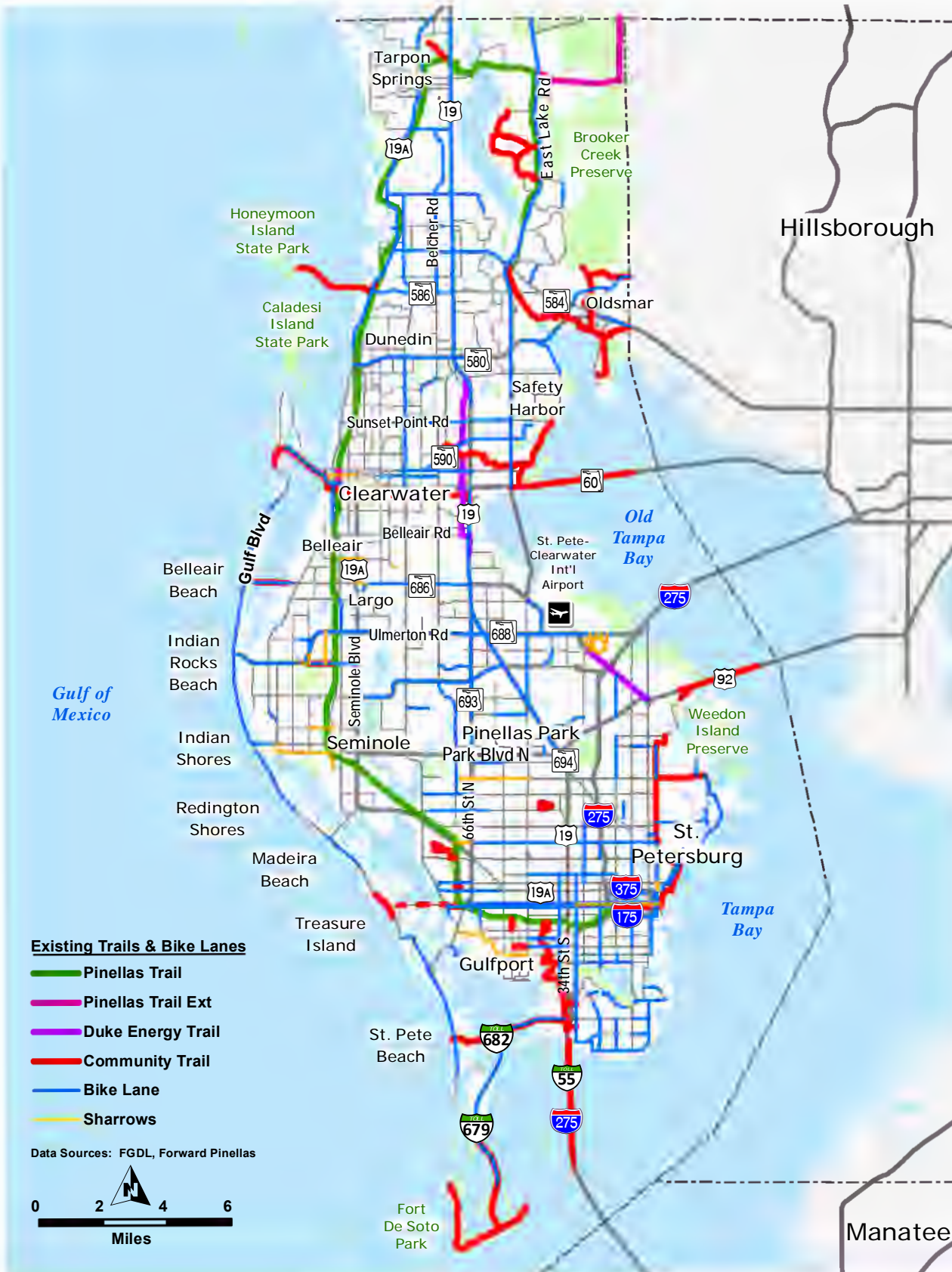
existing facility data, the county has 10 roadway segments with designated sharrows. This includes roadway segments in Tarpon Springs, Gulfport, Pinellas Park, Seminole, Indian Shores, Clearwater, and two each segments in Largo and Indian Rocks Beach.

### Existing Trails

- The 43-mile **Fred Marquis Pinellas Trail (Pinellas Trail)** is the county's most popular and longest existing trail, running primarily along the western side of the county between Tarpon Springs in northeast Pinellas County to downtown St. Petersburg. It was one of the first trails to be inducted into the Rail-Trail Hall of Fame in 2007. The Rails to Trails Conservancy award recognizes exemplary trails for their "scenic value, high use, trail and trailside amenities, historical significance, excellence in management and maintenance of facility, community connections and geographic distribution." The 15-foot-wide trail opened in 1990 along an abandoned railroad corridor. The trail comprises the western most section of the Florida Coast-to-Coast Connector Trail. When completed, this a 250-mile trail will extend from St. Petersburg to Titusville on the east coast.
- The **Pinellas Trail - Duke Energy Florida Trail (Duke Energy Trail)** is a 22-mile north-south trail that extends from John Chesnut Park on East Lake Road to Roosevelt Boulevard/28th Street. There are three existing segments shown on Figure 2. The remaining sections of the trail have not been constructed yet.



**Figure 2. Pinellas County Existing Bicycle Facilities**



- The **Pinellas Trail Loop** is a 75-mile regional trail network that includes the entire Pinellas Trail, as well as the Duke Energy Trail and other trail segments. Some portions of this facility are yet to be constructed. Completion of the gaps in the Trail Loop is an LRTP priority. The North Gap project will close the existing gap in the northern portion of the county. This is under development through a grant from FDOT Sun Trail Network funds and additional funding from the Penny for Pinellas.
- Several **Community Trails** connect to the Pinellas Trail, including the Ream Wilson Clearwater Trail, the Druid Road Trail, the Clearwater Beach Connector Trail, the Honeymoon Island Trail, and the Skyway Trail. These trails provide access to the Trail Loop and to key destinations.

### EXISTING PEDESTRIAN FACILITIES

Considering that everyone is a pedestrian at some point in their daily commutes, providing a continuous network of sidewalks is critical to meeting a community's basic transportation needs. As of 2018, 88% of the county's major roads had sidewalks alongside them. Areas where there is less coverage or gaps in the network include portions of central Pinellas County and the beach communities. Gulf Boulevard provides a north-south connection for the beach communities, but access to neighborhoods is limited.

### Equity Analysis

People who rely on walking, bicycling, and transit to access jobs and meet everyday needs often live in areas that are the least supportive of active transportation modes. Such areas are often characterized by sidewalk networks that have gaps or are in poor condition, infrequent transit service and/or absence of safe bicycle facilities. The health, safety, mobility, and economy of a community is compromised when its residents are not provided with viable mobility choices. Developing bicycle and pedestrian networks that serve all areas of the county, including areas that have a high density of historically under-served populations and relatively few bicycle

and pedestrian facilities, is a primary goal of this *Active Transportation Plan*.

To better understand the needs of communities most affected by the lack of access to active transportation options, an equity analysis was conducted based on their demographic attributes. The analysis also considered the spatial relationship of underserved areas to existing bicycle and pedestrian facility networks. This section provides an overview this analysis that resulted in a geographic equity score that helped to identify areas with low bicycle and pedestrian service where people would be more likely to walk or ride a bicycle, to meet their daily transportation needs.

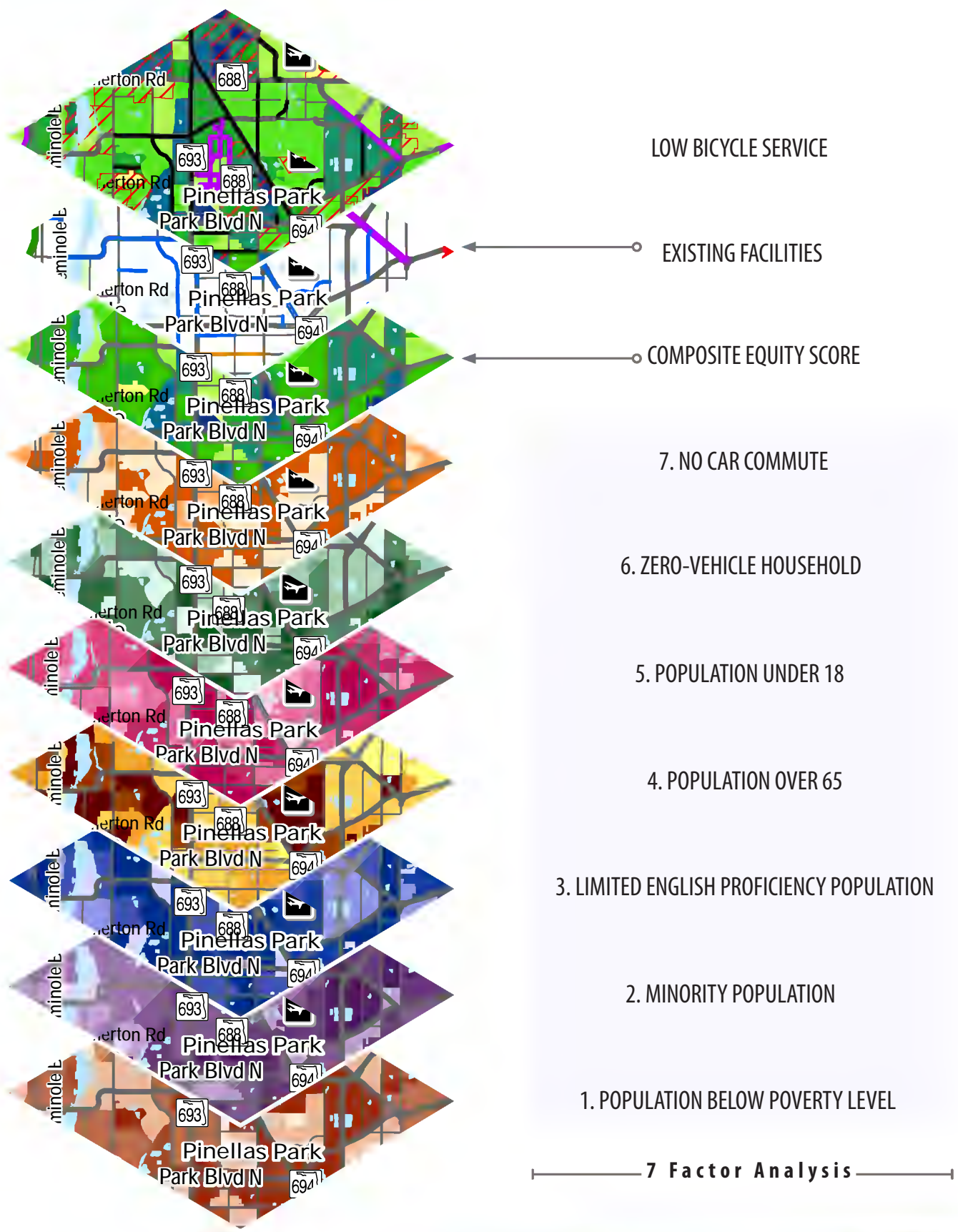
### EQUITY ANALYSIS METHODOLOGY

The equity analysis conducted for the plan included an evaluation of seven 2016 American Community Survey (ACS) socio-economic factors identified for the county. These included:

1. **Population Below Poverty Level:** Percentage of population below poverty level;
2. **Minority Population:** Percentage of minority population;
3. **Limited English Proficiency:** Percentage of population with limited English proficiency;
4. **Population Over 65:** Percentage of population age 65 or above;
5. **Population Under 18:** Percentage of population 18 or below;
6. **Zero-Vehicle Household:** Percentage of zero-vehicle households; and
7. **No Car Commute:** Percentage of means of transportation to work other than personal motor vehicle.

The analysis used a threshold for each of the seven factors, so that those census block groups that had a greater value than the countywide mean value for any given indicator was given a score of one (1). The scores for the individual categories were then summed across the seven socio-economic indicators to generate a composite equity score. For example, if a census block group had an above average number of people below poverty level and an above average number of people

Figure 3. Pinellas County Equity Analysis Framework



65 years of age or older, the census block group was given a score of two (2). The Equity Score range has a maximum possible high score of seven (7), indicating above average values for each of the seven socio-economic indicators, and a minimum possible low equity score of zero (0), which would indicate no above average values.

The composite equity map was then overlaid with the existing network of bicycle facilities (bike lanes, trails, and signed/marked bike routes), and overlaid separately with the existing network of pedestrian facilities (sidewalks and trails), to determine areas of low service. For both the bicycle and pedestrian analysis, the facility service level was calculated by dividing the total mileage of bicycle or pedestrian facilities in a census block group by the number of square miles in the census block group (e.g., bicycle facility miles/square miles). Block groups with a population density less than 1 person per acre were excluded from the analysis. Block groups in the lowest quartile (lowest 25%) were considered to be “low service areas.”

The results of the equity analysis combined with the assessment of low service areas highlight areas within Pinellas County where improvements to the bicycle or pedestrian network would benefit underserved populations<sup>6</sup>. **Figure 3** shows a schematic diagram of the equity analysis framework that used seven socioeconomic factors to derive a composite equity score, and then overlaid the existing bicycle/pedestrian facilities to help determine where areas of high composite equity scores overlapped with areas of low bicycle or pedestrian service.

## Equity Score & Low Bicycle/ Pedestrian Service

**Figure 4** shows the results of combining the Equity Score data and the existing facilities data revealing the areas of Low Bicycle Service. Several Low Bicycle Service Areas exist throughout Pinellas County according to this analysis. Each municipality has some level of low coverage for this indicator. As shown on **Figure 4**, local jurisdictions with the largest areas of

low service include St. Petersburg, Gulfport, Pinellas Park, Seminole, Largo, Indian Rocks Beach, Treasure Island, Safety Harbor, Oldsmar, Dunedin, and Tarpon Springs.

Efforts should be focused on areas where Low Bicycle Service and concentrated high composite Equity Scores overlap. They identify concentrations of the most vulnerable user populations and where improvements should be prioritized to enhance and provide equitable mobility access. These areas are highlighted on the map by red hatched markings. They include areas of St. Petersburg, Largo, Clearwater, Gulfport, and Dunedin.

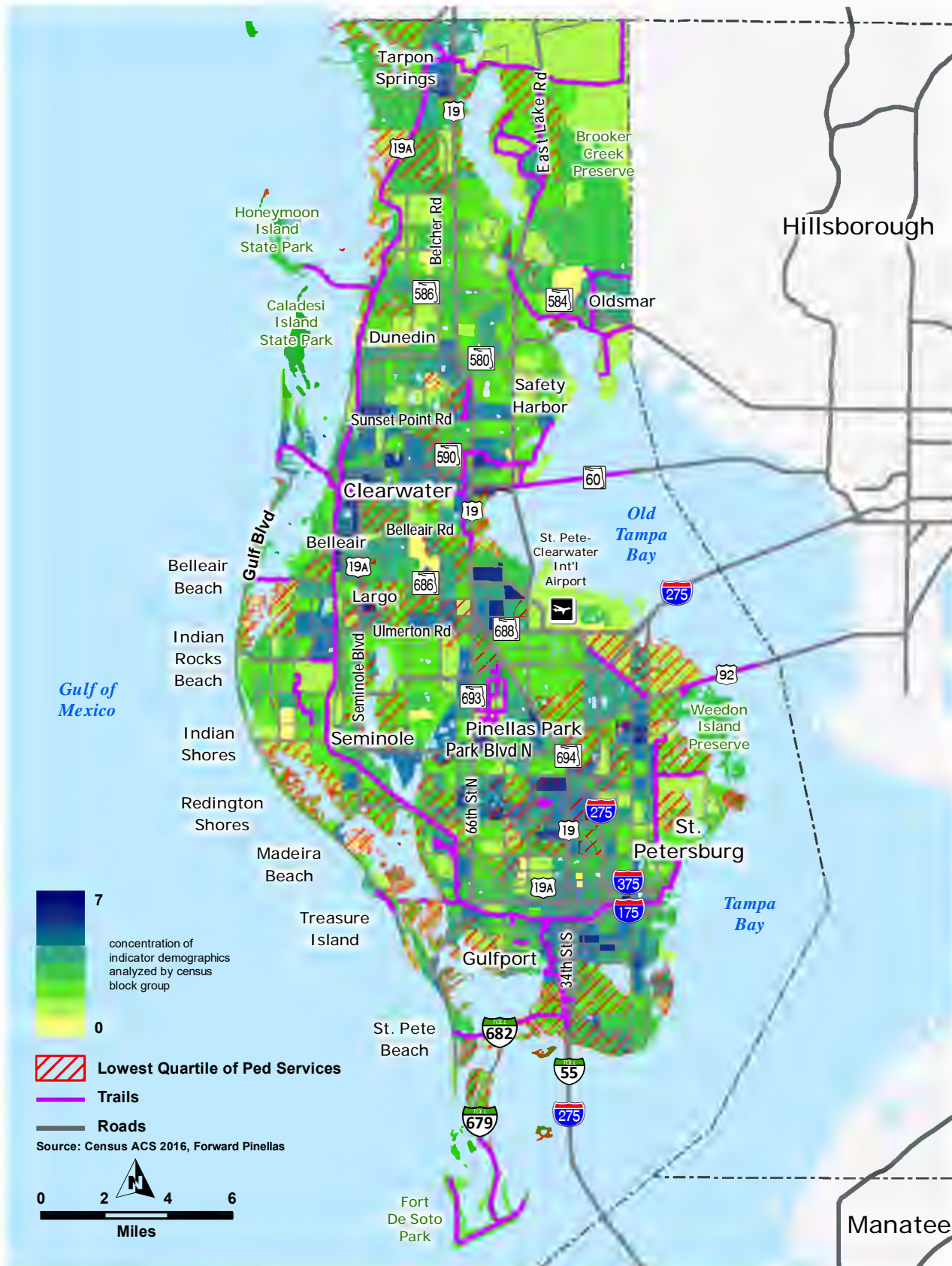
**Figure 5** shows the results of combining the Equity Score data and the existing facilities data revealing the areas of Low Pedestrian Service. Several Low Pedestrian Service Areas exist in south St. Petersburg, Gulfport, Pinellas Park, Seminole, Largo, Indian Rocks Beach, Redington Shores, Madeira Beach, Treasure Island, St. Pete Beach, and Tarpon Springs. Areas where high concentrated equity score populations and low pedestrian service overlap are in Largo, Pinellas Park, and Clearwater.

This exercise helped to inform the process of identifying the improvement projects discussed in the next chapter.

<sup>6</sup> <http://weblink.cityofpt.us/weblink/0/edoc/169101/Seattle-Bike-Master-Plan-Update-FINAL.pdf>



Figure 5. Pinellas County Low Pedestrian Service



## 05 Proposed Improvement Projects

Development of the *Active Transportation Plan* included a review of the bicycle and pedestrian improvement projects proposed in the Forward Pinellas *Bicycle and Pedestrian Master Plan* (adopted in December 2013 and last updated in May 2017). Based on local government feedback on the status of the projects, the list of Master Plan projects was updated and condensed. The revised list of projects, which represents the countywide long-range vision plan, will continue to be maintained as part of the *Active Transportation Plan* and is illustrated in **Figures 6-9**.

To guide the process of prioritizing projects in the Active Transportation Plan, a network of priority corridors was identified. The top ten corridors were then selected as priority projects that will be advanced through the Advantage Pinellas Plan and Transportation Improvement Program. This section describes the process involved with selecting the top ten priority corridors. Also included is the selection criteria for trail overpass projects in the county.

The methodology for identifying the priority projects involved a balance of data analysis, geographic equity, regional network connectivity, facility diversity and stakeholder feedback.

### Data & Planning Analysis

The data analysis approach involved a synthesizing of several GIS datasets to identify focus areas and potential corridors. This included review and analysis of:

- Equity Score
- Low Service Areas for Pedestrian and Bicycle Facilities
- Level of Traffic Stress

- Population
- Demand
- Network Gaps (Existing and Proposed Facilities)
- Safety

Each of the resulting data layers were combined in an online ArcGIS portal. Additionally, the analysis was compared with comments received through the Forward Pinellas crowd sourcing GIS tool. This exercise produced a first step in understanding where the most active transportation activity is, what the conditions are, and where potential improvements can be addressed with the ATP.

The planning analysis looked at network connectivity to identify the location of gaps in terms of connecting activity centers, communities, and destinations. For example, several stakeholders expressed a need to better connect certain communities such as Dunedin and Clearwater. Although completion of the Pinellas Trail Loop has been a top priority in the trail plans of Forward Pinellas and Pinellas County over the years, project stakeholders also expressed a need for more cross county facilities extending north-to-south and east-to-west. Based on this initial analysis step, a list of 47 potential priority corridors was developed. These corridors are listed in **Table 4** and shown in **Figure 10**.

### Stakeholder Feedback

Stakeholder feedback was received from the Forward Pinellas Bicycle Pedestrian Advisory Committee (BPAC) and Technical Coordinating Committee (TCC), and face-to-face meetings with local officials. In addition, various plans were reviewed to ascertain local government priorities in terms of bicycle and pedestrian needs.



The BPAC and TCC feedback helped to guide the planning process and help guide the decision-making and selection of the priority projects. TCC members were asked to inventory and update the list of bicycle and pedestrian projects (existing and proposed) from the *Forward Pinellas Bicycle Pedestrian Master Plan*. The revised projects are included in the countywide vision plan illustrated in **Figures 6-9**. Additionally, it was important to identify which of the proposed projects were considered a high priority but were not being funded locally.

## Geographic Equity

Based on the data analysis alone, most of the higher ranked priority projects would be concentrated in the southern portion of the county. Understanding that an underlying objective of the plan is to build a bicycle and pedestrian network that serves countywide as well as regional interests it was necessary to consider geographical equity in the prioritization process. To do this, the project team divided the county into three geographic focus areas. The limits for each were as follows:

- North: from SR 60 north to the Pinellas/Pasco County Line;
- Central: from Park Boulevard north to SR 60; and
- South: from the southern end of Pinellas County north to Park Boulevard.

The list of projects shown in **Table 4** was then reorganized into smaller lists for each geographic area to narrow the focus for selecting three to four priority project corridors within each area.

## Top Ten Priority Corridor Selection

The selection of the top priority corridors in each geographic area relied heavily on the weighted bicycle and pedestrian demand scores for each corridor. The demand scores were based on a combination of factors including population and employment density; proximity to key destinations such as schools, parks, and community and activity centers; and the computed composite equity scores.

More information about the gap and demand analysis is included in **Tech Memo V (Gap & Demand Analysis)**. Other factors considered in the selection of the top priority corridors included existing infrastructure, connectivity with other facilities and destinations, and local priorities. Also, the project team reviewed the available right-of-way and safety and comfort conditions for users.

A key objective of this plan is to advance a concise list of priority projects that can be programmed in the Transportation Improvement Program in the next few years. Therefore, the initial list of 47 priority corridor was reduced to ten as shown in **Table 5**.



**Figure 6. Forward Pinellas Active Transportation Vision Map**

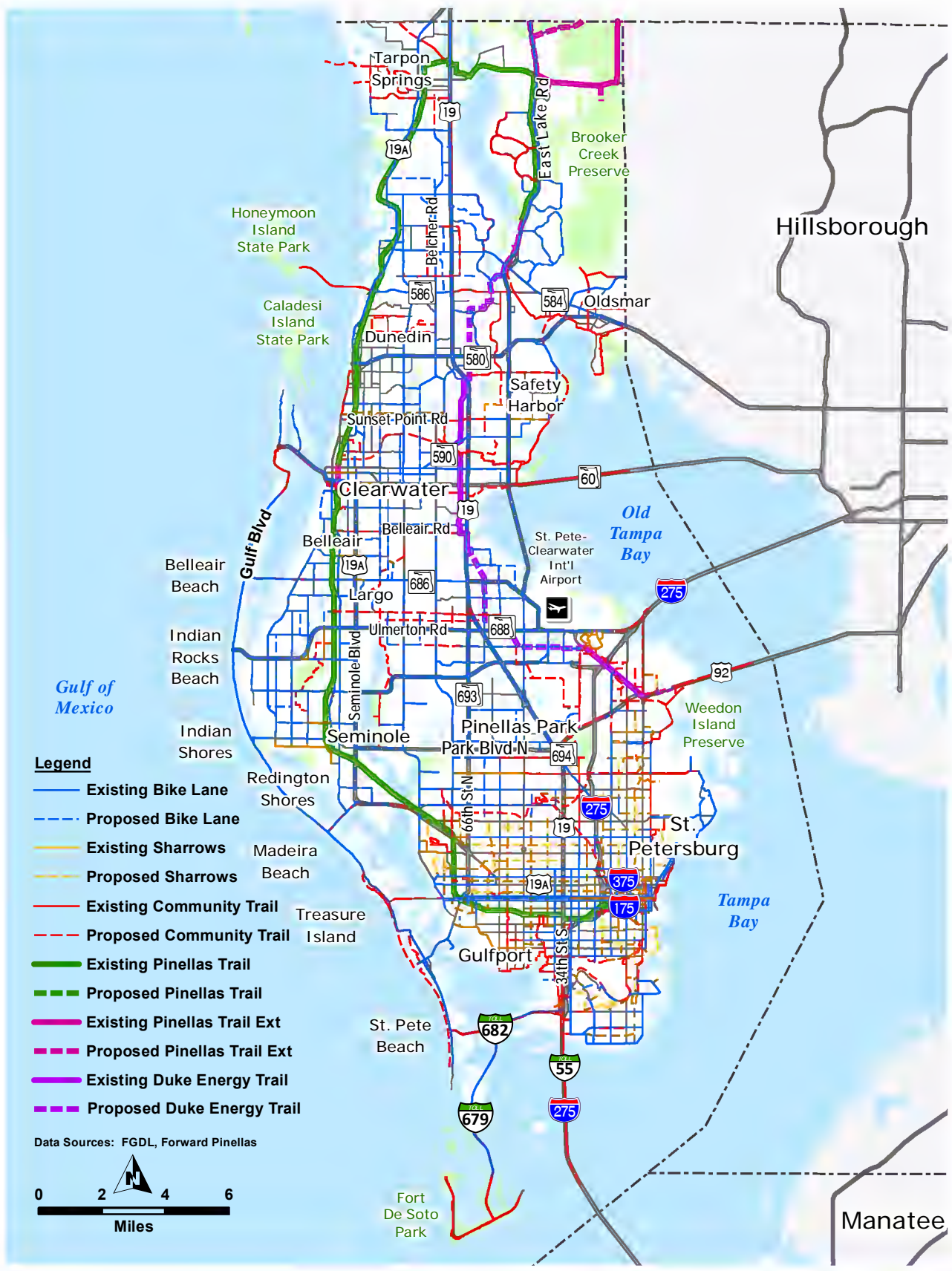


Figure 7. North Area Vision Map

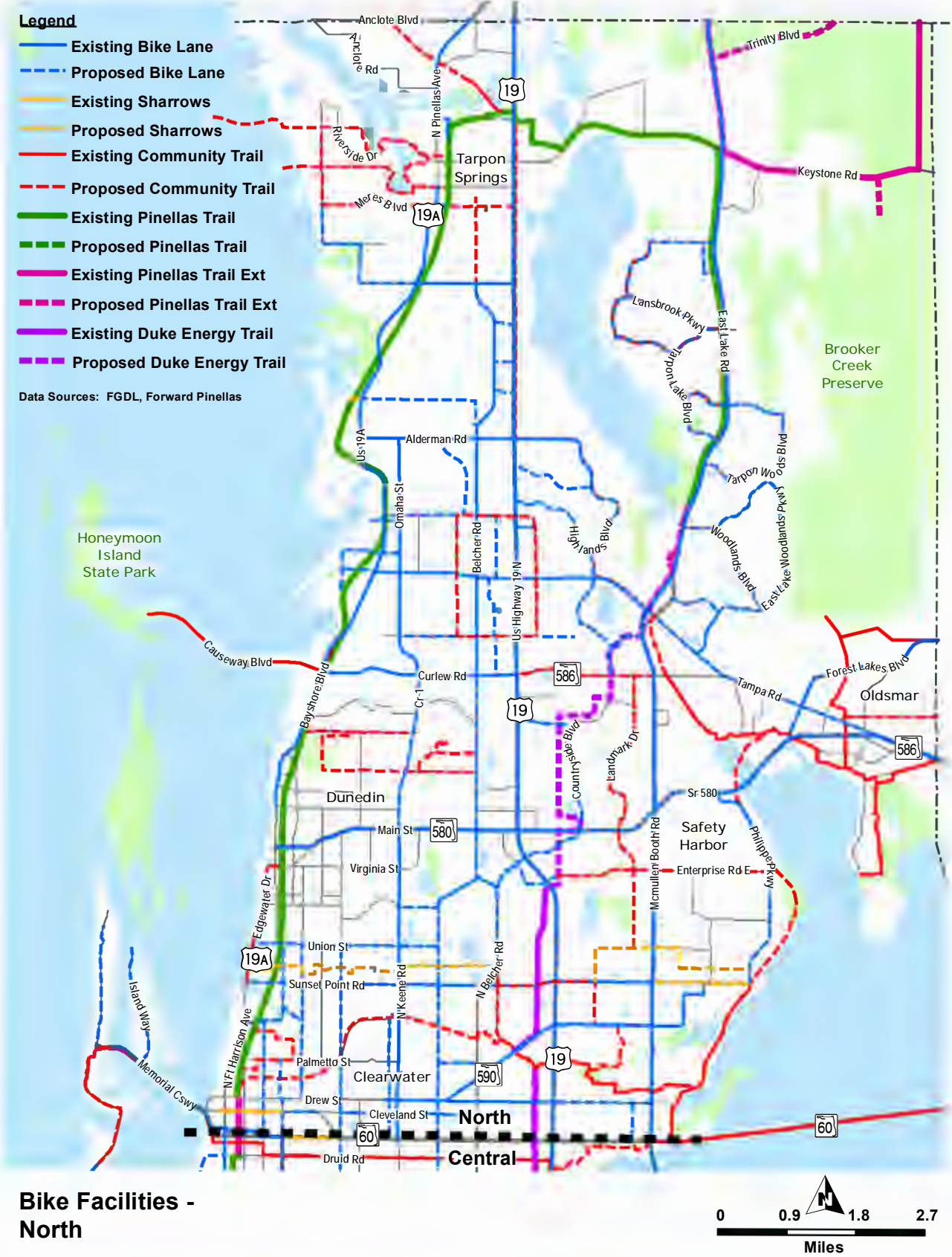




Figure 9. South Area Vision Area



- Legend**
- Existing Bike Lane
  - - - Proposed Bike Lane
  - Existing Sharrows
  - - - Proposed Sharrows
  - Existing Community Trail
  - - - Proposed Community Trail
  - Existing Pinellas Trail
  - - - Proposed Pinellas Trail
  - Existing Pinellas Trail Ext
  - - - Proposed Pinellas Trail Ext
  - Existing Duke Energy Trail
  - - - Proposed Duke Energy Trail

Data Sources: FGDL, Forward Pinellas

**Bike Facilities - South**



**Figure 10. Initial Priority Corridor Map**



**Table 4. Initial Priority Corridor List**

NO.	CORRIDOR	LIMIT FROM	LIMIT TO
1	113th Street	Tom Stuart Causeway	Ulmerton Road
2	13th Avenue N/63rd Street N/17th Avenue N	Pinellas Trail	28th St S
3	142nd Avenue N	Pinellas Trail	Duke Energy Trail
4	18th Avenue S/Tangerine Greenway	55th Street S	4th Street S
5	19th Street S	26th Ave S	Central Avenue
6	26th Ave S/Gulfport Multi-use Trail	Skyway Marina Trail	4th Street S
7	28th Street N/S/Sawgrass Lake Trail	Pinellas Trail	Roosevelt Blvd
8	4th Street N	Gandy Blvd/Duke Energy Trail	Howard Frankland Bridge Trail
9	55th Street S/Gulfport Spur	Joe's Creek Trail	Shore Blvd S
10	70th Avenue N/Park Boulevard N	Sawgrass Lake Park	Gulf Blvd
11	71st Street N/Belcher Road	54th Avenue N	Belleair Rd
12	Bay Pines Trail/150th Avenue	Gulf Boulevard	Pinellas Trail
13	Bayshore Drive	Oldsmar Trail	Veterans Memorial Lane
14	Bayway Trail North	Gulf Boulevard	Skyway Trail
15	Belleair Causeway/East Bay Drive/Roosevelt Blvd	Gulf Boulevard	Ulmerton Road
16	Belleair Road	Pinellas Trail	Duke Energy Trail
17	Central Avenue/107th Avenue	Gulf Boulevard	Bayshore Drive NE/Pinellas Trail Loop (North Bay Trail)
18	Clearwater Beach Trail/Druid Rd Trail/CCC Trail	Gulf Boulevard	Hillsborough County Line
19	Curlew Road/Honeymoon Island Trail	Honeymoon Island Beach	Oldsmar Trail (east side of canal)
20	Elfers Spur and Trail	Pinellas Trail	Pasco County Line
21	Florida Coast to Coast Trail	Pinellas Trail	Pasco County Line
22	Friendship Trail/Gandy Boulevard	Pinellas Trail	Gandy Bridge (to Tampa)
23	Gulf Boulevard	Clearwater Beach	Pass-a-Grille Beach
24	Hercules Ave/Greenbrier Drive/Belcher Rd	Belleair Road	Pinellas Trail
25	I-275 Trail Connections	Ulmerton Rd & 4th Street S	Howard Frankland Bridge Trail
26	Joe's Creek Greenway Trail	54th Ave N	Sawgrass Lake Park
27	Lake St George Drive/Highlands Blvd/Alderman Rd	Pinellas Trail	Duke Energy Trail
28	McMullen Booth Road/East Lake Road	SR 60	Pasco County Line
29	Oldsmar Trail	S Bayview Blvd	Duke Energy Trail
30	Oleander Way	Pasadena Avenue S	Pinellas Trail
31	Pasadena Ave S/Gulfport Blvd S/22nd Ave S	Gulf Boulevard	Skyway Trail
32	Pinellas Trail Loop (Duke Energy Trail)	Gandy Blvd	Tampa Road
33	Pinellas Trail Loop (East Lake Road)	Tampa Road	Keystone Road
34	Pinellas Trail Loop (North Bay Trail)	1st Ave SE	Gandy Blvd
35	Pinellas Trail Loop (Pinellas Trail)	Bayshore Drive SE	East Lake Rd
36	Rosery Road/Poinsetta Rd	Indian Rocks Rd	Eagle Lake Park
37	Skyway Trail	54th Ave S	Pinellas Trail
38	SR 580/Main Street/Tampa Road	Alt US 19	Hillsborough County Line
39	St. Petersburg N/S Downtown Corridor	Pinellas Point S	Pinellas Trail Loop (North Bay Trail)
40	Sunset Point Road/Main Street	Alt US 19	Bayshore Drive
41	Trinity Trail	Pinellas Trail	Pasco County Line
42	Ulmerton Road	Duke Energy Trail	Howard Frankland Bridge Trail
43	Walsingham Road	Gulf Boulevard	Pinellas Trail
44	Bayway Trail South	Mullet Key	Pinellas Bayway South
45	Pinellas Point Dr S / Roy Hanna Dr S	31st St S	St. Petersburg N/S Downtown Corridor
46	Nebraska Ave / Hermosa Dr	Pinellas Trail Loop (Pinellas Trail)	Omaha St
47	9th Ave North	Park Street N	1st Street N

**Table 5. Top Ten Priority Corridors for Active Transportation Projects**

CORRIDOR	AREA
Oldsmar Trail	North
Nebraska Ave. Loop	North
Main St/Sunset Loop	North
142nd Ave.	Central
28th St North	Central
San Martin Blvd. Path	Central
Joe's Creek Greenway	South
9th Ave. North	South
18th Ave. South / Salt Creek Blvd. Trail	South
70th Ave. North	South

Three of the top ten priority corridors are located within the north and central areas of the county and four are in the south area.

An initial project feasibility review was completed for each of the top ten priority corridors to identify the project limits, potential facility type(s), and issues and

opportunities. In addition, a planning-level project cost was estimated for each project based on the project length, facility type(s) and general cost per mile assumptions for various facility types. A project concept summary is provided for each of the ten priority corridors in **Tech Memo VI (Project Concept Summaries)**. In total, the ten projects represent more than 47 miles of new facilities, at a total estimated cost of approximately \$58.1 million. These ten projects will be placed on the Forward Pinellas Multimodal Project Priority List at regular intervals, beginning in 2020, in order to initiate the project development process. Each of these ten projects will require additional and more detailed planning to finalize alignments and facility types.

## Facility Types

Throughout the county, efforts are being taken to fill sidewalk gaps, complete the Pinellas Trail, and implement Complete Streets projects. **Figure 11** illustrates some of the facility types that were

**Figure 11. Project Types Considered for ATP**



**On-Street Shared Lanes**



**Bike Lanes**



**Separated Bikeway**  
(Cycle Track / Protected Bikeway)



**Buffered Bike Lanes**

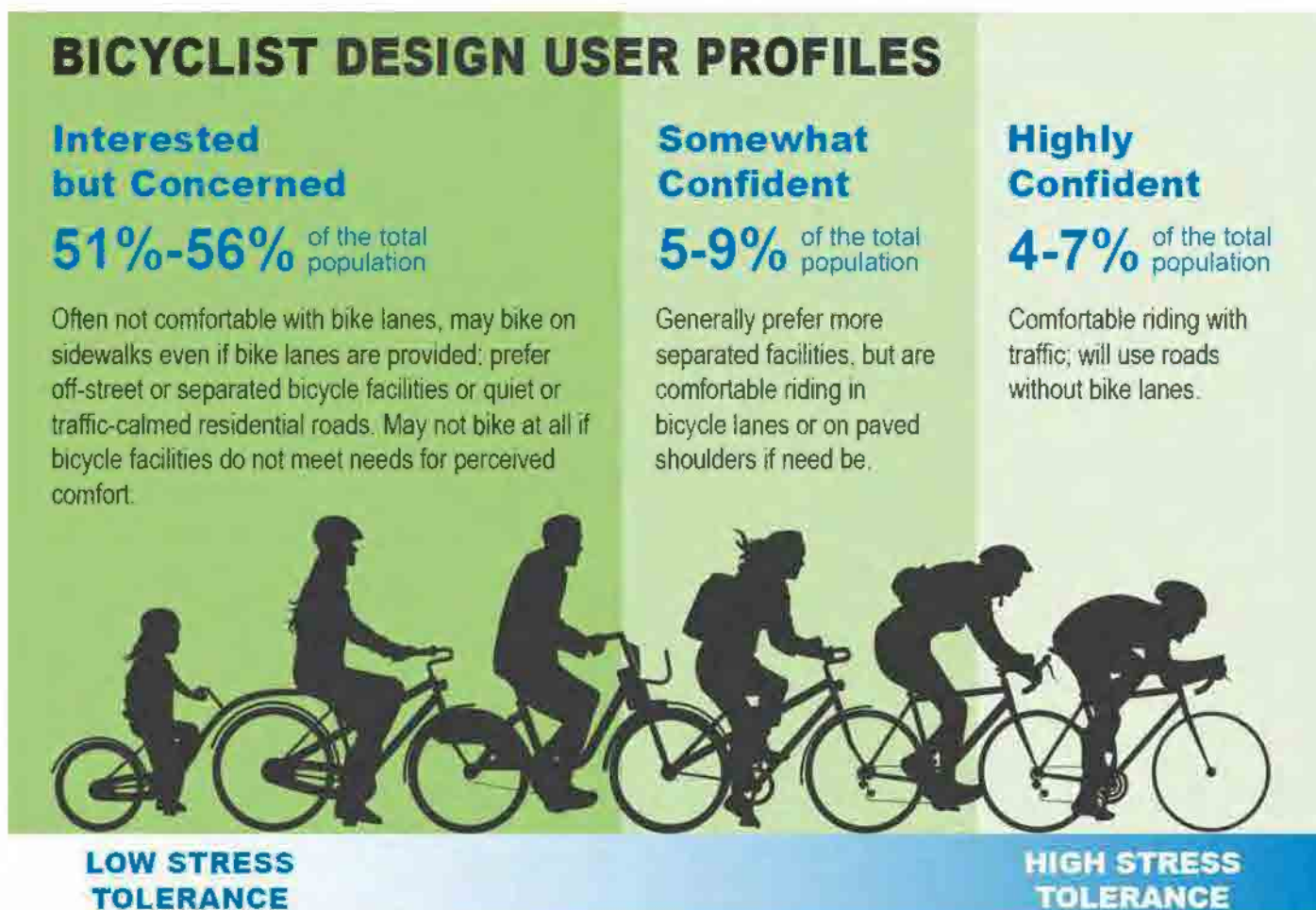


**Sidewalks**



**Trails**

Figure 12. FHWA Bicycle Design User Profiles



considered for implementation. More information on each of these types can be found in **Tech Memo IV (Bicycle Facility Types & Related Standards)**.

The most appropriate bicycle facility types on the priority corridors need to reflect a recent change in bicycle planning and design related to the target design user. In many communities, bicycle facilities have traditionally defaulted to serving “Highly Confident” and “Somewhat Confident” bicycle users, which make up a relatively small portion of the existing and potential bicyclist population. As shown in **Figure 12**, the largest category of bicyclists falls into the “Interested but Concerned” group, typically 50-60% of the population. These users will often not use traditional bicycle facilities like on-street bike lanes on high speed or high volume roadways due to the close proximity of motor vehicle traffic and a perceived

safety threat. These users require more separation from traffic or very low volume, low speed neighborhood streets to feel comfortable riding a bike. Consequently, to attract a wider range of bicycle users, it is important to establish low stress bicycle networks that will serve users of all ages and abilities. Low stress networks incorporate separation from motor vehicle traffic by focusing on trails and separated bikeways, along with providing more bicycle boulevards (also know as neighborhood bikeways or neighborhood greenways, which are low volume, low speed streets optimized for walking and bicycling through signage, pavement markings, traffic calming, traffic reduction, and intersection crossing treatments). Lower stress facilities and a greater amount of separation from vehicle traffic were key considerations for the facilities proposed in the proposed projects along the ten priority corridors.



## 06 Project Prioritization

The process of prioritizing the top ten corridor projects utilized the evaluation criteria described in Section 3, local agency feedback and demand, along with geographic equity.

The projects were initially ranked in descending order of total weighted score, but these rankings were not equitable across all areas of the county, as the south area had the top two projects and four of the top six, while the north area did not have a project higher than seven. As a result, the projects were re-sorted to provide a more equitable distribution of priorities across the entire county. The revised priorities have the highest scoring project from each geographic area ranked one through three, then the second highest scoring project from each geographic area ranked four through six, and so on. **Table 6** shows the scoring for each project, but also reflects the final sorting for geographic equity. As an example, the Sunset Point Road / Main Street project was only the seventh highest scoring project, but as the highest scoring project in the north area, it was moved up to priority number three after the re-sorting to incorporate geographic equity. **Figure 13** provides the final project prioritization map.

### TRAIL OVERPASSES AND PRIORITIZATION

In addition to the top ten priority corridors, a focus of the *Active Transportation Plan* is to create safe crossings along the Pinellas Trail Loop where it intersects with major multi-lane roadways in the form of new trail overpasses. A portion of the LRTP Cost Feasible Plan budget has been dedicated to the construction of these overpasses at priority locations. A total of 12 potential overpass locations were evaluated at existing and proposed trail crossing locations. Considerations for prioritizing potential overpasses include speed



limits, traffic control, number of lanes / crossing width, and crash history. To maintain consistency with the prioritization method of the top ten priority corridors, the same evaluation criteria were used to identify priority trail crossings. As noted previously, these tie back to the *Active Transportation Plan* goals as well as to the criteria Forward Pinellas uses to evaluate applications for Transportation Alternatives project funding. The prioritization scoring for the potential overpass locations are listed in **Table 7**. The top four potential overpass locations listed are along the Duke Energy Trail at SR 60, Roosevelt Boulevard/Carillon, 4th Street/Gandy Boulevard, and Drew Street.

Figure 13. Final Active Transportation Plan Priority Projects



● Overpass Priority

\*Projects are numbered based on the priority project ranking.

## NORTH PROJECT AREA

### SR 60 NORTH TO PINELLAS/PASCO COUNTY LINE

CORRIDOR	LIMITS	PROPOSED FACILITY
3. Main St/Sunset Loop	Sunset Point Road, Alt. US 19, to Phillippe Parkway	Bike Boulevard, Trail, Pedestrian Crossings
6. Nebraska Ave Loop	Nebraska Avenue, 19th Street to W. Lake Road; 19th Street, CR 39 to Nebraska Avenue; CR 39 / CR 95, 19th Street to W. Lake Road; W. Lake Road, CR 95 to Nebraska Avenue	Trail, Pedestrian Crossing
9. Oldsmar Trail	Curlew Road to Tampa Road	Trail, Pedestrian Crossing

## CENTRAL PROJECT AREA

### PARK BOULEVARD NORTH TO SR 60

CORRIDOR	LIMITS	PROPOSED FACILITY
2. 28th Street North	Roosevelt Blvd to 30th Avenue North	Trail, Bike Boulevard, Pedestrian Crossings
5. 142nd Ave / 16th Ave SW	142nd Avenue North / 16th Avenue Southwest, Pinellas Trail to 58th Street North	Trail, Pedestrian Crossing
8. San Martin Boulevard	San Martin Boulevard, Macoma Drive NE (at Patuca Rd NE) to Gandy Boulevard	Trail, Pedestrian Crossings

## SOUTH PROJECT AREA

### SOUTH PINELLAS COUNTY LINE TO PARK BOULEVARD

CORRIDOR	LIMITS	PROPOSED FACILITY
1. 18th Ave South/ Salt Creek Trail Extension	18th Avenue South from 37th Street South to 4th Street South; Salt Creek Trail from 18th Avenue South to 26th Avenue South	Separated Bike Lanes, Trail, Bike Boulevard, Pedestrian Crossings
4. 9th Ave North	Park Street North to 1st Street North	Separated Bike Lanes, Shared Lane Markings, Bike Boulevard, Pedestrian Crossings
7. Joe's Creek Greenway	54th Avenue North at Joe's Creek to 28th Street North; 71st Street North from Joe's Creek Greenway to Pinellas Trail	Trail, Bike Boulevard, Pedestrian Crossings
10. 70th Ave North	70th Avenue North, 58th Street North to US 19	Trail

Table 6. Priority Corridor Project Scoring (Total Weighted Score & Geographic Equity)

RANK	AREA	PROJECT	SAFETY	INTEGRATED & CONNECTS					ACCESSIBLE & COMFORTABLE				QUALITY OF LIFE	TOTAL WEIGHTED SCORE 100%	
			High Crash Location Score	Multimodal Corridor / Activity Center Score	Avg Bike/ Ped Demand Score	Connects Existing Facilities Score	Direct Access to Transit Score	SUB-TOTAL	Avg Weighted Bicycle LTS Score	Sidewalk Coverage Score	High Equity / Low Service Area Score	SUB-TOTAL	Recreational Facility Score		
			20%	10%	10%	10%	10%	40%	10%	10%	15%	35%	5%		
1	S	18th Ave S/ Salt Creek Trail Ext	100	100	61.9	100	100	90.5	96.9	50	100	84.8	100	90.9	
2	C	28th St N	100	100	41.4	100	60	75.3	100	0	100	71.4	100	80.1	
3	N	Sunset Point Rd / Main St	0	50	42.0	100	60	63.0	67.8	0	100	62.2	100	52.0	
4	S	9th Ave N	75	100	55.2	100	100	88.8	83.3	50	100	80.9	100	83.8	
5	C	142nd Ave N/ 16th Ave SW	75	0	47.6	100	100	61.9	100	50	100	85.7	100	74.8	
6	N	Nebraska Ave Loop	0	0	38.4	100	60	49.6	100	100	0	57.1	100	44.8	
7	S	Joe's Creek Greenway	50	0	51.5	100	100	62.9	92.7	0	100	69.3	100	64.4	
8	C	San Martin Blvd	0	50	27.2	100	60	59.3	100	50	50	64.3	100	51.2	
9	N	Oldsmar Trail	0	0	46.0	0	30	19.0	100	50	0	42.9	100	27.6	
10	S	70th Ave N	50	50	55.9	0	100	51.5	100	100	50	78.6	0	58.1	

Table 7. Trail Overpass Scoring & Prioritization

TRAIL	INTERSECTION OR CROSSING	SPEED LIMIT	TRAFFIC CONTROL	AREA JURISDICTION	APPROX WIDTH	SAFETY	INTEGRATED & CONNECTS					ACCESSIBLE & COMFORTABLE			QUALITY OF LIFE	TOTAL WEIGHTED SCORE 100%	RANK BY SCORE
						High Crash Location Score	Multimodal Corridor / Activity Center Score	Avg Bike/Ped Demand Score	Connects Existing Facilities Score	Direct Access to Transit Score	Avg Weighted Bicycle LTS Score	Sidewalk Coverage Score	High Equity / Low Service Area Score	Recreational Facility Score			
						20%	10%	10%	10%	10%	10%	10%	15%	5%			
Duke Energy	SR 60	40	traffic signal	Clearwater	100 ft	75	50	61.0	100	60	100	100	50	100	74.6	1	
Duke Energy	Roosevelt Blvd / Carillon	55	traffic signal	Largo/Unincorp	300 - 350 ft	50	50	39.0	100	60	100	50	100	100	69.9	2	
Duke Energy	4th St/Gandy Blvd	40-45 / 50	overpass/interchange	St. Petersburg	~350 ft	0	50	51.0	100	60	100	100	100	100	66.1	3	
Duke Energy	Drew Street	45	traffic signal	Clearwater	100 ft	0	50	76.0	100	30	100	100	100	100	65.6	4	
Duke Energy	Sunset Point Road	40	mid block	Clw/Unincorp	105 ft	0	50	54.5	100	30	100	100	100	100	63.5	5	
Duke Energy	I-275	65	overpass/interchange	St. Petersburg	?	50	50	36.5	100	60	100	50	50	100	62.2	6	
PT Loop	SR 580	45	mid block	Clearwater	~125 ft	0	50	54.5	100	60	100	100	0	100	51.5	7	
PT Loop	Tampa Road	45	traffic signal	Unincorp	~150 ft	0	0	31.5	100	30	100	50	100	100	51.2	8	
Pinellas Trail	Keystone/East Lake	45 / 55	traffic signal	Unincorp	140 ft / 175 ft	50	0	22.0	100	0	100	50	50	100	49.7	9	
Duke Energy	49th Street / 126 Ave	45	traffic signal	Pinellas Park	~120 ft	50	0	28.5	100	60	100	50	0	100	48.9	10	
Pinellas Trail	Curlew Road/Alt US 19	35 / 40-45	traffic signal	Dunedin	100 ft / 130 ft	0	0	42.5	100	30	100	50	50	100	44.8	11	
PT Loop	Curlew Road / Countryside Blvd	45 / 30	traffic signal	Clw/Unincorp	130 ft	0	0	47.0	100	30	100	100	0	100	42.7	12	

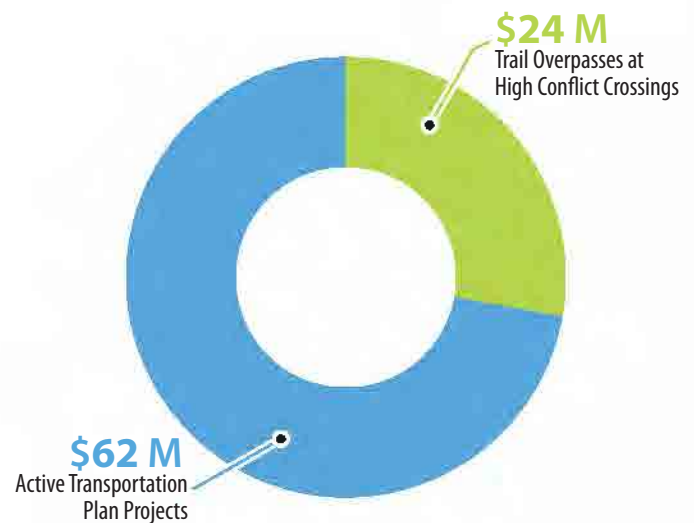


## Project Funding

A total of \$86 million has been allocated in the LRTP Cost Feasible Plan to fund priority projects from the Active Transportation Plan. As shown in Figure 10, \$62 million of this funding is allocated to the Active Transportation Plan priority corridor projects and the remaining \$24 million is allocated for four trail overpass projects at high conflict crossings. The funding strategy places priority bicycle/pedestrian corridor projects in four defined time periods from 2025 through 2045, and includes funding for one overpass in each of the four time periods. **Figures 14 and 15** illustrate the funding strategy and **Tables 8 and 9** provides a summary of the specific priority corridor and overpass projects included in each of the four time periods.

Local governments or FDOT will manage the projects through each phase of the project development and delivery process.

**Figure 14. 2045 Draft Cost Feasible Bicycle / Pedestrian Project Cost Allocations**



**Figure 15. Project Funding Strategy**



**Table 8. Project Scoring By Total Weighted Score & Geographic Equity**

RANK	AREA	PROJECT	TOTAL WEIGHTED SCORE	FUNDING TIMEFRAME
1	South	18th Ave. S. / Salt Creek Trail Ext	90.9	2025
2	Central	28th St. N.	80.1	2026-2030
3	North	Sunset Point Rd. / Main St.	52.0	2026-2030
4	South	9th Ave. N.	83.8	2026-2030
5	Central	142nd Ave. N. / 16th Ave. SW	74.8	2031-2035
6	North	Nebraska Ave. Loop	44.8	2031-2035
7	South	Joe's Creek Greenway Trail	64.4	2031-2035
8	Central	70th Ave. N.	58.1	2036-2045
9	North	Oldsmar Trail	27.6	2036-2045
10	South	San Martin Blvd. Trail	51.2	2036-2045

**Table 9. Overpass Scoring & Funding Timeframe**

RANK	AREA	PROJECT	TOTAL WEIGHTED SCORE	FUNDING TIMEFRAME
1	Central	Duke Energy Trail at SR 60	74.6	2025
2	Central	Duke Energy Trail at Roosevelt Blvd. / Carillon	69.9	2026-2030
3	Central	Duke Energy Trail at 4th St. / Gandy Blvd	66.1	2031-2035
4	North	Duke Energy Trail at Drew St.	65.6	2036-2045

# APPENDIX H

## ALTERNATIVES AND ACES SCENARIOS FOR 2045 NEEDS PLAN

**Future Alternative Testing Plan - Needs Plans and Cost Affordable Plans**

<b>Needs Alternative(s)</b>	<b>SE Data</b>	<b>Highway</b>	<b>Transit</b>	<b>Released to</b>	<b>Comment</b>
<b>Needs 1.0</b>	2045	2045	2040	All Agencies	Started with 2040 Needs and added new projects from MPOs, used 2040 Needs Transit to start and new Draft 2045 SE Data from 4/5/2019
<b>Needs 2.0, 2.1, 2.2</b>	2045	2045	2040	All Agencies	Included various network changes to Needs and E+C networks where projects were more advanced than previously reported for coding
<b>Needs 3.0, 3.1</b>	2045	2045	2040	All Agencies	Changes made in Hillsborough for a "no tolled" alternative
<b>Needs 4.0</b>	2045	2045	2045	All Agencies	Full 2045 Needs Transit update included
<b>Needs 4.0.4, 4.0.6, 4.0.8</b>	2045	2045	2045	All Agencies	Made modifications for Hillsborough projects from 2.2 alternative and tested the THEA Crosstown at three levels of 4, 6, and 8 Lane options
<b>Needs 4.1</b>	2045	2045	2045	All Agencies	Moved East-West toll lanes from Tampa Rd Corridor to Park / Gandy Blvd corridor; other updates and changes made as cleanup to various portions of the network and select 6L THEA Crosstown option
<b>Needs 4.1.1 CS</b>	2045	2045	2045	All Agencies	Moved East-West Toll lanes in Pinellas from Park/Gandy Corridor to Ulmerton Corridor; started runs with Choice Set Mode Choice for premium ridership analysis
<b>Needs 4.2</b>	2045	2045	2045	All Agencies	Removed East-West toll lanes from Pinellas and incorporated new updates from Pasco to both E+C and Needs networks
<b>Needs 4.2.1, 4.2.2</b>	2045	2045	2045	Hillsborough	Fixed Guideway alternative tests for Hillsborough using 10/20 and 30/60 Peak / Off-Peak headways respectively for select fixed guideway routes
<b>Needs 4.2.3</b>	2045	2045	2045	Hillsborough	No toll option; removed the ETL from Gandy bridge



**Future Alternative Testing Plan - Needs Plans and Cost Affordable Plans**

Needs Alternative(s)	SE Data	Highway	Transit	Released to	Comment
<b>Needs 4.3</b>	2045	2045	2045	FDOT	FDOT Clean-up. Minor changes on link corrections
<b>Needs 4.3.1</b>	new 2045	2045	2045	Not Released	Hernando/Citrus Turnpike Extension alternative tests. SE data updated for Hernando/Citrus vacancy rates and Manatee County. Model runs were made but additional analyses were conducted on Cost Affordable network.
<b>Needs 4.3.2</b>	new 2045	2045	2045	All Agencies	Minor Needs project changes for Hernando/Citrus
<b>Needs 4.3.3</b>	new 2045	2045	2045	Hillsborough	Hillsborough Selmon East 8 lanes alternative test
<b>Needs 5.0</b>	new 2045	2045	2045		Pinellas I-275 Express Lane revisions
<b>Needs 5.1</b>	new 2045	2045	2045		ACES testing run for Scenario Slow Roll
<b>Needs 5.2</b>	new 2045	2045	2045		ACES testing run for Scenario Niche Service
<b>Needs 5.3</b>	new 2045	2045	2045		ACES testing run for Scenario Ultimate Traveler Assist

Cost Affordable Alternative(s)	SE Data	Highway	Transit	Released to	Comment
<b>CA 1.0</b>	new 2045	2040/2045	2040/2045	Hernando Citrus	Build on top of the 2040 CA Network. Included 2045 CA projects for Hernando/Citrus.
<b>CA 1.1</b>	new 2045	2040/2045	2040/2045	Hernando Citrus	Build on top of the CA 1.0 Network. Hernando/Citrus Turnpike Extension alternative #1.
<b>CA 1.2</b>	new 2045	2040/2045	2040/2045	Hernando Citrus	Build on top of the CA 1.0 Network. Hernando/Citrus Turnpike Extension alternative #2.
<b>CA 2.0</b>	new 2045	2045	2045	All Agencies	First 2045 CA network on top of the 2024 E+C network, including CA projects from Hernando/Citrus MPO and all SIS projects from FDOT. Released in 9/5 TRT meeting.
<b>CA 3.0</b>	new 2045	2045	2045	All Agencies	Include CA projects from Pasco MPO, THEA, and possible SIS projects revisions. Released in 9/19 TRT meeting.
<b>CA 4.0</b>	new 2045	2045	2045		Include CA projects from Pinellas MPO, SIS revisions from FDOT, and revisions from Pasco MPO.

Tampa Bay Regional Transportation Analysis (RTA)

# Tech Team Meeting

# ACES Testing Preliminary Results

Florida Department of Transportation, D7

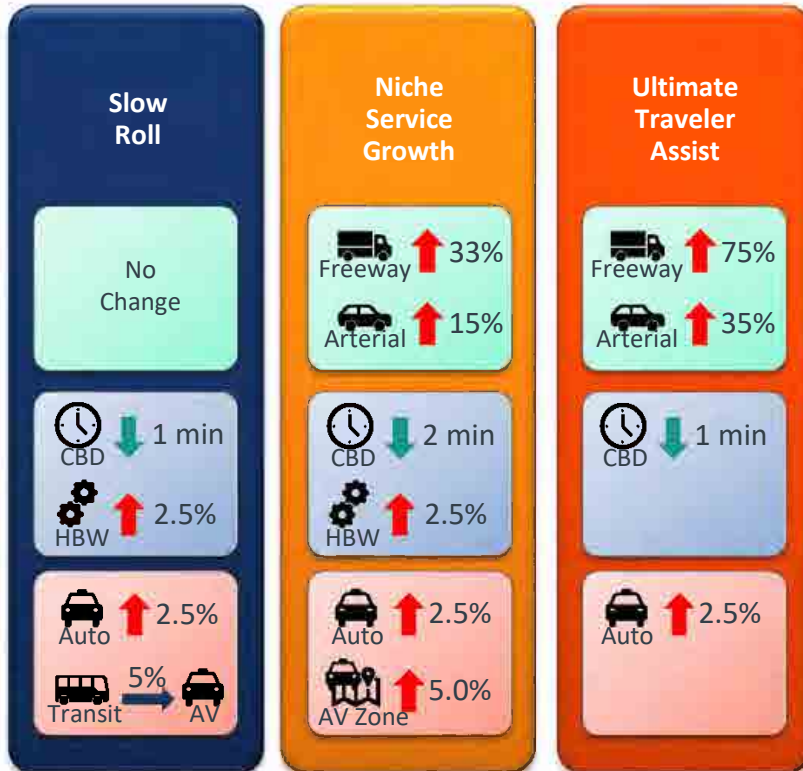
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# ACES Potential Scenarios and Modifications



- TBRPM v8.2 - Year 2040 Cost Feasible
- Capacity Adjustments
  - Freeway: FT 11-19
  - Freeway Ramps (FT 71 – 79): same as arterial
  - Arterial: FT 20-39
  - HOV Lanes for AV
  - Only on Freeway
  - CBD: AT 11-19
  - CBE Fringe: AT 21-29
- Friction Factor Testing
  - 0-20 min: stay same
  - 21-40 min:
    - CBD: 2 min
    - Peak: increase by 20%
    - Off-Peak: increase by 15%

Tests	Peak Home Based Work	Off-Peak Home Based Work
Auto 2.5%	Trip Length 2.5%	Work Trip Length 2.5%
Adjustment	minutes (+2.3% AV Lane + 2.5%)	minutes (+2.2%)
	miles (7.5%)	miles (12.5%)
		Transit (3.0%)

- Mode Choice
  - Person trips increased by 2.5%

# Effect on Trip Length – Year 2040

Tests	Peak Home Based Work Trip Length		Off-Peak Home Based Work Trip Length	
	Time	Miles	Time	Miles
Baseline	27.61 min	9.21 mi	23.05 min	11.43 mi
Slow Roll	28.38 min (+ 2.8%)	9.40 mi (+ 2.1%)	23.45 min (+ 1.7%)	11.78 mi (+ 3.1%)
Niche Service Growth	27.08 min (- 1.9%)	9.82 mi (+ 6.6%)	23.33 min (+ 1.2%)	11.76 mi (+ 2.9%)
Ultimate Traveler Assist	25.65 min (- 7.1%)	9.97 mi (+ 8.3%)	22.92 min (- 0.6%)	11.39 mi (- 0.4%)

- As terminal time decreases
  - Trip length slightly decreases in minutes
  - Trip length stay same in miles
- As capacity increases
  - Trip length decreases in minutes
  - Trip length increases in miles



# Effect on Tampa Downtown Screenline – Year 2040

- Screenline #23

Tests	Count	Volume	V/C Ratio
Baseline	887,226	655,050	0.74
Slow Roll		672,687 (+ 2.7%)	0.76
Niche Service Growth		651,786 (- 0.5%)	0.71
Ultimate Traveler Assist		627,571 (- 4.2%)	0.65



# Effect on Highway Statistics – Year 2040

Tests	Vehicle Miles Traveled (VMT)	Vehicle Hours Traveled (VHT)	Volume/Capacity	Congested Speed
Baseline	105,400,000	3,641,000	0.61	29.73
Slow Roll	108,014,000 (+2.5%)	3,798,000 (+4.3%)	0.62	29.47 (-0.9)
Niche Service Growth	109,677,000 (+4.1%)	3,543,000 (-2.7%)	0.56	30.53 (+2.7%)
Ultimate Traveler Assist	110,674,000 (+5.0)	3,318,000 (-8.9%)	0.50	31.50 (+6.0%)

- Total VMT increases for all scenarios
- Total VHT decreases for the scenarios with capacity increases
- Speed increases for the scenarios with capacity increases



Tampa Bay Regional Transportation Analysis (RTA)

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# TRT Meeting

## 2045 Needs Scenario Testing Results For Autonomous and Connected Vehicles

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Florida Department of Transportation, D7

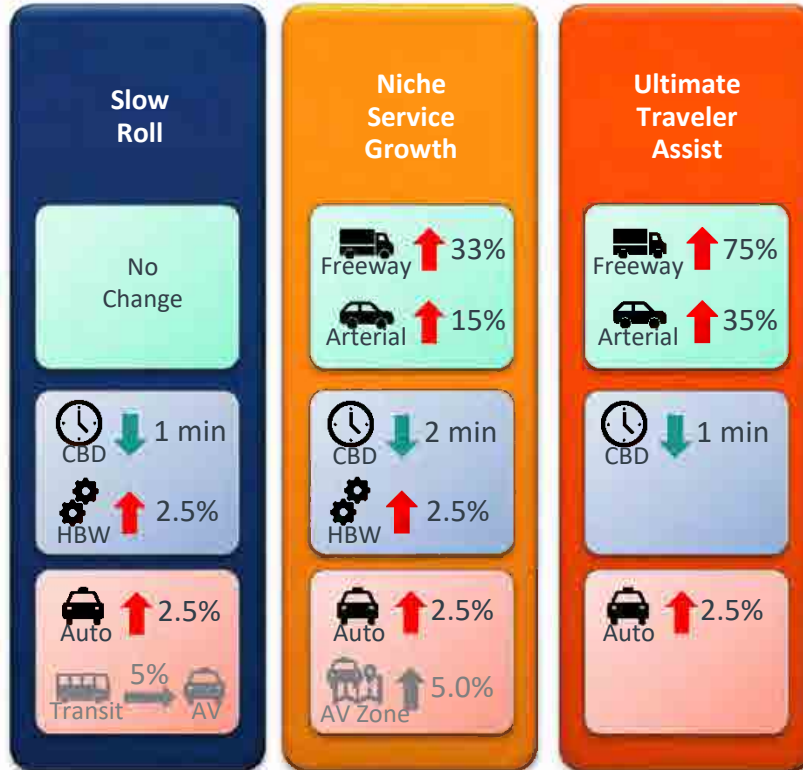
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# Potential Scenarios and Modifications



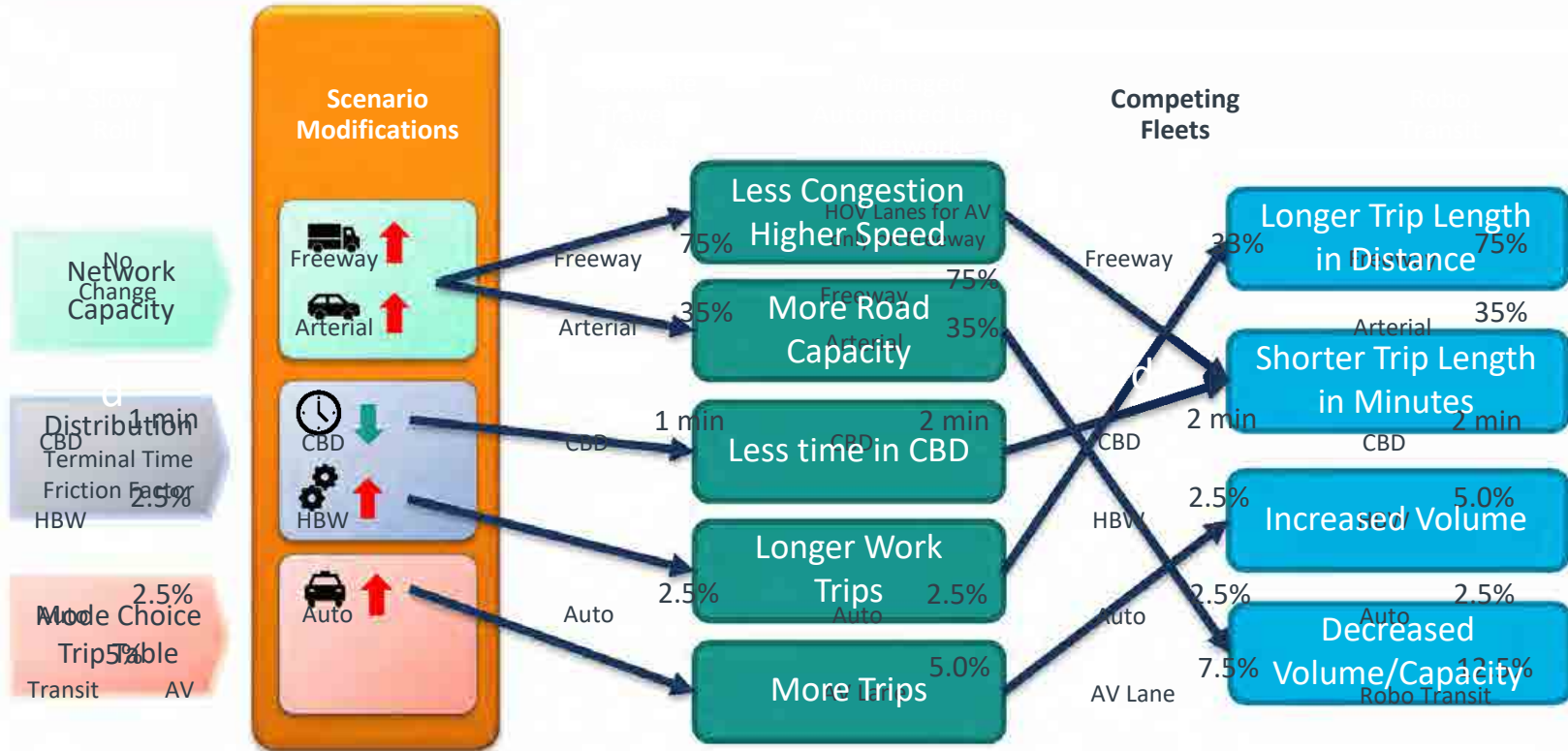
## ➤ TBRPM v9.0 - Year 2045 Needs

- Baseline model run
  - Capacity Adjustments
    - Freeway: FT 11-19
    - Freeway Ramps (FT 71 – 79): same as arterial
    - Arterial: FT 20-39
    - CBD: AT 11-19
    - CBD Fringe: AT 21-29
  - Terminal Time
  - Friction Factor
- | CBD Tests        | Peak Home-Based Work Trip Length | Off-Peak Home-Based Work Trip Length |
|------------------|----------------------------------|--------------------------------------|
| 2 min            | 2 min                            | 2 min                                |
| After Adjustment | minutes (+2.3%)                  | minutes (+2.2%)                      |
| 2.5%             | miles (+2.5%)                    | miles (+3.0%)                        |
| Auto             | Auto                             | Auto                                 |
| 5.0%             | 5.0%                             | 12.5%                                |
| AV Lane          | AV Lane                          | Robo Transit                         |

Source: FDOT, Office of Policy Planning, Guidance for assessing Planning Impact and Opportunities of Automated and Opportunities of Automated, Connected, Electric and Shared-Use Vehicles, September, 2018. Table 5, page 24.



# Results Expectations



# Effect on Trip Length and Time

Tests	Peak Home-Based Work		Off-Peak Home-Based Work	
	Time (min)	Distance (mi)	Time (min)	Distance (mi)
Baseline	28.85 min	10.08 mi	23.03 min	11.68 mi
Slow Roll (vs. Baseline)	29.04 min (+ 0.7%)	10.01 mi (- 0.7%)	23.42 min (+ 1.7%)	12.05 mi (+ 3.2%)
Niche Service Growth (vs. Baseline)	27.29 min (- 5.4%)	10.32 mi (+ 2.4%)	23.29 min (+ 1.1%)	12.03 mi (+ 3.0%)
Ultimate Traveler Assist (vs. Baseline)	26.25 min (- 9.0%)	10.67 mi (+ 5.9%)	22.90 min (- 0.6%)	11.66 mi (- 0.2%)

- Peak Period Home-Based Work
  - Trip time decreases as capacity increases
  - Trip length increases with terminal time and friction factor adjustments
- Impact on Off-Peak period is not as significant as Peak period



# Effect on Highway Statistics



Tests	Vehicle Miles Traveled (VMT)	Vehicle Hours Traveled (VHT)	Avg. V/C	Avg. Congested Speed
Baseline	98,695,100	3,237,400	0.46	31.48
Slow Roll (vs. Baseline)	100,869,600 (+ 2.2%)	3,393,300 (+ 4.8%)	0.47	31.29 (- 0.6%)
Niche Service Growth (vs. Baseline)	102,335,200 (+ 3.7%)	3,267,000 (+ 0.9%)	0.43	31.87 (+ 1.2%)
Ultimate Traveler Assist (vs. Baseline)	103,332,300 (+ 4.7%)	3,174,900 (- 1.9%)	0.39	32.30 (+ 2.6%)

- Total VMT increases for all scenarios
- Total VHT decreases as capacity increases
- Speed increases as capacity increases



# Daily Volume/Capacity Maps

## Legend

-   $V/C > 1.2$
-   $V/C > 1.0$

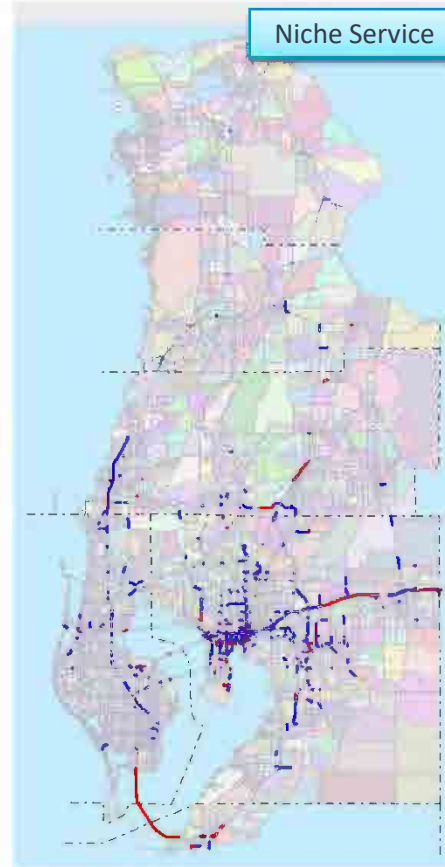
Baseline



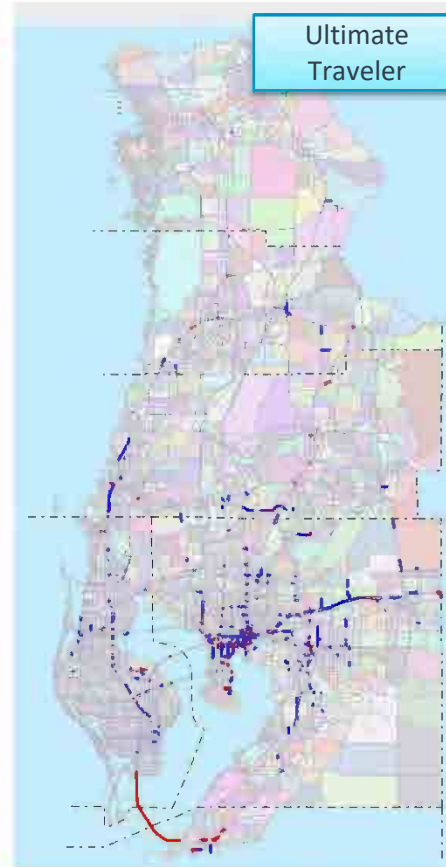
Slow Roll



Niche Service



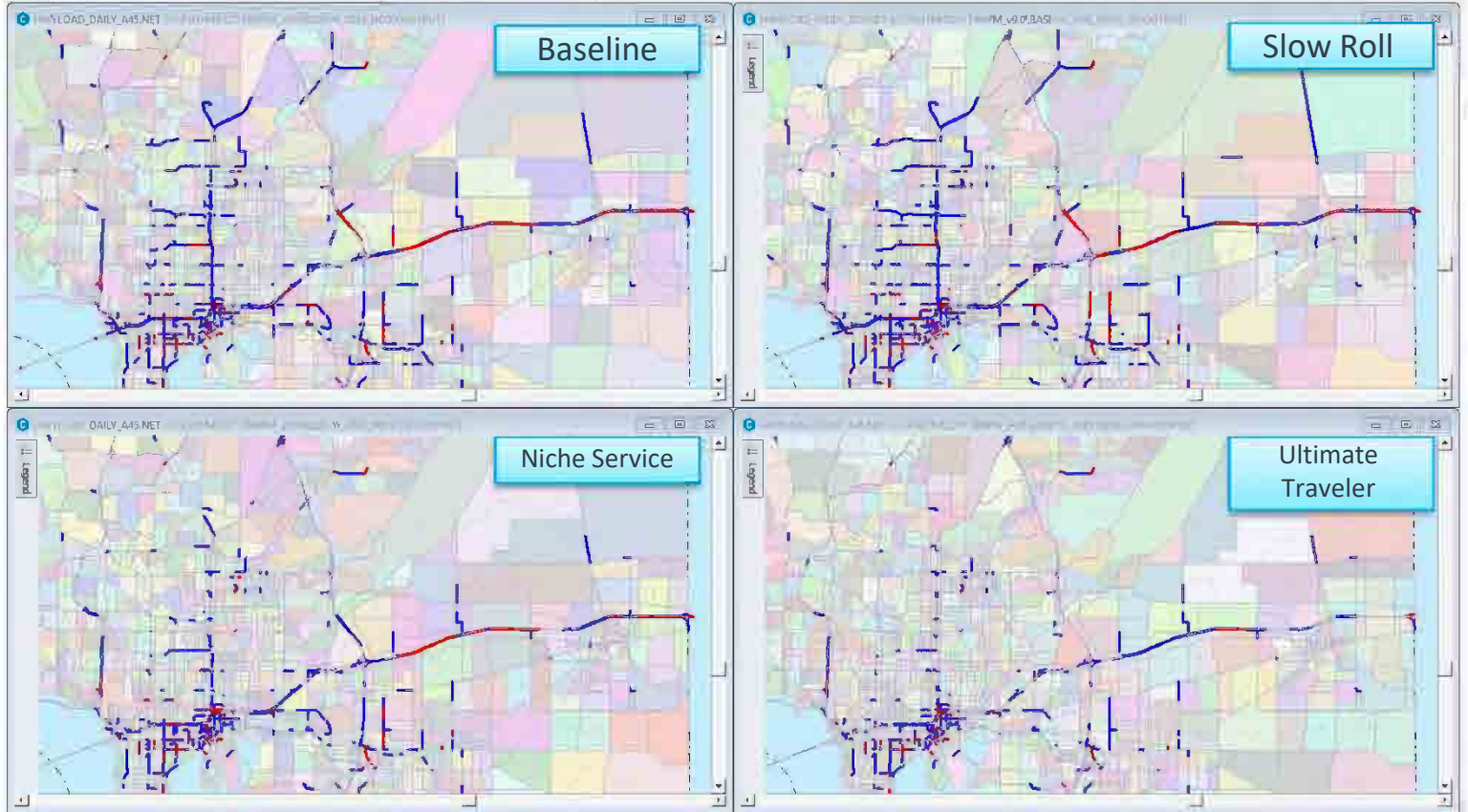
Ultimate Traveler



# Daily Volume/Capacity Maps – Hillsborough I-275 and I-4

## Legend

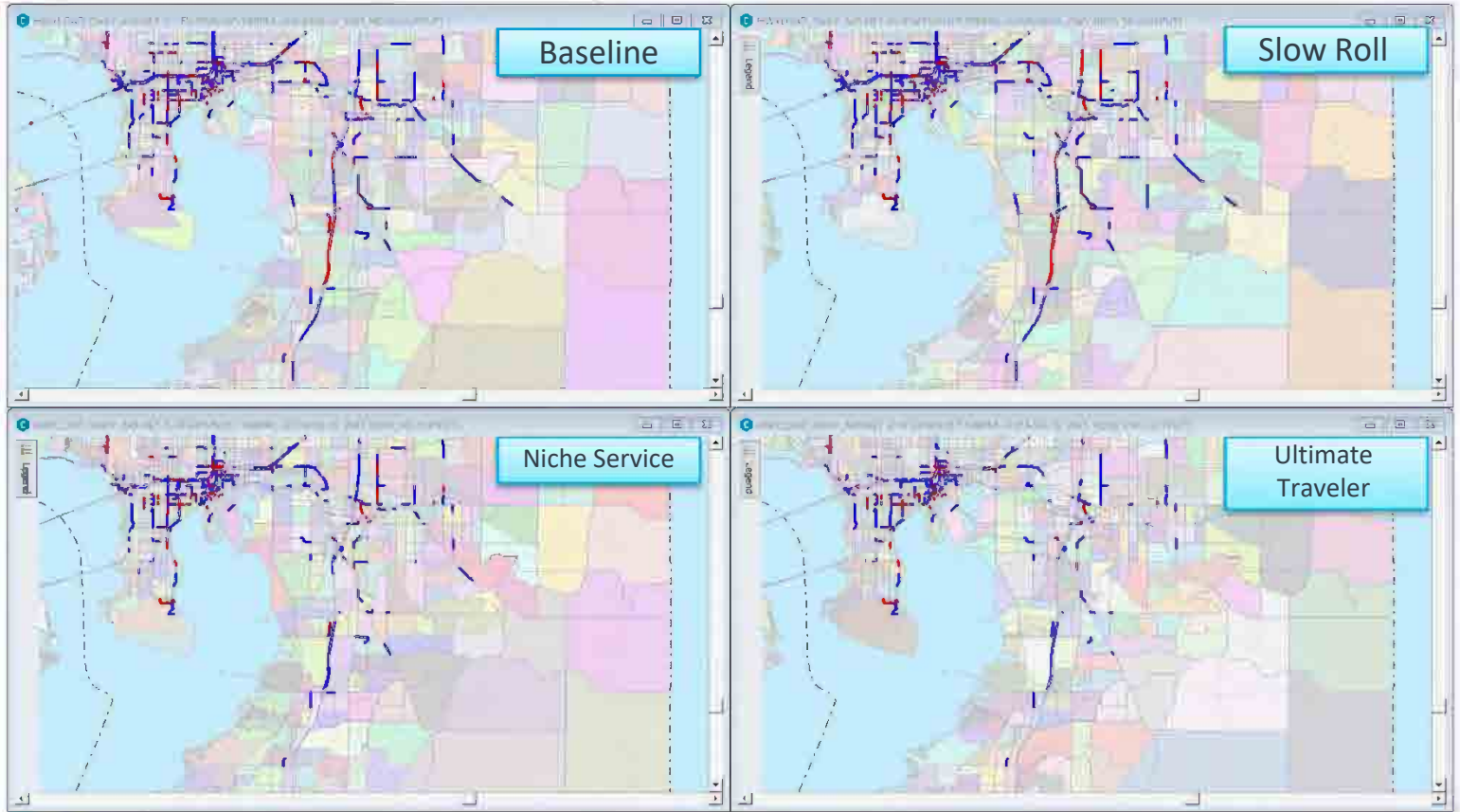
-   $V/C > 1.2$
-   $V/C > 1.0$



# Daily Volume/Capacity Maps – Tampa Downtown and I-75

## Legend

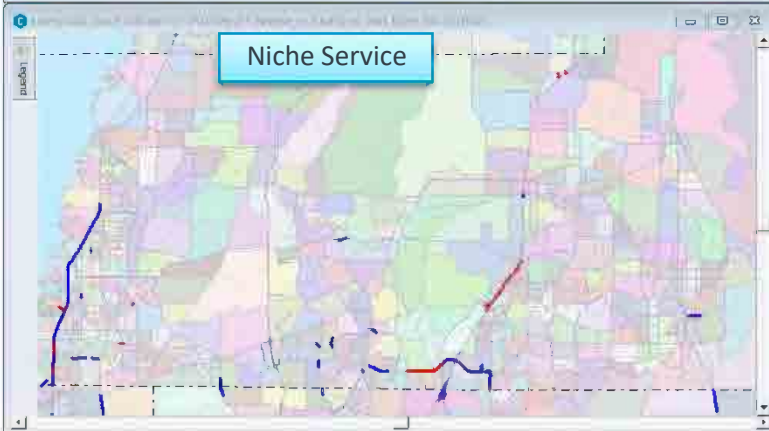
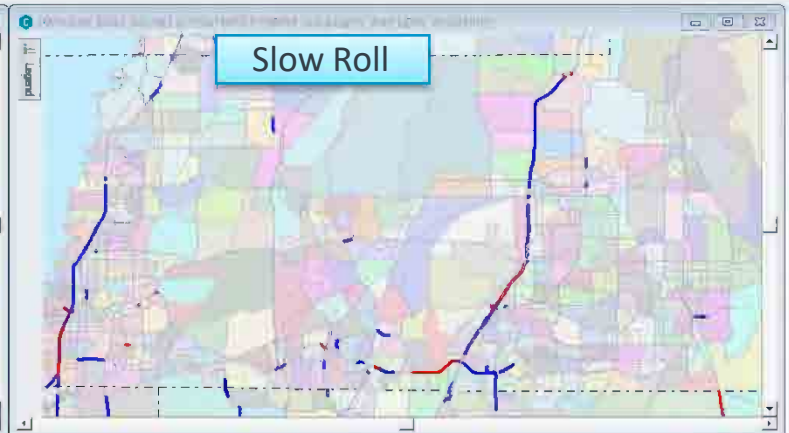
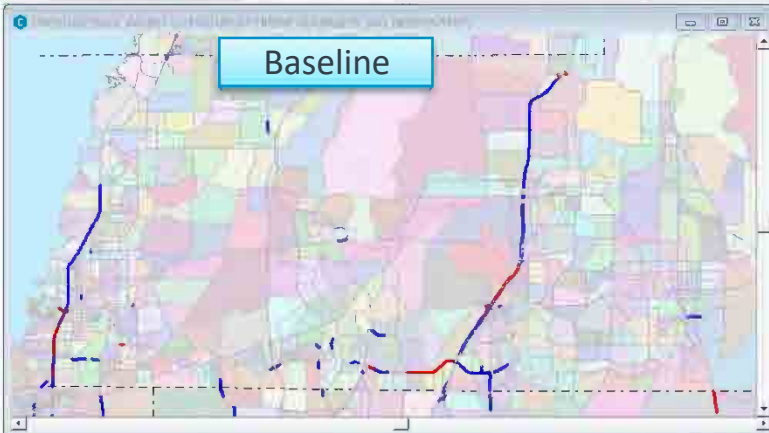
-   $V/C > 1.2$
-   $V/C > 1.0$



# Daily Volume/Capacity Maps – Pasco I-75, SR 54, and US 19

## Legend

- V/C > 1.2
- V/C > 1.0



# Questions?

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*Excellence Delivered **As Promised***



Tampa Bay Regional Transportation Analysis (RTA)

# Automated, Connected, Electric, and Shared-Use Vehicles (ACES)

Florida Department of Transportation, D7  
TRT Meeting

January 17, 2019



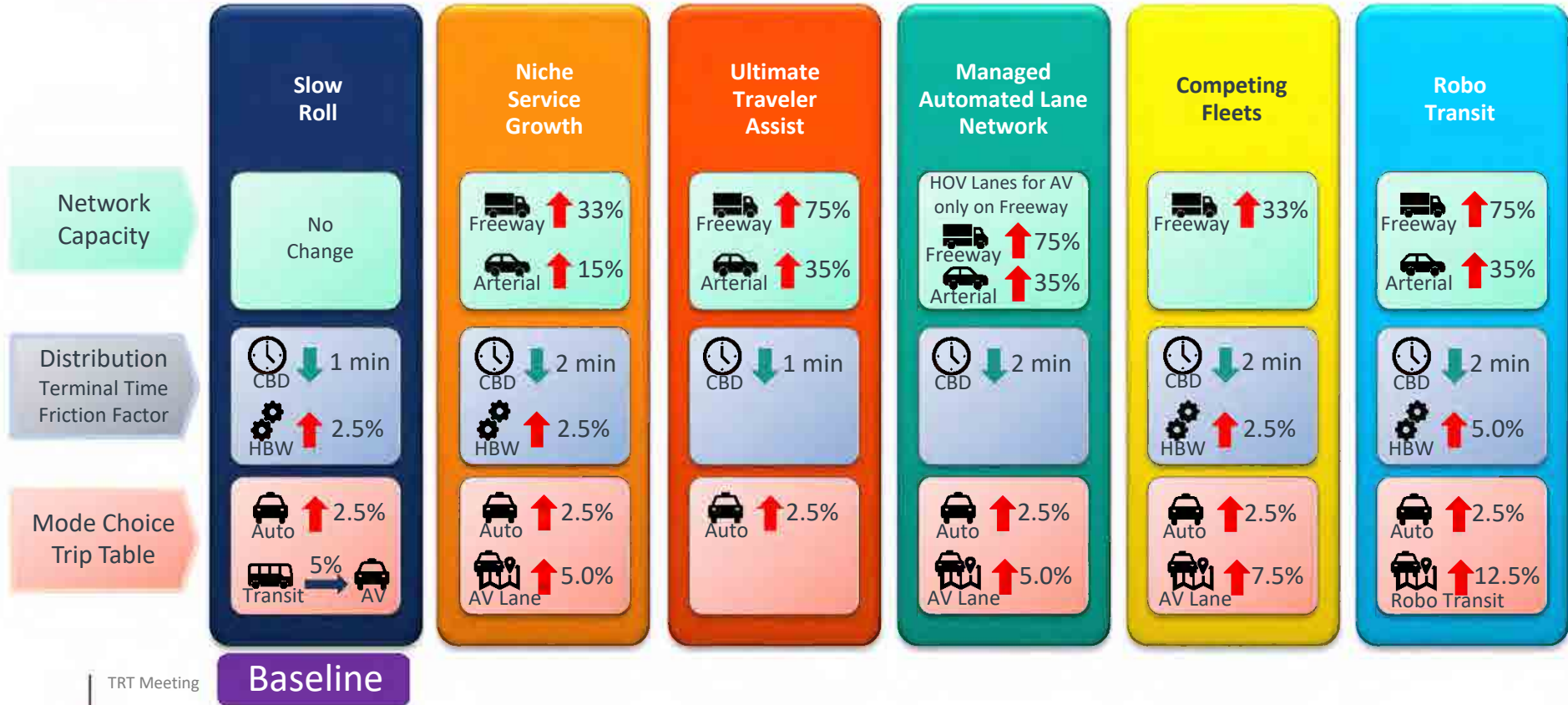
*Excellence Delivered*  Ariston

ISO 9001:2015  
CERTIFIED

# ACES Potential Scenarios

Slow Roll	Niche Service Growth	Ultimate Traveler Assist	Managed Automated Lane Network	Competing Fleets	Robo Transit
<p>Minimum plausible change - Nothing beyond currently available technology and investments already in motion is adopted</p> <p><b>Baseline</b></p>	<p>Innovation proliferates, but only in special purpose or “niche” AV zones, including retirement communities, campuses, transit corridors, urban cores, and ports.</p>	<p>CV technology progresses rapidly, but AV stagnates – 85% of vehicles have V2X capability by 2035 due to NHTSA mandate allowing DOTs to manage congestion aggressively.</p>	<p>Certain lanes become integrated with CV and AV – 50-60% of vehicles (75% of trucks) have automation capability for platooning in controlled settings.</p>	<p>Automated TNC-like services proliferate rapidly, but do not operate cooperatively. VMT doubles due to induced demand and empty vehicle repositioning.</p>	<p>On-demand shared services proliferate and integrate with other modes via cooperative data sharing, policies, and infrastructure.</p>

# ACES Potential Scenarios and Modifications



# APPENDIX I

## MEASURES OF EFFECTIVENESS

# TBRPM v9.0 - LRTP 2045 - Measures of Effectiveness (MOE) Report

**Table 1a: Total Population**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Hillsborough	1,295,315	2,006,245	2,006,245	2,006,245	710,930	54.9%
Pinellas	942,778	1,030,000	1,030,000	1,030,000	87,222	9.3%
Pasco	483,997	795,001	795,001	795,001	311,004	64.3%
<b>TMA</b>	<b>2,722,090</b>	<b>3,831,246</b>	<b>3,831,246</b>	<b>3,831,246</b>	<b>1,109,156</b>	<b>40.7%</b>
Hernando	176,819	269,600	269,600	269,600	92,781	52.5%
Citrus	141,501	186,000	186,000	186,000	44,499	31.4%
<b>District 7 Total</b>	<b>3,040,410</b>	<b>4,286,846</b>	<b>4,286,846</b>	<b>4,286,846</b>	<b>1,246,436</b>	<b>41.0%</b>
Manatee Segment	14,448	30,683	30,683	30,683	16,235	112.4%
<b>Regional Total</b>	<b>3,054,858</b>	<b>4,317,529</b>	<b>4,317,529</b>	<b>4,317,529</b>	<b>1,262,671</b>	<b>41.3%</b>

**Table 1b: Total Dwelling Units**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Hillsborough	562,012	856,322	856,322	856,322	294,310	52.4%
Pinellas	509,394	561,108	561,108	561,108	51,714	10.2%
Pasco	236,820	372,409	372,409	372,409	135,589	57.3%
<b>TMA</b>	<b>1,308,226</b>	<b>1,789,839</b>	<b>1,789,839</b>	<b>1,789,839</b>	<b>481,613</b>	<b>36.8%</b>
Hernando	85,330	128,531	128,531	128,531	43,201	50.6%
Citrus	78,556	101,558	101,558	101,558	23,002	29.3%
<b>District 7 Total</b>	<b>1,472,112</b>	<b>2,019,928</b>	<b>2,019,928</b>	<b>2,019,928</b>	<b>547,816</b>	<b>37.2%</b>
Manatee Segment	5,995	13,579	13,579	13,579	7,584	126.5%
<b>Regional Total</b>	<b>1,478,107</b>	<b>2,033,507</b>	<b>2,033,507</b>	<b>2,033,507</b>	<b>555,400</b>	<b>37.6%</b>

**Table 1c: Total Households**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Hillsborough	508,676	773,092	773,092	773,092	264,416	52.0%
Pinellas	427,719	469,426	469,426	469,426	41,707	9.8%
Pasco	198,624	311,488	311,488	311,488	112,864	56.8%
<b>TMA</b>	<b>1,135,020</b>	<b>1,554,007</b>	<b>1,554,007</b>	<b>1,554,007</b>	<b>418,987</b>	<b>36.9%</b>
Hernando	73,426	107,314	107,314	107,314	33,888	46.2%
Citrus	63,693	83,385	83,385	83,385	19,692	30.9%
<b>District 7 Total</b>	<b>1,272,140</b>	<b>1,744,706</b>	<b>1,744,706</b>	<b>1,744,706</b>	<b>472,566</b>	<b>37.1%</b>
Manatee Segment	4,646	11,927	11,927	11,927	7,281	156.7%
<b>Regional Total</b>	<b>1,276,786</b>	<b>1,756,633</b>	<b>1,756,633</b>	<b>1,756,633</b>	<b>479,847</b>	<b>37.6%</b>

**Table 1d: Total Employment**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Hillsborough	832,300	1,236,150	1,236,150	1,236,150	403,850	48.5%
Pinellas	534,900	593,800	593,800	593,800	58,900	11.0%
Pasco	157,500	266,561	266,561	266,561	109,061	69.2%
<b>TMA</b>	<b>1,524,700</b>	<b>2,096,511</b>	<b>2,096,511</b>	<b>2,096,511</b>	<b>571,811</b>	<b>37.5%</b>
Hernando	55,700	87,801	87,801	87,801	32,101	57.6%
Citrus	45,800	61,712	61,712	61,712	15,912	34.7%
<b>District 7 Total</b>	<b>1,626,200</b>	<b>2,246,024</b>	<b>2,246,024</b>	<b>2,246,024</b>	<b>619,824</b>	<b>38.1%</b>
Manatee Segment	2,779	10,158	10,158	10,158	7,379	265.5%
<b>Regional Total</b>	<b>1,628,979</b>	<b>2,256,182</b>	<b>2,256,182</b>	<b>2,256,182</b>	<b>627,203</b>	<b>38.5%</b>

# TBRPM v9.0 - LRTP 2045 - Measures of Effectiveness (MOE) Report

**Table 2a: Total Productions**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Hillsborough	5,182,204	7,950,972	7,950,972	7,950,972	2,768,768	53.4%
Pinellas	4,123,644	4,501,802	4,501,802	4,501,802	378,158	9.2%
Pasco	1,776,413	2,862,051	2,862,051	2,862,051	1,085,638	61.1%
<b>TMA</b>	<b>11,082,261</b>	<b>15,314,825</b>	<b>15,314,825</b>	<b>15,314,825</b>	<b>4,232,564</b>	<b>38.2%</b>
Hernando	639,746	929,579	929,579	929,579	289,833	45.3%
Citrus	516,245	669,099	669,099	669,099	152,854	29.6%
<b>District 7 Total</b>	<b>12,238,252</b>	<b>16,913,503</b>	<b>16,913,503</b>	<b>16,913,503</b>	<b>4,675,251</b>	<b>38.2%</b>
Manatee Segment	358,365	691,148	691,148	691,148	332,783	92.9%
<b>Regional Total</b>	<b>12,596,617</b>	<b>17,604,651</b>	<b>17,604,651</b>	<b>17,604,651</b>	<b>5,008,034</b>	<b>39.8%</b>

**Table 2b: Total Attractions**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Hillsborough	5,414,689	8,301,169	8,301,169	8,301,169	2,886,480	53.3%
Pinellas	4,241,872	4,695,249	4,695,249	4,695,249	453,377	10.7%
Pasco	1,620,351	2,642,460	2,642,460	2,642,460	1,022,109	63.1%
<b>TMA</b>	<b>11,276,912</b>	<b>15,638,878</b>	<b>15,638,878</b>	<b>15,638,878</b>	<b>4,361,966</b>	<b>38.7%</b>
Hernando	637,821	956,039	956,039	956,039	318,218	49.9%
Citrus	496,248	633,281	633,281	633,281	137,033	27.6%
<b>District 7 Total</b>	<b>12,410,981</b>	<b>17,228,198</b>	<b>17,228,198</b>	<b>17,228,198</b>	<b>4,817,217</b>	<b>38.8%</b>
Manatee Segment	185,659	376,547	376,547	376,547	190,888	102.8%
<b>Regional Total</b>	<b>12,596,640</b>	<b>17,604,745</b>	<b>17,604,745</b>	<b>17,604,745</b>	<b>5,008,105</b>	<b>39.8%</b>

**Table 2c: Total Productions Inside USA/Urban Area**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Hillsborough	5,049,458	7,725,395	7,725,395	7,725,395	2,675,937	53.0%
Pinellas	4,123,644	4,501,802	4,501,802	4,501,802	378,158	9.2%
Pasco	1,723,204	2,675,348	2,675,348	2,675,348	952,144	55.3%
<b>TMA</b>	<b>10,896,306</b>	<b>14,902,545</b>	<b>14,902,545</b>	<b>14,902,545</b>	<b>4,006,239</b>	<b>36.8%</b>
Hernando	558,278	808,272	808,272	808,272	249,994	44.8%
Citrus	336,833	423,311	423,311	423,311	86,478	25.7%
<b>District 7 Total</b>	<b>11,791,417</b>	<b>16,134,128</b>	<b>16,134,128</b>	<b>16,134,128</b>	<b>4,342,711</b>	<b>36.8%</b>
Manatee Segment	0	0	0	0	0	
<b>Regional Total</b>	<b>11,791,417</b>	<b>16,134,128</b>	<b>16,134,128</b>	<b>16,134,128</b>	<b>4,342,711</b>	<b>36.8%</b>

**Table 2d: Total Attractions Inside USA/Urban Area**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Hillsborough	5,354,444	8,209,083	8,209,083	8,209,083	2,854,639	53.3%
Pinellas	4,241,872	4,695,249	4,695,249	4,695,249	453,377	10.7%
Pasco	1,586,759	2,481,515	2,481,515	2,481,515	894,756	56.4%
<b>TMA</b>	<b>11,183,075</b>	<b>15,385,847</b>	<b>15,385,847</b>	<b>15,385,847</b>	<b>4,202,772</b>	<b>37.6%</b>
Hernando	562,330	823,010	823,010	823,010	260,680	46.4%
Citrus	400,452	473,708	473,708	473,708	73,256	18.3%
<b>District 7 Total</b>	<b>12,145,857</b>	<b>16,682,565</b>	<b>16,682,565</b>	<b>16,682,565</b>	<b>4,536,708</b>	<b>37.4%</b>
Manatee Segment	0	0	0	0	0	
<b>Regional Total</b>	<b>12,145,857</b>	<b>16,682,565</b>	<b>16,682,565</b>	<b>16,682,565</b>	<b>4,536,708</b>	<b>37.4%</b>

# TBRPM v9.0 - LRTP 2045 - Measures of Effectiveness (MOE) Report

**Table 2e: Total Productions Outside USA/Urban Area**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Hillsborough	132,746	225,577	225,577	225,577	92,831	69.9%
Pinellas	0	0	0	0	0	
Pasco	53,209	186,703	186,703	186,703	133,494	250.9%
<b>TMA</b>	<b>185,955</b>	<b>412,280</b>	<b>412,280</b>	<b>412,280</b>	<b>226,325</b>	<b>121.7%</b>
Hernando	81,468	121,307	121,307	121,307	39,839	48.9%
Citrus	179,412	245,788	245,788	245,788	66,376	37.0%
<b>District 7 Total</b>	<b>446,835</b>	<b>779,375</b>	<b>779,375</b>	<b>779,375</b>	<b>332,540</b>	<b>74.4%</b>
Manatee Segment	358,365	691,148	691,148	691,148	332,783	92.9%
<b>Regional Total</b>	<b>805,200</b>	<b>1,470,523</b>	<b>1,470,523</b>	<b>1,470,523</b>	<b>665,323</b>	<b>82.6%</b>

**Table 2f: Total Attractions Outside USA/Urban Area**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Hillsborough	60,245	92,086	92,086	92,086	31,841	52.9%
Pinellas	0	0	0	0	0	
Pasco	33,592	160,945	160,945	160,945	127,353	379.1%
<b>TMA</b>	<b>93,837</b>	<b>253,031</b>	<b>253,031</b>	<b>253,031</b>	<b>159,194</b>	<b>169.6%</b>
Hernando	75,491	133,029	133,029	133,029	57,538	76.2%
Citrus	95,796	159,573	159,573	159,573	63,777	66.6%
<b>District 7 Total</b>	<b>265,124</b>	<b>545,633</b>	<b>545,633</b>	<b>545,633</b>	<b>280,509</b>	<b>105.8%</b>
Manatee Segment	185,659	376,547	376,547	376,547	190,888	102.8%
<b>Regional Total</b>	<b>450,783</b>	<b>922,180</b>	<b>922,180</b>	<b>922,180</b>	<b>471,397</b>	<b>104.6%</b>

# TBRPM v9.0 - LRTP 2045 - Measures of Effectiveness (MOE) Report

**Table 3a: Hillsborough County Lane Miles by Facility Type**

Facility Type	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Freeways and Expressways	663	669	695	712	49	7.4%
Divided Arterials	1,478	1,641	1,760	2,030	552	37.3%
Undivided Arterials	540	456	441	347	-193	-35.7%
Collectors	1,398	1,468	1,518	1,727	329	23.5%
One-Way Facilities	97	99	100	96	-1	-1.0%
Ramps	170	187	196	199	29	17.1%
HOV Facilities	0	0	0	0	0	
Toll Facilities	173	227	472	645	472	272.8%
<b>All Facilities</b>	<b>4,519</b>	<b>4,748</b>	<b>5,182</b>	<b>5,756</b>	<b>1,237</b>	<b>27.4%</b>

**Table 3b: Pinellas County Lane Miles by Facility Type**

Facility Type	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Freeways and Expressways	257	305	331	340	83	32.3%
Divided Arterials	1,385	1,361	1,343	1,337	-48	-3.5%
Undivided Arterials	247	233	230	220	-27	-10.9%
Collectors	648	665	674	678	30	4.6%
One-Way Facilities	112	128	148	153	41	36.6%
Ramps	66	72	76	79	13	19.7%
HOV Facilities	0	0	0	0	0	
Toll Facilities	20	101	101	114	94	470.0%
<b>All Facilities</b>	<b>2,735</b>	<b>2,864</b>	<b>2,903</b>	<b>2,921</b>	<b>186</b>	<b>6.8%</b>

**Table 3c: Pasco County Lane Miles by Facility Type**

Facility Type	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Freeways and Expressways	90	137	146	146	56	62.2%
Divided Arterials	596	868	1,129	1,513	917	153.9%
Undivided Arterials	328	244	177	48	-280	-85.4%
Collectors	673	843	1,150	1,272	599	89.0%
One-Way Facilities	5	5	14	14	9	180.0%
Ramps	11	22	23	31	20	181.8%
HOV Facilities	0	0	0	0	0	
Toll Facilities	79	79	79	101	22	27.8%
<b>All Facilities</b>	<b>1,782</b>	<b>2,197</b>	<b>2,718</b>	<b>3,124</b>	<b>1,342</b>	<b>75.3%</b>

**Table 3d: TMA Lane Miles by Facility Type**

Facility Type	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Freeways and Expressways	1,010	1,111	1,172	1,199	189	18.7%
Divided Arterials	3,458	3,869	4,232	4,880	1,422	41.1%
Undivided Arterials	1,114	933	847	614	-500	-44.9%
Collectors	2,719	2,975	3,342	3,677	958	35.2%
One-Way Facilities	215	232	262	262	47	21.9%
Ramps	247	280	295	309	62	25.1%
HOV Facilities	0	0	0	0	0	
Toll Facilities	272	407	653	860	588	216.2%
<b>All Facilities</b>	<b>9,035</b>	<b>9,809</b>	<b>10,802</b>	<b>11,802</b>	<b>2,767</b>	<b>30.6%</b>



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**Table 3e: Hernando County Lane Miles by Facility Type**

Facility Type	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Freeways and Expressways	46	69	69	69	23	50.0%
Divided Arterials	340	362	400	518	178	52.4%
Undivided Arterials	85	119	109	56	-29	-34.1%
Collectors	428	471	553	782	354	82.7%
One-Way Facilities	3	3	3	3	0	0.0%
Ramps	6	7	7	9	3	50.0%
HOV Facilities	0	0	0	0	0	
Toll Facilities	71	74	74	74	3	4.2%
<b>All Facilities</b>	<b>978</b>	<b>1,105</b>	<b>1,215</b>	<b>1,511</b>	<b>533</b>	<b>54.5%</b>

**Table 3f: Citrus County Lane Miles by Facility Type**

Facility Type	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Freeways and Expressways	0	0	0	0	0	
Divided Arterials	286	344	377	493	207	72.4%
Undivided Arterials	108	112	96	81	-27	-25.0%
Collectors	369	386	419	499	130	35.2%
One-Way Facilities	0	0	0	0	0	
Ramps	0	3	3	5	5	
HOV Facilities	0	0	0	0	0	
Toll Facilities	0	60	60	99	99	
<b>All Facilities</b>	<b>763</b>	<b>905</b>	<b>955</b>	<b>1,176</b>	<b>413</b>	<b>54.1%</b>

**Table 3g: District 7 Lane Miles by Facility Type**

Facility Type	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Freeways and Expressways	1,056	1,180	1,241	1,268	212	20.1%
Divided Arterials	4,084	4,576	5,009	5,891	1,807	44.2%
Undivided Arterials	1,307	1,165	1,052	751	-556	-42.5%
Collectors	3,516	3,832	4,314	4,958	1,442	41.0%
One-Way Facilities	218	236	265	266	48	22.0%
Ramps	253	290	304	323	70	27.7%
HOV Facilities	0	0	0	0	0	
Toll Facilities	342	541	786	1,033	691	202.0%
<b>All Facilities</b>	<b>10,776</b>	<b>11,819</b>	<b>12,972</b>	<b>14,489</b>	<b>3,713</b>	<b>34.5%</b>

**Table 3h: Manatee Segment Lane Miles by Facility Type**

Facility Type	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Freeways and Expressways	60	60	60	60	0	0.0%
Divided Arterials	40	40	40	65	25	62.5%
Undivided Arterials	21	21	21	9	-12	-57.1%
Collectors	61	61	61	73	12	19.7%
One-Way Facilities	0	0	0	0	0	
Ramps	11	11	11	11	0	0.0%
HOV Facilities	0	0	0	0	0	
Toll Facilities	17	17	33	46	29	170.6%
<b>All Facilities</b>	<b>211</b>	<b>211</b>	<b>226</b>	<b>264</b>	<b>53</b>	<b>25.1%</b>

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**Table 3i: Total Lane Miles by Facility Type**

Facility Type	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Freeways and Expressways	1,116	1,240	1,300	1,328	212	19.0%
Divided Arterials	4,124	4,616	5,049	5,956	1,832	44.4%
Undivided Arterials	1,328	1,186	1,074	760	-568	-42.8%
Collectors	3,577	3,893	4,375	5,031	1,454	40.6%
One-Way Facilities	218	236	265	266	48	22.0%
Ramps	264	301	315	334	70	26.5%
HOV Facilities	0	0	0	0	0	
Toll Facilities	360	558	819	1,079	719	199.7%
<b>All Facilities</b>	<b>10,987</b>	<b>12,029</b>	<b>13,198</b>	<b>14,753</b>	<b>3,766</b>	<b>34.3%</b>

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**Table 4a: Total Vehicle Miles Traveled**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Hillsborough	32,605,335	49,039,511	49,883,747	50,190,292	17,584,957	53.9%
Pinellas	17,321,308	19,949,490	19,991,798	19,904,502	2,583,194	14.9%
Pasco	8,968,459	15,529,063	16,087,730	15,949,852	6,981,393	77.8%
<b>TMA</b>	<b>58,895,102</b>	<b>84,518,064</b>	<b>85,963,274</b>	<b>86,044,647</b>	<b>27,149,545</b>	<b>46.1%</b>
Hernando	3,898,766	6,501,616	6,353,328	6,400,702	2,501,936	64.2%
Citrus	2,508,836	3,776,435	3,773,148	3,706,793	1,197,957	47.7%
<b>District 7 Total</b>	<b>65,302,705</b>	<b>94,796,116</b>	<b>96,089,750</b>	<b>96,152,142</b>	<b>30,849,437</b>	<b>47.2%</b>
Manatee Segment	1,604,704	2,642,282	2,609,736	2,612,351	1,007,647	62.8%
<b>Regional Total</b>	<b>66,907,409</b>	<b>97,438,398</b>	<b>98,699,486</b>	<b>98,764,492</b>	<b>31,857,083</b>	<b>47.6%</b>

**Table 4b: Total Vehicle Hours of Travel**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Hillsborough	1,022,404	2,350,243	2,070,276	1,847,416	825,012	80.7%
Pinellas	526,806	638,399	625,311	612,171	85,365	16.2%
Pasco	249,662	520,711	471,411	447,929	198,267	79.4%
<b>TMA</b>	<b>1,798,873</b>	<b>3,509,353</b>	<b>3,166,997</b>	<b>2,907,516</b>	<b>1,108,643</b>	<b>61.6%</b>
Hernando	104,175	181,049	171,961	166,882	62,707	60.2%
Citrus	72,927	107,207	105,612	100,802	27,875	38.2%
<b>District 7 Total</b>	<b>1,975,974</b>	<b>3,797,610</b>	<b>3,444,571</b>	<b>3,175,200</b>	<b>1,199,226</b>	<b>60.7%</b>
Manatee Segment	30,999	88,919	75,382	69,770	38,771	125.1%
<b>Regional Total</b>	<b>2,006,974</b>	<b>3,886,529</b>	<b>3,519,952</b>	<b>3,244,970</b>	<b>1,237,996</b>	<b>61.7%</b>

**Table 4c: Total Vehicle Emissions of Carbon Monoxide (KILOGRAMS)**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	530,388	1,024,441	919,842	879,466	349,078	65.8%
Pinellas	297,306	349,693	343,434	336,154	38,848	13.1%
Pasco	151,963	291,544	273,536	263,270	111,307	73.2%
<b>TMA</b>	<b>979,657</b>	<b>1,665,678</b>	<b>1,536,813</b>	<b>1,478,890</b>	<b>499,233</b>	<b>51.0%</b>
Hernando	62,323	115,074	108,718	104,076	41,753	67.0%
Citrus	40,884	61,156	60,182	57,450	16,566	40.5%
<b>District 7 Total</b>	<b>1,082,864</b>	<b>1,841,907</b>	<b>1,705,713</b>	<b>1,640,416</b>	<b>557,552</b>	<b>51.5%</b>
Manatee Segment	23,529	43,406	39,217	37,211	13,682	58.1%
<b>Regional Total</b>	<b>1,106,394</b>	<b>1,885,313</b>	<b>1,744,930</b>	<b>1,677,627</b>	<b>571,233</b>	<b>51.6%</b>

**Table 4d: Total Vehicle Emissions of Hydrocarbons (KILOGRAMS)**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	39,673	70,289	65,495	63,583	23,910	60.3%
Pinellas	21,828	25,556	25,282	24,904	3,076	14.1%
Pasco	10,967	20,561	19,921	19,394	8,427	76.8%
<b>TMA</b>	<b>72,468</b>	<b>116,406</b>	<b>110,698</b>	<b>107,881</b>	<b>35,413</b>	<b>48.9%</b>
Hernando	4,637	8,106	7,780	7,609	2,972	64.1%
Citrus	3,079	4,584	4,538	4,392	1,313	42.6%
<b>District 7 Total</b>	<b>80,184</b>	<b>129,097</b>	<b>123,016</b>	<b>119,882</b>	<b>39,698</b>	<b>49.5%</b>
Manatee Segment	1,678	3,227	2,993	2,873	1,195	71.2%
<b>Regional Total</b>	<b>81,862</b>	<b>132,323</b>	<b>126,010</b>	<b>122,755</b>	<b>40,893</b>	<b>50.0%</b>

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**Table 4e: Total Vehicle Emissions of Oxides of Nitrogen (KILOGRAMS)**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	65,047	96,910	99,992	101,479	36,432	56.0%
Pinellas	33,862	38,785	38,899	38,677	4,815	14.2%
Pasco	18,661	31,503	32,741	32,482	13,821	74.1%
<b>TMA</b>	<b>117,570</b>	<b>167,198</b>	<b>171,632</b>	<b>172,638</b>	<b>55,068</b>	<b>46.8%</b>
Hernando	7,976	13,884	13,456	13,488	5,512	69.1%
Citrus	4,791	7,397	7,389	7,218	2,427	50.7%
<b>District 7 Total</b>	<b>130,337</b>	<b>188,479</b>	<b>192,476</b>	<b>193,343</b>	<b>63,006</b>	<b>48.3%</b>
Manatee Segment	4,009	5,454	5,539	5,646	1,637	40.8%
<b>Regional Total</b>	<b>134,346</b>	<b>193,933</b>	<b>198,015</b>	<b>198,989</b>	<b>64,643</b>	<b>48.1%</b>

**Table 4f: Total Fuel Use (GALLONS)**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	2,040,442	3,068,893	3,121,725	3,140,908	1,100,466	53.9%
Pinellas	1,083,967	1,248,439	1,251,087	1,245,624	161,657	14.9%
Pasco	561,246	971,809	1,006,770	998,142	436,896	77.8%
<b>TMA</b>	<b>3,685,656</b>	<b>5,289,140</b>	<b>5,379,582</b>	<b>5,384,674</b>	<b>1,699,018</b>	<b>46.1%</b>
Hernando	243,985	406,871	397,591	400,556	156,571	64.2%
Citrus	157,003	236,329	236,124	231,971	74,968	47.7%
<b>District 7 Total</b>	<b>4,086,643</b>	<b>5,932,341</b>	<b>6,013,297</b>	<b>6,017,201</b>	<b>1,930,558</b>	<b>47.2%</b>
Manatee Segment	100,422	165,354	163,317	163,481	63,059	62.8%
<b>Regional Total</b>	<b>4,187,066</b>	<b>6,097,695</b>	<b>6,176,614</b>	<b>6,180,682</b>	<b>1,993,616</b>	<b>47.6%</b>

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**Table 5a: Highway Overall Unweighted Volume over Capacity Ratios**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Hillsborough	0.58	0.82	0.76	0.71	0.13	22.4%
Pinellas	0.54	0.59	0.58	0.57	0.03	5.6%
Pasco	0.49	0.67	0.58	0.51	0.02	4.1%
<b>TMA</b>	<b>0.55</b>	<b>0.71</b>	<b>0.67</b>	<b>0.63</b>	<b>0.08</b>	<b>14.5%</b>
Hernando	0.40	0.51	0.46	0.40	0.00	0.0%
Citrus	0.35	0.41	0.40	0.31	-0.04	-11.4%
<b>District 7 Total</b>	<b>0.54</b>	<b>0.69</b>	<b>0.65</b>	<b>0.60</b>	<b>0.06</b>	<b>11.1%</b>
Manatee Segment	0.43	0.75	0.71	0.62	0.19	44.2%
<b>Regional Total</b>	<b>0.54</b>	<b>0.69</b>	<b>0.65</b>	<b>0.60</b>	<b>0.06</b>	<b>11.1%</b>

**Table 5b: Highway Volume over Capacity Ratios Weighted by VMT**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Hillsborough	0.73	0.96	0.88	0.83	0.10	13.7%
Pinellas	0.69	0.72	0.71	0.71	0.02	2.9%
Pasco	0.63	0.83	0.73	0.68	0.05	7.9%
<b>TMA</b>	<b>0.70</b>	<b>0.88</b>	<b>0.81</b>	<b>0.77</b>	<b>0.07</b>	<b>10.0%</b>
Hernando	0.53	0.65	0.62	0.55	0.02	3.8%
Citrus	0.45	0.52	0.49	0.43	-0.02	-4.4%
<b>District 7 Total</b>	<b>0.68</b>	<b>0.85</b>	<b>0.79</b>	<b>0.74</b>	<b>0.06</b>	<b>8.8%</b>
Manatee Segment	0.74	1.02	0.98	0.93	0.19	25.7%
<b>Regional Total</b>	<b>0.68</b>	<b>0.86</b>	<b>0.79</b>	<b>0.75</b>	<b>0.07</b>	<b>10.3%</b>

**Table 5c: Highway Volume over Capacity Ratios Weighted by VHT**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
Hillsborough	0.80	1.18	1.11	1.02	0.22	27.5%
Pinellas	0.70	0.76	0.74	0.73	0.03	4.3%
Pasco	0.64	0.88	0.75	0.69	0.05	7.8%
<b>TMA</b>	<b>0.75</b>	<b>1.06</b>	<b>0.99</b>	<b>0.91</b>	<b>0.16</b>	<b>21.3%</b>
Hernando	0.53	0.69	0.64	0.55	0.02	3.8%
Citrus	0.48	0.55	0.52	0.44	-0.04	-8.3%
<b>District 7 Total</b>	<b>0.73</b>	<b>1.03</b>	<b>0.96</b>	<b>0.87</b>	<b>0.14</b>	<b>19.2%</b>
Manatee Segment	0.80	1.19	1.12	1.07	0.27	33.8%
<b>Regional Total</b>	<b>0.73</b>	<b>1.03</b>	<b>0.96</b>	<b>0.88</b>	<b>0.15</b>	<b>20.5%</b>

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**Table 5d: Highway Volume over Capacity Ratios (Max Period by Direction) by Major Corridor**

Corridor	Dir	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
I-4 (Hillsborough Co) from I-275 to I-75	1	0.89	1.10	1.03	0.99	0.10	11.2%
	2	0.94	1.14	1.09	1.02	0.08	8.5%
I-4 (Hillsborough Co) from I-75 to Hillsborough / Polk County Line	1	0.83	1.21	1.05	1.03	0.20	24.1%
	2	0.86	1.24	1.04	1.01	0.15	17.4%
I-275 (Pinellas Co) from Sunshine Skyway Bridge to Pinellas / Hillsborough Co Line	1	0.73	0.75	0.73	0.75	0.02	2.7%
	2	0.78	0.78	0.78	0.79	0.01	1.3%
I-275 (Hillsborough Co) from Pinellas / Hillsborough Co Line to I-4	1	0.95	0.99	0.91	0.91	-0.04	-4.2%
	2	0.97	1.01	0.90	0.91	-0.06	-6.2%
I-275 (Hillsborough Co) from I-4 to Bearss	1	0.87	1.06	0.99	0.99	0.12	13.8%
	2	0.86	1.09	0.99	1.01	0.15	17.4%
I-275 (Hillsborough Co) from Bearss to I-75 N	1	0.62	1.03	1.00	0.99	0.37	59.7%
	2	0.71	1.10	1.04	1.03	0.32	45.1%
I-75 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Rd	1	0.65	0.99	0.71	0.70	0.05	7.7%
	2	0.64	0.97	0.65	0.66	0.02	3.1%
I-75 (Hillsborough Co) from Big Bend Rd to Leroy Selmon Crosstown Expwy / SR 618	1	0.79	1.19	1.08	1.01	0.22	27.8%
	2	0.75	1.11	1.05	1.00	0.25	33.3%
I-75 (Hillsborough Co) from Leroy Selmon Crosstown Expwy / SR 618 to I-4	1	0.73	0.87	0.96	0.74	0.01	1.4%
	2	0.60	0.77	0.83	0.67	0.07	11.7%
I-75 (Pasco Co) from I-275 to SR 54	1	0.59	0.84	0.85	0.82	0.23	39.0%
	2	0.85	0.87	0.89	0.85	0.00	0.0%
I-75 (Hillsborough Co) from I-4 to I-275	1	0.57	0.77	0.78	0.74	0.17	29.8%
	2	0.54	0.79	0.82	0.72	0.18	33.3%
I-75 (Pasco / Hernando Co) from SR 54 to Pasco / Hernando Co Line	1	0.69	0.88	0.82	0.83	0.14	20.3%
	2	0.68	0.90	0.83	0.83	0.15	22.1%
I-75 (Hernando Co) from Pasco / Hernando Co Line to Hernando / Sumter Co Line	1	0.46	0.60	0.58	0.58	0.12	26.1%
	2	0.44	0.59	0.57	0.57	0.13	29.5%
SR 54 (Pasco Co) from US 19 to Little Rd	1	0.58	0.68	0.67	0.59	0.01	1.7%
	2	0.59	0.66	0.66	0.59	0.00	0.0%
SR 54 (Pasco Co) from Little Rd to US 41	1	0.75	0.77	0.73	0.72	-0.03	-4.0%
	2	0.73	0.78	0.74	0.73	0.00	0.0%
SR 54 and SR 56 (Pasco Co) from US 41 to Bruce B Downs Blvd / CR 581	1	0.84	1.05	0.82	0.77	-0.07	-8.3%
	2	0.87	1.04	0.82	0.79	-0.08	-9.2%
SR 54 (Pasco Co) from Bruce B Downs Blvd / CR 581 to US 301	1	0.69	0.87	0.70	0.63	-0.06	-8.7%
	2	0.70	0.90	0.73	0.66	-0.04	-5.7%
Leroy Selmon Crosstown Expwy (Hillsborough Co) from Willow Ave to I-75	1	0.73	0.95	0.89	0.73	0.00	0.0%
	2	0.74	0.95	0.84	0.70	-0.04	-5.4%
Veteran Expwy (Hillsborough Co) from Hillsborough Ave to Dale Mabry Hwy N	1	0.88	0.89	0.91	0.91	0.03	3.4%
	2	0.99	0.96	0.96	0.96	-0.03	-3.0%
US 41 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Rd	1	0.41	0.69	0.64	0.60	0.19	46.3%
	2	0.35	0.68	0.67	0.60	0.25	71.4%
US 41 (Hillsborough Co) from Big Bend Rd to Selmon Crosstown Expwy	1	0.83	0.98	0.96	0.88	0.05	6.0%
	2	0.76	0.92	0.90	0.83	0.07	9.2%
US 41 (Hillsborough Co) from Busch Blvd to Bearss	1	0.67	0.83	0.78	0.74	0.07	10.4%
	2	0.71	0.85	0.79	0.73	0.02	2.8%
US 41 (Hillsborough Co) from Bearss to Hillsborough / Pasco Co Line	1	0.76	0.81	0.85	0.82	0.06	7.9%
	2	0.77	0.84	0.88	0.81	0.04	5.2%
US 41 (Pasco Co) from Hillsborough / Pasco Co Line - SR 54 to SR 52	1	0.55	0.79	0.70	0.64	0.09	16.4%
	2	0.55	0.82	0.71	0.66	0.11	20.0%
US 41 (Pasco Co) from SR 52 to CR 578 / County Line Rd - Pasco / Hernando Co Line	1	0.38	0.43	0.65	0.56	0.18	47.4%
	2	0.34	0.43	0.66	0.56	0.22	64.7%
US 41 (Hernando Co) from CR 578 / County Line Rd - Pasco / Hernando Co Line to SR 50 / Cortez Blvd	1	0.30	0.49	0.46	0.33	0.03	10.0%
	2	0.30	0.49	0.48	0.33	0.03	10.0%
US 41 (Hernando Co) from SR 50 / Cortez Blvd to Hernando / Citrus County Line	1	0.41	0.49	0.48	0.51	0.10	24.4%
	2	0.39	0.48	0.44	0.52	0.13	33.3%
US 41 (Citrus Co) from Hernando / Citrus Co Line to Citrus / Marion Co Line	1	0.41	0.43	0.44	0.33	-0.08	-19.5%
	2	0.40	0.45	0.44	0.35	-0.05	-12.5%

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**Table 5d: Highway Volume over Capacity Ratios (Max Period by Direction) by Major Corridor (cont.)**

Corridor	Dir	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
SR 60 / Gulf to Bay Blvd (Pinellas Co) from Causeway Bridge to Pinellas / Hillsborough Co Line	1	0.62	0.66	0.67	0.67	0.05	8.1%
	2	0.65	0.66	0.66	0.66	0.01	1.5%
SR 60 / Courtney Campbell Causeway (Hillsborough Co from Pinellas / Hillsborough Co Line to Eisenhower Blvd	1	0.61	0.61	0.61	0.61	0.00	0.0%
	2	0.62	0.58	0.61	0.59	-0.03	-4.8%
SR 60 / Kennedy Blvd / Memorial Hwy (Hillsborough C from Westshore Blvd to Courtney Campbell Causeway	1	0.57	0.64	0.61	0.66	0.09	15.8%
	2	0.56	0.71	0.58	0.53	-0.03	-5.4%
SR 60 / Adamo Dr (Hillsborough Co) from Channelside Dr to 50th St	1	0.71	0.86	0.82	0.78	0.07	9.9%
	2	0.72	0.86	0.81	0.79	0.07	9.7%
SR 60 / Adamo Dr (Hillsborough Co) from 50th St to US 301	1	0.73	0.90	0.86	0.83	0.10	13.7%
	2	0.75	0.94	0.86	0.84	0.09	12.0%
SR 60 / Adamo Dr (Hillsborough Co) from US 301 to I-75	1	0.79	0.86	0.82	0.83	0.04	5.1%
	2	0.84	0.91	0.88	0.84	0.00	0.0%
SR 60 (Hillsborough Co) from I-75 to Turkey Creek Rd	1	0.76	0.93	0.88	0.83	0.07	9.2%
	2	0.79	0.97	0.91	0.85	0.06	7.6%
US 19 (Pinellas Co) from I-275 to Gandy Blvd	1	0.65	0.70	0.69	0.68	0.03	4.6%
	2	0.61	0.65	0.64	0.64	0.03	4.9%
US 19 (Pinellas Co) from Gandy Blvd to Druid Rd	1	0.68	0.77	0.77	0.76	0.08	11.8%
	2	0.66	0.76	0.73	0.73	0.07	10.6%
US 19 (Pinellas Co) from Druid Rd to US 19 Alt	1	0.75	0.80	0.79	0.77	0.02	2.7%
	2	0.78	0.83	0.82	0.80	0.02	2.6%
US 19 (Pasco Co) from US 19 Alt to Hudson Ave	1	0.77	0.90	0.88	0.90	0.13	16.9%
	2	0.73	0.87	0.84	0.91	0.18	24.7%
US 19 (Pasco Co) from Hudson Ave to Pasco / Hernando Co Line	1	0.55	0.62	0.61	0.44	-0.11	-20.0%
	2	0.61	0.67	0.66	0.48	-0.13	-21.3%
US 19 (Citrus Co) from Hernando / Citrus County Line to Citrus / Levy Co Line	1	0.41	0.44	0.43	0.40	-0.01	-2.4%
	2	0.45	0.47	0.46	0.43	-0.02	-4.4%
Ulmerton Rd (Pinellas Co) from I-275 to Gulf Blvd	1	0.64	0.65	0.65	0.65	0.01	1.6%
	2	0.67	0.67	0.69	0.70	0.03	4.5%
Roosevelt Blvd / E Bay / W Bay (Pinellas Co) from Gandy Blvd to Indian Rocks Rd	1	0.66	0.71	0.68	0.67	0.01	1.5%
	2	0.65	0.69	0.67	0.69	0.04	6.2%
Roosevelt Boulevard Ext (Pinellas Co) from 49th St Bridge to CR 296 / 118th Ave N	1	0.72	0.66	0.64	0.72	0.00	0.0%
	2	0.71	0.54	0.52	0.53	-0.18	-25.4%
Dale Mabry Hwy / US 92 (Hillsborough Co) from Intrabay Blvd to Kennedy Blvd	1	0.71	0.80	0.80	0.79	0.08	11.3%
	2	0.73	0.85	0.85	0.84	0.11	15.1%
Dale Mabry Hwy / US 92 (Hillsborough Co) from Kennedy Blvd to Hillsborough Ave	1	0.69	0.81	0.80	0.78	0.09	13.0%
	2	0.68	0.82	0.79	0.77	0.09	13.2%
Dale Mabry Hwy (Hillsborough Co) from Hillsborough Ave to US 41	1	0.74	0.81	0.79	0.72	-0.02	-2.7%
	2	0.75	0.83	0.81	0.74	-0.01	-1.3%
US 301 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Road	1	0.41	0.67	0.64	0.60	0.19	46.3%
	2	0.42	0.68	0.65	0.62	0.20	47.6%
US 301 (Hillsborough Co) from Big Bend Road to Leroy Selmon Crosstown Expwy / SR 618	1	0.82	0.97	0.95	0.90	0.08	9.8%
	2	0.78	0.92	0.88	0.86	0.08	10.3%
US 301 (Hillsborough Co) from Leroy Selmon Crosstown Expwy / SR 618 to I-4	1	0.61	0.71	0.65	0.66	0.05	8.2%
	2	0.62	0.72	0.62	0.59	-0.03	-4.8%
US 301 (Hillsborough Co) from I-4 to Fowler Ave	1	0.64	0.85	0.72	0.72	0.08	12.5%
	2	0.52	0.82	0.71	0.70	0.18	34.6%
US 301 (Hillsborough Co) from Fowler Ave to Hillsborough / Pasco Co Line	1	0.68	0.84	0.81	0.61	-0.07	-10.3%
	2	0.73	0.88	0.80	0.62	-0.11	-15.1%
US 301 (Pasco Co) from Hillsborough / Pasco Co Line to Pasco / Hernando Co Line	1	0.36	0.60	0.51	0.43	0.07	19.4%
	2	0.40	0.58	0.49	0.42	0.02	5.0%
US 301 (Hernando Co) from Pasco / Hernando Co Line to Hernando / Sumter Co Line	1	0.15	0.28	0.21	0.20	0.05	33.3%
	2	0.15	0.27	0.22	0.21	0.06	40.0%

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**Table 5e: Congested Travel Times in Minutes (Max Period by Direction) by Major Corridor**

Corridor	Dir	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2040 Difference from Base	2040 % Difference From Base
I-4 (Hillsborough Co) from I-275 to I-75	1	13.60	28.30	19.80	18.80	5.20	38.2%
	2	16.20	38.30	26.10	22.90	6.70	41.4%
I-4 (Hillsborough Co) from I-75 to Hillsborough / Polk County Line	1	25.90	55.20	35.60	33.00	7.10	27.4%
	2	28.20	69.50	39.50	35.10	6.90	24.5%
I-275 (Pinellas Co) from Sunshine Skyway Bridge to Pinellas / Hillsborough Co Line	1	29.60	62.40	50.80	46.60	17.00	57.4%
	2	33.80	54.90	49.00	45.90	12.10	35.8%
I-275 (Hillsborough Co) from Pinellas / Hillsborough Co Line to I-4	1	16.90	22.30	21.60	22.50	5.60	33.1%
	2	15.90	21.00	22.10	21.70	5.80	36.5%
I-275 (Hillsborough Co) from I-4 to Bearss	1	14.60	23.00	18.60	18.20	3.60	24.7%
	2	15.00	26.60	19.30	19.40	4.40	29.3%
I-275 (Hillsborough Co) from Bearss to I-75 N	1	12.00	20.60	19.30	16.20	4.20	35.0%
	2	8.60	15.00	13.80	12.60	4.00	46.5%
I-75 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Rd	1	14.20	20.20	21.30	23.90	9.70	68.3%
	2	13.90	19.00	22.70	25.00	11.10	79.9%
I-75 (Hillsborough Co) from Big Bend Rd to Leroy Selmon Crosstown Expwy / SR 618	1	15.00	48.50	31.70	27.10	12.10	80.7%
	2	13.80	35.90	26.10	23.80	10.00	72.5%
I-75 (Hillsborough Co) from Leroy Selmon Crosstown Expwy / SR 618 to I-4	1	7.10	12.30	15.40	14.90	7.80	109.9%
	2	6.30	9.20	10.00	9.90	3.60	57.1%
I-75 (Pasco Co) from I-275 to SR 54	1	7.50	6.30	6.40	5.80	-1.70	-22.7%
	2	8.90	7.10	7.20	6.70	-2.20	-24.7%
I-75 (Hillsborough Co) from I-4 to I-275	1	16.20	19.70	19.00	20.40	4.20	25.9%
	2	15.90	18.80	19.30	19.30	3.40	21.4%
I-75 (Pasco / Hernando Co) from SR 54 to Pasco / Hernando Co Line	1	15.90	23.50	19.80	20.70	4.80	30.2%
	2	15.60	23.90	20.00	20.90	5.30	34.0%
I-75 (Hernando Co) from Pasco / Hernando Co Line to Hernando / Sumter Co Line	1	11.50	11.20	11.50	11.50	0.00	0.0%
	2	11.50	11.20	11.50	11.40	-0.10	-0.9%
SR 54 (Pasco Co) from US 19 to Little Rd	1	8.40	10.10	9.70	9.60	1.20	14.3%
	2	8.60	9.80	9.60	9.60	1.00	11.6%
SR 54 (Pasco Co) from Little Rd to US 41	1	31.00	35.40	29.40	28.30	-2.70	-8.7%
	2	27.90	35.90	30.10	28.70	0.80	2.9%
SR 54 and SR 56 (Pasco Co) from US 41 to Bruce B Downs Blvd / CR 581	1	11.00	21.70	16.90	14.40	3.40	30.9%
	2	13.00	20.30	15.50	14.00	1.00	7.7%
SR 54 (Pasco Co) from Bruce B Downs Blvd / CR 581 to US 301	1	19.40	31.00	14.50	13.30	-6.10	-31.4%
	2	22.60	49.10	16.30	14.60	-8.00	-35.4%
Leroy Selmon Crosstown Expwy (Hillsborough Co) from Willow Ave to I-75	1	20.70	33.50	26.10	22.40	1.70	8.2%
	2	23.90	43.50	28.20	24.70	0.80	3.3%
Veteran Expwy (Hillsborough Co) from Hillsborough Ave to Dale Mabry Hwy N	1	24.70	41.40	43.20	42.70	18.00	72.9%
	2	26.10	50.40	54.40	51.40	25.30	96.9%
US 41 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Rd	1	21.70	29.10	30.00	27.20	5.50	25.3%
	2	22.00	35.00	29.20	26.50	4.50	20.5%
US 41 (Hillsborough Co) from Big Bend Rd to Selmon Crosstown Expwy	1	38.20	87.00	68.20	62.40	24.20	63.4%
	2	27.90	55.50	46.60	43.20	15.30	54.8%
US 41 (Hillsborough Co) from Busch Blvd to Bearss	1	7.30	11.50	9.50	8.80	1.50	20.5%
	2	7.80	12.40	10.30	8.80	1.00	12.8%
US 41 (Hillsborough Co) from Bearss to Hillsborough / Pasco Co Line	1	16.00	19.40	21.90	20.50	4.50	28.1%
	2	16.30	21.10	24.80	21.40	5.10	31.3%
US 41 (Pasco Co) from Hillsborough / Pasco Co Line - SR 54 to SR 52	1	23.00	35.60	21.10	17.30	-5.70	-24.8%
	2	24.70	37.40	21.10	17.60	-7.10	-28.7%
US 41 (Pasco Co) from SR 52 to CR 578 / County Line Rd - Pasco / Hernando Co Line	1	12.20	12.20	13.00	13.50	1.30	10.7%
	2	12.20	12.20	13.20	13.50	1.30	10.7%
US 41 (Hernando Co) from CR 578 / County Line Rd - Pasco / Hernando Co Line to SR 50 / Cortez Blvd	1	12.40	20.60	20.00	61.10	48.70	392.7%
	2	12.40	20.20	19.90	61.10	48.70	392.7%
US 41 (Hernando Co) from SR 50 / Cortez Blvd to Hernando / Citrus County Line	1	22.80	26.20	25.30	20.70	-2.10	-9.2%
	2	21.20	21.90	23.60	18.70	-2.50	-11.8%
US 41 (Citrus Co) from Hernando / Citrus Co Line to Citrus / Marion Co Line	1	56.60	52.50	49.40	48.70	-7.90	-14.0%
	2	53.30	52.50	50.90	50.80	-2.50	-4.7%



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**Table 5e: Congested Travel Times in Minutes (Max Period by Direction) by Major Corridor (cont.)**

Corridor	Dir	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
SR 60 / Gulf to Bay Blvd (Pinellas Co) from Causeway Bridge to Pinellas / Hillsborough Co Line	1	23.40	27.20	26.50	26.60	3.20	13.7%
	2	27.70	27.90	29.90	28.50	0.80	2.9%
SR 60 / Courtney Campbell Causeway (Hillsborough Co from Pinellas / Hillsborough Co Line to Eisenhower Blvd	1	7.60	7.50	7.50	7.50	-0.10	-1.3%
	2	7.60	7.50	7.60	7.50	-0.10	-1.3%
SR 60 / Kennedy Blvd / Memorial Hwy (Hillsborough C from Westshore Blvd to Courtney Campbell Causeway	1	6.20	12.30	7.20	7.40	1.20	19.4%
	2	6.40	13.70	6.80	7.40	1.00	15.6%
SR 60 / Adamo Dr (Hillsborough Co) from Channelside Dr to 50th St	1	6.60	10.60	9.60	8.70	2.10	31.8%
	2	7.90	14.60	11.60	9.80	1.90	24.1%
SR 60 / Adamo Dr (Hillsborough Co) from 50th St to US 301	1	7.30	12.90	10.30	9.00	1.70	23.3%
	2	8.20	16.90	11.80	10.30	2.10	25.6%
SR 60 / Adamo Dr (Hillsborough Co) from US 301 to I-75	1	3.70	5.80	4.80	4.90	1.20	32.4%
	2	4.60	8.90	6.80	6.00	1.40	30.4%
SR 60 (Hillsborough Co) from I-75 to Turkey Creek Rd	1	24.00	52.50	39.00	32.90	8.90	37.1%
	2	26.80	69.10	48.80	42.00	15.20	56.7%
US 19 (Pinellas Co) from I-275 to Gandy Blvd	1	17.40	19.00	19.00	18.70	1.30	7.5%
	2	18.40	19.50	19.40	19.20	0.80	4.3%
US 19 (Pinellas Co) from Gandy Blvd to Druid Rd	1	19.50	15.90	15.70	15.60	-3.90	-20.0%
	2	19.70	16.10	15.60	15.40	-4.30	-21.8%
US 19 (Pinellas Co) from Druid Rd to US 19 Alt	1	38.80	46.60	43.30	42.30	3.50	9.0%
	2	42.20	54.90	49.50	45.40	3.20	7.6%
US 19 (Pasco Co) from US 19 Alt to Hudson Ave	1	16.40	19.60	18.50	21.60	5.20	31.7%
	2	14.40	17.30	15.90	14.90	0.50	3.5%
US 19 (Pasco Co) from Hudson Ave to Pasco / Hernando Co Line	1	31.50	32.70	32.50	31.40	-0.10	-0.3%
	2	32.20	34.10	33.80	31.80	-0.40	-1.2%
US 19 (Citrus Co) from Hernando / Citrus County Line to Citrus / Levy Co Line	1	42.00	43.10	42.40	39.20	-2.80	-6.7%
	2	41.80	41.90	41.70	39.20	-2.60	-6.2%
Ulmerton Rd (Pinellas Co) from I-275 to Gulf Blvd	1	30.40	30.80	29.80	28.80	-1.60	-5.3%
	2	28.40	29.20	28.40	28.30	-0.10	-0.4%
Roosevelt Blvd / E Bay / W Bay (Pinellas Co) from Gandy Blvd to Indian Rocks Rd	1	23.20	25.20	24.70	22.40	-0.80	-3.4%
	2	22.40	24.60	24.10	23.10	0.70	3.1%
Roosevelt Boulevard Ext (Pinellas Co) from 49th St Bridge to CR 296 / 118th Ave N	1	4.90	3.30	3.10	2.90	-2.00	-40.8%
	2	3.10	2.50	2.50	2.30	-0.80	-25.8%
Dale Mabry Hwy / US 92 (Hillsborough Co) from Intrabay Blvd to Kennedy Blvd	1	11.80	16.00	16.40	15.90	4.10	34.7%
	2	12.10	18.40	18.10	17.80	5.70	47.1%
Dale Mabry Hwy / US 92 (Hillsborough Co) from Kennedy Blvd to Hillsborough Ave	1	8.10	13.10	13.00	11.60	3.50	43.2%
	2	6.40	10.40	8.70	8.20	1.80	28.1%
Dale Mabry Hwy (Hillsborough Co) from Hillsborough Ave to US 41	1	33.30	42.50	40.20	54.60	21.30	64.0%
	2	35.10	50.70	47.20	58.80	23.70	67.5%
US 301 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Road	1	19.80	28.60	25.20	22.10	2.30	11.6%
	2	21.10	26.30	25.50	22.40	1.30	6.2%
US 301 (Hillsborough Co) from Big Bend Road to Leroy Selmon Crosstown Expwy / SR 618	1	36.20	80.90	63.00	55.20	19.00	52.5%
	2	28.70	53.50	43.20	39.10	10.40	36.2%
US 301 (Hillsborough Co) from Leroy Selmon Crosstown Expwy / SR 618 to I-4	1	9.20	11.60	10.00	10.30	1.10	12.0%
	2	9.20	12.50	9.20	8.50	-0.70	-7.6%
US 301 (Hillsborough Co) from I-4 to Fowler Ave	1	9.30	17.50	13.40	13.50	4.20	45.2%
	2	8.20	17.50	13.90	15.00	6.80	82.9%
US 301 (Hillsborough Co) from Fowler Ave to Hillsborough / Pasco Co Line	1	22.30	44.30	34.00	21.20	-1.10	-4.9%
	2	26.90	62.80	39.30	27.30	0.40	1.5%
US 301 (Pasco Co) from Hillsborough / Pasco Co Line to Pasco / Hernando Co Line	1	41.10	52.60	40.70	39.60	-1.50	-3.6%
	2	41.10	48.60	35.60	35.00	-6.10	-14.8%
US 301 (Hernando Co) from Pasco / Hernando Co Line to Hernando / Sumter Co Line	1	10.00	10.20	10.10	10.30	0.30	3.0%
	2	10.00	10.10	10.10	10.30	0.30	3.0%

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**Table 5f: Congested Travel Speeds in MPH (Max Period by Direction) by Major Corridor**

Corridor	Dir	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2040 Difference from Base	2040 % Difference From Base
I-4 (Hillsborough Co) from I-275 to I-75	1	38.20	18.40	26.30	27.80	-10.40	-27.2%
	2	32.00	13.50	19.80	22.60	-9.40	-29.4%
I-4 (Hillsborough Co) from I-75 to Hillsborough / Polk County Line	1	38.20	17.90	27.70	29.90	-8.30	-21.7%
	2	35.00	14.20	25.00	28.10	-6.90	-19.7%
I-275 (Pinellas Co) from Sunshine Skyway Bridge to Pinellas / Hillsborough Co Line	1	46.10	29.40	36.00	37.90	-8.20	-17.8%
	2	40.50	32.60	36.50	37.20	-3.30	-8.1%
I-275 (Hillsborough Co) from Pinellas / Hillsborough Co Line to I-4	1	31.50	23.80	28.60	35.60	4.10	13.0%
	2	32.80	24.90	28.40	35.50	2.70	8.2%
I-275 (Hillsborough Co) from I-4 to Bearss	1	36.50	23.20	28.60	29.30	-7.20	-19.7%
	2	36.20	20.40	28.20	28.00	-8.20	-22.7%
I-275 (Hillsborough Co) from Bearss to I-75 N	1	37.60	22.00	23.40	27.80	-9.80	-26.1%
	2	48.30	27.60	30.10	32.80	-15.50	-32.1%
I-75 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Rd	1	50.00	35.10	57.00	59.50	9.50	19.0%
	2	51.10	37.40	54.20	57.00	5.90	11.5%
I-75 (Hillsborough Co) from Big Bend Rd to Leroy Selmon Crosstown Expwy / SR 618	1	39.10	12.10	18.60	21.70	-17.40	-44.5%
	2	42.70	16.40	22.60	24.80	-17.90	-41.9%
I-75 (Hillsborough Co) from Leroy Selmon Crosstown Expwy / SR 618 to I-4	1	41.70	27.60	22.10	35.00	-6.70	-16.1%
	2	48.00	37.10	34.10	40.50	-7.50	-15.6%
I-75 (Pasco Co) from I-275 to SR 54	1	38.60	45.90	45.40	49.70	11.10	28.8%
	2	32.90	41.20	40.40	43.70	10.80	32.8%
I-75 (Hillsborough Co) from I-4 to I-275	1	49.30	40.40	42.00	47.00	-2.30	-4.7%
	2	50.10	42.30	41.20	49.50	-0.60	-1.2%
I-75 (Pasco / Hernando Co) from SR 54 to Pasco / Hernando Co Line	1	58.70	39.70	47.00	45.10	-13.60	-23.2%
	2	59.60	39.00	46.50	44.50	-15.10	-25.3%
I-75 (Hernando Co) from Pasco / Hernando Co Line to Hernando / Sumter Co Line	1	59.90	61.20	59.90	59.60	-0.30	-0.5%
	2	60.10	61.50	60.20	60.40	0.30	0.5%
SR 54 (Pasco Co) from US 19 to Little Rd	1	34.00	28.40	29.40	29.90	-4.10	-12.1%
	2	33.50	29.30	29.80	30.00	-3.50	-10.4%
SR 54 (Pasco Co) from Little Rd to US 41	1	25.50	22.30	26.90	27.90	2.40	9.4%
	2	28.30	22.00	26.30	27.50	-0.80	-2.8%
SR 54 and SR 56 (Pasco Co) from US 41 to Bruce B Downs Blvd / CR 581	1	29.30	14.10	23.30	27.40	-1.90	-6.5%
	2	24.70	13.70	23.70	26.10	1.40	5.7%
SR 54 (Pasco Co) from Bruce B Downs Blvd / CR 581 to US 301	1	20.90	13.20	28.10	30.60	9.70	46.4%
	2	17.90	8.30	25.00	27.90	10.00	55.9%
Leroy Selmon Crosstown Expwy (Hillsborough Co) from Willow Ave to I-75	1	29.50	18.30	23.50	27.30	-2.20	-7.5%
	2	26.50	14.50	22.70	26.00	-0.50	-1.9%
Veteran Expwy (Hillsborough Co) from Hillsborough Ave to Dale Mabry Hwy N	1	30.80	32.10	30.70	31.10	0.30	1.0%
	2	25.40	26.30	24.40	25.90	0.50	2.0%
US 41 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Rd	1	39.30	29.30	28.30	31.30	-8.00	-20.4%
	2	38.70	24.30	29.10	32.10	-6.60	-17.1%
US 41 (Hillsborough Co) from Big Bend Rd to Selmon Crosstown Expwy	1	17.40	7.70	9.80	10.70	-6.70	-38.5%
	2	23.80	12.00	14.30	15.40	-8.40	-35.3%
US 41 (Hillsborough Co) from Busch Blvd to Bearss	1	31.10	19.70	23.80	26.00	-5.10	-16.4%
	2	29.20	18.30	22.10	25.90	-3.30	-11.3%
US 41 (Hillsborough Co) from Bearss to Hillsborough / Pasco Co Line	1	22.40	18.50	16.30	17.40	-5.00	-22.3%
	2	21.90	17.00	14.40	16.70	-5.20	-23.7%
US 41 (Pasco Co) from Hillsborough / Pasco Co Line - SR 54 to SR 52	1	25.70	16.70	28.00	34.20	8.50	33.1%
	2	24.00	15.80	28.10	33.60	9.60	40.0%
US 41 (Pasco Co) from SR 52 to CR 578 / County Line Rd - Pasco / Hernando Co Line	1	41.70	41.90	39.10	37.70	-4.00	-9.6%
	2	41.70	41.90	38.80	37.80	-3.90	-9.4%
US 41 (Hernando Co) from CR 578 / County Line Rd - Pasco / Hernando Co Line to SR 50 / Cortez Blvd	1	39.50	32.10	33.00	28.90	-10.60	-26.8%
	2	39.50	32.70	33.20	28.90	-10.60	-26.8%
US 41 (Hernando Co) from SR 50 / Cortez Blvd to Hernando / Citrus County Line	1	28.40	24.70	25.50	31.30	2.90	10.2%
	2	28.20	27.30	25.40	32.20	4.00	14.2%
US 41 (Citrus Co) from Hernando / Citrus Co Line to Citrus / Marion Co Line	1	31.90	34.40	36.50	37.00	5.10	16.0%
	2	33.70	34.20	35.30	35.40	1.70	5.0%

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**Table 5f: Congested Travel Speeds in MPH (Max Period by Direction) by Major Corridor (cont.)**

Corridor	Dir	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Growth from Base	2045 % Growth from Base
SR 60 / Gulf to Bay Blvd (Pinellas Co) from Causeway Bridge to Pinellas / Hillsborough Co Line	1	27.50	23.70	24.20	24.20	-3.30	-12.0%
	2	23.70	23.40	21.90	23.00	-0.70	-3.0%
SR 60 / Courtney Campbell Causeway (Hillsborough Co from Pinellas / Hillsborough Co Line to Eisenhower Blvd	1	46.20	46.80	47.00	46.90	0.70	1.5%
	2	46.40	47.00	46.60	46.90	0.50	1.1%
SR 60 / Kennedy Blvd / Memorial Hwy (Hillsborough C from Westshore Blvd to Courtney Campbell Causeway	1	20.60	10.40	25.90	25.20	4.60	22.3%
	2	19.40	9.10	18.10	16.60	-2.80	-14.4%
SR 60 / Adamo Dr (Hillsborough Co) from Channelside Dr to 50th St	1	24.60	15.30	16.90	18.70	-5.90	-24.0%
	2	22.00	11.90	15.00	17.60	-4.40	-20.0%
SR 60 / Adamo Dr (Hillsborough Co) from 50th St to US 301	1	24.20	13.70	17.10	19.60	-4.60	-19.0%
	2	21.60	10.50	15.00	17.30	-4.30	-19.9%
SR 60 / Adamo Dr (Hillsborough Co) from US 301 to I-75	1	25.70	16.20	19.60	19.30	-6.40	-24.9%
	2	20.60	10.70	13.80	15.90	-4.70	-22.8%
SR 60 (Hillsborough Co) from I-75 to Turkey Creek Rd	1	24.00	10.90	14.70	17.50	-6.50	-27.1%
	2	21.40	8.30	11.80	13.70	-7.70	-36.0%
US 19 (Pinellas Co) from I-275 to Gandy Blvd	1	30.00	27.40	27.40	27.90	-2.10	-7.0%
	2	31.40	29.60	29.80	30.00	-1.40	-4.5%
US 19 (Pinellas Co) from Gandy Blvd to Druid Rd	1	26.40	32.30	32.60	32.90	6.50	24.6%
	2	26.90	32.80	33.80	34.20	7.30	27.1%
US 19 (Pinellas Co) from Druid Rd to US 19 Alt	1	24.40	20.40	22.00	23.20	-1.20	-4.9%
	2	22.40	17.30	19.20	20.90	-1.50	-6.7%
US 19 (Pasco Co) from US 19 Alt to Hudson Ave	1	25.90	21.70	23.00	25.10	-0.80	-3.1%
	2	29.50	24.60	26.70	26.70	-2.80	-9.5%
US 19 (Pasco Co) from Hudson Ave to Pasco / Hernando Co Line	1	37.20	35.80	36.00	37.70	0.50	1.3%
	2	36.30	34.30	34.60	37.20	0.90	2.5%
US 19 (Citrus Co) from Hernando / Citrus County Line to Citrus / Levy Co Line	1	35.80	34.90	35.60	38.40	2.60	7.3%
	2	36.00	36.00	36.10	38.40	2.40	6.7%
Ulmerton Rd (Pinellas Co) from I-275 to Gulf Blvd	1	26.30	25.90	26.80	27.70	1.40	5.3%
	2	26.50	25.80	26.50	26.70	0.20	0.8%
Roosevelt Blvd / E Bay / W Bay (Pinellas Co) from Gandy Blvd to Indian Rocks Rd	1	26.00	23.90	24.40	26.90	0.90	3.5%
	2	27.80	25.60	26.00	26.90	-0.90	-3.2%
Roosevelt Boulevard Ext (Pinellas Co) from 49th St Bridge to CR 296 / 118th Ave N	1	18.00	26.80	28.30	28.60	10.60	58.9%
	2	22.90	31.80	32.20	31.70	8.80	38.4%
Dale Mabry Hwy / US 92 (Hillsborough Co) from Intrabay Blvd to Kennedy Blvd	1	25.30	18.60	18.20	18.70	-6.60	-26.1%
	2	24.60	16.20	16.40	16.80	-7.80	-31.7%
Dale Mabry Hwy / US 92 (Hillsborough Co) from Kennedy Blvd to Hillsborough Ave	1	27.20	16.90	17.00	19.00	-8.20	-30.1%
	2	28.40	17.30	20.70	22.10	-6.30	-22.2%
Dale Mabry Hwy (Hillsborough Co) from Hillsborough Ave to US 41	1	25.50	20.00	21.10	23.30	-2.20	-8.6%
	2	24.40	16.90	18.10	21.70	-2.70	-11.1%
US 301 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Road	1	33.90	23.40	26.60	30.30	-3.60	-10.6%
	2	31.80	25.40	26.20	29.90	-1.90	-6.0%
US 301 (Hillsborough Co) from Big Bend Road to Leroy Selmon Crosstown Expwy / SR 618	1	16.50	7.40	9.50	22.10	5.60	33.9%
	2	20.90	11.20	13.90	31.10	10.20	48.8%
US 301 (Hillsborough Co) from Leroy Selmon Crosstown Expwy / SR 618 to I-4	1	29.00	23.00	26.70	26.00	-3.00	-10.3%
	2	29.10	21.30	28.90	31.40	2.30	7.9%
US 301 (Hillsborough Co) from I-4 to Fowler Ave	1	30.90	16.40	21.40	21.30	-9.60	-31.1%
	2	35.10	16.40	20.60	19.10	-16.00	-45.6%
US 301 (Hillsborough Co) from Fowler Ave to Hillsborough / Pasco Co Line	1	30.90	15.60	20.30	32.60	1.70	5.5%
	2	25.60	11.00	17.60	25.30	-0.30	-1.2%
US 301 (Pasco Co) from Hillsborough / Pasco Co Line to Pasco / Hernando Co Line	1	33.90	26.50	34.20	35.20	1.30	3.8%
	2	33.80	28.60	35.90	36.50	2.70	8.0%
US 301 (Hernando Co) from Pasco / Hernando Co Line to Hernando / Sumter Co Line	1	40.10	39.30	39.50	39.00	-1.10	-2.7%
	2	40.10	39.40	39.50	39.00	-1.10	-2.7%

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**Table 6a: Highway Vehicle Daily Total Hours of Delay by County**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	224,386	1,163,722	885,638	662,754	438,368	195.4%
Pinellas	66,932	117,222	103,030	94,699	27,767	41.5%
Pasco	25,445	146,626	78,206	60,094	34,649	136.2%
<b>TMA</b>	<b>316,763</b>	<b>1,427,571</b>	<b>1,066,874</b>	<b>817,547</b>	<b>500,784</b>	<b>158.1%</b>
Hernando	4,097	21,789	15,469	7,417	3,320	81.0%
Citrus	3,776	6,825	5,681	2,852	-924	-24.5%
<b>District 7 Total</b>	<b>324,636</b>	<b>1,456,184</b>	<b>1,088,024</b>	<b>827,816</b>	<b>503,180</b>	<b>155.0%</b>
Manatee Segment	4,851	43,955	31,272	26,222	21,371	440.5%
<b>Regional Total</b>	<b>329,487</b>	<b>1,500,140</b>	<b>1,119,296</b>	<b>854,038</b>	<b>524,551</b>	<b>159.2%</b>

**Table 6d: Highway Truck Daily Total Hours of Delay by County**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	8,409	59,042	41,339	31,524	23,115	274.9%
Pinellas	2,371	4,854	4,058	3,714	1,343	56.6%
Pasco	1,162	8,187	4,976	4,146	2,984	256.8%
<b>TMA</b>	<b>11,942</b>	<b>72,083</b>	<b>50,373</b>	<b>39,383</b>	<b>27,441</b>	<b>229.8%</b>
Hernando	246	1,847	1,379	612	366	148.8%
Citrus	132	399	340	134	2	1.5%
<b>District 7 Total</b>	<b>12,320</b>	<b>74,329</b>	<b>52,092</b>	<b>40,129</b>	<b>27,809</b>	<b>225.7%</b>
Manatee Segment	536	5,403	4,084	3,537	3,001	559.9%
<b>Regional Total</b>	<b>12,856</b>	<b>79,733</b>	<b>56,176</b>	<b>43,666</b>	<b>30,810</b>	<b>239.7%</b>

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**Table 6b: Highway Vehicle Daily Total Hours of Delay by Major Corridor**

Corridor	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
I-4 (Hillsborough Co) from I-275 to I-75	3,655	25,174	13,828	10,720	7,065	193.3%
I-4 (Hillsborough Co) from I-75 to Hillsborough / Polk County Line	10,591	94,316	39,311	34,090	23,499	221.9%
I-275 (Pinellas Co) from Sunshine Skyway Bridge to Pinellas / Hillsborough Co Line	8,471	23,522	17,780	16,329	7,858	92.8%
I-275 (Hillsborough Co) from Pinellas / Hillsborough Co Line to I-4	9,977	26,956	20,190	13,392	3,415	34.2%
I-275 (Hillsborough Co) from I-4 to Bearss	4,103	14,973	11,389	10,760	6,657	162.2%
I-275 (Hillsborough Co) from Bearss to I-75 N	490	6,668	5,794	5,345	4,855	990.8%
I-75 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Rd	1,205	12,437	5,383	5,309	4,104	340.6%
I-75 (Hillsborough Co) from Big Bend Rd to Leroy Selmon Crosstown Expwy / SR 618	2,718	43,137	24,524	17,871	15,153	557.5%
I-75 (Hillsborough Co) from Leroy Selmon Crosstown Expwy / SR 618 to I-4	1,494	6,365	7,995	3,857	2,363	158.2%
I-75 (Pasco Co) from I-275 to SR 54	2,566	3,850	4,259	3,268	702	27.4%
I-75 (Hillsborough Co) from I-4 to I-275	2,151	13,377	13,213	6,429	4,278	198.9%
I-75 (Pasco / Hernando Co) from SR 54 to Pasco / Hernando Co Line	1,837	18,604	11,653	12,454	10,617	578.0%
I-75 (Hernando Co) from Pasco / Hernando Co Line to Hernando / Sumter Co Line	171	889	814	818	647	378.4%
SR 54 (Pasco Co) from US 19 to Little Rd	112	443	406	388	276	246.4%
SR 54 (Pasco Co) from Little Rd to US 41	2,165	10,067	5,385	4,025	1,860	85.9%
SR 54 and SR 56 (Pasco Co) from US 41 to Bruce B Downs Blvd / CR 581	3,026	15,834	7,608	5,675	2,649	87.5%
SR 54 (Pasco Co) from Bruce B Downs Blvd / CR 581 to US 301	1,489	7,974	1,347	979	(510)	-34.3%
Leroy Selmon Crosstown Expwy (Hillsborough Co) from Willow Ave to I-75	7,613	23,766	19,445	13,812	6,199	81.4%
Veteran Expwy (Hillsborough Co) from Hillsborough Ave to Dale Mabry Hwy N	8,191	14,397	16,223	14,597	6,406	78.2%
US 41 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Rd	125	4,698	2,389	1,490	1,365	1092.0%
US 41 (Hillsborough Co) from Big Bend Rd to Selmon Crosstown Expwy	2,807	15,229	10,498	8,275	5,468	194.8%
US 41 (Hillsborough Co) from Busch Blvd to Bearss	160	1,147	778	462	302	188.8%
US 41 (Hillsborough Co) from Bearss to Hillsborough / Pasco Co Line	1,236	4,037	4,051	3,343	2,107	170.5%
US 41 (Pasco Co) from Hillsborough / Pasco Co Line - SR 54 to SR 52	2,065	11,594	2,442	802	(1,263)	-61.2%
US 41 (Pasco Co) from SR 52 to CR 578 / County Line Rd - Pasco / Hernando Co Line	1	6	220	98	97	9700.0%
US 41 (Hernando Co) from CR 578 / County Line Rd - Pasco / Hernando Co Line to SR 50 / Cortez Blvd	1	94	53	69	68	6800.0%
US 41 (Hernando Co) from SR 50 / Cortez Blvd to Hernando / Citrus County Line	1,003	2,067	1,872	726	(277)	-27.6%
US 41 (Citrus Co) from Hernando / Citrus Co Line to Citrus / Marion Co Line	1,548	1,216	1,049	722	(826)	-53.4%

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**Table 6b: Highway Vehicle Daily Total Hours of Delay by Major Corridor (cont.)**

Corridor	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
SR 60 / Gulf to Bay Blvd (Pinellas Co) from Causeway Bridge to Pinellas / Hillsborough Co Line	3,804	4,787	5,292	5,002	1,198	31.5%
SR 60 / Courtney Campbell Causeway (Hillsborough Co from Pinellas / Hillsborough Co Line to Eisenhower Blvd	226	213	235	228	2	0.9%
SR 60 / Kennedy Blvd / Memorial Hwy (Hillsborough C from Westshore Blvd to Courtney Campbell Causeway	1,220	3,899	889	1,054	(166)	-13.6%
SR 60 / Adamo Dr (Hillsborough Co) from Channelside Dr to 50th St	221	1,816	1,207	976	755	341.6%
SR 60 / Adamo Dr (Hillsborough Co) from 50th St to US 301	721	2,942	1,824	1,504	783	108.6%
SR 60 / Adamo Dr (Hillsborough Co) from US 301 to I-75	508	1,866	1,224	1,142	634	124.8%
SR 60 (Hillsborough Co) from I-75 to Turkey Creek Rd	3,968	23,010	12,765	9,992	6,024	151.8%
US 19 (Pinellas Co) from I-275 to Gandy Blvd	1,010	1,564	1,588	1,312	302	29.9%
US 19 (Pinellas Co) from Gandy Blvd to Druid Rd	4,151	3,010	2,758	2,274	(1,877)	-45.2%
US 19 (Pinellas Co) from Druid Rd to US 19 Alt	6,412	13,659	11,201	10,524	4,112	64.1%
US 19 (Pasco Co) from US 19 Alt to Hudson Ave	2,673	7,165	6,043	7,044	4,371	163.5%
US 19 (Pasco Co) from Hudson Ave to Pasco / Hernando Co Line	536	1,573	1,393	349	(187)	-34.9%
US 19 (Citrus Co) from Hernando / Citrus County Line to Citrus / Levy Co Line	871	1,060	943	176	(695)	-79.8%
Ulmerton Rd (Pinellas Co) from I-275 to Gulf Blvd	4,401	4,298	3,749	3,658	(743)	-16.9%
Roosevelt Blvd / E Bay / W Bay (Pinellas Co) from Gandy Blvd to Indian Rocks Rd	1,792	3,015	2,544	2,076	284	15.8%
Roosevelt Boulevard Ext (Pinellas Co) from 49th St Bridge to CR 296 / 118th Ave N	596	268	177	247	(349)	-58.6%
Dale Mabry Hwy / US 92 (Hillsborough Co) from Intrabay Blvd to Kennedy Blvd	1,314	3,923	3,917	3,745	2,431	185.0%
Dale Mabry Hwy / US 92 (Hillsborough Co) from Kennedy Blvd to Hillsborough Ave	922	2,701	2,318	2,019	1,097	119.0%
Dale Mabry Hwy (Hillsborough Co) from Hillsborough Ave to US 41	3,280	7,416	6,167	4,809	1,529	46.6%
US 301 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Road	396	2,836	1,985	878	482	121.7%
US 301 (Hillsborough Co) from Big Bend Road to Leroy Selmon Crosstown Expwy / SR 618	4,294	21,339	14,055	10,730	6,436	149.9%
US 301 (Hillsborough Co) from Leroy Selmon Crosstown Expwy / SR 618 to I-4	656	1,969	1,602	1,199	543	82.8%
US 301 (Hillsborough Co) from I-4 to Fowler Ave	220	2,739	1,517	1,372	1,152	523.6%
US 301 (Hillsborough Co) from Fowler Ave to Hillsborough / Pasco Co Line	769	4,743	2,438	1,541	772	100.4%
US 301 (Pasco Co) from Hillsborough / Pasco Co Line to Pasco / Hernando Co Line	819	2,938	357	395	(424)	-51.8%

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**Table 6c: Highway Vehicle Daily Total Hours of Delay by County and Facility Type**

County	Facility Type	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	Freeways and Expressways	37,708	248,865	146,681	111,070	73,362	194.6%
	Divided Arterials	68,784	281,698	194,963	164,144	95,360	138.6%
	Undivided Arterials	15,913	71,359	41,769	22,111	6,198	38.9%
	Collectors	81,685	472,020	419,365	298,570	216,885	265.5%
	One-Way Facilities	3,027	13,213	12,631	10,563	7,536	249.0%
	Ramps	11,231	36,910	28,815	21,972	10,741	95.6%
	HOV Facilities	-	-	-	-	-	-
	Toll Facilities	6,039	39,657	41,414	34,325	28,286	468.4%
<b>Hillsborough</b>	<b>All Facilities</b>	<b>224,386</b>	<b>1,163,722</b>	<b>885,638</b>	<b>662,754</b>	<b>438,368</b>	<b>195.4%</b>
Pinellas	Freeways and Expressways	6,046	8,994	9,264	9,171	3,125	51.7%
	Divided Arterials	52,053	73,575	63,726	58,923	6,870	13.2%
	Undivided Arterials	3,349	5,021	4,741	3,756	407	12.2%
	Collectors	3,036	9,010	8,995	8,263	5,227	172.2%
	One-Way Facilities	1,086	2,853	3,831	3,823	2,737	252.0%
	Ramps	984	2,139	2,618	1,580	596	60.6%
	HOV Facilities	-	-	-	-	-	-
	Toll Facilities	378	15,631	9,855	9,183	8,805	2329.4%
<b>Pinellas</b>	<b>All Facilities</b>	<b>66,932</b>	<b>117,222</b>	<b>103,030</b>	<b>94,699</b>	<b>27,767</b>	<b>41.5%</b>
Pasco	Freeways and Expressways	4,440	22,732	16,210	15,874	11,434	257.5%
	Divided Arterials	13,348	79,630	43,172	33,789	20,441	153.1%
	Undivided Arterials	4,584	17,249	3,092	708	(3,876)	-84.6%
	Collectors	2,282	14,582	7,795	4,405	2,123	93.0%
	One-Way Facilities	6	63	190	84	78	1300.0%
	Ramps	781	8,188	7,293	5,208	4,427	566.8%
	HOV Facilities	-	-	-	-	-	-
	Toll Facilities	2	4,182	455	28	26	1300.0%
<b>Pasco</b>	<b>All Facilities</b>	<b>25,445</b>	<b>146,626</b>	<b>78,206</b>	<b>60,094</b>	<b>34,649</b>	<b>136.2%</b>
TMA	Freeways and Expressways	48,194	280,591	172,154	136,115	87,921	182.4%
	Divided Arterials	134,185	434,903	301,861	256,856	122,671	91.4%
	Undivided Arterials	23,846	93,629	49,602	26,575	2,729	11.4%
	Collectors	87,004	495,612	436,155	311,237	224,233	257.7%
	One-Way Facilities	4,118	16,129	16,652	14,469	10,351	251.4%
	Ramps	12,997	47,237	38,726	28,759	15,762	121.3%
	HOV Facilities	-	-	-	-	-	-
	Toll Facilities	6,419	59,470	51,724	43,535	37,116	578.2%
<b>TMA</b>	<b>All Facilities</b>	<b>316,763</b>	<b>1,427,571</b>	<b>1,066,874</b>	<b>817,547</b>	<b>500,784</b>	<b>158.1%</b>

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**Table 6c: Highway Vehicle Daily Total Hours of Delay by County and Facility Type**

County	Facility Type	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hernando	Freeways and Expressways	171	889	814	818	647	378.4%
	Divided Arterials	1,899	9,158	6,279	2,540	641	33.8%
	Undivided Arterials	1,296	6,406	4,889	1,427	131	10.1%
	Collectors	647	4,550	2,989	2,111	1,464	226.3%
	One-Way Facilities	7	39	35	23	16	228.6%
	Ramps	77	746	463	497	420	545.5%
	HOV Facilities	-	-	-	-	-	-
	Toll Facilities	-	1	-	-	-	-
<b>Hernando</b>	<b>All Facilities</b>	<b>4,097</b>	<b>21,789</b>	<b>15,469</b>	<b>7,417</b>	<b>3,320</b>	<b>81.0%</b>
Citrus	Freeways and Expressways	-	-	-	-	-	-
	Divided Arterials	1,983	2,241	2,161	1,058	(925)	-46.6%
	Undivided Arterials	1,347	2,925	2,045	1,313	(34)	-2.5%
	Collectors	447	1,655	1,468	481	34	7.6%
	One-Way Facilities	-	-	-	-	-	-
	Ramps	-	4	6	-	-	-
	HOV Facilities	-	-	-	-	-	-
	Toll Facilities	-	-	-	-	-	-
<b>Citrus</b>	<b>All Facilities</b>	<b>3,776</b>	<b>6,825</b>	<b>5,681</b>	<b>2,852</b>	<b>(924)</b>	<b>-24.5%</b>
District 7 Total	Freeways and Expressways	48,365	281,481	172,968	136,933	88,568	183.1%
	Divided Arterials	138,067	446,301	310,300	260,454	122,387	88.6%
	Undivided Arterials	26,489	102,960	56,536	29,315	2,826	10.7%
	Collectors	88,098	501,817	440,613	313,829	225,731	256.2%
	One-Way Facilities	4,125	16,168	16,687	14,493	10,368	251.3%
	Ramps	13,073	47,987	39,195	29,256	16,183	123.8%
	HOV Facilities	-	-	-	-	-	-
	Toll Facilities	6,419	59,470	51,725	43,536	37,117	578.2%
<b>District 7 Total</b>	<b>All Facilities</b>	<b>324,636</b>	<b>1,456,184</b>	<b>1,088,024</b>	<b>827,816</b>	<b>503,180</b>	<b>155.0%</b>
Manatee Segment	Freeways and Expressways	794	8,397	7,201	6,163	5,369	676.2%
	Divided Arterials	7	820	746	796	789	11271.4%
	Undivided Arterials	1	477	448	-	(1)	-100.0%
	Collectors	313	4,701	3,843	3,750	3,437	1098.1%
	One-Way Facilities	-	-	-	-	-	-
	Ramps	680	3,068	3,316	2,911	2,231	328.1%
	HOV Facilities	-	-	-	-	-	-
	Toll Facilities	3,056	26,493	15,717	12,602	9,546	312.4%
<b>Manatee Segment</b>	<b>All Facilities</b>	<b>4,851</b>	<b>43,955</b>	<b>31,272</b>	<b>26,222</b>	<b>21,371</b>	<b>440.5%</b>
Regional Total	Freeways and Expressways	49,160	289,877	180,169	143,096	93,936	191.1%
	Divided Arterials	138,074	447,121	311,047	261,251	123,177	89.2%
	Undivided Arterials	26,490	103,437	56,984	29,315	2,825	10.7%
	Collectors	88,412	506,518	444,456	317,579	229,167	259.2%
	One-Way Facilities	4,125	16,168	16,687	14,493	10,368	251.3%
	Ramps	13,753	51,055	42,511	32,168	18,415	133.9%
	HOV Facilities	-	-	-	-	-	-
	Toll Facilities	9,475	85,964	67,441	56,137	46,662	492.5%
<b>Regional Total</b>	<b>All Facilities</b>	<b>329,487</b>	<b>1,500,140</b>	<b>1,119,296</b>	<b>854,038</b>	<b>524,551</b>	<b>159.2%</b>



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**Table 6e: Highway Volume over Capacity Ratio (Max Period Direction) by Major Corridor**

Corridor	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
I-4 (Hillsborough Co) from I-275 to I-75	1.00	1.14	1.09	1.02	0.02	2.0%
I-4 (Hillsborough Co) from I-75 to Hillsborough / Polk County Line	0.86	1.24	1.05	1.03	0.17	19.8%
I-275 (Pinellas Co) from Sunshine Skyway Bridge to Pinellas / Hillsborough Co Line	0.78	0.78	0.78	0.79	0.01	1.3%
I-275 (Hillsborough Co) from Pinellas / Hillsborough Co Line to I-4	0.97	1.01	0.91	0.91	(0.06)	-6.2%
I-275 (Hillsborough Co) from I-4 to Bearss	0.87	1.09	0.99	1.01	0.14	16.1%
I-275 (Hillsborough Co) from Bearss to I-75 N	0.71	1.10	1.04	1.03	0.32	45.1%
I-75 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Rd	0.65	0.99	0.71	0.70	0.05	7.7%
I-75 (Hillsborough Co) from Big Bend Rd to Leroy Selmon Crosstown Expwy / SR 618	0.79	1.19	1.08	1.01	0.22	27.8%
I-75 (Hillsborough Co) from Leroy Selmon Crosstown Expwy / SR 618 to I-4	0.73	0.87	0.96	0.74	0.01	1.4%
I-75 (Pasco Co) from I-275 to SR 54	0.85	0.87	0.89	0.85	-	0.0%
I-75 (Hillsborough Co) from I-4 to I-275	0.57	0.79	0.82	0.74	0.17	29.8%
I-75 (Pasco / Hernando Co) from SR 54 to Pasco / Hernando Co Line	0.69	0.90	0.83	0.83	0.14	20.3%
I-75 (Hernando Co) from Pasco / Hernando Co Line to Hernando / Sumter Co Line	0.46	0.60	0.58	0.58	0.12	26.1%
SR 54 (Pasco Co) from US 19 to Little Rd	0.59	0.68	0.67	0.59	-	0.0%
SR 54 (Pasco Co) from Little Rd to US 41	0.75	0.78	0.74	0.73	(0.02)	-2.7%
SR 54 and SR 56 (Pasco Co) from US 41 to Bruce B Downs Blvd / CR 581	0.87	1.05	0.82	0.79	(0.08)	-9.2%
SR 54 (Pasco Co) from Bruce B Downs Blvd / CR 581 to US 301	0.70	0.90	0.73	0.66	(0.04)	-5.7%
Leroy Selmon Crosstown Expwy (Hillsborough Co) from Willow Ave to I-75	0.74	0.95	0.89	0.73	(0.01)	-1.4%
Veteran Expwy (Hillsborough Co) from Hillsborough Ave to Dale Mabry Hwy N	0.99	0.96	0.96	0.96	(0.03)	-3.0%
US 41 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Rd	0.41	0.69	0.67	0.60	0.19	46.3%
US 41 (Hillsborough Co) from Big Bend Rd to Selmon Crosstown Expwy	0.83	0.98	0.96	0.88	0.05	6.0%
US 41 (Hillsborough Co) from Busch Blvd to Bearss	0.71	0.85	0.79	0.74	0.03	4.2%
US 41 (Hillsborough Co) from Bearss to Hillsborough / Pasco Co Line	0.77	0.84	0.88	0.82	0.05	6.5%
US 41 (Pasco Co) from Hillsborough / Pasco Co Line - SR 54 to SR 52	0.55	0.82	0.71	0.66	0.11	20.0%
US 41 (Pasco Co) from SR 52 to CR 578 / County Line Rd - Pasco / Hernando Co Line	0.38	0.43	0.66	0.56	0.18	47.4%
US 41 (Hernando Co) from CR 578 / County Line Rd - Pasco / Hernando Co Line to SR 50 / Cortez Blvd	0.30	0.49	0.48	0.33	0.03	10.0%
US 41 (Hernando Co) from SR 50 / Cortez Blvd to Hernando / Citrus County Line	0.41	0.49	0.48	0.52	0.11	26.8%
US 41 (Citrus Co) from Hernando / Citrus Co Line to Citrus / Marion Co Line	0.41	0.45	0.44	0.35	(0.06)	-14.6%

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**Table 6e: Highway Volume over Capacity Ratio (Max Period Direction) by Major Corridor (cont.)**

Corridor	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
SR 60 / Gulf to Bay Blvd (Pinellas Co) from Causeway Bridge to Pinellas / Hillsborough Co Line	0.65	0.66	0.67	0.67	0.02	3.1%
SR 60 / Courtney Campbell Causeway (Hillsborough Co from Pinellas / Hillsborough Co Line to Eisenhower Blvd	0.62	0.61	0.61	0.61	(0.01)	-1.6%
SR 60 / Kennedy Blvd / Memorial Hwy (Hillsborough C from Westshore Blvd to Courtney Campbell Causeway	0.57	0.71	0.61	0.66	0.09	15.8%
SR 60 / Adamo Dr (Hillsborough Co) from Channelside Dr to 50th St	0.72	0.86	0.82	0.79	0.07	9.7%
SR 60 / Adamo Dr (Hillsborough Co) from 50th St to US 301	0.75	0.94	0.86	0.84	0.09	12.0%
SR 60 / Adamo Dr (Hillsborough Co) from US 301 to I-75	0.84	0.91	0.88	0.84	-	0.0%
SR 60 (Hillsborough Co) from I-75 to Turkey Creek Rd	0.79	0.97	0.91	0.85	0.06	7.6%
US 19 (Pinellas Co) from I-275 to Gandy Blvd	0.65	0.70	0.69	0.68	0.03	4.6%
US 19 (Pinellas Co) from Gandy Blvd to Druid Rd	0.68	0.77	0.77	0.76	0.08	11.8%
US 19 (Pinellas Co) from Druid Rd to US 19 Alt	0.78	0.83	0.82	0.80	0.02	2.6%
US 19 (Pasco Co) from US 19 Alt to Hudson Ave	0.77	0.90	0.88	0.91	0.14	18.2%
US 19 (Pasco Co) from Hudson Ave to Pasco / Hernando Co Line	0.61	0.67	0.66	0.48	(0.13)	-21.3%
US 19 (Citrus Co) from Hernando / Citrus County Line to Citrus / Levy Co Line	0.45	0.47	0.46	0.43	(0.02)	-4.4%
Ulmerton Rd (Pinellas Co) from I-275 to Gulf Blvd	0.67	0.67	0.69	0.70	0.03	4.5%
Roosevelt Blvd / E Bay / W Bay (Pinellas Co) from Gandy Blvd to Indian Rocks Rd	0.66	0.71	0.68	0.69	0.03	4.5%
Roosevelt Boulevard Ext (Pinellas Co) from 49th St Bridge to CR 296 / 118th Ave N	0.72	0.66	0.64	0.72	-	0.0%
Dale Mabry Hwy / US 92 (Hillsborough Co) from Intrabay Blvd to Kennedy Blvd	0.73	0.85	0.85	0.84	0.11	15.1%
Dale Mabry Hwy / US 92 (Hillsborough Co) from Kennedy Blvd to Hillsborough Ave	0.69	0.82	0.80	0.78	0.09	13.0%
Dale Mabry Hwy (Hillsborough Co) from Hillsborough Ave to US 41	0.75	0.83	0.81	0.74	(0.01)	-1.3%
US 301 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Road	0.42	0.68	0.65	0.62	0.20	47.6%
US 301 (Hillsborough Co) from Big Bend Road to Leroy Selmon Crosstown Expwy / SR 618	0.82	0.97	0.95	0.90	0.08	9.8%
US 301 (Hillsborough Co) from Leroy Selmon Crosstown Expwy / SR 618 to I-4	0.62	0.72	0.65	0.66	0.04	6.5%
US 301 (Hillsborough Co) from I-4 to Fowler Ave	0.64	0.85	0.72	0.72	0.08	12.5%
US 301 (Hillsborough Co) from Fowler Ave to Hillsborough / Pasco Co Line	0.73	0.88	0.81	0.62	(0.11)	-15.1%
US 301 (Pasco Co) from Hillsborough / Pasco Co Line to Pasco / Hernando Co Line	0.40	0.60	0.51	0.43	0.03	7.5%

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**Table 6f: Highway Truck Daily Total Hours of Delay by Major Corridor**

Corridor	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
I-4 (Hillsborough Co) from I-275 to I-75	178	1,333	887	741	563	316.3%
I-4 (Hillsborough Co) from I-75 to Hillsborough / Polk County Line	1,117	12,989	6,305	5,672	4,555	407.8%
I-275 (Pinellas Co) from Sunshine Skyway Bridge to Pinellas / Hillsborough Co Line	579	1,993	1,509	1,430	851	147.0%
I-275 (Hillsborough Co) from Pinellas / Hillsborough Co Line to I-4	487	1,554	1,144	761	274	56.3%
I-275 (Hillsborough Co) from I-4 to Bearss	152	731	504	453	301	198.0%
I-275 (Hillsborough Co) from Bearss to I-75 N	10	297	255	239	229	2290.0%
I-75 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Rd	116	1,680	872	871	755	650.9%
I-75 (Hillsborough Co) from Big Bend Rd to Leroy Selmon Crosstown Expwy / SR 618	166	3,209	1,989	1,597	1,431	862.0%
I-75 (Hillsborough Co) from Leroy Selmon Crosstown Expwy / SR 618 to I-4	90	550	677	338	248	275.6%
I-75 (Pasco Co) from I-275 to SR 54	235	428	480	376	141	60.0%
I-75 (Hillsborough Co) from I-4 to I-275	166	1,541	1,544	741	575	346.4%
I-75 (Pasco / Hernando Co) from SR 54 to Pasco / Hernando Co Line	238	2,801	1,911	1,965	1,727	725.6%
I-75 (Hernando Co) from Pasco / Hernando Co Line to Hernando / Sumter Co Line	33	224	206	215	182	551.5%
SR 54 (Pasco Co) from US 19 to Little Rd	2	11	11	10	8	400.0%
SR 54 (Pasco Co) from Little Rd to US 41	67	483	294	219	152	226.9%
SR 54 and SR 56 (Pasco Co) from US 41 to Bruce B Downs Blvd / CR 581	136	1,196	602	479	343	252.2%
SR 54 (Pasco Co) from Bruce B Downs Blvd / CR 581 to US 301	26	124	22	26	-	0.0%
Leroy Selmon Crosstown Expwy (Hillsborough Co) from Willow Ave to I-75	413	741	667	653	240	58.1%
Veteran Expwy (Hillsborough Co) from Hillsborough Ave to Dale Mabry Hwy N	270	257	322	300	30	11.1%
US 41 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Rd	2	113	54	36	34	1700.0%
US 41 (Hillsborough Co) from Big Bend Rd to Selmon Crosstown Expwy	66	433	376	210	144	218.2%
US 41 (Hillsborough Co) from Busch Blvd to Bearss	1	18	13	8	7	700.0%
US 41 (Hillsborough Co) from Bearss to Hillsborough / Pasco Co Line	13	55	49	39	26	200.0%
US 41 (Pasco Co) from Hillsborough / Pasco Co Line - SR 54 to SR 52	40	378	76	24	(16)	-40.0%
US 41 (Pasco Co) from SR 52 to CR 578 / County Line Rd - Pasco / Hernando Co Line	-	-	4	2	2	#DIV/0!
US 41 (Hernando Co) from CR 578 / County Line Rd - Pasco / Hernando Co Line to SR 50 / Cortez Blvd	-	3	2	2	2	#DIV/0!
US 41 (Hernando Co) from SR 50 / Cortez Blvd to Hernando / Citrus County Line	68	242	221	58	(10)	-14.7%
US 41 (Citrus Co) from Hernando / Citrus Co Line to Citrus / Marion Co Line	58	91	90	45	(13)	-22.4%

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**Table 6f: Highway Truck Daily Total Hours of Delay by Major Corridor (cont.)**

Corridor	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
SR 60 / Gulf to Bay Blvd (Pinellas Co) from Causeway Bridge to Pinellas / Hillsborough Co Line	105	162	184	175	70	66.7%
SR 60 / Courtney Campbell Causeway (Hillsborough Co from Pinellas / Hillsborough Co Line to Eisenhower Blvd	7	9	10	9	2	28.6%
SR 60 / Kennedy Blvd / Memorial Hwy (Hillsborough C from Westshore Blvd to Courtney Campbell Causeway	49	137	42	50	1	2.0%
SR 60 / Adamo Dr (Hillsborough Co) from Channelside Dr to 50th St	4	39	27	23	19	475.0%
SR 60 / Adamo Dr (Hillsborough Co) from 50th St to US 301	27	118	83	77	50	185.2%
SR 60 / Adamo Dr (Hillsborough Co) from US 301 to I-75	23	47	38	34	11	47.8%
SR 60 (Hillsborough Co) from I-75 to Turkey Creek Rd	173	1,024	590	466	293	169.4%
US 19 (Pinellas Co) from I-275 to Gandy Blvd	42	86	88	72	30	71.4%
US 19 (Pinellas Co) from Gandy Blvd to Druid Rd	191	137	130	104	(87)	-45.5%
US 19 (Pinellas Co) from Druid Rd to US 19 Alt	130	292	226	222	92	70.8%
US 19 (Pasco Co) from US 19 Alt to Hudson Ave	66	198	170	206	140	212.1%
US 19 (Pasco Co) from Hudson Ave to Pasco / Hernando Co Line	10	34	29	7	(3)	-30.0%
US 19 (Citrus Co) from Hernando / Citrus County Line to Citrus / Levy Co Line	21	18	16	3	(18)	-85.7%
Ulmerton Rd (Pinellas Co) from I-275 to Gulf Blvd	188	183	152	151	(37)	-19.7%
Roosevelt Blvd / E Bay / W Bay (Pinellas Co) from Gandy Blvd to Indian Rocks Rd	65	111	87	73	8	12.3%
Roosevelt Boulevard Ext (Pinellas Co) from 49th St Bridge to CR 296 / 118th Ave N	37	12	8	17	(20)	-54.1%
Dale Mabry Hwy / US 92 (Hillsborough Co) from Intrabay Blvd to Kennedy Blvd	41	167	167	161	120	292.7%
Dale Mabry Hwy / US 92 (Hillsborough Co) from Kennedy Blvd to Hillsborough Ave	35	102	90	81	46	131.4%
Dale Mabry Hwy (Hillsborough Co) from Hillsborough Ave to US 41	77	147	119	98	21	27.3%
US 301 (Hillsborough Co) from Manatee / Hillsborough Co Line to Big Bend Road	7	41	29	15	8	114.3%
US 301 (Hillsborough Co) from Big Bend Road to Leroy Selmon Crosstown Expwy / SR 618	50	368	282	280	230	460.0%
US 301 (Hillsborough Co) from Leroy Selmon Crosstown Expwy / SR 618 to I-4	22	89	58	46	24	109.1%
US 301 (Hillsborough Co) from I-4 to Fowler Ave	7	100	49	46	39	557.1%
US 301 (Hillsborough Co) from Fowler Ave to Hillsborough / Pasco Co Line	34	148	96	44	10	29.4%
US 301 (Pasco Co) from Hillsborough / Pasco Co Line to Pasco / Hernando Co Line	38	159	10	12	(26)	-68.4%

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**Table 7a: Peak Transit Route Miles by Agency**

Agency / County		2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
HART	Hillsborough	1,212	1,212	1,495	3,404	2,192	180.9%
PSTA	Pinellas	1,341	1,341	1,364	1,715	374	27.9%
PCPT	Pasco	383	434	733	1,427	1,044	272.6%
<b>Combined TMA</b>		<b>2,935</b>	<b>2,987</b>	<b>3,592</b>	<b>6,546</b>	<b>3,611</b>	<b>123.0%</b>
TheBUS	Hernando	96	96	96	328	232	241.7%
Citrus Transit	Citrus	133	133	133	359	226	169.9%
TBARTA	Regional	0	0	440	441	441	100.0%
<b>District 7 Total</b>		<b>3,164</b>	<b>3,215</b>	<b>4,261</b>	<b>7,675</b>	<b>4,511</b>	<b>142.6%</b>

**Table 7b: Off-Peak Transit Route Miles by Agency**

Agency / County		2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
HART	Hillsborough	934	933	1,238	2,952	2,018	216.1%
PSTA	Pinellas	1,305	1,305	1,328	1,737	432	33.1%
PCPT	Pasco	383	434	733	1,427	1,044	272.6%
<b>Combined TMA</b>		<b>2,621</b>	<b>2,672</b>	<b>3,299</b>	<b>6,116</b>	<b>3,495</b>	<b>133.3%</b>
TheBUS	Hernando	96	96	96	328	232	241.7%
Citrus Transit	Citrus	133	133	133	334	201	151.1%
TBARTA	Regional	0	0	440	441	441	100.0%
<b>District 7 Total</b>		<b>2,849</b>	<b>2,901</b>	<b>3,968</b>	<b>7,219</b>	<b>4,370</b>	<b>153.4%</b>

**Table 7c: Peak Transit Ridership by Agency**

Agency / County		2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
HART	Hillsborough	27,360	38,900	81,694	132,228	104,868	383.3%
PSTA	Pinellas	18,775	19,907	21,073	31,930	13,155	70.1%
PCPT	Pasco	1,478	1,780	4,463	7,847	6,369	430.9%
<b>Combined TMA</b>		<b>47,613</b>	<b>60,587</b>	<b>107,230</b>	<b>172,005</b>	<b>124,392</b>	<b>261.3%</b>
TheBUS	Hernando	280	285	284	1,766	1,486	530.7%
Citrus Transit	Citrus	10	12	20	1,107	1,097	10970.0%
TBARTA	Regional	0	0	237	565	565	100.0%
<b>District 7 Total</b>		<b>47,903</b>	<b>60,884</b>	<b>107,771</b>	<b>175,443</b>	<b>127,540</b>	<b>266.2%</b>

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**Table 7d: Off-Peak Transit Ridership by Agency**

Agency / County		2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
HART	Hillsborough	23,995	39,475	86,813	132,725	108,730	453.1%
PSTA	Pinellas	28,153	29,613	31,674	55,293	27,140	96.4%
PCPT	Pasco	1,822	2,134	5,200	8,659	6,837	375.2%
<b>Combined TMA</b>		<b>53,970</b>	<b>71,222</b>	<b>123,687</b>	<b>196,677</b>	<b>142,707</b>	<b>264.4%</b>
TheBUS	Hernando	342	343	345	1,939	1,597	467.0%
Citrus Transit	Citrus	16	16	22	910	894	5587.5%
TBARTA	Regional	0	0	233	620	620	100.0%
<b>District 7 Total</b>		<b>54,328</b>	<b>71,581</b>	<b>124,287</b>	<b>200,146</b>	<b>145,818</b>	<b>268.4%</b>

**Table 7e: Daily Transit Ridership by Agency**

Agency / County		2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
HART	Hillsborough	51,355	78,375	168,507	264,953	213,598	415.9%
PSTA	Pinellas	46,928	49,520	52,747	87,223	40,295	85.9%
PCPT	Pasco	3,300	3,914	9,663	16,506	13,206	400.2%
<b>Combined TMA</b>		<b>101,583</b>	<b>131,809</b>	<b>230,917</b>	<b>368,682</b>	<b>267,099</b>	<b>262.9%</b>
TheBUS	Hernando	622	628	629	3,705	3,083	495.7%
Citrus Transit	Citrus	26	28	42	2,017	1,991	7657.7%
TBARTA	Regional	0	0	470	1,185	1,185	100.0%
<b>District 7 Total</b>		<b>102,231</b>	<b>132,465</b>	<b>232,058</b>	<b>375,589</b>	<b>273,358</b>	<b>267.4%</b>

**Table 7f: Daily Transit Ridership by Route Mile by Agency**

Agency / County		2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
HART	Hillsborough	42.4	64.7	112.7	77.8	35.4	83.5%
PSTA	Pinellas	35.0	36.9	38.7	50.8	15.8	45.1%
PCPT	Pasco	8.6	9.0	13.2	11.6	3.0	34.9%
<b>Combined TMA</b>		<b>34.6</b>	<b>44.1</b>	<b>64.3</b>	<b>56.3</b>	<b>21.7</b>	<b>62.7%</b>
TheBUS	Hernando	6.5	6.6	6.6	11.3	4.8	73.8%
Citrus Transit	Citrus	0.2	0.2	0.3	5.6	5.4	2700.0%
TBARTA	Regional	-	-	1.1	2.7	2.7	100.0%
<b>District 7 Total</b>		<b>32.3</b>	<b>41.2</b>	<b>54.5</b>	<b>48.9</b>	<b>16.6</b>	<b>51.4%</b>

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**Table 7g: Peak Transit Ridership by Agency and Mode**

Agency / County		Mode	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
HART Hillsborough		HART local buses	25,348	35,756	55,792	84,148	58,800	232.0%
		HART express bus	661	450	1,101	979	318	48.1%
		HART premium bus / in-street BRT	1,338	2,685	20,632	24,909	23,571	1761.7%
		HART streetcar & AGT	0	0	0	237	237	
		HART light rail	0	0	3,980	18,706	18,706	
		HART commuter rail	0	0	0	2,028	2,028	
		HART project circulator	13	9	0	861	848	6523.1%
		HART project fixed-guideway mode	0	0	189	360	360	
PSTA Pinellas		PSTA local bus	18,126	19,085	20,025	23,321	5,195	28.7%
		PSTA express bus	649	822	482	798	149	23.0%
		PSTA premium bus / in-street BRT	0	0	566	7,403	7,403	
		PSTA light rail	0	0	0	0	0	
		PSTA commuter rail	0	0	0	0	0	
		PSTA project circulator	0	0	0	408	408	
		PSTA project fixed-guideway mode	0	0	0	0	0	
PCPT Pasco		HART premium bus / in-street BRT	0	0	0	0	0	
		PCTC local bus	1,478	1,780	4,343	6,261	4,783	323.6%
		PCTC express bus	0	0	120	84	84	
<b>Combined TMA</b>		<b>Local Bus</b>	44,952	56,621	80,160	113,730	68,778	153.0%
		<b>Express Bus</b>	1,310	1,272	1,703	1,861	551	42.1%
		<b>Premium Bus / In-Street BRT</b>	1,338	2,685	21,198	32,312	30,974	2314.9%
		<b>Streetcar &amp; AGT</b>	0	0	0	237	237	
		<b>Light Rail</b>	0	0	3,980	18,706	18,706	
		<b>Commuter Rail</b>	0	0	0	2,028	2,028	
		<b>Project Circulator</b>	13	9	0	1,269	1,256	9661.5%
		<b>Project Fixed-Guideway Mode</b>	0	0	189	360	360	
TheBUS Hernando		TBUS local bus	280	285	284	1,738	1,458	520.7%
		TBUS express bus	0	0	0	28	28	
Citrus Transit Citrus		TBUS local bus	10	12	20	1,107	1,097	10970.0%
		TBUS express bus	0	0	0	0	0	
TBARTA Regional		REGL express bus	0	0	0	0	0	
		REGL light rail	0	0	0	0	0	
		REGL commuter rail	0	0	0	0	0	
		REGL project circulator	0	0	0	0	0	
		REGL project mode rail	0	0	0	0	0	
<b>District 7 Total</b>		<b>Local Bus</b>	45,232	56,906	80,444	115,468	70,236	155.3%
		<b>Express Bus</b>	1,310	1,272	1,703	1,889	579	44.2%
		<b>Premium Bus / In-Street BRT</b>	1,338	2,685	21,198	32,312	30,974	2314.9%
		<b>Streetcar &amp; AGT</b>	0	0	0	237	237	
		<b>Light Rail</b>	0	0	3,980	18,706	18,706	
		<b>Commuter Rail</b>	0	0	0	2,028	2,028	
		<b>Project Circulator</b>	13	9	0	1,269	1,256	9661.5%
		<b>Project Fixed-Guideway Mode</b>	0	0	189	360	360	

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**Table 7h: Off-Peak Transit Ridership by Agency and Mode**

Agency / County		Mode	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
HART	Hillsborough	HART local buses	22,323	34,907	48,483	76,520	54,197	242.8%
		HART express bus	5	6	56	29	24	480.0%
		HART premium bus / in-street BRT	1,540	4,551	33,922	39,178	37,638	2444.0%
		HART streetcar & AGT	127	11	146	293	166	130.7%
		HART light rail	0	0	4,126	15,059	15,059	
		HART commuter rail	0	0	0	479	479	
		HART project circulator	0	0	0	1,154	1,154	
		HART project fixed-guideway mode	0	0	80	13	13	
PSTA	Pinellas	PSTA local bus	28,103	29,545	29,826	37,462	9,359	33.3%
		PSTA express bus	50	68	8	531	481	962.0%
		PSTA premium bus / in-street BRT	0	0	1,840	17,176	17,176	
		PSTA light rail	0	0	0	0	0	
		PSTA commuter rail	0	0	0	0	0	
		PSTA project circulator	0	0	0	124	124	
		PSTA project fixed-guideway mode	0	0	0	0	0	
PCPT	Pasco	HART premium bus / in-street BRT	0	0	0	0	0	
		PCTC local bus	1,822	2,134	5,003	6,800	4,978	273.2%
		PCTC express bus	0	0	197	99	99	
<b>Combined TMA</b>		<b>Local Bus</b>	52,248	66,586	83,312	120,782	68,534	131.2%
		<b>Express Bus</b>	55	74	261	659	604	1098.2%
		<b>Premium Bus / In-Street BRT</b>	1,540	4,551	35,762	56,354	54,814	3559.4%
		<b>Streetcar &amp; AGT</b>	127	11	146	293	166	130.7%
		<b>Light Rail</b>	0	0	4,126	15,059	15,059	
		<b>Commuter Rail</b>	0	0	0	479	479	
		<b>Project Circulator</b>	0	0	0	1,278	1,278	
		<b>Project Fixed-Guideway Mode</b>	0	0	80	13	13	
TheBUS	Hernando	TBUS local bus	342	343	345	1,918	1,576	460.8%
		TBUS express bus	0	0	0	21	21	
Citrus Transit	Citrus	TBUS local bus	16	16	22	910	894	5587.5%
		TBUS express bus	0	0	0	0	0	
TBARTA	Regional	REGL express bus	0	0	0	0	0	
		REGL light rail	0	0	0	0	0	
		REGL commuter rail	0	0	0	0	0	
		REGL project circulator	0	0	0	0	0	
		REGL project mode rail	0	0	0	0	0	
<b>District 7 Total</b>		<b>Local Bus</b>	52,590	66,929	83,657	122,700	70,110	133.3%
		<b>Express Bus</b>	55	74	261	680	625	1136.4%
		<b>Premium Bus / In-Street BRT</b>	1,540	4,551	35,762	56,354	54,814	3559.4%
		<b>Streetcar &amp; AGT</b>	127	11	146	293	166	130.7%
		<b>Light Rail</b>	0	0	4,126	15,059	15,059	
		<b>Commuter Rail</b>	0	0	0	479	479	
		<b>Project Circulator</b>	0	0	0	1,278	1,278	
		<b>Project Fixed-Guideway Mode</b>	0	0	80	13	13	



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**Table 7i: Daily Transit Ridership by Agency and Mode**

Agency / County		Mode	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
HART	Hillsborough	HART local buses	47,671	70,663	104,275	160,668	112,997	237.0%
		HART express bus	666	456	1,157	1,008	342	51.4%
		HART premium bus / in-street BRT	2,878	7,236	54,554	64,087	61,209	2126.8%
		HART streetcar & AGT	127	11	146	530	403	317.3%
		HART light rail	0	0	8,106	33,765	33,765	
		HART commuter rail	0	0	0	2,507	2,507	
		HART project circulator	13	9	0	2,015	2,002	15400.0%
		HART project fixed-guideway mode	0	0	269	373	373	
PSTA	Pinellas	PSTA local bus	46,229	48,630	49,851	60,783	14,554	31.5%
		PSTA express bus	699	890	490	1,329	630	90.1%
		PSTA premium bus / in-street BRT	0	0	2,406	24,579	24,579	
		PSTA light rail	0	0	0	0	0	
		PSTA commuter rail	0	0	0	0	0	
		PSTA project circulator	0	0	0	532	532	
		PSTA project fixed-guideway mode	0	0	0	0	0	
PCPT	Pasco	HART premium bus / in-street BRT	0	0	0	0	0	
		PCTC local bus	3,300	3,914	9,346	13,061	9,761	295.8%
		PCTC express bus	0	0	317	183	183	
<b>Combined TMA</b>		<b>Local Bus</b>	97,200	123,207	163,472	234,512	137,312	141.3%
		<b>Express Bus</b>	1,365	1,346	1,964	2,520	1,155	84.6%
		<b>Premium Bus / In-Street BRT</b>	2,878	7,236	56,960	88,666	85,788	2980.8%
		<b>Streetcar &amp; AGT</b>	127	11	146	530	403	317.3%
		<b>Light Rail</b>	0	0	8,106	33,765	33,765	
		<b>Commuter Rail</b>	0	0	0	2,507	2,507	
		<b>Project Circulator</b>	13	9	0	2,547	2,534	19492.3%
		<b>Project Fixed-Guideway Mode</b>	0	0	269	373	373	
TheBUS	Hernando	TBUS local bus	622	628	629	3,656	3,034	487.8%
		TBUS express bus	0	0	0	49	49	
Citrus Transit	Citrus	TBUS local bus	26	28	42	2,017	1,991	7657.7%
		TBUS express bus	0	0	0	0	0	
TBARTA	Regional	REGL express bus	0	0	0	0	0	
		REGL light rail	0	0	0	0	0	
		REGL commuter rail	0	0	0	0	0	
		REGL project circulator	0	0	0	0	0	
		REGL project mode rail	0	0	0	0	0	
<b>District 7 Total</b>		<b>Local Bus</b>	97,822	123,835	164,101	238,168	140,346	143.5%
		<b>Express Bus</b>	1,365	1,346	1,964	2,569	1,204	88.2%
		<b>Premium Bus / In-Street BRT</b>	2,878	7,236	56,960	88,666	85,788	2980.8%
		<b>Streetcar &amp; AGT</b>	127	11	146	530	403	317.3%
		<b>Light Rail</b>	0	0	8,106	33,765	33,765	
		<b>Commuter Rail</b>	0	0	0	2,507	2,507	
		<b>Project Circulator</b>	13	9	0	2,547	2,534	19492.3%
		<b>Project Fixed-Guideway Mode</b>	0	0	269	373	373	

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**Table 9a: Highway Lane Miles within EJ Areas**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	787	795	880	971	184	23.4%
Pinellas	1,842	1,896	1,914	2,126	284	15.4%
Pasco	294	295	297	324	30	10.2%
<b>TMA</b>	<b>2,923</b>	<b>2,986</b>	<b>3,091</b>	<b>3,421</b>	<b>498</b>	<b>17.0%</b>
Hernando	99	97	102	119	20	20.2%
Citrus	357	370	370	398	41	11.5%
<b>District 7 Total</b>	<b>3,380</b>	<b>3,453</b>	<b>3,562</b>	<b>3,938</b>	<b>558</b>	<b>16.5%</b>
Manatee Segment	-	-	-	-	-	
<b>Regional Total</b>	<b>3,380</b>	<b>3,453</b>	<b>3,562</b>	<b>3,938</b>	<b>558</b>	<b>16.5%</b>

**Table 9b: Bus Route Miles within EJ Areas**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	341	341	318	503	162	47.5%
Pinellas	1,285	1,285	1,287	1,105	(180)	-14.0%
Pasco	58	75	88	141	83	143.1%
<b>TMA</b>	<b>1,684</b>	<b>1,701</b>	<b>1,693</b>	<b>1,749</b>	<b>65</b>	<b>3.9%</b>
Hernando	8	8	8	25	17	212.5%
Citrus	41	41	41	117	76	185.4%
<b>District 7 Total</b>	<b>1,732</b>	<b>1,750</b>	<b>1,742</b>	<b>1,890</b>	<b>158</b>	<b>9.1%</b>
Manatee Segment	-	-	-	-	-	
<b>Regional Total</b>	<b>1,732</b>	<b>1,750</b>	<b>1,742</b>	<b>1,890</b>	<b>158</b>	<b>9.1%</b>

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**Table 9c: EJ Population within 1/4 mile of Bus Routes with Headway <= 30 Minutes**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	96,115	152,201	148,603	172,489	76,375	79.5%
Pinellas	207,658	250,263	250,443	317,149	109,491	52.7%
Pasco	1,286	4,176	15,917	18,721	17,435	1355.8%
<b>TMA</b>	<b>305,059</b>	<b>406,640</b>	<b>414,963</b>	<b>508,359</b>	<b>203,300</b>	<b>66.6%</b>
Hernando	-	-	-	3,865	3,865	
Citrus	-	-	-	4,620	4,620	
<b>District 7 Total</b>	<b>305,059</b>	<b>406,640</b>	<b>414,963</b>	<b>516,845</b>	<b>211,786</b>	<b>69.4%</b>
Manatee Segment	-	-	-	-	-	
<b>Regional Total</b>	<b>305,059</b>	<b>406,640</b>	<b>414,963</b>	<b>516,845</b>	<b>211,786</b>	<b>69.4%</b>

**Table 9c: Percent of EJ Pop within 1/4 mile of Bus Routes with Headway <= 30 Minutes**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	64%	66%	64%	75%	11.0%	17.2%
Pinellas	54%	57%	57%	72%	18.0%	33.3%
Pasco	4%	11%	42%	49%	45.0%	1125.0%
<b>TMA</b>	<b>54%</b>	<b>57%</b>	<b>58%</b>	<b>71%</b>	<b>17.0%</b>	<b>31.5%</b>
Hernando	0%	0%	0%	39%	39.0%	
Citrus	0%	0%	0%	14%	14.0%	
<b>District 7 Total</b>	<b>51%</b>	<b>54%</b>	<b>55%</b>	<b>68%</b>	<b>17.0%</b>	<b>33.3%</b>
Manatee Segment	0%	0%	0%	0%		
<b>Regional Total</b>	<b>51%</b>	<b>54%</b>	<b>55%</b>	<b>68%</b>	<b>17.0%</b>	<b>33.3%</b>

**Table 9c: EJ Population**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	150,279	231,237	231,237	231,237	80,958	53.9%
Pinellas	385,608	442,895	442,895	442,895	57,287	14.9%
Pasco	31,583	38,311	38,311	38,311	6,728	21.3%
<b>TMA</b>	<b>567,470</b>	<b>712,443</b>	<b>712,443</b>	<b>712,443</b>	<b>144,973</b>	<b>25.5%</b>
Hernando	6,606	10,014	10,014	10,014	3,408	51.6%
Citrus	26,654	33,652	33,652	33,652	6,998	26.3%
<b>District 7 Total</b>	<b>600,730</b>	<b>756,109</b>	<b>756,109</b>	<b>756,109</b>	<b>155,379</b>	<b>25.9%</b>
Manatee Segment	-	-	-	-	-	
<b>Regional Total</b>	<b>600,730</b>	<b>756,109</b>	<b>756,109</b>	<b>756,109</b>	<b>155,379</b>	<b>25.9%</b>

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**Table 9d: EJ Area Trips by Purpose (Origin Trip Ends)**

County	Purpose	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	HBW	95,967.9	142,770.7	142,774.6	142,775.7	46,807.8	48.8%
Pinellas		283,927.8	328,120.0	328,122.8	328,124.7	44,196.9	15.6%
Pasco		18,895.6	22,681.4	22,683.7	22,684.4	3,788.8	20.1%
<b>TMA</b>		<b>398,791.3</b>	<b>493,572.0</b>	<b>493,581.1</b>	<b>493,584.8</b>	<b>94,793.5</b>	<b>23.8%</b>
Hernando		3,610.6	5,452.7	5,453.2	5,452.8	1,842.2	51.0%
Citrus		13,670.0	17,074.5	17,073.8	17,071.7	3,401.7	24.9%
<b>District 7 Total</b>		<b>416,072.0</b>	<b>516,099.3</b>	<b>516,108.2</b>	<b>516,109.3</b>	<b>100,037.3</b>	<b>24.0%</b>
Manatee Segment		-	-	-	-	-	-
<b>Regional Total</b>		<b>416,072.0</b>	<b>516,099.3</b>	<b>516,108.2</b>	<b>516,109.3</b>	<b>100,037.3</b>	<b>24.0%</b>
Hillsborough		HBO	297,324.7	454,513.5	454,518.7	454,519.1	157,194.4
Pinellas	945,829.6		1,080,754.3	1,080,753.4	1,080,756.9	134,927.3	14.3%
Pasco	69,516.1		83,099.4	83,099.3	83,101.1	13,585.0	19.5%
<b>TMA</b>	<b>1,312,670.3</b>		<b>1,618,367.2</b>	<b>1,618,371.4</b>	<b>1,618,377.1</b>	<b>305,706.8</b>	<b>23.3%</b>
Hernando	14,903.5		21,641.2	21,641.4	21,641.4	6,737.9	45.2%
Citrus	69,214.3		85,725.0	85,725.9	85,726.6	16,512.3	23.9%
<b>District 7 Total</b>	<b>1,396,788.2</b>		<b>1,725,733.4</b>	<b>1,725,738.8</b>	<b>1,725,745.1</b>	<b>328,956.9</b>	<b>23.6%</b>
Manatee Segment	-		-	-	-	-	-
<b>Regional Total</b>	<b>1,396,788.2</b>		<b>1,725,733.4</b>	<b>1,725,738.8</b>	<b>1,725,745.1</b>	<b>328,956.9</b>	<b>23.6%</b>
Hillsborough	NHB		170,153.9	277,262.1	277,265.5	277,266.3	107,112.4
Pinellas		341,273.4	382,797.9	382,801.3	382,797.6	41,524.2	12.2%
Pasco		13,697.7	18,045.7	18,045.6	18,045.1	4,347.4	31.7%
<b>TMA</b>		<b>525,125.0</b>	<b>678,105.6</b>	<b>678,112.5</b>	<b>678,109.0</b>	<b>152,984.0</b>	<b>29.1%</b>
Hernando		10,655.8	12,254.9	12,254.6	12,254.6	1,599	15.0%
Citrus		28,810.1	35,860.4	35,860.3	35,860.3	7,050	24.5%
<b>District 7 Total</b>		<b>564,590.9</b>	<b>726,220.9</b>	<b>726,227.3</b>	<b>726,223.9</b>	<b>161,633.0</b>	<b>28.6%</b>
Manatee Segment		-	-	-	-	-	-
<b>Regional Total</b>		<b>564,590.9</b>	<b>726,220.9</b>	<b>726,227.3</b>	<b>726,223.9</b>	<b>161,633.0</b>	<b>28.6%</b>
Hillsborough		TOTAL	563,446.5	874,546.3	874,558.8	874,561.1	311,114.6
Pinellas	1,571,030.7		1,791,672.1	1,791,677.6	1,791,679.2	220,648.5	14.0%
Pasco	102,109.4		123,826.4	123,828.6	123,830.6	21,721.2	21.3%
<b>TMA</b>	<b>2,236,586.6</b>		<b>2,790,044.9</b>	<b>2,790,065.0</b>	<b>2,790,070.9</b>	<b>553,484.3</b>	<b>24.7%</b>
Hernando	29,170.0		39,348.7	39,349.3	39,348.8	10,179	34.9%
Citrus	111,694.5		138,660.0	138,660.0	138,658.6	26,964	24.1%
<b>District 7 Total</b>	<b>2,377,451.1</b>		<b>2,968,053.6</b>	<b>2,968,074.3</b>	<b>2,968,078.3</b>	<b>590,627.2</b>	<b>24.8%</b>
Manatee Segment	-		-	-	-	-	-
<b>Regional Total</b>	<b>2,377,451.1</b>		<b>2,968,053.6</b>	<b>2,968,074.3</b>	<b>2,968,078.3</b>	<b>590,627.2</b>	<b>24.8%</b>

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**Table 9e: Average EJ Area Trip Length in Minutes by Purpose (Origin Trip Ends)**

County	Purpose	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	HBW	13.8	13.0	13.3	13.3	(0.5)	-3.6%
Pinellas		13.7	13.8	14.0	14.0	0.3	2.2%
Pasco		18.5	19.8	20.6	20.7	2.2	11.9%
<b>TMA</b>		<b>13.9</b>	<b>13.9</b>	<b>14.1</b>	<b>14.1</b>	<b>0.2</b>	<b>1.4%</b>
Hernando		21.5	20.0	19.9	20.2	(1.3)	-6.0%
Citrus		17.4	16.8	16.9	17.0	(0.4)	-2.3%
<b>District 7 Total</b>		<b>14.1</b>	<b>14.0</b>	<b>14.2</b>	<b>14.3</b>	<b>0.2</b>	<b>1.4%</b>
Manatee Segment		-	-	-	-	-	
<b>Regional Total</b>		<b>14.1</b>	<b>14.0</b>	<b>14.2</b>	<b>14.3</b>	<b>0.2</b>	<b>1.4%</b>
Hillsborough		HBO	9.5	9.2	9.3	9.2	(0.3)
Pinellas	9.2		9.5	9.4	9.4	0.2	2.2%
Pasco	12.6		13.6	13.6	13.5	0.9	7.1%
<b>TMA</b>	<b>9.4</b>		<b>9.6</b>	<b>9.6</b>	<b>9.6</b>	<b>0.2</b>	<b>2.1%</b>
Hernando	14.4		11.9	11.7	12.0	(2.4)	-16.7%
Citrus	17.6		16.9	16.9	16.9	(0.7)	-4.0%
<b>District 7 Total</b>	<b>9.9</b>		<b>10.0</b>	<b>10.0</b>	<b>9.9</b>	<b>-</b>	<b>0.0%</b>
Manatee Segment	-		-	-	-	-	
<b>Regional Total</b>	<b>9.9</b>		<b>10.0</b>	<b>10.0</b>	<b>9.9</b>	<b>-</b>	<b>0.0%</b>
Hillsborough	NHB		10.5	10.2	10.3	10.4	(0.1)
Pinellas		10.7	10.7	10.8	10.8	0.1	0.9%
Pasco		10.2	10.9	11.1	11.1	0.9	8.8%
<b>TMA</b>		<b>10.6</b>	<b>10.5</b>	<b>10.6</b>	<b>10.6</b>	<b>-</b>	<b>0.0%</b>
Hernando		9.6	10.3	10.3	10.8	1	12.5%
Citrus		10.2	10.8	10.8	10.9	1	6.9%
<b>District 7 Total</b>		<b>10.6</b>	<b>10.5</b>	<b>10.6</b>	<b>10.6</b>	<b>-</b>	<b>0.0%</b>
Manatee Segment		-	-	-	-	-	
<b>Regional Total</b>		<b>10.6</b>	<b>10.5</b>	<b>10.6</b>	<b>10.6</b>	<b>-</b>	<b>0.0%</b>
Hillsborough		TOTAL	10.5	10.1	10.3	10.3	(0.2)
Pinellas	10.4		10.5	10.5	10.5	0.1	1.0%
Pasco	13.4		14.3	14.5	14.5	1.1	8.2%
<b>TMA</b>	<b>10.5</b>		<b>10.6</b>	<b>10.6</b>	<b>10.6</b>	<b>0.1</b>	<b>1.0%</b>
Hernando	13.5		12.5	12.4	12.7	(1)	-5.9%
Citrus	15.7		15.3	15.3	15.3	(0)	-2.5%
<b>District 7 Total</b>	<b>10.8</b>		<b>10.8</b>	<b>10.9</b>	<b>10.9</b>	<b>0.1</b>	<b>0.9%</b>
Manatee Segment	-		-	-	-	-	
<b>Regional Total</b>	<b>10.8</b>		<b>10.8</b>	<b>10.9</b>	<b>10.9</b>	<b>0.1</b>	<b>0.9%</b>

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**Table 9e: Average EJ Area Trip Length in Miles by Purpose (Origin Trip Ends)**

County	Purpose	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	HBW	8.1	7.7	7.9	7.9	(0.2)	-2.5%
Pinellas		7.9	8.1	8.2	8.2	0.3	3.8%
Pasco		10.9	12.3	12.9	13.1	2.2	20.2%
<b>TMA</b>		<b>8.1</b>	<b>8.2</b>	<b>8.3</b>	<b>8.4</b>	<b>0.3</b>	<b>3.7%</b>
Hernando		13.7	13.0	12.9	13.0	(0.7)	-5.1%
Citrus		8.7	9.0	9.0	9.1	0.4	4.6%
<b>District 7 Total</b>		<b>8.2</b>	<b>8.2</b>	<b>8.4</b>	<b>8.4</b>	<b>0.2</b>	<b>2.4%</b>
Manatee Segment		-	-	-	-	-	
<b>Regional Total</b>		<b>8.2</b>	<b>8.2</b>	<b>8.4</b>	<b>8.4</b>	<b>0.2</b>	<b>2.4%</b>
Hillsborough		HBO	5.2	5.0	5.1	5.1	(0.1)
Pinellas	5.0		5.2	5.2	5.2	0.2	4.0%
Pasco	7.0		7.9	8.0	8.0	1.0	14.3%
<b>TMA</b>	<b>5.1</b>		<b>5.3</b>	<b>5.3</b>	<b>5.3</b>	<b>0.2</b>	<b>3.9%</b>
Hernando	8.8		7.2	7.0	7.2	(1.6)	-18.2%
Citrus	9.6		10.0	9.9	9.8	0.2	2.1%
<b>District 7 Total</b>	<b>5.4</b>		<b>5.5</b>	<b>5.5</b>	<b>5.5</b>	<b>0.1</b>	<b>1.9%</b>
Manatee Segment	-		-	-	-	-	
<b>Regional Total</b>	<b>5.4</b>		<b>5.5</b>	<b>5.5</b>	<b>5.5</b>	<b>0.1</b>	<b>1.9%</b>
Hillsborough	NHB		5.8	5.5	5.6	5.7	(0.1)
Pinellas		5.7	5.7	5.8	5.8	0.1	1.8%
Pasco		5.1	5.8	5.9	6.0	0.9	17.6%
<b>TMA</b>		<b>5.7</b>	<b>5.6</b>	<b>5.7</b>	<b>5.8</b>	<b>0.1</b>	<b>1.8%</b>
Hernando		5.0	5.5	5.5	5.7	1	14.0%
Citrus		4.8	5.3	5.4	5.4	1	12.5%
<b>District 7 Total</b>		<b>5.7</b>	<b>5.6</b>	<b>5.7</b>	<b>5.8</b>	<b>0.1</b>	<b>1.8%</b>
Manatee Segment		-	-	-	-	-	
<b>Regional Total</b>		<b>5.7</b>	<b>5.6</b>	<b>5.7</b>	<b>5.8</b>	<b>0.1</b>	<b>1.8%</b>
Hillsborough		TOTAL	5.9	5.6	5.7	5.8	(0.1)
Pinellas	5.7		5.8	5.8	5.9	0.2	3.5%
Pasco	7.5		8.4	8.6	8.6	1.1	14.7%
<b>TMA</b>	<b>5.8</b>		<b>5.9</b>	<b>5.9</b>	<b>6.0</b>	<b>0.2</b>	<b>3.4%</b>
Hernando	8.0		7.5	7.4	7.5	(1)	-6.3%
Citrus	8.2		8.7	8.7	8.6	0	4.9%
<b>District 7 Total</b>	<b>5.9</b>		<b>6.0</b>	<b>6.1</b>	<b>6.1</b>	<b>0.2</b>	<b>3.4%</b>
Manatee Segment	-		-	-	-	-	
<b>Regional Total</b>	<b>5.9</b>		<b>6.0</b>	<b>6.1</b>	<b>6.1</b>	<b>0.2</b>	<b>3.4%</b>

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**Table 9f: Linked Transit Trips Originating in EJ Areas**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	10,944	18,101	30,133	38,245	27,301	249.5%
Pinellas	17,847	19,688	21,649	35,690	17,843	100.0%
Pasco	300	321	690	848	548	182.7%
<b>TMA</b>	<b>29,092</b>	<b>38,110</b>	<b>52,472</b>	<b>74,783</b>	<b>45,691</b>	<b>157.1%</b>
Hernando	16	17	21	144	128	800.0%
Citrus	8	9	10	468	460	5750.0%
<b>District 7 Total</b>	<b>29,116</b>	<b>38,137</b>	<b>52,503</b>	<b>75,395</b>	<b>46,279</b>	<b>158.9%</b>
Manatee Segment	-	-	-	-	-	
<b>Regional Total</b>	<b>29,116</b>	<b>38,137</b>	<b>52,503</b>	<b>75,395</b>	<b>46,279</b>	<b>158.9%</b>

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**Table 9g: Person Trips by Purpose (Origin Trip Ends)**

County	Purpose	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	HBW	941,501.4	1,400,129.6	1,400,191.2	1,400,209.5	458,708.1	48.7%
Pinellas		711,660.0	781,268.8	781,279.3	781,280.4	69,620.4	9.8%
Pasco		301,237.3	475,901.0	477,357.0	477,366.1	176,128.8	58.5%
<b>TMA</b>		<b>1,954,398.7</b>	<b>2,657,299.3</b>	<b>2,658,827.5</b>	<b>2,658,856.0</b>	<b>704,457.3</b>	<b>36.0%</b>
Hernando		103,005.4	149,772.3	150,234.0	150,242.3	47,236.9	45.9%
Citrus		75,607.6	99,584.5	99,583.5	99,581.2	23,973.6	31.7%
<b>District 7 Total</b>		<b>2,133,011.8</b>	<b>2,906,656.1</b>	<b>2,908,645.0</b>	<b>2,908,679.5</b>	<b>775,667.7</b>	<b>36.4%</b>
Manatee Segment		7,628.5	20,374.4	20,351.3	20,340.4	12,711.9	166.6%
<b>Regional Total</b>		<b>2,140,640.3</b>	<b>2,927,030.5</b>	<b>2,928,996.3</b>	<b>2,929,019.8</b>	<b>788,379.5</b>	<b>36.8%</b>
Hillsborough		HBO	2,946,399.6	4,379,653.4	4,381,083.5	4,381,102.8	1,434,703.2
Pinellas	2,612,885.7		2,838,566.1	2,838,563.1	2,838,569.1	225,683.4	8.6%
Pasco	1,153,923.1		1,802,415.0	1,807,238.9	1,807,245.2	653,322.1	56.6%
<b>TMA</b>	<b>6,713,208.5</b>		<b>9,020,634.5</b>	<b>9,026,885.5</b>	<b>9,026,917.1</b>	<b>2,313,708.6</b>	<b>34.5%</b>
Hernando	416,695.8		595,171.0	596,590.5	596,589.7	179,893.9	43.2%
Citrus	338,456.9		440,865.4	440,867.3	440,869.5	102,412.6	30.3%
<b>District 7 Total</b>	<b>7,468,361.2</b>		<b>10,056,670.8</b>	<b>10,064,343.3</b>	<b>10,064,376.3</b>	<b>2,596,015.1</b>	<b>34.8%</b>
Manatee Segment	36,366.4		78,287.9	78,255.3	78,239.4	41,873.0	115.1%
<b>Regional Total</b>	<b>7,504,727.6</b>		<b>10,134,958.8</b>	<b>10,142,598.6</b>	<b>10,142,615.7</b>	<b>2,637,888.1</b>	<b>35.1%</b>
Hillsborough	NHB		1,153,913.5	1,961,945.0	1,961,950.2	1,961,957.5	808,044.0
Pinellas		705,370.6	778,313.0	778,317.5	778,310.8	72,940.2	10.3%
Pasco		287,212.1	522,230.7	522,233.4	522,234.7	235,022.6	81.8%
<b>TMA</b>		<b>2,146,496.2</b>	<b>3,262,488.7</b>	<b>3,262,501.0</b>	<b>3,262,503.0</b>	<b>1,116,006.8</b>	<b>52.0%</b>
Hernando		106,162.9	161,030.0	162,672.2	162,673.5	56,511	53.2%
Citrus		90,824.7	114,016.0	114,015.0	114,015.1	23,190	25.5%
<b>District 7 Total</b>		<b>2,343,483.8</b>	<b>3,537,534.6</b>	<b>3,539,188.2</b>	<b>3,539,191.7</b>	<b>1,195,707.9</b>	<b>51.0%</b>
Manatee Segment		4,839.2	16,614.5	16,616.1	16,618.4	11,779.2	243.4%
<b>Regional Total</b>		<b>2,348,323.0</b>	<b>3,554,149.1</b>	<b>3,555,804.4</b>	<b>3,555,810.0</b>	<b>1,207,487.0</b>	<b>51.4%</b>
Hillsborough		TOTAL	5,041,814.6	7,741,728.0	7,743,224.9	7,743,269.8	2,701,455.2
Pinellas	4,029,916.3		4,398,147.9	4,398,159.9	4,398,160.3	368,244.0	9.1%
Pasco	1,742,372.5		2,800,546.6	2,806,829.2	2,806,846.0	1,064,473.5	61.1%
<b>TMA</b>	<b>10,814,103.4</b>		<b>14,940,422.5</b>	<b>14,948,214.0</b>	<b>14,948,276.1</b>	<b>4,134,172.7</b>	<b>38.2%</b>
Hernando	625,864.1		905,973.2	909,496.7	909,505.5	283,641	45.3%
Citrus	504,889.2		654,465.9	654,465.8	654,465.8	149,577	29.6%
<b>District 7 Total</b>	<b>11,944,856.8</b>		<b>16,500,861.6</b>	<b>16,512,176.5</b>	<b>16,512,247.4</b>	<b>4,567,390.6</b>	<b>38.2%</b>
Manatee Segment	48,834.1		115,276.8	115,222.7	115,198.1	66,364.0	135.9%
<b>Regional Total</b>	<b>11,993,690.8</b>		<b>16,616,138.4</b>	<b>16,627,399.2</b>	<b>16,627,445.5</b>	<b>4,633,754.7</b>	<b>38.6%</b>



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**Table 9h: Average Person Trip Length in Minutes by Purpose (Origin Trip Ends)**

County	Purpose	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	HBW	17.2	16.3	16.7	16.6	(0.6)	-3.5%
Pinellas		14.5	14.6	14.7	14.8	0.3	2.1%
Pasco		21.4	21.4	21.6	21.7	0.3	1.4%
<b>TMA</b>		<b>16.9</b>	<b>16.7</b>	<b>17.0</b>	<b>17.0</b>	<b>0.1</b>	<b>0.6%</b>
Hernando		20.5	20.9	21.0	21.3	0.8	3.9%
Citrus		17.4	16.6	16.6	16.7	(0.7)	-4.0%
<b>District 7 Total</b>		<b>17.1</b>	<b>16.9</b>	<b>17.2</b>	<b>17.2</b>	<b>0.1</b>	<b>0.6%</b>
Manatee Segment		19.8	20.8	20.8	20.2	0.4	2.0%
<b>Regional Total</b>		<b>17.1</b>	<b>16.9</b>	<b>17.2</b>	<b>17.2</b>	<b>0.1</b>	<b>0.6%</b>
Hillsborough		HBO	12.3	11.4	11.5	11.5	(0.8)
Pinellas	9.6		9.8	9.8	9.7	0.1	1.0%
Pasco	13.7		13.3	13.2	13.2	(0.5)	-3.6%
<b>TMA</b>	<b>11.5</b>		<b>11.2</b>	<b>11.3</b>	<b>11.3</b>	<b>(0.2)</b>	<b>-1.7%</b>
Hernando	14.9		14.8	14.7	14.8	(0.1)	-0.7%
Citrus	17.9		17.2	17.2	16.9	(1.0)	-5.6%
<b>District 7 Total</b>	<b>12.0</b>		<b>11.7</b>	<b>11.8</b>	<b>11.7</b>	<b>(0.3)</b>	<b>-2.5%</b>
Manatee Segment	20.3		18.4	18.4	18.1	(2.2)	-10.8%
<b>Regional Total</b>	<b>12.0</b>		<b>11.8</b>	<b>11.8</b>	<b>11.8</b>	<b>(0.2)</b>	<b>-1.7%</b>
Hillsborough	NHB		11.0	10.4	10.6	10.7	(0.3)
Pinellas		10.9	10.9	10.9	11.0	0.1	0.9%
Pasco		10.9	11.2	11.5	11.6	0.7	6.4%
<b>TMA</b>		<b>10.9</b>	<b>10.7</b>	<b>10.9</b>	<b>10.9</b>	<b>-</b>	<b>0.0%</b>
Hernando		10.2	11.1	11.0	11.3	1	10.8%
Citrus		11.0	11.3	11.4	11.4	0	3.6%
<b>District 7 Total</b>		<b>10.9</b>	<b>10.7</b>	<b>10.9</b>	<b>10.9</b>	<b>-</b>	<b>0.0%</b>
Manatee Segment		8.3	10.2	10.3	10.3	2.0	24.1%
<b>Regional Total</b>		<b>10.9</b>	<b>10.7</b>	<b>10.9</b>	<b>10.9</b>	<b>-</b>	<b>0.0%</b>
Hillsborough		TOTAL	12.9	12.0	12.2	12.2	(0.7)
Pinellas	10.7		10.8	10.9	10.8	0.1	0.9%
Pasco	14.6		14.3	14.3	14.3	(0.3)	-2.1%
<b>TMA</b>	<b>12.4</b>		<b>12.1</b>	<b>12.2</b>	<b>12.2</b>	<b>(0.2)</b>	<b>-1.6%</b>
Hernando	15.0		15.1	15.1	15.2	0	1.3%
Citrus	16.6		16.1	16.1	15.9	(1)	-4.2%
<b>District 7 Total</b>	<b>12.7</b>		<b>12.4</b>	<b>12.5</b>	<b>12.5</b>	<b>(0.2)</b>	<b>-1.6%</b>
Manatee Segment	19.1		17.6	17.7	17.4	(1.7)	-8.9%
<b>Regional Total</b>	<b>12.7</b>		<b>12.4</b>	<b>12.6</b>	<b>12.6</b>	<b>(0.1)</b>	<b>-0.8%</b>

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**Table 9h: Average Person Trip Length in Miles by Purpose (Origin Trip Ends)**

County	Purpose	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	HBW	10.3	9.8	10.1	10.2	(0.1)	-1.0%
Pinellas		8.3	8.4	8.6	8.6	0.3	3.6%
Pasco		12.8	13.6	13.8	13.9	1.1	8.6%
<b>TMA</b>		<b>9.9</b>	<b>10.1</b>	<b>10.3</b>	<b>10.4</b>	<b>0.5</b>	<b>5.1%</b>
Hernando		12.0	12.6	12.6	12.8	0.8	6.7%
Citrus		8.9	8.9	9.0	9.1	0.2	2.2%
<b>District 7 Total</b>		<b>10.0</b>	<b>10.2</b>	<b>10.4</b>	<b>10.5</b>	<b>0.5</b>	<b>5.0%</b>
Manatee Segment		16.1	17.1	17.0	16.9	0.8	5.0%
<b>Regional Total</b>		<b>10.0</b>	<b>10.2</b>	<b>10.4</b>	<b>10.5</b>	<b>0.5</b>	<b>5.0%</b>
Hillsborough		HBO	7.0	6.4	6.5	6.5	(0.5)
Pinellas	5.2		5.4	5.3	5.3	0.1	1.9%
Pasco	7.6		7.7	7.7	7.7	0.1	1.3%
<b>TMA</b>	<b>6.4</b>		<b>6.3</b>	<b>6.4</b>	<b>6.4</b>	-	<b>0.0%</b>
Hernando	8.5		8.6	8.5	8.6	0.1	1.2%
Citrus	9.8		10.0	10.0	9.8	-	0.0%
<b>District 7 Total</b>	<b>6.7</b>		<b>6.6</b>	<b>6.7</b>	<b>6.7</b>	-	<b>0.0%</b>
Manatee Segment	16.4		14.7	14.8	14.7	(1.7)	-10.4%
<b>Regional Total</b>	<b>6.7</b>		<b>6.7</b>	<b>6.7</b>	<b>6.7</b>	-	<b>0.0%</b>
Hillsborough	NHB		6.0	5.6	5.7	5.8	(0.2)
Pinellas		5.8	5.9	5.9	6.0	0.2	3.4%
Pasco		5.8	6.2	6.5	6.6	0.8	13.8%
<b>TMA</b>		<b>5.9</b>	<b>5.8</b>	<b>5.9</b>	<b>6.0</b>	<b>0.1</b>	<b>1.7%</b>
Hernando		5.4	5.9	5.9	6.0	1	11.1%
Citrus		5.1	5.6	5.6	5.7	1	11.8%
<b>District 7 Total</b>		<b>5.8</b>	<b>5.8</b>	<b>5.9</b>	<b>6.0</b>	<b>0.2</b>	<b>3.4%</b>
Manatee Segment		6.1	7.1	7.1	7.2	1.1	18.0%
<b>Regional Total</b>		<b>5.8</b>	<b>5.8</b>	<b>5.9</b>	<b>6.0</b>	<b>0.2</b>	<b>3.4%</b>
Hillsborough		TOTAL	7.3	6.8	7.0	7.0	(0.3)
Pinellas	5.9		6.0	6.0	6.0	0.1	1.7%
Pasco	8.2		8.4	8.5	8.6	0.4	4.9%
<b>TMA</b>	<b>6.9</b>		<b>6.9</b>	<b>7.0</b>	<b>7.0</b>	<b>0.1</b>	<b>1.4%</b>
Hernando	8.6		8.8	8.7	8.8	0	2.3%
Citrus	8.8		9.1	9.1	9.0	0	2.3%
<b>District 7 Total</b>	<b>7.1</b>		<b>7.1</b>	<b>7.2</b>	<b>7.2</b>	<b>0.1</b>	<b>1.4%</b>
Manatee Segment	15.3		14.0	14.1	14.0	(1.3)	-8.5%
<b>Regional Total</b>	<b>7.1</b>		<b>7.1</b>	<b>7.2</b>	<b>7.3</b>	<b>0.2</b>	<b>2.8%</b>

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**Table 9i: Person Trips by Purpose (Destination Trip Ends)**

County	Purpose	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	HBW	994,402.4	1,469,129.7	1,469,296.9	1,469,315.9	474,913.5	47.8%
Pinellas		742,108.5	829,400.3	829,612.5	829,609.8	87,501.3	11.8%
Pasco		222,408.1	358,230.6	358,290.1	358,302.9	135,894.8	61.1%
<b>TMA</b>		<b>1,958,919.0</b>	<b>2,656,760.7</b>	<b>2,657,199.5</b>	<b>2,657,228.6</b>	<b>698,309.6</b>	<b>35.6%</b>
Hernando		95,180.0	143,138.8	144,679.2	144,679.7	49,499.7	52.0%
Citrus		75,586.0	99,591.1	99,586.9	99,584.0	23,998.0	31.7%
<b>District 7 Total</b>		<b>2,129,685.0</b>	<b>2,899,490.6</b>	<b>2,901,465.6</b>	<b>2,901,492.3</b>	<b>771,807.3</b>	<b>36.2%</b>
Manatee Segment		3,298.5	10,844.8	10,831.0	10,831.1	7,532.6	228.4%
<b>Regional Total</b>		<b>2,132,983.5</b>	<b>2,910,335.4</b>	<b>2,912,296.6</b>	<b>2,912,323.4</b>	<b>779,339.9</b>	<b>36.5%</b>
Hillsborough		HBO	3,042,520.4	4,504,897.9	4,502,207.6	4,500,507.1	1,457,986.7
Pinellas	2,642,503.4		2,884,905.0	2,891,625.9	2,893,775.8	251,272.4	9.5%
Pasco	1,062,783.1		1,673,025.2	1,673,053.0	1,673,347.5	610,564.4	57.4%
<b>TMA</b>	<b>6,747,806.9</b>		<b>9,062,828.1</b>	<b>9,066,886.4</b>	<b>9,067,630.4</b>	<b>2,319,823.5</b>	<b>34.4%</b>
Hernando	418,412.9		613,740.8	618,635.0	618,412.6	199,999.7	47.8%
Citrus	315,664.5		399,862.0	398,974.0	398,574.1	82,909.6	26.3%
<b>District 7 Total</b>	<b>7,481,884.2</b>		<b>10,076,431.0</b>	<b>10,084,495.4</b>	<b>10,084,617.1</b>	<b>2,602,732.9</b>	<b>34.8%</b>
Manatee Segment	14,426.5		41,988.1	41,769.8	41,722.3	27,295.8	189.2%
<b>Regional Total</b>	<b>7,496,310.7</b>		<b>10,118,419.1</b>	<b>10,126,265.2</b>	<b>10,126,339.4</b>	<b>2,630,028.7</b>	<b>35.1%</b>
Hillsborough	NHB		1,154,032.5	1,964,209.1	1,963,831.1	1,963,643.6	809,611.1
Pinellas		705,299.5	775,017.7	776,379.4	776,971.3	71,671.8	10.2%
Pasco		287,391.7	522,710.8	522,398.7	522,273.5	234,881.8	81.7%
<b>TMA</b>		<b>2,146,723.7</b>	<b>3,261,937.6</b>	<b>3,262,609.2</b>	<b>3,262,888.4</b>	<b>1,116,164.7</b>	<b>52.0%</b>
Hernando		106,239.3	161,364.4	162,718.0	162,595.9	56,357	53.0%
Citrus		90,518.4	113,751.5	113,598.8	113,536.6	23,018	25.4%
<b>District 7 Total</b>		<b>2,343,481.4</b>	<b>3,537,053.5</b>	<b>3,538,926.0</b>	<b>3,539,020.9</b>	<b>1,195,539.5</b>	<b>51.0%</b>
Manatee Segment		4,845.3	16,813.7	16,740.5	16,707.9	11,862.6	244.8%
<b>Regional Total</b>		<b>2,348,326.7</b>	<b>3,553,867.1</b>	<b>3,555,666.4</b>	<b>3,555,728.7</b>	<b>1,207,402.0</b>	<b>51.4%</b>
Hillsborough		TOTAL	5,190,955.3	7,938,236.7	7,935,335.6	7,933,466.6	2,742,511.3
Pinellas	4,089,911.4		4,489,323.1	4,497,617.8	4,500,356.9	410,445.5	10.0%
Pasco	1,572,582.9		2,553,966.6	2,553,741.8	2,553,923.9	981,341.0	62.4%
<b>TMA</b>	<b>10,853,449.5</b>		<b>14,981,526.4</b>	<b>14,986,695.1</b>	<b>14,987,747.4</b>	<b>4,134,297.9</b>	<b>38.1%</b>
Hernando	619,832.2		918,244.0	926,032.2	925,688.1	305,856	49.3%
Citrus	481,768.9		613,204.7	612,159.7	611,694.7	129,926	27.0%
<b>District 7 Total</b>	<b>11,955,050.6</b>		<b>16,512,975.1</b>	<b>16,524,886.9</b>	<b>16,525,130.3</b>	<b>4,570,079.7</b>	<b>38.2%</b>
Manatee Segment	22,570.3		69,646.6	69,341.2	69,261.2	46,690.9	206.9%
<b>Regional Total</b>	<b>11,977,620.9</b>		<b>16,582,621.7</b>	<b>16,594,228.2</b>	<b>16,594,391.5</b>	<b>4,616,770.6</b>	<b>38.5%</b>

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**Table 9j: Average Person Trip Length in Minutes by Purpose (Destination Trip Ends)**

County	Purpose	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	HBW	18.0	17.3	17.5	17.4	(0.6)	-3.3%
Pinellas		16.0	16.2	16.5	16.5	0.5	3.1%
Pasco		16.1	16.4	16.6	16.8	0.7	4.3%
<b>TMA</b>		<b>17.0</b>	<b>16.8</b>	<b>17.1</b>	<b>17.1</b>	<b>0.1</b>	<b>0.6%</b>
Hernando		17.2	18.6	18.8	19.1	1.9	11.0%
Citrus		20.1	20.1	20.1	20.2	0.1	0.5%
<b>District 7 Total</b>		<b>17.1</b>	<b>17.0</b>	<b>17.3</b>	<b>17.3</b>	<b>0.2</b>	<b>1.2%</b>
Manatee Segment		14.6	15.2	14.9	14.7	0.1	0.7%
<b>Regional Total</b>		<b>17.1</b>	<b>17.0</b>	<b>17.3</b>	<b>17.3</b>	<b>0.2</b>	<b>1.2%</b>
Hillsborough		HBO	13.2	12.4	12.6	12.5	(0.7)
Pinellas	10.3		10.1	10.2	10.2	(0.1)	-1.0%
Pasco	11.6		11.5	11.3	11.3	(0.3)	-2.6%
<b>TMA</b>	<b>11.8</b>		<b>11.5</b>	<b>11.6</b>	<b>11.5</b>	<b>(0.3)</b>	<b>-2.5%</b>
Hernando	14.0		14.5	14.6	14.6	0.6	4.3%
Citrus	16.5		15.7	15.5	15.3	(1.2)	-7.3%
<b>District 7 Total</b>	<b>12.1</b>		<b>11.9</b>	<b>11.9</b>	<b>11.9</b>	<b>(0.2)</b>	<b>-1.7%</b>
Manatee Segment	6.8		9.6	9.4	9.2	2.4	35.3%
<b>Regional Total</b>	<b>12.1</b>		<b>11.8</b>	<b>11.9</b>	<b>11.9</b>	<b>(0.2)</b>	<b>-1.7%</b>
Hillsborough	NHB		11.0	10.4	10.7	10.7	(0.3)
Pinellas		10.8	10.8	10.9	10.9	0.1	0.9%
Pasco		11.0	11.2	11.5	11.6	0.6	5.5%
<b>TMA</b>		<b>10.9</b>	<b>10.7</b>	<b>10.9</b>	<b>10.9</b>	<b>-</b>	<b>0.0%</b>
Hernando		10.3	11.1	11.0	11.3	1	9.7%
Citrus		10.9	11.3	11.3	11.3	0	3.7%
<b>District 7 Total</b>		<b>10.9</b>	<b>10.7</b>	<b>10.9</b>	<b>10.9</b>	<b>-</b>	<b>0.0%</b>
Manatee Segment		8.4	10.4	10.4	10.4	2.0	23.8%
<b>Regional Total</b>		<b>10.9</b>	<b>10.7</b>	<b>10.9</b>	<b>10.9</b>	<b>-</b>	<b>0.0%</b>
Hillsborough		TOTAL	13.6	12.8	13.0	13.0	(0.6)
Pinellas	11.4		11.4	11.5	11.5	0.1	0.9%
Pasco	12.1		12.1	12.1	12.1	-	0.0%
<b>TMA</b>	<b>12.6</b>		<b>12.3</b>	<b>12.4</b>	<b>12.4</b>	<b>(0.2)</b>	<b>-1.6%</b>
Hernando	13.8		14.5	14.7	14.7	1	6.5%
Citrus	16.0		15.6	15.5	15.4	(1)	-3.8%
<b>District 7 Total</b>	<b>12.8</b>		<b>12.5</b>	<b>12.6</b>	<b>12.6</b>	<b>(0.2)</b>	<b>-1.6%</b>
Manatee Segment	8.3		10.6	10.5	10.4	2.1	25.3%
<b>Regional Total</b>	<b>12.8</b>		<b>12.5</b>	<b>12.6</b>	<b>12.6</b>	<b>(0.2)</b>	<b>-1.6%</b>

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**Table 9j: Average Person Trip Length in Miles by Purpose (Destination Trip Ends)**

County	Purpose	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	HBW	10.9	10.7	10.9	10.9	-	0.0%
Pinellas		9.4	9.8	10.0	10.1	0.7	7.4%
Pasco		8.9	9.6	9.8	10.0	1.1	12.4%
<b>TMA</b>		<b>10.1</b>	<b>10.3</b>	<b>10.5</b>	<b>10.6</b>	<b>0.5</b>	<b>5.0%</b>
Hernando		9.7	10.9	11.2	11.3	1.6	16.5%
Citrus		10.6	11.3	11.3	11.4	0.8	7.5%
<b>District 7 Total</b>		<b>10.1</b>	<b>10.3</b>	<b>10.5</b>	<b>10.6</b>	<b>0.5</b>	<b>5.0%</b>
Manatee Segment		11.1	11.1	11.0	11.0	(0.1)	-0.9%
<b>Regional Total</b>		<b>10.1</b>	<b>10.3</b>	<b>10.5</b>	<b>10.6</b>	<b>0.5</b>	<b>5.0%</b>
Hillsborough		HBO	7.6	7.2	7.3	7.3	(0.3)
Pinellas	5.7		5.7	5.7	5.7	-	0.0%
Pasco	6.2		6.4	6.3	6.3	0.1	1.6%
<b>TMA</b>	<b>6.6</b>		<b>6.5</b>	<b>6.6</b>	<b>6.6</b>	<b>-</b>	<b>0.0%</b>
Hernando	7.9		8.5	8.7	8.6	0.7	8.9%
Citrus	8.7		8.7	8.6	8.4	(0.3)	-3.4%
<b>District 7 Total</b>	<b>6.8</b>		<b>6.8</b>	<b>6.8</b>	<b>6.8</b>	<b>-</b>	<b>0.0%</b>
Manatee Segment	4.5		6.2	6.1	6.1	1.6	35.6%
<b>Regional Total</b>	<b>6.8</b>		<b>6.8</b>	<b>6.8</b>	<b>6.8</b>	<b>-</b>	<b>0.0%</b>
Hillsborough	NHB		6.0	5.6	5.7	5.8	(0.2)
Pinellas		5.8	5.9	5.9	6.0	0.2	3.4%
Pasco		5.9	6.3	6.5	6.7	0.8	13.6%
<b>TMA</b>		<b>5.9</b>	<b>5.8</b>	<b>5.9</b>	<b>6.0</b>	<b>0.1</b>	<b>1.7%</b>
Hernando		5.4	5.9	5.9	6.0	1	11.1%
Citrus		5.1	5.6	5.6	5.6	1	9.8%
<b>District 7 Total</b>		<b>5.9</b>	<b>5.8</b>	<b>5.9</b>	<b>6.0</b>	<b>0.1</b>	<b>1.7%</b>
Manatee Segment		6.2	7.2	7.2	7.3	1.1	17.7%
<b>Regional Total</b>		<b>5.9</b>	<b>5.8</b>	<b>5.9</b>	<b>6.0</b>	<b>0.1</b>	<b>1.7%</b>
Hillsborough		TOTAL	7.8	7.4	7.6	7.6	(0.2)
Pinellas	6.4		6.5	6.5	6.5	0.1	1.6%
Pasco	6.5		6.8	6.8	6.9	0.4	6.2%
<b>TMA</b>	<b>7.1</b>		<b>7.0</b>	<b>7.1</b>	<b>7.2</b>	<b>0.1</b>	<b>1.4%</b>
Hernando	7.7		8.4	8.6	8.5	1	10.4%
Citrus	8.3		8.5	8.5	8.4	0	1.2%
<b>District 7 Total</b>	<b>7.2</b>		<b>7.2</b>	<b>7.3</b>	<b>7.3</b>	<b>0.1</b>	<b>1.4%</b>
Manatee Segment	5.8		7.2	7.1	7.2	1.4	24.1%
<b>Regional Total</b>	<b>7.2</b>		<b>7.2</b>	<b>7.3</b>	<b>7.3</b>	<b>0.1</b>	<b>1.4%</b>

# TBRPM v9.0 - LRTP 2045 - Measures of Effectiveness (MOE) Report

**Table 9k: Population within 1/4 mile of Bus Routes with Headway <= 30 Minutes**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	172,908	288,215	290,980	331,119	158,211	91.5%
Pinellas	266,661	316,268	316,565	412,815	146,154	54.8%
Pasco	2,752	6,400	25,582	32,081	29,329	1065.8%
<b>TMA</b>	<b>442,321</b>	<b>610,883</b>	<b>633,128</b>	<b>776,016</b>	<b>333,695</b>	<b>75.4%</b>
Hernando	-	-	-	9,156	9,156	
Citrus	-	-	-	10,599	10,599	
<b>District 7 Total</b>	<b>442,321</b>	<b>610,883</b>	<b>633,128</b>	<b>795,771</b>	<b>353,450</b>	<b>79.9%</b>
Manatee Segment	-	-	-	-	-	
<b>Regional Total</b>	<b>442,321</b>	<b>610,883</b>	<b>633,128</b>	<b>795,771</b>	<b>353,450</b>	<b>79.9%</b>

**Table 9k: Percent of Population within 1/4 mile of Bus Routes with Headway <= 30 Minutes**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	13%	14%	14%	17%	4%	30.8%
Pinellas	28%	31%	31%	40%	12%	42.9%
Pasco	1%	1%	3%	4%	3%	300.0%
<b>TMA</b>	<b>16%</b>	<b>16%</b>	<b>17%</b>	<b>20%</b>	<b>4%</b>	<b>25.0%</b>
Hernando	0%	0%	0%	3%	3%	
Citrus	0%	0%	0%	6%	6%	
<b>District 7 Total</b>	<b>15%</b>	<b>14%</b>	<b>15%</b>	<b>19%</b>	<b>4%</b>	<b>26.7%</b>
Manatee Segment	0%	0%	0%	0%	0%	
<b>Regional Total</b>	<b>14%</b>	<b>14%</b>	<b>15%</b>	<b>18%</b>	<b>4%</b>	<b>28.6%</b>

# TBRPM v9.0 - LRTP 2045 - Measures of Effectiveness (MOE) Report

**Table 9I: Employment within 1/4 mile of Bus Routes with Headway <= 30 Minutes**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	175,466	295,602	301,324	338,425	162,958	92.9%
Pinellas	223,903	251,528	252,753	299,549	75,646	33.8%
Pasco	1,184	2,147	15,082	16,132	14,948	1263.0%
<b>TMA</b>	<b>400,553</b>	<b>549,277</b>	<b>569,158</b>	<b>654,105</b>	<b>253,552</b>	<b>63.3%</b>
Hernando	-	-	-	6,805	6,805	
Citrus	-	-	-	8,911	8,911	
<b>District 7 Total</b>	<b>400,553</b>	<b>549,277</b>	<b>569,158</b>	<b>669,821</b>	<b>269,268</b>	<b>67.2%</b>
Manatee Segment	-	-	-	-	-	
<b>Regional Total</b>	<b>400,553</b>	<b>549,277</b>	<b>569,158</b>	<b>669,821</b>	<b>269,268</b>	<b>67.2%</b>

**Table 9I: Percent of Employment within 1/4 mile of Bus Routes with Headway <= 30 Minutes**

County	2015 Base Trad	2024 EC 45 SE	2045 Cost Affordable 4.0	2045 Needs 5.0	2045 Difference from Base	2045 % Difference from Base
Hillsborough	21%	24%	24%	27%	6%	28.6%
Pinellas	42%	42%	43%	50%	8%	19.0%
Pasco	1%	1%	6%	6%	5%	500.0%
<b>TMA</b>	<b>26%</b>	<b>26%</b>	<b>27%</b>	<b>31%</b>	<b>5%</b>	<b>19.2%</b>
Hernando	0%	0%	0%	8%	8%	
Citrus	0%	0%	0%	14%	14%	
<b>District 7 Total</b>	<b>25%</b>	<b>24%</b>	<b>25%</b>	<b>30%</b>	<b>5%</b>	<b>20.0%</b>
Manatee Segment	0%	0%	0%	0%	0%	
<b>Regional Total</b>	<b>25%</b>	<b>24%</b>	<b>25%</b>	<b>30%</b>	<b>5%</b>	<b>20.0%</b>

# APPENDIX J

## PROJECT PRIORITIZATION



## Project Prioritization for Advantage Pinellas

The prioritization of projects for the Advantage Pinellas Plan was done in several steps. The results of the robust public outreach efforts undertaken during Plan development were the most instrumental in project selection. All our engagement efforts highlighted the public's desire for us to advance projects that did not exclusively focus on widening or building new roadways. There was a strong desire for funding bicycle, pedestrian, technology and transit projects. Because of this, Advantage Pinellas allocates nearly 100% of flexible funding sources to these projects.

For bicycle and pedestrian projects, Forward Pinellas utilized the prioritization process outlined in the Active Transportation Plan. That Plan identified the top 10 priority corridors to be funded through Advantage Pinellas and placed them in priority order. This was also done for trail overpass projects. Forward Pinellas is committed to advancing these projects through the annual update to our priority list, adding the projects to that list one at a time until they are all completed.

Funding was also set aside for future bus replacements, regional transit services and future technological solutions to improve mobility. As these projects are identified and further refined, Forward Pinellas is committed to advancing them through the annual development of the multimodal priority list.

For projects on the Strategic Intermodal System, Forward Pinellas deferred to the priority order determined by FDOT and included those projects without changes.

As Pinellas County maintains many major roadways throughout the county, Forward Pinellas worked closely with County staff to reflect the roadways under County jurisdiction in the priority order desired by the County. These projects are funded primarily with local revenues. Some County projects were identified as being a high priority for local and regional travel. Forward Pinellas worked with the County to match local funding with state and federal resources to advance these projects in an order acceptable to both parties.

# APPENDIX K

## FINANCIAL RESOURCES



**Advantage**  
**PINELLAS**

ENGAGE. ADAPT. CONNECT.

**Document Title**

**Date**

**Financial Resources Technical Memorandum**

**2/14/2019**



## Executive Summary

Advantage Pinellas, the 2045 Long Range Transportation Plan (LRTP), includes revenue projections from existing federal, state, and county sources as well as potential revenue sources. This technical memorandum describes the revenue sources that are reasonably expected to be used to develop the 2045 Cost Feasible Plan. The sources of revenues are summarized below and additional details are available in subsections of this report.

### Pinellas County Revenue Projections:

- Federal and State sources include Strategic Intermodal System funds, Other Arterial & Construction funds, Transportation Regional Incentive Program funds, Transportation Management Area funds, and Federal Transit Administration revenues.
- Fuel taxes include:
  - Existing: Constitutional Fuel Tax, County Fuel Tax, 6-Cent 1<sup>st</sup> Local Option Fuel Tax (LOFT), and 9<sup>th</sup>-Cent Fuel Tax
  - Potential: indexing the existing fuel taxes and the 5-Cent 2<sup>nd</sup> LOFT
- Sales taxes include the existing Local Government Infrastructure Sales Surtax (Penny for Pinellas) and the potential Charter County and Regional Transportation System Surtax.
  - Transit –the existing funding sources for transit service include Federal Transit Administration (FTA) formula funds and fare revenues.

Table 1 presents a summary of the 2045 LRTP revenue projections for existing revenue sources and Table 2 presents the summary of revenues for potential new sources.

**Table 1.** 2045 LRTP Revenue Projections for Existing Sources in Millions of Year of Expenditure Dollars

Funding Source	2020-2024	2025-2029	2030-2034	2035-2039	2040-2045	Total 2020-2045
Strategic Intermodal System	\$1,081.3	\$116.4	\$27.9	\$12.5	\$406.1	\$1,644.2
Other Arterial & Construction	\$171.4	\$235.6	\$268.2	\$285.0	\$345.4	\$1,305.6
Transportation Regional Incentive Program	\$6.7	\$9.9	\$11.6	\$12.1	\$14.5	\$54.8
Transportation Management Area	\$67.3	\$67.3	\$67.3	\$67.3	\$80.8	\$350.0
Transit: 5307	\$45.4	\$53.2	\$53.2	\$53.2	\$63.9	\$269.0
Transit: 5337	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.2
Transit: 5339	\$8.6	\$8.5	\$8.5	\$8.5	\$10.2	\$44.3
Constitutional Fuel Tax	\$36.5	\$36.2	\$35.8	\$35.5	\$42.1	\$186.2
County Fuel Tax	\$16.3	\$16.5	\$16.7	\$16.8	\$20.4	\$86.8
6-Cent 1st Local Option Fuel Tax	\$68.4	\$66.9	\$65.5	\$64.0	\$74.9	\$339.7
9th-Cent Fuel Tax	\$20.5	\$19.8	\$19.0	\$18.3	\$21.0	\$98.6
Penny for Pinellas	\$211.2	\$246.3	\$292.3	\$346.4	\$470.5	\$1,566.6
Fare Revenues	\$52.3	\$52.9	\$53.5	\$54.0	\$65.6	\$278.4
<b>Total Revenues</b>						\$6,224.3



**Table 2. 2045 LRTP Revenue Projections for Potential Sources in Millions of Year of Expenditure Dollars**

Funding Source	2020-2024	2025-2029	2030-2034	2035-2039	2040-2045	Total 2020-2045
Charter County and Regional Transportation System Surtax (1 percent)	\$896.7	\$1,045.8	\$1,241.0	\$1,470.8	\$1,998.1	\$6,652.5
Additional Revenue from Indexing Existing Fuel Taxes	\$15.9	\$39.4	\$69.4	\$103.2	\$154.8	\$382.7
1-5 cents 2nd Local Option Fuel Tax (LOFT), 100% to County						
1 cent	\$18.3	\$17.6	\$17.0	\$16.3	\$18.7	\$87.9
2 cents	\$36.5	\$35.2	\$33.9	\$32.6	\$37.5	\$175.8
3 cents	\$54.8	\$52.9	\$50.9	\$49.0	\$56.2	\$263.7
4 cents	\$73.1	\$70.5	\$67.9	\$65.3	\$74.9	\$351.7
5 cents	\$91.3	\$88.1	\$84.9	\$81.6	\$93.7	\$439.6
1-5 cents 2nd Local Option Fuel Tax (LOFT), 60% to County						
1 cent	\$11.0	\$10.6	\$10.2	\$9.8	\$11.2	\$52.7
2 cents	\$21.9	\$21.1	\$20.4	\$19.6	\$22.5	\$105.5
3 cents	\$32.9	\$31.7	\$30.5	\$29.4	\$33.7	\$158.2
4 cents	\$43.8	\$42.3	\$40.7	\$39.2	\$45.0	\$211.0
5 cents	\$54.8	\$52.9	\$50.9	\$49.0	\$56.2	\$263.7
<b>Total Revenues (Low)</b>						\$7,087.9
<b>Total Revenues (High)</b>						\$7,474.8

Note: Total Revenues (Low) is sum of Charter County and Regional Transportation System Surtax, Additional Revenue from Indexing Existing Fuel taxes, and 1-5 Cents 2<sup>nd</sup> LOFT 60% to County at 1 cent per gallon

Total Revenues (High) is sum of Charter County and Regional Transportation System Surtax, Additional Revenue from Indexing Existing Fuel taxes, and 1-5 Cents 2<sup>nd</sup> LOFT 100% to County at 5 cents per gallon.



## Introduction

This technical memorandum documents the assumptions and methodology that were used to develop revenue estimates for Advantage Pinellas, the Forward Pinellas 2045 Long Range Transportation Plan (2045 LRTP) to fund the multimodal transportation system, including roadways, public transportation, bicycle facilities, sidewalks, and access to intermodal facilities. This memorandum is composed of three sections and an Appendix:

- Federal/State Revenue Sources
- County Revenue Sources
- Summary of Results
- Appendix A: *2045 Revenue Forecast Forward Pinellas*

## Federal/State Revenue Sources

Annual Federal and State revenue projections for the 2045 LRTP were established in the *FDOT 2045 Revenue Forecast Forward Pinellas Handbook* for the Strategic Intermodal System, Other Arterial Construction (OA), Transportation Management Area, and Transportation Regional Incentive Program. Federal Transit Administration revenues were sourced from the Pinellas Suncoast Transit Authority (PSTA) Adopted Operating and Capital Budget Fiscal Year 2019

## Strategic Intermodal System (SIS)/Florida Interstate Highway System

This is a capacity program providing funds for construction, improvements, and associated right-of-way (ROW) on the State Highway System roadways designated as part of the SIS or Florida Interstate Highway System (FIHS). The SIS First Five Year Plan (FY 2018/2019-FY 2022/2023), Second Five Year Plan (FY 2023/2024-FY 2027/2028), and the Long-Range Cost-Feasible Plan (FY 2029-2045) are posted on FDOT websites. SIS projects within Pinellas County can be identified from these plans and their costs can be used as available program funds. Project costs are estimated annually for FY 2019-2028, and projects from the Long-Range Cost-Feasible Plan were allocated to years based on the midpoint of the range of the construction period. Between FY 2020-2045, the total SIS Highways Construction and ROW funds available to Pinellas County are approximately \$1.6 billion.

SIS funding in the early years (2020-2024) is primarily for three major projects on I-275 and US 19 (SR 55) scheduled for the majority of construction in 2020 and 2021. Project 4229042 is a bridge on I-275 from north of SR687 (4<sup>th</sup> St. N) to north of Howard Frankland in the amount of \$807 million in 2020. The projects 2567742 and 2567743 are interchange projects from north of SR 580 (Main St.) to Northside Dr., and Northside Dr. to North of CR 95, and have funding of \$66.7 and \$82.2 million, respectively, in 2021.

## Other Arterial Construction (OA)/Right-of-Way

This is a capacity program providing funds for construction, improvements, and associated ROW on the State Highway System roadways not designated as part of the SIS or FIHS. Other Arterials (OA) revenue includes additional funding for the Economic Development Program and the County Incentive Grant Program. The Economic Development Program is a sub-program of the OA program which may provide funds for access roads and highway improvements for new and existing businesses and manufacturing enterprises that meet certain criteria. Pursuant to the *FDOT 2045 Revenue Forecast Forward Pinellas Handbook*, approximately **\$1.3 billion** is projected to be available for roadway projects for 2020–2045.

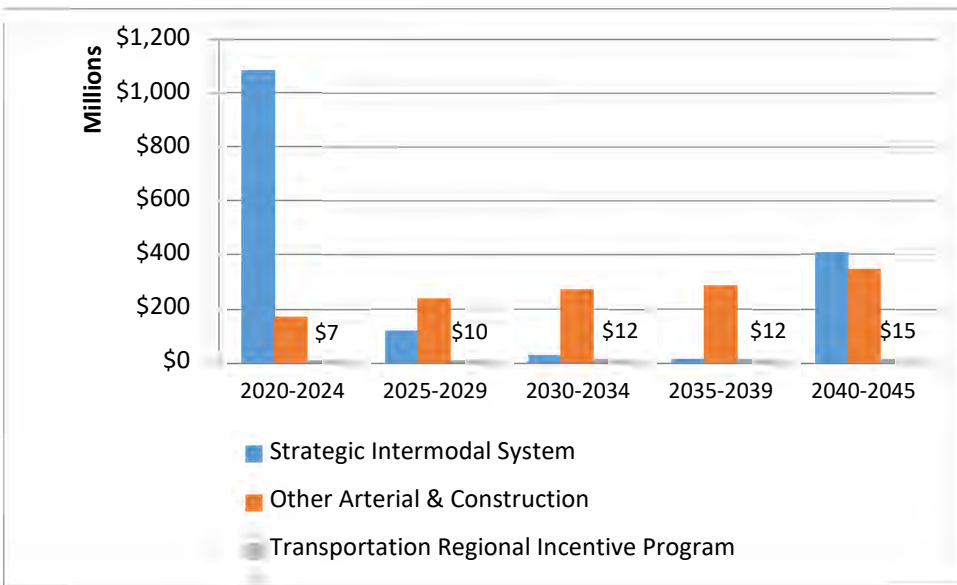


## Transportation Regional Incentive Program (TRIP)

This program was established as part of the State’s major growth management legislation enacted with Senate Bill 360. The program is intended to encourage regional planning by providing matching funds for improvements to regionally significant transportation facilities identified and prioritized by regional partners. Forward Pinellas, as the Metropolitan Planning Organization (MPO) for Pinellas County, has partnered with other MPOs in the region through an interlocal agreement to identify regional facilities that could be eligible for TRIP funding. In the past, revenues have been shared based on population, with the total FDOT District 7 revenues projected at approximately **\$178.3 million** for 2020–2045. Based on this total, FDOT projects that Forward Pinellas would receive approximately **\$54.8 million** for 2020-2045 using the 2015 population by county to distribute the funds. Forward Pinellas is assuming 30.8% of the District 7 allocation.<sup>1</sup>

Funds from the State’s General Revenue Fund are made available for TRIP through SB 360 legislation. TRIP funds can be used for up to a 50 percent match to local or regional funds. In-kind matches, such as ROW donations and private funds made available to regional partners, also are allowed. Federal funds attributable to urbanized areas also may be used for the local/regional match. Pinellas County has been successful in leveraging the 9<sup>th</sup>-Cent Fuel Tax against TRIP funding for much of the Intelligent Transportation Systems (ITS)/Advanced Traffic Management System (ATMS) infrastructure throughout the county.

**Figure 1.** SIS, OA, and TRIP Funding in Millions of Year of Expenditure Dollars



Sources:

SIS: FDOT Strategic Intermodal System Long Range Cost Feasible Plan, FY 2029-2045; FDOT Strategic Intermodal System First Five Year Plan, FY 2018-2023; FDOT Strategic Intermodal System Second Five Year Plan, FY 2024-2028, OA and TRIP: *2045 Revenue Forecast Forward Pinellas Handbook*

<sup>1</sup> Based on 2011-2015 ACS 5-year estimates for Citrus, Hernando, Hillsborough, Pasco, and Pinellas Counties (FDOT District 7).



## Transportation Management Area

These are funds distributed to an urban area that has a population greater than 200,000, as designated by the U.S. Department of Transportation (U.S. DOT). They are the same as Surface Transportation Program (SU) funds in the five-year work program. Pursuant to the *FDOT 2045 Revenue Forecast Forward Pinellas Handbook*, approximately **\$350.0 million** was assumed to be available for Pinellas County for on-system state roadway improvements for 2020–2045.

## Federal Transit Revenues

The projections for PSTA include funding from Federal Transit Administration (FTA) Sections 5307, 5337, and 5339 as found in the PSTA Adopted Operating and Capital Budget Fiscal Year 2019. For each of the three programs, FTA releases the annual apportionment for each urbanized area (UZA) and PSTA uses backup data<sup>2</sup> and FTA unit values to assign the annual formula funds to each agency within the Tampa-St. Petersburg UZA.

- **Urbanized Area Formula Program (5307):** Federal funds are made available for urbanized areas and to Governors for transit capital and operating assistance and for transportation-related planning. The term “urbanized area” refers to an incorporated area with a population of 50,000 or more that is designated as such by the U.S. Bureau of the Census. Recipients must be eligible public bodies.

A wide variety of activities are eligible for funding assistance: planning, engineering design and evaluation of transit projects, capital investments in buses and bus-related activities (including vehicle replacement, bus overhaul and rebuilding, security equipment, and construction of maintenance and passenger facilities), and capital investments in new and existing fixed-guideway systems (including rolling stock, overhaul and rebuilding of vehicles, track, signals, communications, and computer hardware/software). Also, all preventive maintenance and some Americans with Disabilities Act (ADA) complementary paratransit service costs are considered capital expenses.

PSTA uses the funds to support the sustainability plan, including hybrid and electric buses, and providing rapid transit in areas of the county that would benefit from its availability. The majority of funds are used for capital projects, but also for preventative maintenance, tire leasing, administrative, and short-range planning costs.

The FTA apportionment for Section 5307 Urbanized Area funds is distributed to Hillsborough Area Regional Transit (HART), PSTA, Pasco County Public Transit (PCPT), and the Tampa Bay Regional Transportation Authority (TBARTA) as part of the Tampa-St. Petersburg UZA. The split formula is based on an agreement between the agencies, and is based on the number of miles reported annually.

Funds are allocated according to legislative formulas. For areas with a population between 50,000 and 200,000, the formula is based on population and population density. For areas of more 200,000, the formula combines bus revenue vehicle miles, bus passenger miles, fixed-guideway revenue vehicle and route miles, population, and population density factors. A 20 percent non-federal match is required.

**State of Good Repair Grants (5337):** The State of Good Repair grants are capital assistance funds for maintenance, replacement, and rehabilitation projects of high-intensity fixed guideway and bus systems. The funds help agencies maintain a state of good repair. Funds are eligible to be spent on rolling stock, track, line equipment and structures, signals and communication, power equipment, security systems, passenger stations, maintenance facilities and

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<sup>2</sup> Per PSTA, includes National Transit Database, Low Income, and Census data



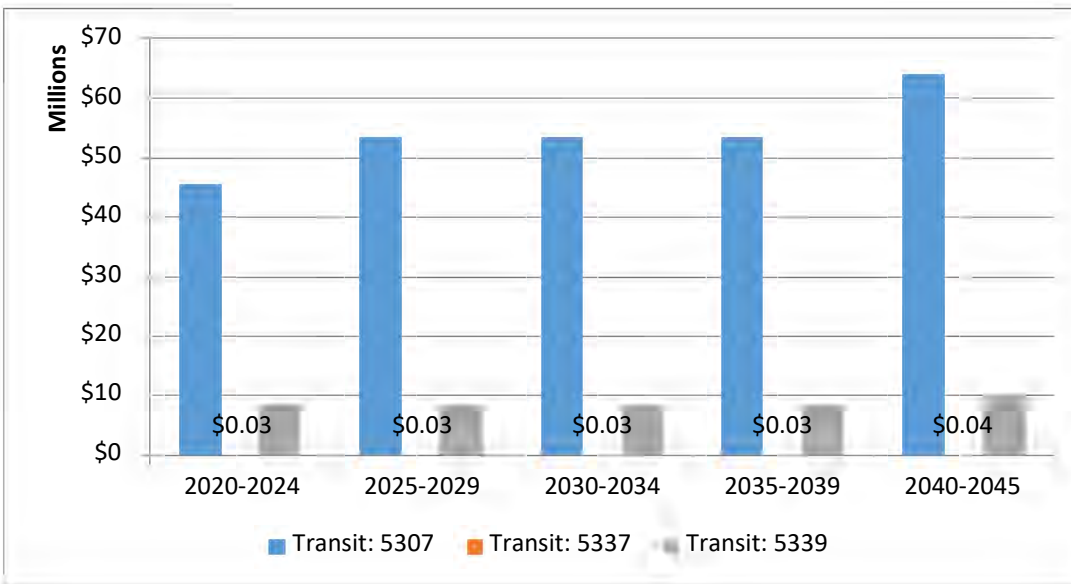


equipment, and operational support equipment. Funds are apportioned by statutory formulas and a 20 percent non-federal match is required.

**Bus and Bus Facilities Formula Program (5339):** The Bus and Bus Facilities program provides capital assistance for new and replacement buses and related equipment and facilities. Eligible capital projects include the purchasing of buses for fleet and service expansion, bus maintenance and administrative facilities, transfer facilities, bus malls, transportation centers, intermodal terminals, park-and-ride stations, acquisition of replacement vehicles, bus rebuilds, bus preventive maintenance, passenger amenities such as passenger shelters and bus stop signs, accessory and miscellaneous equipment such as mobile radio units, supervisory vehicles, fare boxes, computers and shop and garage equipment. Funds are allocated on a discretionary basis and through competitive grants, and a minimum 20 percent non-federal match is required. The U.S. DOT Secretary has the discretion to allocate funds.

Based on the 2019 PSTA Adopted Budget and absent any projections of increased revenue miles, funding was expected to remain constant for 5337 and 5339 at \$6,000 and \$1.7 million per year, respectively, and the average for FY 2019-FY 2023 Section 5307 funding was assumed to be maintained through 2045. The federal transit revenues total **\$313.4 million** for 2020-2045.

**Figure 2. FTA Formula Funding in Millions of Year of Expenditure Dollars**



Source: Pinellas Suncoast Transit Authority, Adopted Operating and Capital Budget Fiscal Year 2019

Note: Section 5337 funds total \$156,000 over 2020-2045



## County Revenue Sources

Annual County revenue projections for the 2045 LRTP were established in the *2018 Local Government Financial Information Handbook* for fuel taxes, while local data including the 2018 Pinellas County Economic Profile and 2019 PSTA Operating Budget were used to estimate revenues for sales taxes and PSTA fares, respectively.

### Fuel Tax

Historically, fuel taxes have represented a major portion of Pinellas County's local transportation revenues. Currently, Pinellas County charges seven cents of the possible 12 cents of LOFT in addition to the Constitutional Fuel Tax (2 cents) and County Fuel Tax (1 cent). The majority of fuel tax revenue is dedicated to transportation infrastructure maintenance and ITS. This section provides a summary of adopted and available fuel taxes as well as projected future revenues for all fuel tax options in Pinellas County.

Local fuel tax revenues are based on a set pennies-per-gallon charge, not a percentage of the dollar sale (as with a sales tax) and, therefore, fuel taxes do not increase as gas prices increase or with the effects of inflation. Additionally, fuel tax revenues suffer due to increasing fuel efficiency and shifts to electric vehicles. Based on government fuel economy projections,<sup>3</sup> it was estimated that average fuel economy (miles per gallon) is projected to increase by approximately 1.7 percent annually through 2045 (compared to 1.04 percent annual increase in VMT). Combining increasing fuel economy with projected vehicle miles traveled from the regional travel demand model, the gallons of motor and diesel fuel purchased were estimated. As a result, overall fuel tax revenues are expected to decline over time. Table 3 provides projected fuel tax revenues for Pinellas County through 2045 for existing fuel taxes.

**Table 3.** Fuel Tax Revenues in Millions of Year of Expenditure Dollars

Funding Source	2020-2024	2025-2029	2030-2034	2035-2039	2040-2045	Total 2020-2045
Constitutional Fuel Tax	\$36.5	\$36.2	\$35.8	\$35.5	\$42.1	\$186.2
County Fuel Tax	\$16.3	\$16.5	\$16.7	\$16.8	\$20.4	\$86.8
6-Cent 1st Local Option Fuel Tax	\$68.4	\$66.9	\$65.5	\$64.0	\$74.9	\$339.7
9th-Cent Fuel Tax	\$20.5	\$19.8	\$19.0	\$18.3	\$21.0	\$98.6
<b>Total Revenues</b>	<b>\$141.8</b>	<b>\$139.4</b>	<b>\$137.0</b>	<b>\$134.7</b>	<b>\$158.4</b>	<b>\$711.3</b>

Source: *2018 Local Government Financial Information Handbook*

<sup>3</sup> US Energy Information Administration "Light Duty Vehicle Miles per Gallon by Technology Type," Accessed 12-6-18, <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=50-AEO2018&region=0-0&cases=ref2018&start=2016&end=2050&f=A&linechart=&ctype=linechart&sourcekey=0>



### Constitutional Fuel Tax (2 cents/gallon)

- Tax applies to every net gallon of motor and diesel fuel sold within a county; collected in accordance with Article XII, Section 9 (c) of the Florida Constitution.<sup>4</sup>
- The State allocates 80 percent of this tax to counties after first withholding amounts pledged for debt service on bonds issued pursuant to provisions of the State Constitution for road and bridge purposes.
- These funds can be used for ROW acquisition, construction, and maintenance of roads.
- Counties have the option of sharing the proceeds of this tax with their municipalities. This is not an option that Pinellas County exercises.

Based on the distribution provided in the *2018 Local Government Financial Information Handbook*, Pinellas County is projected to receive approximately **\$7.3 million** from this fuel tax in FY 2019.

### County Fuel Tax (1 cent/gallon)

- Tax applies to every net gallon of motor and diesel fuel sold within a county.
- The primary purpose of these funds is to help reduce a County's reliance on ad valorem taxes.
- Proceeds are to be used for transportation-related expenses, including reduction of bond indebtedness incurred for transportation purposes. Authorized uses include acquisition of ROW; construction, reconstruction, operation, maintenance, and repair of transportation facilities, roads, bridges, bicycle paths, and pedestrian pathways; or reduction of bond indebtedness incurred for transportation purposes.
- Counties have the option of sharing the proceeds of this tax with their municipalities. This is not an option that Pinellas County exercises.

Based on the distribution provided in the *2018 Local Government Financial Information Handbook*, Pinellas County is project to receive approximately **\$3.2 million** from the County Fuel Tax in FY 2019.

### 6-Cent 1<sup>st</sup> LOFT

- Tax applies to every net gallon of motor and diesel fuel sold within a county.
- Proceeds may be used to fund transportation expenditures as defined in Section 336.025(7), Florida Statutes.
- To accommodate statewide equalization, all six cents are automatically levied on diesel fuel in every county, regardless of whether a County is levying the tax on motor fuel at all or at the maximum rate.
- Proceeds are distributed to a County and its municipalities according to a mutually agreed-upon distribution ratio or by using a formula contained in the Florida Statutes.

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<sup>4</sup> A "Net" gallon refers to volumetric changes in fuels due to temperature variations. Fuel taxes in Florida are computed on net gallons instead of gross gallons.



- Expires December 2027, assumed re-adoption by majority vote of the Board of County Commissioners or by voter approval in a countywide referendum through 2045.

Based on the distribution provided in the *2018 Local Government Financial Information Handbook*, Pinellas County is projected to receive approximately \$23.6 million from this fuel tax in FY 2019, with approximately 60 percent allocated to the County and the remaining 40 percent distributed to the cities; 2 percent is set aside for administrative costs. The County's estimated portion is **\$13.9 million** in FY 2019.

### 9<sup>th</sup>-Cent Fuel Tax (1 cent/gallon)

- Tax applies to every net gallon of motor fuel sold within a county.
- Proceeds may be used to fund transportation expenditures as defined in Section 336.027(7), Florida Statutes.
- To accommodate statewide equalization, this tax is automatically levied on diesel fuel in every county, regardless of whether a County is levying the tax on motor fuel at all.
- Counties are not required to share the proceeds of this tax with their municipalities.
- Expires December 2026, assumed re-adoption by majority vote of the Board of County Commissioners or by voter approval in a countywide referendum through 2045

Based on the distribution provided in the *2018 Local Government Financial Information Handbook*, Pinellas County is projected to receive approximately **\$4.2 million** from this fuel tax in FY 2019. This represents the portion allocated to the County, which is 100 percent of the revenues; 2 percent is set aside for administration. Pinellas County has the option to allocate revenues to municipalities, but historically has not. The 9<sup>th</sup>-Cent Fuel Tax funds the creation and maintenance of the Advanced Traffic Management System/Intelligent Transportation System (ATMS/ITS) in the county.

The 9<sup>th</sup>-Cent Fuel Tax is set to expire in late 2026. It was assumed that this fuel tax will be re-adopted and that collection is assumed to continue through 2045. Additionally, it was assumed that the current allocation level (100% to the County) will remain constant through 2045 and that it will continue to be dedicated to the maintenance and improvement of the ATMS/ITS.

### 5-Cent 2<sup>nd</sup> LOFT

Currently, the 5-Cent 2<sup>nd</sup> local option fuel tax has not been adopted by Pinellas County and is not included in Table 3. For illustrative purposes, the additional fuel tax revenues that would be collected via the 5-Cent LOFT were projected. These projections estimate the revenues if adopted at incremental rates of 1 to 5 cents beginning in 2019. Additionally, if adopted, two scenarios were estimated for revenue distribution: 1) 100 percent to the County and 2) assuming the same distribution levels applied to the 6-Cent 1<sup>st</sup> LOFT will be applied to the 5-Cent 2<sup>nd</sup> LOFT, allocating approximately 60 percent of the revenues to the County and 40 percent to the cities. As with the 6-Cent 1<sup>st</sup> LOFT projections, it is assumed



that this distribution will remain constant through 2045. If adopted, this revenue source may not be used for the routine maintenance of roadways, but may be used for reconstruction and capacity expansion improvements.<sup>5</sup>

- Tax applies to every net gallon of motor fuel sold within a county. Diesel fuel is not subject to this tax.
- Tax must be levied by an ordinance adopted by a majority plus one vote of the membership of the governing body or voter approval in a countywide referendum.
- Proceeds may be used to fund transportation expenditures needed to meet requirements of the capital improvements element of an adopted Local Government Comprehensive Plan or for expenditures needed to meet the immediate local transportation problems and for other transportation-related expenditures that are critical for building comprehensive roadway networks by local governments. Routine maintenance of roads is not considered an authorized expenditure. Expenditures for the construction of new roads, the reconstruction or resurfacing of existing paved roads, or the paving of existing graded roads increase capacity and can be included in the capital improvements element of an adopted comprehensive plan.<sup>6</sup>
- Proceeds are distributed to a County and its municipalities according to a mutually-agreed-upon distribution ratio or by using a formula contained in the Florida Statutes.

Table 4 provides projected one cent increments of the 5-Cent LOFT revenues for Pinellas County through 2045 assuming 100 percent of revenues go to the County while Table 5 displays revenues if 60 percent goes to the County.

**Table 4.** 5-Cent 2nd Local Option Fuel Tax Revenues, 100 percent to County in Millions of Year of Expenditure Dollars

	2020-2024	2025-2029	2030-2034	2035-2039	2040-2045	Total 2020-2045
1 cent	\$18.3	\$17.6	\$17.0	\$16.3	\$18.7	\$87.9
2 cents	\$36.5	\$35.2	\$33.9	\$32.6	\$37.5	\$175.8
3 cents	\$54.8	\$52.9	\$50.9	\$49.0	\$56.2	\$263.7
4 cents	\$73.1	\$70.5	\$67.9	\$65.3	\$74.9	\$351.7
5 cents	\$91.3	\$88.1	\$84.9	\$81.6	\$93.7	\$439.6

Source: 2018 Local Government Financial Information Handbook

<sup>5</sup> 2018 Local Government Financial Information Handbook, page 226

<sup>6</sup> 2018 Local Government Financial Information Handbook, page 226



**Table 5.** 5-Cent 2nd Local Option Fuel Tax Revenues, 60 percent to County in Millions of Year of Expenditure Dollars

	2020-2024	2025-2029	2030-2034	2035-2039	2040-2045	Total 2020-2045
1 cent	\$11.0	\$10.6	\$10.2	\$9.8	\$11.2	\$52.7
2 cents	\$21.9	\$21.1	\$20.4	\$19.6	\$22.5	\$105.5
3 cents	\$32.9	\$31.7	\$30.5	\$29.4	\$33.7	\$158.2
4 cents	\$43.8	\$42.3	\$40.7	\$39.2	\$45.0	\$211.0
5 cents	\$54.8	\$52.9	\$50.9	\$49.0	\$56.2	\$263.7

Source: 2018 Local Government Financial Information Handbook

### Indexing Local Fuel Taxes

The state indexes the state gas taxes to the Consumer Price Index (CPI) every January, meaning that prices motorists pay rise in proportion to inflation, but local fuel taxes are not indexed to inflation. Indexing local fuel taxes to the CPI requires an act of the Florida Legislature. Indexing fuel taxes are important to local governments because it allows revenues to be adjusted as costs for materials and services rise with inflation. Using inflation factors from the Florida Department of Transportation,<sup>7</sup> the additional revenues that could be collected on the existing local fuel taxes is projected to be **\$382.7 million** for 2020-2045 as shown in Table 6. Indexing the potential 5 Cent 2<sup>nd</sup> LOFT would provide additional revenues.

**Table 6.** Potential Additional Revenue from Indexing Fuel Taxes in Millions of Year of Expenditure Dollars

	2020-2024	2025-2029	2030-2034	2035-2039	2040-2045	Total 2020-2045
Indexing Fuel Taxes	\$15.9	\$39.4	\$69.4	\$103.2	\$154.8	\$382.7

Source: 2018 Local Government Financial Information Handbook, FDOT Office of Work Program and Budget Inflation Factors

### Sales Tax

Historically, local option sales tax revenues have represented a major portion of Pinellas County's local transportation revenues. Pinellas County charges a 1.0 percent Local Discretionary Sales Surtax, specifically the Local Government Infrastructure Sales Surtax, which is more commonly referred to as the "Penny for Pinellas." This sales tax was first adopted in 1987 (collection began in 1990) and is set to expire at the end of 2029. Transportation improvements that have been funded with the Penny for Pinellas include countywide resurfacing improvements, intersection capacity improvements, bridge rehabilitation, construction of new and widened roads, Pinellas Trail expansion, and roadway beautification.

<sup>7</sup> Office of Work Program and Budget, (Fiscal Year 2017 is July 1, 2016 to June 30, 2017), <http://www.fdot.gov/planning/policy/economic/inflation.pdf>



This section provides a brief outline of adopted and available sales tax options for transportation as well as projected future revenues for sales tax options in Pinellas County. Sales tax revenues are based on a percentage of the sale and, therefore, increase and decrease with the effects of inflation and deflation. Compared to fuel taxes, sales tax revenues are a more reliable and consistent source of revenue.

Table 7 provides the projected sales tax revenues for Pinellas County through 2045. It was assumed that the sales tax revenues would grow proportional to population projections from Forward Pinellas at 0.21 percent per year. The projections in Table 7 for the Penny for Pinellas reflect only the revenues available to the County based on interlocal agreement and exclude any revenues allocated to municipalities, while the potential source Charter County and Regional Transportation System Surtax assumes all revenues are available to the county.

**Table 7. Sales Tax Revenues in Millions of Year of Expenditure Dollars**

Funding Source	2020-2024	2025-2029	2030-2034	2035-2039	2040-2045	Total 2020-2045
<b>Existing Sources</b>						
Penny for Pinellas	\$211.2	\$246.3	\$292.3	\$346.4	\$470.5	\$1,566.6
<b>Potential Source</b>						
Charter County and Regional Transportation System Surtax (1 percent)	\$896.7	\$1,045.8	\$1,241.0	\$1,470.8	\$1,998.1	\$6,652.5

Source: 2018 Local Government Financial Information Handbook, Pinellas County 2018 Economic Profile

**Local Government Infrastructure Sales Surtax (1.0%)**

- Commonly referred to as the “Penny for Pinellas.”
- This tax must be levied at the rate of 0.5 or 1 percent pursuant to an ordinance enacted by a majority vote of the County’s governing body and approved by voters in a countywide referendum.
- Generally, the proceeds must be expended to finance, plan, and construct infrastructure; to acquire land for public recreation, conservation, or protection of natural resources; or to finance the closure of local government-owned solid waste landfills that have been closed or are required to be closed by order of the Department of Environmental Protection.
- The surtax proceeds must be distributed to the County and its respective municipalities according to an interlocal agreement

Based on the taxable sales from the Pinellas County 2018 Economic Profile and interlocal agreements allotting 11.3 percent to countywide investments (jails, courts, and housing), Pinellas County will receive 51.75 percent of the



remaining revenues of the third Penny Extension (2020-2030), down from 52.33 percent under the current Extension (2010-2020). An estimated 51.3 percent of this total is expected to be spent on transportation projects, resulting in **\$38.7 million** in FY 2019. Compared to the current Extension, the third Penny Extension reflects a 42 percent increase in projected allocations to Pinellas County, and a 45 percent increase overall to the 24 municipalities.

Currently, this sales tax is set to expire at the end of 2029. For the 2045 LRTP purposes, the additional revenues that would be available, contingent upon re-adoption, were projected. Additionally, it is assumed that the current allocation levels (51.75 percent to the County, 51.3 percent of County portion to transportation) will remain constant through 2045.

### **Charter County and Regional Transportation System Surtax (1.0%)**

- Commonly referred to as the “Transit Surtax.”
- This tax may be levied at the rate of up to 1 percent pursuant to approval by a majority vote of the county’s electorate.
- Generally, the proceeds are for the development, construction, operation, and maintenance of fixed guideway rapid transit systems, bus systems, on-demand transportation services, and roads and bridges.
- The surtax proceeds must be deposited into the County trust fund or remitted by the county’s governing body to an expressway, transit, or transportation authority created by law.
- Neighboring Hillsborough County adopted this surtax in 2018 and will collect revenues beginning in 2019.

Based on taxable sales as found in the Pinellas County 2018 Economic Profile, estimated revenues in FY 2019 would be **\$164.5 million**. As with the Local Infrastructure Surtax, a 0.21 percent annual growth rate in the sales tax was used for projecting revenues through 2045, based on population projections.

### **PSTA Fare Revenues**

Fare revenue projections from the PSTA Adopted Operating and Capital Budget for FY 2019 total approximately \$10.4 million, increasing to \$11 million by 2045 based on county population growth. It is assumed that no expansion to service, increases to fares, or changes to fare structure occur during the analysis period. Revenues are estimated to total **\$278.4 million** for 2020-2045.

### **Other Sources**

In addition to the sources described in prior sections, other existing and potential sources of revenues are described below; no revenue projections have been estimated:

**Developer Fees** are fees charged to new development within pre-defined geographic areas and can be collected based on metrics such as value, square footage, frontage length, and others. The revenues could be dedicated to specific uses including transportation or utilities. Impact fees and mobility fees are developer fees historically used in Pinellas County. They are one-time fees helping to pay for local transportation improvements that serve the new development.

**Tax Increment Financing (TIF)** TIF is a value capture tool used to encourage redevelopment in blighted areas. Transportation investments are paid for with the incremental property tax revenues resulting from new development.





**Special Assessment Districts** are created to impose a fee on properties within the assessment area to fund improvements in that area. The County uses special assessment districts to fund local street paving, drainage, and lighting projects.

**Millage** Property taxes (ad valorem taxes) are made up of a number of local tax rates assessed on real property. Property taxes are a major source of funding for general government. A portion of the Countywide millage rate (in dollars per thousand) and the transit district rate (currently at the statutory maximum) are eligible for transportation uses.

**Public Private Partnership (PPP or P3)** An organizational structure or agreement between public and private entity(ies), P3s can provide a source of funding to pay the return on investment to the private sector. The benefits of the arrangement include better allocation of risk, faster implementation, and lower costs through private sector innovation.

**Index Fuel Taxes** The state indexes the state gas taxes to the Consumer Price Index (CPI) every January, meaning that prices motorists pay rise in proportion to inflation. Local fuel taxes are not indexed. Indexing local fuel taxes to the CPI requires an act of the Florida Legislature. Indexing fuel taxes are important to local governments because it allows revenues to be adjusted as costs for materials and services rise with inflation. Total estimated revenues 2020-2045 (in addition to existing fuel taxes): \$382.7 million

**Commercial Off-Street Parking Fee** An additional tax or fee on parking in public and/or commercial spaces could be collected by the County for transportation uses.

**Airport Car Rental Fees** An additional tax or fee on rental car transactions at the St. Pete-Clearwater International Airport could be dedicated to transportation uses. However, Section 159 of FAA Reauthorization, which was signed into law in October 2018, prohibits levying any tax on a business at an airport “that is not generally imposed on sales or services by that State, political subdivision, or authority unless wholly utilized for airport or aeronautical purposes.” As such, an amendment to the FAA law would be needed to make the funds available to the County.



## ***2045 REVENUE FORECAST FORWARD PINELLAS***

WITH STATEWIDE, DISTRICTWIDE  
AND COUNTY-SPECIFIC PROJECTIONS

2045 Forecast of State and Federal Revenues for Statewide and Metropolitan Plans

### **Overview**

This report documents the Florida Department of Transportation (FDOT) revenue forecast through 2045. Estimates for major state programs for this metropolitan area, for FDOT Districts, and for Florida as whole are included. This includes state and federal funds that “flow through” the FDOT work program. This information is used for updates of Metropolitan Planning Organization (MPO<sup>1</sup>) Long Range Transportation Plans (LRTPs) and related documents.

### Background

In accordance with federal statute, longstanding FDOT policy and leadership by the Metropolitan Planning Organization Advisory Council (MPOAC), the Office of Policy Planning (OPP) provides projections of future available funding to Florida’s 27 MPOs. This data is known as the Revenue Forecast. Consistent data is being applied to the development of the FDOT Strategic Intermodal System (SIS) Highway Cost Feasible Plan.

The department developed a long-range revenue forecast through 2045. The forecast is largely based upon recent federal legislation (e.g., the FAST Act<sup>2</sup>) and changes in multiple factors affecting state revenue sources and current policies. This 2045 forecast incorporates (1) amounts contained in the department’s work program for FYs 2018 through 2022, (2) the impact of the department’s objectives and investment policies, and (3) the Statutory Formula (equal parts of population and motor fuel tax collections) for distribution of certain program funds. All estimates are expressed in nominal dollars, also known as year of expenditure (YOE) dollars.

### Purpose

This version of the forecast (in word processing or portable document format) provides one specific MPO, and all interested parties, with dollar figures that will be necessary and useful as it prepares its 2045 LRTP. If more detail or particular additional numbers are needed, these may subsequently be delivered in spreadsheet format. This document does not forecast funds that do not “flow through” the state work program. Further information concerning local sources of revenue is available from State of Florida sources, particularly *Florida’s Transportation Tax Sources: A Primer*, and the *Local Government Financial Information Handbook*.<sup>3</sup>

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<sup>1</sup> In this document, the general term MPO is used to refer to organizations whose names take different forms, including TPO, TPA and MTPO.

<sup>2</sup> Fixing America’s Surface Transportation (FAST) Act, Public Law 114-94, December 4, 2015.

<sup>3</sup> FDOT’s tax source primer is available at <http://www.fdot.gov/comptroller/pdf/GAO/RevManagement/Tax%20Primer.pdf>. The financial information handbook is prepared by the Office of Economic and Demographic Research, part of the Florida Legislature; it is available at <http://edr.state.fl.us/Content/local-government/reports/lgh17.pdf>.

This forecast features county level estimates for major FDOT capacity programs, specifically Other Roads and Transit. If an MPO includes more than one county, the county level estimates are totaled to produce an overall MPO estimate. If an MPO's boundary doesn't match county boundaries, the FDOT District will determine appropriate funding totals for that MPO. OPP is available for consultation and support, and Districts are asked to share their method and results with our office. However, final responsibility rests with the appropriate District.

There is a long-term goal to focus planning on metropolitan areas which do not correspond to county or city boundaries. In some cases, analyses and plans are based on census designated urbanized areas (UZAs). But for most sources of funding, it is more practical to define geographic areas by county boundaries.

This forecast does not break down SIS Highway expenditures to the county or District level. SIS Highway expenditures are addressed in the SIS Cost Feasible Plan (CFP), which is under preparation by the FDOT Systems Implementation Office.<sup>4</sup> Districts always inform MPOs of projects that are proposed to be included in the CFP, and, conversely, CFP projects need to be included in the appropriate MPO LRTP(s) to receive federal funding.

This Forecast lists funding for FDOT programs designed to support, operate, and maintain the state transportation system. The FDOT has set aside sufficient funds in the 2045 Revenue Forecast for these programs, referred to as "non-capacity programs" here, to meet statewide objectives and program needs in all metropolitan and non-metropolitan areas. Specific District level amounts are provided for existing facilities expenditures. Funding for these programs is not included in the county level estimates.

### **2045 Revenue Forecast (State and Federal Funds)**

The 2045 Revenue Forecast is the result of a three-step process:

1. State and federal revenues from current sources were estimated.
2. Those revenues were distributed among appropriate statewide capacity and non-capacity programs consistent with statewide priorities.
3. County level estimates for the Other Roads and Transit programs were developed, along with County, District or Statewide estimates for other funding categories that are of particular interest to the 27 Florida MPOs.

### Forecast of State and Federal Revenues

The 2045 Revenue Forecast includes program estimates for the expenditure of state and federal funds expected from current revenue sources (i.e., new revenue sources were not added). The forecast estimates revenues from federal, state, and Turnpike sources included in the Department's 5-Year Work Program.

The forecast does not estimate revenue from other sources (i.e., local government/authority taxes, fees, and bond proceeds; private sector participation; and innovative finance sources). Estimates of state revenue sources were based on estimates prepared by the State Revenue Estimating Conference (REC) in September 2017 for state fiscal years (FYs) 2019 through 2028. Estimates of federal revenue sources were based on the Department's Federal Aid Forecast for FYs 2018 through 2027. In this forecast, Surplus Toll Revenue is only projected for Miami-

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<sup>4</sup> Formerly known as the Systems Planning Office.

Dade County, but that category may apply to more counties in future Revenue Forecasts. Assumptions about revenue growth are shown in Table 1:

**Table 1**  
**Revenue Sources and Assumptions**

Revenue Sources	Years	Assumptions*
State Taxes (includes fuel taxes, tourism-driven sources, vehicle-related taxes and documentary stamp taxes)	2019-2028	Florida REC Estimates; these average in the range from 2.5% to 3.0% per year
	2029-2045	Annual 1.93% increase in 2029, gradually decreasing to -0.44% in 2045
Federal Distributions (Total Obligor Authority)	2018-2027	FDOT Federal Aid Forecast
	2028-2045	Annual 0.0% increase through 2045
Turnpike	2018-2028	Turnpike Revenue Forecast
	2029-2045	Annual 1.93% increase in 2029, gradually decreasing to -0.44% in 2045

\* Note all growth rates show nominal, or year of expenditure, dollar figures. Consistent with REC assumptions, a constant annual inflation rate of 2.60% is projected forward indefinitely. Therefore, *an assumption of nominal growth of 1.93% signifies a real decline of about 0.65% per year.*

A summary of the forecast of state, federal and Turnpike revenues is shown in Table 2. The *2045 Revenue Forecast Guidebook* contains inflation factors that can be used to adjust project costs expressed in “present day cost” to “year of expenditure” dollars.

**Table 2**  
**Forecast of Revenues**  
**2045 Revenue Forecast (Millions of Dollars)**

(Percentages reflect percentage of total period funding produced by that source. For example, Federal funding is projected to provide 24% of all funding for the period of 2021 through 2025)

Major Revenue Sources	Time Periods (Fiscal Years)					26-Year Total <sup>2</sup> 2020-2045
	2020 <sup>1</sup>	2021-2025 <sup>1</sup>	2026-2030	2031-2035	2036-2045	
Federal	2,353 28%	10,884 24%	11,878 23%	12,108 21%	24,217 20%	61,440 22%
State	5,270 62%	27,366 61%	34,128 65%	38,264 66%	80,719 66%	185,748 65%
Turnpike	814 10%	6,572 15%	6,688 13%	7,861 14%	16,518 14%	38,453 13%
<b>Total<sup>2</sup></b>	<b>8,437</b>	<b>44,823</b>	<b>52,694</b>	<b>58,233</b>	<b>121,454</b>	<b>285,641</b>

<sup>1</sup> Based on the FDOT Adopted Work Program for 2018 through 2022.

<sup>2</sup> Columns and rows sometimes do not equal the totals due to rounding.

### Estimates for State Programs

Long range revenue forecasts assist in determining financial feasibility of needed transportation improvements, and in identifying funding priorities. FDOT policy places primary emphasis on safety and preservation. Remaining funding is planned for capacity programs and other priorities.

The 2045 Revenue Forecast includes the program funding levels contained in the July 1, 2017 Adopted Work Program for 2018 through 2022. The forecast of funding levels for FDOT programs for 2020-2045 was developed based on the corresponding Program and Resource Plan (PRP), which includes the Adopted Work Program and planned funding for fiscal years 2023-2026. This Revenue Forecast provides information for Capacity and Non-Capacity state programs. The information is consistent with “Financial Guidelines for MPO Long Range Plans” moved forward by the Metropolitan Planning Organization Advisory Council Policy and Technical Committee on July 13, 2017.

The Revenue Forecast entails long-term financial projections for support of long-term planning. The forecast is delivered well in advance of the 5-year LRTP adoption schedule, roughly 18 months in advance of the first required adoption. This forecast is considered satisfactory for the remainder of the 5-year cycle; in other words, it is useful for MPOs whose adoptions come at the end of the cycle, about 3½ years after the first MPOs. However, FDOT reserves the right to consider adjustments to the Revenue Forecast during the LRTP adoption cycle, if warranted.

### **Capacity Programs**

Capacity programs include each major FDOT program that expands the capacity of existing transportation systems (such as highways and transit). Table 3 includes a brief description of each major capacity program and the linkage to the program categories used in the PRP.

### Statewide Forecast for Capacity Programs

Table 4 identifies the statewide estimates for capacity programs in the 2045 Revenue Forecast. \$285 billion is forecast for the entire state transportation program from 2020 through 2045; about \$149 billion (52%) is forecast for capacity programs.

### Metropolitan Forecast for Capacity Programs

Pursuant to federal law, transportation management area (TMA) funds and certain Transportation Alternatives (TALU) funds are projected based on current population estimates. These 2 categories only apply to federally designated TMAs; 15 of the State’s 27 MPOs qualify for these funds. District estimates for certain Transportation Alternatives (TA) funds and the Other Roads program were developed using the current statutory formula.<sup>5</sup> For planning purposes, transit program funds were divided between Districts and counties according to population.

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<sup>5</sup> The statutory formula is 50% population and 50% motor fuel tax collections.

**TABLE 3**  
**Major Capacity Programs Included in the 2045 Revenue Forecast**  
**and Corresponding Program Categories in the Program and Resource Plan (PRP)**

2045 Revenue Forecast Programs	PRP Program Categories
<p><u>SIS Highways Construction &amp; ROW</u> - Construction, improvements, and associated right of way on SIS highways (i.e., Interstate, the Turnpike, other toll roads, and other facilities designed to serve interstate and regional commerce including SIS Connectors).</p>	<p>Interstate Construction  Turnpike Construction  Other SIS Highway Construction  SIS Highway Traffic Operations  SIS Highway Right of Way (ROW)  SIS Advance Corridor Acquisition</p>
<p><u>Other Arterial Construction/ROW</u> - Construction, improvements, and associated right of way on State Highway System roadways not designated as part of the SIS. Also includes funding for local assistance programs such as the Transportation Regional Incentive Program (TRIP), and the County Incentive Grant Program (CIGP).</p>	<p>Arterial Traffic Operations  Construction  County Transportation Programs  Economic Development  Other Arterial &amp; Bridge Right of Way  Other Arterial Advance Corridor Acquisition</p>
<p><u>Aviation</u> - Financial and technical assistance to Florida’s airports in the areas of safety, security, capacity enhancement, land acquisition, planning, economic development, and preservation.</p>	<p>Airport Improvement  Land Acquisition  Planning  Discretionary Capacity Improvements</p>
<p><u>Transit</u> - Technical and operating/capital assistance to transit, paratransit, and ridesharing systems.</p>	<p>Transit Systems  Transportation Disadvantaged – Department  Transportation Disadvantaged – Commission  Other; Block Grants; New Starts Transit</p>
<p><u>Rail</u> - Rail safety inspections, rail-highway grade crossing safety, acquisition of rail corridors, assistance in developing intercity and commuter rail service, and rehabilitation of rail facilities.</p>	<p>Rail/Highway Crossings  Rail Capacity Improvement/Rehabilitation  High Speed Rail  Passenger Service</p>
<p><u>Intermodal Access</u> - Improving access to intermodal facilities, airports and seaports; associated rights of way acquisition.</p>	<p>Intermodal Access</p>
<p><u>Seaport Development</u> - Funding for development of public deep-water ports projects, such as security infrastructure and law enforcement measures, land acquisition, dredging, construction of storage facilities and terminals, and acquisition of container cranes and other equipment used in moving cargo and passengers.</p>	<p>Seaport Development</p>
<p><u>SUN Trail</u> – FDOT is directed to make use of its expertise in efficiently providing transportation projects to develop a statewide system of paved non-motorized trails as a component of the Florida Greenways and Trails System (FGTS), which is planned by the Florida Department of Environmental Protection (FDEP).</p>	<p>Other State Highway Construction  Other State Highway ROW  Other Roads Construction  Other Roads ROW  Other SIS Highway Construction  SIS Highway ROW</p>

**Table 4**  
**Statewide Capacity Program Estimates**  
**State and Federal Funds from the 2045 Revenue Forecast (Millions of Dollars)**

Major Programs	Time Periods (Fiscal Years)					26-Year Total <sup>2</sup>
	2020 <sup>1</sup>	2021-25 <sup>1</sup>	2026-30	2031-35	2036-45	2020-2045
SIS Highways Construction & ROW	2,199	12,940	12,490	13,933	28,971	70,534
Other Roads Construction & ROW	892	6,538	8,006	8,650	18,103	42,188
Aviation	211	1,143	1,433	1,596	3,354	7,738
Transit	417	2,306	2,881	3,154	6,580	15,339
Rail	178	850	1,255	1,425	2,985	6,692
Intermodal Access	40	262	345	379	791	1,816
Seaports	114	622	837	938	1,970	4,481
SUN Trail	25	125	125	125	250	650
<b>Total Capacity Programs</b>	<b>4,075</b>	<b>24,786</b>	<b>27,372</b>	<b>30,200</b>	<b>63,004</b>	<b>149,438</b>
<b>Statewide Total Forecast</b>	<b>8,437</b>	<b>44,823</b>	<b>52,694</b>	<b>58,233</b>	<b>121,454</b>	<b>285,641</b>

<sup>1</sup> Based on the FDOT Tentative Work Program for FYs 2018 through 2022.

<sup>2</sup> Columns and rows sometimes do not equal the totals due to rounding.

Estimates for the Other Roads and Transit program categories for this metropolitan area are included in Table 5.

**Table 5**  
**County Level Capacity Program Estimates**  
**State and Federal Funds from the 2045 Revenue Forecast (Millions of Dollars)**

Estimates for Forward Pinellas

Capacity Programs*	Time Periods (Fiscal Years)					26-Year Total
	2020	2021-25	2026-30	2031-35	2036-45	2020-2045
Other Roads Construction & ROW	20.37	188.74	247.28	273.43	575.73	1305.54
Transit	16.84	93.56	117.97	129.19	269.15	626.71
<b>Total - Main Programs</b>	<b>37.21</b>	<b>282.29</b>	<b>365.25</b>	<b>402.62</b>	<b>844.88</b>	<b>1932.25</b>

\* Estimates for 2018 through 2022 are contained in the FDOT Adopted Work Program.

# Other Roads estimates do not include projected funding for the TRIP program of the Federal TMA program (SU Fund Code).

^ Transit estimates do not include projected funding for the Florida New Starts program.

A few programs fund capacity projects throughout the state on a competitive basis. The two most prominent programs for MPOs are the Transportation Regional Incentive Program (TRIP) and the Florida New Starts Transit Program. Formerly, TRIP was referred to as a Documentary Stamp Tax program, but there are currently multiple sources of funding. With the economic recovery, the forecast funding for TRIP is now over five times the level of 5 years ago. Also, amounts for the federally funded TMA program (Fund Code SU) are provided in Table 6, and not included in Table 5. Neither TRIP, Florida New Starts or TMA funds are included above.

**Table 6**  
**Transportation Management Area (TMA) Funds Estimates**  
**(Known as SU Funds in FDOT Work Program)**  
**Federal Funds from the 2045 Revenue Forecast (Millions of Dollars)**

Forward Pinellas Metropolitan Area (Defined as Pinellas County)	Time Periods (Fiscal Years)					26 Year Total
	2020	2021-25	2026-30	2031-35	2036-45	2020-2045
<b>TMA / SU Funds</b>	13.46	67.31	67.31	67.31	134.62	350.01

Projects which would be partially or entirely funded by TRIP or FL New Starts cannot be counted as “funded” in LRTPs. This is because there is no guarantee of any specific project receiving TRIP or FL New Starts funding in the future. Both programs are competitive, and only a small percentage of potentially eligible projects receive funding. However, these projects can be included in LRTPs as “illustrative” projects.<sup>6</sup> If MPOs have specific questions, they should consult with their District liaison and planning staff; District staff will contact the OPP, Work Program, or other Central Office staff as needed. Conditional estimates of TRIP funds by District are in Table 7. Statewide estimates of FL New Starts funds are in Table 8.

The FAST Act continued funding for Transportation Alternatives projects. Categories impacting MPOs include funds for (1) Transportation Management Areas (TALU funds); (2) areas with populations greater than 5,000 up to 200,000 (TALL funds), and (3) any area of the state (TALT funds). Estimates of Transportation Alternatives Funds are shown further below in Table 9.

**Table 7**  
**Districtwide Transportation Regional Incentive Program Estimates**  
**State Funds from the 2045 Revenue Forecast (Millions of Dollars)**

FDOT District	5-Year Period (Fiscal Years)					26-Year Total <sup>2</sup>
	2020 <sup>1</sup>	2021-25	2026-30	2031-35	2036-2045	2020-2045
District 1	3.1	21.9	32.7	36.4	74.6	<b>168.8</b>
District 2	2.5	17.6	26.3	29.2	59.9	<b>135.5</b>
District 3	1.6	11.6	17.3	19.2	39.3	<b>89.0</b>
District 4	4.1	28.9	43.1	47.9	98.2	<b>222.3</b>
District 5	4.7	32.8	49.0	54.4	111.7	<b>252.6</b>
District 6	2.8	19.7	29.4	32.7	67.0	<b>151.6</b>
District 7	3.3	23.2	34.6	38.4	78.8	<b>178.2</b>
<b>Statewide Total Forecast</b>	<b>22.2</b>	<b>155.8</b>	<b>232.3</b>	<b>258.2</b>	<b>529.5</b>	<b>1,197.9</b>

<sup>1</sup> Estimates for 2018 through 2022 are contained in the FDOT Adopted Work Program.

<sup>2</sup> Columns and rows sometimes do not equal the totals due to rounding.

<sup>6</sup> Other projects for which funding is uncertain may also be included as illustrative projects.



**Table 8**  
**Transit - Florida New Starts Program Estimates**  
**State Funds from the 2045 Revenue Forecast (Millions of Dollars)**

Statewide Program	Time Periods (Fiscal Years)					26-Year Total
	2020	2021-25	2026-30	2031-35	2036-45	2020-2045
Statewide Total Forecast	41.8	226.3	259.2	282.4	593.4	1,403.1

**Table 9**  
**Transportation Alternatives Funds Estimates**  
**Federal Funds from the 2045 Revenue Forecast (Millions of Dollars)**

Forward Pinellas Metropolitan Area (Defined as Pinellas County)	Time Periods (Fiscal Years)					26 Year Total <sup>1</sup>
	2020 <sup>1</sup>	2021-25	2026-30	2031-35	2036-45	2020-2045
TALU (Urban); Funds for TMA	1.17	5.85	5.85	5.85	11.69	30.40
TALL (<200,000 population); Entire FDOT District	0.37	1.86	1.86	1.86	3.71	9.65
TALT (Any Area); Entire FDOT District	3.67	18.33	18.33	18.33	36.66	95.32

<sup>1</sup> Rows sometimes do not equal the totals due to rounding.

Other projects for which funding is uncertain may also be included in LRTPs as “illustrative” projects.

**Non-Capacity Programs**

Non-capacity programs refer to FDOT programs designed to support, operate and maintain the state highway system: safety, resurfacing, bridge, product support, operations and maintenance, and administration. Table 10 includes a description of each non-capacity program and the linkage to the program categories used in the Program and Resource Plan.

County level estimates are not needed for these programs. Instead, FDOT has included sufficient funding in the 2045 Revenue Forecast to meet the following statewide objectives and policies:

- **Resurfacing program:** Ensure that 80% of state highway system pavement meets Department standards;
- **Bridge program:** Ensure that 90% of FDOT-maintained bridges meet Department standards while keeping all FDOT-maintained bridges open to the public safe;
- **Operations and maintenance program:** Achieve 100% of acceptable maintenance condition standard on the state highway system;
- **Product Support:** Reserve funds for Product Support required to construct improvements (funded with the forecast’s capacity funds) in each District and metropolitan area; and
- **Administration:** Administer the state transportation program.

The Department has reserved funds in the 2045 Revenue Forecast to carry out its responsibilities and achieve its objectives for the non-capacity programs on the state highway system in each

**TABLE 10**  
**Major Non-Capacity Programs Included in the 2045 Revenue Forecast**  
**and Corresponding Program Categories in the Program and Resource Plan (PRP)**

2045 Revenue Forecast Programs	PRP Program Categories
<u>Safety</u> - Includes the Highway Safety Improvement Program, the Highway Safety Grant Program, Bicycle/Pedestrian Safety activities, the Industrial Safety Program, and general safety issues on a Department-wide basis.	Highway Safety Grants
<u>Resurfacing</u> - Resurfacing of pavements on the State Highway System and local roads as provided by state law.	Interstate Arterial and Freeway Off-System Turnpike
<u>Bridge</u> - Repair and replace deficient bridges on the state highway system. In addition, not less than 15% of the amount of 2009 federal bridge funds must be expended off the federal highway system (e.g., on local bridges not on the State Highway System).	Repair - On System Replace - On System Local Bridge Replacement Turnpike
<u>Product Support</u> - Planning and engineering required to “produce” FDOT products and services (i.e., each capacity program; Safety, Resurfacing, and Bridge Programs).	Preliminary Engineering Construction Engineering Inspection Right of Way Support Environmental Mitigation Materials & Research Planning & Environment Public Transportation Operations
<u>Operations &amp; Maintenance</u> - Activities to support and maintain transportation infrastructure once it is constructed and in place.	Operations & Maintenance Traffic Engineering & Operations Toll Operations Motor Carrier Compliance
<u>Administration and Other</u> - Resources required to perform the fiscal, budget, personnel, executive direction, document reproduction, and contract functions. Also includes the Fixed Capital Outlay Program, which provides for the purchase, construction, and improvement of non-highway fixed assets (e.g., offices, maintenance yards). The “Other” category consists primarily of debt service.	Administration Fixed Capital Outlay Office Information Systems Debt Service

District and metropolitan area. Table 11 identifies the statewide estimates for non-capacity programs. About \$136 billion (48% of total revenues) is forecast for non-capacity programs.

**Table 11**  
**Statewide Non-Capacity Expenditure Estimates**  
**State and Federal Funds from the 2045 Revenue Forecast (Millions of Dollars)**

Major Categories	Time Periods (Fiscal Years)					26-Year Total <sup>1</sup>
	2020	2021-25	2026-30	2031-35	2036-45	2020-2045
Safety	141	820	826	825	1,659	<b>4,271</b>
Resurfacing	633	4,354	4,150	4,241	8,756	<b>22,135</b>
Bridge	1,035	1,051	2,403	2,946	6,122	<b>13,556</b>
Product Support	1,302	6,576	6,709	7,096	14,614	<b>36,299</b>
Operations and Maintenance	1,384	7,442	8,596	9,162	18,939	<b>45,523</b>
Administration and Other	429	2,770	2,891	2,819	5,559	<b>14,468</b>
<b>Statewide Total Forecast</b>	<b>4,923</b>	<b>23,013</b>	<b>25,576</b>	<b>27,089</b>	<b>55,650</b>	<b>136,251</b>

<sup>1</sup> Columns and rows sometimes do not equal the totals due to rounding.

Table 12 contains District-wide estimates for State Highway System (SHS) existing facilities expenditures for information purposes. Existing facilities expenditures include all expenditures for the program categories Resurfacing, Bridge, and Operations and Maintenance (O&M). In the previous Revenue Forecast, these expenditures were described as SHS O&M, but the expenditures on the Resurfacing and Bridge categories, in combination, are about as much as those for O&M. These existing facilities estimates are provided pursuant to an agreement between FDOT and the Federal Highway Administration (FHWA) Division Office.

**Table 12**  
**State Highway System Existing Facilities Estimates by District**  
**State and Federal Funds from the 2045 Revenue Forecast (Millions of Dollars)**

Major Programs	Time Periods (Fiscal Years)					26-Year Total <sup>1</sup>
	2020	2021-25	2026-30	2031-35	2036-45	2020-2045
District 1	457	1,922	2,267	2,446	5,060	<b>12,151</b>
District 2	606	2,551	3,009	3,247	6,716	<b>16,129</b>
District 3	495	2,084	2,458	2,652	5,487	<b>13,176</b>
District 4	410	1,728	2,038	2,199	4,549	<b>10,924</b>
District 5	561	2,362	2,785	3,006	6,217	<b>14,931</b>
District 6	203	854	1,007	1,087	2,248	<b>5,399</b>
District 7	319	1,345	1,586	1,712	3,541	<b>8,503</b>
<b>Statewide Total Forecast</b>	<b>3,051</b>	<b>12,847</b>	<b>15,150</b>	<b>16,348</b>	<b>33,817</b>	<b>81,214</b>

Note: Includes Resurfacing, Bridge, and Operations & Maintenance Programs.

<sup>1</sup> Columns and rows sometimes do not equal the totals due to rounding.

### Advisory Concerning Florida's Turnpike Enterprise

Within the framework of FDOT, Florida's Turnpike Enterprise (Turnpike) is given authority, autonomy and flexibility to conduct its operations and plans in accordance with Florida Statute and its Bond Covenants. The Turnpike's traffic engineering consultant projects Toll Revenues and Gross Concession Revenues for the current year and the subsequent 10-year period, currently FYs 2018-2028. The consultant's official projections are available at [http://www.floridasturnpike.com/documents/reports/Traffic%20Engineers%20Annual%20Report/1\\_Executive%20Summary.pdf](http://www.floridasturnpike.com/documents/reports/Traffic%20Engineers%20Annual%20Report/1_Executive%20Summary.pdf).

Projections of Turnpike revenues within the State of Florida Revenue Forecast beyond FY2028 are for planning purposes, and no undue reliance should be placed on these projections. Such amounts are generated and shared by the FDOT Office of Policy Planning (OPP) for purposes of accountability and transparency. They are part of the Revenue Forecast process, which serves the needs of MPOs generating required Long Range Transportation Plans (LRTPs).

MPOs do not program capital projects or make decisions concerning Turnpike spending. OPP projections are not part of the Turnpike's formal revenue estimating process and are not utilized for any purpose other than to assist MPOs and perform related functions. Such amounts do not reflect the Turnpike's requirement to cover operating and maintenance costs, payments to bondholders for principal and interest, long-term preservation costs, and other outstanding Turnpike obligations and commitments.

**REVENUE FORECAST FOR THE FORWARD PINELLAS  
LONG RANGE PLAN UPDATE**

**2045 Forecast of State and Federal Revenues  
for Statewide and Metropolitan Plans**

# APPENDIX L

## ENVIRONMENTAL JUSTICE



# Environmental Justice

2015 Demographic Analysis Report



# Environmental Justice

## 2015 Demographic Analysis Report

Developed by Forward Pinellas in its role as the Pinellas County Metropolitan Planning Organization for its 2045 Long Range Transportation Plan

May 2018

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*This project has been developed in compliance with Title VI of the Civil Rights Act of 1964 and other federal and state nondiscrimination authorities. Neither FDOT nor this project will deny the benefits of, exclude from participation in, or subject anyone to discrimination the basis of race, color, national origin, age, sex, disability, or family status.*

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## **Introduction**

This report provides a summary population analysis conducted to determine the broad geographic location, total number, and the percentage of the population groups address by the U.S. Department of Transportation Order on Environmental Justice, and Executive Order 12898 (Feb. 11, 1994). These groups are: Black or African American, Hispanic or Latino, Asian American, American Indian and Alaskan Native, Native-Hawaiian and Other Pacific Islander, and Low-Income. The analysis advances the tenets of the Environmental Justice legislation focused on Title VI of the 1964 Civil Rights Act. The purpose of the legislation is to ensure nondiscrimination in federally funded activities by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs in minority and low-income populations. This demographic analysis will be used to develop two maps depicting low income and minority locations in relation to selected federally funded projects in the 2045 Long Range Transportation Plan (LRTP) update. The objective is to anticipate the transportation and community impact of selected federally funded roadway, bicycle and pedestrian, and transit enhancements included in the 2045 LRTP.

## **Demographic Context**

The base population, race and income level data for this analysis was gathered from the 2011-2015 American Community Survey (ACS) 5-Year Estimates at the Census Tract level. Census Tracts are defined by the Census Bureau as small, relatively permanent statistical subdivisions of a county for the purpose of presenting data. Census Tracts are amongst the lowest common denominator of data.

According to the ACS population, the estimated population increased by nearly 33,000 people since 2010 to 949,321 in 2015. The ACS population profile indicates that there were slightly more females than males in Pinellas County, and the median age of residents continued to increase from 43.6 in 2000 to 46.3 in 2010 and 47.1 in 2015. The average household size increased slightly from 2.24 in 2010 to 2.28 in 2015. In 2010, 70.4% of all occupied households were owner-occupied compared to 64.8% in 2015. In 2010, 19.4% of all housing units were vacant. This percentage remained approximately the same in the 2015 ACS estimate.

## **Populations for Environmental Justice (EJ) Analysis**

Information on minority and low income populations was retrieved from the 2011-2015 American Community Survey (ACS) 5-Year Estimates (Minority: ACS Demographic and Housing Estimates/Low Income: Poverty Status in the Past 12 months). Per Capita Income information was also utilized for comparison purposes and this data was drawn from the 2011-2015 ACS 5-Year Estimates: Selected Economic Characteristics.

According to guidance on defining EJ areas, it is recommended that thresholds are set where minority populations exceed either 50% of the population in a geographic area or where the minority population is meaningfully greater than the minority population percentage in the general population. The average minority population by census tract in the county is 22.15%. For the purposes of this analysis, any census tract with a minority population that exceeds 22.15% has been identified as an EJ area. This threshold was set in collaboration with the Forward Pinellas Technical Coordinating Committee (TCC). It was determined that a threshold of 50% was too high for local conditions and would exclude areas with concentrations of minority populations that were significant, in relation to the entire Pinellas County population.

The average low-income population by census tract in Pinellas County increased from 12.1% in 2010 to 14.36% in 2015. Low-income is defined as those living below the poverty level in Pinellas County, as determined by the Census Bureau. Table 4 highlights the 2015 Poverty Thresholds utilized by the Census Bureau. For the purpose of this analysis, any census tract with a low-income population that exceeds a countywide average of 20% has been identified as an EJ area. This threshold was set in collaboration with the TCC.

While the average low-income population by census tract in Pinellas County was 14.36%, the 20% threshold was chosen given the characteristics of the local population. With poverty status determined in part by per-capita income data combined with the large population of retirees in the county, it was decided that using the countywide average would be misleading as many retirees may be utilizing accumulated wealth to supplement any other income. In addition, staff conducted an analysis of those communities identified as having a higher-than-average rate of poverty and determined that some of those communities were actually more upscale retiree communities that should not be included as a part of

this analysis. The following three maps illustrate the census tracts in Pinellas County that will be identified as EJ for the 2045 LRTP update. Figure 1 shows the census tracts where the minority population exceeds the countywide average of 22.15%, while Figure 2 shows those census tracts where the percentage of the population living below the poverty line exceeds 20%. Figure 3 shows the combination of these two maps that identify all EJ areas in Pinellas County. This information will be used for a spatial analysis to determine the levels of transportation investment in EJ versus non-EJ areas, and to ensure that minority and low-income populations in EJ areas will not experience disproportionately high and adverse effects burdened from projects related to the transportation system as well as ensure these areas will not be disproportionately excluded from receiving the benefits of transportation investments. In addition, EJ areas will be targeted for additional public outreach activities to ensure that traditionally underrepresented groups are involved in the transportation planning process.

Figure 1

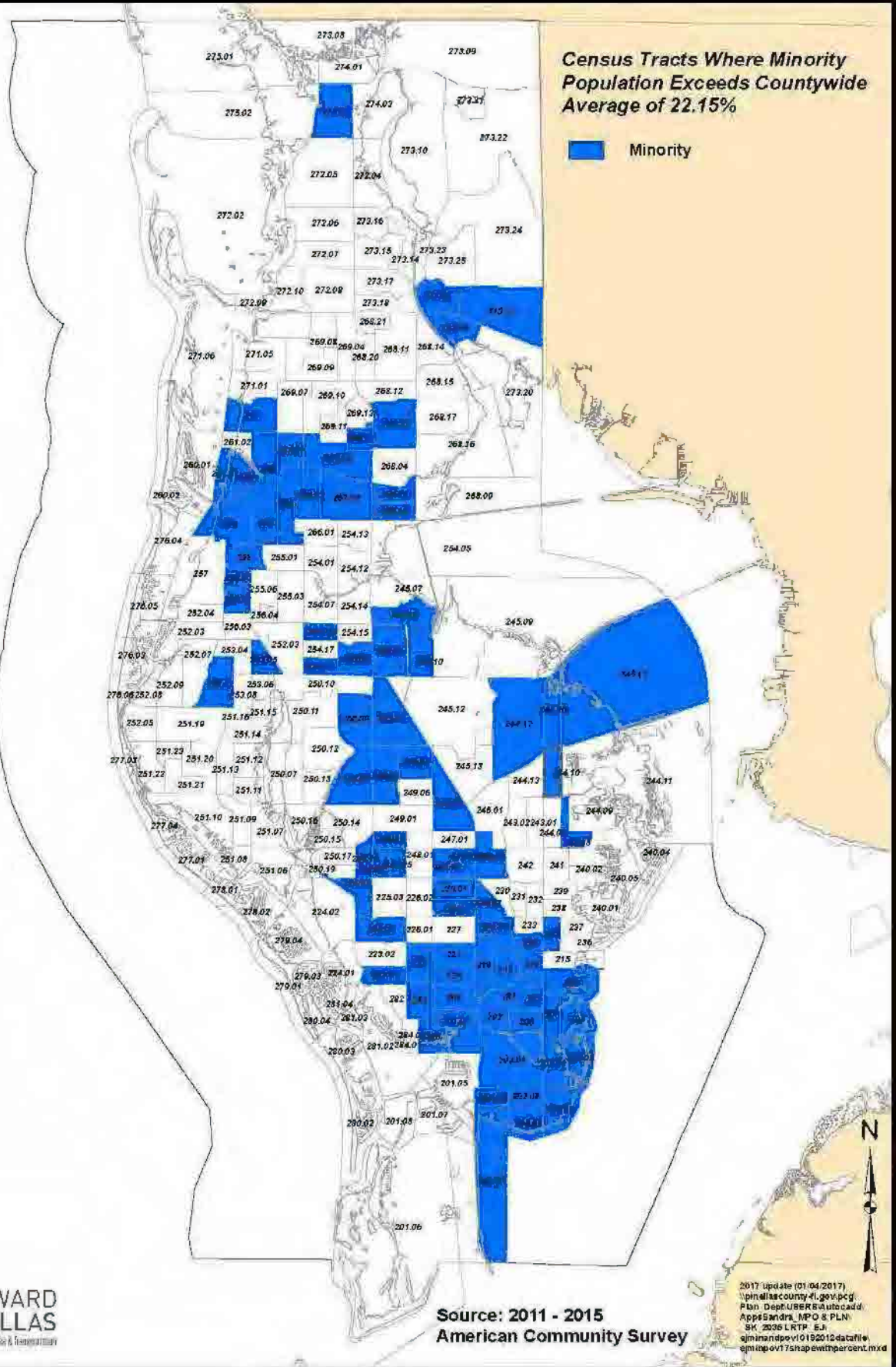
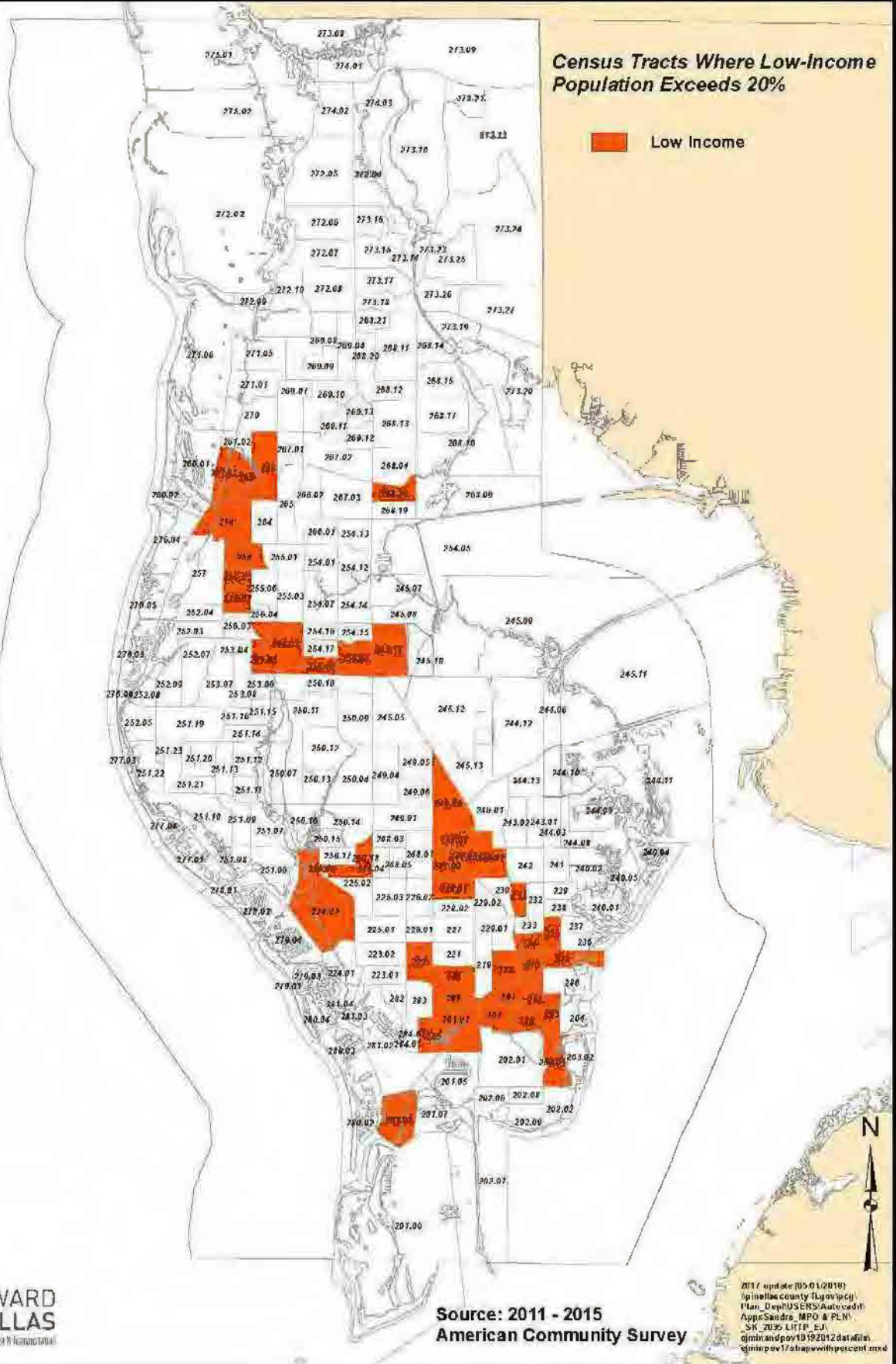


Figure 2





## Minority Population Analysis

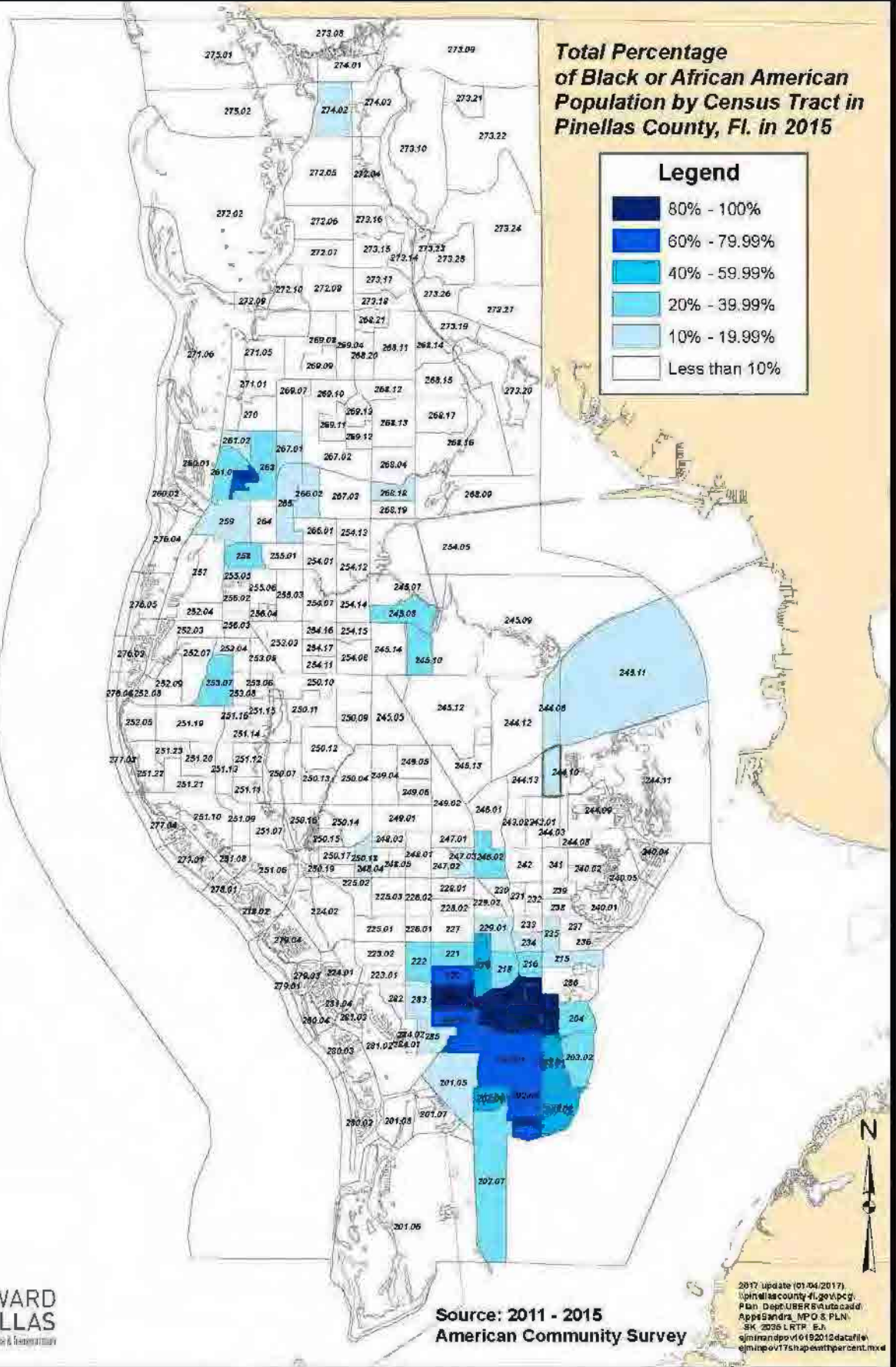
### **Areas with High Black or African American Population Alone**

Approximately 10.48% (96,133) of the estimated Pinellas County population for whom poverty status was determined in 2015 was Black or African American. The population is scattered throughout the county with concentrations in census tracts ranging from 0.3% to 96.09% of the total census tract population. In 2010, the Black or African American population made up 10.3% (94,745) of the entire population. Table 1 below highlights those census tracts with a Black or African American population exceeding 50% of the census tract population. This threshold was chosen to highlight those census tracts with the highest concentrations of the minority group. Figure 4 displays the geographical distribution of the Black or African American population throughout Pinellas County.

Table 1

Census Tracts with Black or African American Population over 50% in 2015			
Census Tract	Total Population	Black or African American Population	Percentage Black or African American Population
201.01	4,811	3,711	77.14%
202.01	4,963	3,057	61.60%
202.08	2,271	1,780	78.38%
202.09	4,042	2,738	67.74%
205.00	3,251	2,773	85.30%
206.00	4,300	3,959	92.07%
207.00	3,431	3,295	96.04%
208.00	4,632	4,451	96.09%
212.00	3,380	2,941	87.01%
220.00	2,856	2,156	75.49%
262.00	1,943	1,499	77.15%
287.00	2,963	2,719	91.77%

Figure 4





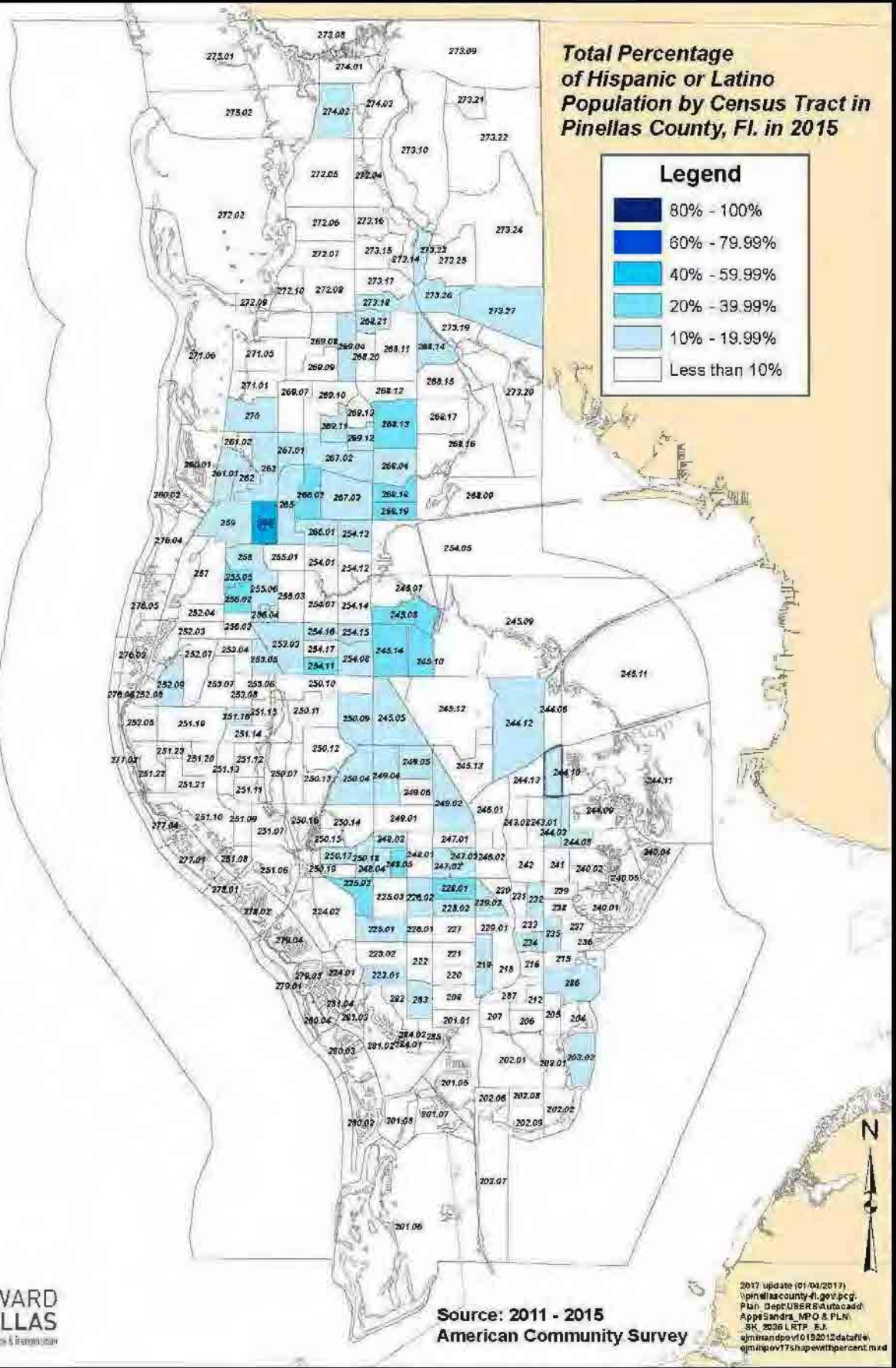
**Areas with High Hispanic or Latino Population (All Races)**

The Hispanic or Latino population comprises people belonging to different racial groups. The population of this group as a whole increased 89% between 2000 and 2015. This group accounted for approximately 4.6% (42,760) of the population in 2000, 8% (73,241) in 2010 and approximately 8.7% (81,038) in 2015. Table 2 below highlights those census tracts with a Hispanic or Latino population exceeding 20% of the census tract population. This threshold was chosen to highlight those census tracts with the highest concentrations of the minority group. Figure 5 displays the geographical distribution of the Hispanic or Latino population.

**Table 2**

<b>Census Tracts with an Hispanic or Latino Population greater than 20% in 2015</b>			
<b>Census Tract</b>	<b>Total Population</b>	<b>Total Hispanic or Latino Population</b>	<b>Percentage Hispanic or Latino Population</b>
225.02	3,921	900	22.95%
245.08	6,325	1,569	24.81%
245.1	2,468	1,170	47.41%
245.14	4,502	955	21.21%
248.05	2,693	561	20.83%
254.11	2,094	497	23.73%
255.05	2,458	824	33.52%
264	6,289	2,674	42.52%
268.13	3,983	1,187	29.80%
268.18	3,936	993	25.23%
268.19	1,993	520	26.09%

Figure 5



**Areas with High Asian American Population**

Asian Americans accounted for 3.2% (29,338) of the population in 2015, an increase from 3% (27,233) in 2010. Table 3 below highlights those census tracts that have an Asian population above 10%. This threshold was chosen to highlight those census tracts with the highest concentrations of the minority group. Figure 6 displays the geographical distribution of the Asian population throughout Pinellas County.

Table 3

Census Tracts with an Asian Population Greater than 10% in 2015			
Census Tract	Total Population	Asian Population	Percentage Asian Population
228.02	3,578	626	17.50%
229.01	2,822	508	18.00%
229.02	2,455	399	16.25%
230	2,493	310	12.43%
245.05	7,705	780	10.12%
245.09	3,352	386	11.52%
247.01	3,375	364	10.79%
247.02	2,075	222	10.70%
248.03	2,616	376	14.37%
248.04	2,136	386	18.07%
248.05	2,693	444	16.49%
249.01	5,635	674	11.96%
249.04	3,702	587	15.86%
250.14	4,726	488	10.33%
281.02	3,463	350	10.11%

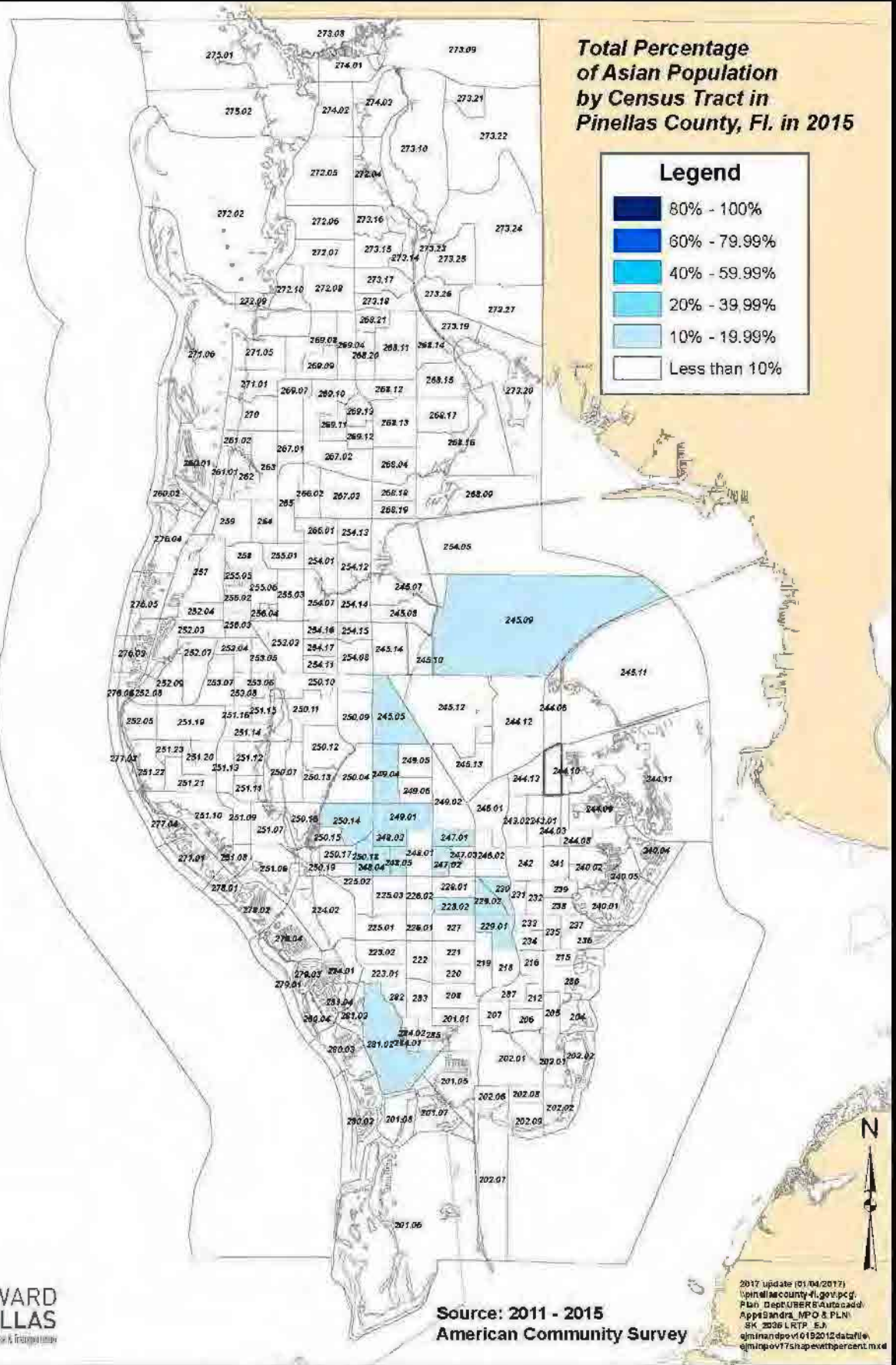
**Areas with High American Indian and Alaska Native Population**

The American Indian and Alaska Native population accounted for 0.3% (2,355) of the population in 2015 compared to .3% (2,892) in 2010. While this group is included in the total numbers for determining minority EJ areas, a separate analysis is not included due to the very small numbers of the population.

**Areas with High Native-Hawaiian or Other Pacific Islander Population**

Native-Hawaiian or Other Pacific Islanders accounted for about 0.1% of the total population of Pinellas County in 2015, or approximately 663 people. This is a decrease from 810 people identified in this group in 2010. Due to such small numbers and percentages, a separate analysis is not included for this population.

Figure 6



Source: 2011 - 2015 American Community Survey

## Low-Income Population Analysis

Low-income population refers to a person whose household income is at or below the U.S. Department of Health and Human Services Poverty Guidelines. The guidelines are issued each year by the Department of Health and Human Services for administrative purposes, and are a simplified version of the Poverty Thresholds used by the U.S. Census. Poverty Thresholds are a measure of need, which do not vary geographically, and are adjusted by such factors as family size, and number of children less than 1 year of age, and for farm and non-farm residents. Table 4 demonstrates the poverty levels used by the US Census Bureau. Based on age, sex, family size or household role, and their income, individuals were classified below, at, or above the poverty level. This analysis considered only individuals below poverty level. Poverty statistics are used by federal agencies to assess the need or eligibility for various public assistance programs. The U.S. Census Bureau uses in its tables the population alone for whom poverty status is determined. Then adjustments are made for determination of poverty based on the criteria described above. The resulting population is reported by age group as below or above the poverty level.

**Table 4**  
**Poverty Thresholds for 2015 by Size of Family and Number of Related Children Under 18 Years**

Size of family unit	Weighted Average Thresholds	Related children under 18 years								
		None	One	Two	Three	Four	Five	Six	Seven	Eight or more
One person (unrelated individual).....	12,082									
Under 65 years.....	12,331	12,331								
65 years and over.....	11,367	11,367								
Two people.....	15,391									
Householder under 65 years.....	15,952	15,871	16,337							
Householder 65 years and over.....	14,342	14,326	16,275							
Three people.....	18,871	18,540	19,078	19,096						
Four people.....	24,257	24,447	24,847	24,036	24,120					
Five people.....	28,741	29,482	29,911	28,995	28,286	27,853				
Six people.....	32,542	33,909	34,044	33,342	32,670	31,670	31,078			
Seven people.....	36,998	39,017	39,260	38,421	37,835	36,745	35,473	34,077		
Eight people.....	41,029	43,637	44,023	43,230	42,536	41,551	40,300	38,999	38,668	
Nine people or more.....	49,177	52,493	52,747	52,046	51,457	50,490	49,159	47,956	47,658	45,822

Source: US Census Bureau

### ***Analysis of Level of Poverty***

The information for the low-income population group was retrieved from the 2011-2015 American Community Survey 5-Year Estimates for poverty status in the last twelve months. The analysis included people of all age groups. The per capita income data was included in the analysis to compare the relationship of the population in the census tract with the group below the poverty level being analyzed. The analysis also included an overview of the median income at the household level for the analysis group as a matter of reference.

The average low-income population by census tract in Pinellas County was 14.36% compared with a rate of about 10% in 1999 and 12.1% in 2010. Looking at poverty level from an age perspective, while the average census tract has a poverty level of about 14.36%, the average poverty level by census tract for those under 18 years of age is 22%, compared with 14.1% for those aged 18-65 and with 9.2% for those over 65 years of age.

***Areas with High Black or African American Population below the Poverty Level***

Approximately 10.48% (96,133) of the estimated Pinellas County population in 2015 were Black or African American. Poverty status was determined for 93,724 of this group in the 2011-2015 American Community Survey (ACS). Of the 93,724 in this group in Pinellas County for whom a poverty status determination was made, 28,395 (30%) were determined to be below the poverty level. The median household income for this group is \$30,695 while the median income for Pinellas County is \$45,819 countywide. Table 5 illustrates those census tracts with the highest concentrations of Black or African American population below the poverty level.

**Table 5**

<b>Census Tracts with more than 50% of Black or African American Population below the Poverty Level in 2015</b>					
Census Tract	Total Population for Whom Poverty Status has been Determined	Total Black or African American Population for Whom Poverty Status has been Determined	Total Black or African American Population Below the Poverty Level	Percentage of Black or African American Population Below the Poverty Level	Census Tract Per Capita Income (2015)
215	3,128	423	212	50.12%	\$63,559.00
216	2,061	787	520	66.07%	\$23,002.00
218	2,762	1,098	710	64.66%	\$19,304.00
225.01	4,836	201	103	51.24%	\$24,665.00
225.03	5,517	411	283	68.86%	\$31,031.00
226.01	3,186	153	118	77.12%	\$27,350.00
226.02	4,540	147	93	63.27%	\$26,869.00
230	2,493	69	61	88.41%	\$22,984.00
234	1,584	180	104	57.78%	\$20,349.00
235	3,276	523	318	60.80%	\$28,247.00
236	2,958	50	47	94.00%	\$37,920.00
241	4,497	429	310	72.26%	\$25,362.00
242	4,853	127	96	75.59%	\$25,022.00
244.03	3,679	212	128	60.38%	\$24,364.00
244.08	4,238	415	243	58.55%	\$28,615.00
245.07	3,465	114	62	54.39%	\$28,885.00
245.12	3,290	68	48	70.59%	\$25,487.00
246.01	3,557	83	44	53.01%	\$23,083.00
246.02	6,174	1,711	1341	78.38%	\$15,023.00
249.01	5,635	137	79	57.66%	\$24,264.00
249.04	3,702	140	74	52.86%	\$22,909.00
250.1	4,555	115	81	70.43%	\$29,800.00
250.12	5,520	82	60	73.17%	\$37,307.00
250.13	3,919	298	298	100.00%	\$25,680.00
250.16	1,878	86	64	74.42%	\$46,865.00
250.17	2,746	51	40	78.43%	\$19,383.00
250.19	2,175	87	45	51.72%	\$21,451.00
251.13	2,500	27	23	85.19%	\$28,726.00
251.15	3,341	169	138	81.66%	\$21,561.00
252.08	1,646	141	118	83.69%	\$41,381.00
245.08	6,491	320	209	65.31%	\$19,333.00
254.17	2,310	68	68	100.00%	\$25,208.00
258	4,071	1,074	635	59.12%	\$16,477.00
267.01	4,348	539	337	62.52%	\$22,610.00
268.13	3,983	4	4	100.00%	\$37,429.00
268.14	2,270	141	129	91.49%	\$24,043.00
268.16	5,511	306	173	56.54%	\$31,678.00

<b>Census Tracts with more than 50% of Black or African American Population below the Poverty Level in 2015</b>					
Census Tract	Total Population for Whom Poverty Status has been Determined	Total Black or African American Population for Whom Poverty Status has been Determined	Total Black or African American Population Below the Poverty Level	Percentage of Black or African American Population Below the Poverty Level	Census Tract Per Capita Income (2015)
268.18	3,936	622	335	53.86%	\$14,116.00
269.11	3,520	1	1	100.00%	\$30,918.00
272.06	6,644	34	34	100.00%	\$34,940.00
272.08	6,901	46	28	60.87%	\$36,107.00
272.09	1,124	11	7	63.64%	\$34,728.00
273.14	3,620	194	106	54.64%	\$29,964.00
273.12	1,547	15	15	100.00%	\$43,686.00
273.24	4,180	76	44	57.89%	\$45,114.00
273.27	4,371	185	159	85.95%	\$28,005.00
275.02	7,455	4	4	100.00%	\$30,007.00
280.04	2,105	12	12	100.00%	\$36,935.00
281.02	3,463	159	87	54.72%	\$54,951.00
282	2,472	87	44	50.57%	\$23,798.00

Source: US Census Bureau



**Areas with a High Hispanic or Latino Population below the Poverty Level**

In 2015, this group accounted for 8.7% (81,072) of the population in Pinellas County. Poverty status was determined for 79,802 of the total group. Of this, 18,071 (22.6%) Hispanic and Latino persons were determined to be under the poverty level. The median household income for this group is \$36,633, compared to \$45,819 countywide. Table 6 illustrates those census tracts with the highest concentrations of Hispanic or Latino population below the poverty level.

**Table 6**

<b>Census Tracts with more than 50% of Hispanic or Latino Population below the Poverty Level in 2015</b>					
Census Tract	Total Population for Whom Poverty Status has been Determined	Total Hispanic or Latino Population for Whom Poverty Status has been Determined	Total Hispanic or Latino Population Below the Poverty Level	Percentage of Hispanic or Latino Population Below the Poverty Level	Census Tract Per Capita Income (2015)
202.02	3,578	154	101	65.58%	\$20,530.00
215	3,128	111	61	54.95%	\$23,002.00
220	2,856	30	30	100.00%	\$23,226.00
245.14	4,502	955	503	52.67%	\$23,083.00
250.1	4,555	379	299	78.89%	\$33,161.00
253.03	4,592	460	236	51.30%	\$24,268.00
260.02	2,754	86	43	50.00%	\$25,644.00
259	4,808	817	653	79.93%	\$54,724.00
262	1,943	206	161	78.16%	\$17,068.00
265	6,944	947	615	64.94%	\$28,222.00
268.16	5,511	530	330	62.26%	\$35,976.00
269.12	3,722	504	344	68.25%	\$23,063.00

Source: US Census Bureau

**Areas with High Asian Population below the Poverty Level**

Asian Americans accounted for 3.2% (29,338) of the population in 2015, and the poverty status was determined for 29,359 people in this group. It was determined that 3,427 Asian Americans were living below the poverty level, or just under 12% of the group. The median household income for this group in 2010 was \$49,397 and \$57,230 in 2015 compared with \$45,819 countywide. Table 7 illustrates those census tracts with the highest concentrations of Asian population below the poverty level.

**Table 7**

<b>Census Tracts with more than 50% of Asian Population below the Poverty Level in <del>2010</del> 2015</b>					
Census Tract	Total Population for Whom Poverty Status has been Determined	Total Asian Population for Whom Poverty Status has been Determined	Total Asian Population Below the Poverty Level	Percentage of Asian Population Below the Poverty Level	Census Tract Per Capita Income (2010)
201.08	2,287	36	25	69%	\$27,249.00
202.07	2,541	9	9	100%	\$21,026.00
203.02	3,831	54	29	54%	\$32,653.00
216	2,061	30	24	80%	\$19,304.00
227	4,185	322	200	62%	\$20,579.00
234	1,584	19	15	79%	\$28,247.00
250.15	2,812	55	31	56%	\$46,865.00
251.08	2,133	55	49	89%	\$24,072.00
251.1	5,616	60	46	77%	\$32,123.00
253.08	2,125	21	21	100%	\$34,559.00
254.05	3,742	121	105	87%	\$49,481.00
259	4,808	160	102	64%	\$54,724.00
267.02	6,813	441	245	56%	\$25,350.00
268.09	2,806	81	60	74%	\$41,388.00
269.07	5,995	71	60	85%	\$39,271.00
273.17	5,255	46	46	100%	\$28,467.00
273.23	2,940	32	32	100%	\$45,114.00
279.01	2,323	69	36	52%	\$58,964.00
282	2,472	39	23	59%	\$23,628.00
285	2,113	25	17	68%	\$40,542.00
287	2,963	94	94	100%	\$17,690.00

Source: US Census Bureau

**Areas with High American Indian and Alaska Native Population below the Poverty Level**

The American Indian and Alaska Native population accounted for 0.3% (2,892) of the population in 2010. The percentage remained the same in 2015, but the estimated number decreased to 2,555. Poverty status was determined for 2,539 in this group, with 438, or 17%, determined to be below the poverty level. The median income for this group countywide was \$43,138, compared to \$45,819 for all persons countywide. While this group is included in the total numbers for determining low-income EJ areas, a separate analysis is not included due to the very small numbers of the population.

***Areas with High Native-Hawaiian or Other Pacific Islander Population below the Poverty Level***

Native-Hawaiian or Other Pacific Islanders account for about 0.1% of the total population of Pinellas County in 2010, or 810 people compared to approximately 931 people in 2015. Poverty status was determined for 702 people in this group, finding that 129, or 18.4%, of the group is below the poverty level. The median income for this group is \$44,410, compared to \$45,819 countywide. While this group is included in the total numbers for determining low-income EJ areas, a separate analysis is not included due to the very small numbers of the population.

**Areas with High White Alone Population below the Poverty Level**

Pinellas County is 84.9% White, with a total population of 769,793, according to the 2015 American Community Survey (ACS). Poverty status was determined for 758,304 people in this group. Of this group, 91,943 people were determined to be below the poverty level, approximately 12% of the White population. The median income for this group was \$47,546, compared to \$45,819 countywide. Table 8 illustrates those census tracts where more than 25% of the white population is below the poverty level.

**Table 8**

<b>Census Tracts with more than 25% of White Population below the Poverty Level in 2015</b>					
Census Tract	Total Population for Whom Poverty Status has been Determined	Total White Population for Whom Poverty Status has been Determined	Total White Population Below the Poverty Level	Percentage of White Population Below the Poverty Level	Census Tract Per Capita Income (2015)
202.06	1179	1216	330	27%	\$33,067.00
205	363	409	176	43%	\$17,444.00
206	251	257	88	34%	\$15,767.00
212	224	305	160	52%	\$63,559.00
216	1178	1183	404	34%	\$19,304.00
220	644	644	197	31%	\$23,226.00
224.02	5420	5420	1351	25%	\$24,665.00
234	1239	1355	363	27%	\$28,247.00
245.14	3639	3648	1057	29%	\$23,083.00
246.02	3940	3973	1226	31%	\$14,925.00
247.01	2758	2764	807	29%	\$20,575.00
247.02	1651	1651	503	30%	\$17,416.00
247.03	2104	2122	570	27%	\$22,804.00
249.02	4956	5140	1579	31%	\$22,909.00
250.18	1705	1979	540	27%	\$21,451.00
254.08	5692	5713	1464	26%	\$18,490.00
254.11	1685	1685	445	26%	\$31,267.00
255.05	1850	1949	654	34%	\$20,410.00
256.02	2581	2581	714	28%	\$28,104.00
259	3937	4016	1110	28%	\$54,724.00
261.01	1500	1500	481	32%	\$30,005.00
262	309	309	228	74%	\$17,068.00
263	4622	4622	1364	30%	\$17,939.00
285	1779	1787	468	26%	\$40,542.00

Source: US Census Bureau

**Summary Analysis**

Table 9 below, illustrates the poverty status and median income for each population group as a whole, countywide.

**Table 9**

<b>Summary Data Analysis for Pinellas County, FL in 2015</b>				
<b>Population Group</b>	<b>Total Population for Whom Poverty Status has been Determined</b>	<b>Population Below Poverty Level</b>	<b>Percent of Population Below Poverty Level</b>	<b>Median Income for Population or Group</b>
Black or African American	93,724	28,395	30%	\$30,695
Hispanic or Latino	79,802	18,071	22.64%	\$36,633
Asian	29,359	3,427	11.67%	\$57,230
American Indian and Native Alaskan	2,539	438	16.78%	\$43,138
Native Hawaiian or Other Pacific Islander	702	129	18.40%	\$44,410
White Alone	758,304	91,943	12.12%	\$47,546

Source: US Census Bureau

**AGE ANALYSIS**

As previously stated, the median age in Pinellas County continued to increase from 43.6 in 2000 to 46.3 in 2010 and 47.1 in 2015. Due to the increasing median age of residents in Pinellas County, a separate analysis for age is included in this document. Table 10 displays those census tracts where the median age of the residents exceeds 65. Figure 7 illustrates the geographical distribution of the median age by census tract throughout the county. This analysis can help identify those areas where a large segment of the population may face mobility challenges and could benefit from additional consideration during the transportation planning process.

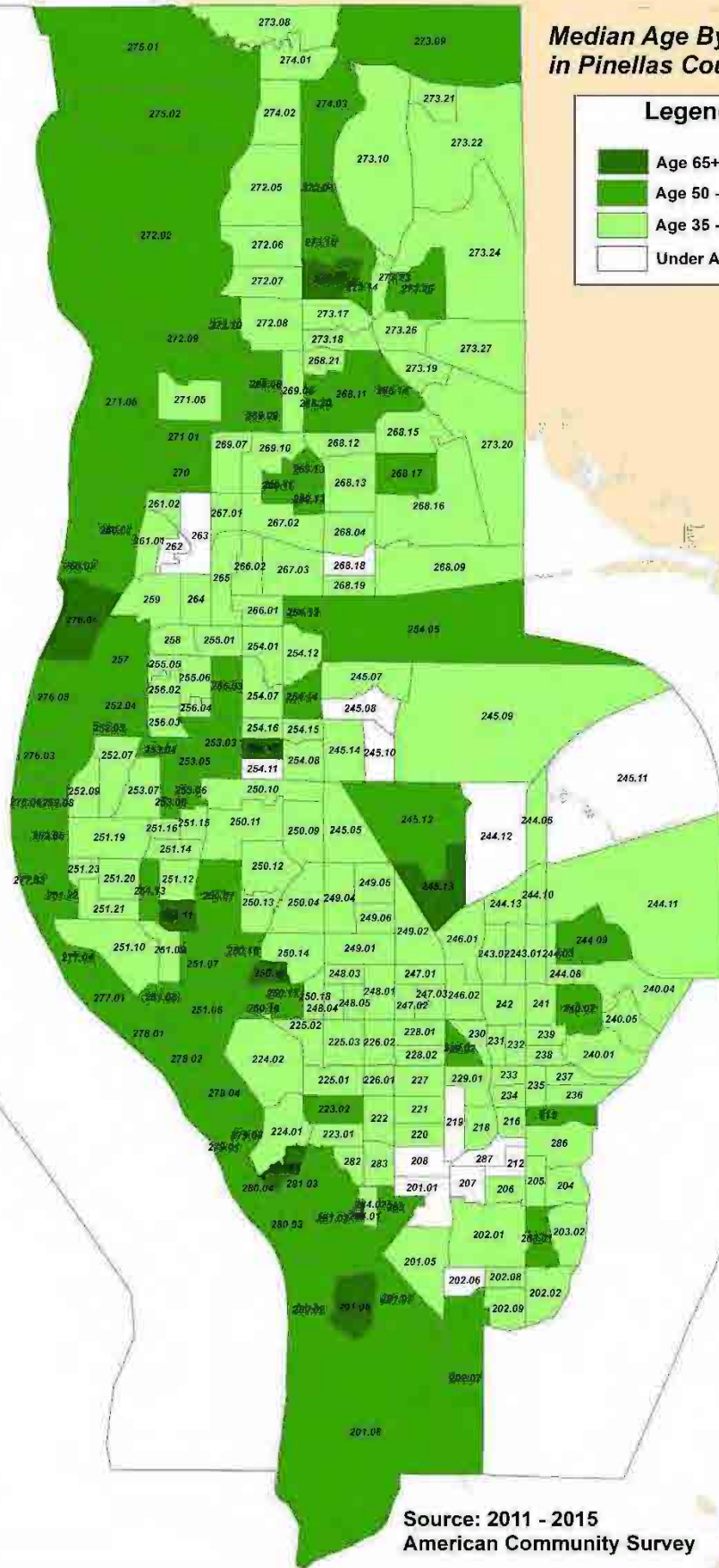
**Table 10**

<b>Census Tracts in Pinellas County Florida Where Median Age Exceeds 65</b>	
<b>Census Tract</b>	<b>Median Age</b>
201.08	65.9
243.13	70
250.15	71.5
251.11	75.4
254.17	68.1
273.15	68.3
276.04	70.1
281.04	74.9
284.01	71.2

Source: US Census Bureau

Figure 7

### Median Age By Census Tract in Pinellas County, FL. in 2015



Source: 2011 - 2015  
American Community Survey



06/21/2018  
median age

2017 update (05/15/2018):  
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# APPENDIX M

## ENVIRONMENTAL MITIGATION

# 2045 LRTP

Environmental

Consultation

Workshop

06.21.19



## Technical Memorandum

August 2019

presented by



Hillsborough MPO  
Metropolitan Planning  
for Transportation



HILLSBOROUGH  
METROPOLITAN  
PLANNING ORGANIZATION



HERNANDO/CITRUS METROPOLITAN  
PLANNING ORGANIZATION

Brooker Creek Preserve | Tarpon Springs, FL



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# Methodology

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### **Purpose of the Meeting**

The Hillsborough, Pinellas, Pasco, and Hernando/Citrus MPOs held a regional workshop to discuss with Federal, State, and Tribal wildlife, land management and regulatory agencies potential environmental mitigation strategies to include as a part of the Long-Range Transportation Plan updates. For transportation projects, the Long-Range Transportation Plan (LRTP) is required to consider potential environmental mitigation activities, ways in which environmental impact from transportation projects can be avoided, minimized, or mitigated. {23 CFR 450.324(f)(10)}

### **Invited Organizations**

A list of the invited organizations is provided below.

Citrus, Hernando, Hillsborough, Pasco, and Pinellas County  
Courtney Campbell Causeway Scenic Highway Corridor  
Engineering Services Administration  
Environmental Protection Commission  
FDOT  
FL Department of Agriculture and Consumer Services  
FL Department of Economic Opportunity  
FL Department of Environmental Protection  
FL Fish and Wildlife Conservation Commission  
FL Fish and Wildlife Conservation Commission  
Florida Department of Transportation  
Local Mitigation Strategy Working Group for Pinellas County  
Local Mitigation Strategy Working Group for Hillsborough County  
MacDill Air Force Base  
Pinellas Suncoast Transit Authority (PSTA)  
Seminole Tribe of Florida  
Southwest Florida Water Management District  
Tampa Bay Estuary Program  
Tampa Bay Regional Planning Council  
Tampa Bay Science Advisory Panel  
Tampa Bay Regional Planning Council  
Teco Energy  
Tindale-Oliver & Association  
University of South Florida  
Urban Land Institute  
US Environmental Protection Agency  
US Fish and Wildlife Service

### **Background and Questions**

For highway projects, the LRTP must include a discussion on the types of potential environmental mitigation activities and potential areas to carry out these activities. The environmental mitigation discussion in the LRTP must be developed in consultation with Federal, State and Tribal wildlife, land management and regulatory agencies. The LRTP discussion can be at a system-wide level to identify areas where mitigation may be undertaken (perhaps illustrated on a map) and what kinds of mitigation strategies, policies and/or programs may be used when these environmental areas are affected by projects in the LRTP. This discussion in the LRTP would identify broader environmental mitigation needs and opportunities that individual transportation projects might take advantage of later.

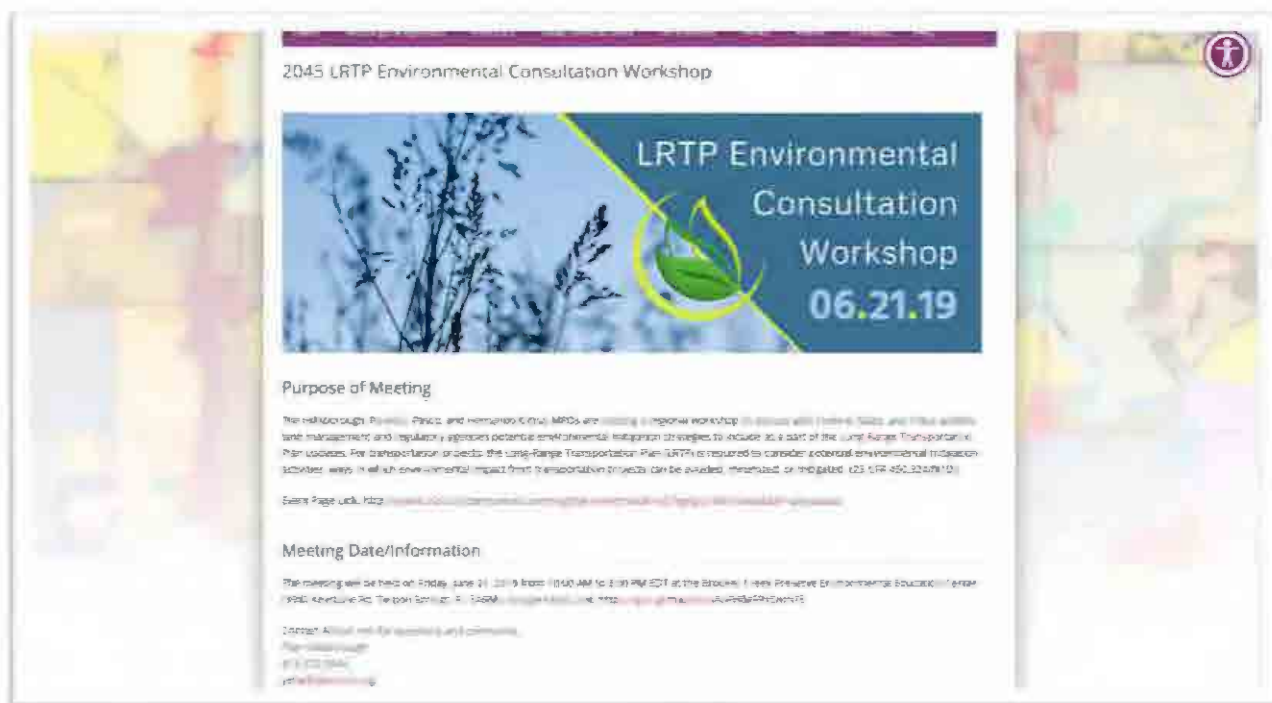
At the workshop, the following questions were posed to workshop participants:

- What policies/programs/activities does your agency currently undertake to mitigate development impacts to the environment?
- What limitations are there for each of these areas?
  - Is there no capacity remaining in mitigation banks?
  - Is there no consideration for new mitigation banks in the future?
  - Is there limited success with certain activities?
- How should critical habitat considerations be addressed to protect wildlife?
- Are you aware of any untapped opportunities to enhance environmental mitigation activities?



## **Record Agency Feedback**

Prior to the date of the workshop, a website was developed for the meeting information. Map drafts were uploaded to gain comments prior to the event. Maps were presented again at the workshop. During the meeting, feedback was collected via discussion facilitated by staff after an introductory presentation. Group discussion was held on regional-wide environmental issues related to transportation planning. Afternoon breakout sessions by county were held and recorded. All feedback was captured via discussion by staff posted comments on maps and flip charts and written on the technical memorandum. The website was kept open for two weeks for additional comments.





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# Maps Reviewed

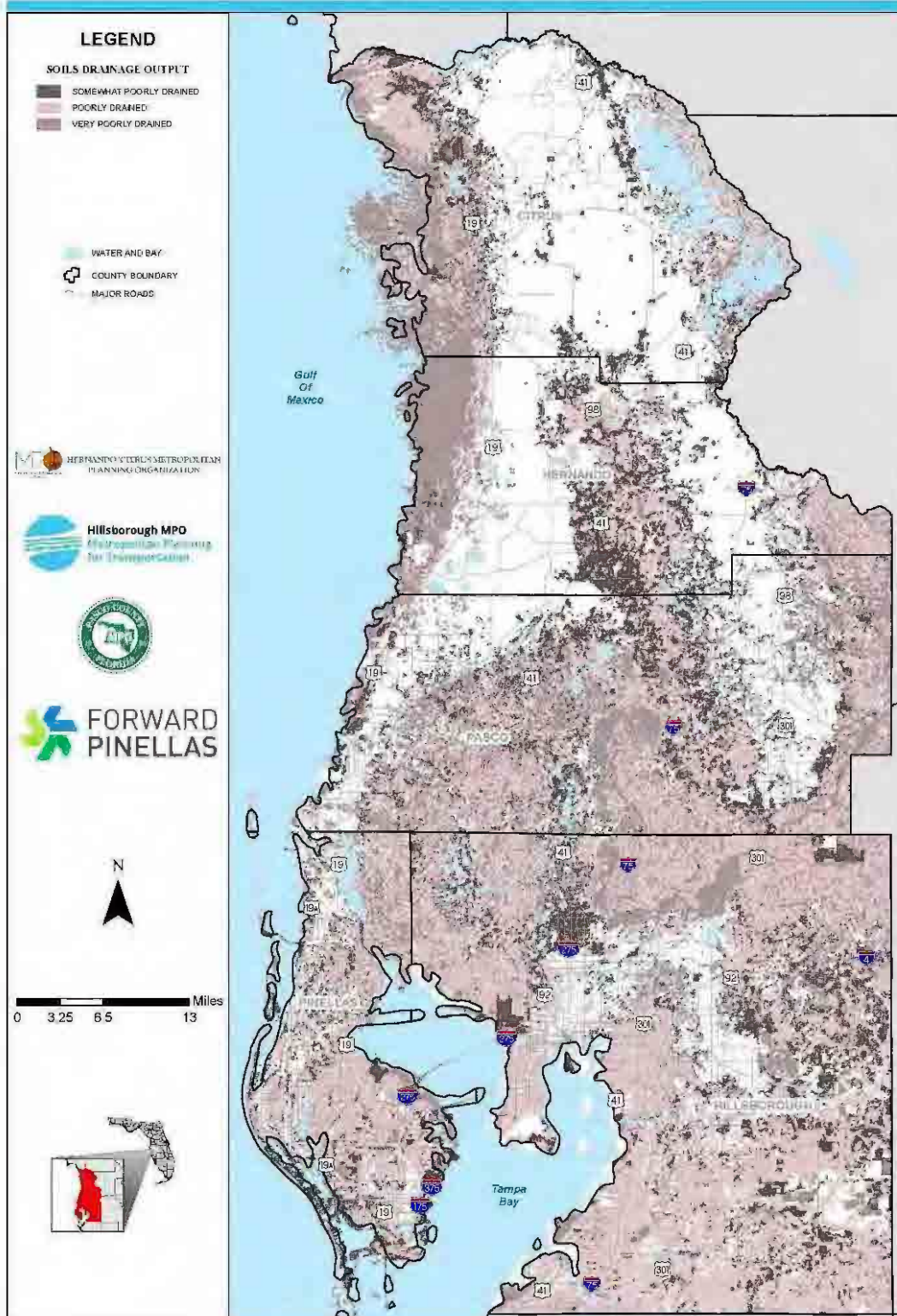
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## **West Central Florida Regional Maps**

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# WCF REGIONAL SOILS CLASSIFICATION

2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



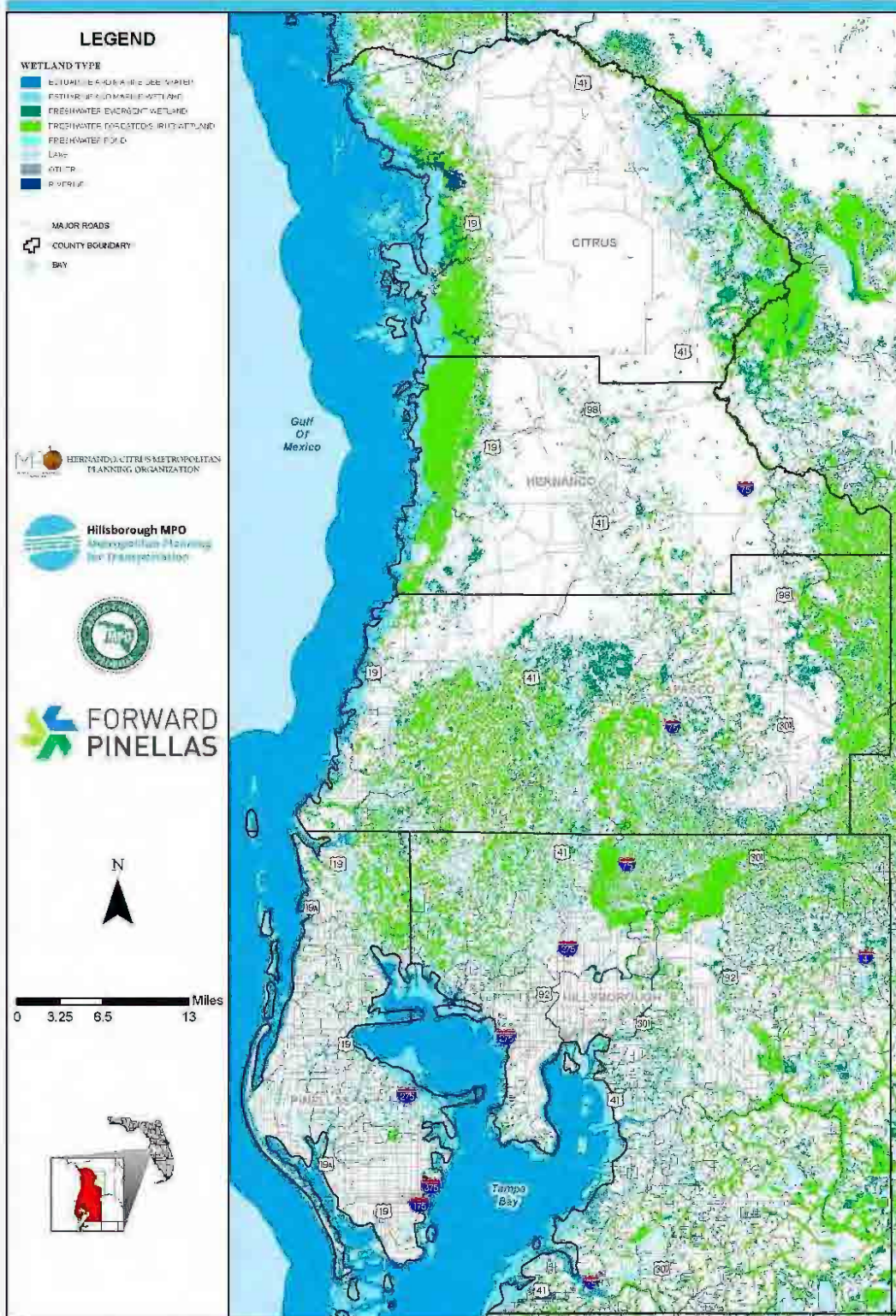
Data Source: Hillsborough County MPO, Pinellas MPO, Pasco MPO, and Citrus-Hernando MPO  
 Soils - NRCS = National Resources Conservation Service, Water, Lakes - FDEP

WCF = WEST CENTRAL FLORIDA

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 Author: Roger Mathre Updated: June 6, 2019

# WCF REGIONAL WETLANDS

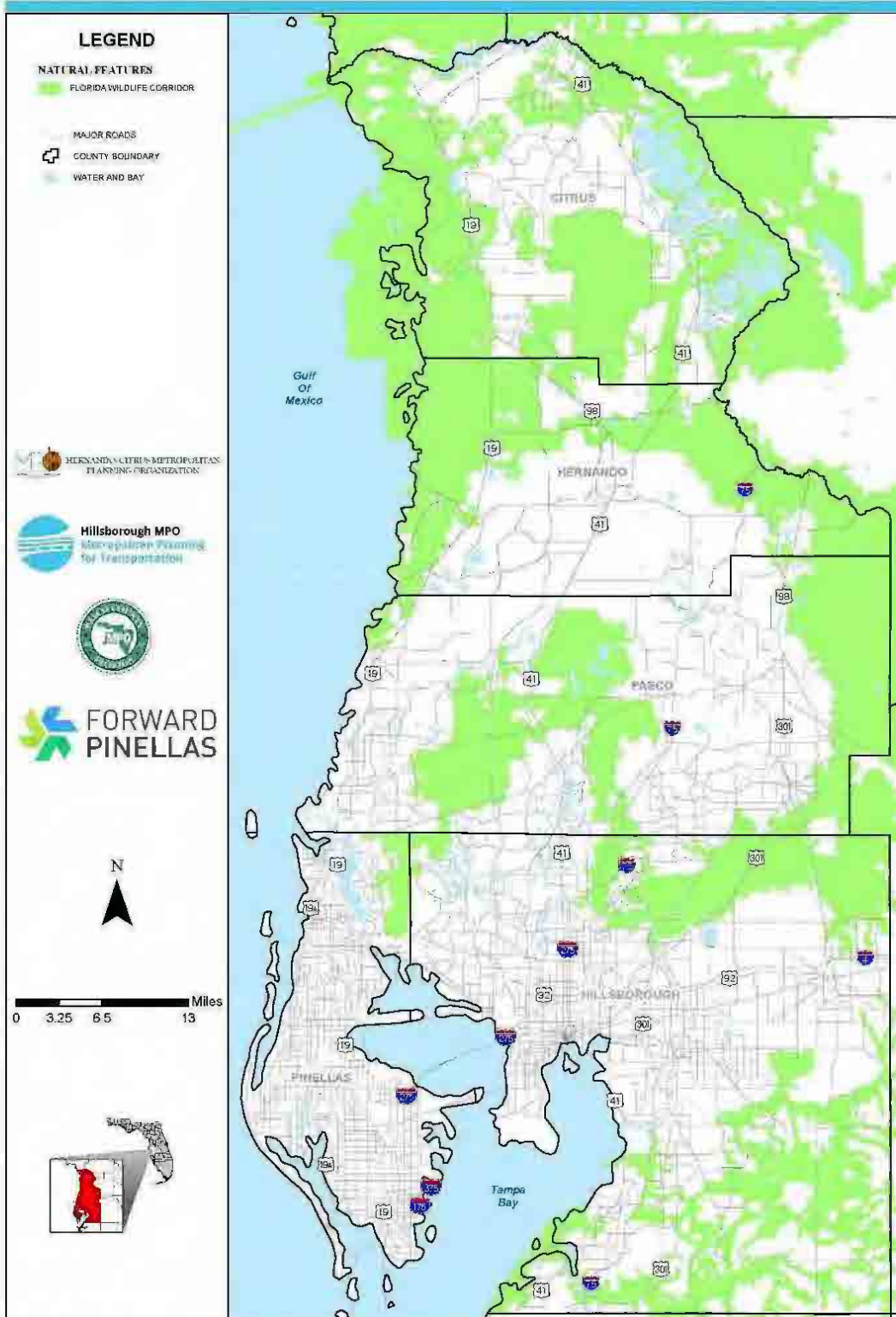
2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



Data Source: Hillsborough County MPO, Pinellas MPO, Pasco MPO, and Citrus-Hernando MPO.  
Wetlands - National Wetlands Inventory, Water, Lakes - FDEP  
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Author: Cathy Welsh Updated: June 5, 2019

# WCF REGIONAL FLORIDA WILDLIFE CORRIDOR

2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



Data Source: Hillsborough County MPO, Pinellas MPO, Pasco MPO, and Citrus-Hernando MPO. Florida Wildlife Corridors - floridawildlifecorridor.org. Water, Lakes - FDEP.

WCF = WEST CENTRAL FLORIDA

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 Author: Cathy Walsh. Updated: June 5, 2019



**Comments:**

**Wildlife Corridors:**

*All Counties* - Need the highway corridor to overlay on top of all maps - especially the wildlife corridor to show areas; Consider adding trails as linear parks; I-4: wildlife crossings considered in permitting (SWFWMD); Prescribed burns needed, but public also needs to be informed/educated on the topic

*Hillsborough* - Crossings cannot be considered locally - education needed at decision-making stage; HC possesses wildlife crossings; provide them in the initial transportation plans/maps.

*Pasco* - 1 cent tax in Pasco: environmental lands - adopted ecological corridors.

*Pinellas* - Pinellas Trail is a wildlife corridor.

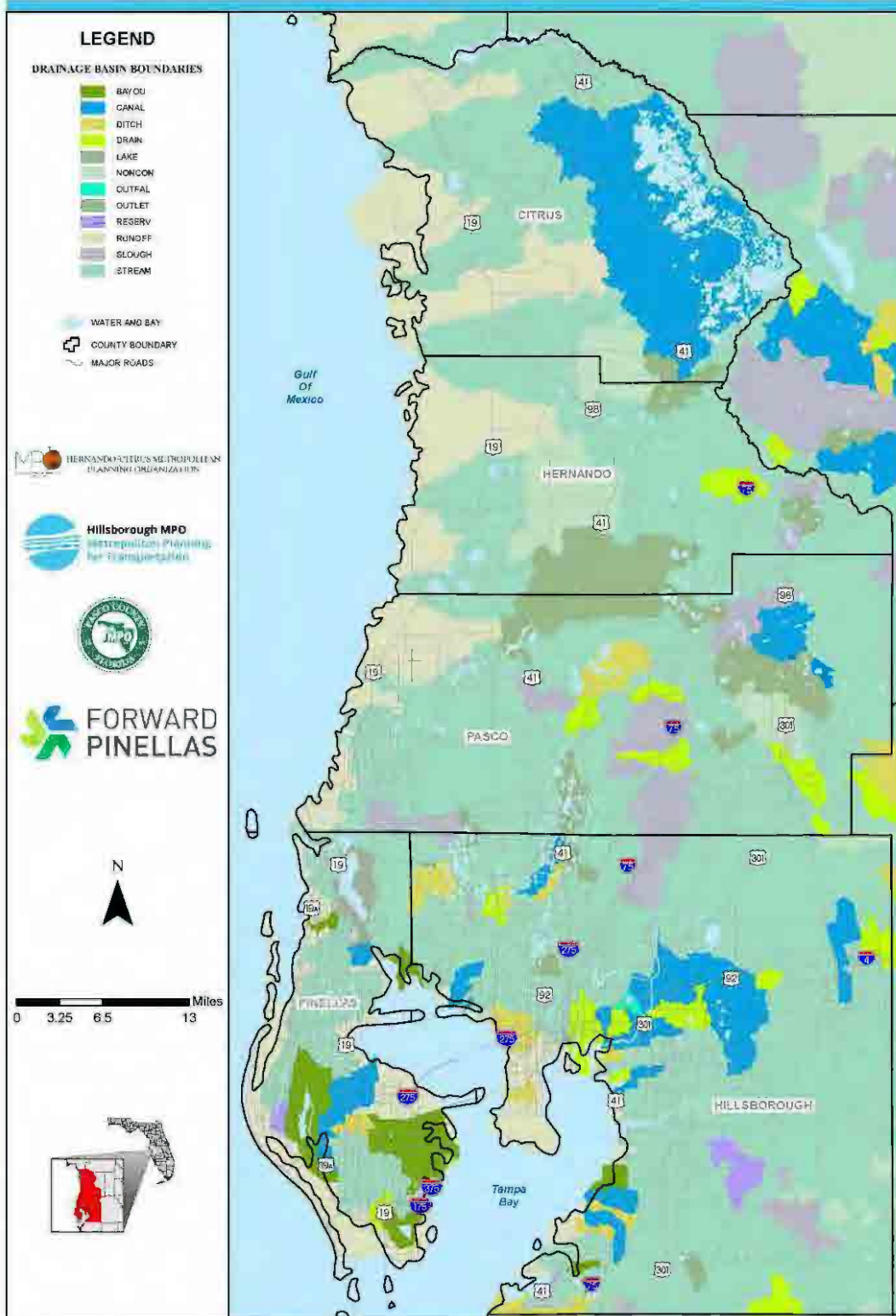


**Wildlife Corridors:**

- (1) Need the highway corridor to overlay on top of all maps - especially the wildlife corridor to show areas.
- (2) Consider adding trails as linear parks.
- (3) Pinellas Trail is a wildlife corridor.

# WCF REGIONAL DRAINAGE BASIN CLASSIFICATION

2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



Data Source: Hillsborough County MPO, Pinellas MPO, Pasco MPO, and Citrus-Hernando MPO  
 Drainage Basins - SWP/MMD, Water, Lakes - FDEP

WCF = WEST CENTRAL FLORIDA

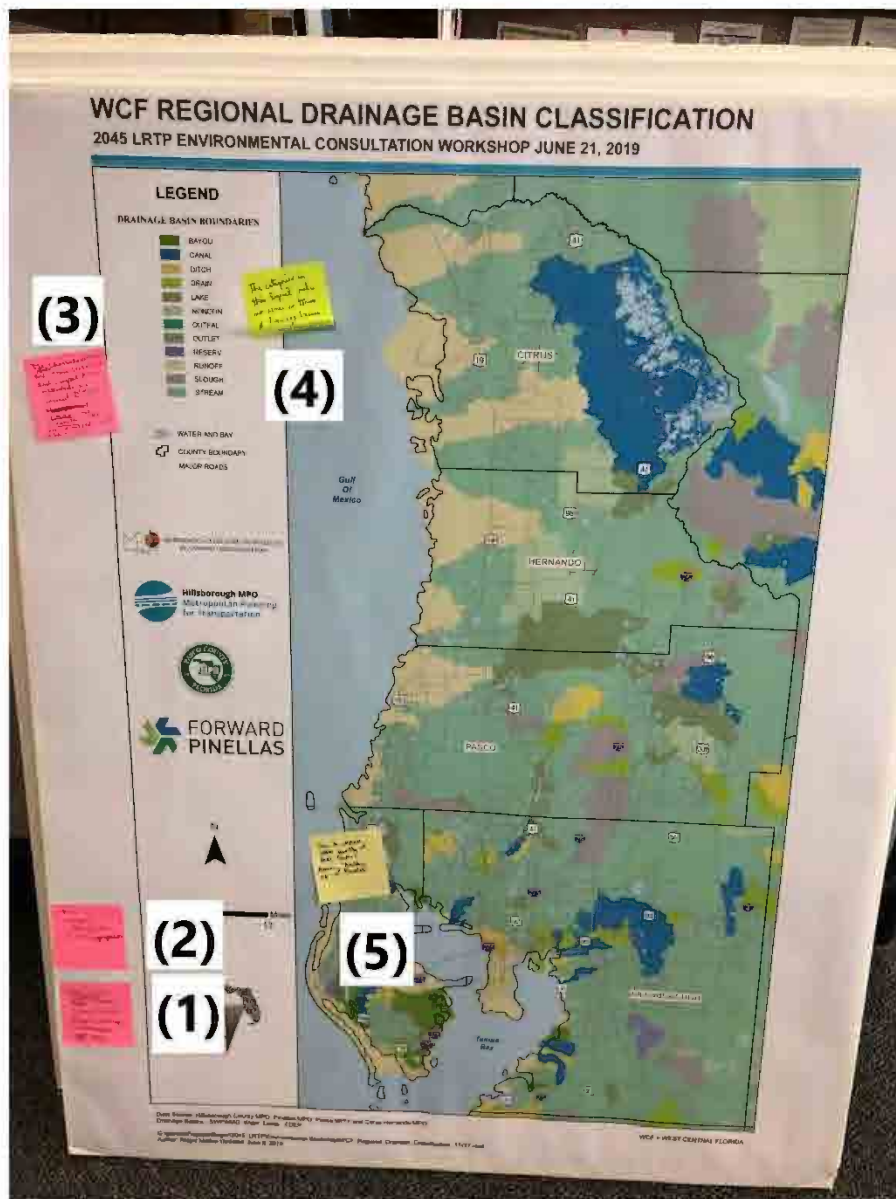
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 Author: Roger Mathie Updated: June 6, 2019

**Comments:**

**Drainage Basin Classification:**

*All Counties* - The categories in this legend make no sense in terms of drainage basin delineated; The Chassahowitzka River and Homosassa River and Crystal River watersheds as labeled DITCH or RUNOFF. They are watersheds not ditch or runoff; The canal designation is not appropriate; Having main highways and streets labeled would help in reading/understanding ALL maps.

*Pinellas* - How to improve water quality of Lake Tarpon? Assuming building up in Pinellas.

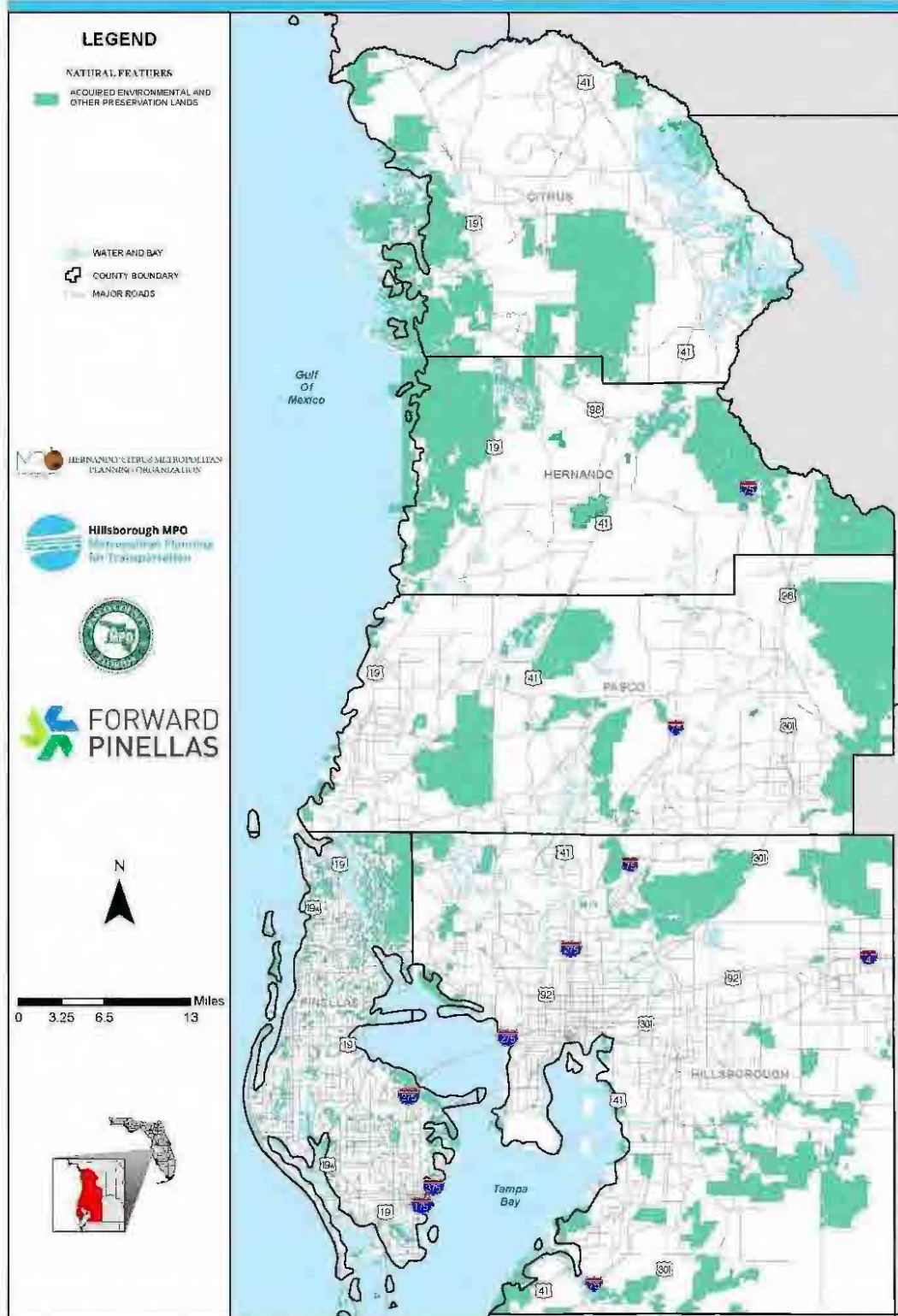


**Drainage Basin Classification:**

- (1) Having main highways and streets labeled would help in reading/understanding ALL map.
- (2) The canal designation is not appropriate.
- (3) The Chassahowitzka River and Homosassa River and Crystal River watersheds as labeled DITCH or RUNOFF. They are watersheds not ditch or runoff.
- (4) The categories in this legend make no sense in terms of drainage basin delineated.
- (5) How to improve water quality of Lake Tarpon? Assuming building up in Pinellas?

# WCF REGIONAL NATURAL CONSERVATION LANDS

2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



Data Source: Hillsborough County MPO, Pinellas MPO, Pasco MPO, and Citrus-Hernando MPO  
 Soils - NRCS = National Resources Conservation Service, Water, Lakes - FDEP

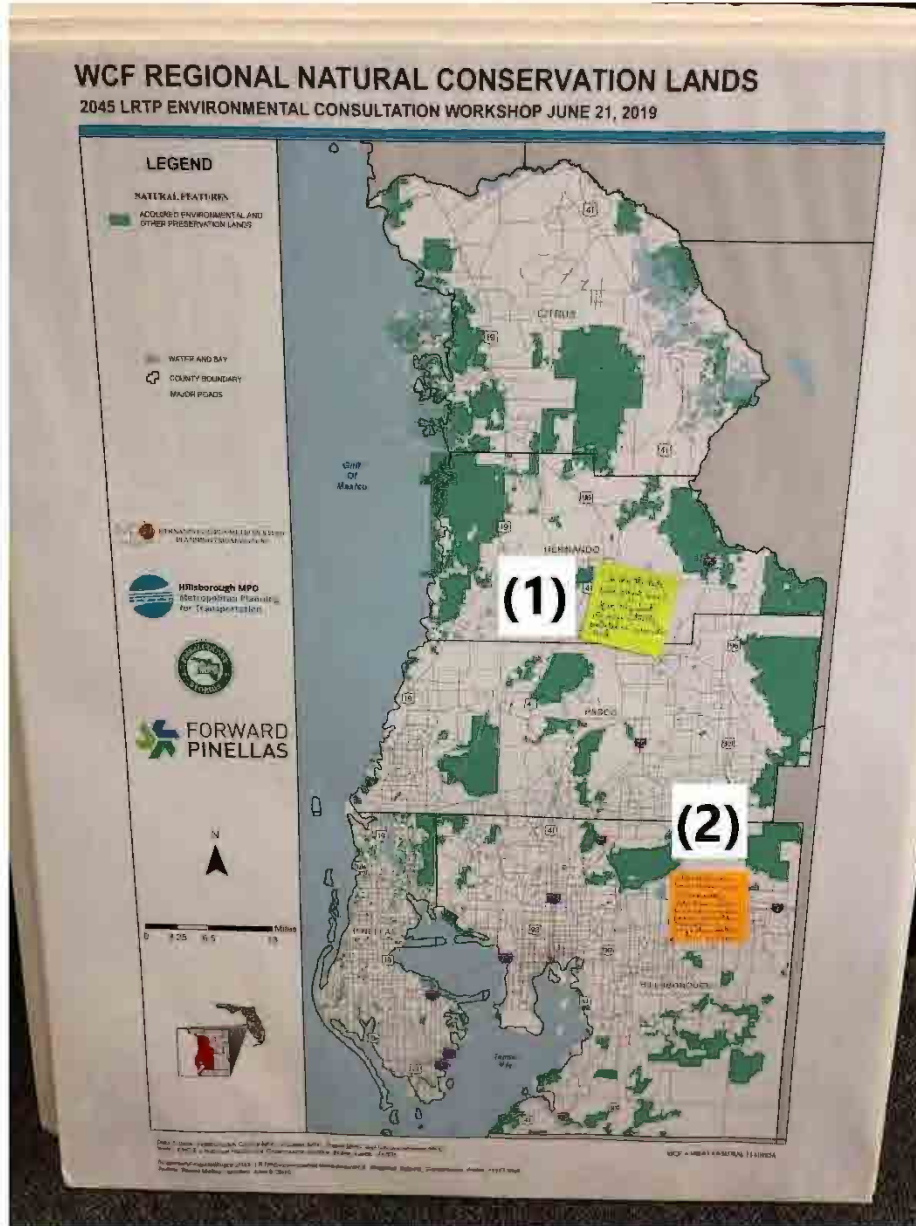
WCF = WEST CENTRAL FLORIDA

G:\GISroot\Projects\Rogers\2045\_LRTP\Environmental Workshop\WCF\_Regional\_Natural\_Conservation\_Areas\_11x17.mxd  
 Author: Roger Mathre Updated: June 6, 2019

**Comments:**

**Natural Conservation Lands:**

*Hernando* - Is this the Peck Sink Project Area? If not, only 150 acres are actually protected as conservation land.



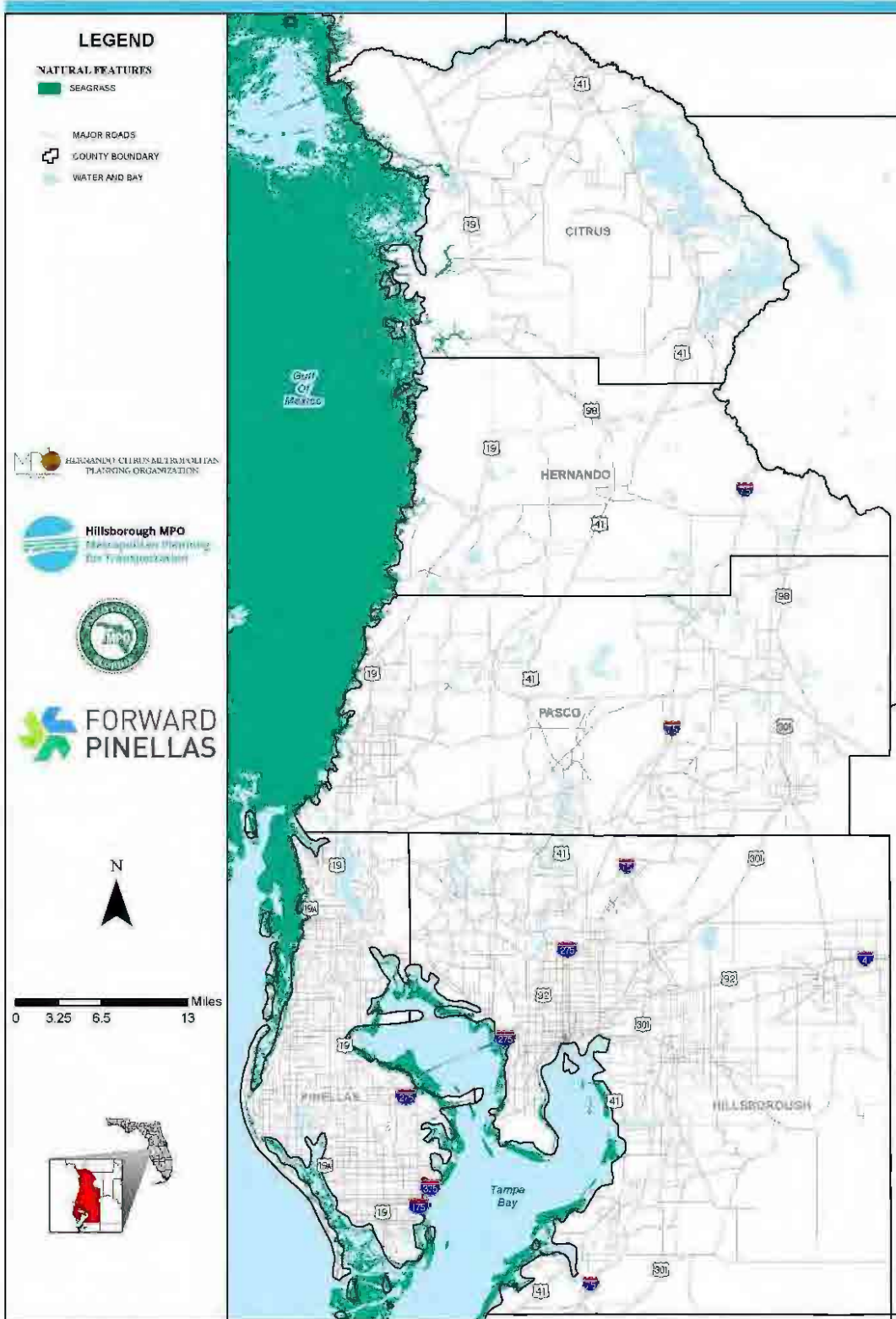
**Natural Conservation Lands:**

**(1)** Is this the Peck Sink Project Area? If not, only 150 acres are actually protected as conservation land.

**(2)** Natural Corridor from Hooker Lake to (eventually) Hillsborough River area. The corridor crosses under US Hwy 92, very little protection from road construction.

# WCF REGIONAL SEAGRASS

2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



Data Source: Hillsborough County MPO, Pinellas MPO, Pasco MPO, and Citrus-Hernando MPO. Seagrass - MyFlorida.com. Water, Lakes - FDEP

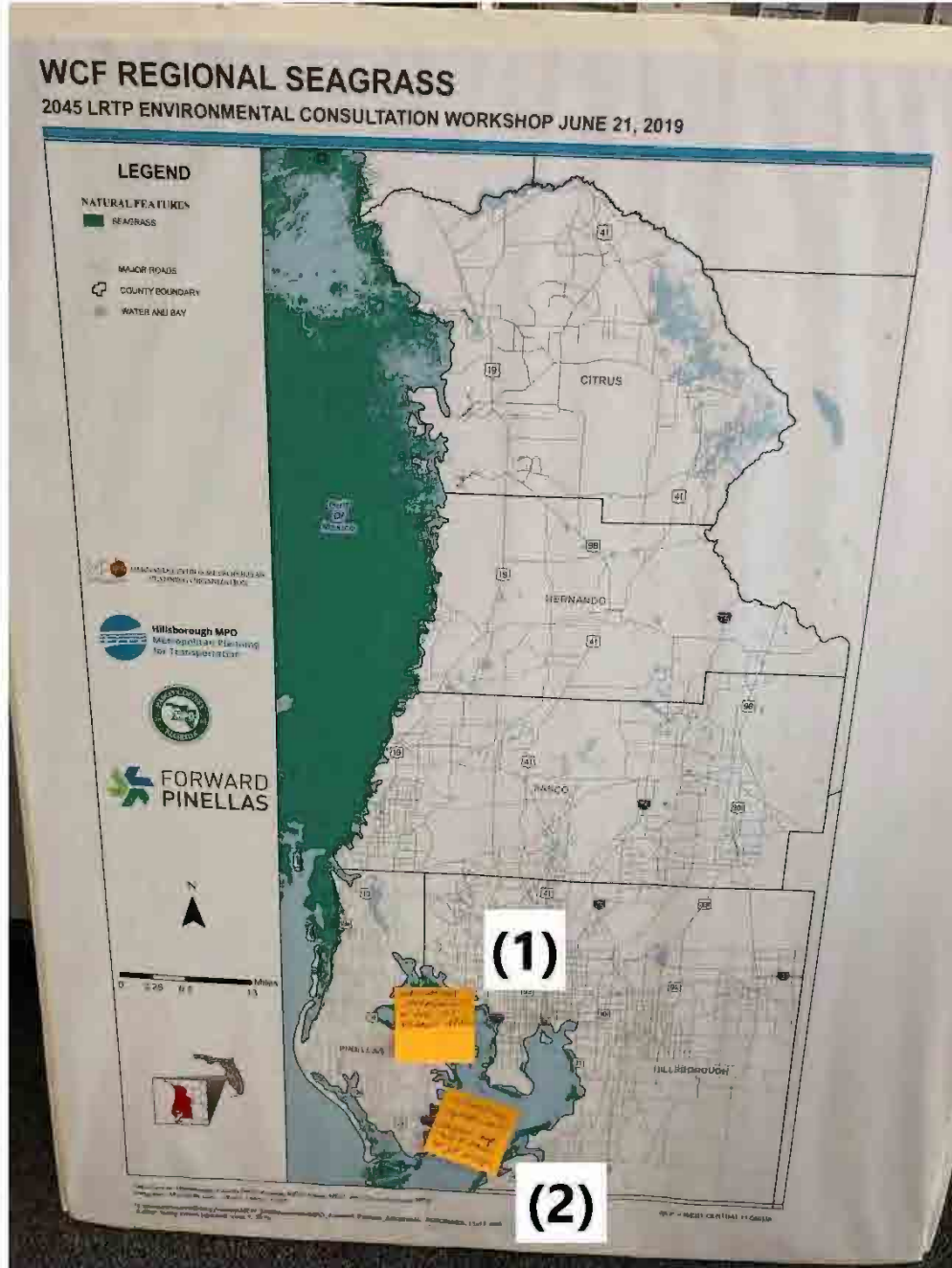
G:\GIS\road\Projects\Cathy\Arcmap\NEW\_MXD\Areswide\MPO\_Forward\_Pinellas\_REGIONAL\_SEAGRASS\_11x17.mxd  
 Author: Cathy Welsh Updated June 5, 2019

**Comments:**

**Seagrass:**

*Hillsborough* - Circulation improvements in OTB for seagrass offsets; Hooker Lake to Hillsborough River area. There is a connection under US 92, I4, US301 - little consideration given to wildlife crossings.

*Pinellas* - Circulation improvements in OTB for seagrass offsets.

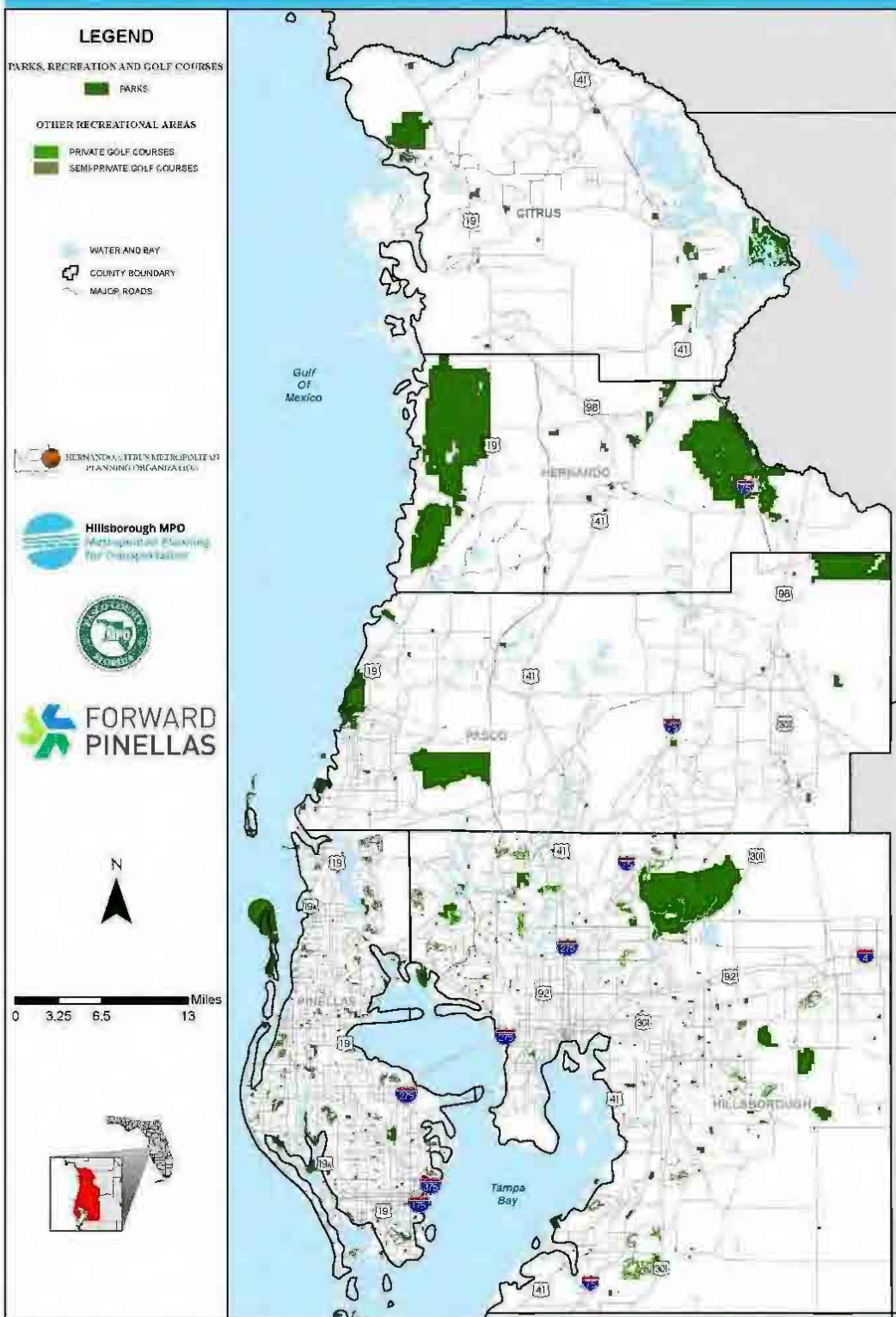


**Seagrass:**

- (1) Circulation improvements in OTB for seagrass offsets.
- (2) SWFWMD has updated (2018) seagrass map – look at trends, not just coverage.

# WCF REGIONAL PARKS AND RECREATION

## 2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



Data Source: Hillsborough County MPO, Pinellas MPO, Pasco MPO and Citrus/Hernando MPO  
 Scales - NRCOS = National Resources Conservation Service; Water, Lakes - FDEP

G:\gsroot\Projects\Roger\2045\_LRTP\Environmental\Workshop\WCF\_Regional\_Parks\_Recreation\_11x17.mxd  
 Author: Roger Malhe Updated: June 6, 2019



**Comments:**

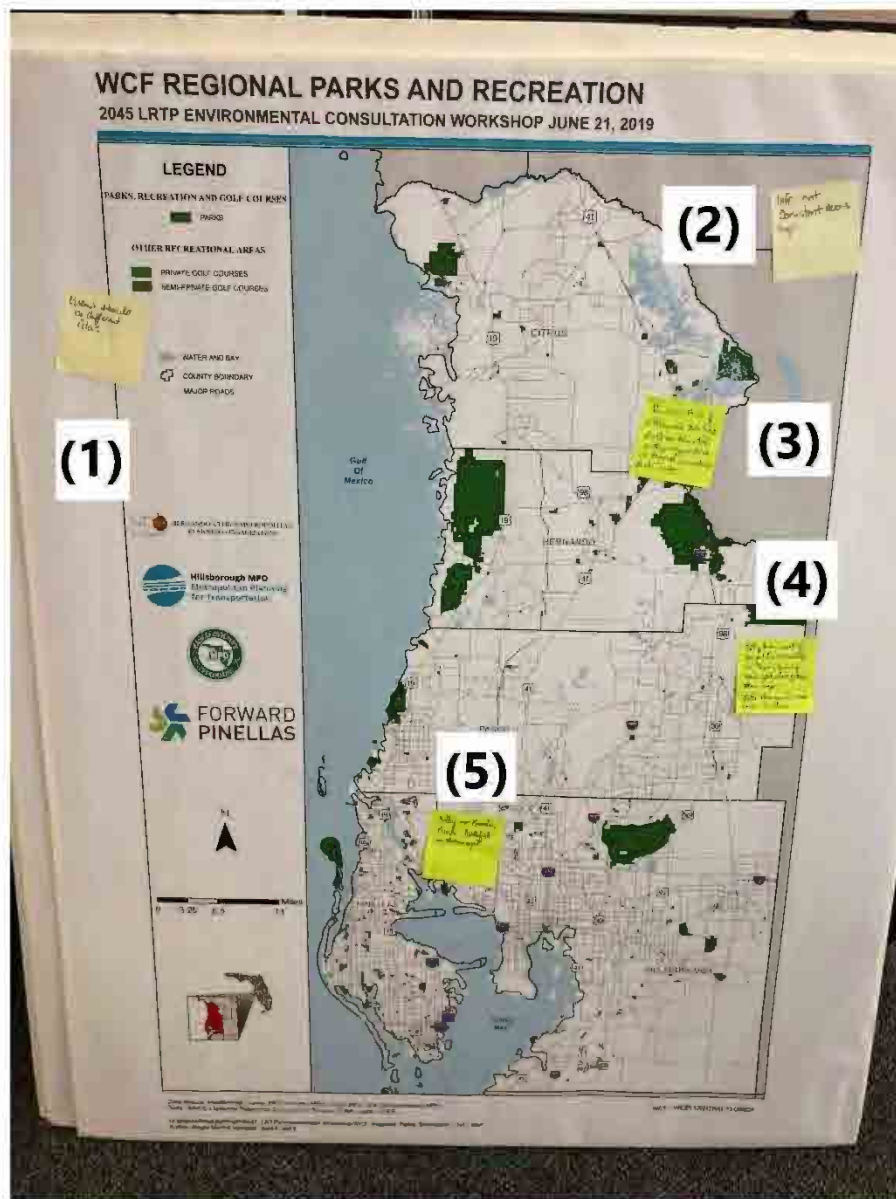
**Parks and Recreation:**

*All Counties* - Information isn't consistent across maps; Greens should be in different colors.

*Citrus* - The Citrus tract of Withlacoochee State Forest should be delineated on this map, as it is on Regional Conservation Land Map.

*Hillsborough* - Why no Brooker Creek identified on this map?

*Pasco* - Why has most of the public ownership in Green Swamp been excluded from this map?  
Both Hernando and Pasco counties.



**Parks and Recreation:**

(1) Greens should be in different colors.

(2) Information isn't consistent across maps.

(3) The Citrus tract of Withlacoochee State Forest should be delineated on this map, as it is on Regional Conservation Land Map.

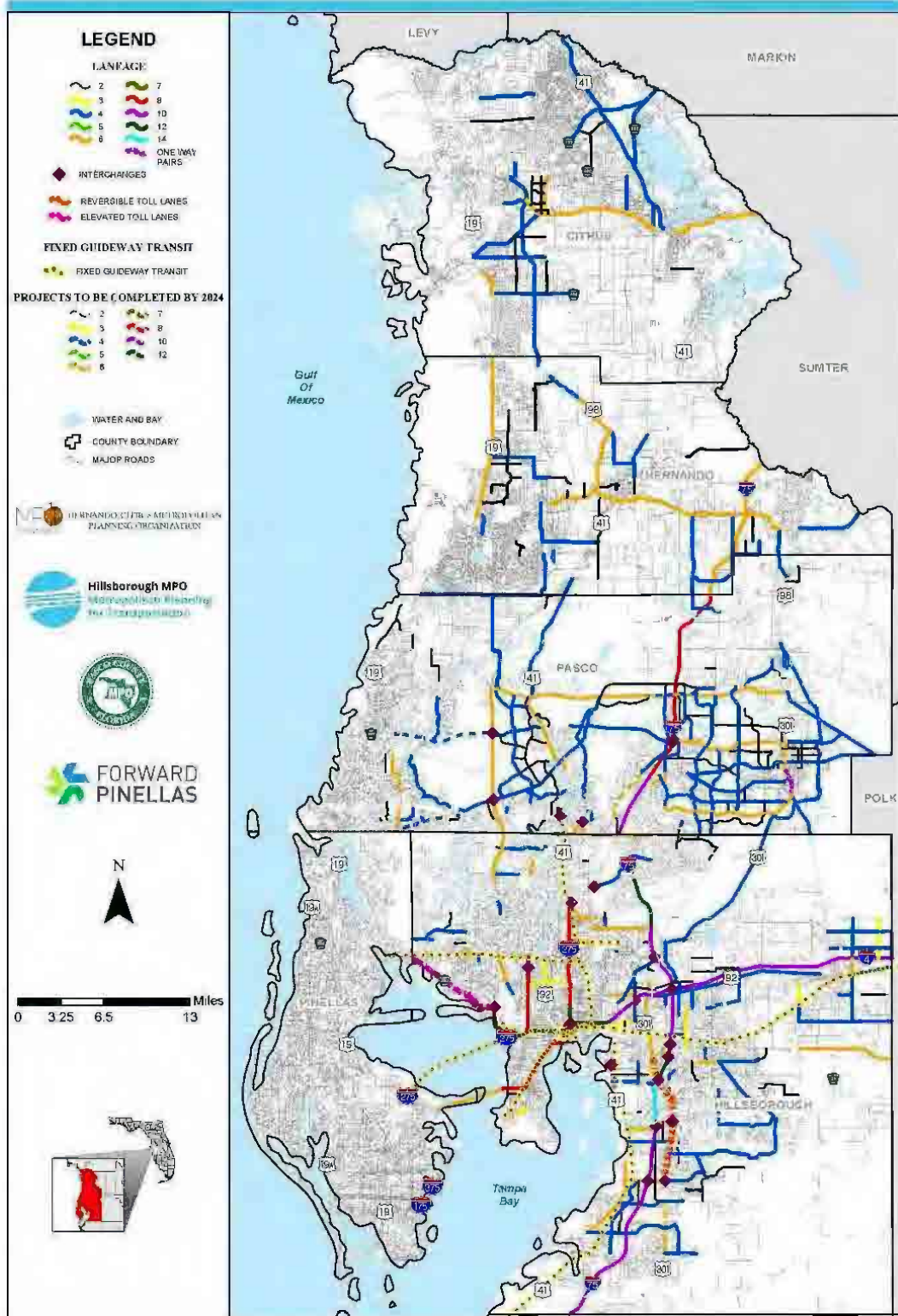
(4) Why has most of the public ownership in Green Swamp been excluded from this map? Both Hernando and Pasco counties.

(5) Why no Brooker Creek identified on this map?

# WCF REGIONAL 2045 HIGHWAY NEEDS PLAN

2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019

DRAFT



Data Source: Hillsborough County MPO, Pinellas MPO, Pasco MPO, and Citrus-Hernando MPO  
2045 Highway Needs Projects - See each County's roadway plan for details.

G:\isroot\Projects\Roger\2045\_LRTP\Environmental Workshop\WCF\_Regional\_2045\_Needs\_Plan\_1117.mxd  
Author: Roger Mathie Updated: June 18, 2019

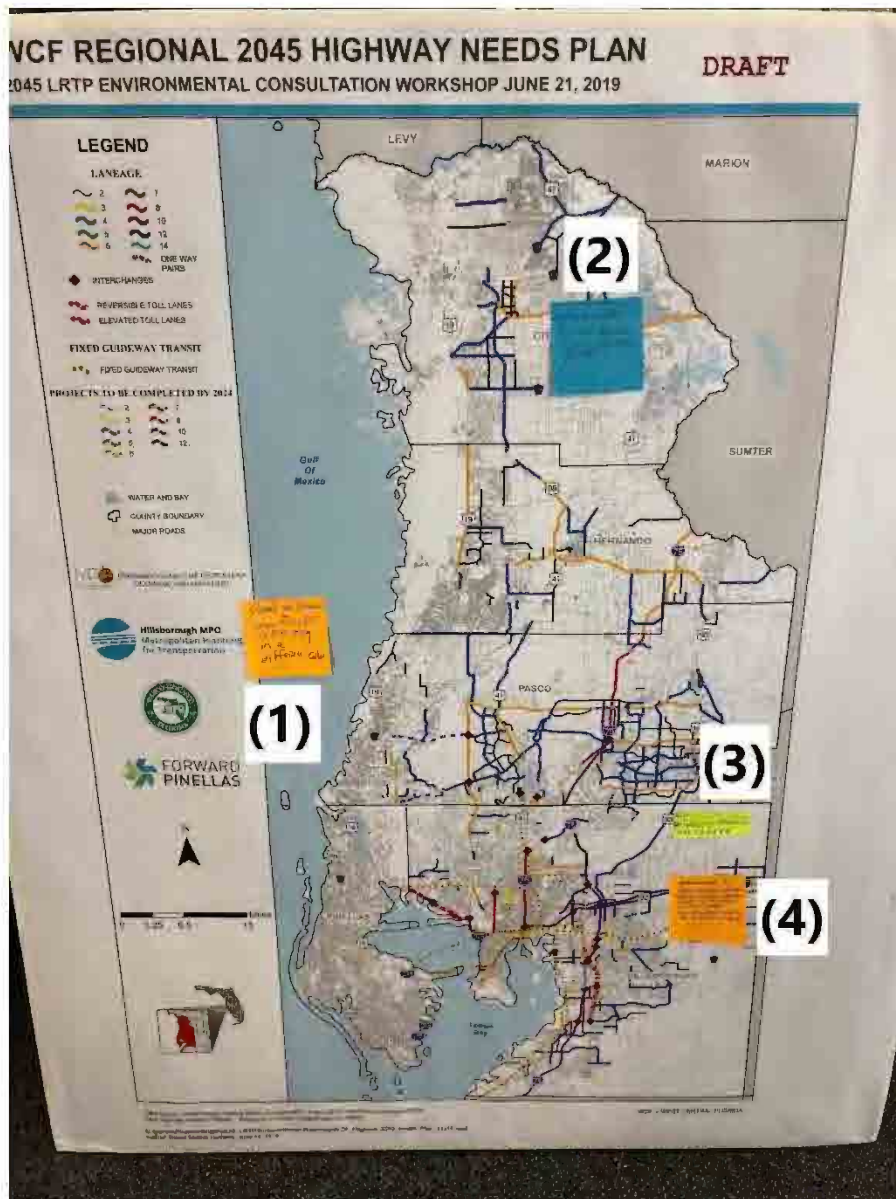
**Comments:**

**2045 Highway Needs Plan:**

*All Counties* - Need to show "New Roads" vs Existing in a different color.

*Citrus* - Where is the "coastal connector" roadway (turnpike) project?

*Hillsborough* - Wildlife crossing, add to PD + E. Hooker Lake to Hillsborough River area; There is a connection under US 92, I4, US301 - little consideration given to wildlife crossings.



**2045 Highway Needs Plan:**

(1) Need to show "New Roads" vs Existing in a different color.

(2) Where is the "coastal connector" roadway (turnpike) project?

(3) Wildlife crossing, add to PD + E.

(4) Hooker Lake to Hillsborough River area: There is a connection under US 92, I4, US301 - little consideration given to wildlife crossings.

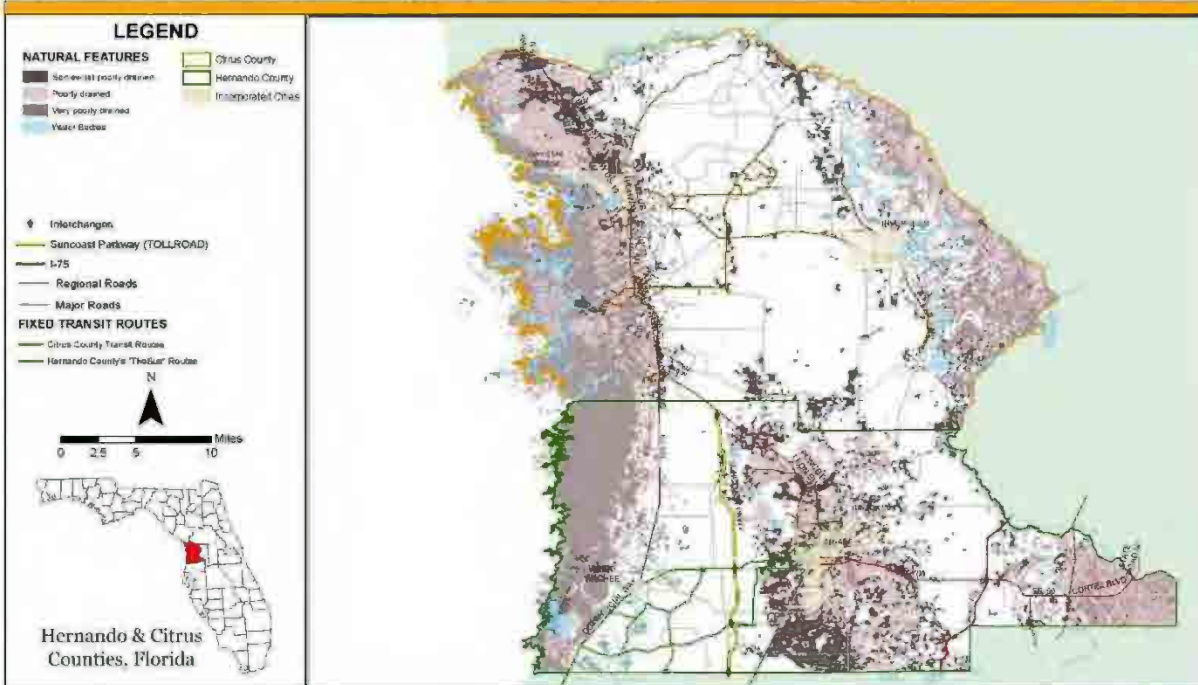
## Hernando/Citrus County



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# HERNANDO/CITRUS SOILS CLASSIFICATION

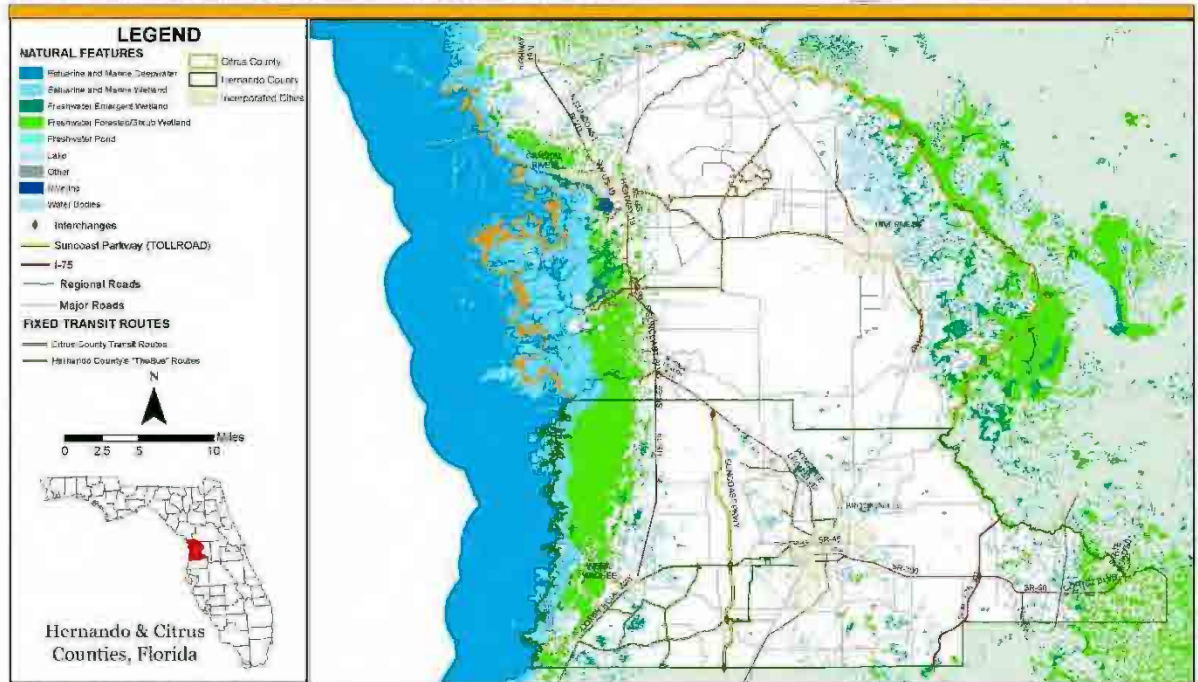
2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



1

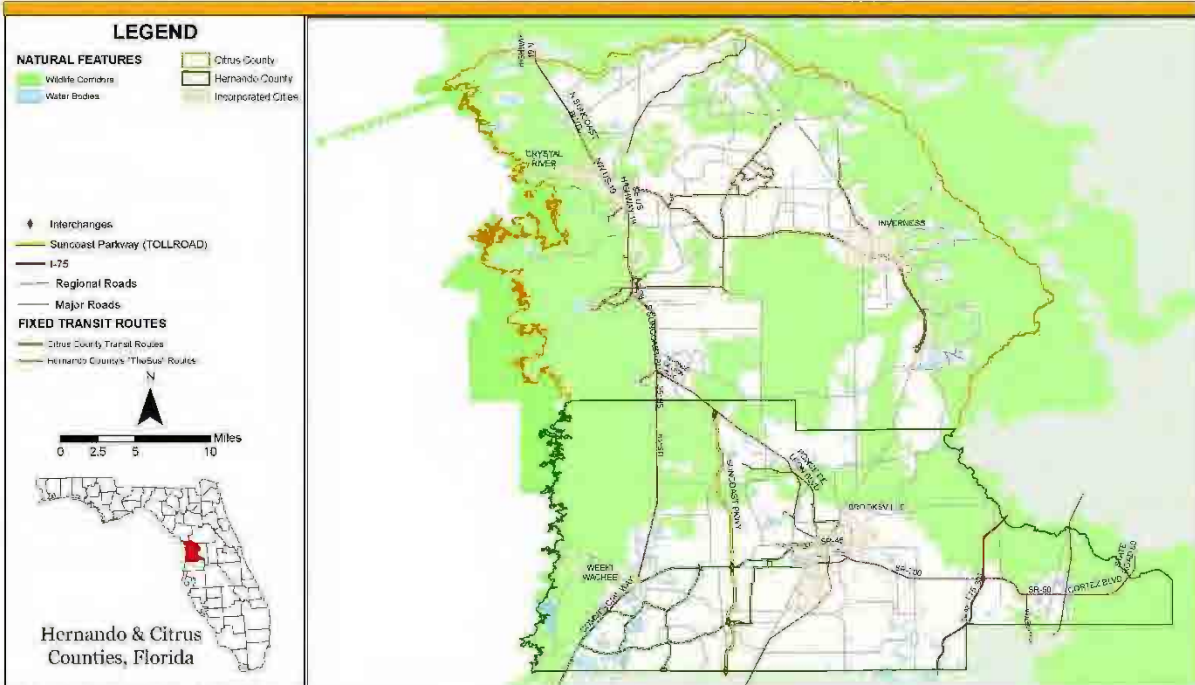
# HERNANDO/CITRUS WETLANDS CLASSIFICATION

2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



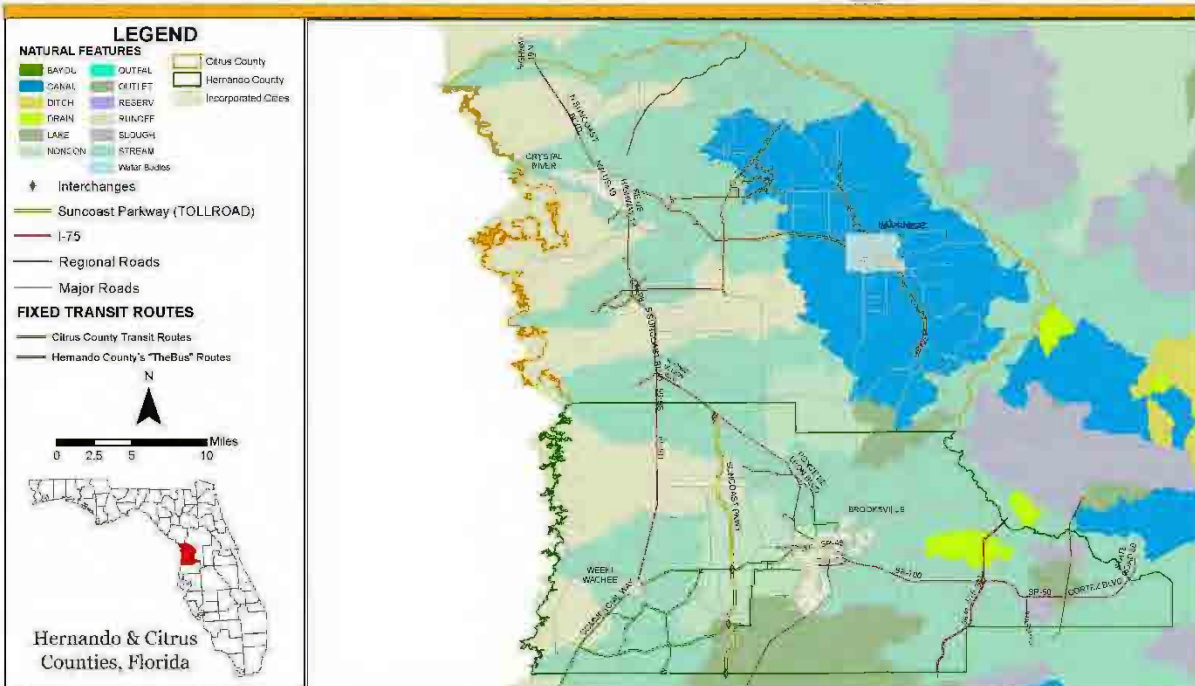
1

**HERNANDO/CITRUS WILDLIFE CORRIDORS CLASSIFICATION**  
 2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



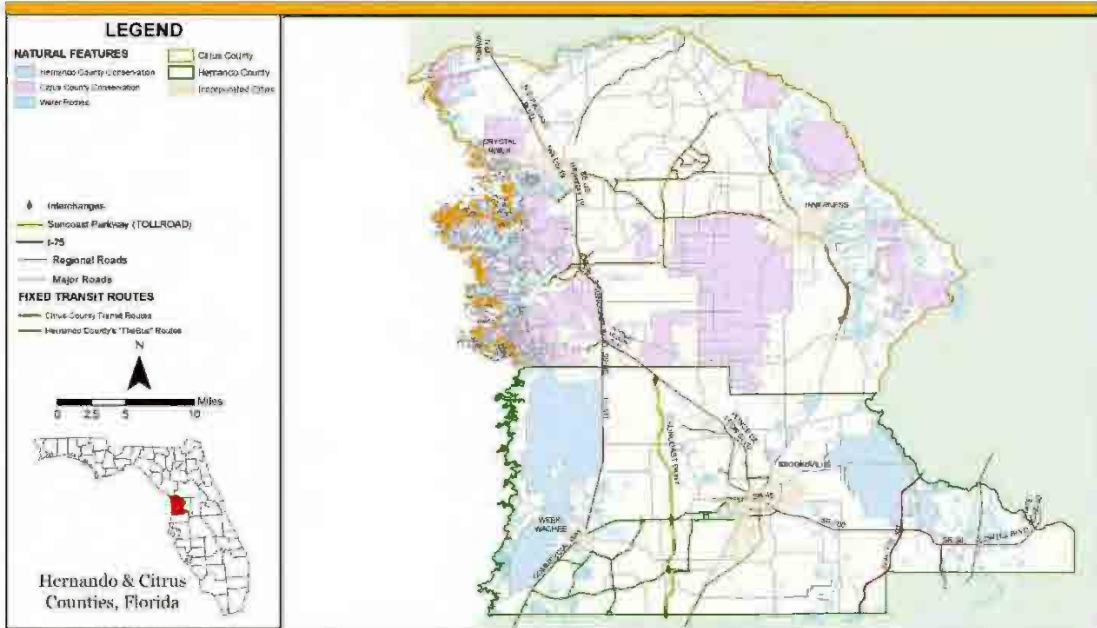
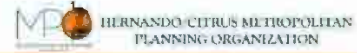
1

**HERNANDO/CITRUS DRAINAGE BASIN CLASSIFICATION**  
 2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019

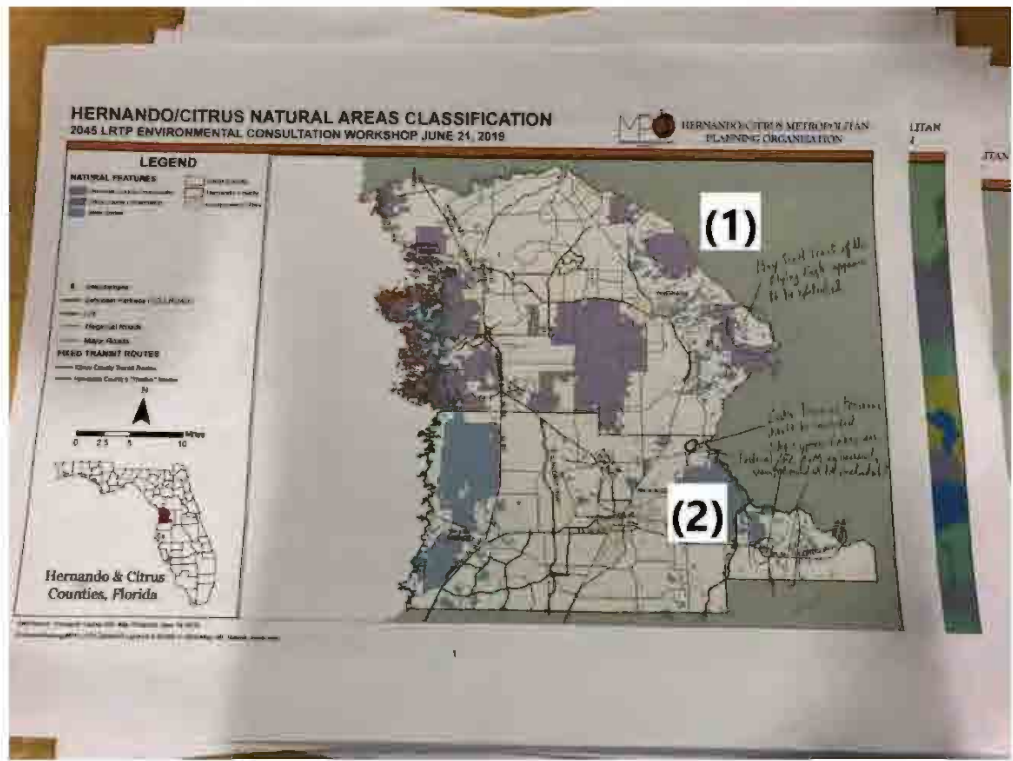


1

**HERNANDO/CITRUS NATURAL AREAS CLASSIFICATION**  
 2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



Data Source: Hernando County GIS files (revised) June 16, 2019  
 Address: \\sagefile01\1217\2019\2019\layers\01\00001\1217\Map\_NA\_Natural.mxd



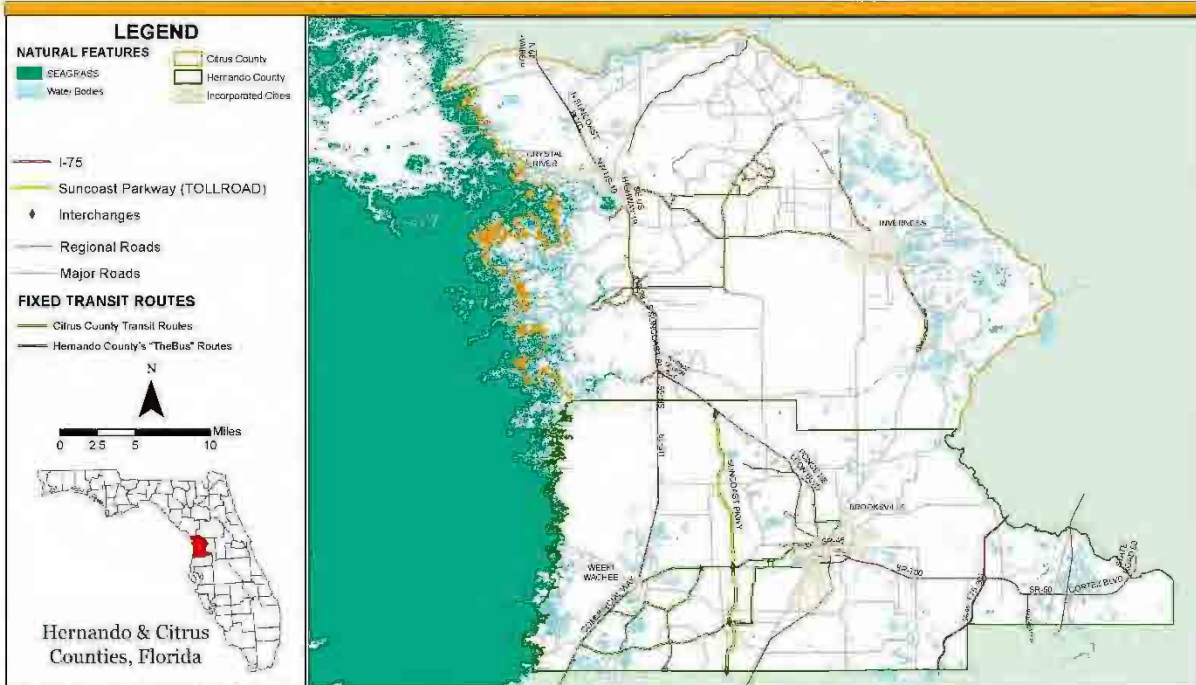
**Participant Comments on Natural Areas Classification:**

- (1): Boy Scout Tract of the Flying Eagle Appears to be excluded.
- (2): Lake Townsen Preserve should be included like Cypress Lakes was. Federal/FL A+M agricultural research area; should it be included?



# HERNANDO/CITRUS SEAGRASS CLASSIFICATION

2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



1

# HERNANDO/CITRUS OTHER RECREATIONAL AREAS CLASSIFICATION

2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



1

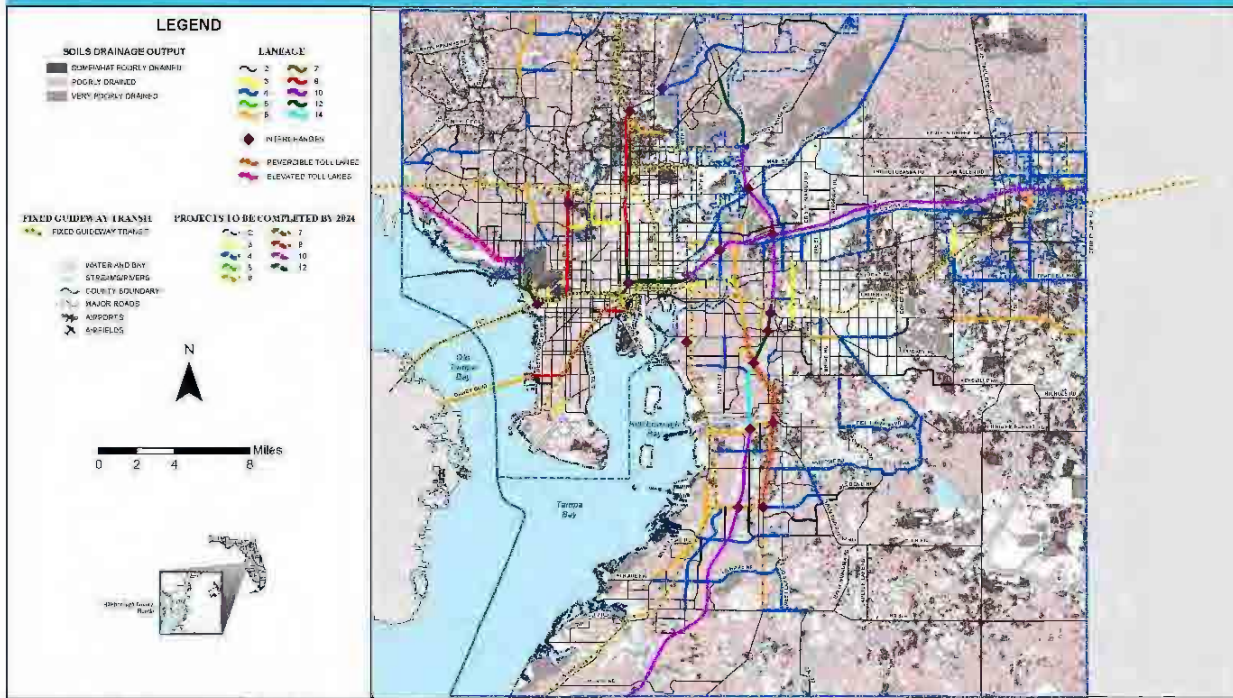
## Hillsborough County



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# HILLSBOROUGH COUNTY SOILS CLASSIFICATION

2045 L RTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019

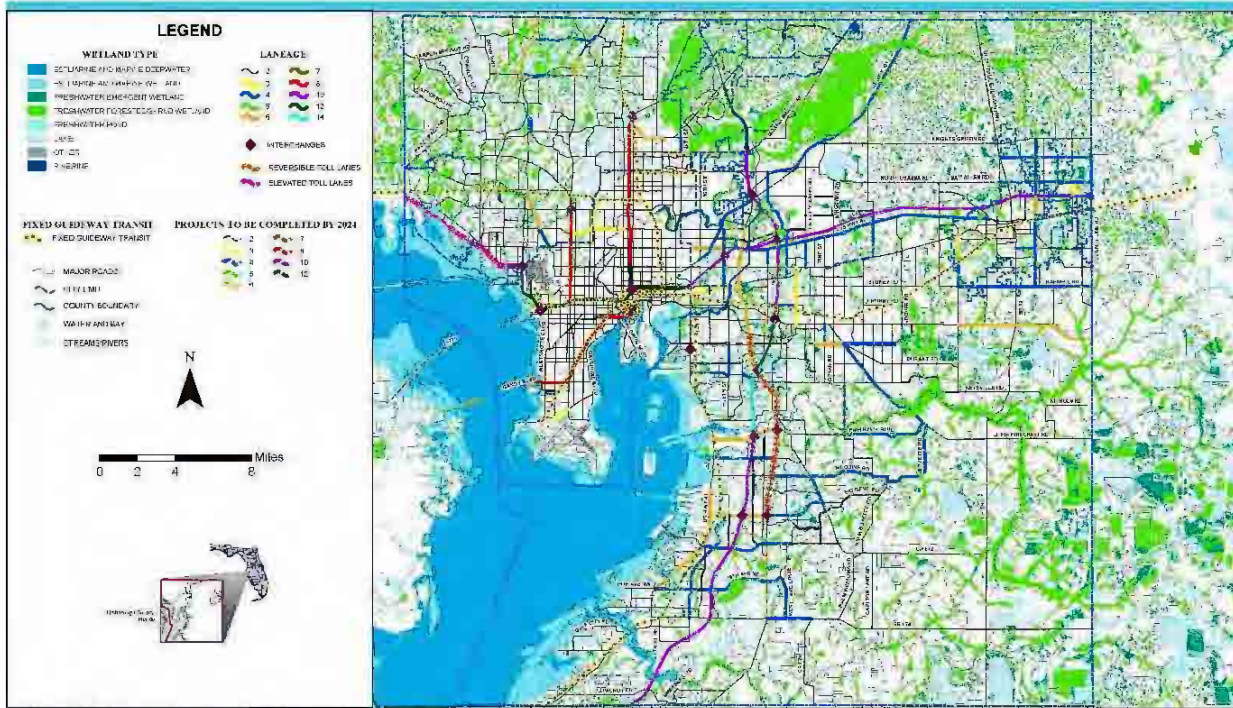


Data Source: See Adopted MPO Long Range Transportation Plan for specific roadway improvements. Roads: Water from Hillsborough County City-County Planning Commission. Soils Classification: USDA National Resources Information Service. See Data Model.

U:\gis\work\Projects\2045\_LRTP\Environmental\Workshop\Hillsborough\_Soils\_Classification\_11117.mxd  
 Author: Roger Mabie Updated: June 5, 2019

# HILLSBOROUGH COUNTY WETLANDS CLASSIFICATION

2045 L RTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



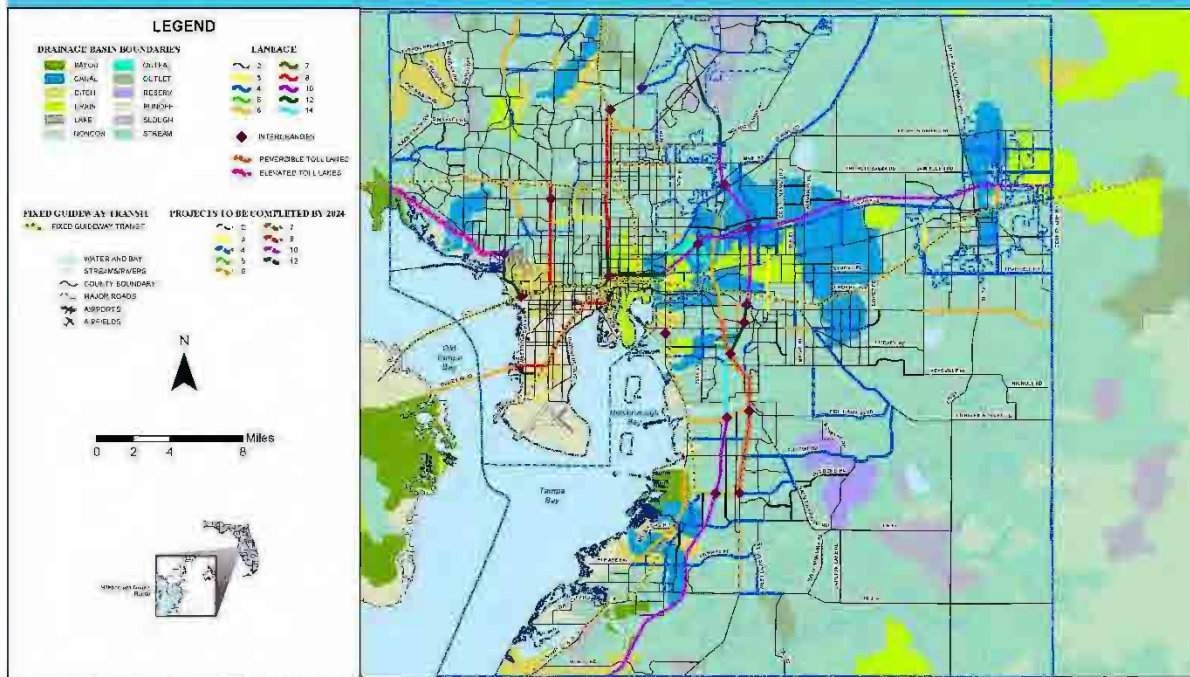
Data Source: Wetlands - National Wetlands Inventory. See Adopted MPO Long Range Transportation Plan for specific roadway improvements. Roads: See Data Model from Hillsborough County City-County Planning Commission.

U:\gis\work\Projects\2045\_LRTP\Environmental\Workshop\Hillsborough\_Wetlands\_Classification\_11117.mxd  
 Author: Roger Mabie Updated: June 5, 2019



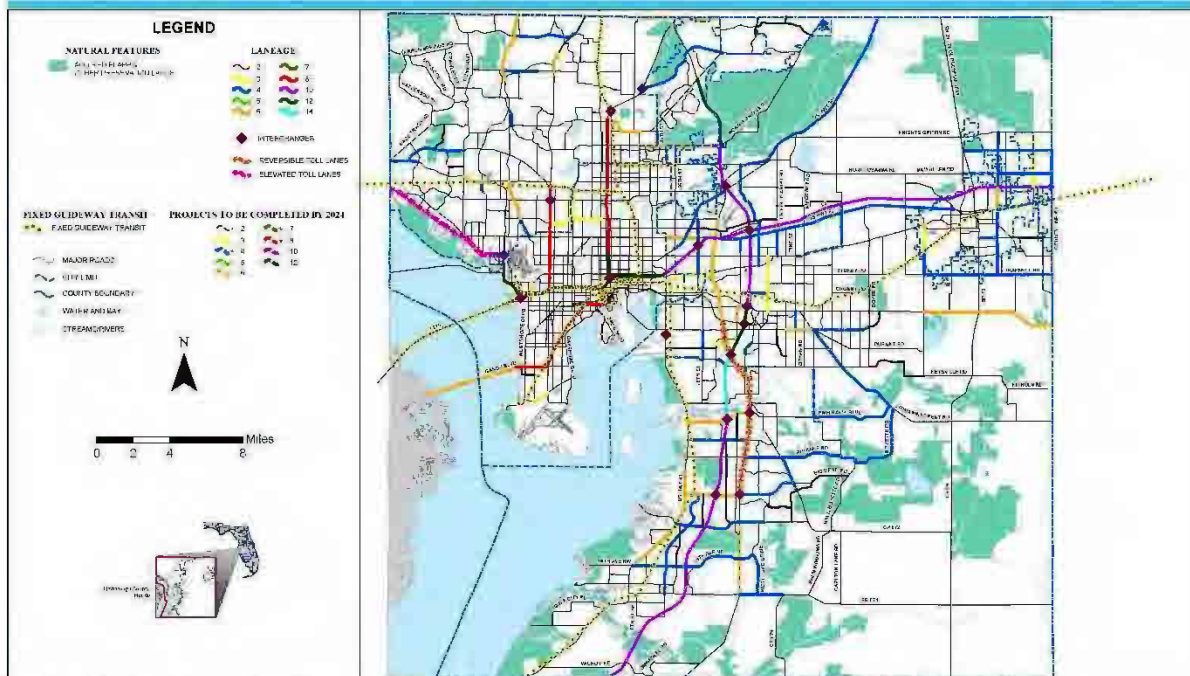
# HILLSBOROUGH COUNTY DRAINAGE BASIN CLASSIFICATION

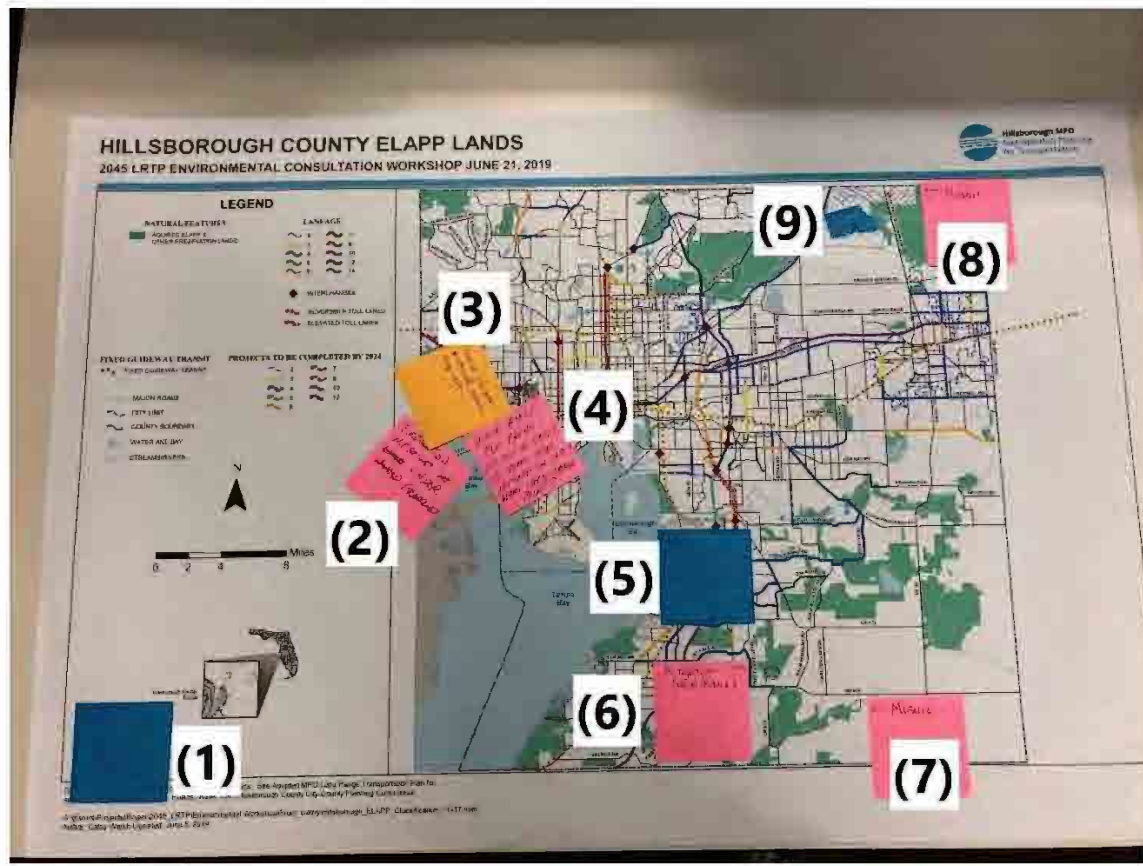
2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



# HILLSBOROUGH COUNTY ELAPP LANDS

2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019





### Participant Comments on Wildlife Corridors

#### (1) SWFWMD Note:

- a. Jessica Hendricks: use 303D list, add hydrological reconnection list
- b. List of acquired/desired lands
  - i. Ex. Courtney Campbell Causeway

#### (2) Circulation improvement under Howard Franklin

#### (3) Derelict tide gate along 60, Bahama breeze basin

#### (4) With bike/ped paths on Courtney Campbell Causeway and Gandy, is there real demand on HE? What are launch points?

#### (5) Bridge over Bullfrog Creek, natural wildlife corridor

#### (6) Mitigation bank (future)

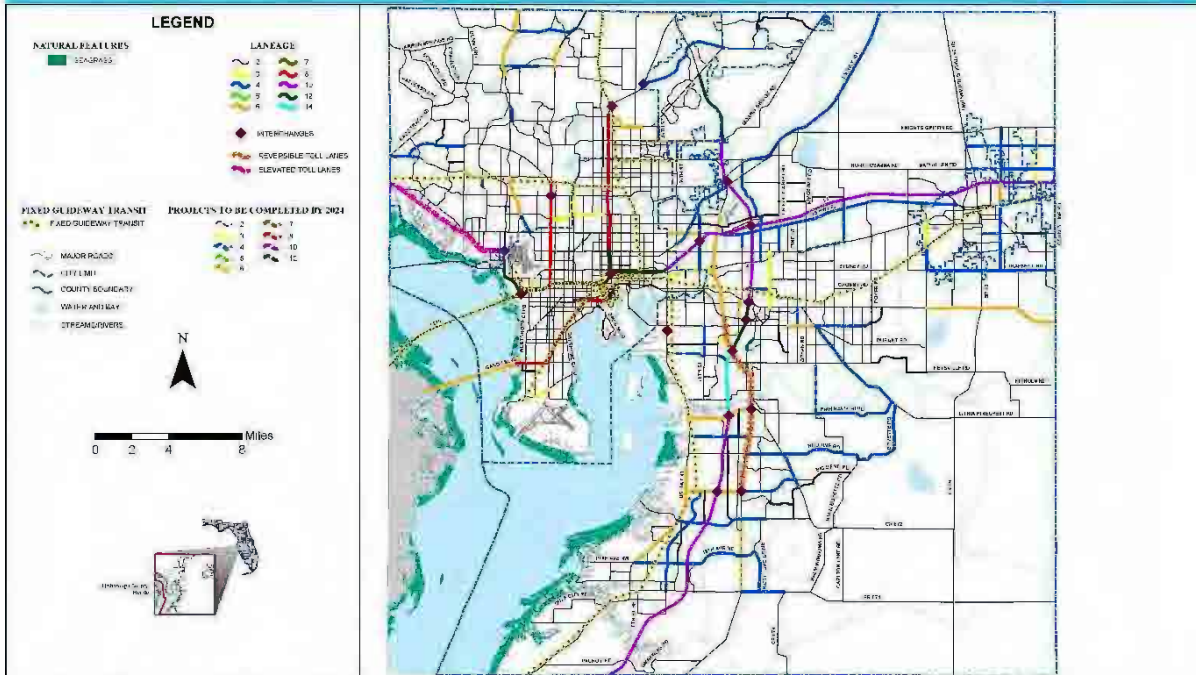
#### (7) Mosaic

#### (8) Mosaic

#### (9) Wildlife crossing, trying to buy

# HILLSBOROUGH COUNTY SEAGRASS CLASSIFICATION

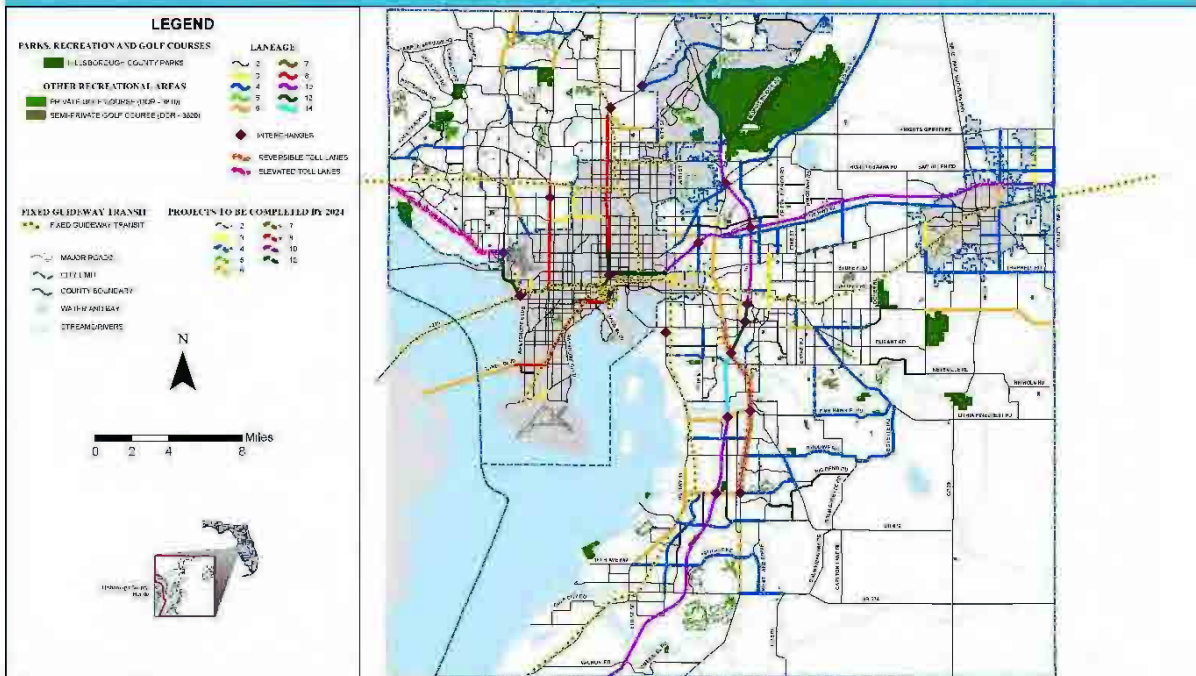
2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



Data Source: Seagrass - MyFlorida.com; See Adopted MPO Long Range Transportation Plan for Specific roadway and transit routes. Roads: Values from Hillsborough County City-County Planning Commission  
 G:\gsr\proj\2019\2045\_LRTP\Environmental\Workshop\For\_City\Hillsborough\_Seagrass\_Classification\_11417.mxd  
 Author: Cathy Walsh Updated: June 5, 2019

# HILLSBOROUGH COUNTY PARKS AND RECREATION

2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019

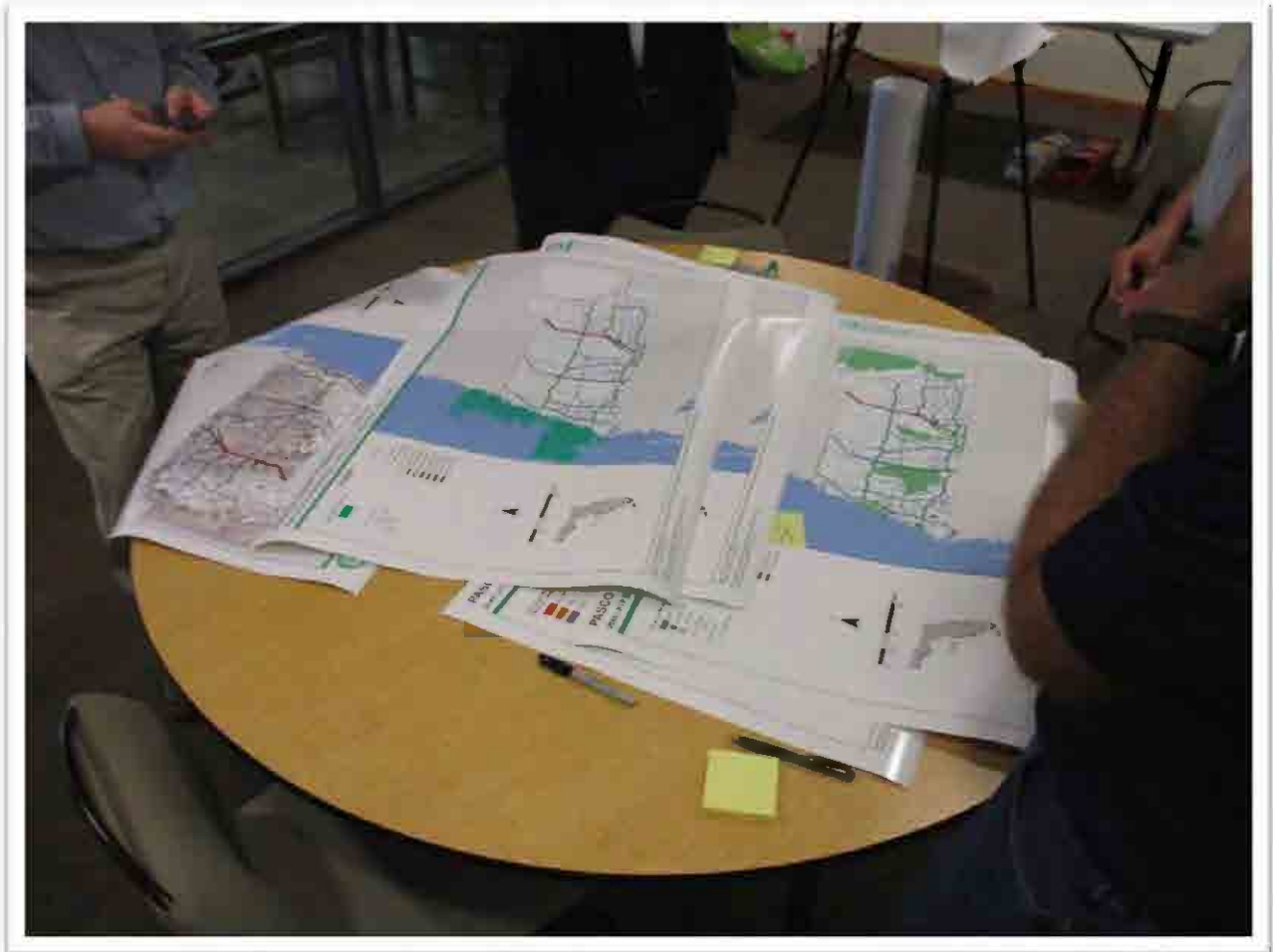


Data Source: Parks, Recreation and Golf Courses - Hillsborough County Property Appraiser DCB Davis; See Adopted MPO Long Range Transportation Plan for specific roadway and transit routes. Roads: Values from Hillsborough County City-County Planning Commission  
 G:\gsr\proj\2019\2045\_LRTP\Environmental\Workshop\For\_City\Hillsborough\_Parks\_and\_Recreation\_11417.mxd  
 Author: Jane McBride Updated: June 5, 2019



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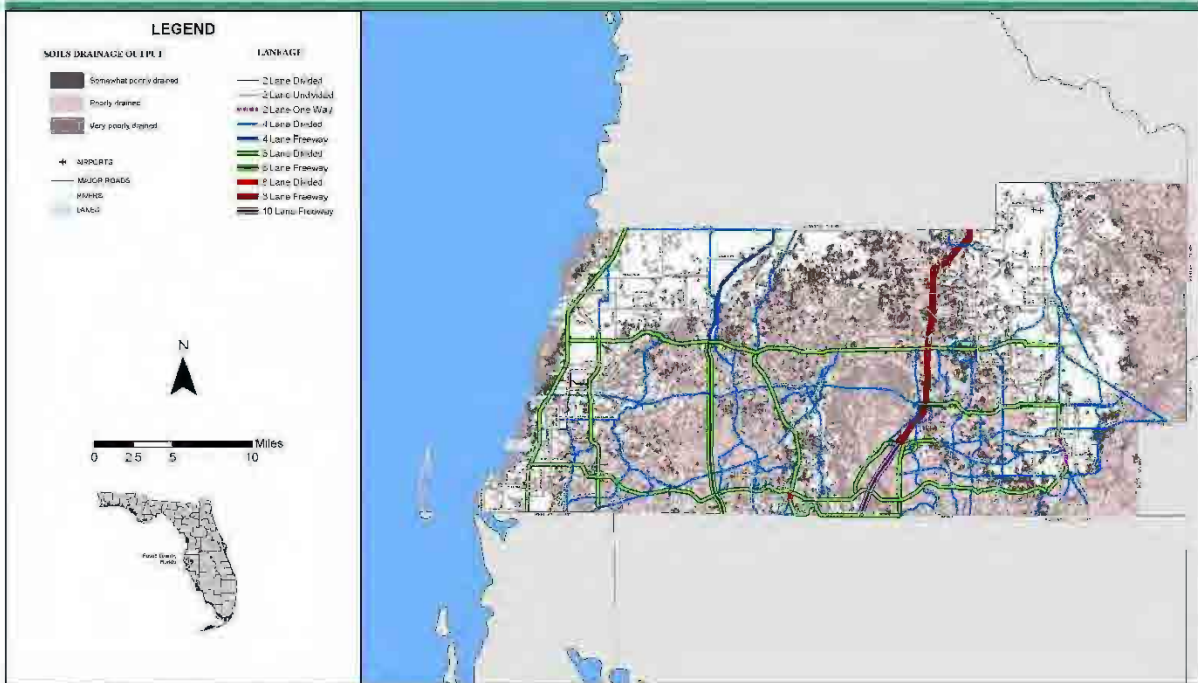
## Pasco County



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# PASCO COUNTY SOILS CLASSIFICATION

2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019

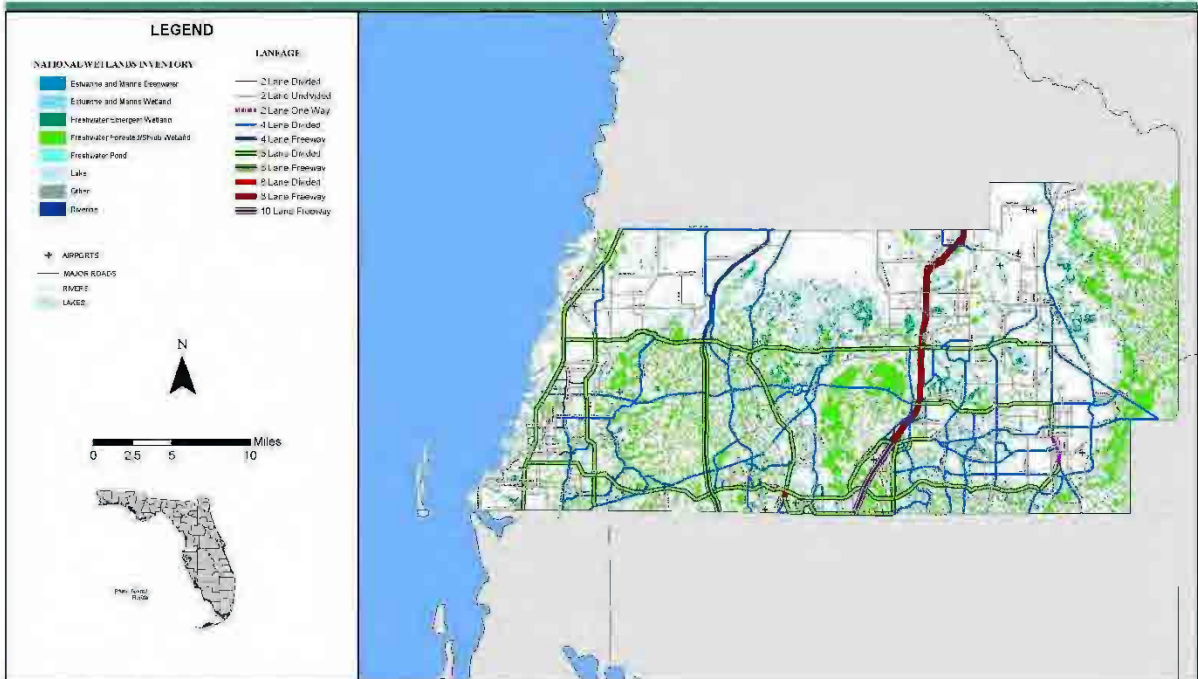


Data Source: See Adopted MPO Long Range Transportation Plan for specific roadway improvements. Roads: Water from Pasco County GIS Department. Soils: SWSRIGG.  
 S:\GIS\STATE\_GIS\MPOR\Regions\MPO\Pasco\_Soils\_Classification.mxd  
 Author: Nathan Coleman Updated: June 9, 2019

6

# PASCO COUNTY NATIONAL WETLANDS INVENTORY

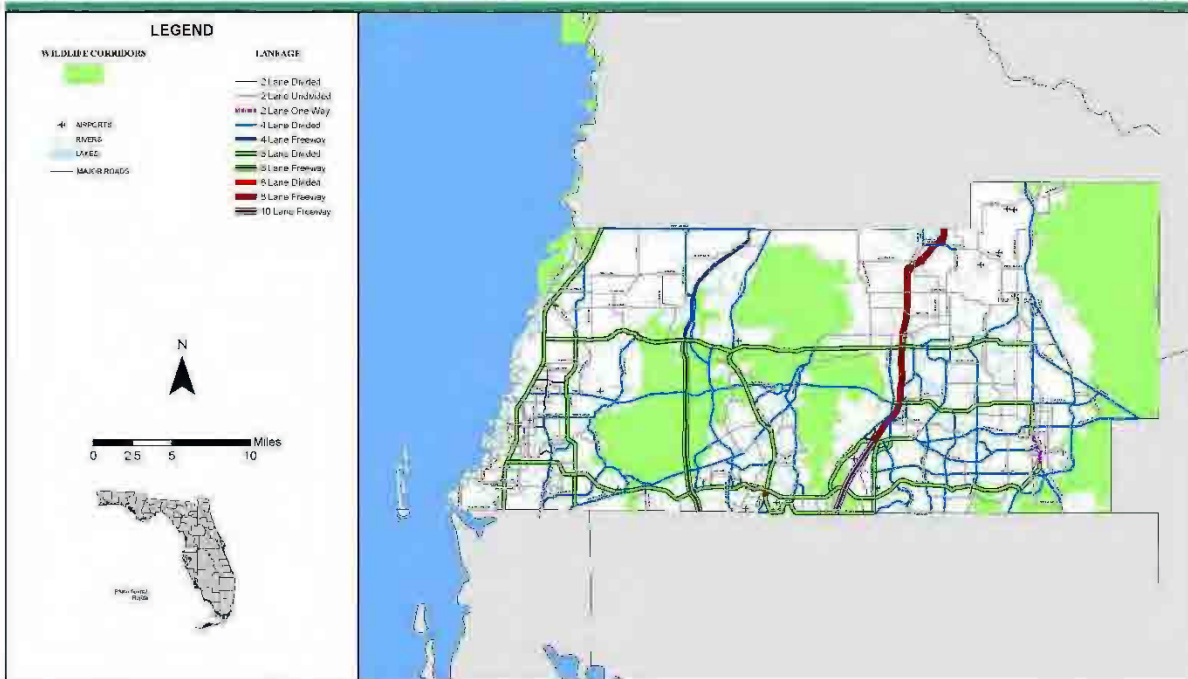
2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



Data Source: See Adopted MPO Long Range Transportation Plan for specific roadway improvements. Roads: Water from Pasco County GIS Department. Wetlands: National Wetlands Inventory.  
 S:\GIS\STATE\_GIS\MPOR\Regions\MPO\Pasco\_National\_Wetlands\_Inventory.mxd  
 Author: Nathan Coleman Updated: June 4, 2019

3

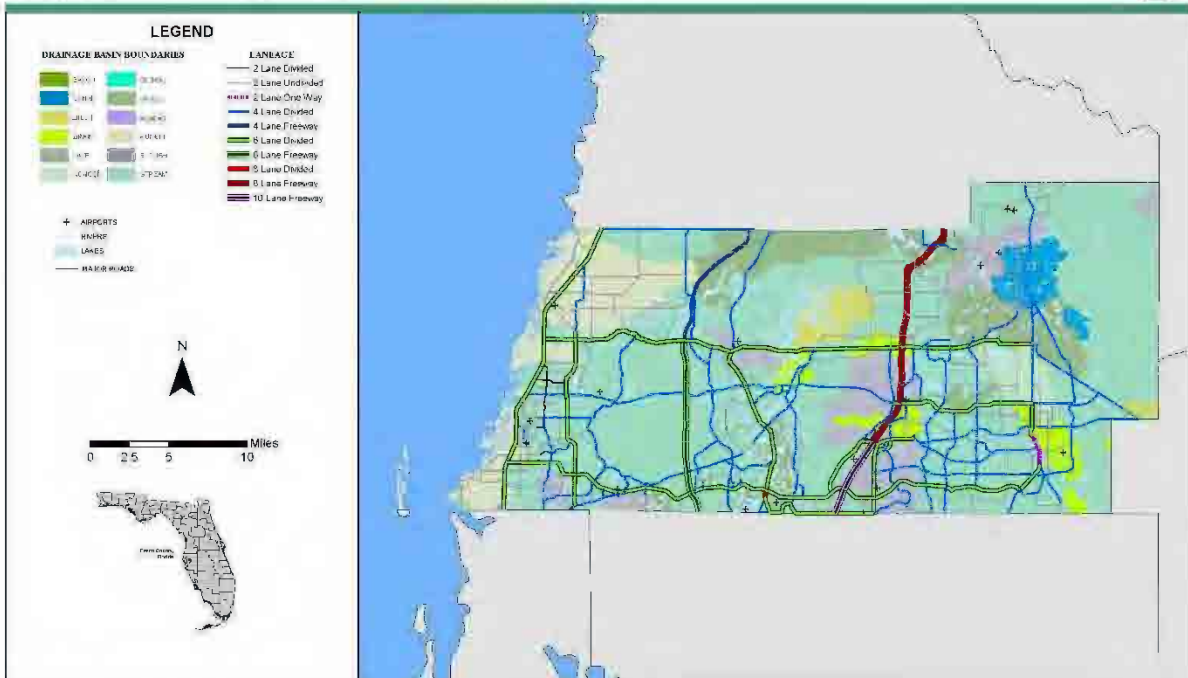
**PASCO COUNTY WILDLIFE CORRIDOR**  
 2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



Data Source: See Adopted MPO Long Range Transportation Plan for specific roadway improvements. Roads: Water from Pasco County GIS Department. Wildlife Corridor: Florida Fish and Wildlife Conservation Commission.   
 GIS DATE: 02/26/2019 09:58:41 AM File: Wildlife\_Corridor.mxd  
 Author: Nathan Delman Updated: June 4, 2019

7

**PASCO COUNTY DRAINAGE BASIN CLASSIFICATION**  
 2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019

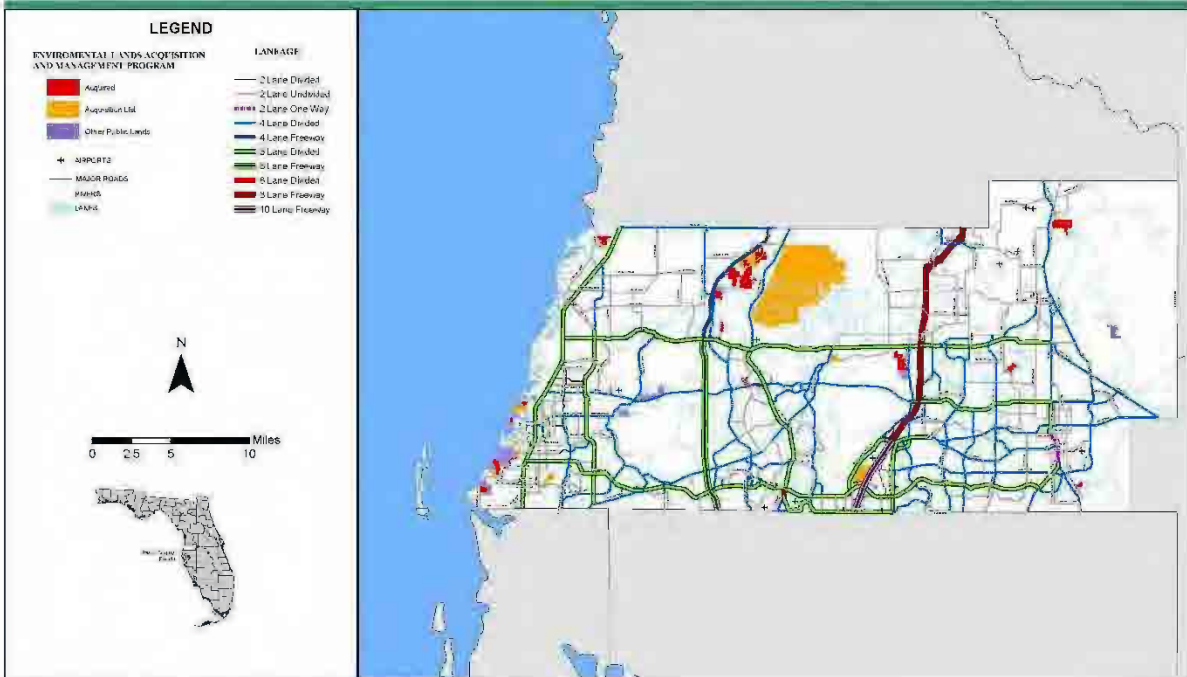


Data Source: See Adopted MPO Long Range Transportation Plan for specific roadway improvements. Roads: Water from Pasco County GIS Department. Drainage Basins: SWFWMD.   
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 Author: Nathan Delman Updated: June 4, 2019

1

# PASCO COUNTY ENVIROMENTAL LANDS AQUISITION AND MANAGAMENT PROGRAM

2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



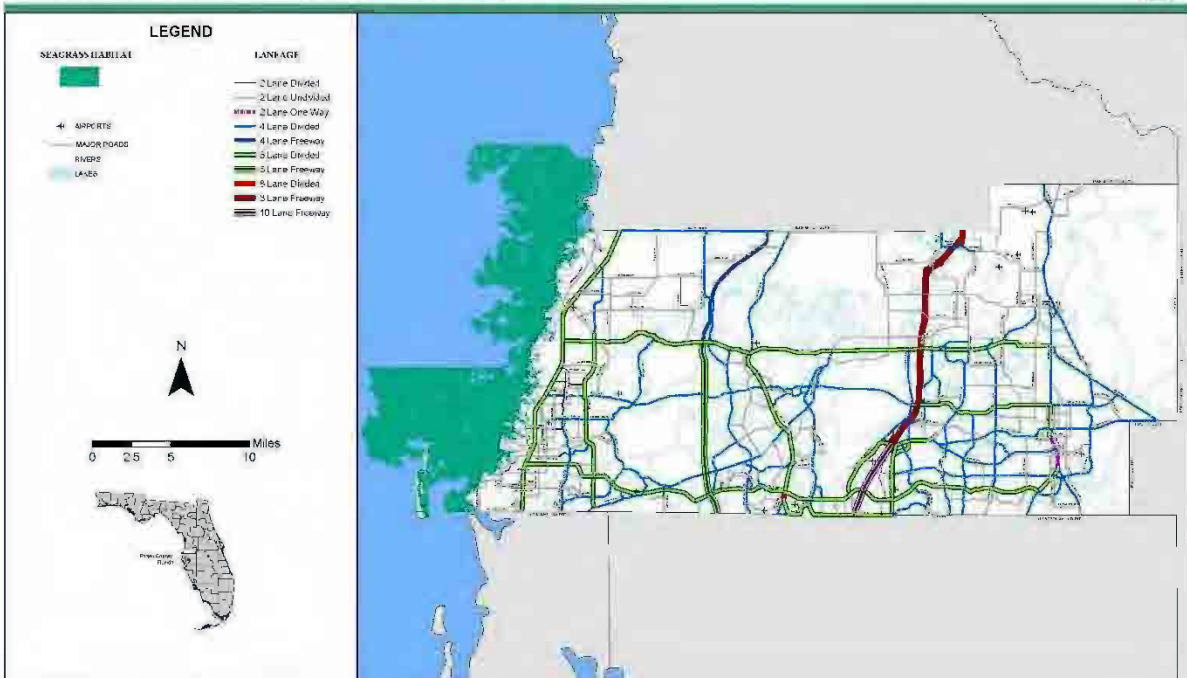
Data Source: (See Adopted MPO Long Range Transportation Plan for specific roadway improvements: Roads, Water from Pasco County GIS Department, Drainage Basins - SRFPAWD)

G:\GEOGRAPHIC\_INFORMATION\_SYSTEMS\GIS\Projects\2019\2045\_LRTP\mxd\2045\_LRTP\_Enviro\_Lands.mxd  
 Author: Bethan Delmon Updated: June 4, 2019

2

# PASCO COUNTY SEAGRASS HABITAT

2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019

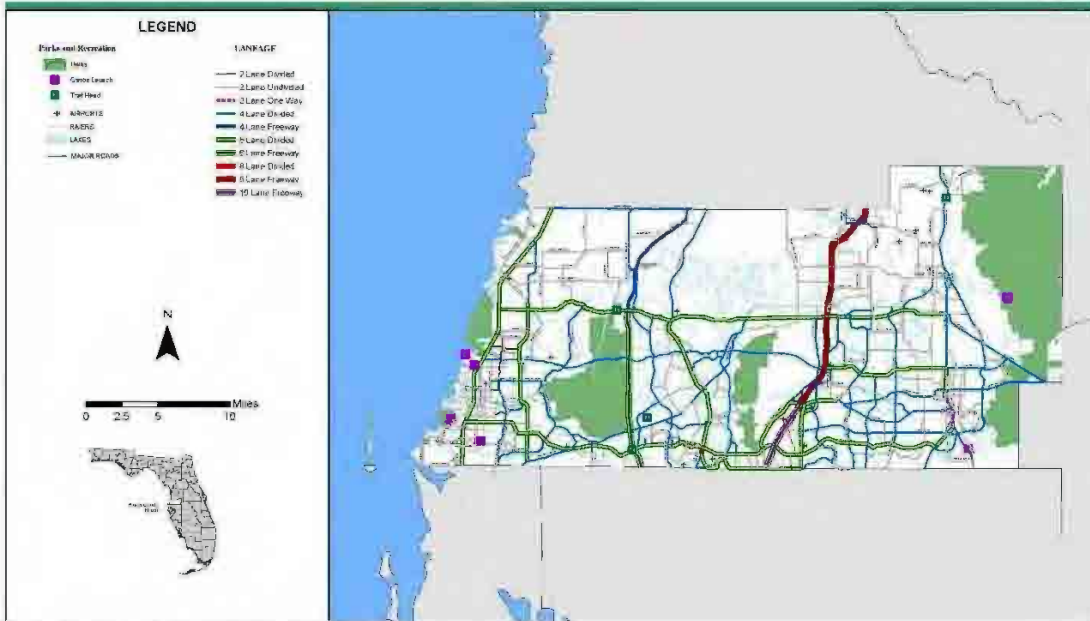


Data Source: (See Adopted MPO Long Range Transportation Plan for specific roadway improvements: Roads, Water from Pasco County GIS Department, Drainage Basins - Florida Fish and Wildlife)

G:\GEOGRAPHIC\_INFORMATION\_SYSTEMS\GIS\Projects\2019\2045\_LRTP\mxd\2045\_LRTP\_Seagrass\_Habitat.mxd  
 Author: Bethan Delmon Updated: June 4, 2019

5

PASCO COUNTY PARKS AND RECREATION  
2045 LRTP ENVIRONMENTAL CONSULTATION WORKSHOP JUNE 21, 2019



Data Source: Rich Anderson (MPO) Lane Usage. This is a general map for specific planning. Information about Water Flows are provided from Pasco County GIS Department.  
© 2019 MPO. All rights reserved. MPO and Pasco County. All rights reserved.  
Auditor: Nathan DeLeon Updated: June 4, 2019

4



**Participant Comments on Parks and Recreation:**

(1) Add trails as linear parks (opp-roads)

## Pinellas County





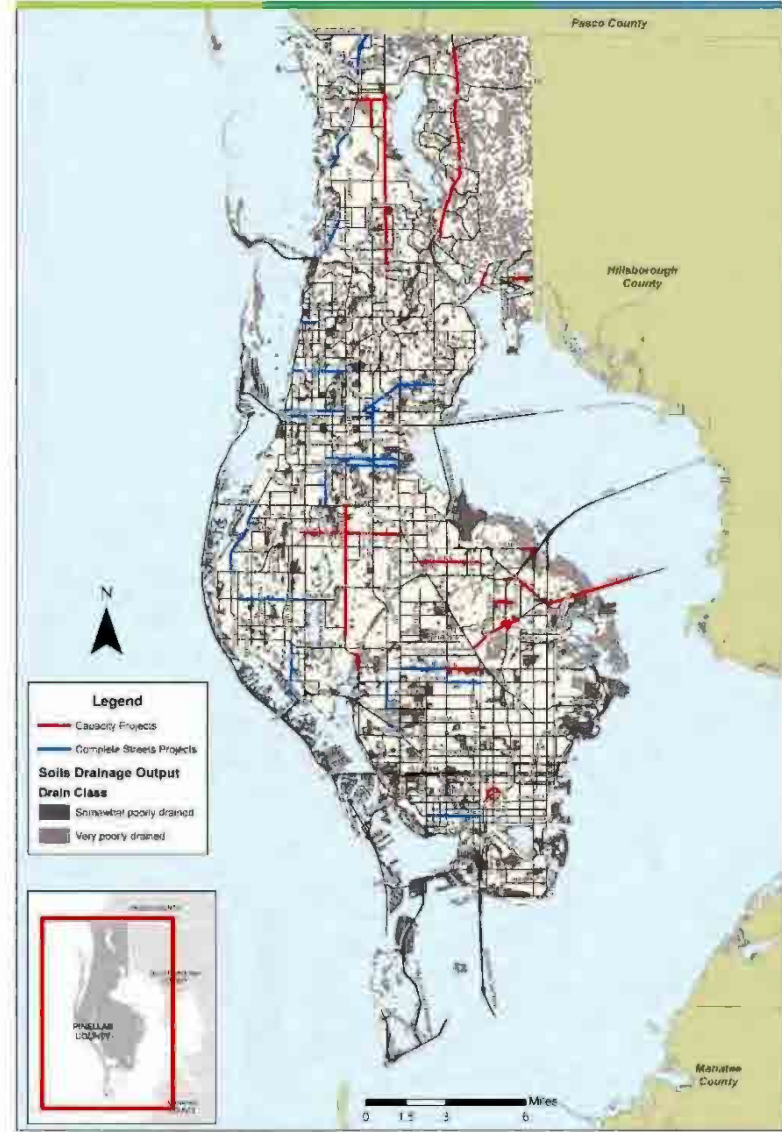
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# Pinellas Wetlands



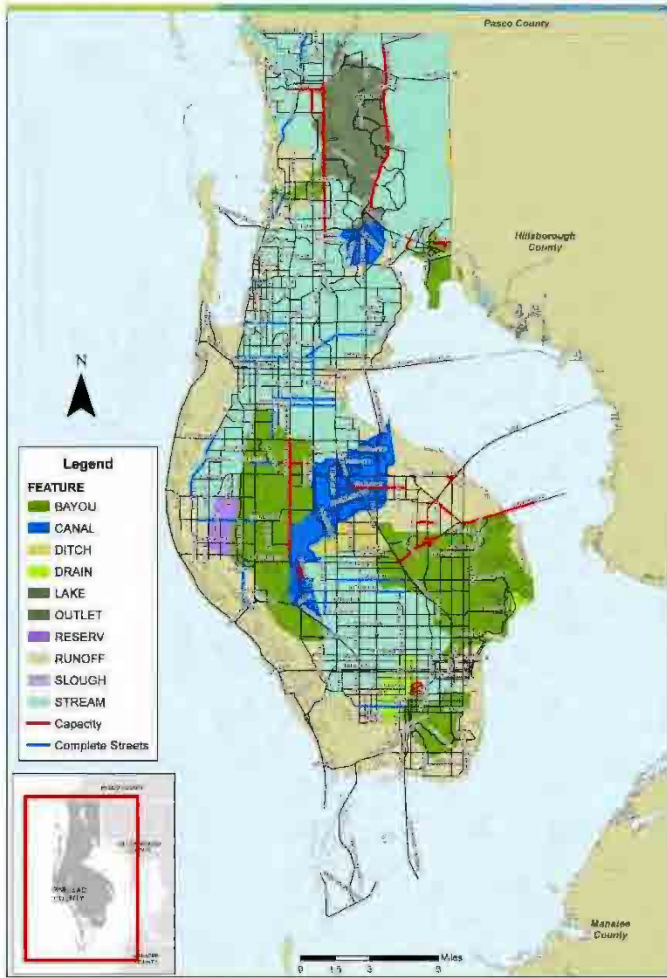
Data Source: Forward Pinellas, 2018. Map Prepared: May 20, 2019.  
 H:\USERS\Tiana\Users\Project GIS Data\STP\RTP\_Environmental\Map\Wetlands.mxd

# Pinellas Hydric Soils

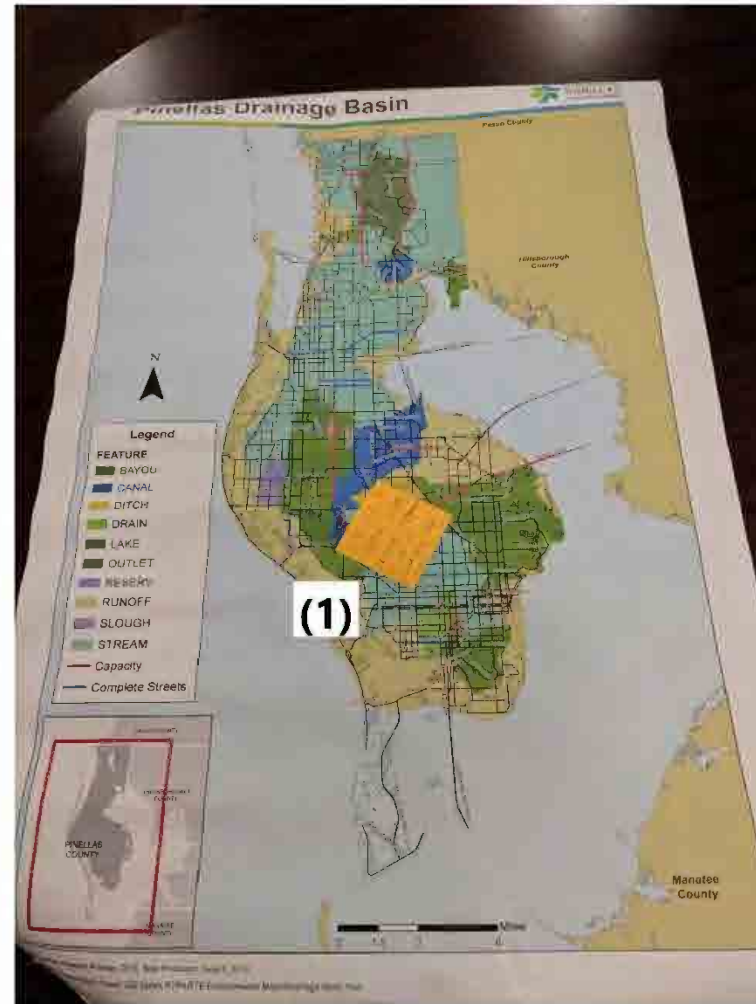


Data Source: Forward Pinellas, 2018. Map Prepared: June 4, 2019.  
 H:\USERS\Tiana\Users\Project GIS Data\STP\RTP\_Environmental\Map\Hydric Soils.mxd

# Pinellas Drainage Basin



Data Source: Forward Pinellas 2016 Map Redesign June 9, 2019  
1:\1\B&S\Travel\2016\Project\GIS Data\RTPL\BTP\Environment\Shape\Change\Basin.mxd



## Participant Comments on Drainage Basin:

(1) Consider water quality critical improvement in lieu of stormwater ponds – highly built environment

# Pinellas Parks, Recreation, Natural Lands



Data Source: Forward Pinellas, 2016. Map Produced: June 3, 2019.  
Pinellas County's Parks GIS Data (PINELAS\_LandscapeMaps\_Parks and Recreation.mxd)

1



## Participant Comments on Parks, Recreation, Natural Lands:

(1) Need to identify Pinellas Trail on map

## Pinellas Seagrass



Data Source: Forward Pinellas, 2015. Map Produced: June 2, 2015.  
MapScale: 1:50,000. Project GIS: 10/15/14. PIP: Environmental/Map Production Unit



### Participant Comments on Seagrass:

- (1) Bay Pointe Stormwater Treatment
- (2) Hydrologic reconnections should be considered at any opportunity

# Comments

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Presentation



### Agenda for Today

- ▶ 10 AM - 10:30 AM Introductions
- ▶ 10:30 AM - 12:30 PM Regional Discussion
  - ▶ Overview Presentation
  - ▶ Review of and comments of Regional Maps
    - ▶ Discussion and feedback with staff (Flip Chart and Post-It Notes)
- ▶ 12:30 PM - 1:30 PM Boxed Lunch (on site)
- ▶ 1:30 PM - 3:00 PM County Breakout Session
  - ▶ Review and comments of Regional Maps
    - ▶ Discussion and feedback with staff (Flip Chart and Post-It Notes)



## Purpose

- ▶ To enhance the consideration of environmental issues and impacts in the transportation planning process.
- ▶ To strengthen efforts to engage resource agencies earlier in the development of a project.
- ▶ To establish coordination efforts between transportation and resource agencies as projects advance.



## FHWA Requirements

### Long Range Plans must:

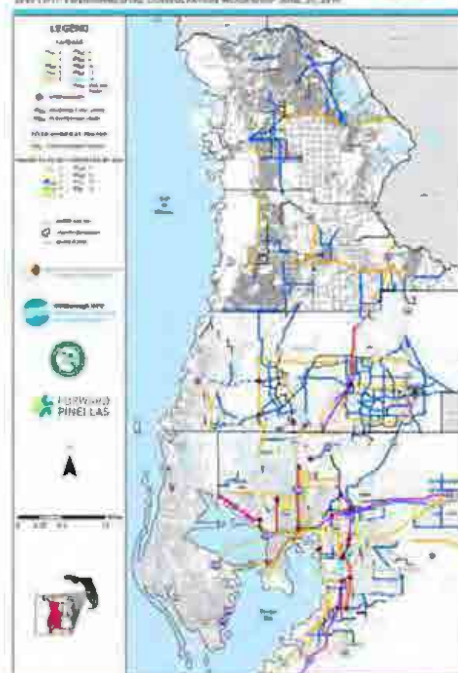
- ▶ Include a discussion on the types of environmental mitigation activities and the potential areas to carry them out.
- ▶ Be developed in consultation with federal, state and tribal agencies involved with wildlife, land management and regulation.
- ▶ Be performed at a systemwide level to identify where mitigation may be undertaken, and what types of mitigation activities may be undertaken in areas affected by LRTP projects.
- ▶ Focus on broader mitigation needs and opportunities that may be by future projects.
- ▶ Not be project specific.



## L RTP Needs Plan

- ▶ Future projects needed for mobility in each county
- ▶ Projects will undergo a full environmental assessment as funding is identified and project is advanced for funding
- ▶ Review project locations on environmental land to identify potential red flags that can be funded for possible mitigation costs

### WCF REGIONAL 2045 HIGHWAY NEEDS PLAN **DRAFT**



## Current Strategies

- ▶ Wetland mitigation
  - ▶ Environmental Resource Permitting Program
  - ▶ Existing SWFWMD mitigation banks
- ▶ Seagrasses
  - ▶ Avoidance
  - ▶ Strategic reconfiguration of causeways to allow for better water flow to protect seagrasses

## Questions for you

- ▶ What policies/programs/activities does your agency currently undertake to mitigate development impacts to the environment?
- ▶ What limitations are there for each of these areas?
  - ▶ Is there no capacity remaining in mitigation banks?
  - ▶ Is there no consideration for new mitigation banks in the future?
  - ▶ Is there limited success with certain activities?
- ▶ How should critical habitat considerations be addressed to protect wildlife?
- ▶ Are you aware of any untapped opportunities to enhance environmental mitigation activities?



## Additional Comments



## Contact Information

► All materials posted online

<http://www.planhillsborough.org/2045-lrtp-environmental-consultation-workshop-draft/>

► Additional comments can be submitted until July 5<sup>th</sup>:

- ❑ Allison Yeh, Hillsborough MPO - [yeha@plancom.org](mailto:yeha@plancom.org)
- ❑ Chelsea Favero, Forward Pinellas - [cfavero@forwardpinellas.org](mailto:cfavero@forwardpinellas.org)
- ❑ Cayce Dagenhart, Hernando/Citrus MPO - [cdagenhart@co.hernando.fl.us](mailto:cdagenhart@co.hernando.fl.us)
- ❑ Tania Gorman, Pasco MPO - [tgorman@pascocountyfl.net](mailto:tgorman@pascocountyfl.net)

**Thank you!**

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**Regional Questions and Answers Summary**



## Audience Question

Group (Staff and another agency's response)

---

*Could the development of transportation systems decrease the number of people using septic systems?*

Yes. More people living near the transportation systems can be connected to the sewage pipeline and, if marketed correctly to consumers, can decrease the number of septic system users.

30% of nitrates are removed from sewage using the septic system, but the rest cannot be treated and must be disposed into the environment. Pasco county is in the process of acquiring private utilities to connect more people to the county's sewage system.

Resources mentioned:

2004 Environmental Lands Acquisition Program

2016 Florida Water Protection Act

*Is there a rubric available to guide engineers towards sustainable development in roadway development?*

Nothing yet.

*How should critical habitats be addressed when they are impacted by transportation projects?*

The FWC doesn't have regulatory authority to address these habitats. However, permits are available to transfer animals from the affected area to other critical habitats

*How should wildlife corridors be implemented in transportation plans?*

Hillsborough County already has wildlife corridors for some portions of its roadways. However, human development should not interfere with local water sources to ensure wildlife are healthy when migrating to areas of Hillsborough County.

*Are studies available that show how the Tampa Region's highway projects affect local wildlife, and what are the best ways to mitigate further wildlife impacts?*

Environmental and cultural consequences are analyzed for each transportation project. Further, permits are issued when highway projects demonstrate a reasonable degree of wildlife impact. However, elected officials determine whether these issues are a problem. Environmental strategies are not found in local legislation, so environmentally-informed elected officials are important for the implementation of environmental strategies. Transportation planners cannot implement new environmental strategies without the compliance with elected officials.

It is also important to note that secondary impacts can result from transportation projects. Roads are long walls. Because wildlife managers cannot control the movement of wildlife to wildlife corridors, it is unsure what portions of wildlife benefit from completing their migration routes. Prescribed fires nearby roadways are NIMBY for people using transportation close to the fire. People need to be notified of prescribed fires before they happen to lessen the perceived severity.

*Are mitigation credits allowed to be implemented at the planning stage? And are MPO's allowed to create their own ROMA's?*

During the planning stage, mitigation credits are not implemented. 10+ year projections are required for transportation projects to estimate ROMA's. MPO's should stop relying on private banks and create their own ROMA's.

*Are MPO's working with the agricultural sectors of their counties?*

MPO's do not work directly with agricultural sectors but have representatives that coordinate with agricultural people. It is suggested that there should be direct communication with the agricultural sector by the MPO's.

*Are golf courses Senate Bill Mitigation approved?*

MPO's do not have control over purchasing golf courses unless state governments such as the FDOT are involved in the situation.

Other notes:

- MPO's should fund/support environmental programs such as Florida Forever.
- Transportation projects should also account for sea level rise in the next several decades and have road elevations built based on these projections.



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Comments Matrix



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		All Counties	Hillsborough	Pinellas	Pasco	Hernando	Citrus
<b>Topics</b>	Agricultural Communication Coordination	Encourage direct communication with transportation agencies.					
	Engineer Rubric/Guidelines for Green Infrastructure Improvement	Not composed yet, but should be.					
	Septic Tanks	Consider connecting sewage lines with transportation projects to stop public reliance on septic tanks. Septic tanks - 70% sepage.					
	Mitigation Banks	See description in "Additional Comments" section.					

		All Counties	Hillsborough	Pinellas	Pasco	Hernando	Citrus
<b>Topics</b>	Parks and Recreation	<p><b>(1)</b> Greens should be in different colors.</p> <p><b>(2)</b> Information isn't consistent across maps.</p>	<p><b>(5)</b> Why no Brooker Creek identified on this map?</p>	<p><b>(1)</b> (County Map) Need to identify Pinellas Trail on map.</p>	<p><b>(4)</b> Why has most of the public ownership in Green Swamp been excluded from this map? Both Hernando and Pasco counties.</p> <p><b>(1)</b> (County Map) Add trails as linear parks (opp-roads)</p>		<p><b>(3)</b> The Citrus tract of Withlacoochee State Forest should be delineated on this map, as it is on Regional Conservation Land Map.</p>
	Wildlife Corridors	<p><b>(1)</b> Need the highway corridor to overlay on top of all maps - especially the wildlife corridor to show areas.</p> <p><b>(2)</b> Consider adding trails as linear parks.</p> <p>I-4: wildlife crossings considered in permitting (SWFWMD)</p> <p>Prescribed burns needed, but public also needs to be informed/educated on the topic</p>	<p>Crossings cannot be considered locally - education needed at decision-making stage</p> <p>HC possesses wildlife crossings; provide them in the initial transportation plans/maps.</p>	<p><b>(3)</b> Pinellas Trail is a wildlife corridor.</p>	<p>1 cent tax in Pasco: environmental lands - adopted ecological corridors</p> <p>Would me useful to identify private vs. public lands within the corridors.</p> <p>Connectivity is important, maybe private land could be acquired or access agreement made to protect wildlife.</p> <p>Info presented doesn't seem consistant between maps. Conservationa rea on one does not show up as a park/wildlife corridor.</p>		<p>In Citrus, the Duke Energy footprint looks too small, is there really that much conservation zoned land?</p> <p>Yellow area @ Crystal River, is that the State Park? There is no county park that big.</p> <p>Info presented doesn't seem consistant between maps. Conservationa rea on one does not show up as a park/wildlife corridor.</p>

Note: Each parenthesis **"(x)"** refers to map comments in the previous section.

		All Counties	Hillsborough	Pinellas	Pasco	Hernando	Citrus
<b>Topics</b>	Natural Conservation Lands		(2) Natural Corridor from Hooker Lake to (eventually) Hillsborough River area. The corridor crosses under US Hwy 92, very little protection from road construction.		<p>Name large tracts of parks/conservation (label). Include delineated wildlife areas the endangered/threatened species layers.</p> <p>Not acquired land should be highlighted for identification of opportunity to focus mitigation efforts. Ability to maintain conservation lands (namely through burning) often conflicts with plans to build roads. Burning and high-volume traffic don't mix.</p> <p>Policy creation: roads near conservation lands shouldn't be developed into high-volume traffic corridors because it greatly reduces the land manager's ability to maintain the property.</p> <p>(1): Boy Scout Tract of the Flying Eagle Appears to be excluded.</p> <p>(2): Lake Townsen Preserve should be included like Cypress Lakes was. Federal/FL A+M agricultural research area; should it be included?</p>	(1) Is this the Peck Sink Project Area? If not, only 150 acres are actually protected as conservation land.	<p>Name large tracts of parks/conservation (label). Include delineated wildlife areas the endangered/threatened species layers.</p> <p>Not acquired land should be highlighted for identification of opportunity to focus mitigation efforts. Ability to maintain conservation lands (namely through burning) often conflicts with plans to build roads. Burning and high-volume traffic don't mix.</p> <p>Policy creation: roads near conservation lands shouldn't be developed into high-volume traffic corridors because it greatly reduces the land manager's ability to maintain the property.</p> <p>(1): Boy Scout Tract of the Flying Eagle Appears to be excluded.</p> <p>(2): Lake Townsen Preserve should be included like Cypress Lakes was. Federal/FL A+M agricultural research area; should it be included?</p>
	Note: Each parenthesis "(X)" refers to map comments in the previous section.						

		All Counties	Hillsborough	Pinellas	Pasco	Hernando	Citrus
<b>Topics</b>	2045 Highway Needs Plan	(1) Need to show "New Roads" vs Existing in a different color.	(3) Wildlife crossing, add to PD + E  (4) Hooker Lake to Hillsborough River area. There is a connection under US 92, I4, US301 little consideration given to wildlife crossings.		The Turnpike Project "Coastal Connector" needs to be included on the maps and in the discussion.  Look at Springs SWIM plans for vetted projects to coordinate with.  Needs layer should be able to be overlayed onto any of these projects - so it shows if it goes through a sensitive area or wildlife corridor.  Change in attitude about how mode of transportation is more important than people.		(2) Where is the "coastal connector" roadway (turnpike) project?  The Turnpike Project "Coastal Connector" needs to be included on the maps and in the discussion.  Look at Springs SWIM plans for vetted projects to coordinate with.  Needs layer should be able to be overlayed onto any of these projects - so it shows if it goes through a sensitive area or wildlife corridor. Change in attitude about how mode of transportation is more important than people.
	Seagrass		(1) Circulation improvements in OTB for seagrass offsets.  (2) SWFWMD has updated (2018) seagrass map - look at trends, not just coverage.	Circulation improvements in OTB for seagrass offsets.  (1) Bay Pointe Stormwater Treatment  (2) Hydrologic reconnections should be considered at any opportunity			

Note: Each parenthesis "(X)" refers to map comments in the previous section.

		All Counties	Hillsborough	Pinellas	Pasco	Hernando	Citrus
<b>Topics</b>	Drainage Basin Classification	<p><b>(1)</b> Having main highways and streets labeled would help in reading/understanding ALL maps.</p> <p><b>(2)</b> The canal designation is not appropriate.</p> <p><b>(3)</b> The Chassahowitzka River and Homosassa River and Crystal River watersheds as labeled DITCH or RUNOFF. They are watersheds not ditch or runoff.</p> <p><b>(4)</b> The categories in this legend make no sense in terms of drainage basin delineated.</p>		<p><b>(5)</b> (Regional Map)How to improve water quality of Lake Tarpon? Assuming building up in Pinellas.</p> <p><b>(1)</b> (County Map) Consider water quality critical improvement in lieu of stormwater ponds - highly built environment</p>	<p>Drainage Basin maps should show basin names and not what the symbology currently shows.</p> <p>Examine watershed BMAPS in the highway corridor and coordinate. Will impervious surfaces impact the BMAPS? (legal?)</p>		<p>Drainage Basin maps should show basin names and not what the symbology currently shows.</p> <p>Examine watershed BMAPS in the highway corridor and coordinate. Will impervious surfaces impact the BMAPS? (legal?)</p>
	ROMA Areas		Planning stage: how many mitigation projects for 10+ years that won't be dependent on private banks?		Align strategies with land acquisition	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> <p>Note: Each parenthesis <b>"(x)"</b> refers to map comments in the previous section.</p> </div>	
	Florida Forever	Program needs to be fully funded. No more silos for the issue.					



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## **Additional Comments**

### **Mitigation Banks:**

*All counties* - The FDOT designs, builds and maintains transportation systems. The installation of these systems may add impervious pavement and re-route the natural drainage pattern of an area. Both the transportation facility and the stormwater management system take up space and in some instances, expansions can encroach into an area that is currently not developed with commercial or residential attributes. When this occurs, environmental scientists must determine if this natural acreage supports wetlands or surface waters and if so, evaluate the level of impact the construction of the project will have. Scientists must also determine which listed species of animal, bird, reptile, plant, insect or fish may also live on the land (or in the water). The goal is to have 'no net loss' of function or value to wetlands, surface waters, listed species or their habitats, in the post construction condition to meet the state and federal environmental regulations.

In the United States, water quality is governed nationally by the Environmental Protection Agency (EPA) through the Clean Water Act. In the State of Florida, water is owned by the public and maintaining water quality is regulated through Chapter 373, Part IV of the Florida Statutes. The US Army Corp of Engineers (USACE) implements the federal regulatory program on behalf of the EPA in Florida and the Southwest Florida Water Management District (SWFWMD) implement's the State of Florida's program for District Seven. Environmental permits are intended to minimize adverse environmental, water quality, or water quantity impacts during construction and the subsequent operation. The agencies are required to evaluate the potential for impacts for each construction or maintenance project in which a dredge or fill action is proposed in wetlands or surface waters on listed threatened or endangered species, including species of special concern here in Florida, and their designated habitat. These evaluations often require concurrence from other state or federal agencies including the National Marine Fisheries Service, US Fish and Wildlife Service, and the Florida Fish and Wildlife Conservation Commission.

The Uniform Mitigation Assessment Method (UMAM), establishes a standardized procedure for evaluating the functions provided by wetlands and surface waters, the amount those functions are reduced by a proposed impact, and the amount of mitigation needed to offset that loss. The loss is offset or mitigated with replacing the lost function within the same drainage basin to achieve a 'no net loss' as previously mentioned. In general, mitigation is best accomplished through creation, restoration, or enhancement of ecological communities like those being impacted. Mitigation can be conducted on the project site, off-site, or through the purchase of credits from an established mitigation bank. A Mitigation Bank has obtained a permit from both SWFWMD and USACE to construct, operate, manage and maintain a property upon which creation, enhancement, and/or restoration of wetlands and surface waters is undertaken to provide for the withdrawal of mitigation credits for a cost.

The FDOT and other transportation authorities (established pursuant to Chapters 348 or 349) must evaluate mitigation alternatives according to Chapter 373.4137 of the Florida Statutes. The Florida Legislature determined impacts from proposed transportation projects can be more effectively achieved by long range mitigation planning rather than on a project by project basis. The use of mitigation banks and any other alternative mitigation options that satisfy state and federal requirements in a manner that promotes efficiency, timeliness in project delivery, and cost-effectiveness can be used. One alternative program developed by the SWFWMD in this region of the State is the FDOT Mitigation Program (a.k.a. 'senate bill mitigation'). However, for each proposed project, all available alternatives are evaluated for efficiency, timeliness in project delivery, and cost-effectiveness prior to making a commitment to a mitigation source. Some of the evaluating factors include whether there are suitable and sufficient mitigation bank credits available in the appropriate drainage basin and whether the mitigation source satisfies state and federal regulatory requirements, including long term maintenance and liability. Off-site mitigation alternatives are commonly the preferred method of mitigation for transportation projects because of limited right-of way.

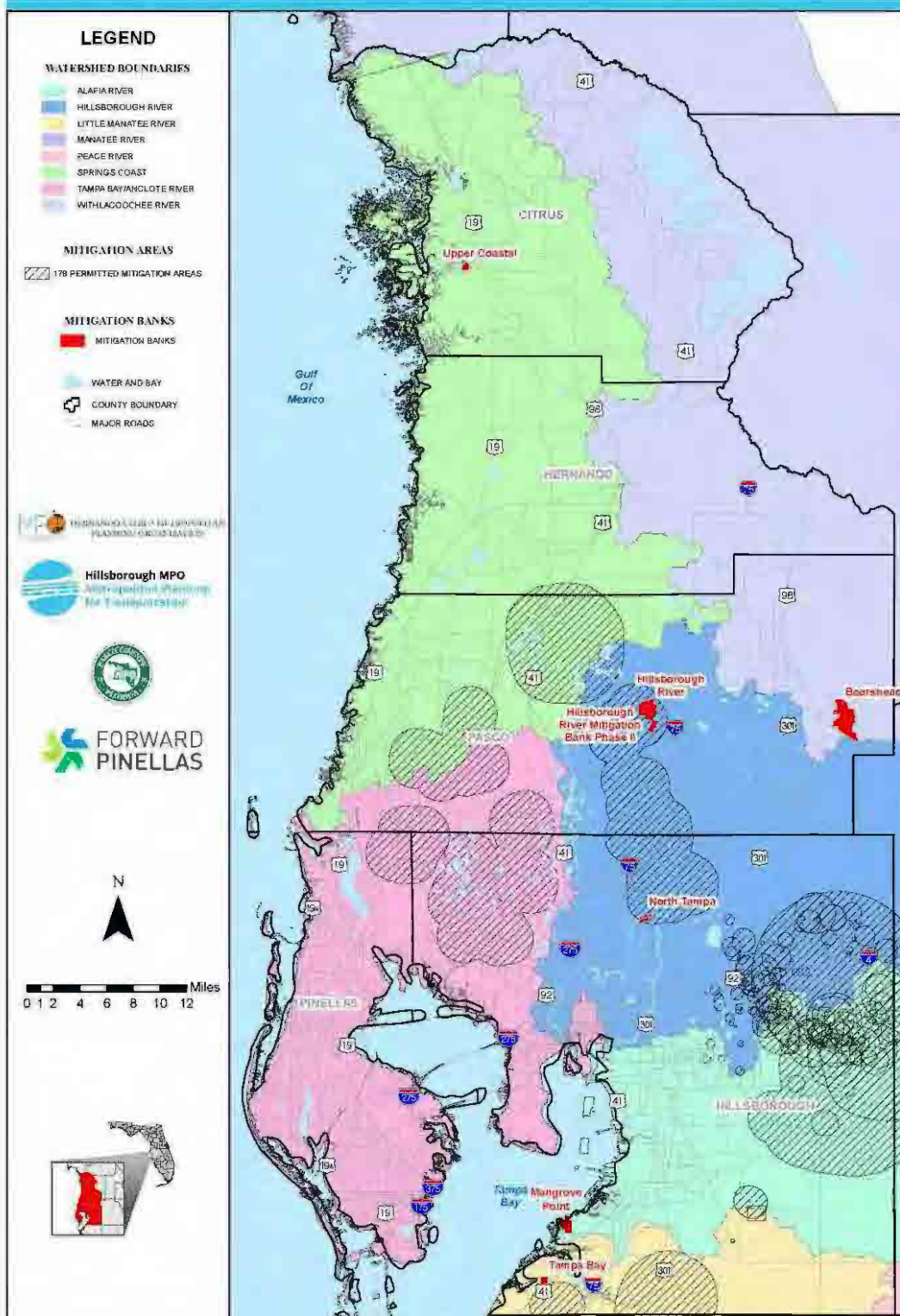
Current mitigation banks within District 7:									
Updated:		Jun-19		19-Mar					
ERP Basins in District 7	Mitigation Basin	Freshwater Forested (Palustrine Forested)		Freshwater Non-Forested (Palustrine Emergent+Open Water)		Mangrove (Estuarine Forested)		Salt Marsh (Estuarine Emergent)	
		Available <sup>1</sup>		Available <sup>1</sup>		Available <sup>1</sup>		Available <sup>1</sup>	
		State	Fed	State	Fed	State	Fed	State	Fed
Tampa Bay/ Coastal	Tampa Bay			12.88	19.089	0	0.168	14.65	19.542
	Bullfrog Creek <sup>6</sup>	0	0						
	Nature Coast <sup>6</sup>	n/a	n/a	n/a	n/a	6.35		1.06	
	Hernando Beach <sup>6</sup>					n/a	n/a	n/a	n/a
	Mangrove Point <sup>6</sup>					0	0	0	0
Upper Coastal	FL Gulf Coast (partial) <sup>4</sup>	Freshwater Mitigation Service Area does not include D						20.85	18.38
	Aripeka <sup>6</sup>	n/a	n/a	n/a	n/a			0	0
	Nature Coast <sup>6</sup>	n/a	n/a	n/a	n/a	6.35		1.06	
	Old Florida	110.09	10.823	46.108	14.091				
	Hernando Beach <sup>6</sup>					n/a	n/a	n/a	n/a
	Upper Coastal <sup>5, 6</sup>	12.065	0.685	n/a	n/a				
Hillsborough River	Hillsborough River	19.87	10.83	0.32	6.81				
	North Tampa	0	2.88						
	Two Rivers <sup>6</sup>	n/a	n/a	n/a	n/a				
	Wiggins Prairie <sup>6</sup>	n/a	n/a	n/a	n/a				
	Alafia River <sup>6</sup>	n/a	n/a	n/a	n/a				
	Fox Branch	40.71	0	0.51	0				
	Boarshead Ranch	0.15	0	1.02	0				
Withlacoochee	Green Swamp	19.4	0	0.43	0				
	Withlacoochee	63	0	0	0.07				
	FL Gulf Coast (partial) <sup>4, 6</sup>	Freshwater Mitigation Service Area does not include D						20.85	18.38
	Crooked River <sup>6</sup>	n/a	n/a	n/a	n/a				
	Hilochee	0	0	24.45	14.31				
	Boarshead Ranch	0.15	0	1.02	0				
Alafia	Alafia River <sup>6</sup>	5.08	0	0.02	0				
Little Manatee	Manatee	n/a	n/a	n/a	n/a				

Current FDOT Mitigation Program sites within District 7:											
ERP Basins in District 7	SWFWMD FDOT Mitigation Site	Freshwater Forested (Palustrine Forested)		Freshwater Non-Forested (Palustrine Emergent+Open Water)		Mangrove (Estuarine Forested)		Salt Marsh (Estuarine Emergent)		Seagrass	
		Credits	Acres	Credits	Acres	Credits	Acres	Credits	Acres	Credits	Acres
Tampa Bay/ Coastal	Brooker Creek	36.59	114.35	12.12	37.86						
	Alligator Lake	0.71	3.13	4.61	10.35						
	Bahia Beach	1.41	6.06	11.57	18.62	1.06	16.14	15.39	15.39		
	Ekker	0		0							
	Mobbly Bayou					--		--			
	Cockroach Bay										
	Ft DeSoto Park									2.91	12.38
	Gateway										
	Tappan Tract										
	Apollo Beach										
	Boyd Hill										
	<b>Total</b>		38.71		28.3		1.06		15.39		2.91
Upper Coastal	Conner Preserve	50.34	502.27	31.89	325.84						
	Anclote Parcel										
Hillsborough River	Colt Creek	12.01	39.04	8.37	23.61						
	Conner Preserve	13.52	85.02	12.05	83.68						
	Fussell										
	Hills River Corridor	n/a	n/a	n/a	n/a						
Withlacoochee	Colt Creek	287.82	1000.12	37.81	110.18						
	Baird Tract										
	Halpata Tasthanaki	17.24	103.36								
Alafia	Balm Boyette										
Little Manatee	Little Manatee River										

Note: these charts were provided by FDOT 7 for illustrative purposes only. They have not been updated to reflect current credits of acreage.

# WEST CENTRAL FLORIDA REGIONAL MITIGATION BOUNDARIES

## 2045 L RTP ENVIRONMENTAL CONSULTATION - TECHNICAL MEMORANDUM



Date Source: Hillsborough County MPO, Pinellas MPO, Pasco MPO, and Citrus-Hernando MPO  
 Watersheds and Mitigation Areas & Banks - SWFWMD, Water, Lakes - FDEP

WCF = WEST CENTRAL FLORIDA

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 Author: Roger Mathie Updated: August 19, 2019

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# Next Steps



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**Staff-Researched Mitigation Strategies**



### Mitigation Banks:

When land-based transportation projects in Florida are constructed on wetlands, mitigation banks are the main method of restoring lost natural habitat. Wetlands play a vital role for the Floridian ecosystem by filtering local water of pollutants and housing diverse arrays of wildlife exclusive to Florida (USDA). The Florida Fish and Wildlife Conservation Commission (FWC), the U.S Fish and Wildlife Service (FWS), and the National Marine Fisheries Service (NMFS) require that measures be taken for projects to have the least amount of habitat impact on state and federally-protected species. Mitigation banks work to restore natural habitats by “[restoring, establishing, enhancing, or preserving]” aquatic areas in places nearby or outside of the impacted area (EPA, 2019). Wetland credits can be purchased from the mitigation bank. The number of credits purchased indicates the degree of ecological function that was provided by the impacted environment and be restored with this mitigation strategy (EPA, 2019). Four options are available for mitigation banks:

- *Tampa Bay Mitigation Bank:*

The Tampa Bay Mitigation Bank is currently the only bank with wetland credits available for purchase for projects in Hillsborough County. The 161-acre wetland creation site is located in southwestern Hillsborough County, along the headwaters of Andrews Creek, and provides wetland credits for roadway projects located in western coastal regions of Hillsborough County (within the Tampa Bay Basin). Estuarine and tidal forest credits are available for state and federal permitting requirements, and estuarine and freshwater credits are offered to satisfy County permitting criteria. Although this mitigation bank currently has credits for sale, its future availability of credits for transportation projects will depend on the extent of future development within the bank’s service area.

- *North Tampa Mitigation Bank:*

The North Tampa Mitigation Bank is a 161-acre bank located in Temple Terrace, which will service projects located within the Hillsborough River Basin. This bank was permitted in November 2009 by the SWFWMD and is likely to have state wetland credits available for purchase soon; however, the availability of credits is expected to be limited. The USACE permit is currently pending, and it is unknown when federal wetland credits will be available for purchase at this mitigation bank.

- *Regional Offsite Mitigation Areas:*

Regional Offsite Mitigation Areas (ROMAs) are similar to private mitigation banks but are sponsored by government entities to provide credits for associated government-funded projects. The Hillsborough County Board of County Commissioners currently owns a 14,000-acre tract of land located in northeastern Hillsborough County (Cone Ranch), which is currently targeted for ELAPP acquisition. Although a ROMA does not currently exist at Cone Ranch, it could potentially prove to be a suitable site for establishment of a ROMA, due to the strong need for land restoration and management activities at the site.

○ *Senate Bill Mitigation:*

“Senate Bill Mitigation” was established pursuant to Chapter 348 and 349 Florida Statutes (F.S.) and may be used for County roadway projects that are funded by FDOT. This form of mitigation consists of providing funding to the SWFWMD for “...acquisition for preservation, restoration or enhancement, and the control of invasive and exotic plants in wetlands and other surface waters, to the extent that such activities comply with the mitigation requirements adopted” under Chapter 373 FS (The Florida Senate, 2018). “Senate Bill Mitigation” is currently available for state-funded roadway projects throughout Hillsborough County and is expected to remain a viable option for future projects; however, it cannot be used to offset adverse impacts to seagrass resulting from transportation projects.

*Mitigation Bank Alternatives:*

When these mitigation opportunities are not available for transportation projects, mitigation in the form of wetland habitat creation, restoration, enhancement, and/or preservation can be utilized to offset adverse wetland impacts resulting from transportation improvements in Hillsborough County. This can be accomplished by designing a mitigation site(s) that provides the necessary wetland functions to replace the ecological value of the impacted wetland(s). This method of mitigation may consist of creating a new wetland within an upland area, restoring a degraded wetland to its historic condition (this may include removal of undesirable plant species from the wetland), enhancing a wetland to a more desirable condition (in order to provide a greater habitat value to wildlife), and preservation (establishment of a conservation easement over the wetland to prevent future development). Due to the need for restoration, enhancement, and preservation of existing wetlands throughout Hillsborough County, these mitigation opportunities are expected to continue to remain available for transportation projects.

*Wildlife Corridors:*

For transportation projects that cut through natural areas, wildlife corridors are constructed under roads to preserve the natural functions of the surrounding environment. Animals such as the Florida Panther and Florida Black Bear rely on various terrains throughout Florida for feeding, shelter and reproduction (Florida Wildlife Corridor). Wildlife corridors allow for the continuation of these migration routes. Additionally, corridors allow for the continuation of Florida’s natural flow of freshwater and preserve the processes that allow us to have water resources (Florida Wildlife Corridor).

*Critical Habitats:*

For transportation projects to be further environmentally conscious, critical habitats must be preserved during the planning process to ensure the continuation of Florida’s endemic wildlife. Critical habitats are areas within a region that possess “physical or biological features that are essential to the conservation of endangered and threatened species and that may need special management or protection” (FWC, 2017). Protecting organisms native to Florida serves to support the state’s ecological processes; the vulnerable gopher tortoise creates burrow habitats that support over 350 different species of animals (FWS, 2019). Food webs are complex,

interconnected systems. Reducing the availability of land for our wildlife will reduce our supply of natural resources. The preservation of these areas ultimately preserves our own lifestyles.

### Ecological Corridors

#### ○ *North Pasco (Starkey) to Crossbar Ecological Corridor*

This Ecological Corridor follows the Pithlachascotee River and begins at the northern County line along the Masaryktown Canal to the Crossbar Ranch wellfield. Crews Lake Park lies approximately midway between the north Pasco and Crossbar wellfields and is included in the Ecological Corridor. Large portions of this corridor are not currently in public ownership. The overall distance between the public lands to be interconnected requires a width of 2,200 feet to provide functionality for this Ecological Corridor. The Corridor contains flatwoods, mesic hammocks, and forested wetlands associated with the Pithlachascotee floodplain, including the extremely dynamic hydrologic basin associated with Crews Lake, but also will preserve portions of the historic Sandhill communities as it approaches the Crossbar Ranch. The essential features are the flatwoods, mesic hammocks, forested wetlands, the Pithlachascotee floodplain and xeric uplands on either side of the Masaryktown Canal.

Boundaries: Being one thousand one hundred (1,100) feet on each side of the centerline of Pithlachascotee River and its associated wetlands, flatwoods and uplands, extending from the Starkey Wilderness Park easterly boundary to the Cross Bar Ranch westerly boundary, conceptually indicated on Exhibit 804-1 of this Section.

#### ○ *Crossbar to Connerton Ecological Corridor*

The Conner Preserve, formerly known as the Connerton purchase, serves as the nexus for three of the seven Ecological Corridors. The Crossbar to Connerton connection is a 2,200-foot-wide corridor that will preserve a broad expanse of herbaceous marshes in the west central portion of the County. Much of the area encompassed by the Crossbar to Connerton Ecological Corridor is comprised of seasonally flooded sandhill and flatwoods marshes. The mosaic created by the presence of these marshes, flatwoods, and imbedded adjacent uplands provides for the preservation of seasonally flooded, mesic, and xeric habitats that will be used by a wide variety of wildlife. The essential features are the Sandhill, marsh and flatwood habitats which create a unique mix of diverse habitat types within the confines of this corridor.

Boundaries: Being one thousand one hundred (1,100) feet on each side of the centerline of the Category 1 wetlands, extending from the Conner Preserve northerly boundary to the Al Bar Portion of Crossbar Ranch southerly boundary, conceptually indicated on Exhibit 804-2 of this Section.

#### ○ *North Pasco (Starkey) to Connerton Ecological Corridor*

Throughout much of its approximately four-mile course, this Ecological Corridor incorporates the forested wetland systems associated with Five Mile Creek. There is an existing large, open span undercrossing at the juncture with the Suncoast Parkway. An additional large mammal undercrossing is designed for this Corridors' juncture with U.S. 41 providing connectivity with the Conner Preserve. Much of the western portion of this 2,200-foot-wide corridor is comprised of

forested wetlands and the floodplain associated with Five Mile Creek. This corridor includes areas of historic flatwoods habitat that have been modified to agricultural and silvicultural use. The flatwoods communities can be restored as part of the preservation of this Corridor, but several areas of relic Sandhill also exist within the confines of the recommended Corridor boundaries enhancing its diversity and value as habitat. The essential features within the confines of the Ecological Corridor are the forested wetlands and floodplain associated with Five Mile Creek and the small, imbedded upland habitats within the limits of the Ecological Corridor boundary.

Boundaries: Being one thousand one hundred (1,100) feet on each side of the centerline of the Five Mile Creek wetlands and associated uplands, extending from the Starkey Wilderness Park easterly boundary to the Conner Preserve and Connerton Conservation Easement westerly boundaries, conceptually indicated on Exhibit 804-3 of this Section.

o *Cypress Creek to Connerton Ecological Corridor*

The required 550-foot width of this Ecological Corridor is based on its relatively short distance between the Conner Preserve and the Cypress Creek Wellfield. The majority of this Corridor includes wetlands associated with Cypress Swamp that were historically associated with the mosaic of wetlands in the northeast corner of the Connerton Ranch. This Ecological Corridor crosses Ehren Cutoff (S.R. 583) and the planned design of an improved, realigned roadway in the future must incorporate a large mammal crossing to provide corridor continuity and connectivity from the Cypress Creek wellfield to the Conner Preserve. The essential features is establishing and preserving the connectivity between the Conner Preserve and the Cypress Creek Wellfield employing the wetlands and imbedded uplands at the nearest point between the two areas of public lands.

Boundaries: Being two hundred twenty-five (225) feet on each side of the centerline of the Category 1 wetlands, extending from the Conner Preserve easterly boundary to the Cypress Creek Wellfield northwesterly boundary, conceptually indicated on Exhibit 804-4 of this Section.

o *Starkey to South Pasco Ecological Corridor*

This Ecological Corridor extends south of the SWFWMD lands along South Branch, a tributary of the Anclote River, ultimately to the connection with Brooker Creek in Hillsborough County. Much of this Corridor has been impacted by development. Due to the urban nature of the connection south of the SWFWMD lands, and the relatively short distance of this Corridor, the required width is 1100 feet with a 550-foot-wide extension to the east for a necessary connection to the South Pasco wellfield. The essential features are the South Branch tributary, its associated floodplain and the wetlands, flatwoods and small upland areas within the confines of the Ecological Corridor.

Boundaries: Being five hundred fifty (550) feet on each side of the centerline of the South Branch and associated wetlands, flatwoods and uplands, including portions of the floodplain, extending from the Starkey Wilderness Park southerly boundary to the Pasco-Hillsborough County line northerly boundary and two hundred twenty five (225) feet on each side of the centerline of the

South Branch tributary to the South Pasco Wellfield westerly boundary, conceptually indicated on Exhibit 804-5 of this Section.

- *Cypress Creek to Cypress Bridge Ecological Corridor*

This relatively short Ecological Corridor is urban in nature but is essential to facilitate dispersal of wildlife through the surrounding altered landscape. This Corridor is vitally important to preserve habitat and connectivity through the urbanized “bottleneck” between the large conservation lands associated with Cabbage Swamp and Cypress Swamp and the conservation lands in Hillsborough County. The preservation and protection of this Corridor is very important because of the impacts associated with S.R. 54/Interstate 75 transportation corridor and associated development along its course. However, preservation of the remaining forested wetlands associated with Cypress Creek and its floodplain will provide a minimal sustainable area of valuable natural habitat. The essential features are the protection of the Cypress Creek channel and its associated floodplain as a designated Outstanding Florida Water; protection of the surface water resource; and preservation of the remaining forested wetlands within the defined Ecological Corridor boundaries.

Boundaries: Being two hundred seventy-five (275) feet on each side of the centerline of Cypress Creek and increasing to being five hundred fifty (550) feet on each side of the center line of Cypress Creek, extending from the Cypress Creek Wellfield southerly boundary to the Pasco-Hillsborough County boundary, conceptually indicated on Exhibit 804-6 of this Section.

- *Hillsborough River to Green Swamp Ecological Corridor*

Extensive purchases by the SWFWMD have already taken place along the proposed Hillsborough River Ecological Corridor. Although C.R. 39 currently crosses the Hillsborough River, the protection of the river and its floodplain in this portion of the County has been prioritized by the SWFWMD. For the most part, this portion of the river is surrounded by agricultural uses but continues to support a sufficiently wide forested floodplain throughout the Ecological Corridor. Because of the importance of the Hillsborough River surface water resource and the habitat value of, the remaining forested floodplain, the Ecological Corridor is established at a width of 2,200 feet. The essential features are the forested areas associated with the Hillsborough River floodplain, the 100-year floodplain and continuity with the existing SWFMD lands.

Boundaries: Being one thousand one hundred (1,100) feet on each side of the centerline of the wetlands and floodplains associated with the Hillsborough River, extending from the Pasco-Hillsborough County line northerly boundary to the Green Swamp westerly boundary, conceptually indicated on Exhibit 804-7 of this Section.

# Appendix



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**Sign-In Sheet of Participants**

2045 LRTP Environmental Consultation Workshop  
 June 21, 2019  
 10:00 AM - 3:00 PM

Brooker Creek Preserve Environmental Education Center  
 3940 Keystone Rd, Tarpon Springs, FL 34688

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Hosted by the Hillsborough MPO, Forward Pinellas, Pasco MPO, and Hernando/Citrus MPO

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 June 21, 2019  
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### **Reference Links**

<https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/fl/newsroom/features/?cid=stelprdb1252222>

<https://www.epa.gov/cwa-404/mitigation-banks-under-cwa-section-404>

<https://www.flsenate.gov/Laws/Statutes/2018/373.4137>

<https://www.floridawildlifecorridor.org/>

<https://myfwc.com/wildlifehabitats/wildlife/gopher-tortoise/commensals/>

[https://www.fws.gov/endangered/esa-library/pdf/critical\\_habitat.pdf](https://www.fws.gov/endangered/esa-library/pdf/critical_habitat.pdf)

<https://www.citrusbocc.com/commserv/parksrec/parks/parks.jsp>

<https://www.discovercrystalriverfl.com/>

# APPENDIX N

## RESILIENT TAMPA BAY

# Technical Memorandum

## **Resilient Tampa Bay: Transportation Pilot Program Project**

*FHWA Resiliency & Durability to Extreme Weather*

*prepared for*

### **Tampa Bay Transportation Management Area**

Hillsborough MPO

Forward Pinellas

Pasco MPO

*prepared by*

### **Cambridge Systematics, Inc.**

*with*

Tampa Bay Regional Planning Council

Resilient Analytics

FTE Engineers

**November 30, 2019**



# Resilient Tampa Bay: Transportation Pilot Program Project

## *Resiliency & Durability to Extreme Weather*

*prepared for*

**Tampa Bay Transportation Management Area**

*prepared by*

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**December, 2019 – Final Draft**

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## Executive Summary

Located on the west coast of Florida and near the Gulf of Mexico, the Tampa Bay region is an important state hub for the tourism, higher education, commercial shipping, medical services, business/financial services, defense/national security, and agricultural sectors. The region is also one of the most vulnerable areas in the country. Extreme weather events such as storm surge, flooding, and heavy precipitation events are threatening transportation facilities across the region, creating potential risks of damages in infrastructure, increases in repair and maintenance costs, and disruption to normal operations of transportation systems. Due to climate trends, this region faces additional threats from increasing temperatures, intensifying precipitation events, and rising sea levels.

As the Tampa Bay region continues to face these weather and climate challenges, new federal requirements state that future Long Range Transportation Plan (LRTP) updates must address "improving the resiliency and reliability of the transportation system and reducing or mitigating the stormwater impacts of surface transportation ..." To assist in meeting the new federal mandate as well as support state, regional and local organizations to integrate appropriate strategies into their transportation planning process, this document reports on an assessment of the Tampa Bay region's<sup>1</sup> exposure/vulnerability to potential extreme weather challenges and provides strategies to prepare for, respond to, and recover from those impacts. The information can be used immediately and over time to enhance the region's transportation facilities and operation.

The main objective of the assessment was to provide adaptation strategies, or projects, for inclusion in each MPO's LRTP. With that end goal in mind, steps were taken throughout the project to categorize and prioritize transportation infrastructure, namely roads. The following steps outline the analyses results for use in LRTP preparation as well as other purposes.

- To understand the potential impacts from extreme weather and climate change, eleven scenarios were developed to model hurricanes, sea level rise, and heavy precipitation events as well as their combined effects in the three-county Tampa Bay region<sup>2</sup>. The resulting information is available to partner agencies for separate or supplemental analysis, such as by Local Mitigation Strategy working groups.
- To perform detailed transportation and econometric analysis, two scenarios were chosen: a Category 3 Storm plus a High (NOAA) sea level rise projection, and 9 inches of precipitation/rain over 24 hours (one day). High, moderate, and low scores (termed vulnerability throughout this report) were assigned to roads depending on the depth of potential inundation. Section 2.1.1 explains more about the scenarios and choices.
- To categorize roads by importance, a stakeholder survey was conducted to determine priorities among eleven different items, such as traffic volumes, population density, proximity to important facilities like hospitals and power plants, and access to vehicles (zero-car households). High, moderate, and low

---

<sup>1</sup> For the assessment, the region consists of Hillsborough, Pinellas, and Pasco Counties. The study was managed by the Hillsborough MPO, with Forward Pinellas, Pasco MPO, FDOT District 7, and the Tampa Bay Regional Planning Council as partners.

<sup>2</sup> This document is created as part of the Resilient Tampa Bay Transportation stakeholders' proactive effort to prepare for potential extreme weather risks and to ensure the transportation system's safety, mobility, and infrastructure security. The analyses of hazards/events should not be viewed as a prediction of occurrence.

criticality classifications were assigned based on a road's score (termed its criticality). Section 2.2 provides more details.

- There are nine combination of criticality and vulnerability (see Figure 2-11). High resilience projects are termed those with High or Moderate criticality and High or Moderate vulnerability. (The top three categories.) These classifications are used to assign adaption strategies and associated costs.
- An adaptation tool box (see Chapter 3.0) was created to identify various adaptation strategies and explain the benefits and constraints of each. The toolbox describes the strategies most appropriate for specific threats and conditions in which each works best. For example, enhanced drainage works well in areas with available median or shoulder clearance and less so in coastal areas with sheet flow into the Gulf or Bay.
- To determine how best to identify and cost estimate adaptation strategies for roads in the region, the MPOs identified six representative projects, two in each county, using criticality and vulnerability information. The purpose was to perform high level concept design for the six projects, develop planning level cost estimates for the projects, and then use the information to apply adaptation strategies with associated costs to all vulnerable roads in the region. (See Section 4.1.)
- To evaluate the benefits versus costs of implementing adaptation strategies, econometric analyses were performed. These analyses evaluated the impacts from the loss of each (individually) representative project as well as the impacts of all roads impacted by the Category 3 with High sea level rise and the 9-inch per day rain event. To evaluate the length of time an outage impacts the economy, modeling for 2-days, 1-week, 2-weeks, and a month was performed. For example, implementing adaptation strategies for Gandy Boulevard or Gulf Boulevard is beneficial should the asset unavailable for travel for as little as two days. Yet, it would be regionally beneficial to enhanced US 19 and Roosevelt Boulevard should they be out for a month. (Sections 4.2 and 4.3 provide details on the econometric analysis and cost/benefit tradeoffs, respectively.)
- To evaluate current short-term spending on maintenance, drainage, and coastal projects, the Capital Improvement Program (CIP) budgets for the counties, municipalities and FDOT were assessed. Fair amounts are spend on routine road maintenance and drainage, with beach nourishment and other coastal projects also being implemented. The drainage and coastal adaptation strategies identified here function like existing projects through local/regional programs. However, the enhancement to improve the roads (beyond maintenance) are beyond what is typically considered. (See Section 4.4.)
- Chapter six identifies recommendations for incorporating adaptation strategies into the LRTPs. It is recommended that high resilience projects be included because the adaptation costs outweigh replacement costs. However, these costs are substantial. By narrowing to projects for highly critical and highly vulnerable locations, or starting with drainage improvements, the investment needs can be scaled back. This chapter also identifies other recommendations for continued coordination and next steps.

This document consists of six chapters: introduction, needs determination, adaptation strategy toolbox, cost and benefit analysis, public and stakeholder engagement, and recommendations. Following the introduction in Chapter one, Chapter two describe the impact of eleven climate scenarios on the transportation network in Tampa Bay Region. Mobility, connectivity, socioeconomic, equity, and emergency operation factors were considered to identify areas where climate threads could cause the biggest impact. Transportation facilities were prioritized by their vulnerability and criticality, and locations of potential improvements were identified. Chapter three provides an overview of the adaptation strategies and identified potential improvements to candidate projects. Chapter four describes the estimated costs of implementing adaptation strategies, and compares them with the potential economic loses if infrastructure is inundated. Chapter five provides an overview of stakeholder and public engagement in the preparation of this report. Chapter six provides

recommendations for including resiliency strategies in the decision-making process of transportation planning.

This document is created as part of the Resilient Tampa Bay Transportation stakeholders' proactive effort to prepare for potential extreme weather risks and to ensure the transportation system's safety, mobility, and infrastructure security. The analyses of hazards/events should not be viewed as a prediction of occurrence.

## 1.0 Introduction

The Tampa Bay region is an important state hub for tourism, higher education, commercial shipping, medical services, business/financial services, defense/national security, and agricultural sectors. The region is also one of the most vulnerable areas in the country, experiencing frequent storm events and flooding. While it has not been directly impacted by a major hurricane in nearly 100 years, the region has experienced a series of close calls, most recently during the 2017 hurricane season. Due to climate change, the region faces additional threats from sea level rise and increasing frequency of severe inland flooding from heavy precipitation events.

As the Tampa Bay region continues to face these climate challenges, understanding individual assets and overall system vulnerability to key climate hazards will allow state and local agencies to integrate appropriate measures and strategies into their planning process, project development, asset management, and day-to-day operations. New federal requirements state that future Long Range Transportation Plan (LRTP) updates must address "improving the resiliency and reliability of the transportation system and reducing or mitigating the stormwater impacts of surface transportation ..."

To assist in meeting the new federal mandate as well as inform the LRTP updates for Tampa Bay's three Metropolitan Planning Organizations (Hillsborough, Pasco, and Pinellas MPOs) and the regional LRTP, the Resilient Tampa Bay Transportation stakeholders, consisting of the three MPOs, Tampa Bay Regional Planning Council, and the Florida Department of Transportation District 7, has conducted a regional climate vulnerability study in the three counties with the awarded FHWA *Resilience and Durability to Extreme Weather* grant.

The study assessed the potential climate vulnerability and risks on the transportation network due to storm surge, inland flooding, and sea level rise; screened and prioritized critical transportation facilities; identified adaptation strategies and candidate projects; compared potential economic impact and adaptation costs, and provided recommendations for the inclusion of resiliency strategies in the transportation planning's decision making process.

The study focused on roadway infrastructure in Hillsborough, Pinellas, and Pasco counties. The Tampa Bay regional travel demand model served as the base network for scenario development and evaluation. An indicator-based desk review approach was used in the quantitative analysis part of the study. Stakeholder input was obtained and incorporated regarding important (critical) roads, and it should be noted that the study should not be viewed as a predictor of occurrence(s).

Figure 1-1 Study Area



## 2.0 Needs Determination

A first step in identifying potential investments for the LRTPs was to identify infrastructure needs based on model projections of water-related weather and climate impacts. Storm surge, sea level rise, and precipitation events will create challenges to the transportation systems' infrastructure safety, operational efficiency, and emergency management. This section analyzed the impacts of coastal storms, sea level rise, and heavy precipitation events to identify potential at-risk transportation facilities in the Tampa Bay region.

### 2.1 Climate Scenarios

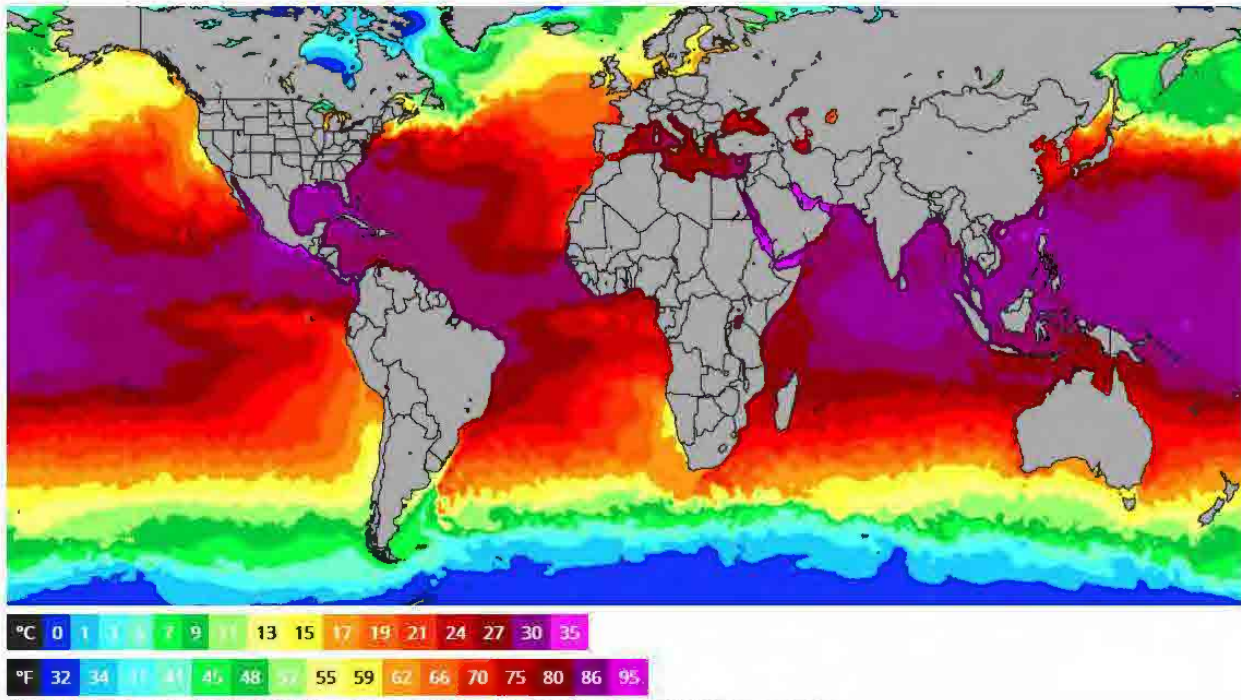
Tampa Bay is no exception to threats from extreme weather events facing many coastal regions. While the region has not been directly impacted by a major hurricane in nearly 100 years, a series of close calls, most recently experienced during 2017's Hurricane Irma, indicates the looming threat of a major hurricane event to the region. Although the threat of destruction from storm surge flooding has not been in the forefront of citizen minds, the three counties have been planning for post-disaster redevelopment and hazard mitigation.

Due to climate change, the region faces additional threats from sea level rise and severe inland flooding. Approximately 39 percent of the region's population lives in areas at risk of flooding, and nearly 40 percent of the region's 1.1 million jobs are in zones susceptible to hurricane storm surge. In 2015, Karen Clark & Co., a risk management firm, stated in their "Most Vulnerable US Cities to Storm Surge Flooding Report" that the Tampa - St. Petersburg area is the most vulnerable US metropolitan area for flooding damage. A direct hit from a Category 4 storm with peak winds of 150 mph could result in potential losses of \$175 billion to the area.

Evidence has been mounting that conditions are becoming more commonplace to increasing storm frequency and higher precipitation rates. As these factors continue to appear, the probability for higher rates of precipitation events can't be ignored. In the early summer of 2019, the western Atlantic and Gulf of Mexico had astonishingly high surface temperatures. The Atlantic had areas greater than 80 degrees F and the Gulf had areas as high as 95 degrees F.

To fulfill the objectives set out in this project, several climate-based assessments had to be made. The team agreed upon the analyses of sea level rise, tropical storm events, and significant rain events. Tampa Bay's geographic location ruled out other infrastructure stressors such as snowfall/blizzards, earthquakes/tsunamis, and other location-specific hazards





Source: [www.seatemperature.org](http://www.seatemperature.org)

### 2.1.1 Scenario Development

Eleven scenarios were developed to model hurricanes, sea level rise, and heavy precipitation events as well as their combined effects in the three-county Tampa Bay region:

- Sea Level Rise High Projection (NOAA)
- Sea Level Rise Intermediate-Low Projection (NOAA)
- Category 1 Storm
- Category 1 Storm plus Sea Level Rise High Projection
- Category 1 Storm plus Sea Level Rise Intermediate-Low Projection
- Category 3 Storm
- **Category 3 Storm plus Sea Level Rise High Projection**
- Category 3 Storm plus Sea Level Rise Intermediate-Low Projection
- Category 5 Storm
- **Precipitation - 9 inches of rain over 24 hours (1 day)**
- Precipitation - 11 inches each day for 3 days (33 total inches)

Details about the modeling of scenarios are shown below. The bold scenarios were used for the detailed analysis presented throughout the remainder of this document, including in the identification of adaptation strategies and projects. A Category 3 storm plus High Sea Level Rise was selected as a moderate risk approach for protecting transportation assets. Traditional emergency management, focused on protecting people, would evaluate the worst-case scenario of Category 5<sup>3</sup>. A review of the Category 5 impacts showed a very large area of potential impact. This study is focused on identifying and ultimately enhancing transportation assets to avoid potential compromise of infrastructure and support rapid recovery. With this asset management lens, a more moderate scenario was chosen to prioritize the most critical and vulnerable facilities.

## Sea Level Rise

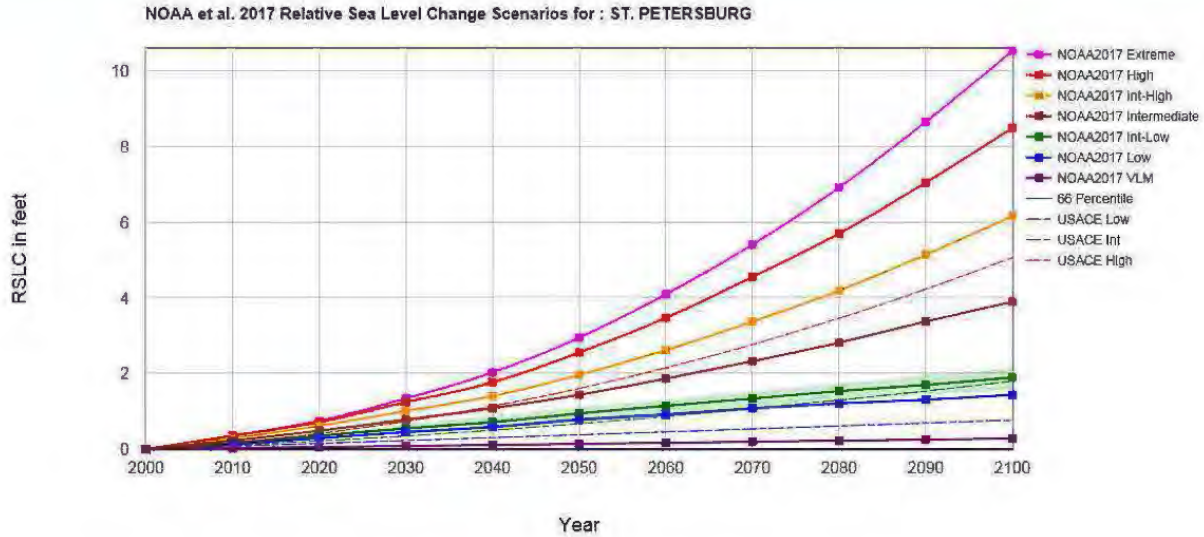
Tampa Bay's geographic location and topography lends itself to rapid changes with slight variation in sea level. The combination of low slopes and low elevation add up to an increased vulnerability with sea surface level changes. Based on elevation alone, the image shows a considerable area of Tampa Bay that is under 6 ft elevation. Additionally, coastline areas tend to have a more concentrated population.

This study will focus on the 2045 horizon due to the -LRTPs being developed by the MPOs of Hillsborough, Pasco, and Pinellas. The next variable needed to determine the sea level rise is the methodology to use for timeline horizon values. Three distinct methodologies that have curves for the surface level values over time can be used: Intergovernmental Panel on Climate Change (IPCC), U.S. Army Corps of Engineers (USACE), and National Oceanic and Atmosphere Administration (NOAA). The team chose the NOAA et al. 2017 SLR curves due to a past and updated document released for the Tampa Bay area by the Climate Science Advisory Panel (CSAP). Previously, CSAP has recommended using the NOAA curve from 2012.



Elevation 6ft or lower

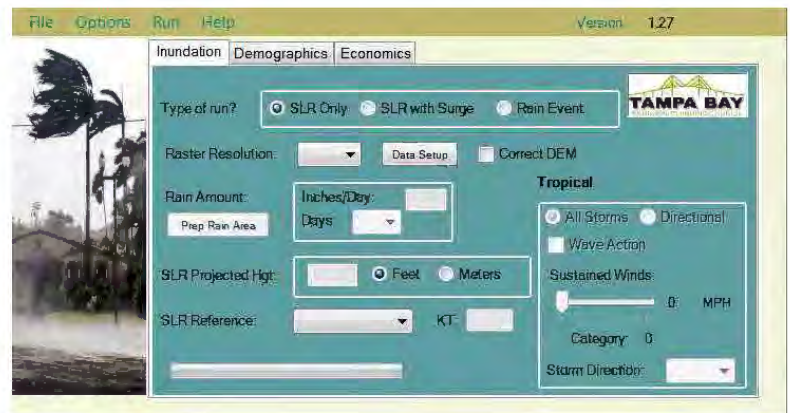
<sup>3</sup> Category 5 inundation is extensive throughout the region. For efficiencies, scenarios that incorporated sea level rise were not prepared.

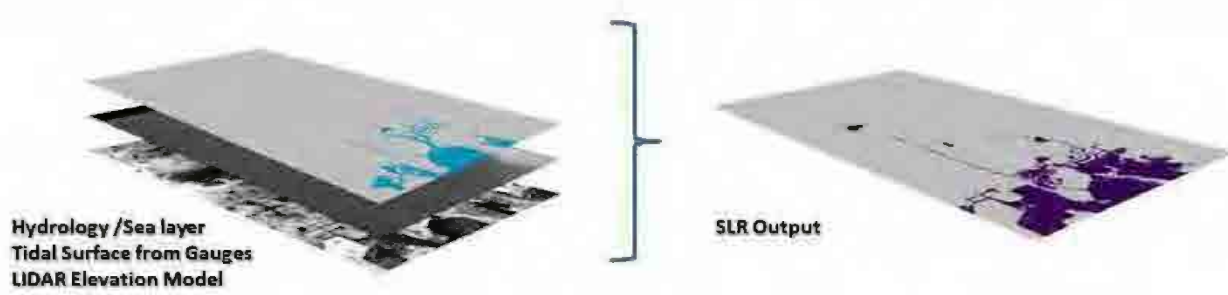


This The study launched before the updated CSAP recommendations. However, using the same logic expressed in the previous document, the team chose to use the 'High' curve for the upper limits of possible rise and the 'Intermediate Low' for the lower limit. These limits can be roughly translated into what is thought to be the result of continuing climate change at the current rate (or worse) for the upper limit and reducing or slowing down emissions for the lower limit. The team chose CSAP-recommended St. Petersburg tidal gauge for SLR due to the three counties involved in the Study are in and around Tampa Bay region. Counties north of Pasco County should use the Cedar Key tidal gauge.

For the modeling of the sea level inundation at the 2045 horizon, a model was built using GIS. The model consisted of an application created by Tampa Bay Regional Planning Council which can model tidal-based sea level rise depending on parameters selected by the user. It is important to not use bathtub model with a single level surface to depict sea level rise. Using a single constant level surface (just adding inundation based on a certain shoreline elevation value) would not depict the true nature of the new shoreline. Current and future shorelines are a result of tidal variations and the sea surface is not level. The tool is agnostic in terms of what data the projected rise will use. Whatever the projected value for the horizon becomes, it can be inputted into the model.

The model uses tidal gauges to distribute the sea surface according to the variations found in the gauges over the entire area of concern. The best elevation available is used, which is a LIDAR digital elevation model. The resulting output is a polygon inundation layer that simulates the coverage of the sea surface for that horizon year chosen.



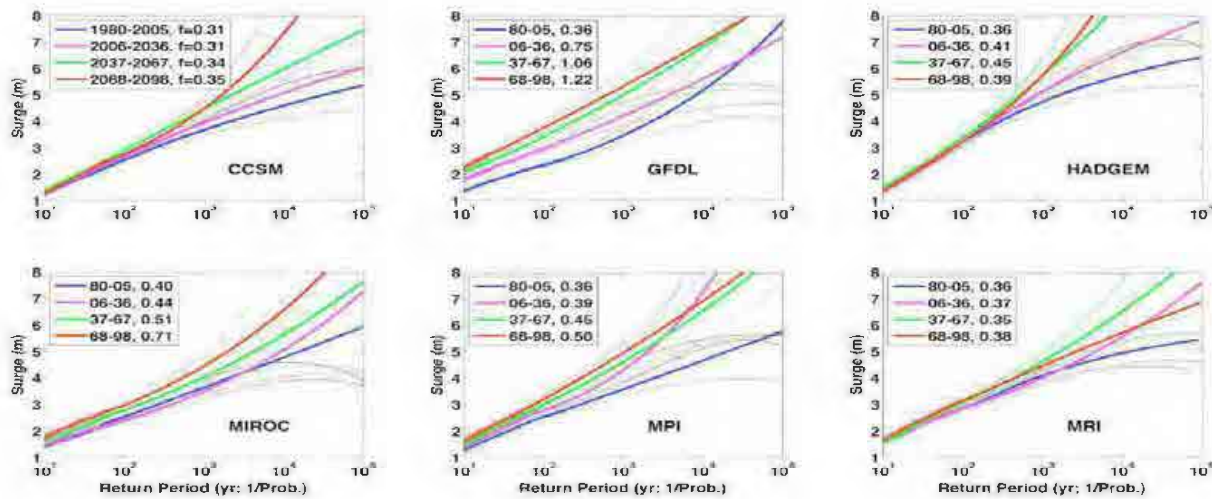


At the 2045 horizon, it appears there is not much inundation from sea level rise alone looking at the regional scale, even at the 'High' curve. However, sea level intrusion can be noticed in certain areas within the Tampa Bay area. The three images below depict the High Curve affecting mostly low-elevation areas.



### Storm Surge

Current evidence points to increasing frequency of tropical storms with more environmental moisture trapped in the atmosphere due to warmer ocean surfaces. There is also indication, through observation and modeling, that the strength of the storms will increase as well.

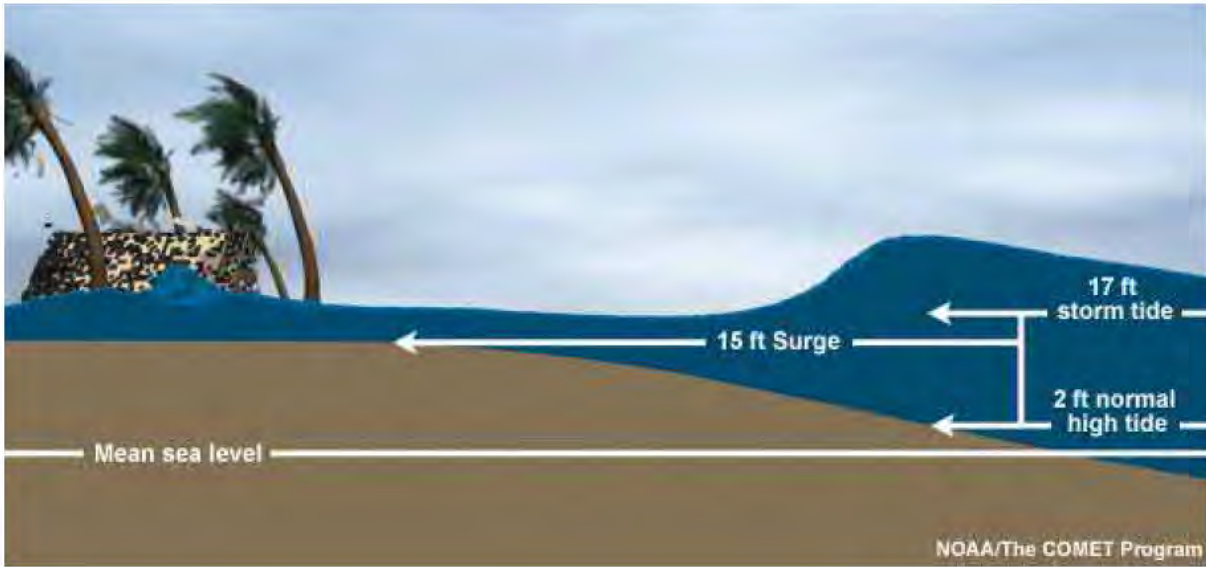


N. Lin, K. Emanuel 2015

The above graphs show storm surge height as a function of return period for Tampa Bay. These were projected using each of the 6 climate models from the IPCC AR5 RCP8.5 scenario, which is considered 'business as usual' without reducing the climate change rate. The bright blue lines depict the well-documented past. It is important to pay attention to the bright green and bright red lines, as these are functions of the climate projected to those horizon years with respect to surge height and strong storm frequency. In all models, the surge height is greater for any given return period but increases the longer a return period becomes.

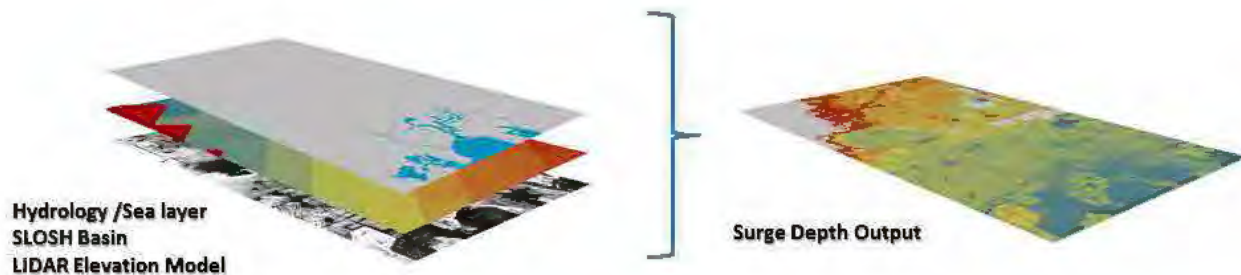
Since Tampa Bay is on the west coast of Florida, the bathymetry of the Gulf of Mexico and Tampa Bay is generally shallow compared to the east coast of Florida. This presents more opportunity for surge buildup with any given wind speed. To approach assessment modeling for this study, hurricane storm tide<sup>4</sup> inundation was modeled first with current conditions (current sea level) of today. Three storms were modeled: Category 1, Category 3, and Category 5. The models use the Maximum of Maximums (MOM) from tens of thousands of simulated storms from the National Hurricane Center's (NHC) SLOSH model. Simulated storms moving from all forward directions retain the highest surge values and represent a worst-case scenario for the storm category modeled.

<sup>4</sup> The combination of storm surge and existing tide level gives the total surge height of Storm Tide

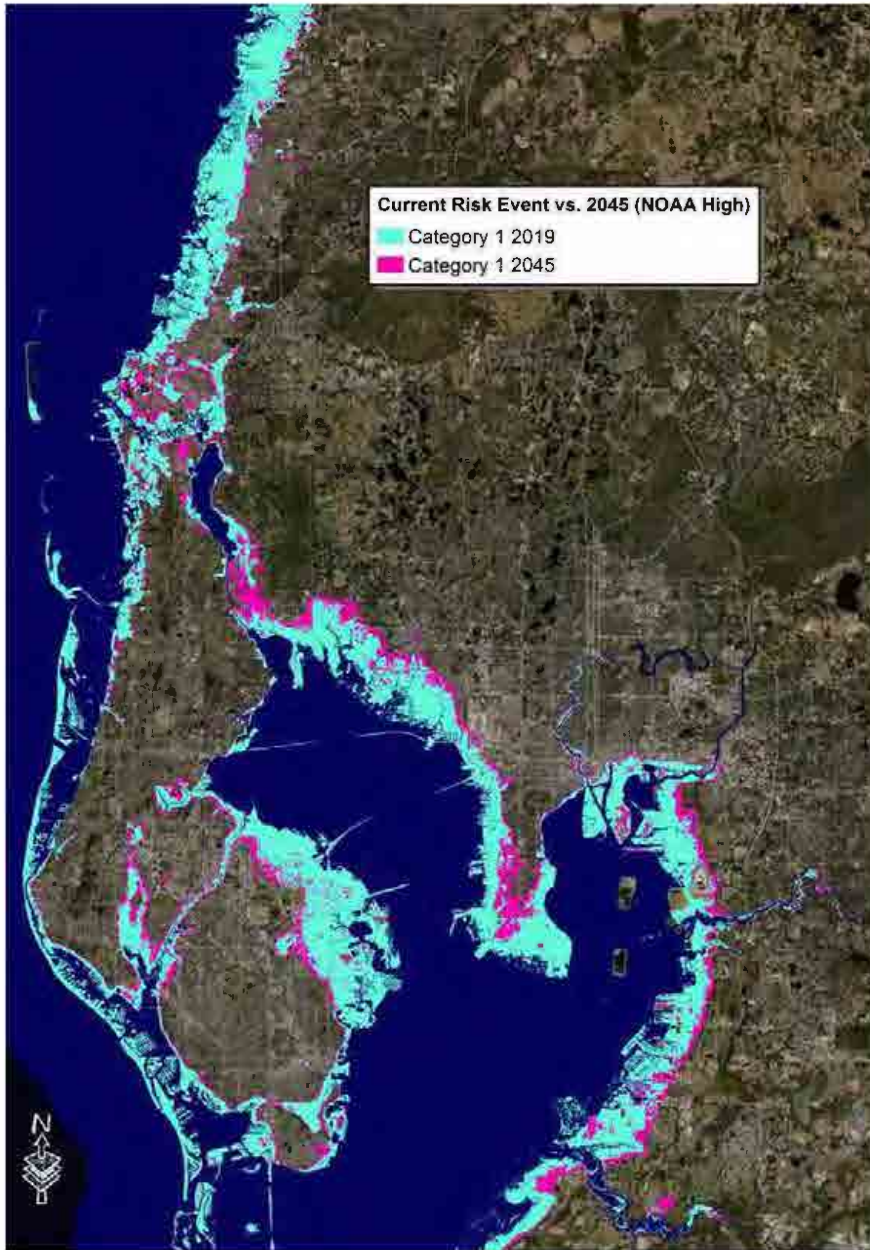


Courtesy of NOAA

The project modeling uses the same tool mentioned previously with the only difference in the input parameter being 0.0 ft SLR. The results were modeled for the counties when the new SLOSH (Sea, Lake, Overland, Surge, from Hurricanes) basin from the NHC replaced the existing basin in 2016. Counties updated their evacuation zones based on those results. To assess the inundation for the future time horizon of 2045, both the High Curve and Intermediate Low Curve were modeled with storm surge. We did not model Category 5 surge with future sea level rise because the storm’s high magnitude is already significant. A one to two feet higher sea surface would not make much difference to a 29 to 39 feet– 39ft of storm tide. It should be noted that the methodology used for this study processed the SLOSH data and the SLR data analyzing them as a single surge layer rather than simply overlaying one layer of data over another. This results in a more integrated representation of the interaction between storm surge and SLR. It should be noted that the methodology used for this study processed the SLOSH data and the SLR data analyzing them as a single surge layer rather than simply overlaying one layer of data over another. This results in a more integrated representation of the interaction between storm surge and SLR.

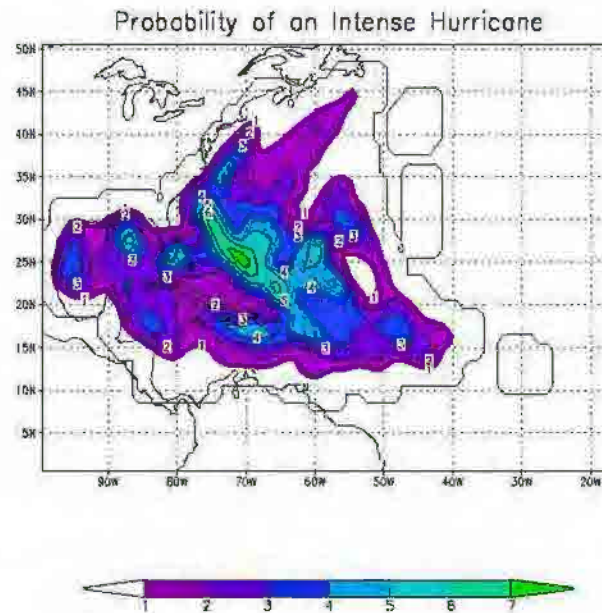
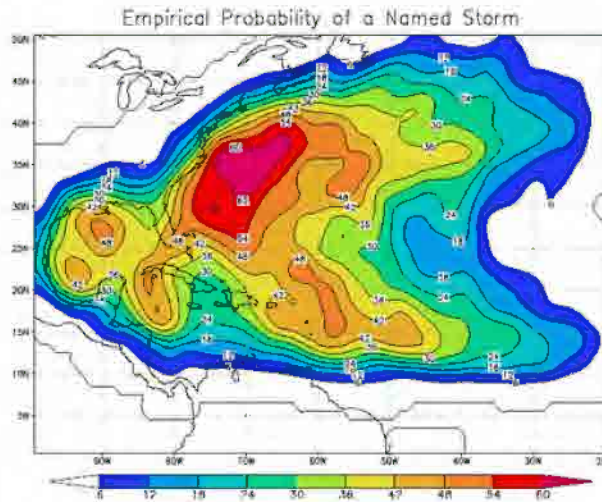
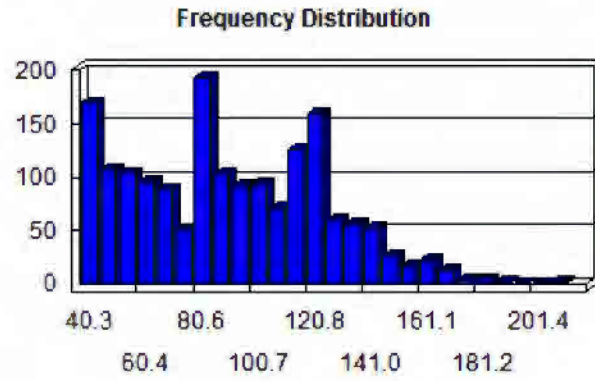


Higher sea levels are giving future tropical storms more fuel for producing surge in coastal areas. It also lowers the tipping point for breaching landmass by having any natural or man-made barriers appear smaller due to the sea level being higher.



The above image demonstrates the additional inundation that can be expected in 2045 due to surface sea levels being 2.165 ft higher. Modeling is run in reference to Mean Sea Level (MSL) due to the surge model using MOM surge values, which already have high tide built into its output. Modeling in reference to Mean Higher High Water (average of the highest tide per day) would make results artificially higher.

The team chose Category 3 storm models as the representative tropical storm threat. The other two category scenarios (1 and 5) solely added reference and scale to the chosen category. Currently, the Tampa-St. Petersburg area has an 11 percent chance of feeling the impacts of a hurricane in any given year. In the 1,703 recorded storms that had winds over 40 mph, only 42 were Category 5 storms. The remaining storms numbered at 208 in Category 4, 286 in Category 3, 247 in Category 2, and 355 in Category 1.



Graphics courtesy of NOAA Atmospheric Lab

With the statistical data as guidance, two storm categories had a higher probability amongst the five— Category 1 and Category 3. The team chose Category 3 to represent a significant event that could have a



likely chance of occurring within the next two decades. Reinforcing the decision was the general assumption of more frequent and stronger storms in the future (alluded to with 6 model graphs previously). The inundation from a Category 3 storm was modeled for the present sea level and the 2045-projected sea level. The 2045 inundation was inserted into the transportation analysis of surface network infrastructure for the three counties of this study.

### Precipitation

Resiliency towards future climate changes does not just involve threats from the sea. As mentioned earlier, evidence seems to suggest that higher moisture in the atmosphere increases the chance of more frequent and longer duration of all storms, not solely tropical.

Heavy precipitation events in most parts of the United States have increased in both intensity and frequency since 1901 (high confidence). There are important regional differences in trends, with the largest increases occurring in the northeastern United States (high confidence). (Ch. 7; Fig. ES.6)

Extreme Precipitation Has Increased Across Much of the United States

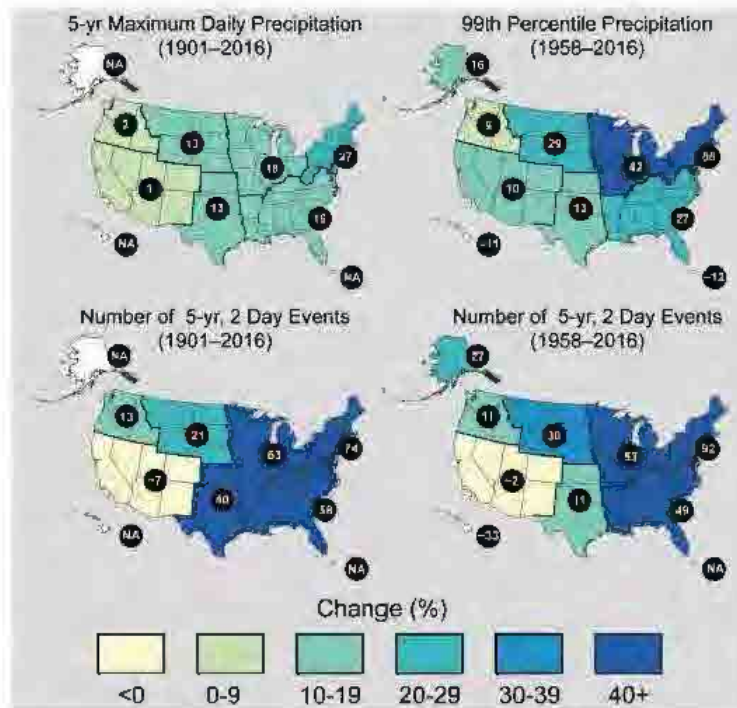
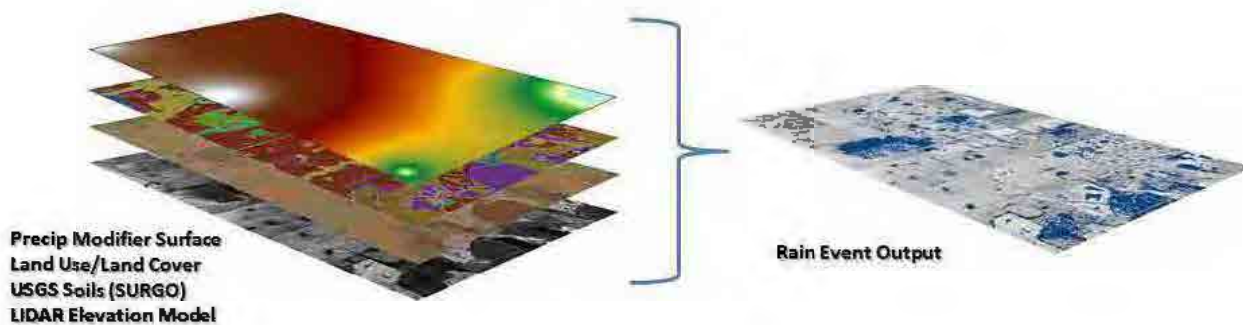


Figure ES.6: These maps show the percentage change in several metrics of extreme precipitation by NCA4 region, including (upper left) the maximum daily precipitation in consecutive 5-year periods; (upper right) the amount of precipitation falling in daily events that exceed the 99th percentile of all non-zero precipitation days (top 1% of all daily precipitation events); (lower left) the number of 2-day events with a precipitation total exceeding the largest 2-day amount that is expected to occur, on average, only once every 5 years, as calculated over 1901–2016; and (lower right) the number of 2-day events with a precipitation total exceeding the largest 2-day amount that is expected to occur, on average, only once every 5 years, as calculated over 1958–2016. The number in each black circle is the percent change over the entire period, either 1901–2016 or 1958–2016. Note that Alaska and Hawaii are not included in the 1901–2016 maps owing to a lack of observations in the earlier part of the 20th century. (Figure source: GIGS-NC / NOAA NCEI). Based on figure 7.4 in Chapter 7.

The graphics above from the Global Change Climate Science Special Report essentially show that precipitation events and their intensity are increasing.

For our study to express a more thorough picture of future climate threats, we needed to include inland flooding events that affected the road networks not directly connected to coastal roadway infrastructure. We chose to go beyond using FEMA flood zones found in the FIRM data and maps. The FEMA flood zones, namely zones A and AE, represent a 1-in-100 year chance to arrive at the depicted inundation. This 1% annual event could be fluctuating due the climate moisture levels referenced earlier. We wanted to approach the inland flooding threats based on what-if scenarios. For example, “What if we had X amount of rain in Y days?”. To answer such questions, we had to model the rain with chosen parameters.

The model we chose was a ponding and flow accumulation model. It is strictly a surface topography model and does not involve public works drainage infrastructure and facilities. In high volume rain events, the storm drains and outflow will be saturated mimicking a closed system. Data from around the county show that drainage pipes, culverts, and outflow pipes created decades ago are often inadequate with the increase in rain duration and frequency<sup>5</sup>. For a study of the three counties, the magnitude of such a detailed model would prevent results within the allotted timeframe of the project. The model uses four GIS layers and calculates the ability for precipitation to flow into lower areas based on soils and runoff coefficients of land types.



The team decided to model two scenarios for the inland flooding events. One scenario would be chosen as the representative rain event for the roadway surface infrastructure and one would be a substantial event. Historical data for Tampa Bay (Tampa airport back to 1940) goes back to 1891. The biggest 1-day storm recorded was 11.45 inches in 1979. In recent years, the most rain in one day has been around 4 inches – with 4.39 inches (officially) on August 3, 2015. The amount can vary in other areas but can be more. During the 1921 hurricane, the amount recorded was 5.02 inches. Based on this data, the likelihood of 9-inch rain in 24 hours is not inconceivable, especially with the addition of a tropical storm event. This became the representative scenario. and the substantial scenario would align more with a ‘Harvey-type’ event with 11 inches per day for 3 days – or 33 inches.

After running the representative scenario, we had recent events that the model could test. One such event was the August 2-4, 2015 whereby a low-pressure rain front that stalled over Tampa Bay. Just below it is an example of flooding on Kennedy Blvd. looking towards the west.

<sup>5</sup> <https://www.climate.gov/news-features/climate-case-studies/extreme-rainfall-analyses-can-point-right-size-culverts>



Kennedy Boulevard, Tampa. August, 2015. Photo: imgur.com



During that event, one single day did not exceed more than 5 inches. However, the combined days left inundation varying from the equivalent of 4 – 11 inches in various spots around the region. The model output

above is for the 9-inch scenario. You can see that the inundation (in red) has captured the locations of real-world flooding in the same location.

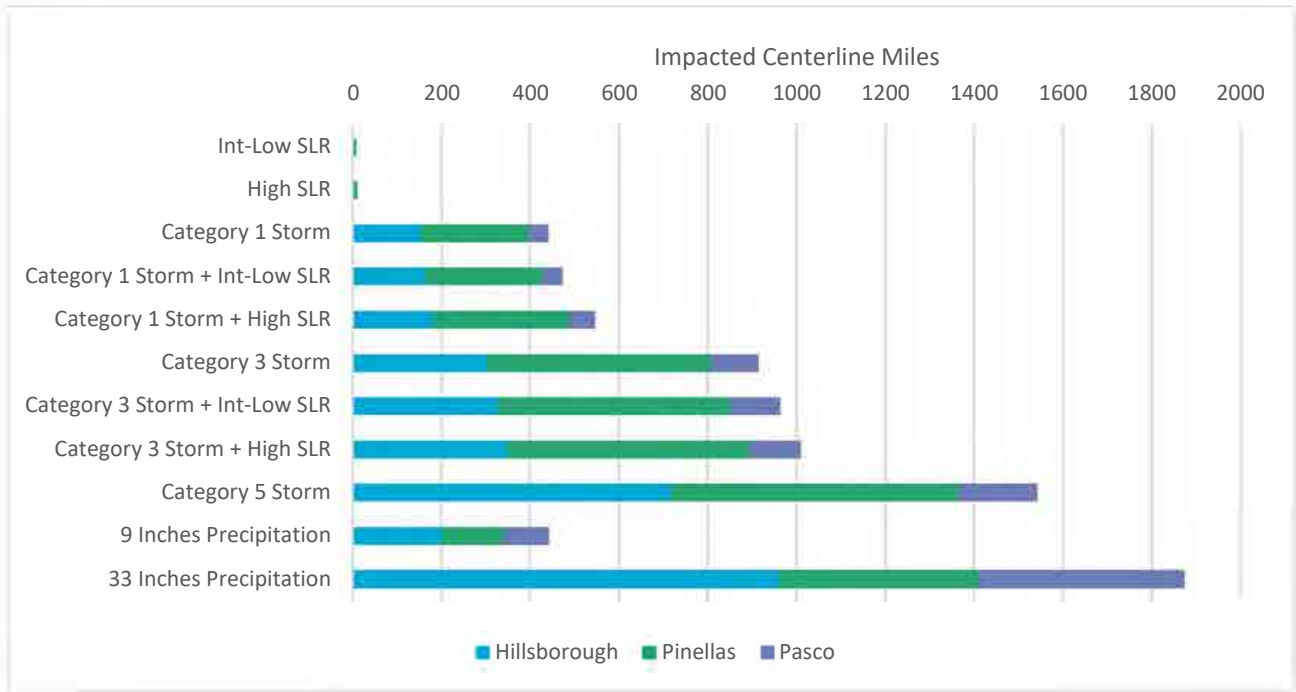
The rain event modeling is not an exact science. However, it does use historic precipitation data from the PRISM Climate Group for the precipitation modifier layer in the model. This layer modifies rainfall input data slightly based on past summer season averages. This would consider any natural or made-made real world modifiers such as vegetation and heat island effects that spatially present themselves in past precipitation amounts. Our aim was to present areas that have a distinct possibility to flood in high volume rain events. The ponding and accumulation have a direct effect on the surface infrastructure, the focus of analysis in this study.

### *2.1.2 Impacted Transportation Facilities*

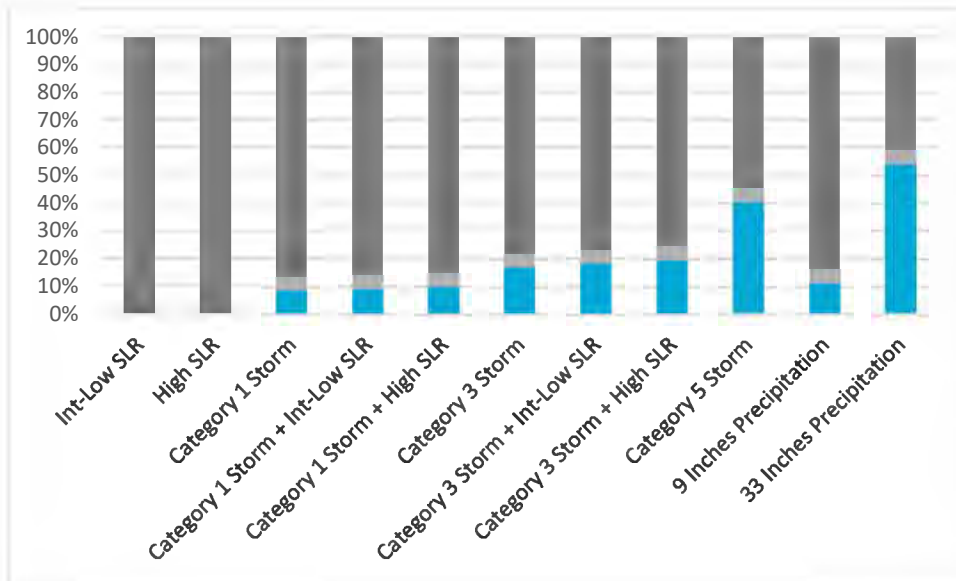
In each of the above scenarios, a surface representing the height of water surface from storm surge, sea level rise, or rain was produced by the respective models. The height of the water surface was then compared to the elevation of the ground or roadways using data from the digital elevation model (DEM). Areas of inundation and impacted transportation facilities were identified when the elevation of the ground or roadways were lower than the water surface.

Figure 2-1 summarizes the length of transportation facilities impacted by each scenario in Hillsborough, Pinellas, and Pasco counties. Figure 2-2, Figure 2-3, and Figure 2-4 illustrate the percentage of transportation facilities being impacted by each scenario in Hillsborough County, Pinellas County, and Pasco County respectively. The impacts of sea level rise alone are relatively small to the three-county region's transportation network, with less than one percent of the roadways projected to be affected. However, the effect grows quickly when sea level rise is combined with storm events. Over 400 centerline miles, or 12% of roadways are projected to be impacted by a Category 1 storm in the three-county region. Category 3 storms and Category 5 storms will impact over 25% and 42% of the roadways in the region. About 100 centerline miles of additional roadways will be impacted when the storms are combined with high sea level rise. The heavy precipitation events could also put the transportation network at risk. Over 10% of each county's roadways are vulnerable in the 9-inch precipitation scenario. In the scenario of 33 inches of rain over three days, close to half of the region's transportation network would be inundated.

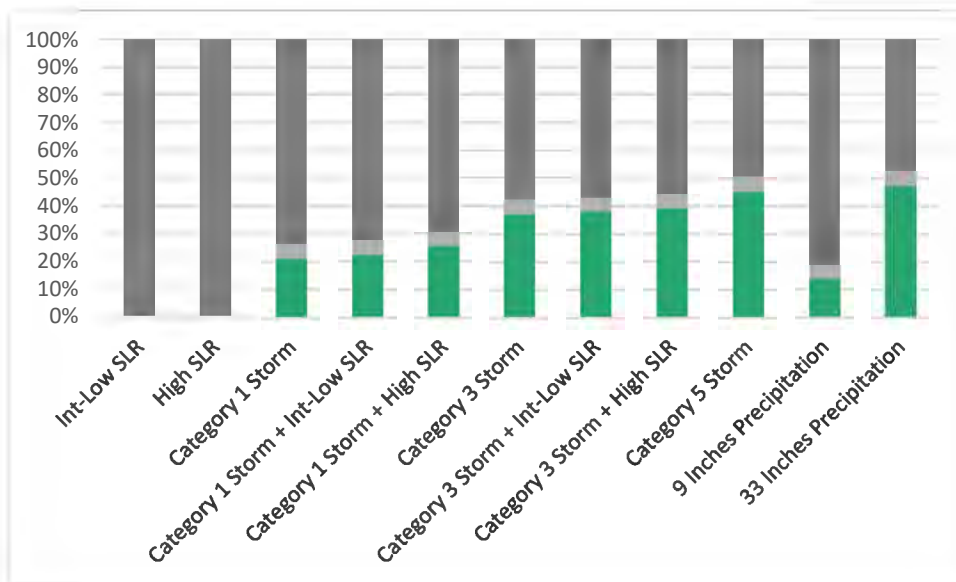
**Figure 2-1 Impacted Transportation Facilities by Scenario**



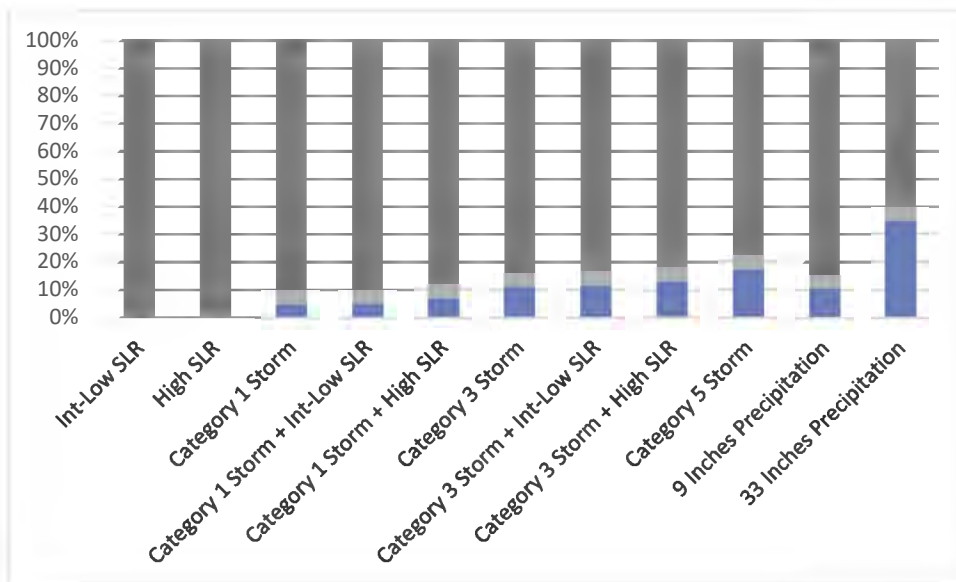
**Figure 2-2 Percentage of Transportation Facilities Impacted by Scenario Hillsborough County**



**Figure 2-3 Percentage of Transportation Facilities Impacted by Scenario**  
*Pinellas County*



**Figure 2-4 Percentage of Transportation Facilities Impacted by Scenario**  
*Pasco County*



### 2.1.3 Transportation Network Vulnerability

Coordinated with the RTBT stakeholders, the study team decided to focus on two scenarios when estimating each transportation facilities' vulnerability: Category 3 storm plus high sea level rise projection, and a precipitation event of 9-inch of rain over 24 hours. The vulnerability of transportation facilities was categorized into "high", "moderate", and "low" based on the maximum inundation depth in either of these two

scenarios. The inundation depth was calculated by subtracting the elevation of ground or roadway surfaces from the water surface height.

Figure 2-6 and Figure 2-7 show the vulnerability of transportation facilities in Hillsborough, Pinellas, and Pasco counties for Category 3 storms plus a high sea level rise projection scenario, and 9-inch precipitation scenario, respectively. Areas color-coded in blue represent locations of water surface being higher than the ground or roadway surface.

In the scenario of Category 3 storm plus high sea level rise projection, vulnerable transportation facilities are located along the coastline of the three-county region, including the gulf coast of Pasco County, both western and eastern coasts of Pinellas County, and areas near coastline and further inland areas along rivers of Hillsborough County.

In the precipitation event of 9-inch of rain over a 24-hour scenario, the impact is much more extensive across the whole region, although the depths of inundation are smaller. It should be noted that due to the lack of unified digital elevation model source, the hydrology model is not able to produce meaningful results for the eastern part of Pasco County.

Each roadway segment is color-coded by its depth of inundation in three categories. Segments that are inundated by greater than or equal to 11feet are considered having high vulnerability; segments that are inundated by 6 to 10 feet are considered having moderate vulnerability; segments that are inundated by less than or equal to 5 feet are considered having low vulnerability. Figure 2-5 summarized transportation vulnerability in Hillsborough, Pinellas, and Pasco counties.

**Figure 2-5 Transportation Vulnerability by Counties**

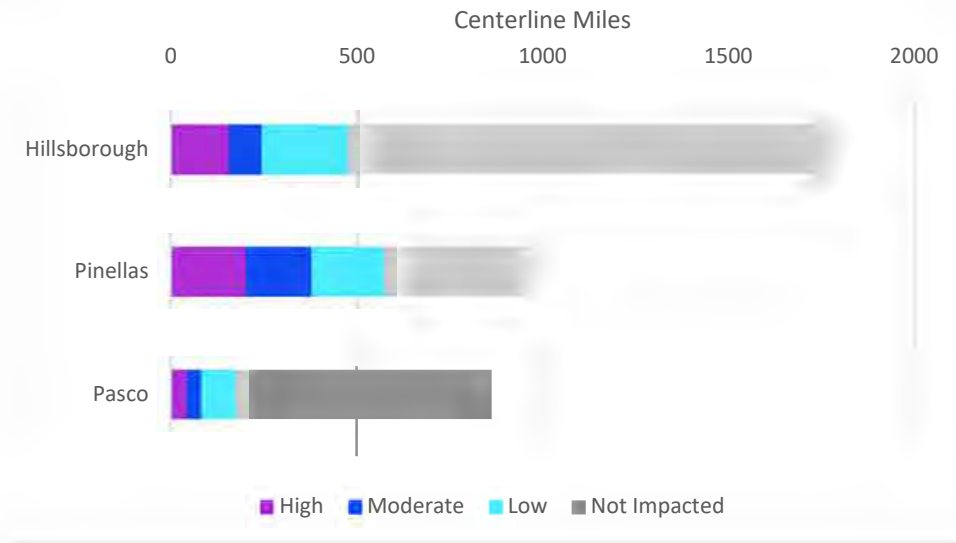


Figure 2-6 Transportation Vulnerability – Based on Category 3 Storm plus High Sea Level Rise Scenario

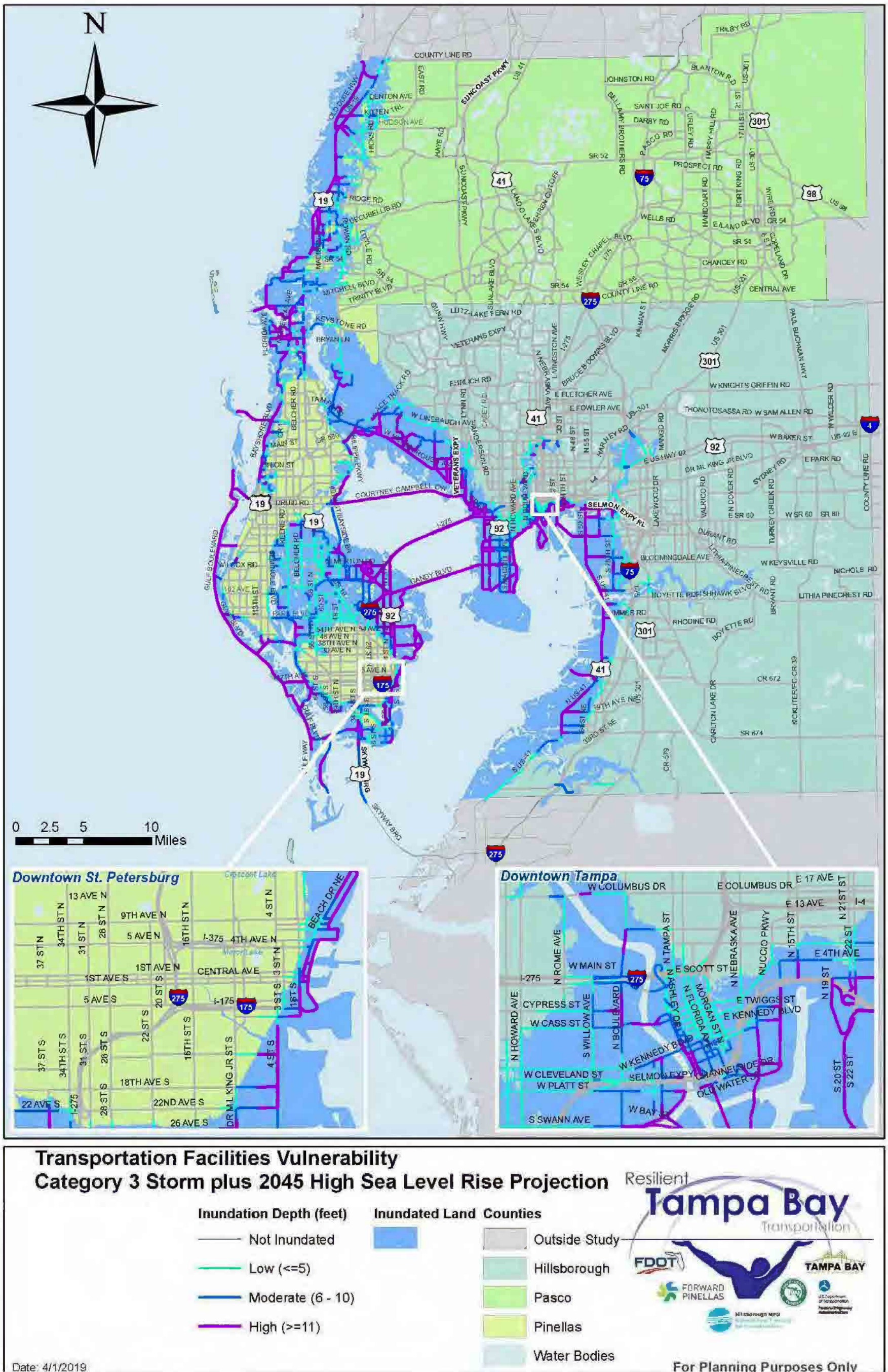
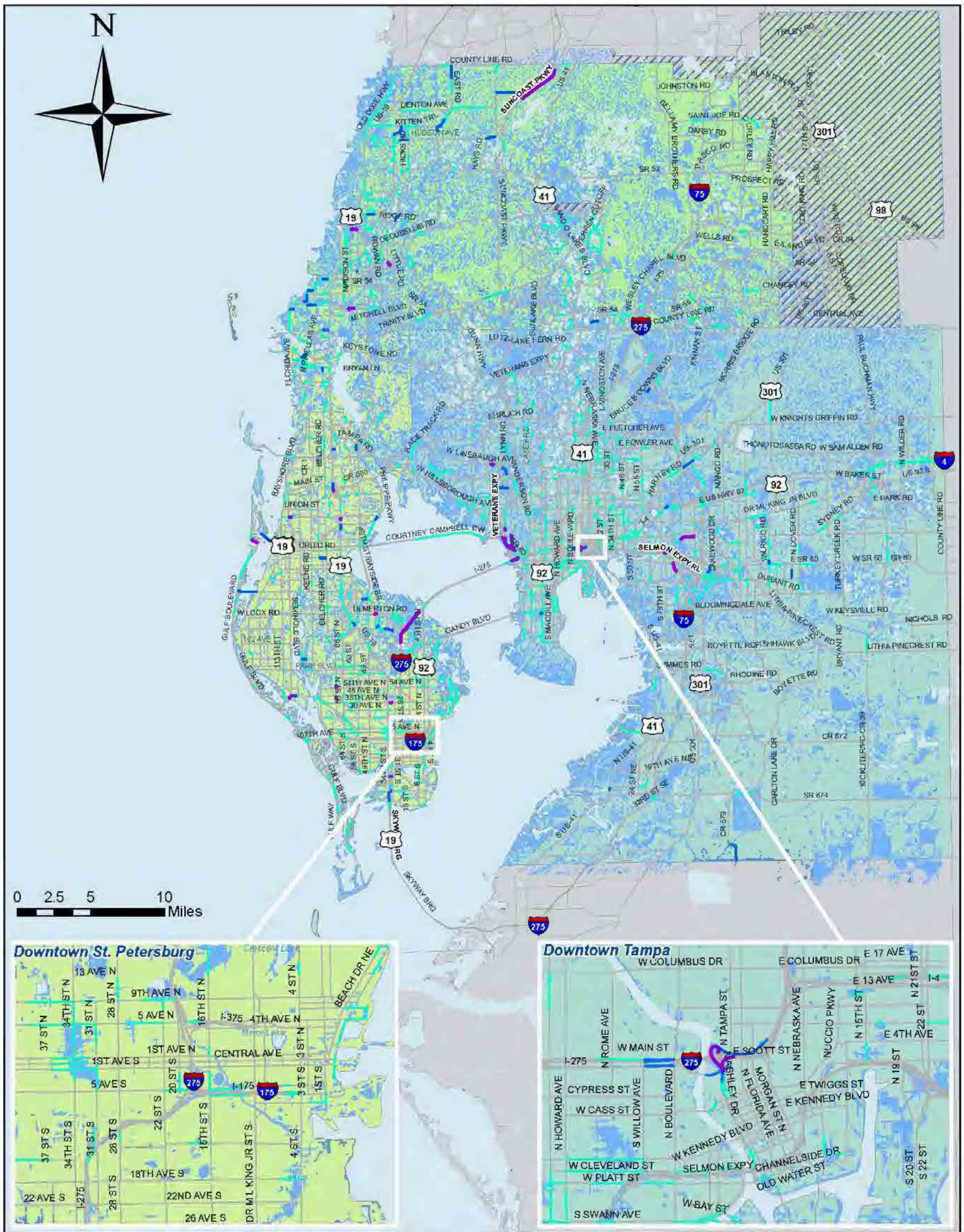




Figure 2-7 Transportation Vulnerability – Based on 9 Inches Precipitation Event Scenario



**Transportation Facilities Vulnerability - 9 Inches Precipitation**

- |                                |                    |                    |
|--------------------------------|--------------------|--------------------|
| <b>Inundation Depth (feet)</b> | Inundated Land     | <b>Counties</b>    |
| Not Inundated                  | Data Not Available | Outside Study Area |
| Low (<=5)                      | Water Bodies       | Hillsborough       |
| Moderate (6 - 10)              |                    | Pasco              |
| High (>=11)                    |                    | Pinellas           |



For Planning Purposes Only

Notes: Due to the lack of unified DEM source, the hydrology model is not able to produce meaningful results for the eastern part of Pasco County.

Date: 4/2/2019

## 2.2 Critical Transportation Facilities

This section documents the screening process for prioritizing critical transportation links based on mobility, connectivity, equity, and emergency operations along with socioeconomic factors. The screening process consists of two parts: stakeholder engagement and quantitative analysis. As part of the Resilient Tampa Bay Transportation initiative, the project team reached out to agencies and government stakeholders to learn what they believe are the most important factors influencing the identification of critical transportation infrastructure. The participants of the survey include staff from county planning agencies, county public works departments, city agencies, economic development agencies or chambers, regional organizations, state agencies, transit agencies, and non-profit agencies.

Based on the stakeholder outreach results, 11 factors were selected to determine the criticality of transportation facilities. Each factor has a maximum score reflecting its relative weighting of importance among other factors, as shown in Table 2-1.

A criticality score was calculated for each facility by summing scores from all factors. As shown in Table 2-2, facilities with criticality scores greater than or equal to 14 are considered to have high criticality; facilities with scores lower than 14 and greater than or equal to 11 are considered to have moderate criticality; facilities with scores less than 11 are considered to have low criticality.

Figure 2-8 summarizes the transportation network centerline mileage in Hillsborough, Pinellas, and Pasco counties. Figure 2-9 shows the criticality of transportation facilities in the Tampa Bay region.

**Table 2-1 Criticality Determination Factors**

Factor	Max Score	Scoring Method	Description
Evacuation Route	3	3, if Yes; 0 otherwise	Whether it is an evacuation Route;
Projected 2040 Traffic volume	3	High - 3, Medium- 2, Low - 1	Projected 2040 Traffic volume, categorized into "high", "moderate", and "low" using natural breaks
Connectivity to major economic and social activity centers	3	High - 3, Medium- 2, Low - 1	Distance to the nearest Hospitals, Shelters, and Power Plants, categorized into "high", "moderate", and "low" using natural breaks
Transit Corridor	2	2 if Yes; 0 otherwise	Whether it is a Transit Corridor
Part of the LRTP Cost Affordable Projects	2	2 if Yes; 0 otherwise	Whether it is part of the 2040 LRTP Cost Affordable Projects
Intermodal Connectivity	1	1 if Yes; 0 otherwise	Whether it is a SIS Port/Rail connectors
Freight Connectivity	1	1 if Yes; 0 otherwise	Whether it is part of the FDOT D7 Tampa Bay Regional Freight Transportation Network (Limited Access Facilities and Regional Freight Mobility Corridors only)
Projected Population density	3	High - 3, Medium- 2, Low - 1	Projected 2040 Population density, categorized into "high", "moderate", and "low" using natural breaks
Projected Employment density	2	High - 2, Low - 1	Projected 2040 Employment density, categorized into "high" and "low" using natural breaks
Percentage of Zero-Car Households	2	High - 2, Low - 1	Percentage of Zero-Car Households, categorized into "high" and "low" using natural breaks
Equity areas	1	1 if Yes; 0 otherwise	Whether it is within Environmental Justice Zones as identified by the metropolitan planning organizations
<b>Max Total Score</b>	<b>23</b>		

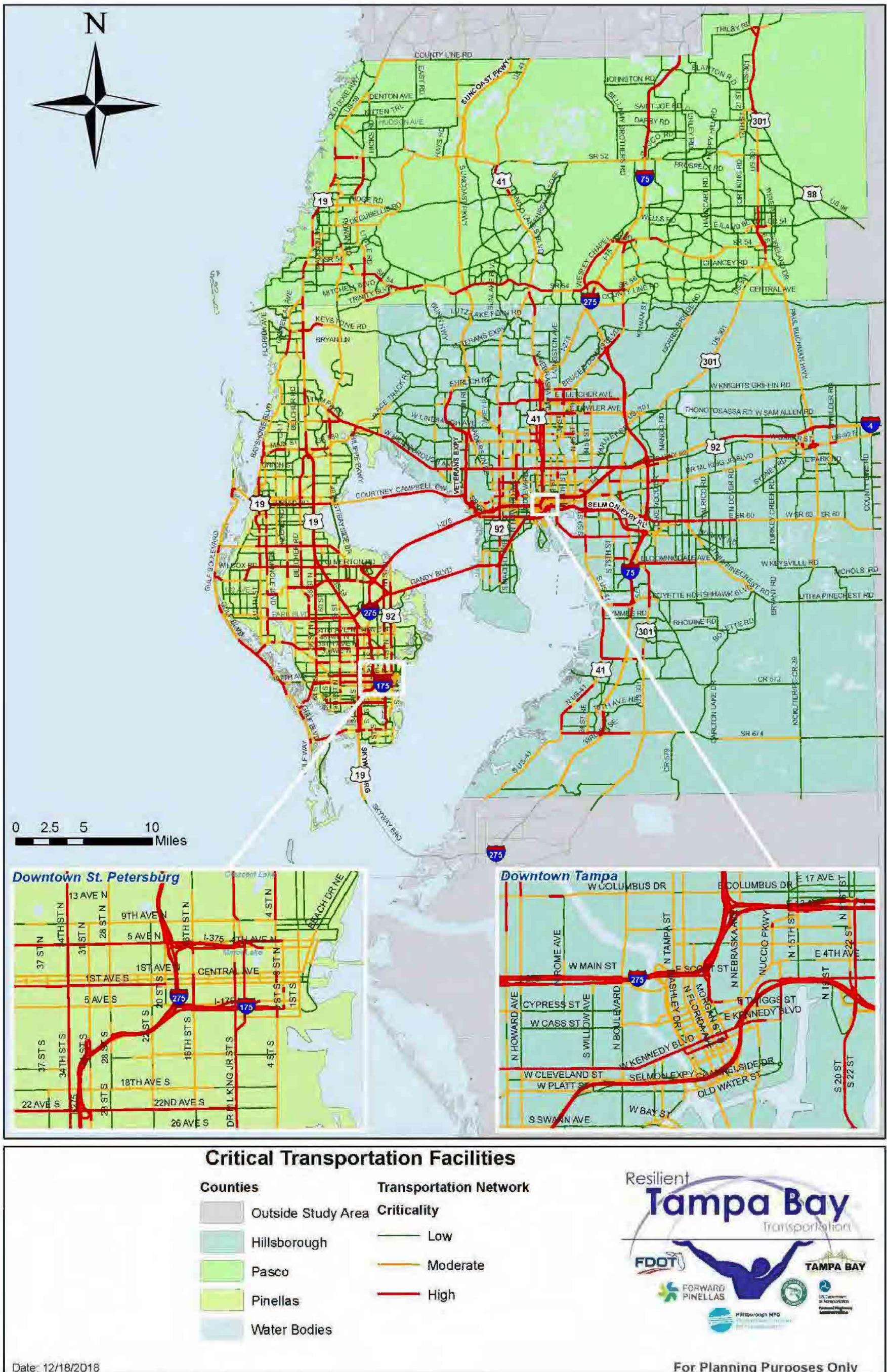
**Table 2-2 Criticality Determination**

Total Score	Criticality
5 to 10	Low
11 to 13	Moderate
14 to 20	High

**Figure 2-8 Summary of Transportation Network Criticality by Counties**



Figure 2-9 Transportation Network Criticality



## 2.3 Prioritization

A composite analysis was conducted to evaluate each transportation segment's resilience priority, which considered a transportation segment's vulnerability and criticality, as shown in Figure 2-10.

Working with staff in the RTBT, high resilience priority facilities are defined as transportation segments with high criticality and high or moderate vulnerability in either a Category 3 storm plus high sea level rise scenario, or a 9-inch precipitation event scenario.

Figure 2-11 and Figure 2-12 show the composite of vulnerability and criticality of transportation facilities in the Category 3 storm plus high sea level rise scenario, or the 9-inch precipitation event scenario, respectively. Facilities with both high vulnerability and high criticality are color-coded in dark purple with thick lines, these include many short segments located near the coastline, and longer segments such as US 19 in Pasco County, Gulf Boulevard and Roosevelt Boulevard in Pinellas County, Gandy Boulevard, I-275, West Hillsborough Avenue, and US 41 in Hillsborough County.

**Figure 2-10 Composite Analysis: Vulnerability and Criticality**

Vulnerability	High	High Vulnerability, Low Criticality	High Vulnerability, Moderate Criticality	High Vulnerability, High Criticality
	Moderate	Moderate Vulnerability, Low Criticality	Moderate Vulnerability, Moderate Criticality	Moderate Vulnerability, High Criticality
	Low	Low Vulnerability, Low Criticality	Low Vulnerability, Moderate Criticality	Low Vulnerability, High Criticality
		Low	Moderate	High
		Criticality		

Table 2-3 summarizes the centerline miles of transportation facilities by their vulnerability and criticality in Hillsborough, Pinellas, and Pasco counties. A detailed list of facilities with high or moderate vulnerability and high criticality can be found in Appendix D.

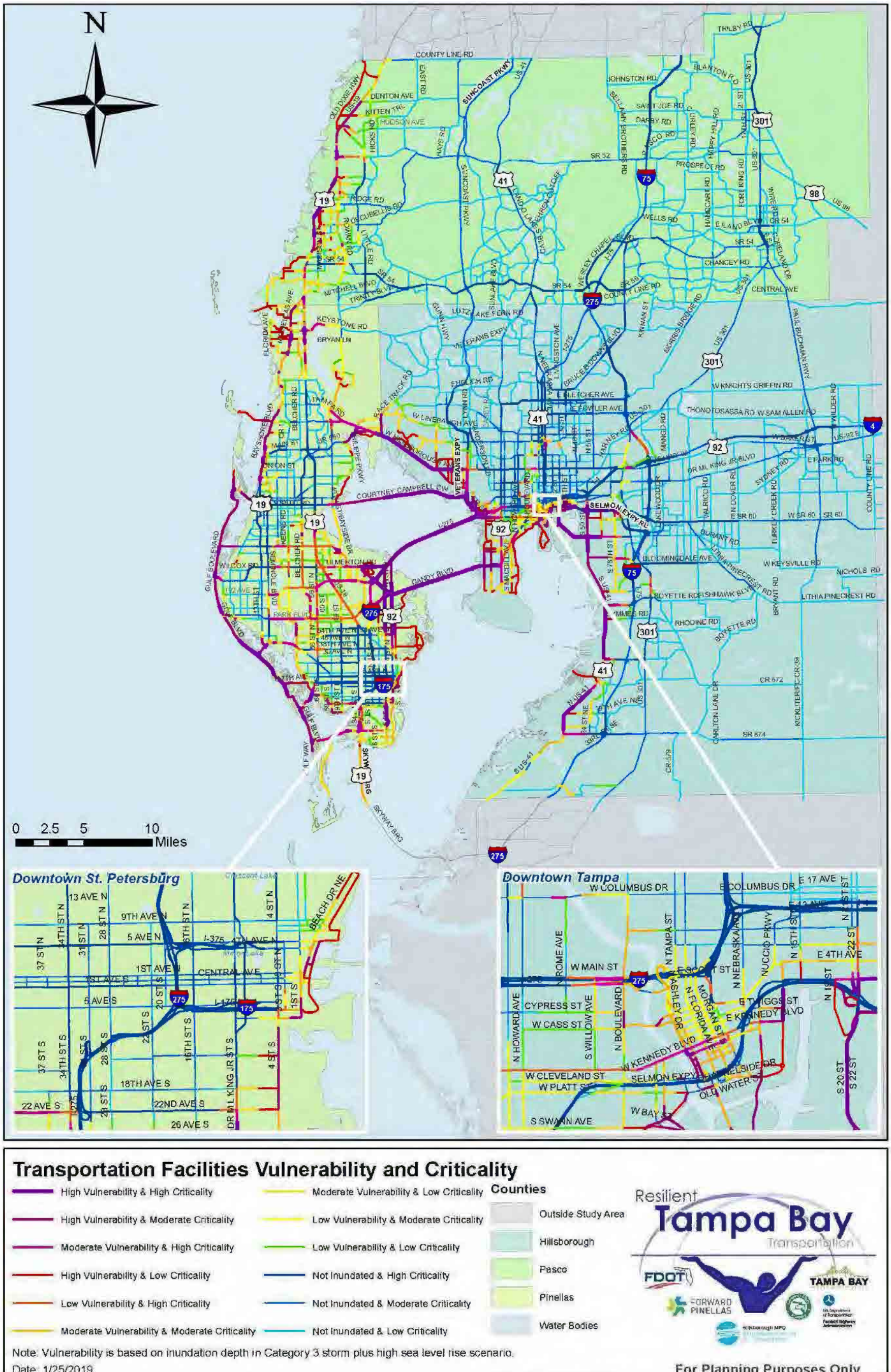
**Table 2-3 Summary of Transportation Facilities by Vulnerability and Criticality**  
Centerline Miles

Vulnerability - Criticality	Transportation Facilities (Centerline Miles)			
	Hillsborough	Pinellas	Pasco	
High-High	66	80	5	
High-Moderate	35	60	13	
Moderate-High	30	62	2	
High-Low	57	61	24	
Low-High	59	79	5	
Moderate-Moderate	21	50	10	
Moderate-Low	37	64	27	
Low-Moderate	69	49	21	
Low-Low	103	68	63	
Not Impacted-High	320	128	72	
Not Impacted-Moderate	362	125	176	
Not Impacted-Low	615	134	442	

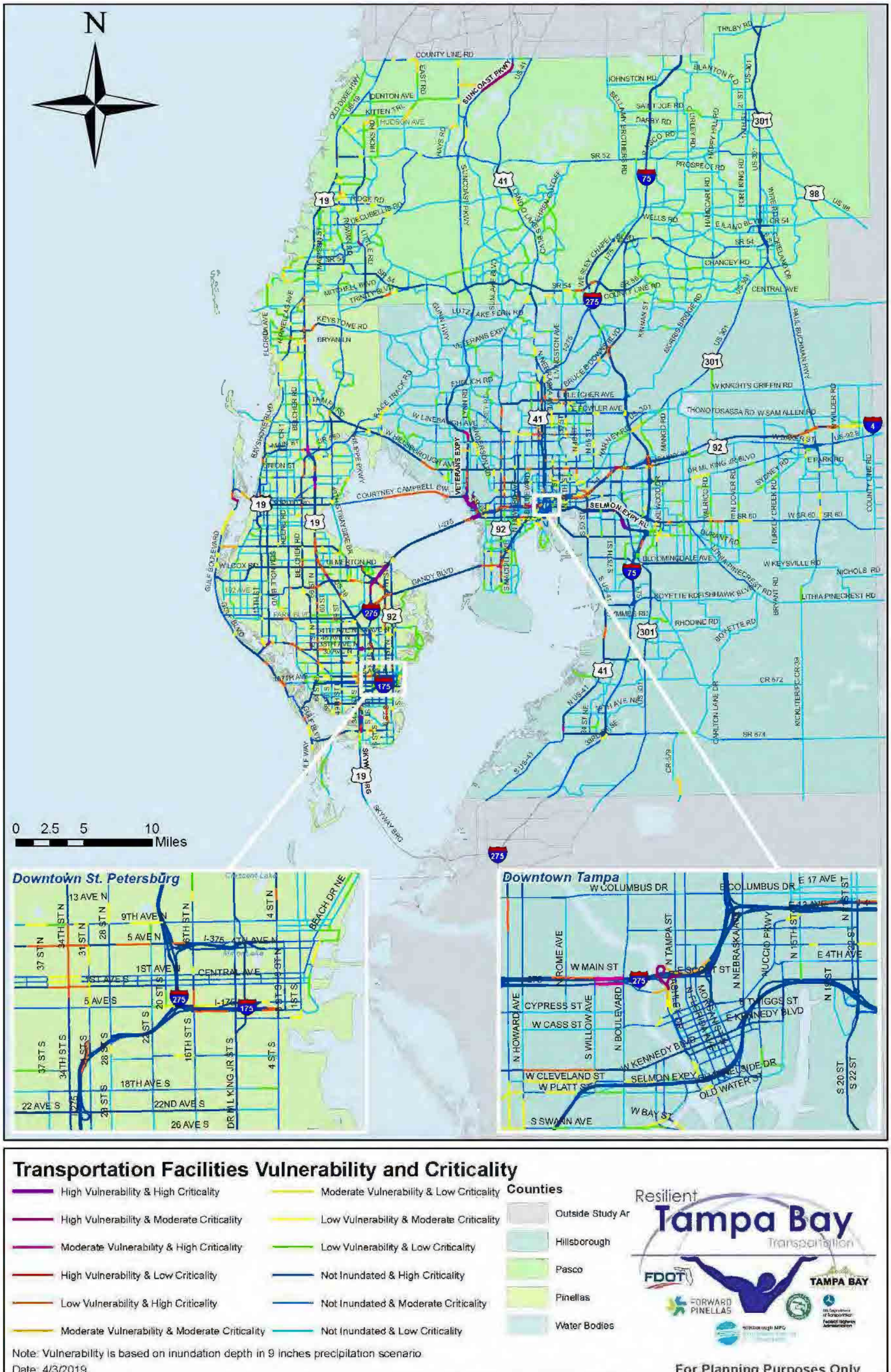
Note: Centerline miles



**Figure 2-11 Composite Analysis: Vulnerability and Criticality**  
 Vulnerability based on Category 3 Storm Plus High Sea Level Rise Scenario



**Figure 2-12 Composite Analysis: Vulnerability and Criticality**  
 Vulnerability based on 9 Inches Precipitation Scenario



## 2.4 County Representative Projects

Understanding transportation asset criticality and vulnerability to key climate hazards will allow state and local agencies to integrate appropriate adaptation and mitigation measures and strategies into their planning process, project development, asset management, and day-to-day operation. To assist in meeting the new federal mandate as well as inform the LRTP updates for three MPOs and the regional LRTP, the Hillsborough MPO, Pinellas MPO, and Pasco MPO, in coordination with the Tampa Bay Regional Planning Council, and the Florida Department of Transportation District 7, selected two representative projects in each county. The selection of the representative projects considered both the corridors criticality to the region's mobility, connectivity, and emergency operations (Chapter 3), and their vulnerability to storms and heavy precipitation events (Chapter 2). Locations of representative projects in Hillsborough, Pinellas, and Pasco counties are shown in Figure 2-13. These locations will receive more in-depth analysis for adaptation strategies, economic impacts, as well as benefits and cost comparisons in the latter sections. They can serve as pilot projects and help inform project development and evaluation in other locations in the Tampa Bay region.

### Hillsborough County:

- Gandy Blvd from 4th St to S Dale Mabry Hwy
- Big Bend Rd from US-41 to I-75

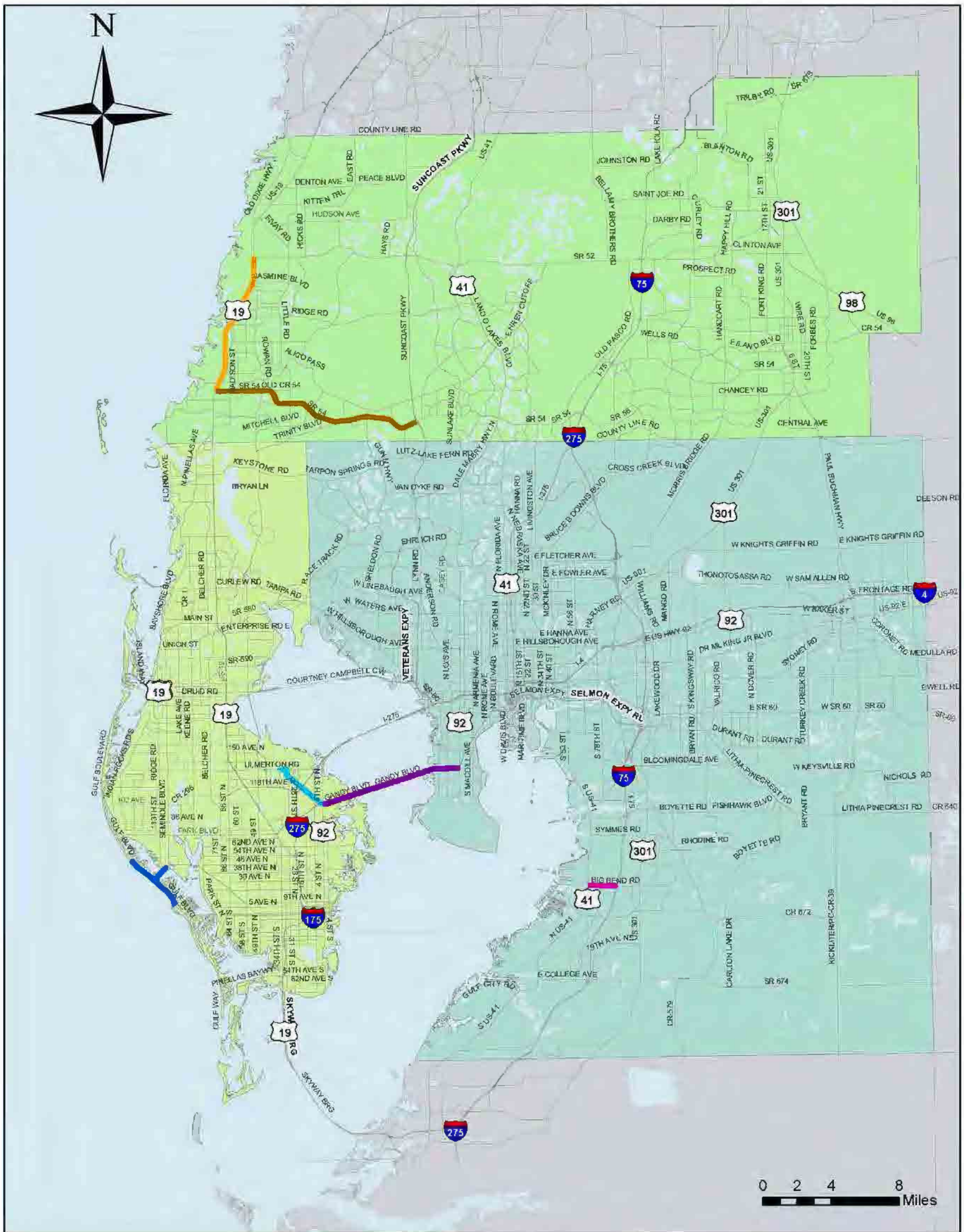
### Pinellas County

- Gulf Boulevard from Bath Club Circle to 125th Ave & Tom Stuart Causeway Bridge
- Roosevelt Boulevard from Ulmerton Road to Gandy Boulevard

### Pasco County

- US 19 from S.R.54 to S.R.52
- S.R. 54 from US 19 to Suncoast Pkwy

Figure 2-13 County Representative Projects



<p><b>Representative Projects</b></p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 20px; height: 5px; background-color: orange; border: 1px solid black; margin-right: 5px;"></span> US 19 from S.R.54 to S.R.52</li> <li><span style="display: inline-block; width: 20px; height: 5px; background-color: brown; border: 1px solid black; margin-right: 5px;"></span> S.R.54 from US 19 to Suncoast Pkwy</li> <li><span style="display: inline-block; width: 20px; height: 5px; background-color: blue; border: 1px solid black; margin-right: 5px;"></span> Gulf Blvd Bath Club Cir to 125 Ave &amp; Tom Stuart Cswy Bridge</li> <li><span style="display: inline-block; width: 20px; height: 5px; background-color: cyan; border: 1px solid black; margin-right: 5px;"></span> Roosevelt Blvd/SR 686 from Ulmerton Rd/SR 688 to Gandy Blvd</li> <li><span style="display: inline-block; width: 20px; height: 5px; background-color: purple; border: 1px solid black; margin-right: 5px;"></span> Gandy Blvd from 4th St to S Dale Mabry Hwy</li> <li><span style="display: inline-block; width: 20px; height: 5px; background-color: pink; border: 1px solid black; margin-right: 5px;"></span> Big Bend Rd from US-41 to I-75</li> </ul>	<p><b>Counties</b></p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 20px; height: 10px; background-color: #d3d3d3; border: 1px solid black; margin-right: 5px;"></span> Outside Study Area</li> <li><span style="display: inline-block; width: 20px; height: 10px; background-color: #c8e6c9; border: 1px solid black; margin-right: 5px;"></span> Hillsborough</li> <li><span style="display: inline-block; width: 20px; height: 10px; background-color: #e8f5e9; border: 1px solid black; margin-right: 5px;"></span> Pasco</li> <li><span style="display: inline-block; width: 20px; height: 10px; background-color: #fff9c4; border: 1px solid black; margin-right: 5px;"></span> Pinellas</li> <li><span style="display: inline-block; width: 20px; height: 10px; background-color: #e0f2f1; border: 1px solid black; margin-right: 5px;"></span> Water Bodies</li> </ul>	<p><b>Resilient Tampa Bay Transportation</b></p> <p>FDOT   TAMPA BAY   FORWARD PINELLAS   Hillsborough MPO   Pinellas County Administration</p>
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Date: 1/22/2019

## 3.0 Adaptation Strategy Toolbox

The options available to designers and planners for adapting to climate change in the transportation sector are composed of options from enhanced drainage to pavement improvements to more nature-based strategies. The options selected for individual cases are dependent on factors including available budget, the topography, and exposure to the specific type of impact. The challenge for planners is determining the appropriate option given the situation that the asset is confronted with in a specific time period. The transportation adaptation toolkit is designed to support this decision-making process by providing the general circumstance under which the option may be appropriate and the vulnerabilities that a specific option may seek to mitigate.

The following sections introduce each option with the following structure:

- Adaptation Summary – A brief description of the adaptation and the vulnerabilities it is usually used as a protection against.
- Appropriate Conditions – The conditions under which the adaptation should be considered.
- Limitations – A brief description of the limitations for a given solution that should be considered by a decision-making authority.

The toolkit is intended to support and guide decision-making activities. It is not intended to replace the advice and design expertise of an engineering firm. Detailed analysis of a given site may dictate that the initial toolbox recommendations may need to be altered due to restrictions of specific topography or cost considerations.

### Choosing an Adaptation Option

The selection of an appropriate adaptation option(s) will depend on both budget and design parameters. In terms of budgetary considerations, adaptation options will vary considerably in terms of cost. For example, raising a road profile will potentially have a greater cost impact than enhancing the road surface. However, raising the profile may provide longer-term benefits and may be a preferred choice from a life-cycle costing perspective. In terms of design parameters, much of the selection of appropriate adaptation options will be based on the topography and surrounding development. For example, where development has occurred close to a road, the ability to widen swales or other drainage structures may be limited.

To assist in deciding between adaptation options, the table below provides the conditions under which an adaptation may be appropriate to consider, and which options may be less appropriate. In either case, the table should be used as a guideline and not as a design specification. Individual local conditions may overrule a recommendation.

The options table below lists the 12 options introduced in this manual. The table provides an indicator of which circumstance may be appropriate for each option. This does not imply that the options will be unavailable under other circumstances. Rather, it implies options where it might be preferred or practical as indicated.

**Figure 3-1 Options Table**

	Minimal Topography Changes	Available Median for Alteration	Minimal Clearance to the Side of the Road	Coastal or Beach Exposure	Existing Drainage Swales	Open Access on Side of Roadway	Residential or Commercial Properties
Swales or Ditches		O	X	X	O	O	
Retention or Detention Ponds			X	X		O	
Enhanced Road Surface			O				O
Enhanced Sub-Surface			O				O
Hardened Shoulders			X			O	
Raise Profile	O		X				
Permeable Pavements							O
Protected or Depressed Medians		O					
Revetments and Sea Walls				O			
Wave Attenuation Devices				O			
Beach and Dune Nourishment				O			
Vegetation (can be used in both coastal and inland scenarios)	O	O	O	O	O	O	O

**O: Preferred Circumstance X: Not Applicable**

The focus of this effort is to provide adaptation options for both inundation and storm surge threats to transportation assets. The adaptations described here assume that inundation and surge threats are transient in nature and do not represent a continuous condition over an extended period as would be the case for infrastructure affected by sea level rise. As introduced above, each option is detailed with the conditions under which it should be considered and the adaptation protection it provides.

NOTE: When implementing any of these options, it is necessary to have a detailed engineering analysis done for the specific site to determine appropriate designs and applicability.

## 3.1 Coastal Asset Protection

The protection of coastal road assets presents multiple options depending on the placement of the asset and the desired intervention location. In addition to the hardening approach, there are multiple options that can be employed that are removed from the asset itself including offshore solutions such as breakwaters, wave attenuation devices, and onshore solutions, of which the focused solutions are beach nourishment and natural shorelines. In each case, these solutions present an opportunity to protect assets against storm surge or wave action prior to the surge reaching full velocity or depth.

### Conditions

Exposure to Surge – The existing or proposed roadway is exposed to storm surge forces, from its location on the coast and the projected surge, has a depth that places the road at risk for extended inundation or severe surge forces.

### Threats

Storm Surge – Coastal protections are intended to protect a coastal asset from damage inflicted by a surge event. The protection may not be complete, but it is intended to be a significant reduction from the original possibility presented by the surge event.

#### 3.1.1 Natural Shorelines

Where possible, a natural solution should be emphasized to combat storm surge from Category 3 storms. Natural shorelines are a broad category that includes options such as vegetation, edging, sills, beach nourishment, and a combination of vegetation with sand dunes<sup>6</sup>. The selection of each approach is dependent on several factors including exposure, wave action, and topography. The following sections highlight two of the more common applications of natural shorelines.

<sup>6</sup> SAGE 2015. Natural and Structural Measures for Shoreline Stabilization, SAGE: Systems Approach to Geomorphic Engineering

### 3.1.2 Solution A1 – Beach Nourishment and Dune Restoration

A natural alternative to the sea walls and revetments introduced for storm surge protection is the use of sand dunes and beach nourishment. Sand dunes provide natural protection for coastal roads by providing a barrier between the roadway and the seaward ocean forces. Over time, natural processes slowly build sand dunes on coastal areas and then erode the sand dunes through storm surges and wave actions. This process continues an endless cycle if left without interference. However, coastal roads and the interference of human development to the natural processes requires this sand dune regeneration process to be increased through artificial means.

Although the design requirements for sand dunes is specific to the individual beach and road scenario, the process for restoring and creating sand dunes is standardized. Specifically, the process requires a barge to be anchored offshore where a temporary pipeline can then be extended from the barge to the shore. A large pump is then used to pump sand from the sea bottom through the pipe onto the beach where front-end loaders are then used to distribute the sand appropriately on the beach and where required into sand dunes.

Costs for this approach can vary widely, however a series of case histories established by coastal states<sup>7</sup> and coastal dune restoration guidelines<sup>8</sup> provide general guidelines. Specifically, these studies have



**Figure 3-2 Beach nourishment process. Sand is being deposited on the beach from dredging operations offshore.**

<sup>7</sup> California (2002). California beach restoration Study, Department of Boating and Waterways and State Coastal Conservancy, January 2002.

<sup>8</sup> Fournier, M., undated, 'Standards for Creating and Restoring Sand Dunes: from Massachusetts to North Carolina (ed. by Miller & Skaradek, Cape May Plant Material Center, and RPS, USDA, NRCS).



found a cost of over \$700,000 per 0.25 miles of coastline. However, this approach provides a natural alternative to the other methods and can provide auxiliary benefits to the local community. These benefits are estimated at over three times the initial cost with a potential reduction of risk of 30% - 50%<sup>9</sup>.

A recent option that is being introduced by The Netherlands is a sand engine approach that provides longer-term nourishment<sup>10</sup>. Further study and analysis would be required to determine the effectiveness of this approach.

**Benefit:** The benefit of utilizing a beach nourishment approach is that it relies solely on natural materials and enhances the natural conditions and barriers that beaches provide for flooding. The extension of the beach through beach nourishment provides an extended barrier between the shoreline and populated areas. The enhanced dunes raise the profile of the barrier and provide extra protection against wave and tidal action. The combination of the solutions enhances the natural ecosystem by providing additional areas for wildlife nesting and the expansion of protected areas.

From a cost perspective, beach nourishment is relatively costly from a life-cycle perspective. The \$2.8 million per mile is a cost that will be incurred on a regular basis as beach nourishment must be replenished. The frequency of this replenishment will vary depending on the frequency of storms, tidal conditions, and the extent of the beach nourishment. A planning window between 5-10 years is reasonable for incremental replenishment of the beach. However, the protection that beach nourishment provides can far outweigh these costs as many properties will gain protection as well as increasing the amount of beach available for tourism.

### 3.1.3 Solution A2 – Vegetation as Erosion Control

A second natural approach to reducing erosion on the seaward side of a road in scenarios where there is only minor to moderate wave or overtopping actions in conjunction with storm surge is to use vegetation as binder on the seaward slopes. Specifically, grassy vegetation and shrubs can be used to combat erosion in slight to moderate conditions. Dune grass and marsh grass have proven to be effective in



(Credit: Ann Tihansky, USGS. Public domain.)

**Figure 3-3 Artificial sand dunes create a barrier between coastal flooding and properties.**

<sup>9</sup> Reguero, B. G., Beck, M. W., Bresch, D. N., Calil, J., & Meliane, I. (2018). Comparing the cost effectiveness of nature-based and coastal adaptation: A case study from the Gulf Coast of the United States. *PLoS one*, 13(4), e0192132. doi:10.1371/journal.pone.0192132

<sup>10</sup> Fast Company (2013). "This Dutch "Sand Engine" uses nature's Destructive Power to Protect From Flooding," Fast Company May 9, 2013.

reducing erosion as well as shrubs appropriate to local conditions<sup>11</sup>. Typically, this approach is combined with sand dune restoration to provide an additional level of stability to the sand dune structures. This approach also is locally dependent on conditions and soils that may not be appropriate for inland areas.

**Benefit:** Vegetation has always been a natural barrier against flooding and the effects of water flow or wave action. The root systems of plants help to bind together soils and reduces the amount of erosion that takes place during flooding events. The vegetation also helps to filter water that is entering the drainage system. The combination of these benefits serves to create a natural filtration and holding system in many different geographic conditions.

The cost-benefit for vegetation is very favorable for locations that choose to follow this path. Once the vegetation is mature, there is little maintenance that is required for the community. However, there is a period when the vegetation is first put in place that protection of the area will be required. Specifically, protection is needed using barriers to protect the vegetation and individuals to check on the plantings. This initial expenditure is offset by the long-term viability and affordability of the solution. Dunes supported by vegetation can significantly enhance the ability of the natural barrier to stay in place and better withstand tidal and storm surge forces at the coast.

### Figure 3-4 Using beachgrass to control erosion of sand dunes.

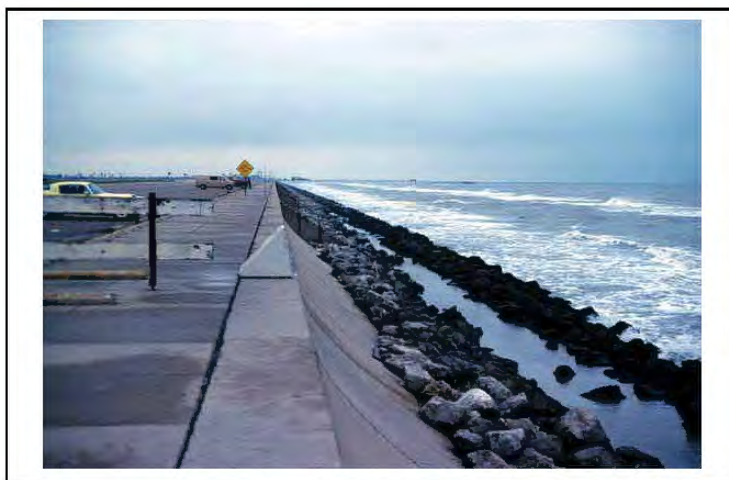
#### 3.1.4 Solution B – Revetments and Sea Walls for Direct Asset Protection

Coastal roads that are directly exposed to wave action and surge events can be extremely susceptible to erosion on the seaward side due to increased flows during surge events. The concept of hardening the seaward side is to provide protection against increased hydrologic action and specifically protect the roadbed from direct exposure to the elements. To accomplish this protection, the seaward side of the

<sup>11</sup> Western Carolina (2009). Principles of Property Damage Mitigation, Western Carolina university, <http://www.wcu.edu/coastalhazards/Libros/>, Last reviewed, November 2009.

road embankment will be hardened using a revetment or seawall that is placed along the slope where exposure to water may occur<sup>12</sup>.

The distinction between revetments and seawalls is one of functional purpose. Revetments are layers of protection on the top of a sloped surface to protect the underlying soil. Seawalls are walls designed to protect against large wave forces. They are rigid structures or rubble mound structures specifically designed to withstand large wave forces. Some types of larger seawalls such as the Galveston Seawall also protect against overtopping. These larger structures are not common in the US because they require extensive marine structural design. Rubble mound seawalls are much more common in the US. They look like revetments but contain larger stones to withstand larger waves. Because of their similarities in function, the Federal Highway Administration (FHWA) uses the two terms seawall and revetment interchangeably<sup>13</sup>.



**Figure 3-5 Example of seawall for coastal defense combined with a revetment in front to dissipate wave energy.**

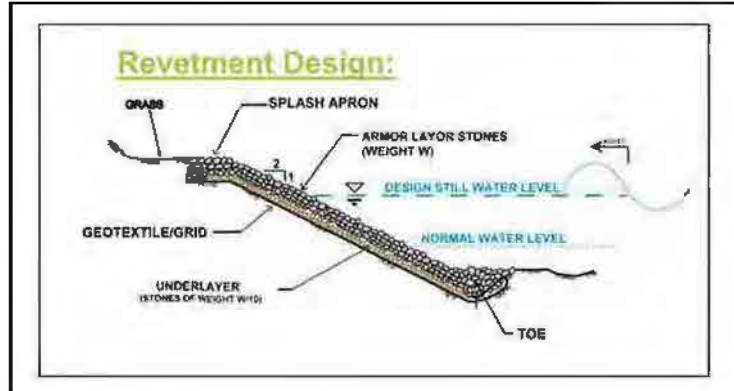
For revetments, the FHWA recommends a design approach based on determining a design wave and using Hudson's equation to estimate stone size for embankments subject to wave action. The fundamental philosophy is that the revetment will be efficient at absorbing non-catastrophic wave energy. Figure 5 shows a typical revetment design cross-section.

During a storm surge event, road embankments not ordinarily exposed to wave action may experience further erosion due to higher water levels. In order to prevent erosion during such extreme events, this embankment should also be armored according to a revetment design.

<sup>12</sup> FHWA, 2008. Hydraulic Engineering Circular 25

<sup>13</sup> By Credit:Public Domain, <https://en.wikipedia.org/w/index.php?curid=9889940>

**Benefits:** The benefit of a sea wall system is that it provides a time-proven solution to protecting coastal assets against many different conditions including storm surge, wave action, and tidal changes. Sea walls can also provide natural areas for sea life and protection for visitors to the shore. They have proven to be long-lasting and require minimum maintenance in comparison to other natural solutions. Seawalls are a technology that is well-studied and often the expertise that is required to construct the barriers can be found locally.



**Figure 3-6 Typical cross-section of revetment after FHWA guidelines.**

From a life-cycle perspective, revetments can be a significant benefit in that they require minimal maintenance over the design life if are constructed properly and built to a level that will withstand future risks. This second part is critical in terms of life-cycle costs. If the revetment is constructed to a level that does not anticipate future threats, then overtopping can start to occur and create damage to the top of the structure. Therefore, proper design analysis is required to ensure the seawall meets its required design life.

### 3.1.5 Solution C – Wave Attenuation Devices

In contrast to a revetment which is a direct-asset protection strategy, wave attenuation devices (WADs) can be used to protect on-shore infrastructure from an offshore location. WADs reduce the force of waves striking the coast by dissipating energy when waves encounter them. A field experiment was conducted at the Greenshores Coastal Restoration Inc. (CRI)<sup>14</sup> wave-attenuation-device site in Pensacola, Florida in order to quantify the wave height and wave energy reduction achieved by wave attenuation devices. Wave height and wave energy measurements were taken from an offshore area and from various locations in the protected near shore area. The field measurements show that WADs can reduce the wave height and wave energy by over 80%.

There are two main commercial types of WADs. The first type is usually made with concrete and submerged to the ocean floor and can be seen in Figure 3-7. This type of WAD has minimal impact on the live bottom due to its small footprint. Additionally, they act as an artificial reef and facilitate local fish populations. The second type is a floating WAD (Figure 3-8). Floating WADs are completely portable and do not require major construction to move.

The effective use of wave attenuation devices is dependent on the potential increase in wave activity and the subsequent storm surge in the area where the asset is located. As previous studies on wave action in the Tampa Bay region have found, the difference between the outer areas of Tampa Bay and the inner

<sup>14</sup> [http://www.livingshorelinesolutions.com/uploads/Wave\\_Attenuation\\_Study\\_2007.pdf](http://www.livingshorelinesolutions.com/uploads/Wave_Attenuation_Study_2007.pdf)

regions is significant in terms of wave impacts<sup>15</sup>. However, anticipated hurricane strength and the accompanying storm surge could change this dynamic in the future.

**Benefits:** Wave attenuation devices are a newer defense against increased wave action in comparison to seawalls, as they provide an opportunity to protect significant lengths of coastline against major events such as hurricanes. The ability of the devices to reduce wave force prior to reaching shore is a significant benefit when considering strong wave forces that pose risks to assets.



**Figure 3-7** Wave attenuation devices<sup>16</sup>

<sup>15</sup> [https://tbep.tech.org/TBEP\\_TECH\\_PUBS/2009/TBEP\\_03\\_09\\_FieldMeasurementsOfWaveAction.pdf](https://tbep.tech.org/TBEP_TECH_PUBS/2009/TBEP_03_09_FieldMeasurementsOfWaveAction.pdf)

<sup>16</sup> <http://www.tbo.com/news/business/pyramid-key-to-saving-egmont-key-20140526/>



Figure 3-8 Floating wave attenuation device<sup>17</sup>

## 3.2 Raised Road Profile

In situations where extended inundation is possible due to storm surge or precipitation events, enhancing drainage may not be enough to avoid damages to critical roads. Additionally, in areas where the topography results in a road being in a low-lying area that naturally collects water, it may be difficult or cost-prohibitive to put systems in place that remove water under inundation scenarios. Finally, there are critical roads that the area is dependent upon to serve as emergency routes. These roads must be kept accessible for the maximum amount of time possible. In all these cases, the solution may be to raise the profile of the road, or at least critical parts of the road such as an intersection, to ensure the road remains viable throughout an emergency.

### Conditions

Exposure to Inundation – The existing or proposed roadway is anticipated to experience inundation due to either severe precipitation events or storm surge conditions.

Roadway Criticality – Where a roadway is considered critical and other drainage options will be insufficient, raising the profile is an option.

Adjoining Area Compatibility – A primary consideration for raising the profile is the ability for the raised roadway to connect with adjoining roads or properties.

<sup>17</sup> <http://www.whispwave.com/products/wave-attenuators/medium-floating-wave-attenuator/>

## Threats

Storm Surge – A raised profile will provide roadways protection the from surge events if the culvert culverts or other flow structures are included with the design to prevent excessive erosion due to the roadway acting as a dam structure.

Precipitation Inundation - A raised profile can protect against precipitation events by providing greater runoff possibilities and reduce or eliminate the pooling of water that will result in damage to surface and base elements.

Sea level rise and nuisance flooding - A raised profile can protect against increased flooding situations due to increases in sea level or the impacts of seasonal high tides.

### 3.2.1 Solution – Raise Profile

In order to analyze the benefits of elevating a roadway, the possible storm surge or other inundation scenario must be analyzed to determine the appropriate height to raise the profile. Specifically, in this scenario, the potential storm surge from a Category 3 storm must be considered as well as the length of time projected for sustained inundation. For example, if a Category 3 storm is projected to have an inundation depth of 10 feet for a period of 8 hours, then raising the profile to any height lower than 10 feet plus a safety margin would not produce the results desired for emergency management.

Avoiding permanent inundation is extremely valuable for multiple reasons. If the roadway is clear of water, this will allow for emergency vehicles to continue to use the roadway as needed. Furthermore, overtopping can cause significant stresses on the roadway due to weir flow. Therefore, understanding the potential threat of a situation is critical to designing an appropriate profile for the given road at a given location.

The final solution for raising the profile of a road will require a transportation engineering firm to look at the impact on access and egress for adjoining properties. Additionally, the design will have significant impacts on the local area drainage functionality. However, in cases where a road is critical for emergency operations, these considerations should be weighed against the essential nature of the road in facilitating emergency operations.

**Benefits:** Raising the profile of a road is a significant investment. However, the return for the population focuses on the significant reduction in potential damage to a road from flood events. Since roads are susceptible to both surface erosion and erosion of the road base, protection from water and flood events is a critical consideration. The raising of the road profile is intended to raise the critical vulnerabilities of the road above the threat of flood events. By channeling the water through culverts under the road or utilizing techniques to harden the roads, they can be protected from flood events and extend its lifespan.

The cost-benefit of raising the profile focuses on the comparison of projected damages and the initial cost of raising the profile. The investment cost is focused on the initial outlay for raising the profile. Subsequent to the initial cost, the maintenance of the road returns to the typical expenditures incurred with any road on an annual basis. Additionally, once the road is raised, there is no further cost that is needed to maintain the raised profile. This one-time investment can then be offset by the protection offered to the road itself as well as the surrounding structures.

### 3.3 Enhanced Drainage

The high water table found in Florida requires proactive drainage under normal conditions. The lack of ability to move water through natural gravity or through limited groundwater absorption requires transportation assets to be protected by retention ponds or swales that hold water away from an asset. The challenge presented by surge or increased precipitation is that the drainage structures in place may not be designed to hold the increase in water volume. In these cases, the water may settle on a roadway or begin to produce erosive qualities as it resides adjacent to the base for an extended period. The challenge for designers is to implement a solution that removes this threat.

#### Conditions

**Minimal Topography** – The area has minimal changes in topography which allows greater flexibility to arrange and expand drainage structures.

**Available Expansion** – There must be available space to expand the retention structures. This can be expanded swales or ditches on the side of the roadway or expanded detention/retention pond areas in open areas adjacent to the transportation asset.

**Development Flexibility** – The existing or proposed development must have required access or right-of-way to allow for the expansion of the structures.

#### Threats

**Storm Surge** – Enhanced drainage structures will provide a diversion of storm surge waters from transportation assets. However, the enhanced drainage will provide greater assistance in protecting against extended inundation than against the initial or return surge waters.

**Precipitation Inundation** – Enhanced drainage will provide protection against precipitation inundation by providing enhanced ability for draining water away from the transportation asset. Appropriate for both localized inundation threats and wider spread threats.

#### 3.3.1 Solution A – Increased Swales or Ditches

Increasing the size of drainage swales or, in specific instances, drainage pipes, will allow the system to drain a greater capacity of water away from the roadway when combined with appropriate camber of the roadway itself. In this option, the existing drainage structures, including both ditches or piping, will need to be resized to handle the increased volume of water that is projected from the inundation or surge events. The Federal Highway Administration provides specific guidance in sizing and implementing appropriate drainage structures for specific circumstances<sup>18</sup>. Figure 8 shows typical structural designs based on FHWA recommendations.

<sup>18</sup> Urban Drainage Design Manual, Hydraulic Engineering Design Circular No. 22, FHWA-NHI-10-009, Federal Highway Administration



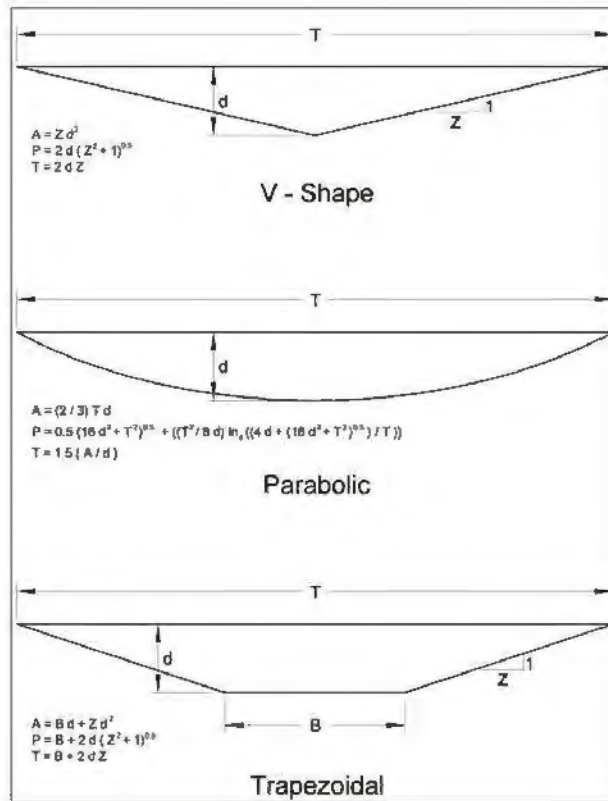


Figure 3-9 Typical design structures for drainage channels as per FHWA-NHI-10-009



[http://www.dot.ca.gov/design/lap/landscape-design/erosion-control/stormwater/biofiltration\\_swale.html](http://www.dot.ca.gov/design/lap/landscape-design/erosion-control/stormwater/biofiltration_swale.html)

Figure 3-10 Example of a swale used for stormwater management from roadway runoff.

One problem associated with storm water runoff is the stability and durability of the slopes, ditches, and embankments. One identified method for preventing erosion of these earthen structures is to reinforce them with concrete surface treatments. Such treatment decreases floodwater concentration and promotes flow to designated reservoirs. One should note that ditches are used on many standard highway construction projects to control runoff from the highway surface<sup>19</sup> (Figure 9). Impermeable geotextile can be placed between the subbase and the subgrade to avoid such saturation. This should be coupled with a draining layer to let water flow from the subgrade to the lateral drain<sup>20</sup>.

**Benefits:** Drainage swales are a traditional method for moving water away from a road base, holding water before it enters a storm sewer system, and reducing the flow of water due to a flood event. The expansion of swales provides additional capacity in the system and thus increases the protection against flood events. There are few downsides to this solution, especially in areas where water enters the system on a regular basis to reduce the opportunity for standing water to serve as insect breeding areas. In areas where there is appropriate width next to a road, swales are a preferred solution to controlling flood events.

The economic benefits of this type of solution result from a combination of the reduced damage caused by inundation and the increased control of the water flow entering the stormwater system. These benefits can be substantial in areas where regular flooding occurs, and inundation of roads is a regular threat. However, there does need to be a consideration of maintenance for swales as these structures can get filled with debris or have the drains blocked by vegetation that may grow in the swale area. This maintenance should be taken into consideration when specifying the placement of such structures.

### 3.3.2 Solution B – Increased Retention or Detention Ponds

“The temporary storage or detention/retention of excess storm water runoff as a means of controlling the quantity and quality of storm water releases is a fundamental principle in storm water management and a necessary element of a growing number of highway storm drainage systems.”<sup>21</sup>

<sup>19</sup> Landphair H, McFalls J, Thompson D, 2000.

<sup>20</sup> Climate Change, Energy, Sustainability and Pavements, 2014.

<sup>21</sup> Urban Drainage Design Manual, Hydraulic Engineering Design Circular No. 22, FHWA-NHI-10-009, Federal Highway Administration

The control of storm water or storm surge anticipated by enhanced precipitation and storm surge scenarios will be essential in Florida due to the inability to naturally move water. In instances where greater holding capacity is required above roadside swales/piping, retention or detention ponds should be considered if the area is available to construct or expand such structures (Figure 10). The structures will provide a level of protection against inundation causing both surface and base damage including both erosion and surface damage.

As with the design of swales and channels, the FHWA provides design guidance for the sizing of pond structures. These structures can be effective in cases where large amounts of water need to be retained prior to the release into the storm water system. The projected 9-inch precipitation events are examples of conditions under which retention/detention ponds can be appropriate.

**Benefits:** Retention and detention ponds serve to hold water and reduce the amount of flow into storm sewers. Where there is area to install such a system, ponds have proven over time to significantly reduce flooding due to overwhelmed systems. Ponds can also serve to enhance the natural environment by providing homes to wildlife and providing resting areas for birds such as ducks and cranes as they traverse longer areas. Overall, the solution of using ponds can be extremely effective if the area required to host such a structure is available.



**Figure 3-11 Example of a detention pond used for stormwater management from roadway runoff.**

The cost-benefit considerations for retention and detention ponds focus primarily on initial construction costs. These structures can be a significant investment in terms of both the cost of construction as well as the land required to support the structure. However, the land utilized may not be usable without the structure as it may lay in a floodplain area that will not support structures. This balancing of considerations should be offset by the significant benefit these ponds provide in terms of holding water that could be inundating adjacent roads and property. Maintenance is required for the structures to ensure proper drainage out of the pond as well as drainage structures leading to the pond.

### 3.3.3 Solution C – Depressed or Raised Medians

A second potential use of medians in protecting vulnerable infrastructure is to either depress the median and use it as an equivalent to a swale on the side of the road for drainage or raise the median and use it as an additional barrier to slowing the movement of the water across the roadway. The depression of the median will provide an intermediate barrier between the two sets of traffic lanes to decrease the potential impact of flooding. The level of depression will depend on a combination of drainage requirements and safety standards. However, the depressed median can serve as an effective protection against floods

moving completely across the roadway. The use of a depressed median may also require the installation of increased drainage structures such as storm sewer pipes if large amounts of water may be expected.

The raising of the median would require enhancing the depth of the base and then placing vegetation on top to provide a natural barrier to the flow of water across the roadway. This enhancement will allow the median to act as a separator between the lanes and reduce the amount of flow or depth of the water inundating the roads and entering the drainage swales. It will not eliminate the flooding, but it can reduce the amount of water entering the drainage system at one time.

**Benefits:** The median in a roadway can serve multiple purposes in addition to its role as a roadway divider for safety purposes. In terms of flooding, medians can serve as a barrier to slow or prevent water as it moves across the roadway. When medians are depressed, the median can serve as a holding area like a small drainage swale. This can enhance the drainage of water away from the road base and increase the rate at which the flood event is transferred from the road. When the median is raised, it serves as a barrier to assist in separating the roadway and reducing the area in which the water is in contact with the road surface. It is essentially acting like a small dam in the center of the road to prevent wider effects of the event. In extended flat areas where there is little topography to naturally prevent flood action, the median can be an effective deterrent to the effects of flooding.

The use of the median as a flood control barrier or drainage component has a long-term benefit of reducing damage to road surfaces as well as to stormwater systems. However, this approach does require annual maintenance considerations. The use of vegetation on the median requires maintenance to ensure that proper growing conditions exist as well as potential annual expenditures to augment existing vegetation. Using a depressed median to assist in drainage has similar maintenance requirements as drainage swales. Ensuring that drains are clear, and that excess vegetation does not block water drainage paths are an essential part of the success of this approach.

### 3.3.4 Green Stormwater Infrastructure

A second approach to addressing drainage threats is to focus on green infrastructure. This is an area that is receiving increased attention by designers and engineers as it provides both a natural approach to stormwater protection and enhances the aesthetic quality of the location where it is developed. Although green solutions are an approach to drainage, these solutions are presented here as a grouping to consider as solutions to the overall threats to stormwater drainage.

NOTE: Green infrastructure can generally be considered wherever more traditional engineered approaches are considered. Green infrastructure can replace or complement more traditional approaches.

**Benefits:** Green infrastructure introduces an opportunity to either combine natural landscape and vegetation with engineered solutions or to implement a natural solution to stormwater management. There are few downsides to this approach. There are primarily benefits both to the natural landscape and to introducing or reintroducing green elements to a built environment. The enhanced ability to filter water with natural plant materials, the ability to reduce flow rates, and the ability to create natural barriers in areas such as parking lots are all benefits provided by green infrastructure. There are additional maintenance costs to green infrastructure, but early implementation studies have demonstrated that life-cycle payback in benefits can outweigh the additional maintenance costs.

The cost-benefit of green infrastructure varies across case histories and locations. According to studies looking across multiple cities and projects, benefits have been an order of magnitude greater than traditional approaches and reductions in stormwater entering the system have been up to 70%<sup>22, 23, 24</sup>. However, a common baseline through previous uses of green infrastructure is that the additional filtering provided by green infrastructure is a significant benefit for the community. Additionally, green infrastructure provides an aesthetic addition to local communities that may not be able to be quantified in traditional cost-benefit calculations. These intangible benefits need to be considered to offset the additional annual costs that may be incurred by some green infrastructure solutions. The overall consideration in terms of implementing this approach is whether the community prefers to incorporate natural materials into stormwater management and is committed to maintaining the areas during the critical first year as they become established.

### Option 1 – Bioswales

Bioswales are an enhancement to traditional drainage swales. Rather than having a narrow drainage swale adjacent to a roadway, a bioswale combines the drainage swale with a natural planting area. By turning the swale into a green location, the bioswale adds several features beyond drainage functions. Specifically, the bioswales slow, infiltrate, and filter stormwater flows (Figure 12).

The use of a bioswale can be effective when the area adjacent to the roadway provides for the placement of a bioswale. Typically, a bioswale can be placed in any location where traditional drainage swales can be located. The type of vegetation used can be adjusted to local conditions.



Typical bioswale as per EPA, "What is Green Infrastructure?"



Typical bioswale with directed drainage from roadway as per Soil Science Society.

**Figure 3-12 Typical bioswale**

<sup>22</sup> Economides, Christopher (2014). "Green Infrastructure: Sustainable Solutions in 11 Cities Across the US," Columbia University Water Center.

<sup>23</sup> US EPA (2013). "Case Studies Analyzing the Economic Benefits of Low Impact Development and Green Infrastructure Programs," EPA 841-R-13-004.

<sup>24</sup> <https://www.epa.gov/green-infrastructure/performance-green-infrastructure>

## Planter Boxes

Planter boxes provide a green stormwater option for areas where sidewalks and development restrict the use of bioswales due to the lack of clearance adjacent to a roadway. In these areas, the insertion of a green element can slow stormwater runoff that is occurring because of impervious surfaces such as sidewalks, allowing rainwater to flow onto a street and create excess stormwater flow (Figure 13). Planter boxes collect and absorb runoff from sidewalks, parking lots, and streets and are ideal for space-limited sites in dense urban areas as a streetscaping element.

An advantage of a planter box option is that it can be designed to fit almost any location. If it has vegetation that is appropriate for the location, proper soil conditions, and was constructed to allow for appropriate water retention, a planter box can be a cost-effective means for stormwater retention.



Typical planter box as per EPA, "What is Green Infrastructure?"



Michigan Avenue bioretention planter box  
Source: Tetra Tech, Inc.

Planter box with directed drainage from roadway as per Southeast Michigan Council of Governments.

**Figure 3-13 Typical planter box**

## Green Streets

An option for green infrastructure as a tool for stormwater management when initially designing a roadway or to redesigning an existing roadway is the insertion of a green street concept. Green streets are a concept where green areas are incorporated into the design of the street or adjoining frontage or sidewalk areas. Rather than limiting the green area to an adjacent area such as in a bioswale, a green street concept incorporates the green elements directly into the streetscape. Like bioswales, the green street elements serve to filter and reduce stormwater. As illustrated in Figure 14, the green streets can be designed in accordance with the local requirements for the street design.

The Florida area provides ample opportunities to include green street concepts because of its limited topography. The Floridian landscape challenges many roadways with adjoining areas to allow for broader use of greenspace, and ample rainfall to ensure that the vegetation can survive the climate. The types of vegetation used can be customized to local conditions.



Typical green street design as per EPA, "What is Green Infrastructure?"



Typical green street with integrated sidewalks as per feature L-A at Home, Los Angeles Times.

## Green Parking

Parking lots are a significant challenge for stormwater management. The large, impervious surfaces create conditions where high intensity precipitation events lead directly to excessive stormwater runoff. With the increasing development of commercial districts with large parking areas, the challenge of parking area runoff continues to elevate in importance. One option to consider from a green infrastructure perspective is the use of green parking concepts. In this approach, the perimeter of the parking lot is bordered with a green area. In cases where a large parking lot exists, these green areas can also be used intermittently within the parking lot (Figure 15).

A green parking concept can include multiple types of specific green infrastructure alternatives. Bioswales, planter boxes, and permeable pavers are only a few of the options that are available to the parking area developers. These options can also be inserted retroactively in existing parking areas. The green parking concept is being used effectively in many climate conditions as it provides an opportunity to combine local vegetation and design options appropriate to local conditions.



Typical green parking lot design as per EPA, "What is Green Infrastructure?"



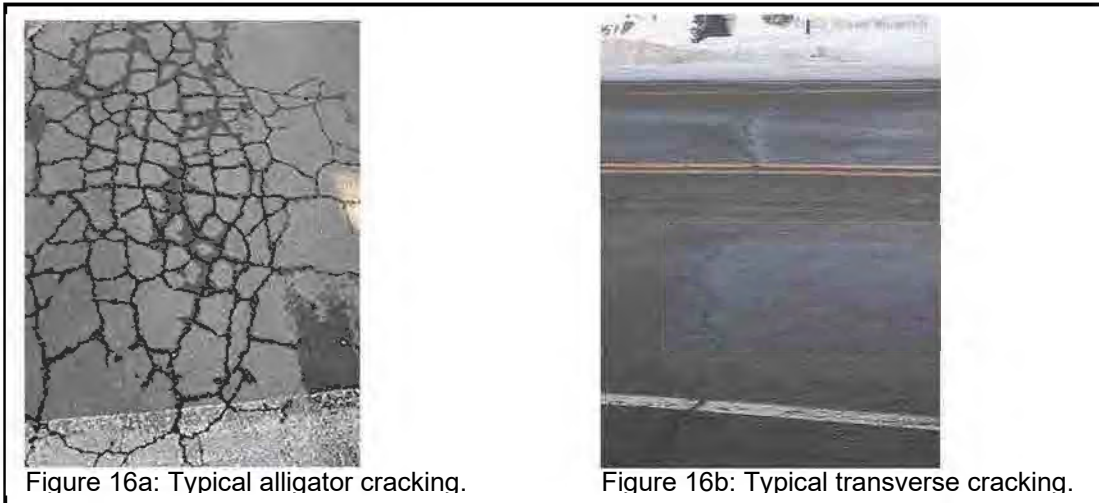
Typical green parking area with integrated planting areas and permeable pavers as per Massachusetts Executive Office of Energy and Environmental Affairs.

**Figure 3-15 Typical green parking lot**



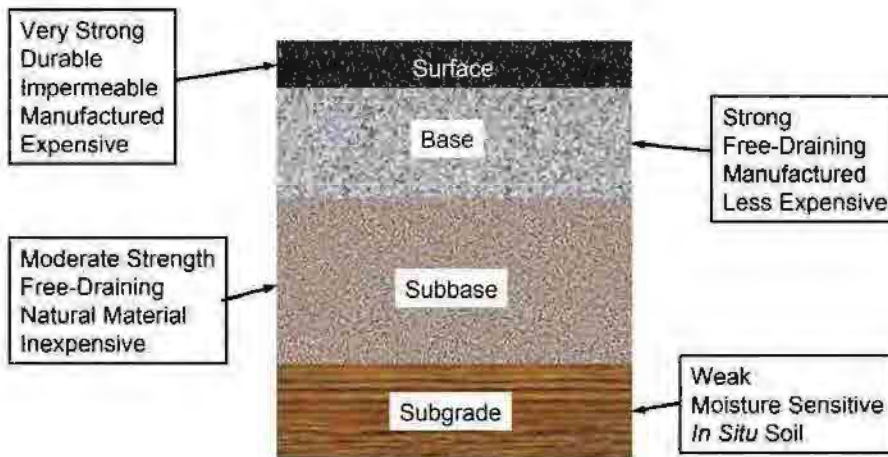
### 3.4 Enhanced Road Surface

Inundation and storm surge can cause multiple damage scenarios for road surfaces. Issues including wash boarding, alligator cracking, and transverse cracking are only a few of the potential impacts that the movement of water over a road surface can create (**Error! Reference source not found.**). In terms of the subbase of a road, erosion from moving water can occur at both the base and subbase levels. Figure 3-17 illustrates a typical road subbase cross-section.<sup>25</sup> Enhancing the surface and/or the subbase will allow a road to enhance resistance against either inundation or water movement.



**Figure 3-16 Typical alligator cracking**

<sup>25</sup> Geotechnical Aspects of Pavements, Publication No. FHWA-NHI-10-009, Federal Highway Administration



**Figure 3-17 Typical design of a road and substructure as per FHWA-NHI-05-037**

### Conditions

**Exposure to Threats** – The existing or proposed roadway is exposed to either inundation or storm surge or both. In areas where minimal other protections are available such as swales, this exposure is of greater threat.

**Roadway Criticality** – Where a roadway is considered critical and raising the profile may be inappropriate, enhancing the roadway structure is appropriate.

**Type of construction project** – For a road maintenance project, enhancing layers below the surface may impact maintenance of traffic considerations.

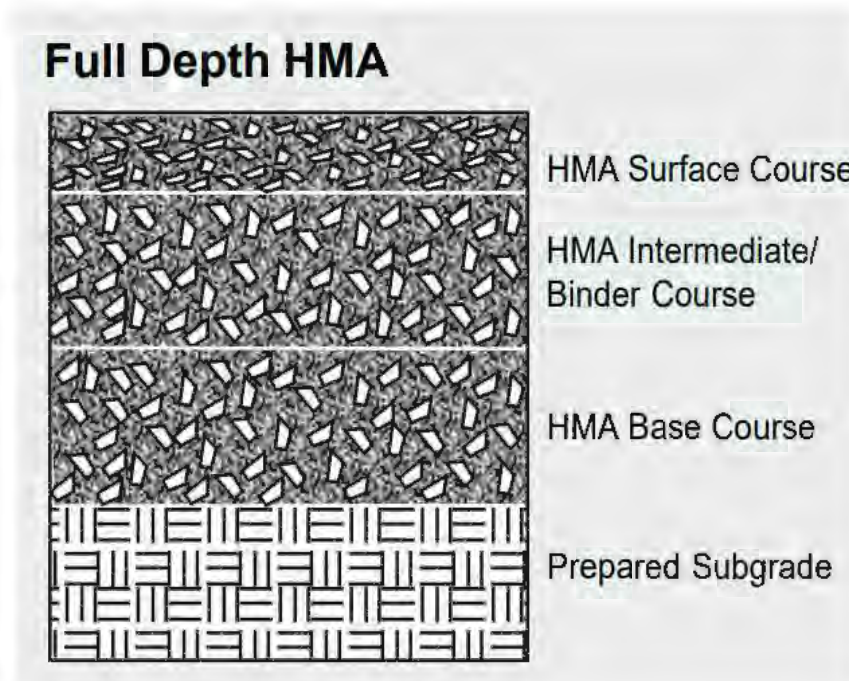
### Threats

**Storm Surge** – Enhanced roadway structures will provide greater resistance to the flow of water across the top of the roadway that may erode the wearing surface. Additionally, enhanced base structures will provide greater drainage capacity which will provide greater resistance to erosion caused by moving water.

**Precipitation Inundation** – Enhanced surface structure and base structures will provide both greater drainage capacity and greater runoff capability to resist the negative effects of standing water.

### 3.4.1 Solution A – Enhanced Road Surface

The road surface of a typical hot mixed asphalt (HMA) asset is comprised of several asphalt courses as shown in Figure 3-18<sup>26</sup>. As illustrated, the surface course of a road is designed to provide the quality of service for cars and trucks while the binder and/or base course provides structural stability. The failure of either of these courses can cause deterioration of the road and ultimately failure at an accelerated rate. As an adaptation for projected inundation, precipitation events, and storm surge, the surface course can be enhanced through additional thickness while the binder course can use enhanced materials and formulation to reduce the effects of the projected threats. A typical solution is to enhance the surface course with an additional 2" of surface course materials, or to enhance the binder course with larger aggregate that enable greater drainage to the base.



**Figure 3-18 Typical design of a road structure as per FHWA HMA Pavement Mix Type Selection Guide**

### 3.4.2 Solution B – Enhanced Sub-Surface

As illustrated in Figure 17 above, the subsurface of a road structure is composed of multiple layers to provide both structural and drainage properties for the road. In cases where inundation is projected, the length of time that the water remains on the surface of the road will reduce the projected lifespan of the road by weakening the base. Additionally, currents from storm surge can erode the base when exposed by cracks in the road surface. As a defense against these potential effects, the thickness of the subbase layers can be enhanced to both provide additional drainage, structural strength, and resistance to flow

<sup>26</sup> HMA Pavement Mix Type Selection Guide, National Asphalt Pavement Association, Federal Highway Administration, 2001.

damages. Recommended enhancements can include thickness enhancements from 4" to 6" depending on engineering requirements.

### 3.4.3 Solution C – Complete Rebuild

In some situations, where substantial improvement is planned for other reasons, a complete rebuild of a roadway should be considered. During this rebuild, options such as enhanced drainage, enhanced road surface, hardened shoulders, and an enhanced or depressed median can be considered as part of the redesign.

**Benefits:** Enhancing a road surface and/or subsurface provides significant benefits in terms of increasing resistance to flood and other water-related damages. The increased base depth in a subsurface provides greater opportunity for drainage as well as a greater foundation for the road surface to support vehicular traffic. In areas where significant commercial traffic exists, this enhanced foundation will allow the road to absorb the greater weight with minimal negative effects. Similarly, the increased thickness of the surface course will allow the road to resist cracking due to water infiltrating through cracks to the base. Although the cost of increasing the thickness of the base or surface layer will be an additional cost when first placed, the reduction in maintenance costs to repair cracks or potholes is a significant advantage for the local population.

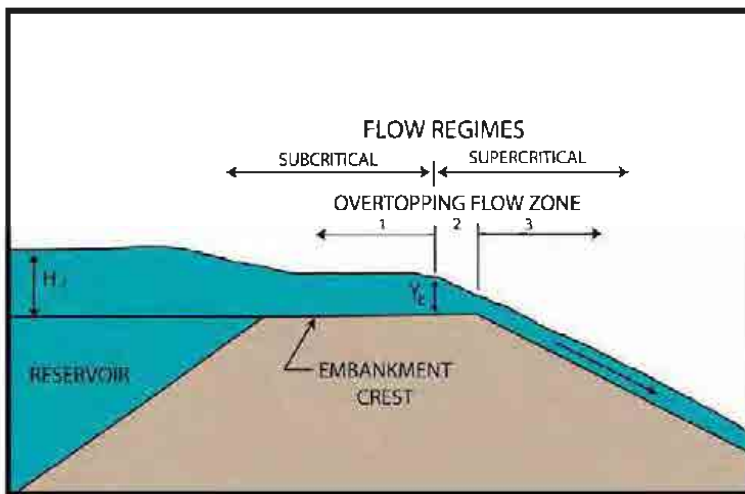
From a cost-benefit perspective, the overall category of enhancing a road surface has a benefit of strengthening the road and extending its design lifespan. The overall benefit will be to reduce maintenance and ensure continuation of service. The cost-benefit of this approach is summarized by the value of a functioning road system to the public. Historically, industry has seen an 18% savings in production costs for every dollar invested in roads<sup>27</sup>. Retaining design lifecycle to ensure continued serviceability is the underlying focus for enhancing road surfaces.

Depending on the combination of solutions selected, the degree of enhancement to design lifespan will vary. For example, if the road surface itself is enhanced, there is increased surface resistance to damage, increasing the likelihood of the road reaching its design lifespan. However, this may not extend the lifespan. In contrast, enhancing the subbase or rebuilding the road with enhanced specifications, while more costly to implement, are more likely to extend the lifespan. These considerations should be included in the overall planning of the road adjustment in consideration of the priority for the project.

<sup>27</sup> Productivity and the Highway Network, Federal Highway Administration, <https://www.fhwa.dot.gov/policy/otps/060320b/>

### 3.5 Enhanced (Hardened) Shoulders and/or Medians

Damages to pavements and roads from surge and inundation can be reduced in specific circumstances<sup>28</sup> by hardening the sides or shoulders of roadways and/or of roadway medians. These protections will differ depending on whether the roadway is exposed directly to wave action from the coast or whether it is inland and requires protection from storm surge. In terms of coastal protection, the direct wave attack on the seaward side of the road requires the ability to dissipate the energy from repeated waves breaking against the side of the road. On the inland side, both the initial flow of water from storm surge and the parallel flow of water to lower spots in the road as a storm surge recedes can cause damage. Additionally, the issue of weir flow is a concern for damages. Under weir flow conditions, the road embankment acts like a broad crested weir to the incoming storm surge. As the surge exceeds the elevation water flows across the road and down the landward side at super critical flows. The super critical flows scour the shoulder material and can create devastating damages. Figure 3-19 illustrates weir flow damage.



**Figure 3-19 Weir flow leading to failure of embankment**

In areas where an extra area of road extends with little or no topographic variation, the road may act as a natural barrier to the extension of inundation events and/or serve as an opportunity to reduce damage to the overall road by limiting inundation to one side of the roadway. Specifically, in the same manner, the shoulder or side of a roadway may be hardened using riprap, concrete, or other materials, the median of a roadway can be hardened to create a barrier or diversionary element in a critical emergency thoroughfare.

#### Conditions

Exposure to Surge – The existing or proposed roadway is exposed to storm surge forces either with coastal exposure or inland exposure.

<sup>28</sup> FHWA, 2008.

Exposure to Runoff – Where a road is elevated over the surrounding area, excessive precipitation events can cause heavy local runoff. In these cases, runoff can cause erosion to occur along the side of the road, endangering shoulders and roadways.

Exposure to Surge – The existing or proposed roadway is exposed to storm surge forces that extend across a roadway for an extended length.

## Threats

Storm Surge – Hardened shoulders will provide greater resistance to surge flows, both initial and weir flows. Hardened medians provide an opportunity to divert surge flows or reduce their impact on a specific roadway.

Precipitation Inundation – Hardened shoulders will provide greater resistance to enhanced runoff that cause erosion to occur – in localized areas along the roadway.

Storm Surge and Inundation – Depressed medians provide an opportunity for an intermediate barrier for water moving across a roadway.

### 3.5.1 Solution A – Enhanced or Armored Shoulders

The armoring of roadway shoulders and sides will vary depending on the specific circumstances. Roads which have coastal exposure should consider the use of armoring that can withstand high velocity flows. This type of armoring includes sheet piling and gabions. The sheet piling should be located on the shoulder where supercritical flows are most likely to occur. Buried gabions can be used to resist overtopping flows that may be lower but parallel to the road during a storm event. A concrete revetment system is another option to reduce erosion from overtopping. In this case, the system should be comprised of heavy blocks, vertical and horizontal interlocking cables and anchors to resist hydraulic forces from overtopping. Capabilities of interlocking blocks have been confirmed in laboratory tests<sup>29</sup>.

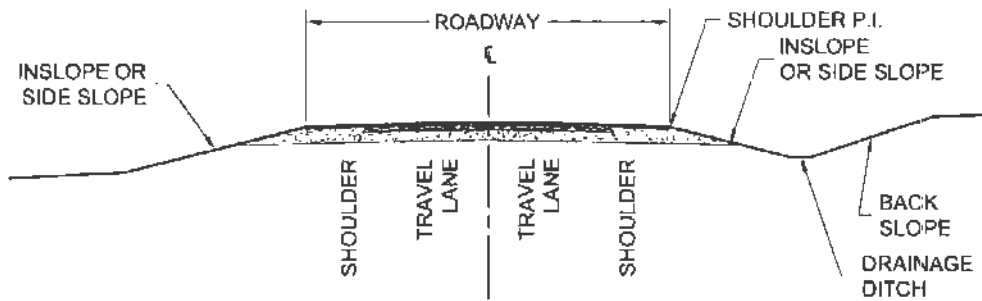
Other options for coastal exposure, as well as inland areas where strong flows may be experienced, is to use natural riprap construction. In this approach, boulders or similar large elements can be used to protect the road against wave or flow actions. The size of the individual elements will be dependent on the type of exposure that the road will experience.

In areas where the road is inland and will experience less intense flows, hardening of shoulders may include changing the surface of the shoulder to concrete paving to enhance protection, using riprap in vulnerable areas to divert flows away from the road surface and base, and using piling in select areas to protect key points such as intersections.

Figure 3-20 illustrates the section of roadway where hardening may be appropriate for both the shoulder and the adjoining slopes<sup>30</sup>. Figure 20 illustrates an actual application of a soil mat to prevent erosion and harden a shoulder against water flow impact.

<sup>29</sup> FHWA, 2008.

<sup>30</sup> “Design Considerations for Embankment Protection During Road Overtopping Events,” Marr et al, University of Minnesota, MN/RC 2017-21, 2017.



After MN/RC 2017-21

**Figure 3-20 Diagram of typical roadway with shoulders and slopes where appropriate hardening materials can be placed to protect the main roadway.**

**Benefits:** The side of a roadway is susceptible to erosion due to water either draining off the road surface or from water pooling or moving alongside the roadway. In either case, moving water is creating a situation where material can be eroded from the road base. If this action can continue without repair, then the erosion will start impacting the road foundation. This ultimately can lead to the road surface beginning to break away and down an embankment. This creates the necessity to protect the sides of the road from moving water as much as possible. The shoulder hardening accomplishes this task with minimum impact to the overall design of the road and surrounding area.

Putting appropriate drainage is a key component of retaining the design life of a road. In cases where wet conditions exist, such as in places where inundation and storm surge are prevalent, inadequate drainage can increase maintenance by 10% - 15% at a minimum. In cases where slopes, heavy traffic, or exposure to coastal impacts exist, this figure can rise dramatically due to inadequate drainage. The final number will depend on local conditions, but a general rule will be that damage numbers will tend to increase as risks continue to rise.



**Figure 3-21 Installation of soil mats on a shoulder to reduce erosion and protect the road base against damage from water flow events.**



### 3.5.2 Solution B – Protected Medians

The armoring of medians may be accomplished using multiple material approaches like armoring the sides of roadways. For example, a concrete revetment system comprised of heavy blocks, vertical and horizontal interlocking cables and anchors to resist hydraulic forces may be used in areas where extreme surge is anticipated and the potential to raise the median exists. Other options include the use of riprap construction where boulders or similar large elements can be used to protect the median against flow actions. The size of the individual elements will be dependent on the type of exposure that the road will experience.

In areas where the median will experience less intense flows, hardening of medians may include concrete structures to divert flows away from the road surface and base, and using piling in select areas to protect key points such as intersections.

**Benefits:** Medians can provide the same opportunities for protection and the same risks of damage as the side of roads. In areas where a median is depressed, opportunities exist for water to erode a road base. In these cases, additional hardening, either through rock or concrete, will reduce the ability of the water to erode roadway material. Like shoulders, hardening a median can have significant benefits with a minimum of negative impacts.

The cost perspective on medians is like that of increasing drainage. Inadequate drainage will increase erosion on the sides of the road as well as at the median. The 10%-15% increase in damage can also be seen at the median. However, the enhanced median will provide additional benefits besides the protection from erosion. The advantages to drainage and stormwater will increase as reflected in the benefits provided by swales. This dual benefit creates an advantageous scenario for medians that exceeds many other options.

## 3.6 Permeable Pavement

Permeable pavements, also referred to as porous pavements, are loadbearing, durable highway surfaces that have an underlying layered structure that temporarily stores water prior to infiltration into soil or drainage to a controlled outlet. The advantage of such a pavement system is that it can help to reduce runoff volume during periods of peak flow and minimize flooding. According to the California Storm Water Quality Association<sup>31</sup>, permeable pavements have the following limitations:

Appropriate only for gentle slopes;

Can become clogged if improperly installed or maintained; and

Appropriate only for highways with low traffic volumes, axle loads, and travel speeds (< 30 mph)

These limitations make permeable pavements appropriate in limited situations. However, these pavements are receiving increased attention for their potential application and may be an appropriate solution in specific scenarios.

<sup>31</sup> [https://www.casqa.org/sites/default/files/BMPHandbooks/BMP\\_NewDevRedev\\_Section\\_4.pdf](https://www.casqa.org/sites/default/files/BMPHandbooks/BMP_NewDevRedev_Section_4.pdf)

## Conditions

**Exposure to Inundation** – The existing or proposed roadway is anticipated to experience inundation due to either severe precipitation events or storm surge conditions.

**Appropriate Usage** – If the inundation scenario is projected in an area which meets the limitations for the use of permeable pavements, then permeable pavements may be an option.

## Threats

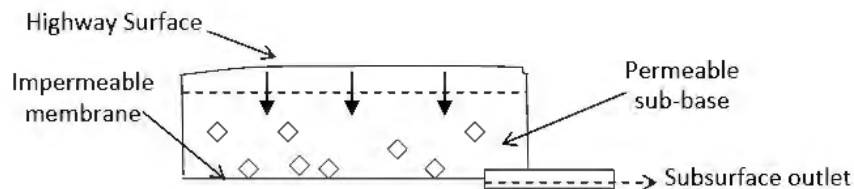
**Storm Surge** – Permeable pavement can reduce the amount of time in which the road experiences inundation from a storm surge event.

**Precipitation Inundation** - Permeable pavement can reduce the amount of time in which the road experiences inundation from a precipitation event.

### 3.6.1 Solution – Permeable Pavements

The design elements associated with the construction and maintenance of porous pavements include initial grading, paving, and excavation of up to four feet of soil. Once excavated, a sight well, stone fill, and filter fabric are installed. Finally, the area is seeded and landscaped appropriately. A schematic representation of a porous pavement design, including the major construction elements, is provided in Figure 3-22.

The benefit of this form of solution is that permeable pavement will reduce the runoff associated with traditional pavement by allowing greater drainage into the soil. The design lifespan remains the same and typical maintenance remains the same according to existing studies<sup>32</sup>. However, as stated previously, the load capacity of permeable pavements is less than traditional pavements thus making it usable more for side roads or parking areas rather than main thoroughfares (Figure 3-23).



**Figure 3-22 Typical cross section of permeable pavement**

<sup>32</sup> Virginia DCR Stormwater Design Specification No 7  
<http://vwrrc.vt.edu/swc/NonPBMPSpecsMarch11/VASWMBMPSpec7PERMEABLEPAVEMENT.html>

**Benefits:** The primary benefit of introducing permeable pavements is this material allows water to drain through the pavement surface rather than redirecting it to the median or the side as in typical impervious pavements. By draining water through the surface, the road surface reduces the amount of time that it suffers damage from inundation. The challenge with this approach is that permeable pavements are not proven to be as strong as traditional pavements and are thus not used in all conditions. However, there is an opportunity to examine areas such as parking lots and other areas that incur standing water, but do not see as heavy a traffic load, to find opportunities to test this approach.

The cost-benefit of permeable pavements encompasses a broad range of elements. The most notable component of this solution is the reduction in runoff into the stormwater system. Studies have shown that runoff can be reduced by 50% in some instances<sup>33, 34</sup>. However, this can be very dependent on the location of the pavements, whether they are being used in a parking lot or on a roadway, and on the density of the soil beneath the pavements.

The cost component of the analysis is also dependent on the location. However, the current state of studies indicates that the overall savings from reduced runoff, reduced particulates in the water, and reduced erosion will offset initial increases in cost.



<http://landscapeonline.com/research/article-a.php?number=13303>

**Figure 3-23 Installation of permeable pavers in a parking area to enhance drainage in a large space.**

<sup>33</sup> <https://sustainabletechnologies.ca/app/uploads/2015/01/PP-Tech-Brief-Final.pdf>

<sup>34</sup> [https://stormwater.pca.state.mn.us/index.php?title=MS4 fact sheet - Pervious Pavements](https://stormwater.pca.state.mn.us/index.php?title=MS4_fact_sheet_-_Pervious_Pavements)

## 4.0 Cost and Benefit Analysis

### 4.1 Cost Estimation of Adaptation Strategies

It is important to compare the cost and benefit when evaluating potential investments for inclusion in the LRTPs. This chapter will discuss the estimated cost of applying adaptation strategies to locations with needs and compare that with the potential economic loss of not investing in adaptation options.

#### 4.1.1 Approach

The process of estimating construction costs for roadway improvements generally begins with an evaluation of the actual costs for similar projects in the region. Costs can be derived from reviewing historical cost databases and bid tabulations from other projects, or by estimating the labor and equipment needed to complete a specific work element. Costs were evaluated as if the adaptation strategies would be done on their own. Most likely, they will be combined with existing capacity or maintenance projects. With the cost estimation approach used here where Design, CEI and contingency are all percentages of the costs, there is very little overlap that can be saved when combining with another project.

For this planning level effort, the Florida Department of Transportation's (FDOT) cost-per-mile models were referenced where applicable. These models are frequently used to develop long-range estimates during planning stages. For scenarios involving relatively short distances, costs were developed using the FDOT historical cost database. This database is updated regularly and includes data for every construction contract executed by FDOT. City and County data were reviewed to ensure consistency.

The cost per mile values provided by FDOT are for construction only. Project costs were increased by 12% of construction costs to allow for Design and 15% to allow for Construction Engineering & Inspection

Where cost-per-mile figures were used, additional costs have been applied to allow for the fact that existing minor bridges, box culverts, traffic signals, and local agency utilities will have to be rebuilt.

Asphalt Pavement is by far the most common pavement type used in the Tampa Bay region. Portland Cement Concrete pavement does have its advantages though, and should be considered for certain applications, especially in flood-prone areas. Because of its initial lower cost, asphalt is generally specified for new construction by public agencies. It requires milling and resurfacing every 14-20 years, and that work does not create huge disruptions by affecting only the top 2-4 inches of the roadway surface. Obviously, when new development warrants capacity improvements, more significant work such as widening is included.

When analyzing life-cycle costs, concrete is not only competitive, but frequently wins. It is a much more durable pavement surface, so it does not have to be maintained (resurfaced) as often as asphalt. Furthermore, in low lying areas, when constructed with proper base and underdrains, concrete has been shown to withstand submersion better than asphalt.

For this analysis, asphalt pavement prices have been used for generation of cost estimates. Unless a roadway gets reconstructed for a significant length, concrete will not be competitive.

Right-of-way (ROW) acquisition is sometimes needed when implementing adaptation strategies, such as creating detention/retention ponds, natural shorelines, and some asset protection strategies. While right-of-way costs can sometimes be as high as the actual construction costs, the generic nature of many of the improvements that might be made across a wide variety of conditions prevent making a reasonable determination of whether additional right-of-way will be required. The common use of retaining walls has reduced the need for right-of-way acquisition on many projects, especially in urban areas. In this analysis, right-of-way acquisition cost was only included for detention/retention ponds and was estimated as 100% of construction cost for planning purposes.

Roadways that are on the fringes of urban areas, that is, those that are more likely to have been constructed or widened within the last 30-40 years, are more likely to have sufficient right-of-way to fit the needed improvements. While the right-of-way might not be as much as the agency would like, a common modification, such as constructing retaining walls to reduce or eliminate gradual side slopes, make it possible to fit the improvements within a smaller area than would have been previously required. This is possible because effective use of retaining walls reduces the impact that would occur if side slopes were to be extended at standard side slope ratios. In many cases, such as on urban arterial roadways and interstate highways in older, established areas, capacity improvements such as lane additions have been constructed without major right-of-way acquisitions using this technique. Modern retaining walls such as Mechanically Stabilized Earth (MSE) walls have become the most common method of constructing walls in tight quarters and are considerably cheaper than building cast-in-place concrete walls. The additional modifications that are required in urban areas certainly cost more than a similar project on the urban fringes, and this is reflected in the cost per mile tables published by FDOT.

Narrow coastal roads, such as Gulf Boulevard in Pinellas County, have been constrained by restaurants and other small businesses that cater to the high tourist traffic. Many of these businesses were constructed over 50 years ago, and as such, were permitted to build their facilities and parking lots close to the road. In these areas, it would not be economically or politically viable to widen or raise the roadway to make it less vulnerable to storm surge or localized flooding. For example, raising Gulf Boulevard by as little as two feet would require the reconstruction of numerous commercial entrances and parking lots.

The larger the project, the smaller the unit prices for individual items of work that make up the finished project. For example, the mobilization activities that would be required to construct a small intersection, such as equipment rental, company overhead, and other administration costs, might be like the mobilization costs of a considerably larger project. Those costs, when applied to a larger project, reduce the overall overhead cost when looked at on a per-mile basis.

The costs for projects discussed within this report have been estimated as if there will be no other construction at those sites. However, because of development in the region, and the ever-increasing need for capacity improvements, it would be beneficial for agencies to incorporate the recommendations outlined herein when considering other improvements in their capital improvement plans. Granted, the costs for a needed roadway improvement would be higher if these recommendations were incorporated, but the long-term costs, such as reduced impacts to traffic, improved drainage, and hardening of the pavement, could be worth the increased initial effort.

Costs are current, based on year 2019, so inflationary adjustments will need to be made to estimate future costs.

**Table 4-1 Per-Mile Cost of Adaptation Strategies**

	Solution	Cost Per Mile	Description
Coastal Protection	Beach Nourishment and Dune Restoration	\$2,000,000	
	Natural Shoreline	\$6,716,700	Design & Permitting & Construction (Deep water/High wake)
	Sea Walls	\$1,919,000	Design & Permitting & Construction (Deep water/High wake)
	Wave Attenuation Devices	\$2,000,000	per mile
	Revetments	\$2,476,320	per mile
Avoidance	Vegetation as Erosion Control	\$15,840	per mile
	Raise Roadway Profile	\$16,127,000	Raise roadway profile 4 feet
	Raise Roadway: six-lane urban	\$16,127,000	Raise profile 4 feet
	Raise Roadway: four-lane urban	\$14,385,000	Raise profile 4 feet
	Raise Roadway: four-lane rural	\$6,943,000	Raise profile 4 feet
	Raise Roadway: two-lane rural	\$4,801,000	Raise profile 2 feet
	Raise Profile at intersections	\$6,199,000	Raise profile 4 feet at major intersections for 500 feet in all directions, assume two per mile
Drainage Enhancement	Detention / Retention Ponds	\$4,198,000	Include ROW cost as 100% of construction cost
	Enhanced Swales / Ditches	\$2,099,000	Widen existing ditch on one side to 10-foot flat bottom with 4:1 side slopes, 6-foot depth
	Enhance Drainage on Roadside	\$2,099,000	Widen existing ditch on one side to 10-foot flat bottom with 4:1 side slopes, 6-foot depth
	Permeable Pavements	\$443,520	Per mile, calculated using \$7/sqf, assumed 12 ft width, \$84 per roadway foot
Asset Protection	Enhance Subbase	\$4,536,000	twice as enhance road surface
	Enhance Road Surface	\$2,268,000	Mill 1", resurface with 3 inches new asphalt, resulting in 2 inches additional pavement
	Harden Shoulders / Protected Medians	\$540,000	Add soil mat on both sides, 15-foot width
	Turf reinforcement matting on shoulders	\$540,000	Add soil mat on both sides, 15-foot width
	Tied block rolled mat on shoulder	\$2,811,000	Add heavy duty tied block soil mat on both sides, 15-foot width
	Vegetation	\$15,840	per mile

Costs for items of work not generally completed on FDOT projects were derived from other projects in the West Florida region or from material suppliers.

Costs to replace an existing road should it be damaged or compromised are similar to the per-mile and per-intersection costs listed above (see Avoidance). As such, those figures are referenced in the document for comparisons.

#### 4.1.2 Cost Estimation of Representative Projects

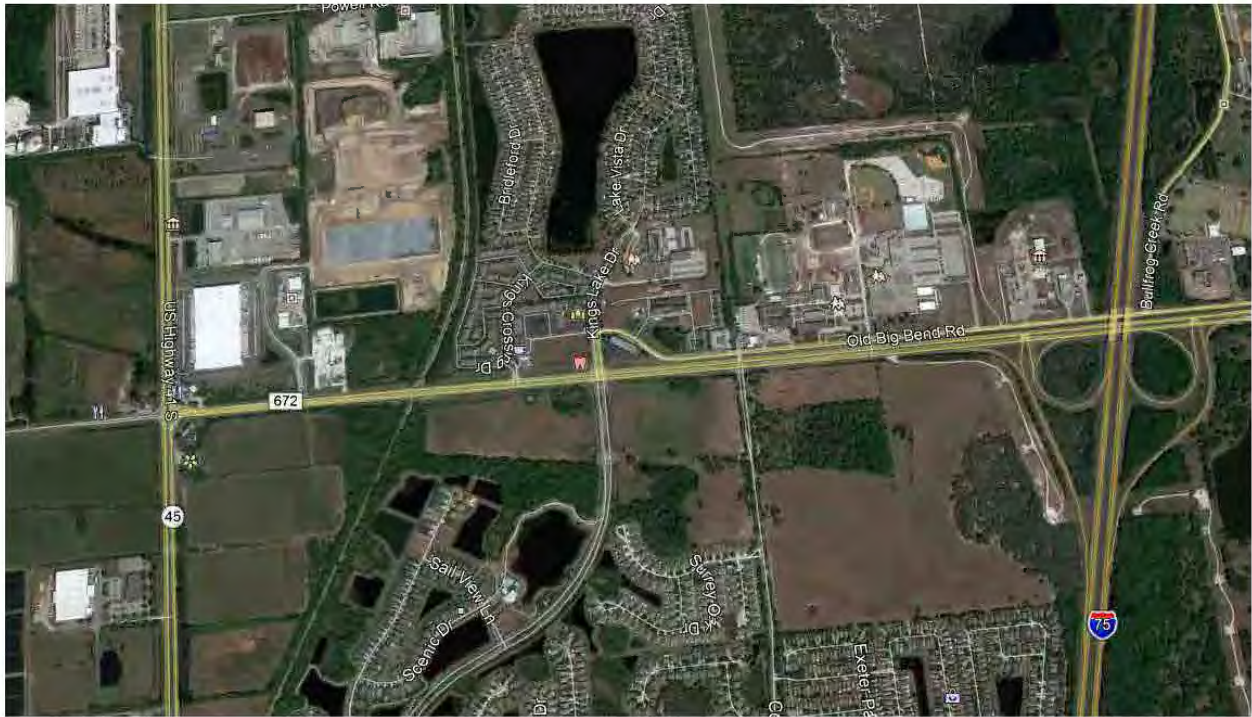
In this section, all six of the demonstration projects are included with the threats and the possible interventions. Each project is provided as an example of where and how an adaptation strategy can be implemented for a specific scenario.

##### Project 1: Big Bend Road

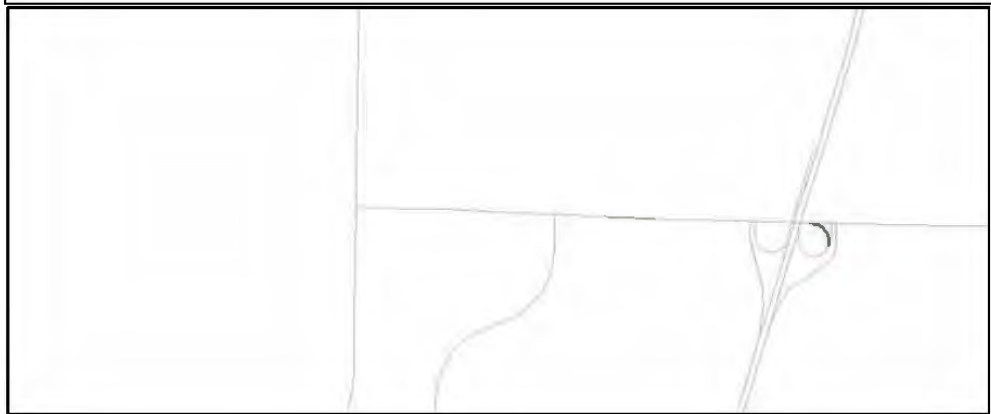
A straight section of road with a 30' increase in elevation from west to east, primarily in the first mile of the western end. There is low to moderate concern from a Category 3 event, limited to the western section of the road. There is opportunity for increasing the drainage on the side of the roads as there is existing drainage in place and open space on both sides of the road.

<b>County:</b>	Hillsborough County
<b>Length:</b>	1.68 Miles
<b>Bridge Over Water:</b>	No
<b>Direct Exposure to Ocean:</b>	No
<b>Number of Lanes:</b>	4
<b>Surface:</b>	Asphalt
<b>Conditions:</b>	Minimal topography, drainage in place, open median, tree line on sides
<b>Concerns:</b>	Surge creates damage to surface and base

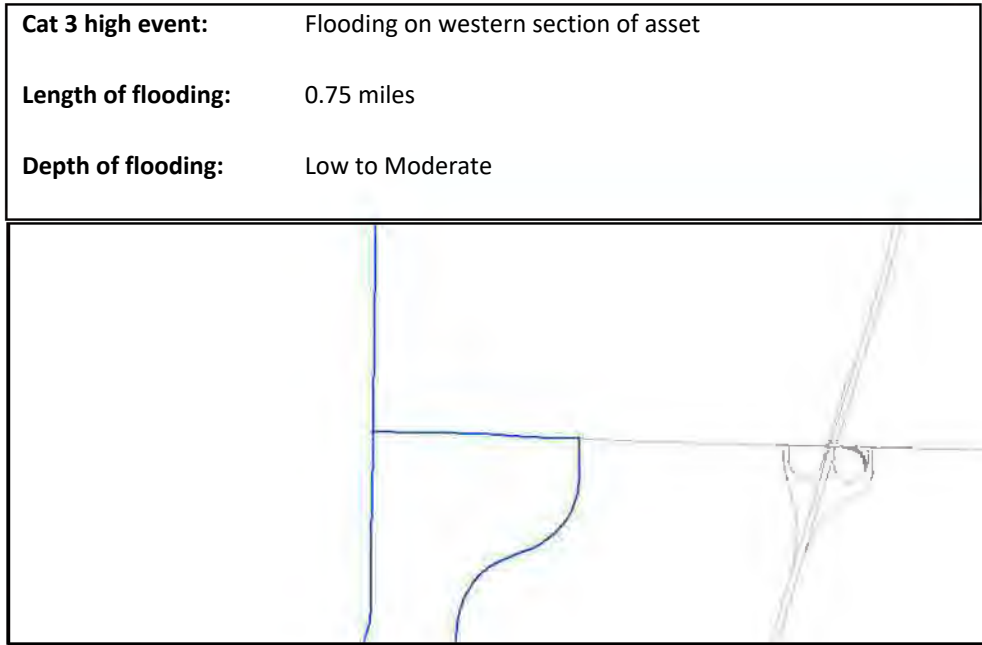
Figure 4-1 Big Bend Road



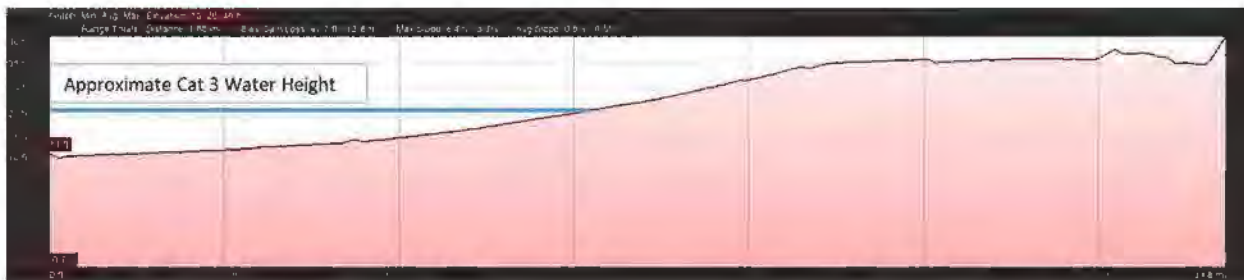
<b>9-inch precip event:</b>	No direct flooding on asset
<b>Length of flooding:</b>	0 miles
<b>Depth of flooding:</b>	NA







**Figure 4-2 Big Bend Road Elevation Profile**



**Adaptation Options:**

**Option A:** Widen existing ditch on one side to a 10-foot flat bottom with 4:1 side slopes, 6-foot depth

Cost: \$1,574,000

**Option B:** Mill 1", resurface with 3 inches new asphalt, resulting in 2 inches additional pavement

Cost: \$1,701,000

**Option C:** Add soil mat on both sides, 25-foot width

Cost: \$405,000

**Funding needed for recommended options (A+B+C):** \$3,680,000

The regional economic impacts of having Big Bend Road out of service for two days in the first year afterward is \$6.7 million, with \$2.9 million and \$3.3 million benefitting Hillsborough and Pinellas Counties, respectively. (See Table 4-7.)

## Project 2: Gandy Boulevard

Two approaches to the Gandy Blvd bridge are highly vulnerable to flooding from both a precipitation event and a Category 3 hurricane event. The project focuses on 8.35 miles of road that covers both approaches to the bridge. Studies are planned to investigate replacing the bridge structure and associated studies and cost estimating could require water flow modeling for pier and structure requirements. For these reasons, incorporating bridge replacement was not feasible. Due to considerations required to raise the profile of the bridge, the preferred option to address the threats is to raise the profile of Gandy Boulevard approaches and not the bridge itself. The costs of raising a replaced bridge are like the costs of replacing the bridge.

<b>County:</b>	Hillsborough and Pinellas
<b>Length:</b>	8.35 Miles. Cost to replace the bridges are not included
<b>Bridge Over Water:</b>	Yes
<b>Direct Exposure to Ocean:</b>	Yes
<b>Number of Lanes:</b>	4
<b>Surface:</b>	Asphalt
<b>Conditions:</b>	Low profile at entrance to bridge. Minimal deviation to inundation potential.
<b>Concerns:</b>	Weakening of base due to flows, extended inundation due to low profile

Figure 4-3 Gandy Boulevard



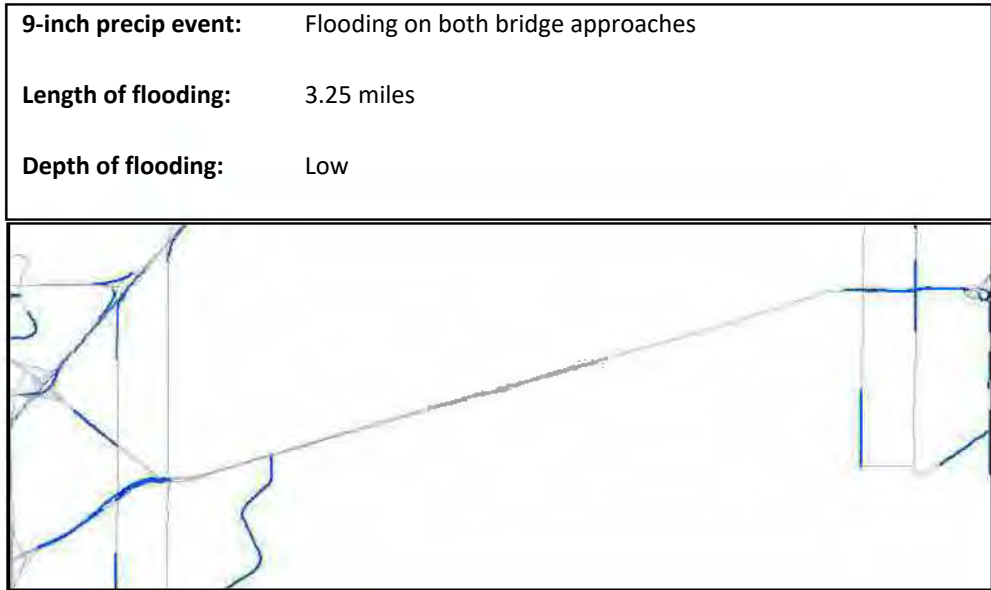


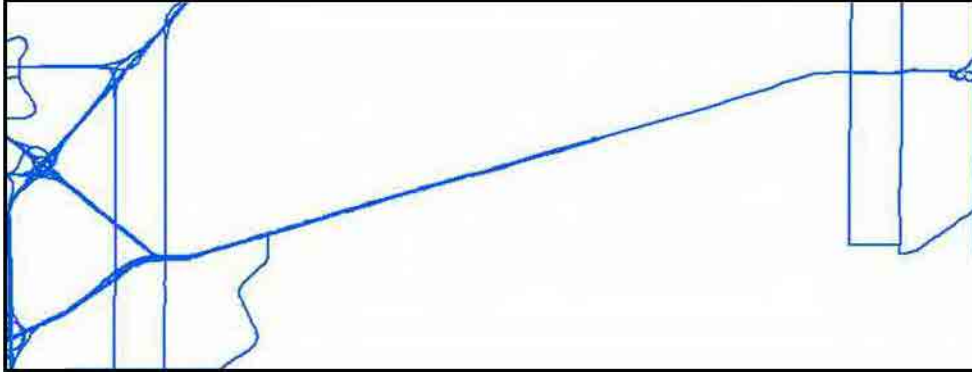
Figure 4-4 Gandy Blvd Elevation Profile – Western Approach



Figure 4-5 Gandy Blvd Elevation Profile – Eastern Approach



<b>Cat 3 high event:</b>	Completely flooded
<b>Length of flooding:</b>	8.35 miles
<b>Depth of flooding:</b>	High



The Cat 3 High sea level rise profile is not provided because the project is completely inundated.

Both approaches have areas with elevations of approximately 5 feet.

**Adaptation Options:**

**Option A:** Raise roadway profile by 4 feet near bridge entrances

Cost: \$46,751,000

If the bridges are reconstructed as two separate projects, assume each project will cost 70% of the total, or \$32,726,000

**Option B:** Widen existing ditch on one side to a 10-foot flat bottom with 4:1 side slopes, 6-foot depth

Cost: \$6,822,000

**Option C:** Add soil mat on both sides, 25-foot width, and consider wave attenuation devices

Cost: \$1,755,000

**Funding needed for recommended options (A, constructing in two phases):** \$74,029,000 (bridge replacement costs are separate)

The regional economic impacts of having Gandy Boulevard out of service for two days in the first year afterward is \$223 million, nearly three times the costs of adjusting the profile for the bridge approaches. Approximately \$106 million, \$110 million, and \$14.1 million in benefits would accrue to Hillsborough, Pinellas and Pasco Counties, respectively. (See Table 4-8.)

### Project 3: Gulf Boulevard

A 4.95-mile stretch of road running along the coast in Pinellas County. The road is primarily flat and adjacent to seashore properties. The road is vulnerable to flooding from a precipitation event along two sections that span 0.67 miles. However, during a Category 3 event, the entire length of road is subject to inundation. The adjacent development creates a minimal number of options for protecting the road by raising the profile or enhancing the shoulders. This is a good opportunity to examine a natural shoreline approach where beach nourishment and dunes could provide needed protection. Both Gulf Boulevard and the Tom Stuart Causeway have similar characteristics and similar suggested adaptation strategies.

<b>County:</b>	Pinellas
<b>Length:</b>	4.95 Miles
<b>Bridge Over Water:</b>	Yes
<b>Direct Exposure to Ocean:</b>	Yes
<b>Number of Lanes:</b>	4
<b>Surface:</b>	Asphalt
<b>Conditions:</b>	Built-up areas on both sides of road, flat topography from beach to shopping areas
<b>Concerns:</b>	Minimal opportunity to enhance road due to topography and development

**Figure 4-6 Gulf Boulevard**



<b>9-inch precip event:</b>	Flooding in 2 sections (east on Tom Stuart causeway and southern section on Gulf Blvd)
<b>Length of flooding:</b>	0.67 miles
<b>Depth of flooding:</b>	Low

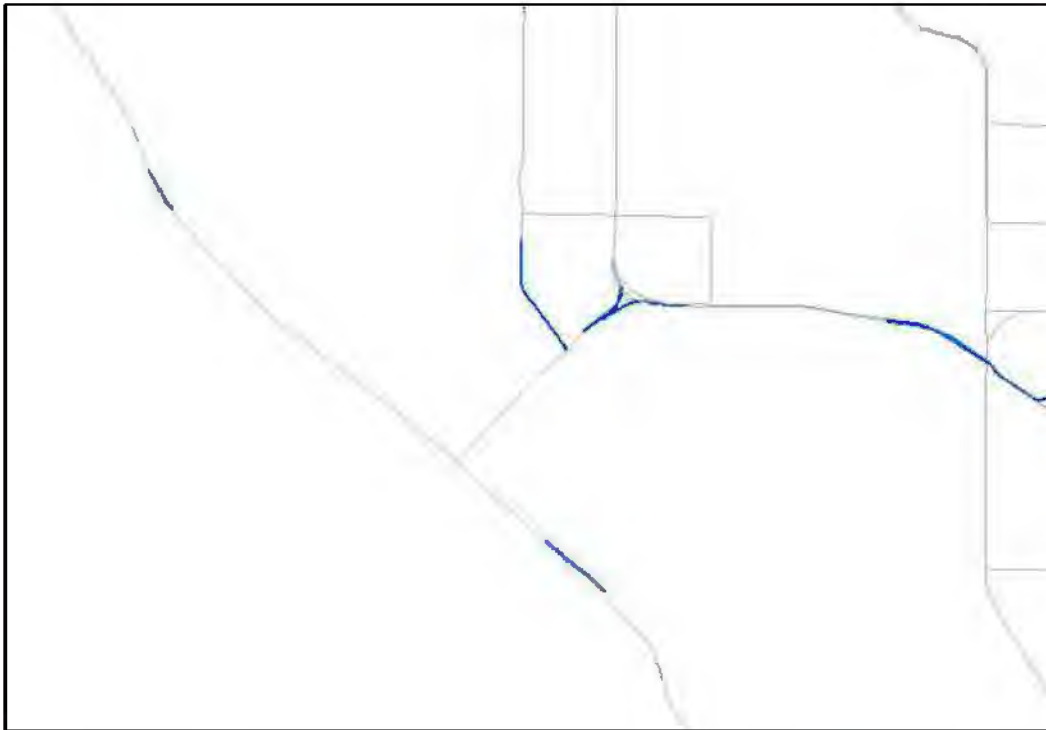
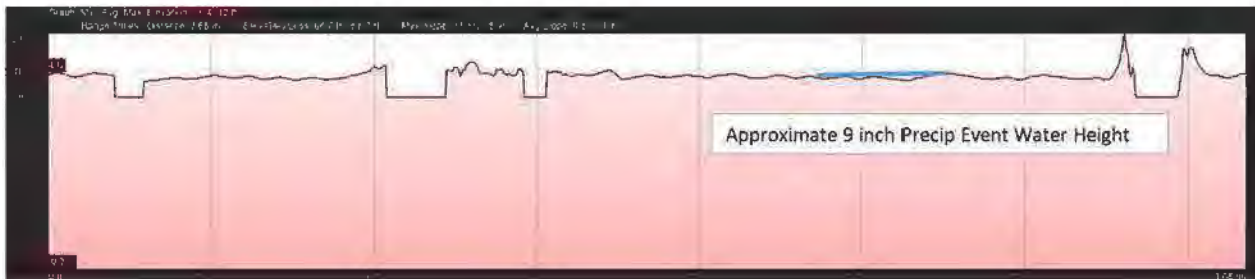
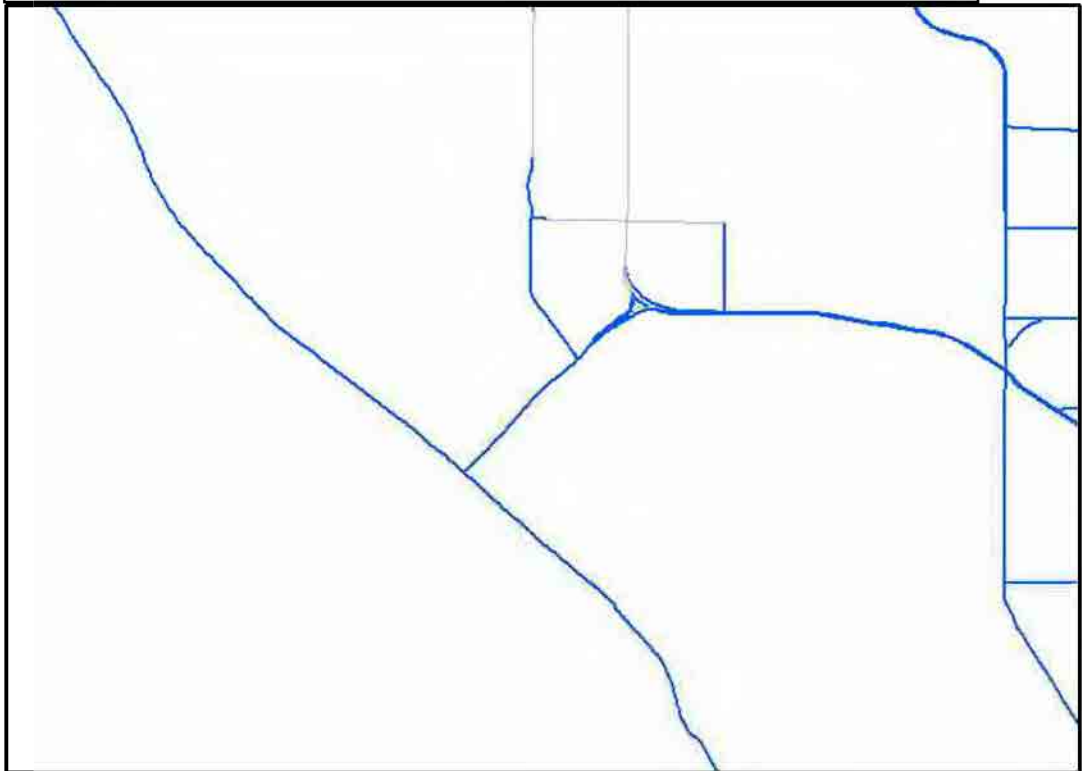


Figure 4-7 Gulf Blvd Elevation Profile



<b>Cat 3 high event:</b>	Completely flooded
<b>Length of flooding:</b>	4.95 miles
<b>Depth of flooding:</b>	High



The Cat 3 High sea level rise profile is not provided because the project is completely inundated.

**Adaptation Options:**

**Option A:** Consider natural shoreline options such as beach enhancement to provide topographic protection

Cost: \$9,900,000

**Option B:** Adding cross drains (assume 36-inch pipes, 5 per mile) and widening swales where there is available space.

Cost: \$2, 483,000

**Option C:** Wave attenuation devices

Cost: \$9,900,000

**Funding needed recommended options (A +B):** \$12,383,000

The regional economic impacts of having Gulf Boulevard out of service for two days in the first year afterward is \$25.5 million, nearly double the costs of recommended adaptation strategies. Approximately \$4 million, \$13 million, and \$9 million in benefits would accrue to Hillsborough, Pinellas and Pasco Counties, respectively. (See Table 4-11.)

### Project 4: Roosevelt Boulevard

A 2.86-mile stretch of road with a slight downward slope from northwest to southeast. The road runs through an area with open space on both sides for much of its length. It also encompasses two primary intersections. The road is highly vulnerable to inundation from a Category 3 event with minimal flooding projected from a precipitation event. The focus on a temporary event such as a hurricane makes the road a good candidate for enhancing the road surface. There are additional opportunities to widen the drainage areas and complement the road surface hardening.

**County:** Pinellas

**Length:** 2.86 Miles

**Bridge Over Water:** No

**Direct Exposure to Ocean:** No

**Number of Lanes:** 4

**Surface:** Asphalt

**Conditions:** Low profile along road, minimal median protection, drainage swales in several places

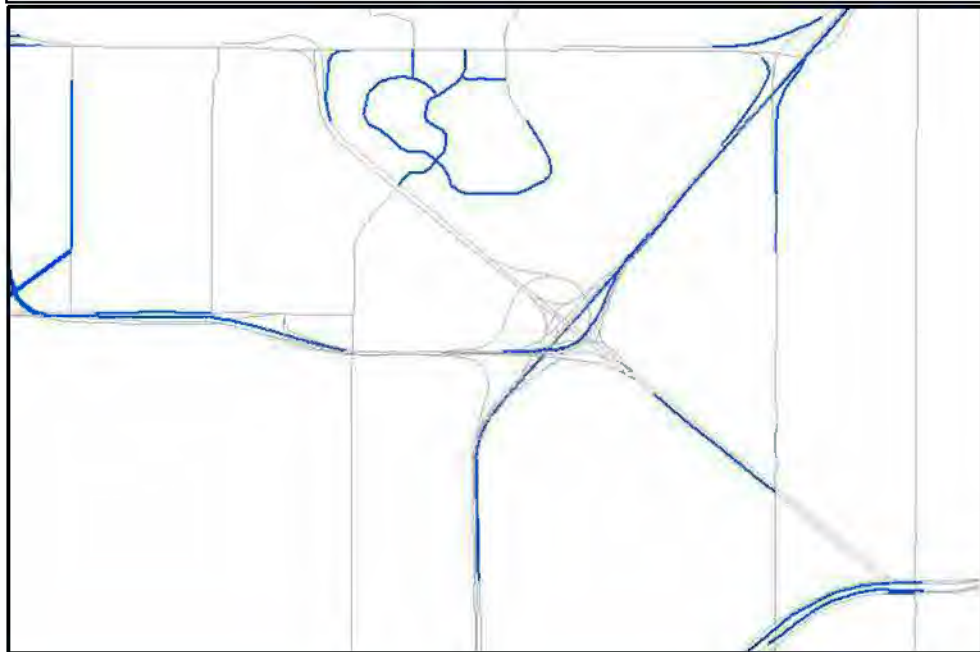
**Concerns:** No protection against surge or inundation damage

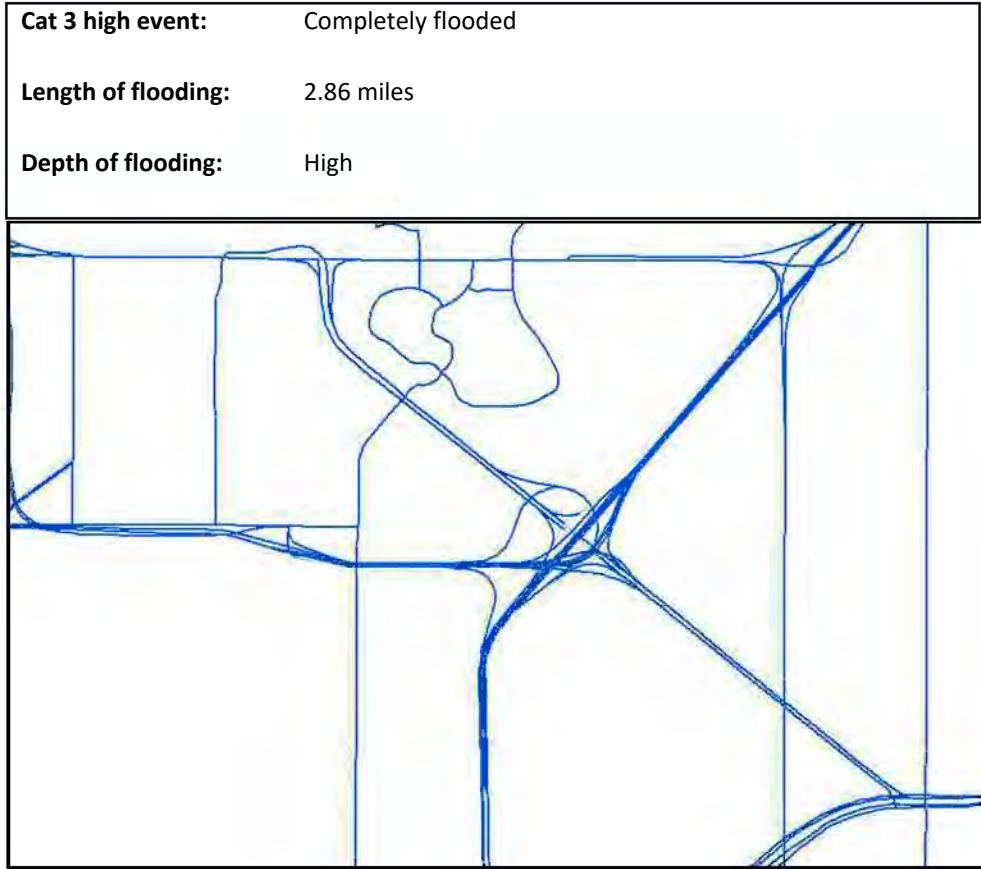


Figure 4-8 Roosevelt Blvd



<b>9-inch precip event:</b>	Flooding in 2 sections (intersection with Ulmerton and between 9th and 275)
<b>Length of flooding:</b>	0.87 miles
<b>Depth of flooding:</b>	Low





**Figure 4-9 Roosevelt Blvd Elevation Profile**



The Cat 3 High sea level rise profile is not provided because the project is completely inundated.

**Adaptation Options:**

**Option A:** Mill 1", resurface with 3 inches new asphalt, resulting in 2 inches additional pavement

Cost: \$6,486,000

**Option B:** Widen existing ditch on one side to 10-foot flat bottom with 4:1 side slopes, 6-foot depth

Cost: \$6,003,000

**Option C:** Raise median and add soil mat to protect from erosion

Cost: \$3,938,000

**Funding needed for recommended options (A+B+C): \$16,427,000**

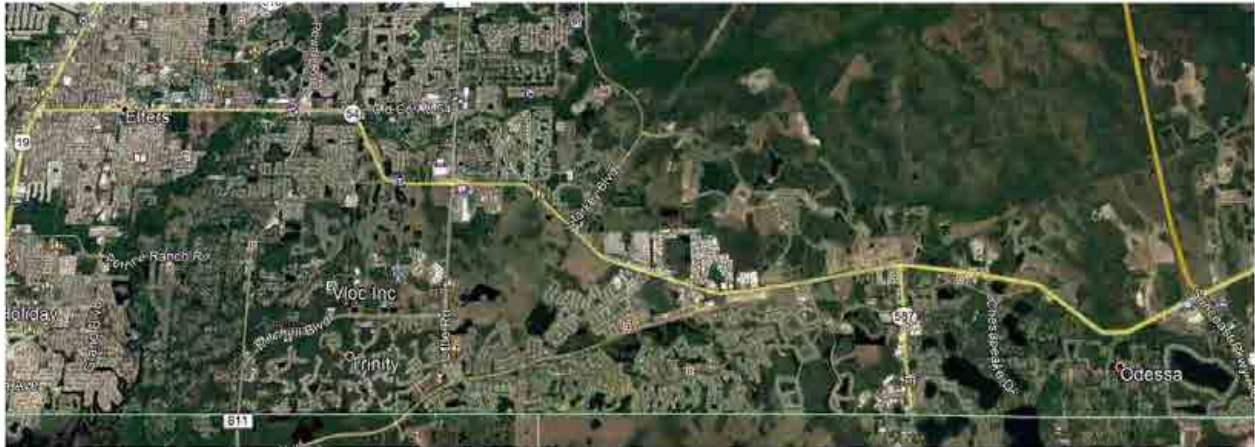
The regional economic impacts of having Roosevelt Boulevard out of service for two days in the first year afterward is \$4.9 million, is approximately one fourth the costs of recommended adaptation strategies. Approximately \$2.7 million, \$1.3 million, and \$0.8 million in benefits would accrue to Hillsborough, Pinellas and Pasco Counties, respectively. (See Table 4-12.) The economic benefits indicate implementing a single strategy might be more cost effective. Stormwater related improvements, such as Option B and Option C, could provide community benefits for many more less intense storms than a Category 3 hurricane or 9-inches of rainfall. The benefits of the adaptation strategies shown here reflect a single event only.

### Project 5: S.R. 54

S.R. 54 is a 12.8-mile stretch of road that goes through several elevation changes, varying from a low of 30' to a high of 65' over its distance. The extended length of the road travels through multiple land uses from highly developed residential areas to open areas. This leads to a variety of potential interventions, each of which may be more viable at different areas. In terms of vulnerability, the road is primarily at risk from a Category 3 event in the more populated area around Seven Springs Boulevard At this intersection, it may be most appropriate to widen existing drainage ditches to reduce the threat from a hurricane event. However, it is also appropriate to think of solutions that may be appropriate going forward such as using vegetation or green infrastructure to reduce the vulnerability of areas that may be developed at a future time.

<b>County:</b>	Pasco
<b>Length:</b>	12.80 Miles
<b>Bridge Over Water:</b>	No
<b>Direct Exposure to Ocean:</b>	No
<b>Number of Lanes:</b>	6
<b>Surface:</b>	Asphalt
<b>Conditions:</b>	West end has commercial areas, but large open areas on both sides. Evidence of road wear on asphalt
<b>Concerns:</b>	Little protection from inundation and surge in any area

Figure 4-10 S.R. 54

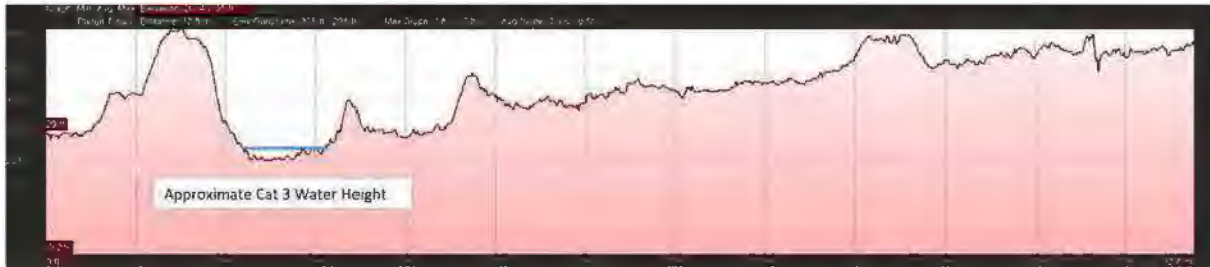


<b>9-inch precip event:</b>	No direct flooding on asset
<b>Length of flooding:</b>	N/A
<b>Depth of flooding:</b>	N/A



<b>Cat 3 high event:</b>	Flooding east and west of intersection at Seven Springs Blvd
<b>Length of flooding:</b>	0.97 miles
<b>Depth of flooding:</b>	Low



**Figure 4-11 S.R. 54 Elevation Profile**

The 9-inch precipitation profile is not provided because the project has no direct flooding in this scenario.

#### **Adaptation Options:**

**Option A:** Mill 1", resurface with 3 inches new asphalt, resulting in 2 inches additional pavement

Cost: \$6,486,000

**Option B:** Widen existing ditch on one side to 10-foot flat bottom with 4:1 side slopes, 6-foot depth

Cost: \$6,003,000

**Option C:** Raise median and add soil mat to protect from erosion

Cost: \$3,938,000

**Funding needed for recommended options (A+B+C):** \$16,427,000

The regional economic impacts of having SR 54 out of service for two days in the first year afterward is \$5.1 million, is approximately one third the costs of recommended adaptation strategies. Approximately \$2.5 million, \$1.8 million, and \$0.8 million in benefits would accrue to Hillsborough, Pinellas and Pasco Counties, respectively. (See Table 4-10.) SR 54 is a large project with different characteristics in the west and east. Refining the project into smaller segments would likely show cost effectiveness in the western areas. The eastern area of SR 54 is in a development phase and has an opportunity to implement transportation infrastructure to address potential perils of storms, so that future retrofits are not needed.

#### **Project 6: US 19**

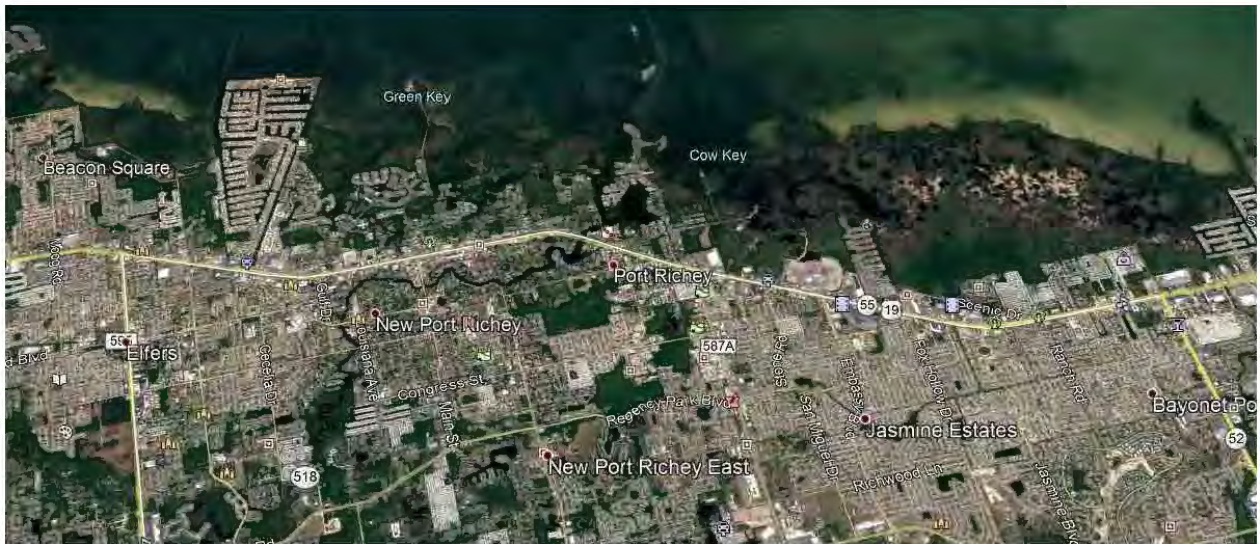
U.S. 19 is a road segment of 8.45 miles that runs along an inland waterway, adjacent to properties that face the waterway. The road has a drop of elevation of about 15' from the north to the south. There is little protection in place to guard against a Category 3 hurricane and a precipitation event. Development along the road limits the options that may be implemented without incurring additional charges for impacting locally developed areas. However, the potential flooding makes raising the profile of the road a viable alternative to protect it as well as adjacent properties.

**County:** Pasco  
**Length:** 8.45 Miles  
**Bridge Over Water:** Yes  
**Direct Exposure to Ocean:** No  
**Number of Lanes:** 6  
**Surface:** Asphalt

**Conditions:** Both sides of road have light commercial development. West side is open to residential areas

**Concerns:** Very little protection in place. Wide streets and corridors provide little protection.

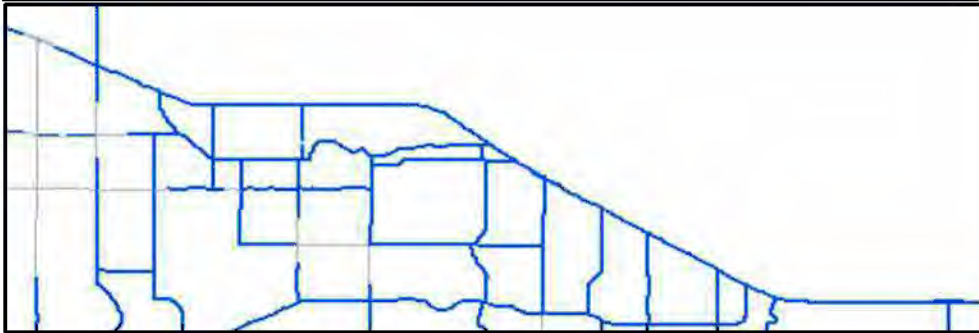
**Figure 4-12 US 19**



<b>9-inch precip event:</b>	Flooding in northern section between Jasmine Blvd and 52
<b>Length of flooding:</b>	0.67 Miles
<b>Depth of flooding:</b>	Low



<b>Cat 3 high event:</b>	Completely Flooded
<b>Length of flooding:</b>	8.45 miles
<b>Depth of flooding:</b>	High



**Figure 4-13 US 19 Elevation Profile**



The Cat 3 High sea level rise profile is not provided because the project is completely inundated.

**Adaptation Options:**

**Option A:** Add soil mat on both sides, 25-foot width and raise profile of roads.

Cost: \$136,273,000

**Option B:** Another option would be to enhance the natural shoreline.

Cost: \$16,900,000

**Option C:** Add soil mat on both sides, 25-foot width

Cost: \$4,563,000

**Option D:** Raise profile 4 feet at major intersections for 500 feet in all directions, assume two per mile.

Cost: \$49,582,000

**Funding needed for recommended options (A):** \$136,273,000

Raising the profile of US 19 is a major project that may be difficult to fund. As such, an alternate project would be to raise the intersections first and later raise the segments. As such combining options (B+C+D) for a cost of \$71,045,000 is an alternate consideration.

The regional economic impacts of having US 19 out of service for two days in the first year afterward is \$25.6 million, is approximately one fifth the costs of recommended adaptation strategies and less than one third the costs of the alternate recommendation. Approximately \$4.2 million, \$12.8 million, and \$8.6 million in benefits would accrue to Hillsborough, Pinellas and Pasco Counties, respectively. (See Table 4-9.) Raising the profile of the road is an expensive recommendation; however it could potentially allow for additional emergency evacuation and response and recovery actions. A higher road may have the benefit of protecting property and people east of US 19, if it were to act as a surge buffer.

#### *4.1.3 Cost Estimation of Other Adaptation Needs*

In addition to the county representative projects, adaptation costs are also estimated for impacted transportation facilities in Category 3 storms with high sea level rise scenario and the 9-inch precipitation scenario. The purpose is to assist partners in future planning until future analyses are performed.

In each scenario, four types of strategies were considered for each impacted road segment based on their criticality and vulnerability: avoidance, drainage enhancement, asset protection, and coastal protection. As shown in, avoidance, or raised roadway profiles, were assigned to locations of high criticality and high vulnerability, as well as locations of new construction that are projected to have high or moderate vulnerability. Three types of drainage enhancement strategies are considered: detention/retention ponds, enhanced swales/ditches, and depressed medians. Asset protection strategies include enhance subbase, harden shoulders/protected medians, enhance road surface, and add vegetation. In addition, coastal protection strategies were also assigned for locations near the coastline or intercoastal shoreline (Table 4-3). The table shows that more strategies, and strategies providing more robust benefits in a variety of situations were assigned to highly critical and highly vulnerable locations. The strategies assigned were scaled down based on criticality and vulnerability. Over time, these facilities also may warrant more aggressive strategies.



**Table 4-2 Applying the Strategies to Other Needs**

Status	Criticality	Vulnerability	Avoidance	Drainage Enhancement	Asset Protection
New Project	Any	High or Moderate	Raise Roadway Profile	Detention / Retention Ponds	Enhance Subbase
Existing Roadway	High	High	Raise Roadway Profile	Detention / Retention Ponds	Enhance Subbase
Existing Roadway	High	Moderate		Detention / Retention Ponds	Enhance Subbase
Existing Roadway	High	Low		Enhanced Swales / Ditches	Harden Shoulders / Protected Medians
Existing Roadway	Moderate	High		Detention / Retention Ponds	Enhance Road Surface
Existing Roadway	Moderate	Moderate		Depressed Medians	Vegetation
Existing Roadway	Moderate	Low		Depressed Medians	Vegetation
Existing Roadway	Low	High		Enhanced Swales / Ditches	Harden Shoulders / Protected Medians
Existing Roadway	Low	Moderate		Depressed Medians	Vegetation
Existing Roadway	Low	Low		Depressed Medians	Vegetation

**Table 4-3 Applying the Strategies to Other Needs – Coastal Protection**

Coastal Protection	Location
Beach Nourishment and Dune Restoration	1/8 mile to coastline
Natural Shoreline	Not Applicable. Requires locational evaluation. Beach Nourishment and Dune Restoration is used as a representative.
Sea Walls	At shoreline
Wave Attenuation Devices	1/8 mile to shoreline
Revetments	Not Applicable. Requires locational evaluation. Beach Nourishment and Dune Restoration is used as a representative.

The per-mile costs of each strategy (Table 4-1) was used to calculate the total cost of adaptation strategies in the three counties. Table 4-4 summarized the adaptation cost of high-resilience priority<sup>35</sup> segments in the three counties; Table 4-5 shows the adaptation cost of moderate and low-resilience priority segments.

It should be noted that this is a simplified desk-based analysis attempting to estimate the adaptation needs for transportation planning purposes. The assignment of strategies has not been verified by field investigation or engineering studies. Further research will be needed for the design and implementation of adaptation strategies.

**Table 4-4 Cost Estimation of Adaptation Needs for High Resilience Priority Segment (\$Million)**

High Resilience Priority Segments					
	Avoidance	Drainage Enhancement	Asset Protection	Coastal Protection	Sum
Hillsborough	\$957	\$427	\$391	\$92	\$1,866
Pinellas	\$1,425	\$660	\$594	\$139	\$2,818

**Table 4-5 Cost Estimation of Adaptation Needs for Moderate – Low Resilience Priority Segment (\$Million)**

Moderate - Low Resilience Priority Segment					
	Avoidance	Drainage Enhancement	Asset Protection	Coastal Protection	Sum
Hillsborough	\$19	\$885	\$262	\$11	\$1,177
Pinellas	\$20	\$530	\$157	\$	\$707

## 4.2 Economic Impact Analysis

This chapter analyzed the key combined impacts of a two-day disruption to six representative projects and two extreme weather events. This was in terms of total loss to Gross Regional Product (GRP) and personal income (or wages) across all three counties along with the associated changes to the efficiency of the regional road network.

Overall, TBRPC found that the economic (GRP) impacts of each scenario range from relatively small losses (-\$5.1 million) for a disruption of traffic on a segment of SR 54, to devastating impacts from the regional impacts of a Category 3 hurricane (-\$1.3 billion). In all cases, TBRPC found economic impacts

<sup>35</sup> High resilience priority facilities are defined as transportation segments with high criticality and high or moderate vulnerability in either the category 3 storm plus high sea level rise scenario, or the 9-inch precipitation event scenario (Section 2.32.32.3).

throughout the three-county study area from each representative project. Due to Pasco County's 'bedroom community' status as a home to many commuters, disrupted transportation facilities in Pasco had unusually large impacts on Pinellas and Hillsborough counties.

Compared to the loss of property and years of reconstruction costs, which have exceeded tens of billions of dollars in recent years with hurricanes Katrina, Irma and Harvey, the costs associated with transportation efficiency impacts are significant if secondary to capital stock (housing and commercial buildings) losses in those hurricanes and may have as long lasting residual impacts as the costs of reconstruction itself.

#### 4.2.1 Approach

Extreme weather events restrict access to the Tampa Bay area regional road network and cause output losses to the Tampa Bay area economy. Wind, debris, heavy rain and flooding may impair or even disable major transportation links, forcing many auto and truck trips to re-route and others to simply not take place at all. The effects of longer or deferred trips, slower travel speeds, and lower overall accessibility influence short-term traffic patterns but may also yield long-term economic impacts.

Along with additional travel for commuters, line-haul costs comprise a substantial portion of overall regional congestion costs. Escalated truck operating costs, especially in bad weather conditions and exacerbating pre-existing congestion, means more money must be spent on warehousing and logistics costs, and extended but relatively less productive work shifts. Consequently, the costs of regionally produced intermediate goods rise (the inputs of tires and engines that make the final good of a truck, for example), increasing final costs to consumers. Those increased costs make local businesses less competitive over time compared to communities with more resilient transportation infrastructure or fewer extreme weather events.

Even when the precipitating event is short-lived, the ripple effects of cost and price adjustments can take years to return to pre-event conditions, depending upon the magnitude of the impact and its geographic reach in adversely impacting transportation efficiency. Accordingly, TBRPC modeled scenario impacts not just in the event year, 2045, but each year through 2050 to account for the post-event impacts.

In this section, TBRPC discusses the methodology for importing output from Tampa Bay Regional Planning Model<sup>36</sup> (TBRPM) results for six representative projects and two extreme weather scenarios into REMI TranSight. We also discuss the implications of the long-term effects of variations in the duration of each scenario.

#### Using REMI TranSight to simulate the economic impacts of extreme weather

TBPRC conducts transportation economic studies using computer simulations with Regional Economic Models Inc. (REMI)'s TranSight, the premier software package for analyzing the economic impacts of transportation investments. TranSight simulations, however, evaluate the impact one project/group of projects have on the economic efficiency of the regional transportation system itself and not on the impact on the loss of access to adjacent land uses.

<sup>36</sup> Appendix A describes the travel demand modeling performed to support the econometric analysis.

For example, while there are no jobs on the bridges spanning Tampa Bay removing any one bridge would substantially impact the overall economic efficiency of the entire transportation system, causing significant economic losses in the model. On the other hand, if a small road supporting lots of jobs, with alternative routes, should become inaccessible due to flooding, its loss would not substantially impair regional average travel speeds and trip lengths because there are alternative routes. Consequently, economic impacts would be limited even though in the “real world” many jobs would be inaccessible. TranSight’s simulations do not consider individual land uses per se.

Instead, those TranSight simulations, or scenarios compare and contrast travel demand outputs such as changes in vehicle miles traveled and vehicle hours traveled for investments such as new roadways or transit corridors. These transportation indicators are associated with various alternative actions or a baseline.

Just as the TBRPM compares before and after conditions of a set of projects against a baseline of expected transportation indicators, TranSight compares the financial impacts of extreme events against a baseline of economic conditions to answer “what-if” questions about the relationship between transportation and the economy.

TranSight tracks the interrelationships between different socioeconomic and industrial sectors of the economy to produce a detailed account on the flow of goods and services impacted by the transportation system’s efficiency. When a project or an event changes the performance of the transportation system, various transportation indicators or model outputs signal to TranSight how a change in system performance might be reflected in the economy.

As an example, let us say that an added lane or additional transit service cuts average travel times by a minute along a transportation corridor. Moreover, that the baseline employment for Hillsborough County in 2018 is 860,000. That change in commuter speed ultimately lowers the cost of labor for businesses, making them more competitive while decreasing commuting costs for commuters and raising real disposable income. If that one-minute decrease in travel time enables adding 1,000 jobs (+1,000 jobs) to the economy, then the total number of jobs is 861,000. On the other hand, a below baseline change of 1,000 jobs (-1,000 jobs) results in 859,000 jobs in the County. Each of the tables in Section 4 (Tables 4.2 through 4.9) report change relative to the baseline (Table 4.1).

## Modeling Transportation Costs within REMI TranSight

REMI TranSight is a module of REMI PI+, using TBRPM outputs for changes in trips, Vehicle Hours of Travel (VHT) and Vehicle Miles of Travel (VMT). Those outputs are then used in three different input variables of the Transportation Cost Matrix within REMI TranSight.

Those variables are:

- Commuter Costs
- Transportation Costs
- Accessibility Costs

### Commuter Costs

The commuter cost matrix reflects changes in commuting time (measured in hours per commuter trip) between and within regions. Commute savings or losses are assumed to accrue entirely to firms. TranSight derives the region-to-region changes in commuter time from the transportation model output of changes in the VHT/trip ratio for each mode.

### Transportation Costs

TranSight quantifies transportation cost savings from the difference between the alternative and baseline scenarios in the ratio of VMT to VHT. This approach captures the offset between shorter travel times and additional miles traveled. In other words, the principal driver of cost savings is the change in average travel velocity on the region's road network, which reduces the effective distance between sellers and their markets.

### Accessibility Costs

Accessibility connects business and consumer interests in terms of intermediate inputs and consumer goods. Expansions of network capacity facilitate greater flow of inputs to production, augmenting the variety of available goods and thereby enhancing regional productivity, particularly for industries with heavy dependence on intermediate inputs and transportation. Moreover, the Accessibility matrix component accounts for residual bias toward local purchases unexplained by the transportation costs component. The mathematical procedure for deriving each of these costs is given in Appendix C-1.

### Baseline Forecasts and Economic Impacts

Both TranSight and conventional travel demand models compare current conditions versus planned future conditions. In simulating economic impacts to the economy, TranSight measures 'shocks' or economic impacts of a transportation project to a baseline forecast. Baseline forecasts are reference points that economic analysts use to judge the direction and magnitude of potential economic impacts. They are not important in themselves other than placing employment change and other impacts, in the context of the overall economy, due to shock such as extreme weather events,

A summary table of the hypothetical results would show total values of the differences between the baseline and the alternative impact. In the following section, TBRPC identifies the baseline used by REMI TranSight for Gross Regional Product and Personal Income.

### Extreme Weather Event Duration and Economic Impacts

Because REMI TranSight is configured with one-year increments as the unit of time, studying phenomena shorter than one-year requires some adjustments to the magnitude of the impact. For example, if a job program were to create 52,000 jobs in one year and we were interested in only one week of equivalent impact, we would analyze the creation of 1,000 jobs as a week's proportionate share of 52 weeks (1 year). While this approach does not formally restrict the model in terms of year-long effects, it does approximate the overall magnitude of a week's impact.

However, one consequence of a short analysis period is that some components of the TranSight analysis that are more realistic over the course of more than a year. For example, economic migration due to a change in regional economic conditions may be less realistic over a shorter period. Therefore, TBRPC urges caution in interpreting the inter-county results in Section 4.

Another consequence of short analysis periods is that the weather is unreliable to fit into a single week and guaranteed to return to full operation at the end of a week. Severe storms may flood roads. But debris, soil subsidence and structural damage may result in disruptions that last for longer time periods. In order to estimate the range of economic impacts from increasing durations, TBRPC modeled the Travel Demand results in TranSight in 2-day, 1-week, 2-week and 1-month intervals. All scenarios were run with the same procedure, by adjusting the week-long default magnitude of the scenario by the change in time in the TranSight model input interface. For example, if the TranSight input were 100 units for a one-week impact, TBRPC entered 200 units for a two-week impact.

As expected, the results for each of the scenarios conformed to a roughly proportionate change to the duration of the event. Gandy Blvd, however, was an exception. Because of a small difference in commuting costs between Pinellas and Hillsborough counties over one-week, preliminary results indicated that a one-month disruption of Gandy Blvd would have negative impacts for Hillsborough County but benefits for Pinellas County. It is because increases to transportation costs in Pinellas would be much lower than in Hillsborough County, making Pinellas more 'competitive.' TBRPC deemed this result unrealistic, given the importance of Gandy to Pinellas County and the artificial adjustment of the two-week and one-month scenarios to a two-day scenario impact.

With that caveat, TBRPC found that adjusting each representative project and two weather events by the duration of the disruption generally yielded results that scale proportionately. Those impacts are shown in graphs at the end of Section **Error! Reference source not found.** for spacing reasons. Tables for longer duration periods are available by request from TBRPC.

#### 4.2.2 Economic Impact of Representative Projects/Scenarios

TBRPC analyzed the economic impacts of transportation system disruptions from six representative projects and two extreme weather scenarios, the 9-inch rain event and the Category 3 hurricane using Remi TranSight (Version 4.0). Using outputs generated from the Tampa Bay Regional Planning Model (TBRPM) for the year 2045, TBRPC modeled the potential impacts of each event disrupting selected transportation links for a week.

Results are reported using the following indicators:

- Gross Regional Product; and
- Personal income (or wages)

Gross Regional Product is defined as the sum of the gross values added of all residents engaged in production (plus any taxes, and minus any subsidies, on products not included in the value of their outputs). The term is the same as Gross Domestic Product, reduced to a regional context. Personal Income is the aggregate of all sources of income to households across wages, supplemental income, rental income, and transfer payments.

While all data in the following tables are reported in 2018 dollars, Table 4-6 provides the baseline Gross Regional Product and Personal Income for each county in 2045, benchmarking the net differences reported in the following tables.

**Table 4-6 Baseline Gross Regional Product and Personal Income, by County**

County/Year	2045	2046	2047	2048	2049	2050
<i>Gross Regional Product (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	\$184,501.9	\$188,346.8	\$192,485.6	\$196,710.2	\$201,032.1	\$205,459.1
Pasco	\$20,737.6	\$21,191.1	\$21,678.1	\$22,174.9	\$22,682.9	\$23,196.4
Pinellas	\$108,660.3	\$111,211.9	\$113,970.1	\$116,800.4	\$119,718.3	\$122,711.6
<b>Total</b>	<b>\$313,899.8</b>	<b>\$320,749.7</b>	<b>\$328,133.7</b>	<b>\$335,685.4</b>	<b>\$343,433.2</b>	<b>\$351,367.2</b>
<i>Gross Personal Income (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	\$130,176.9	\$136,304.5	\$142,752.3	\$149,533.1	\$156,653.6	\$164,163.0
Pasco	\$42,957.2	\$45,253.5	\$47,671.3	\$50,216.3	\$52,897.4	\$55,697.6
Pinellas	\$99,604.3	\$104,284.6	\$109,237.0	\$114,441.2	\$119,947.3	\$125,745.0
<b>Total</b>	<b>\$272,738.4</b>	<b>\$285,842.6</b>	<b>\$299,660.5</b>	<b>\$314,190.6</b>	<b>\$329,498.4</b>	<b>\$345,605.6</b>

Source: TBRPC Remi TranSight, 4.0, 2019.

## Hillsborough Projects

Hillsborough County is the most populous county in the Tampa Bay region and has the largest economy in the region. Hillsborough's projects are Gandy Boulevard and Big Bend. Gandy spans Tampa Bay between Tampa and Pinellas County. Big Bend provides access to TECO's Big Bend power plant in Apollo Beach.

**Table 4-7 Gandy Blvd Economic Impacts – Two Days of Impact**

	2045	2046	2047	2048	2049	2050
<i>Gross Regional Product (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	-\$105.8	-\$24.5	-\$16.3	-\$9.6	-\$5.8	-\$3.9
Pasco	-\$14.1	\$0.5	\$0.9	\$1.0	\$1.0	\$0.8
Pinellas	-\$110.0	-\$30.3	-\$22.1	-\$14.6	-\$10.1	-\$7.5
<b>Total</b>	<b>-\$229.9</b>	<b>-\$54.3</b>	<b>-\$37.6</b>	<b>-\$23.3</b>	<b>-\$15.0</b>	<b>-\$10.6</b>
<i>Personal Income (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	-\$68.6	-\$9.6	-\$2.7	\$2.7	\$5.9	\$7.3
Pasco	-\$5.1	-\$1.3	\$0.7	\$0.9	\$0.7	\$0.2
Pinellas	-\$107.7	-\$16.3	-\$12.7	-\$5.9	-\$1.7	\$0.8
<b>Total</b>	<b>-\$181.5</b>	<b>-\$27.2</b>	<b>-\$14.7</b>	<b>-\$2.3</b>	<b>\$4.9</b>	<b>\$8.3</b>

Source: TBRPC Remi TranSight, 4.0, 2019.

Gandy Blvd is the most economically significant link in this analysis, with a two-day interruption costing the regional economy \$229.9 million dollars throughout 2045, with ripple effects distorting prices and demand for goods and services between the counties through 2050.

Those impacts, however, are uneven across the counties. Since Gandy is a vital link between Hillsborough and Pinellas, its role in supporting both economies mean that its disruption would hurt the competitiveness of firms in both counties vis-à-vis Pasco County businesses, which sees gains in GRP from 2046 onward. Personal income in Pasco, however, declines until 2047. That is because many Pasco residents commute to jobs in either Hillsborough or Pinellas and the cost of their commutes are indirectly raised by rerouting traffic and increased congestion from disrupting Gandy Boulevard, adversely impact their real disposable income.



Compared to Gandy Blvd, Big Bend is a relatively small facility in terms of its regional economic impact. Even though the magnitude of the impact disconnecting Big Bend is enough to raise costs for businesses and commuters, its impact on the regional transportation network does not shift relative costs among the counties to convey an advantage to one county over the others.

**Table 4-8 Big Bend Economic Impacts – Two Days of Impact**

	2045	2046	2047	2048	2049	2050
<i>Gross Regional Product (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	-\$2.9	-\$0.3	-\$0.3	-\$0.2	-\$0.2	-\$0.1
Pasco	-\$0.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Pinellas	-\$3.3	-\$0.2	-\$0.2	-\$0.1	-\$0.1	-\$0.1
<b>Total</b>	<b>-\$6.7</b>	<b>-\$0.6</b>	<b>-\$0.5</b>	<b>-\$0.4</b>	<b>-\$0.3</b>	<b>-\$0.2</b>
<i>Personal Income (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	-\$2.2	-\$0.5	-\$0.4	-\$0.4	-\$0.3	-\$0.3
Pasco	-\$0.7	-\$0.1	-\$0.1	-\$0.1	-\$0.1	-\$0.1
Pinellas	-\$2.4	-\$0.4	-\$0.3	-\$0.2	-\$0.2	-\$0.2
<b>Total</b>	<b>-\$5.4</b>	<b>-\$0.9</b>	<b>-\$0.8</b>	<b>-\$0.7</b>	<b>-\$0.6</b>	<b>-\$0.5</b>

Source: TBRPC Remi TranSight, 4.0, 2019.

## Pasco Projects

Pasco County is the smallest of the three counties in terms of population and employment, with fewer jobs per resident than Hillsborough or Pinellas. Pasco fits into the regional economy as a bedroom community with more residents traveling daily to work in either larger county, compared to commuter in-flows. Two projects were selected in Pasco County for analysis, US 19 and SR 54.

**Table 4-9 US 19 Economic Impacts – Two Days of Impact**

	2045	2046	2047	2048	2049	2050
<i>Gross Regional Product (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	-\$4.2	-\$0.5	\$0.0	\$0.1	\$0.2	\$0.2
Pasco	-\$8.6	-\$0.5	-\$0.3	-\$0.1	-\$0.1	-\$0.1
Pinellas	-\$12.8	-\$6.1	-\$4.7	-\$3.4	-\$2.5	-\$2.0
<b>Total</b>	<b>-\$25.6</b>	<b>-\$7.1</b>	<b>-\$5.0</b>	<b>-\$3.4</b>	<b>-\$2.4</b>	<b>-\$1.8</b>
<i>Personal Income (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	\$2.3	-\$0.7	\$0.6	\$0.9	\$1.1	\$1.2
Pasco	-\$6.3	-\$0.4	-\$0.7	-\$0.8	-\$1.0	-\$1.2
Pinellas	-\$14.8	-\$2.2	-\$1.9	-\$0.8	-\$0.2	\$0.2
<b>Total</b>	<b>-\$18.8</b>	<b>-\$3.3</b>	<b>-\$2.0</b>	<b>-\$0.8</b>	<b>-\$0.1</b>	<b>\$0.2</b>

Source: TBRPC Remi TranSight, 4.0, 2019.

Unlike projects in the other two counties, Pasco GRP losses are only a third of the total regional GRP loss in 2045 and less than half of the regional personal income loss. This is because US 19 is a regionally important facility and disruptions in Pasco County have impacts on the much larger economies of Pinellas and Hillsborough.

Moreover, as shown Table 5.3, even though there is a loss of GRP in Hillsborough County as the result of this disruption, Hillsborough sees a small gain in personal income. Keeping in mind that REMI TranSight does not distinguish between two days duration events or one year duration events, only the magnitude of the impact in one year, Hillsborough would become a relatively more attractive place to live because the transportation, accessibility, and commuting cost increases are not as high as in other counties (even though there are still cost increases that would be sustained over time).

As shown in Appendix C, Hillsborough residence-adjusted employment has increased, meaning that there is an increase in people living within Hillsborough and working outside the county. Because they are

living in Hillsborough, personal income increases within the county. Even though there is a net decrease in population and labor force, there is still a net increase in residence adjusted employment. For example, if ten people move out of a region and 5 people move in and work in a different region, there is still a net decrease of five people. But there would be a residence adjusted increase of five people.

**Table 4-10 SR 54 Economic Impacts – Two Days of Impact**

	2045	2046	2047	2048	2049	2050
<i>Gross Regional Product (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	-\$2.5	-\$0.3	-\$0.2	-\$0.1	\$0.0	\$0.0
Pasco	-\$1.8	-\$0.5	-\$0.4	-\$0.3	-\$0.2	-\$0.2
Pinellas	-\$0.8	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1
<b>Total</b>	<b>-\$5.1</b>	<b>-\$0.7</b>	<b>-\$0.4</b>	<b>-\$0.2</b>	<b>-\$0.1</b>	<b>-\$0.1</b>
<i>Personal Income (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	-\$0.6	-\$0.1	\$0.2	\$0.3	\$0.3	\$0.3
Pasco	-\$3.7	-\$0.2	-\$0.5	-\$0.5	-\$0.6	-\$0.6
Pinellas	\$0.4	\$0.0	\$0.1	\$0.2	\$0.2	\$0.2
<b>Total</b>	<b>-\$3.9</b>	<b>-\$0.4</b>	<b>-\$0.2</b>	<b>-\$0.1</b>	<b>-\$0.1</b>	<b>-\$0.1</b>

Source: TBRPC Remi TranSight, 4.0, 2019.

As with the US 19 project, Pasco GRP losses are only a third of the total GRP loss in 2045 but incurs almost all the personal income loss. This finding suggests that commuter traffic flows from Pasco to the other counties while relatively few workers from other counties use SR 54 to access jobs in Pasco.

Moreover, as shown in **Error! Reference source not found.**, though there is a loss of GRP in Pinellas County as a result of this disruption, Pinellas sees a small gain in personal income. Pinellas resident employees who commute to jobs outside of Pinellas pay relatively less for transportation, raising their real personal income. Over longer disruption durations, Pinellas would become a relatively more attractive place to live because the transportation, accessibility, and commuting cost increases are not as high as in other counties (even though there are still cost increases).

## Pinellas Projects

Pinellas has the second highest population in the Tampa Bay Area and the second highest number of jobs. The two pilot projects are Gulf Boulevard and Roosevelt Boulevard.

**Table 4-11 Gulf Blvd Economic Impacts – Two Days of Impact**

	2045	2046	2047	2048	2049	2050
<i>Gross Regional Product (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	-\$4.2	-\$0.5	\$0.0	\$0.2	\$0.2	\$0.2
Pasco	-\$8.6	-\$0.5	-\$0.3	-\$0.1	-\$0.1	-\$0.1
Pinellas	-\$12.7	-\$6.1	-\$4.7	-\$3.4	-\$2.5	-\$1.9
<b>Total</b>	<b>-\$25.5</b>	<b>-\$7.0</b>	<b>-\$5.0</b>	<b>-\$3.4</b>	<b>-\$2.4</b>	<b>-\$1.8</b>
<i>Personal Income (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	\$2.3	-\$0.7	\$0.6	\$0.9	\$1.1	\$1.2
Pasco	-\$6.3	-\$0.4	-\$0.7	-\$0.9	-\$1.0	-\$1.2
Pinellas	-\$14.6	-\$2.2	-\$1.8	-\$0.8	-\$0.2	\$0.2
<b>Total</b>	<b>-\$18.7</b>	<b>-\$3.3</b>	<b>-\$1.9</b>	<b>-\$0.8</b>	<b>-\$0.1</b>	<b>\$0.2</b>

Source: TBRPC Remi TranSight, 4.0, 2019.

Gulf Boulevard impacts raise the cost of doing business in Pinellas and Pasco counties along with the relative cost of labor for their resident workers. As such, Hillsborough resident employees accrue a comparative advantage over businesses and labor in the other two counties, seeing gains in personal income through 2050.

**Table 4-12 Roosevelt Blvd Economic Impacts – Two Days of Impact**

	2045	2046	2047	2048	2049	2050
<i>Gross Regional Product (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	-\$2.7	-\$0.3	-\$0.2	-\$0.1	\$0.0	\$0.0
Pasco	-\$1.3	-\$0.1	\$0.0	\$0.0	\$0.0	\$0.0
Pinellas	-\$0.8	-\$0.2	-\$0.1	-\$0.1	-\$0.1	\$0.0
<b>Total</b>	<b>-\$4.9</b>	<b>-\$0.5</b>	<b>-\$0.3</b>	<b>-\$0.2</b>	<b>-\$0.1</b>	<b>-\$0.1</b>
<i>Personal Income (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	-\$1.9	-\$0.3	-\$0.2	-\$0.1	\$0.0	\$0.0
Pasco	-\$1.2	\$0.0	-\$0.1	-\$0.1	-\$0.1	-\$0.2
Pinellas	-\$0.9	-\$0.2	-\$0.1	\$0.0	\$0.0	\$0.0
<b>Total</b>	<b>-\$3.9</b>	<b>-\$0.6</b>	<b>-\$0.4</b>	<b>-\$0.3</b>	<b>-\$0.2</b>	<b>-\$0.1</b>

Source: TBRPC Remi TranSight, 4.0, 2019.

Like Big Bend in Hillsborough County, Roosevelt's overall disruption impacts are relatively small. But as a key link to I-275, disruption of this segment impacts Hillsborough County's economy more than Pinellas or Pasco.

### 9-Inch Rain Event and Category 3 Hurricane

The last two scenarios affect all three counties. A 9-inch rain event primarily impacts Hillsborough County and the principal impacts are related to flooding. A Category 3 hurricane primarily impacts Pinellas County, with wind obstructing roads with debris and storm surge flooding low-lying areas. Both scenarios have devastating impacts on the Tampa Bay Area, as shown in the following two tables.

**Table 4-13 9 Inch Storm Event Economic Impacts – Two Days of Impact**

	2045	2046	2047	2048	2049	2050
<i>Gross Regional Product (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	-\$448.2	-\$72.8	-\$47.0	-\$26.2	-\$14.4	-\$8.4
Pasco	-\$26.4	-\$5.0	-\$2.7	-\$1.1	-\$0.5	-\$0.3
Pinellas	-\$302.1	-\$78.9	-\$57.3	-\$38.1	-\$26.4	-\$19.5
<b>Total</b>	<b>-\$776.6</b>	<b>-\$156.7</b>	<b>-\$107.0</b>	<b>-\$65.4</b>	<b>-\$41.3</b>	<b>-\$28.2</b>
<i>Personal Income (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	-\$296.5	-\$47.4	-\$24.4	-\$5.1	\$6.8	\$13.2
Pasco	-\$56.2	-\$8.2	-\$5.7	-\$4.5	-\$4.7	-\$5.8
Pinellas	-\$277.1	-\$48.6	-\$35.1	-\$17.4	-\$6.1	\$0.7
<b>Total</b>	<b>-\$629.8</b>	<b>-\$104.2</b>	<b>-\$65.2</b>	<b>-\$27.0</b>	<b>-\$4.0</b>	<b>\$8.2</b>

Source: TBRPC Remi TranSight, 4.0, 2019.

**Table 4-14 Category 3 Storm Economic Impacts – Two Days of Impact**

	2045	2046	2047	2048	2049	2050
<i>Gross Regional Product (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	-\$254.4	-\$54.2	-\$28.7	-\$11.6	-\$2.6	\$0.9
Pasco	-\$43.8	-\$11.3	-\$6.9	-\$3.9	-\$2.5	-\$2.1
Pinellas	-\$1,019.6	-\$234.7	-\$174.0	-\$118.9	-\$84.6	-\$63.6
<b>Total</b>	<b>-\$1,317.8</b>	<b>-\$300.2</b>	<b>-\$209.7</b>	<b>-\$134.5</b>	<b>-\$89.8</b>	<b>-\$64.8</b>
<i>Personal Income (Millions of Fixed 2018 Dollars)</i>						
Hillsborough	-\$55.8	-\$32.3	\$15.9	\$32.8	\$43.1	\$46.9
Pasco	-\$89.5	-\$16.9	-\$12.4	-\$10.5	-\$10.8	-\$12.6
Pinellas	-\$950.4	-\$171.5	-\$151.1	-\$100.8	-\$67.6	-\$45.7
<b>Total</b>	<b>-\$1,095.7</b>	<b>-\$220.6</b>	<b>-\$147.6</b>	<b>-\$78.5</b>	<b>-\$35.3</b>	<b>-\$11.4</b>

Source: TBRPC Remi TranSight, 4.0, 2019.

### Event Duration and Economic Impacts

Extreme weather events vary in their duration, often imposing costs on the economy long after the event itself has passed due to roads damaged by soil subsidence, inoperable streetlights and obstructed driving lanes. This section depicts the economic effects of variations in event duration for each event in the previous sections across a 2-day, 1-week (the duration used in the preceding sections), 2-week and 1-month period for regional GRP impact totals. As can be seen, the compromise of these facilities can result in economic impacts that may not be fully recovered in five years.

Figure 4-14 US 19 Gross Regional Product Impacts by Event Duration

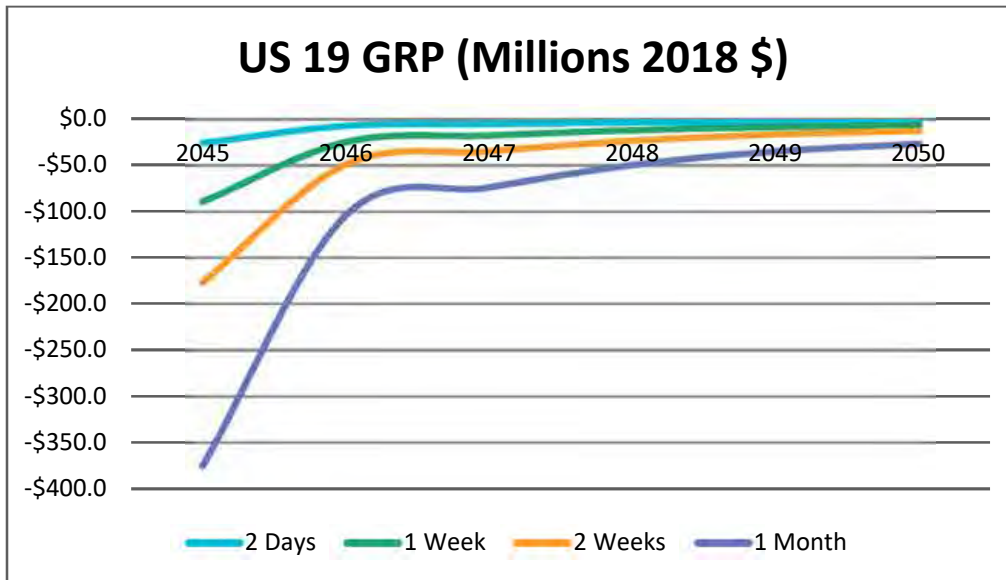


Figure 4-15 SR 54 Gross Regional Product Impacts by Event Duration

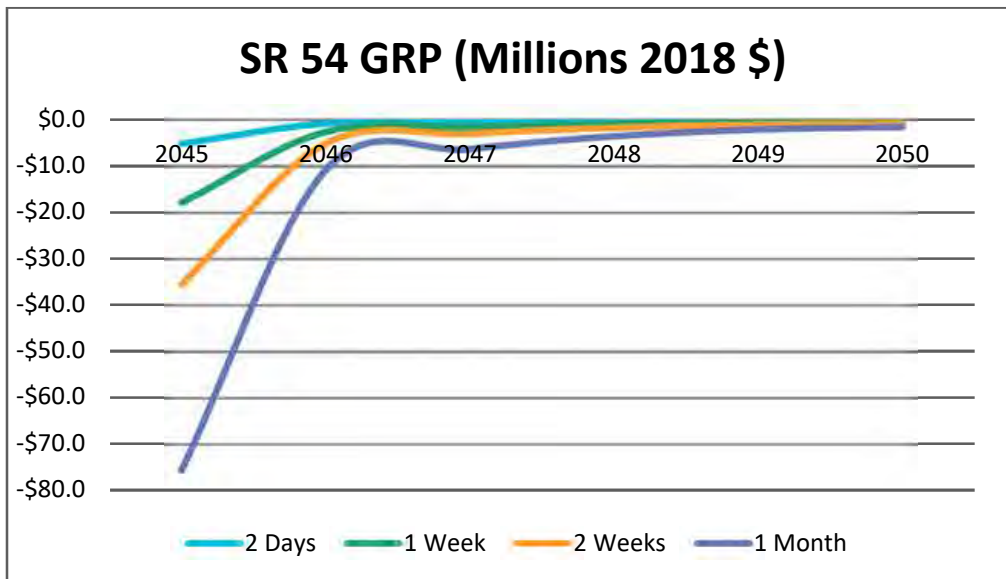




Figure 4-16 Gulf Blvd Gross Regional Product Impacts by Event Duration

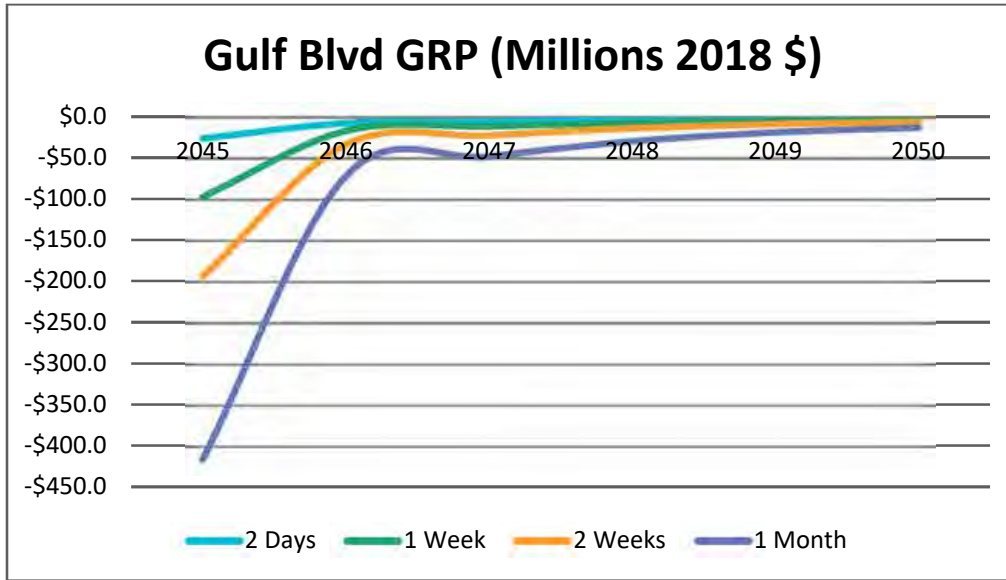
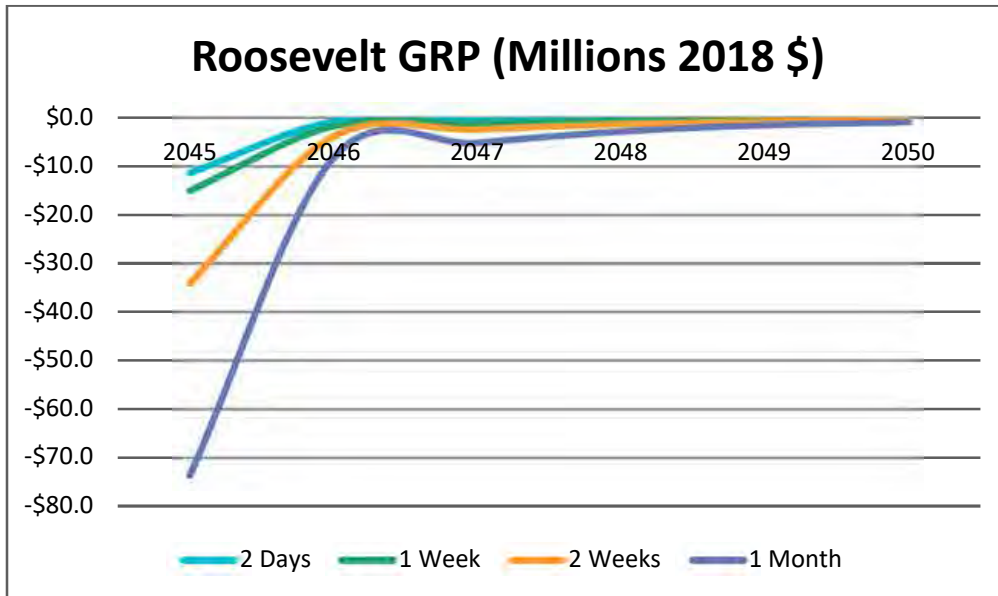
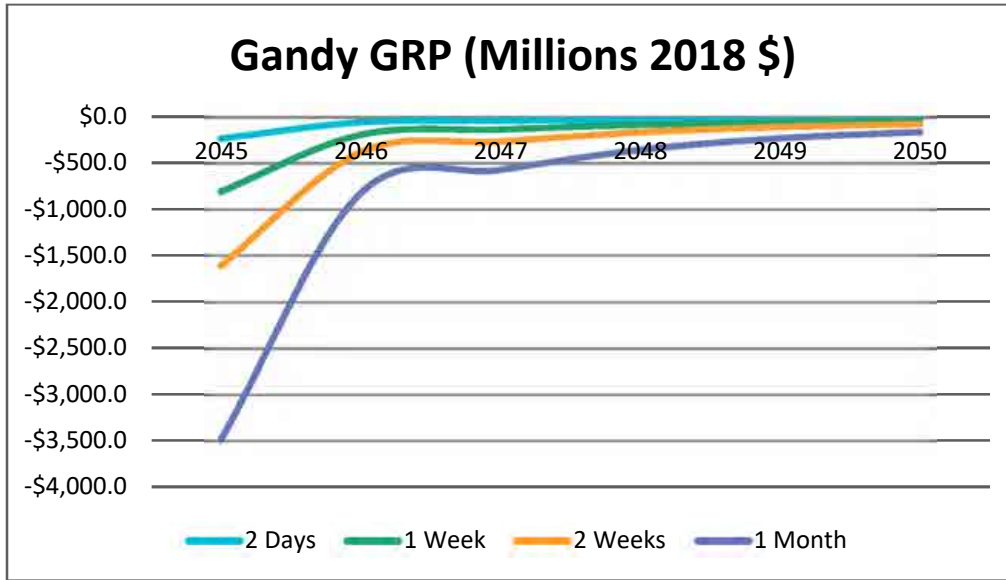


Figure 4-17 Roosevelt Gross Regional Product Impacts by Event Duration



**Figure 4-18 Gandy Gross Regional Product Impacts by Event Duration**



**Figure 4-19 Big Bend Gross Regional Product Impacts by Event Duration**

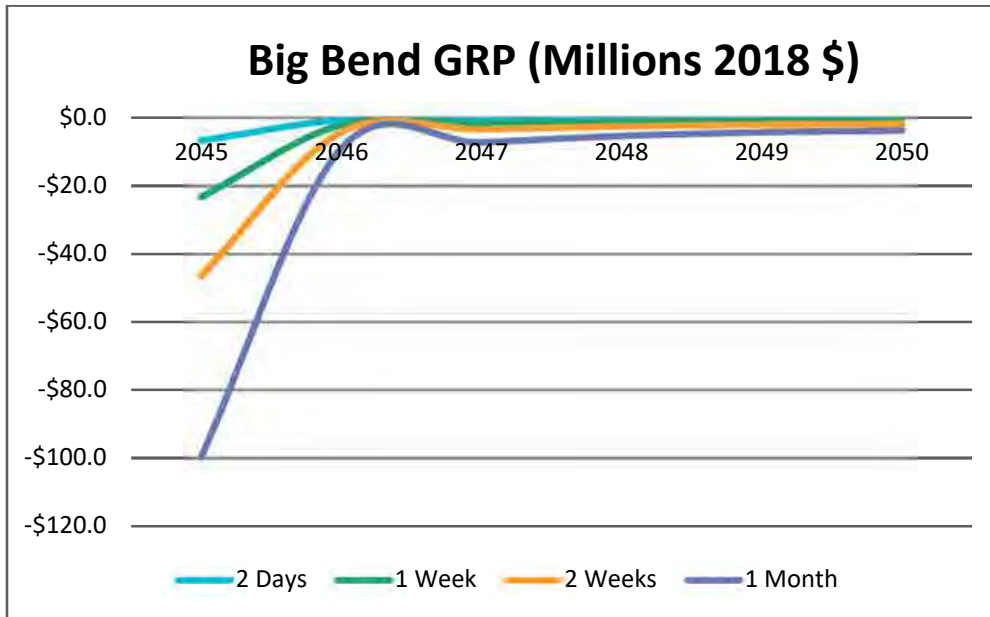


Figure 4-20 9 Inch Rain Event Gross Regional Product Impacts by Event Duration

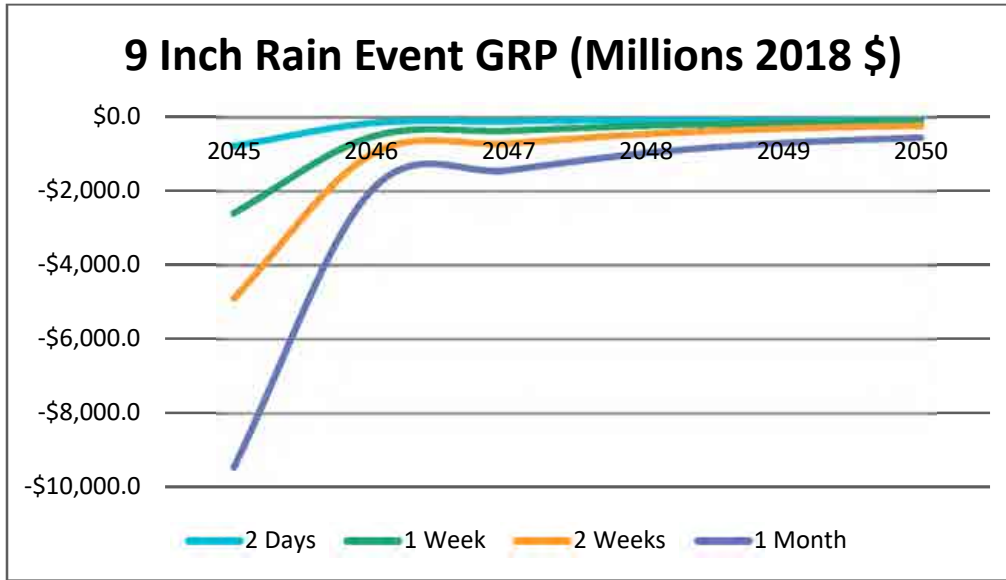
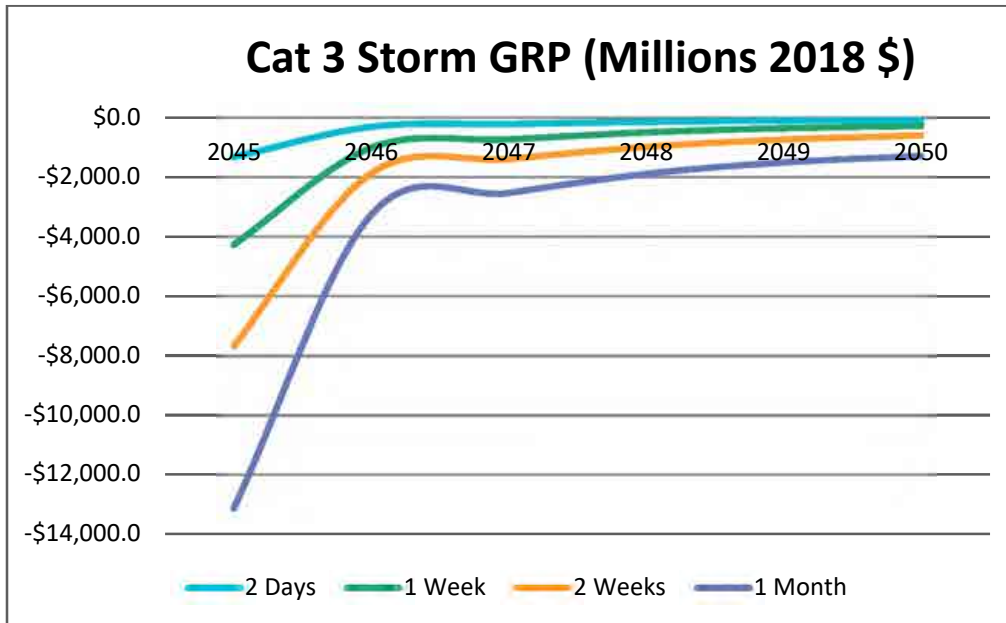


Figure 4-21 Cat 3 Storm Gross Regional Product Impacts by Event Duration



## 4.3 Cost and Benefit Comparison

### 4.3.1 Adaptation Cost and Potential Economic Loss

This section compared the potential economic impacts and adaptation costs for eight scenarios. This included the locations of six county representative projects being inundated and Category 3 storms plus the high sea level rise scenario and 9-inch precipitation in 24 hours scenario. The benefit of adaptation strategies is measured by the potential economic impact they mitigate when compared to no investment. The economic impact is represented using the 2045 annual total loss of Gross Regional Product (GRP) and 2045 annual total loss of personal income caused by roadway inundation of 2 days, 1 week, 2 weeks, and 1 month. The adaptation cost is represented by the cost of implementing adaptation strategies at county-representative project locations and other vulnerable areas.

In Cost-Benefit Analyses, both costs and benefits occur in the future while decisions about whether those benefits exceed costs must be made today. For projects in the immediate future, costs are subtracted from benefits. We can say that positive net benefits justify a project while negative net benefits do not. However, public investment decisions frequently involve investments (costs) in the immediate future, as in adaptation costs to a capital investment program. Benefits, such as avoided costs from the economic losses, that occur in the future must be discounted to present values in order to compare them with present day investment costs. Costs used reflect the recommended adaptation strategy option(s).

Discounting to present values, however, is not the same thing as adjusting future costs to inflation. Let us say that a friend offers you ten dollars today or ten dollars (leaving inflation aside) in a year. Most people would choose having the ten dollars today because that money can be put to productive use right away, as opposed to money offered in the future. Economists use a discount rate to account for people's reference for immediate payment by subtracting a percentage value from today's money each year out by an amount that represents its opportunity cost, or cost of capital, of not spending the money today.

In this analysis, we use a real discount rate of 4 percent as recommended by Florida Department of Transportation<sup>37</sup>. While the Federal Highway Administration<sup>38</sup> recommends using a 7 percent real interest rate<sup>38</sup>, this discount rate was based on long-term government debt yields from 1973-2003. Today, 7 percent is high relative to prevailing interest rates for private investment and much higher for prevailing treasury notes and bonds real interest rates<sup>39</sup>. As such, TBRPC felt it was appropriate to match FDOT's discount rate.

As with the economic analysis, this cost benefit study is only focused on the costs (or avoided costs) of Gross Regional Product impacts to the efficiency of the transportation system itself. Property value impacts or impacts to residents and businesses are not explicitly considered in the analysis. Moreover, the analysis does not consider the likelihood of more frequent extreme weather events or more intense events. Instead, we look exclusively look at one time costs of adaptation measures and one time

<sup>37</sup> [https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/content/planning/policy/economic/macroimpacts0115.pdf?sfvrsn=5d49079b\\_0](https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/content/planning/policy/economic/macroimpacts0115.pdf?sfvrsn=5d49079b_0)

<sup>38</sup> <https://cms.dot.gov/sites/dot.gov/files/docs/mission/office-policy/transportation-policy/284031/benefit-cost-analysis-guidance-2017.pdf>

<sup>39</sup> <https://www.whitehouse.gov/wp-content/uploads/2017/11/Appendix-C-revised.pdf>

'benefits' of avoiding 100 percent of the potential economic damage associated with an extreme weather event in 2045.

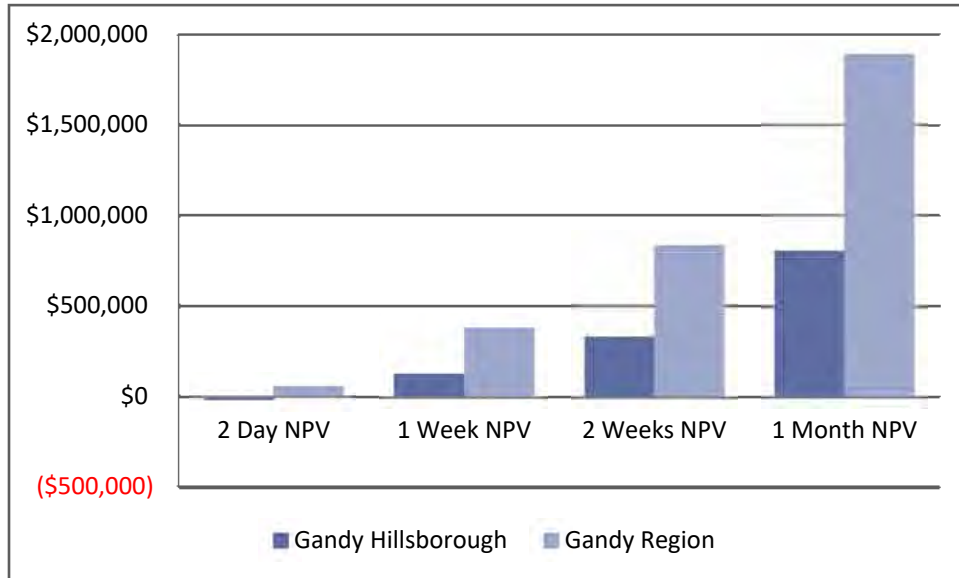
In the following analysis, TBRPC calculated Net Present Values for avoided costs to Gross Regional Product at the county level and at the regional (three county) level for each representative project. Different resiliency investment scenarios were tested across two -day, 1-week, 2-week and 1-month duration scenarios in 2045. If extreme weather events become more frequent and/or more intense than once in the next 25 years, net present values will increase significantly.

Listed below are the assumptions TBRPC used in analyzing the benefit-cost of the adaptation measures identified by CS.

- Discount Rate of 4%
- Extreme Weather Events occur once in 2045 and are not more frequent or more intense
- Economic impacts are exclusively focused on the transportation costs of the overall efficiency of the regional transportation network. Extreme weather impacts on access to property, property values and taxes, property damage, closed businesses and lost sales and employment are **excluded** from this analysis
- Capital investments happen in the very near future. If adaptation measures are staggered, results will be different
- Impacts can occur in 2-day, 1-week, 2-week or 1-month intervals

Results indicate that due to the interconnected nature of the metropolitan economy, the region as a whole sometimes benefits more from adaptation measures taken by individual counties facing direct impacts. For example, Gandy Boulevard has a negative Net Present Value for a two-day duration event in Hillsborough County while the region's total impact is positive. That is because Hillsborough bears the cost of the adaption measure through its own capital program while the other two counties benefit without having to pay for the adaption measure`.

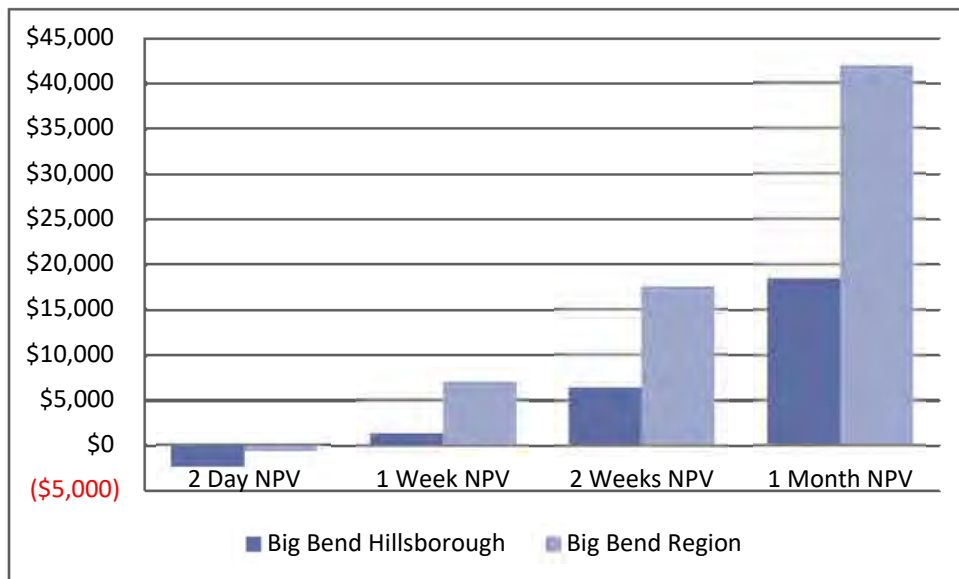
**Figure 4-22 Gandy Net Present Value of Adaptation Measures by Event Duration (2018 \$1,000s)**



With greater duration events, both Hillsborough and the Region benefits from the adaptation investments increase substantially. There is a greater return for each successively higher level of assumed risk about future events.

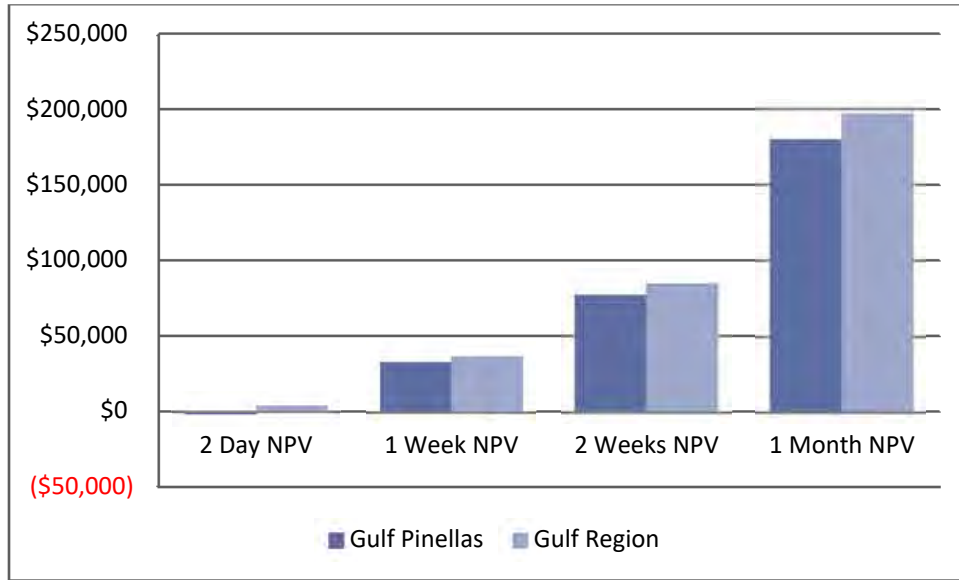
Big Bend’s adaptation measures return similar net present values from regional impacts relative to county impacts, because the entire region benefits from Hillsborough County’s investments in adaptation measures.

**Figure 4-23 Big Bend Net Present Value of Adaptation Measures by Event Duration (2018 \$1,000s)**



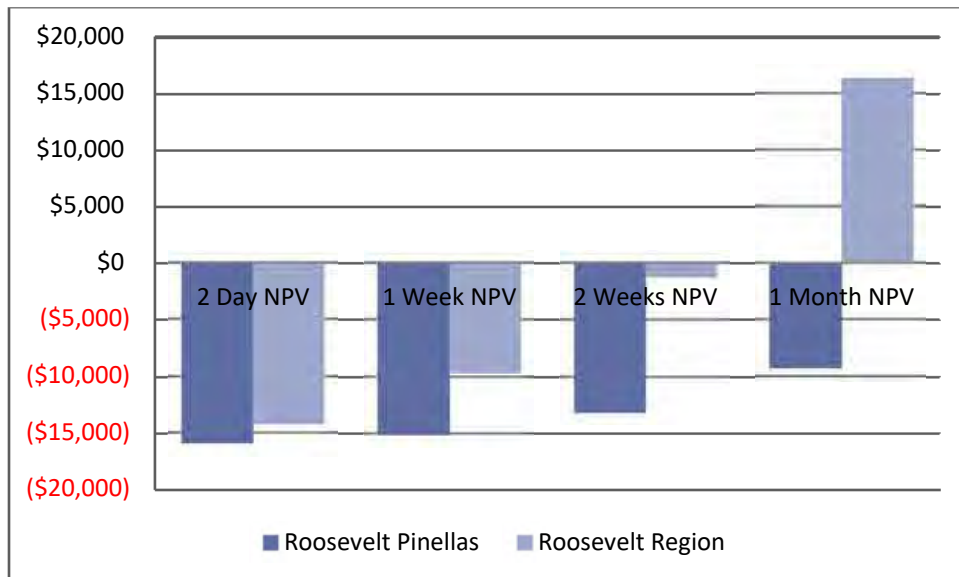
In Pinellas County, Net Present Value impacts for Gulf Boulevard are nearly identical between Pinellas and the region, as shown in Figure 4-24.

**Figure 4-24 Gulf Blvd Net Present Value of Adaptation Measures by Event Duration (2018 \$1,000s)**



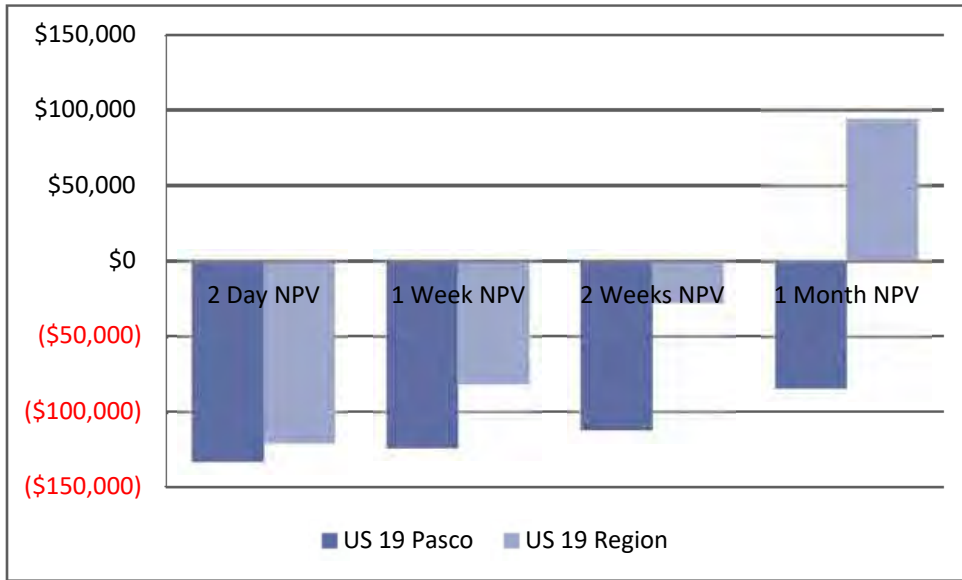
That is because Gulf Boulevard mostly impacts Pinellas trips and therefore avoided costs primarily benefit Pinellas residents and businesses. On the other hand, Roosevelt Boulevard adaptation measures primarily benefit Hillsborough County (and Pasco, to a lesser extent) over costs to Pinellas. As shown in Figure 4-25, Pinellas pays the costs of adaptation measures but does not benefit relative to the cost through any of the duration scenarios.

**Figure 4-25 Roosevelt Net Present Value of Adaptation Measures by Event Duration (2018 \$1,000s)**



A nearly identical pattern of impacted county costs versus regional benefits obtains in Pasco County with US 19. There is no duration scenario in which US 19 adaptation costs pay for themselves for Pasco County, but there are regional benefits at the 1-month duration. This analysis was performed on the main recommended project costing \$136 million. For the alternate project of \$71 million, the tradeoffs would be seen earlier.

**Figure 4-26 US 19 Net Present Value of Adaptation Measures by Event Duration (2018 \$1,000s)**

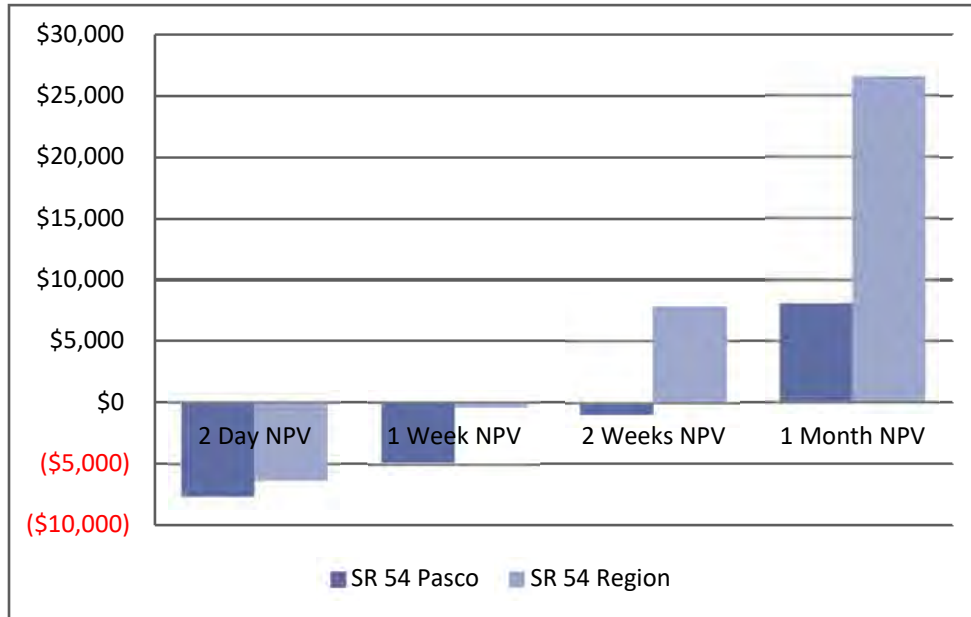


There is no duration scenario in which US 19 adaptation costs pay for themselves for Pasco County, but there are regional benefits at the 1-month duration.

SR 54, on the other hand, shows strong gains to regional Net Present Values as durations increase, becoming positive at the 1-month duration level. Overall, however, Pasco's net present value returns from adaptation investments are poor due to the high cost for some mitigation measures and long periods of time between capital investment and 2045, when the benefits from a major storm become evident.



**Figure 4-27 SR 54 Net Present Value of Adaptation Measures by Event Duration (2018 \$1,000s)**



The figures below illustrate the economic impact to each county in the Category 3 storms plus high sea level rise scenario, and the 9-inch precipitation scenario. The economic impact is compared with the cost of potential adaptation strategies in each county, including the two representative projects in each county, and potential strategies for high resilience priority locations, as well as the Moderate & Low Resilience Priority Needs. All costs of adaptation strategies are shown as net present values using the method describe previously. The intention is to help inform the decision of whether to include these potential adaptation projects in LRTPs, by estimating under what situation, an adaptation investment will be close to or smaller than the potential economic loss of not investing, and therefore is worth being included in the LRTP.

For example in Figure 4-28 and Figure 4-29, the annual loss in GRP in Hillsborough County will be close to the cost of implementing the two county representative project plus the cost of addressing high resilience priority needs, when the transportation network is inundated for 14 days (2 week) due to a 9-inch precipitation event or for 30 days (1 month) due to a Category 3 Storm with High sea level rise. The annual loss in GRP Hillsborough County will be equal to the funding needed to address all adaptation needs when there are over 30 days (1 month) the transportation facilities are closed due to 9-inch precipitation events.

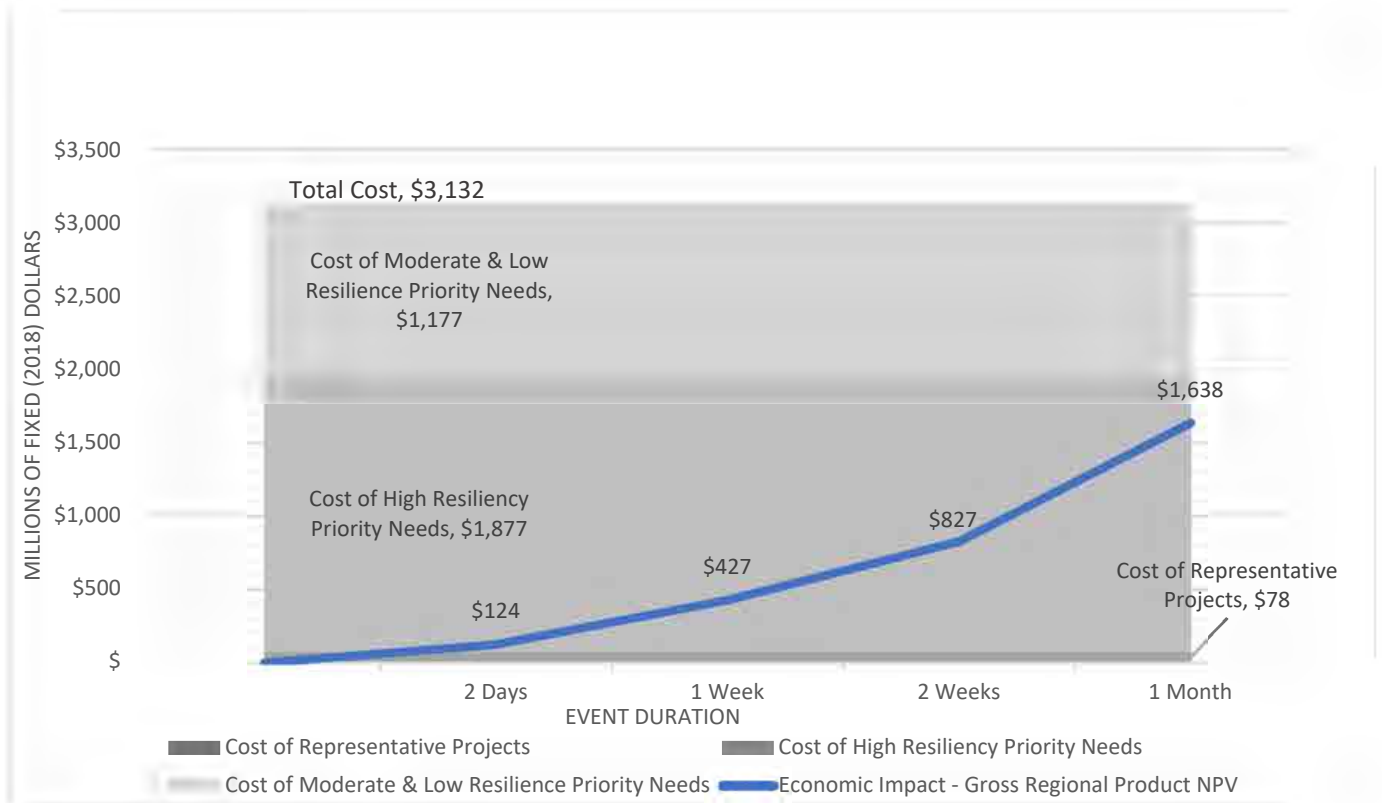
For Pinellas County, the annual loss in GRP in will be greater than the cost of implementing the two county representative projects plus the cost of addressing high resilience priority needs, when the transportation network is inundated for about 10 days (1.5 week) due to a Category 3 Storm. The annual loss in GRP Pinellas County will be almost equal to the funding needed to address all adaptation needs when there are 14 days (2 weeks) the transportation facilities are closed due to a Category 3 Storm.

For Pasco County, the annual loss in GRP in will be greater than the cost of implementing the two county representative project when the transportation network is inundated for about 14 days (2 week) due to a

Category 3 Storm or over three weeks due to a 9-inch precipitation event. The annual loss in GRP Pasco County will be greater to the funding needed to address additional high resilience priority needs when there are over three weeks the transportation facilities are closed due to a Category 3 Storm.

It should be noted that adaptation projects are not guaranteed to mitigate 100% of the economic impacts. On the other hand, while the annual economic impact is used here for comparison, the benefit of adaptation projects could last for decades once build.

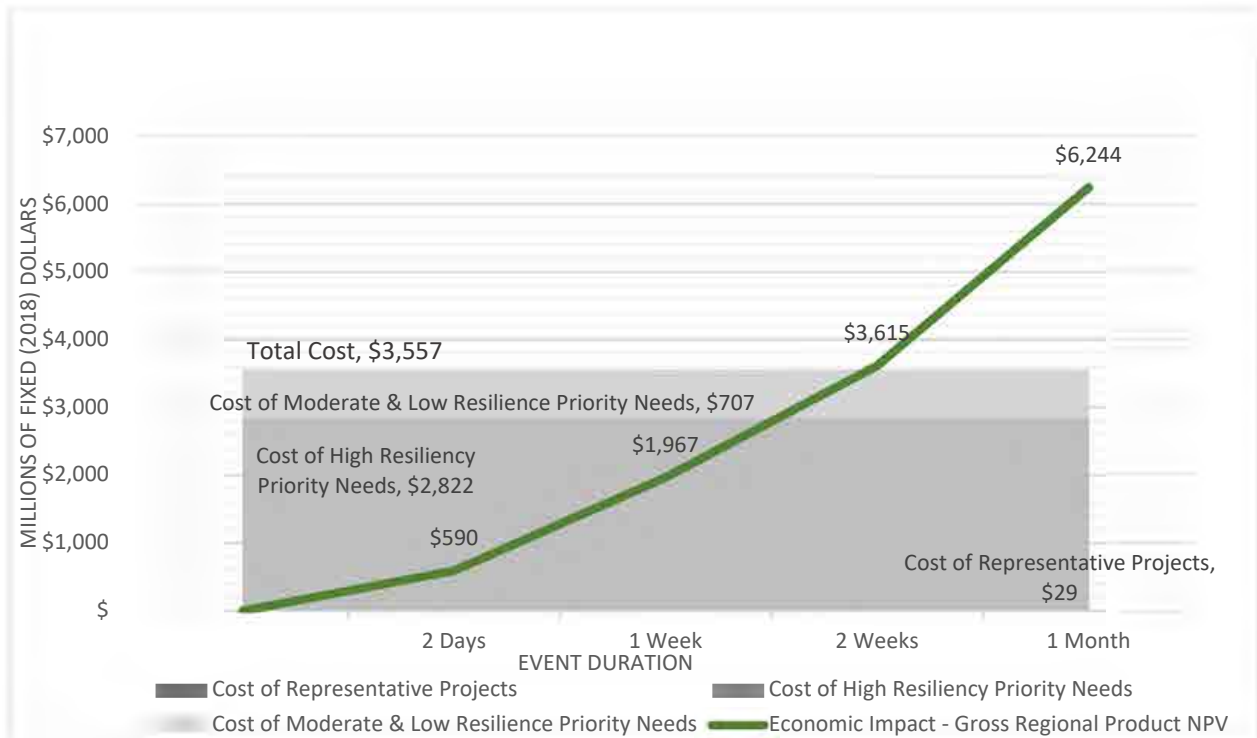
**Figure 4-28 Category 3 Storm plus High SLR Scenario**  
*Hillsborough County: 2045 Economic Impact vs. Adaptation Cost*



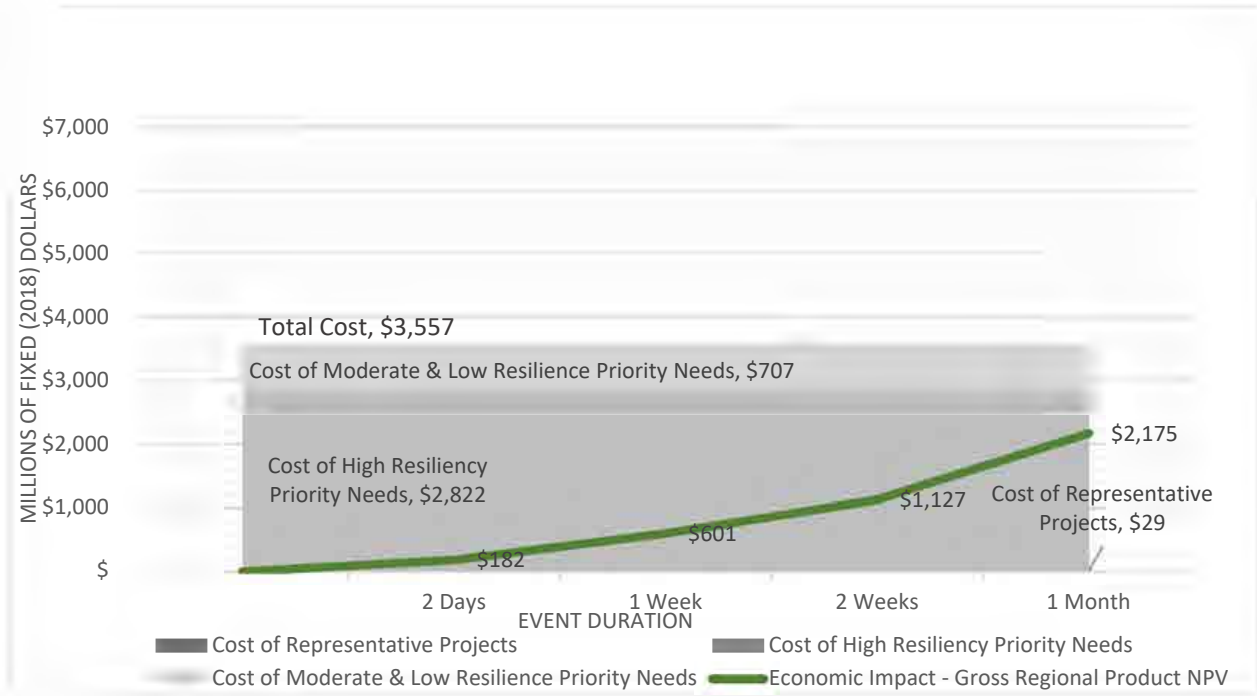
**Figure 4-29 9 Inches Precipitation Scenario**  
*Hillsborough County: 2045 Economic Impact vs. Adaptation Cost*



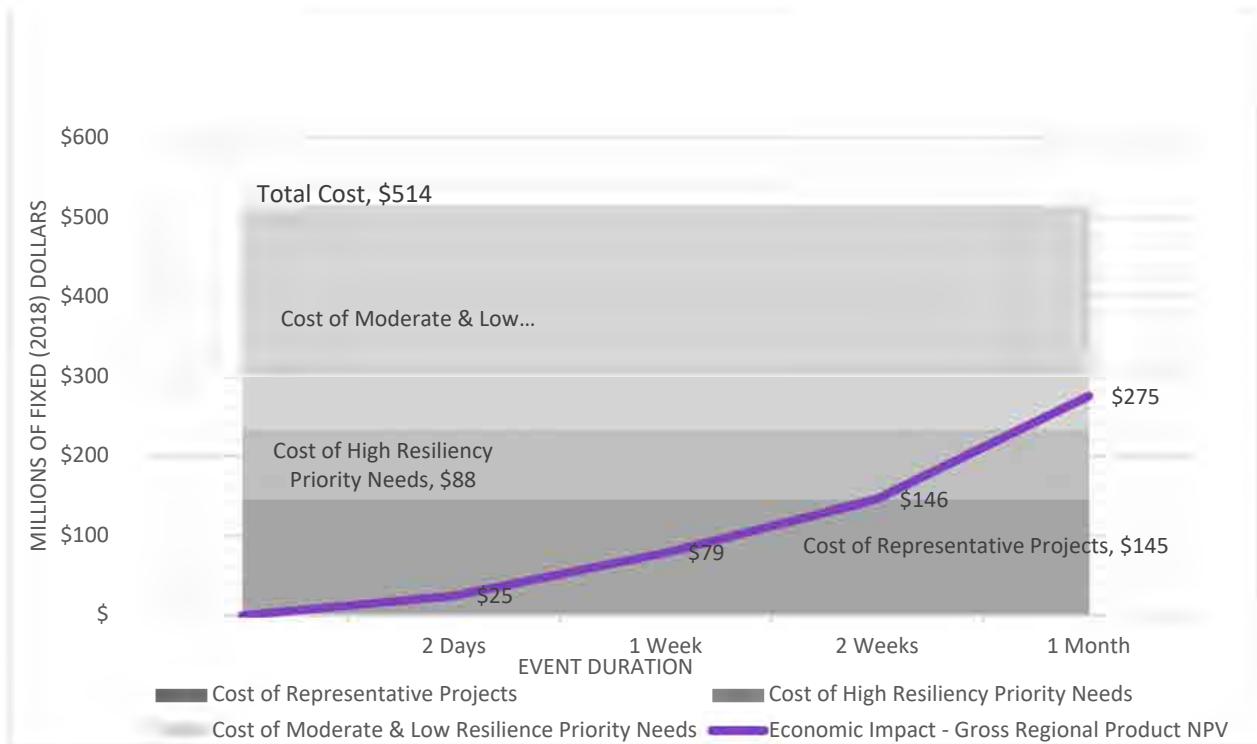
**Figure 4-30 Category 3 Storm plus High SLR Scenario**  
*Pinellas County: 2045 Economic Impact vs. Adaptation Cost*



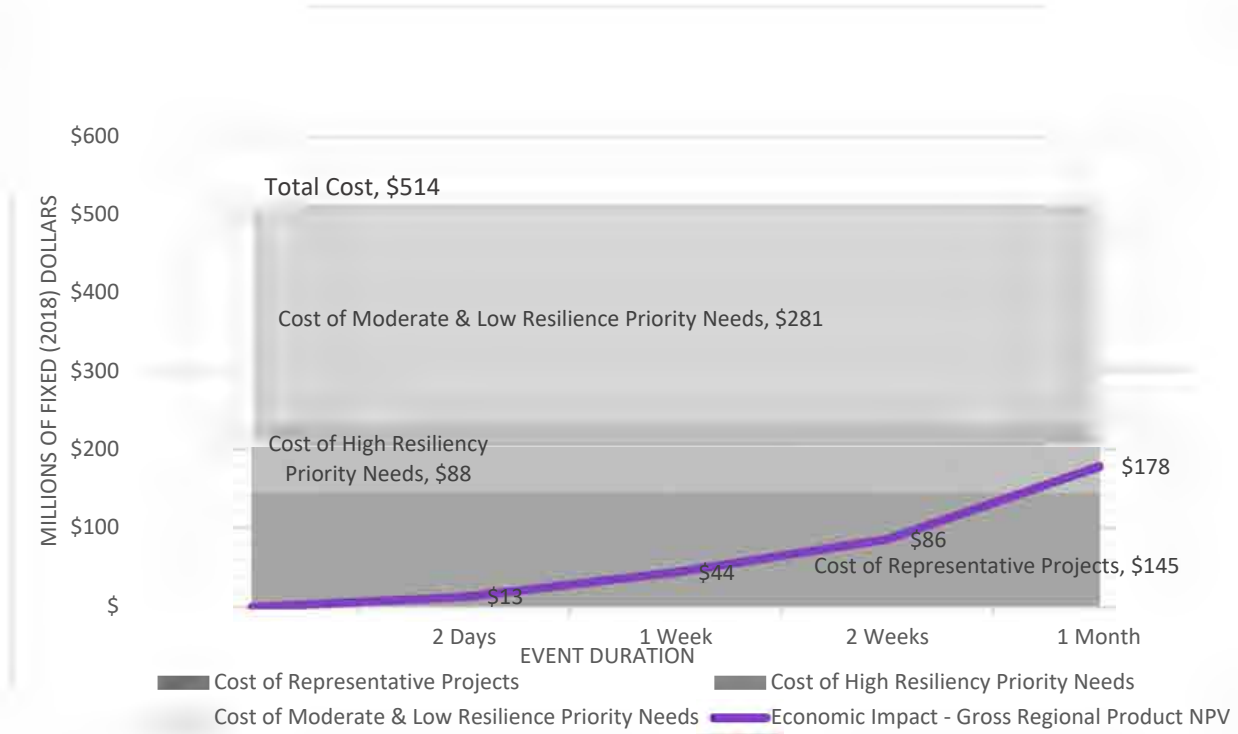
**Figure 4-31 9 Inches Precipitation Scenario**  
*Pinellas County: 2045 Economic Impact vs. Adaptation Cost*



**Figure 4-32 Category 3 Storm plus High SLR Scenario**  
*Pasco County: 2045 Economic Impact vs. Adaptation Cost*



**Figure 4-33 9 Inches Precipitation Scenario**  
*Pasco County: 2045 Economic Impact vs. Adaptation Cost*

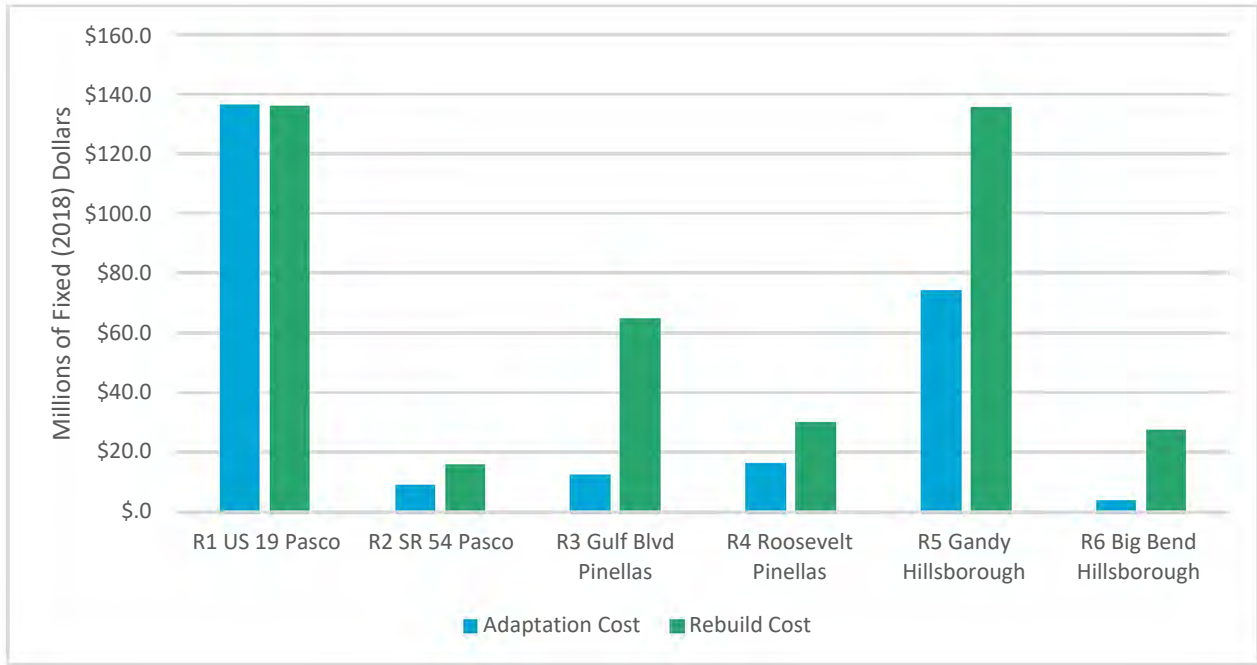


**4.3.2 Adaptation Cost and Rebuild Cost**

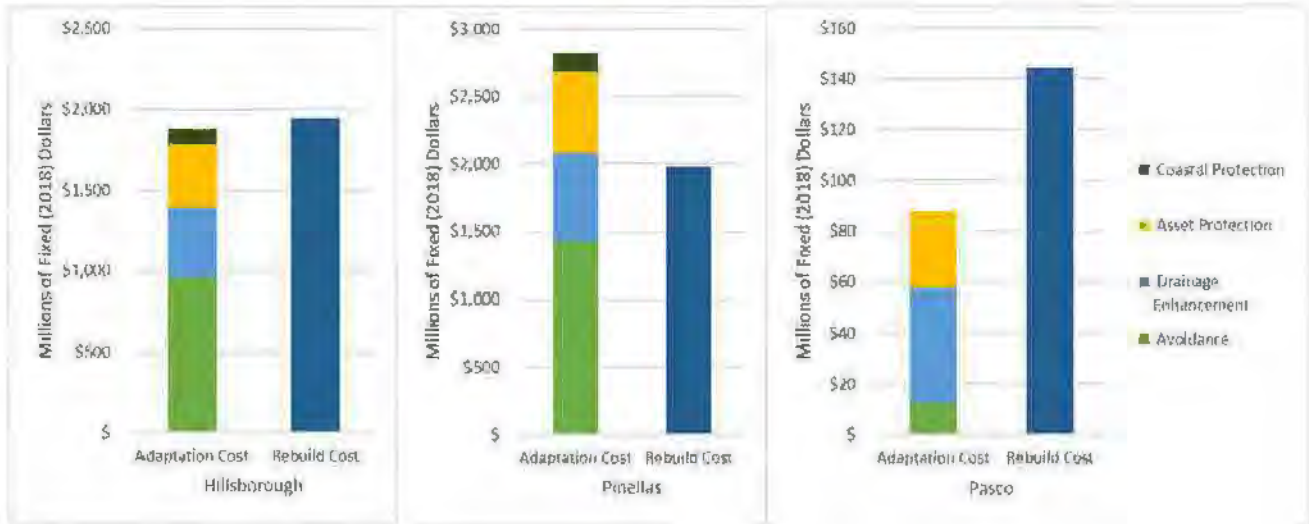
In addition to potential economic loss due to roadway closure, extreme weather events could cause damage to the infrastructure itself, adding cost of repairing or rebuilding the destroyed assets to the region’s burden, and causing additional inconvenience and economic loss during the construction.

Figure 4-34, Figure 4-35, and Figure 4-36 compare the adaptation cost and rebuild cost of representative projects, high resiliency priority needs, and moderate and low resiliency priority needs in the three counties. The rebuild cost is estimated using the per-mile cost of raising roadway profiles as discussed in Section 4.1, which in reality could be higher given the additional post-disaster clean-up cost that would occur. The raising the profile version of these costs are used because it is likely that adaptation measures will be incorporated with any rebuild redesign and the costs can account for those changes. Adaptation strategies are proactive and, in most cases, less expensive ways to address potential threats from extreme weather and climate events.

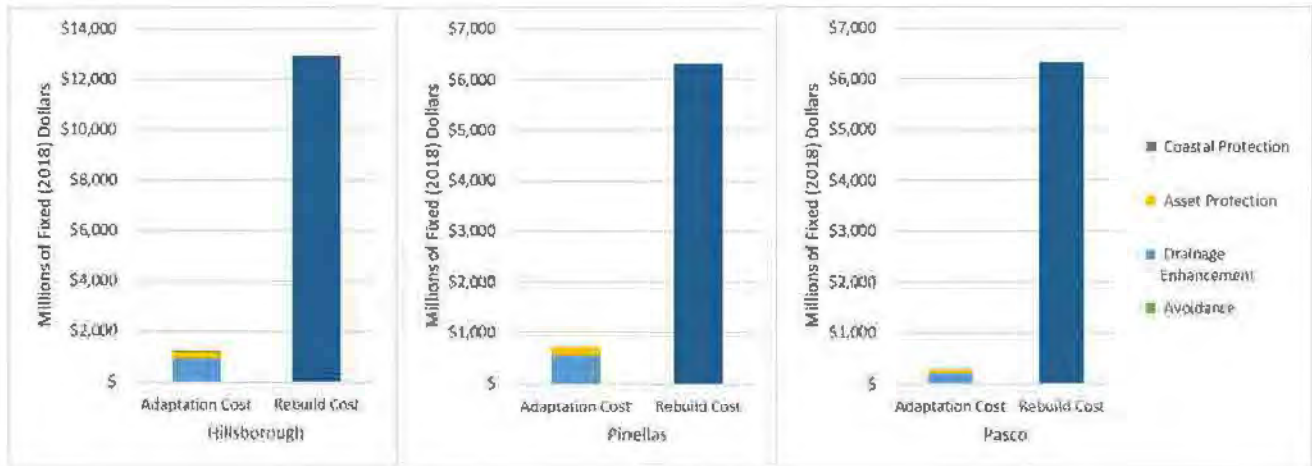
**Figure 4-34 Adaptation Cost and Rebuild Cost for Representative Projects**



**Figure 4-35 Adaptation Cost and Rebuild Cost for High Resilience Priority Needs**



**Figure 4-36 Adaptation Cost and Rebuild Cost for Moderate and Low Resilience Priority Needs**



#### 4.4 Adaptation Costs versus Current Investments

According to the current 5-year Capital Improvement Program budget in each county, as shown in Table 4-15, Hillsborough County, Pinellas County, and Pasco County each have about \$650 million, \$102 million, and \$106 million budget for bridges and pavement maintenance and stormwater treatment in the fiscal year 2020 to 2024 timeframe. To assist planning for future years, the total adaptation funding needs over the life of LRTP (2025-2045, 20 years), as shown in Table 4-16, were divided by 4 to obtain the future 5-year funding needs, as shown in Table 4-17 **Error! Reference source not found..**

As a whole, the annual spending as reflected in the current 5-year budget for Hillsborough County would cover the cost for the county representative projects and high resilience priority needs. However, that would assume that revenue resources could be used across categories and that existing capital improvement needs are not covered. Both those situations are improbable and funding for adaptation strategies will need to be in addition to current methods, with the exception of coordination on drainage improvements. For Pinellas County, the current budget level would cover the county representative projects and Pasco County’s current level of funding would cover the cost for the county representative projects and high resilience priority needs.

Table 4-18 and Table 4-19 shows the comparison of current budget and future funding needs broken down by categories. The infrastructure and drainage category include adaptation strategies of raising profile, enhance drainage, and asset protection. Raising the profile and asset protection (primarily shoulder enhancements) are new elements not generally included in bridges and pavement maintenance funding. The coastal protection category includes beach nourishment, nature shorelines, etc. as described in Chapter 3.

It should be noted that facilities that are routinely impacted by flooding can require 10-15% more maintenance.

Given the large costs associated the high resilience projects, Table 4-15 shows the costs for the highly critical and highly vulnerable locations versus all high resilience locations (i.e., those high

critical/moderate vulnerability or moderate criticality/high vulnerability). The highly critical/highly vulnerable roads were assigned more comprehensive adaptation strategies, including raising the profile, which explains the large costs as compared to the high resilience projects.

**Table 4-15 Current 5-Year CIP Budget (\$Million)**

		Bridges and Pavement	Stormwater	Total
Hillsborough <sup>40</sup>	FDOT	\$201.5	\$15.2	\$216.8
	County	\$179.3	\$113.4	\$292.7
	Municipalities	\$37.1	\$104.1	\$141.2
	<b>Subtotal</b>	<b>\$417.9</b>	<b>\$232.7</b>	<b>\$650.6</b>
Pinellas	FDOT <sup>41</sup>	\$37.1		\$37.1
	County <sup>42</sup>	\$3.3	\$61.7	\$65.0
	<b>Subtotal</b>	<b>\$40.4</b>	<b>\$61.7</b>	<b>\$102.1</b>
Pasco	FDOT <sup>43</sup>	\$5.6		\$5.6
	County <sup>44</sup>	\$67.0	\$33.1	\$100.1
	<b>Subtotal</b>	<b>\$72.6</b>	<b>\$33.1</b>	<b>\$105.7</b>
Tri-County	<b>Total</b>	<b>\$530.9</b>	<b>\$327.5</b>	<b>\$858.4</b>

<sup>40</sup> Hillsborough County Capital Improvement Program Budget FY 2018/2019 – FY 2022/2023

<sup>41</sup> FDOT Work Program Pinellas County Maintenance Projects, 2020 - 2024

<sup>42</sup> Pinellas County Capital Improvement Program Budget 2020 - 2024,

<sup>43</sup> FDOT Work Program Pasco County Maintenance Projects, 2020 - 2024

<sup>44</sup> Pasco County Capital Improvement Program Budget 2020 - 2024,



**Table 4-16 Total Adaptation Funding Needs (\$Million)**

	Representative Projects	High Resilience Priority Needs	Moderate-Low Resilience Priority Needs	Total Funding Needs
Hillsborough	\$77.7	\$1,877.3	\$1,177.5	\$3,132.5
Pinellas	\$28.8	\$2,821.9	\$706.8	\$3,557.5
Pasco	\$145.0	\$87.8	\$280.7	\$513.6
Tri-County Total	\$251.6	\$4,787.0	\$1,458.2	\$6,496.8

**Table 4-17 Comparison of Current Budget and Future 5-Year Funding Needs (\$Million)**

County	Current 5-Year Budget	Future 5-Year Funding Needs			
		Representative Projects	High Resilience Priority Needs	Moderate-Low Resilience Priority Needs	Total
Hillsborough	\$650.6	\$19.4	\$469.3	\$294.4	\$783.1
Pinellas	\$102.1	\$7.2	\$705.5	\$176.7	\$889.4
Pasco	\$105.7	\$36.3	\$22.0	\$70.2	\$128.4
Tri-County Total	\$858.4	\$62.9	\$1,196.8	\$364.6	\$1,624.2

**Table 4-18 Total Adaptation Funding Needs by Category (\$Million)**

	Representative Projects		High Resilience Priority Needs		Moderate-Low Resilience Priority Needs		Total	
	Infrastructure & Drainage	Coastal Protection	Infrastructure & Drainage	Coastal Protection	Infrastructure & Drainage	Coastal Protection	Infrastructure & Drainage	Coastal Protection
Hillsborough	\$77.7		\$1,785.4	\$91.9	\$1,166.8	\$10.7	\$3,029.9	\$102.6
Pinellas	\$18.9	\$9.9	\$2,678.9	\$143.0	\$706.8	\$0.0	\$3,404.6	\$152.9
Pasco	\$145.0		\$87.8	\$0.0	\$280.7	\$0.0	\$513.6	\$0.0
Tri-County Total	\$241.7	\$9.9	\$4,552.2	\$234.9	\$2,154.3	\$10.7	\$6,948.1	\$255.5

**Table 4-19 Comparison of Annual Current Budget and Future Funding Needs by Category (\$Million)**

County	Future 5-Year Funding Needs								Current 5-Year Budget
	Representative Projects		High Resilience Priority Needs		Moderate-Low Resilience Priority Needs		Total		
	Infrastructure & Drainage	Coastal Protection	Infrastructure & Drainage	Coastal Protection	Infrastructure & Drainage	Coastal Protection	Infrastructure & Drainage	Coastal Protection	
Hillsborough	\$3.9	\$0.0	\$89.3	\$4.6	\$58.3	\$0.5	\$151.5	\$5.1	\$130.1
Pinellas	\$0.9	\$0.5	\$133.9	\$7.1	\$35.3	\$0.0	\$170.2	\$7.6	\$20.4
Pasco	\$7.3	\$0.0	\$4.4	\$0.0	\$14.0	\$0.0	\$25.7	\$0.0	\$21.1
Tri-County Total	\$12.1	\$0.5	\$227.6	\$11.7	\$107.7	\$0.5	\$347.4	\$12.8	\$171.7

**Table 4-20 Cost by Criticality/Vulnerability (not including representative projects)**

(Millions of Fixed (2018) Dollars)						
<b>Hillsborough</b>						
	<b>Avoid/ Protect</b>	<b>Drainage</b>	<b>Coastal Protection</b>	<b>Total</b>	<b>Cost of Rebuild</b>	<b>Total Minus Rebuild</b>
High Resilience	\$1,392.076	\$456.775	\$91.893	\$1,940.745	\$1,987.500	-\$46.756
High/High	\$1,249.986	\$253.954	\$71.960	\$1,575.900	\$966.647	\$609.253
Difference	\$142.090	\$202.822	\$19.933	\$364.845	\$1,020.853	
Percentage	89.8%	55.6%	78.3%	81.2%	48.6%	
<b>Pinellas</b>						
	<b>Avoid/ Protect</b>	<b>Drainage</b>	<b>Coastal Protection</b>	<b>Total</b>	<b>Cost of Rebuild</b>	<b>Total Minus Rebuild</b>
High Resilience	\$2,039.717	\$858.827	\$89.974	\$2,988.517	\$3,718.576	-\$730.059
High/High	\$1,851.998	\$376.261	\$89.974	\$2,318.233	\$1,154.341	\$1,163.892
Difference	\$187.719	\$482.565	\$0.000	\$670.284	\$2,564.235	
Percentage	90.8%	43.8%	100.0%	77.6%	31.0%	
<b>Pasco</b>						
	<b>Avoid/ Protect</b>	<b>Drainage</b>	<b>Coastal Protection</b>	<b>Total</b>	<b>Cost of Rebuild</b>	<b>Total Minus Rebuild</b>
High Resilience	\$65.293	\$154.147	\$0.000	\$219.440	\$885.305	-\$665.865
High/High	\$19.221	\$3.905	\$0.000	\$23.126	\$13.687	\$9.439
Difference	\$46.072	\$150.242	\$0.000	\$196.314	\$871.618	
Percentage	29.4%	2.5%		10.5%	1.5%	

## 5.0 Public Engagement

The RTBT initiative coordinated with agencies and the general public in multiple ways.

### Project Management

- The *Tampa Bay Transportation Management Area* Leadership Group (TMA) served as the oversight for the effort.
- Three MPOs working together, Pinellas County MPO (Forward Pinellas), Pasco MPO, and Hillsborough County MPO provide management direction, with Hillsborough MPO taking the lead and administering the FHWA grant.
- The *ONE BAY* Resilient Communities Working Group served as a steering committee and sounding board for the plan, particularly with respect to public outreach.
- The three county Local Mitigation Strategy Working Groups provided technical support and comments during development of the project

### Coordination Approach

RTBT focused its efforts on transportation infrastructure. Other organizations are performing similar vulnerability assessments on other types of infrastructure, more refined geographic area, or looking at social vulnerabilities. Some of these projects and agencies active in Tampa Bay are:

- Pinellas County Restore Act Vulnerability Assessment
- Hillsborough County Perils of Flood Act Matrix of Impacts Initiative
- University of South Florida School of Community Design
- University of South Florida Department of Urban Planning
- FDOT District 7 Gandy Boulevard PD&E
- FDOT District 7 Community Liaison and Drainage Engineer
- Public Works from the three counties

### Best Practices and Conferences

- Federal Highway Administration and MPO Peer exchanges
- Women's Transportation Society Annual Conference
- American Planning Association Florida Conference
- Association of MPO's Annual Meeting

- Transportation Resilience Conference
- Transportation Research Board

### Public Outreach

Public outreach utilized the committee MPO committees as well as established county and regional organizations which was comprised with members of the public, private sector experts, and agency representations.

Hillsborough MPO, Forward Pinellas, and Pasco County Outreach included the following groups from Fall 2018 and is anticipated through Spring 2020.

- Citizens Advisory Committees
- Technical Advisory Committees
- Transportation Disadvantaged Local Coordinating Boards
- County Local Mitigation Strategy Working Groups
- MPO Boards

One Bay Resilient Communities Meetings hosted by the Tampa Bay Regional Planning Council

- Regional Project Kick-off, Winter 2018
- Status, Spring 2019
- Preliminary Interim Results, Fall 2019
- Final results, Winter 2020

To help determine criticality, a public and agency survey was prepared to gauge what roadways were most important to the region and for what reasons. The survey asked what factors are important to determine criticality, such as hurricane evacuation, projected traffic volumes, or intermodal connectivity. It asked what area factors should be used to determine criticality, such as project population and percentage of zero-car households. Lastly it asked what activities or destinations respondents consider critical from an access perspective, such as shelters and hospitals, or educational or military institutions. The results of the survey were used to identify and weight the variables factored into the criticality assessment. (Section 2.2 of the report describes how the results were used.)

## 6.0 Summary and Recommendations

The transportation network in the Tampa Bay region faces challenges from extreme weather events. Heavy rain results in localized flooding, King Tide high tides are seeing water appear on roads, and storm surge and rain from hurricanes will inundate roads and may result in flooding throughout the region. Based on the results of this assessment, about 11 percent of the region's roadways are highly vulnerable to storms, sea level rise, and heavy precipitation, an additional eight percent of the roadways are of moderate vulnerability. Among these high or moderate vulnerable roadways, over one third are facilities that are highly critical to the region's safety, mobility, and economy.

Inundation of these roadways (defined as high resilience priority roadways in the document) will cause significant economic impact, including loss in Gross Regional Product (GRP) and personal income. Based on the comparison at Section 4.3.1, the loss in GRP alone will be close to or greater than the cost implementing adaptation strategies to high resilience priority needs when the transportation network is inundated for approximately 14 days due to Category 3 storm plus sea level rise or 9-inch precipitation events. Flooding from a single rain event typically subsides in a few hours or days. Similarly, storm surge typically ebbs after a few days, however, flooding from rain can last for several or more.

In addition, extreme weather events could cause damage to the infrastructure itself through washouts or other structural issues, adding cost of repairing or rebuilding the compromised assets to the region's burden. Based on the results from Section 4.3.2, compared to the rebuilding, adaptation strategies are proactive and in most cases less expensive ways to address potential threats from extreme climate events, not including the additional inconvenience, economic loss, and impact on emergency evacuation that might occur during the construction.

**It is recommended that the adaptation strategies for high resilience priority locations be considered for inclusion in the three MPO's LRTPs.** The cost of implementing adaptation strategies for these locations outweighs the cost of rebuilding. However, these costs are projected to be substantial and in addition to costs for current transportation needs. **As an alternate, implementing projects that relate to highly critical and highly vulnerable locations is an excellent first step.** The planning and implementation of adaptation projects should be closely coordinated with existing or future capital or maintenance and rehabilitation investments in the LRTP and county/municipal transportation, stormwater and beach enhancement plans.

The high criticality and high vulnerability projects include adaptation strategies of raising the profile (avoid), enhancing drainage, bolstering the road base or shoulders (protect), and coastal protection. Coastal protection strategies such as beach nourishment, sea walls, and wave attenuation can protect not only transportation facilities, but also properties and other assets in the region. It is important to work with various agencies and stakeholders to plan and fund these strategies. Including them in the LRTP would benefit transportation; however, given the indirect link, other benefactors and implementing agencies, implementing these strategies are recommended to be pursued outside the LRTP.

Raising the profile is a purposeful and effective strategy. However, there often are concerns about access and impacts to adjacent residences and businesses, and implementing these projects require information sharing and public input. As such, **implementing drainage solution adaptation strategies is an appropriate short-term solution while proactively seeking opportunities to implement other strategies.** Also, stormwater funding generally is available through other resources such as stormwater

fees or capital improvement bonding, which would allow transportation funding to be geared toward protection and avoidance solutions.

The protection strategies are designed to ensure an asset recovers should it be inundated due to flooding (rain or hurricane related). These strategies include shoring up the road surface and subbase through deeper pavement, subbases that can be flooded, vegetative solutions to stabilize shoulders, and coastal/shoreline solutions to reduce wave and surge effects. During maintenance and rehabilitation projects for all high resilience projects, it is recommended that at a minimum protective measures be considered as noted.

New capacity projects in the region, as well as major rehabilitation such as the Gandy Boulevard bridge, should consider the vulnerability and criticality determinations identified in this study and incorporate adaptation strategies where appropriate. Most of the projects identified in this report address retrofitting assets to address resilience and reliability through adaptation. For new or replaced facilities, regional entities should take the opportunity to embed adaptation elements.

Following the FHWA vulnerability assessment and adaptation framework, this study evaluated the transportation facilities in the Tampa Bay region based on their potential vulnerability/exposure and criticality. It is also recommended that agencies in the Tampa Bay region continue to implement other areas of the FHWA framework. For example, this study did not include bridge or pavement conditions in the assessment. **A near-term next step would be to align assets with potential structural issues with adaptation strategies identified here for inclusion in improvement plans where feasible.**

As noted above, **multiple partners are needed to implement adaptation strategies identified to protect transportation infrastructure.** One option to begin this coordination would be to select a subarea for more detailed and coordinated identification of adaptation strategies benefiting property and buildings as well as transportation. A subarea study could allow for sub basin or regional water flow modeling to assess the capacity needs of stormwater infrastructure. This could be done by identifying adaptation action areas or through informal coordination. Municipalities most likely already include this type of coordination in their capital planning program. Including the MPOs and FDOT in the discussions could be beneficial.

The Section 3.0 of this document provided examples of adaptation options for the counties' representative projects and conducted an index-base assignment of strategies to transportation facilities for planning purposes. Facilities with higher criticality and higher vulnerability were assigned with more comprehensive and generally more expensive strategies as compared to locations with lower criticality and vulnerability. As a result, the cost could be overestimated for some locations while underestimated for others. These estimates also do not include water modeling that may be required for bridges or riverine areas. Detail engineering assessments through project development and design will be needed to validate and select suitable strategies and provide more refined cost estimates.

This econometric analysis performed in this assessment clearly points to the continued need for the three MPOs to work cooperatively. That analysis showed that a specific adaptation strategy may be implemented by a single county, yet the economic benefits (or impacts) accrue to the entire region.

Lessons learned and FHWA framework suggestions primarily relate to studying a large geographic area in a systematic, comprehensive approach. Some recommendations are:

- There is a need to continue to align GIS and travel demand models. In this project, a GIS-based analysis approach was used. Converting the information to tables was labor intensive given the segmentation and information in the travel demand model.
- In Florida, water is a major weather and climate stressor. Hydrologists can assist in identifying areas with potential vulnerabilities to risk. Similarly, to assign adaptation strategies to every road segment in the network, required some assumption based on criticality and vulnerability rankings given the large number of links. Working at a large scale or across disciplines is a challenge to continue to be addressed.
- It is possible to recommend non-transportation solutions (e.g., green infrastructure and natural solutions) that will benefit communities as well as transportation systems. Working with partners to implement these strategies, particularly as related to funding across agencies, could be enhanced.
- Of major need are planning level tools to evaluate the costs and benefits of implementing various adaptation strategies. This project provides one way to identify costs of construction and the costs of no action. A piece missing is to determine the vulnerabilities and benefits if a specific action is taken. For example, when raising the elevation of infrastructure, it is possible to assess whether the road will be sufficiently high to withstand flooding. However, if a natural shoreline is implemented, how does one gauge if the asset is protected from flooding/surge vulnerability.



## Appendix A. Travel Demand Model Methodology

Travel demand modeling was intended to be used in REMI Transight analysis which required results in a very specific format of vehicle demand metrics (VMT, VHT and number of trips) by county to county origin-destination (OD) pairs<sup>45</sup>. The default output from the Tampa Bay Regional Planning Model (TBRPM) provides link level demand at the aggregate level region-wide. The model does not provide outputs in the required Transight format hence it was therefore necessary to perform select zone analysis to get OD demand for specific county-county zone pairs for the REMI analysis. The approach used was to modify the default assignment procedure by time period to incorporate select zone analysis for each of the 63 possible permutations of County OD patterns.

The processing order for this analysis began with running the TBRPM model with the relevant disconnected links for each scenario to establish the OD demand based on model link closures. The links were disconnected using Cube Network functions when path skimming and assignment were undertaken. Once the OD demand trip tables were available, these were then run in the select link assignments described previously for each time period.

The CAT 3 High and the 9" precipitation events produce the largest impacts as would be expected given the number of links affected. The next highest impact scenario is the Gandy Boulevard scenario which removes one of only three Trans Bay crossings in the region. Because of the reduction in assigned trips owing to OD redistribution, the link demand metric reduction in VMT and VHT in some instances behaved in the opposite manner than would be initially expected. In the cases where VMT and VHT increased, trip OD redistribution produced rerouting to available alternate facilities, often being lower in classification with attendant lower speeds and capacities.

Overall, this analysis shows that the TBRPM model is very sensitive to link disruptions, producing large changes in trip distribution patterns within the region. Further analysis may be warranted to determine assignment rerouting effects without the impact of OD demand adjustments in the trip distribution step. It is important to remember that the model is a tool and should be used complementarily with appropriate planning level judgment to better guide decision making regarding resilience to climate events.

<sup>45</sup> Hillsborough County Capital Improvement Program Budget FY 2018/2019 – FY 2022/2023

<sup>45</sup> FDOT Work Program Pinellas County Maintenance Projects, 2020 - 2024  
45 Pinellas County Capital Improve

## Appendix B. Regional Travel Demand Model Results, Inter-County Flows

### Figure B-6-1 US 19 from S.R.54 to S.R.52 - Pasco

Project/Event Impacts on 2045 Baseline Travel Characteristics							
Origin County	Destination County	Auto VMT	Auto VHT	Auto Trips	Truck VMT	Truck VHT	Truck Trips
Hillsborough	Hillsborough	-0.23%	0.16%	-0.05%	0.06%	0.27%	0.02%
Hillsborough	Pasco	3.14%	2.59%	-1.12%	4.86%	7.61%	5.37%
Hillsborough	Pinellas	-3.91%	-2.47%	0.53%	-4.26%	-5.76%	-4.97%
Pasco	Hillsborough	-55.69%	-50.95%	-1.12%	-51.09%	-44.05%	5.37%
Pasco	Pasco	8.39%	8.91%	27.23%	14.41%	17.39%	29.80%
Pasco	Pinellas	-3.80%	-0.76%	-4.89%	-6.14%	-3.25%	-6.36%
Pinellas	Hillsborough	124.80%	104.47%	0.53%	105.53%	80.94%	-4.97%
Pinellas	Pasco	-3.80%	-0.76%	-4.89%	-6.14%	-3.25%	-6.36%
Pinellas	Pinellas	-9.84%	-7.95%	-23.14%	-14.02%	-14.42%	-24.30%
<b>Total Impacts</b>		<b>-0.75%</b>	<b>0.11%</b>	<b>-0.58%</b>	<b>-0.38%</b>	<b>0.25%</b>	<b>-0.37%</b>

### Figure B-6-2 S.R.54 from US 19 to Suncoast - Pasco

Project/Event Impacts on 2045 Baseline Travel Characteristics							
Origin County	Destination County	Auto VMT	Auto VHT	Auto Trips	Truck VMT	Truck VHT	Truck Trips
Hillsborough	Hillsborough	0.08%	0.55%	0.03%	0.10%	0.39%	0.00%
Hillsborough	Pasco	0.81%	1.89%	-0.07%	-1.49%	0.10%	-1.51%
Hillsborough	Pinellas	-0.59%	0.12%	-0.40%	-0.19%	0.47%	-0.18%
Pasco	Hillsborough	0.81%	1.89%	-0.07%	-1.49%	0.10%	-1.51%
Pasco	Pasco	-0.54%	0.61%	-2.21%	-1.39%	-0.22%	-2.37%
Pasco	Pinellas	0.84%	1.94%	0.48%	-0.73%	0.19%	-0.60%
Pinellas	Hillsborough	-0.50%	0.35%	-0.40%	-0.05%	1.07%	-0.18%
Pinellas	Pasco	0.84%	1.94%	0.48%	-0.73%	0.19%	-0.60%
Pinellas	Pinellas	-0.04%	0.47%	0.02%	-0.15%	0.51%	-0.04%
<b>Total Impacts</b>		<b>0.00%</b>	<b>0.71%</b>	<b>-0.45%</b>	<b>-0.35%</b>	<b>0.30%</b>	<b>-0.49%</b>

### Figure B-6-3 Gulf Boulevard/SR 699 from Bath Club Circle to 125th Ave & Tom Stuart Causeway Bridge - Pinellas

Project/Event Impacts on 2045 Baseline Travel Characteristics							
Origin County	Destination County	Auto VMT	Auto VHT	Auto Trips	Truck VMT	Truck VHT	Truck Trips
Hillsborough	Hillsborough	-0.19%	0.14%	-0.06%	0.04%	0.20%	0.00%
Hillsborough	Pasco	3.06%	2.89%	-1.34%	4.55%	7.63%	5.17%
Hillsborough	Pinellas	-3.69%	-2.65%	0.71%	-4.54%	-6.39%	-5.13%
Pasco	Hillsborough	-55.87%	-50.88%	-1.34%	-51.26%	-43.81%	5.17%
Pasco	Pasco	8.84%	8.76%	26.63%	14.08%	16.94%	29.23%
Pasco	Pinellas	0.25%	0.46%	0.15%	0.12%	0.37%	0.09%
Pinellas	Hillsborough	125.34%	104.09%	0.71%	104.91%	79.74%	-5.13%
Pinellas	Pasco	0.25%	0.46%	0.15%	0.12%	0.37%	0.09%
Pinellas	Pinellas	-8.59%	-7.69%	-21.62%	-12.74%	-13.95%	-23.03%
<b>Total Impacts</b>		<b>-0.22%</b>	<b>0.17%</b>	<b>-0.24%</b>	<b>-0.09%</b>	<b>0.26%</b>	<b>-0.13%</b>

**Table B-4 Roosevelt Boulevard/SR 686 from Ulmerton Road/SR 688 to Gandy Blvd - Pinellas**

Project/Event Impacts on 2045 Baseline Travel Characteristics							
Origin County	Destination County	Auto VMT	Auto VHT	Auto Trips	Truck VMT	Truck VHT	Truck Trips
Hillsborough	Hillsborough	-0.19%	0.15%	-0.02%	0.05%	0.32%	0.02%
Hillsborough	Pasco	-0.49%	0.08%	-0.30%	-0.10%	0.73%	-0.11%
Hillsborough	Pinellas	-0.10%	0.10%	-0.06%	0.89%	1.29%	0.59%
Pasco	Hillsborough	-0.49%	0.08%	-0.30%	-0.10%	0.73%	-0.11%
Pasco	Pasco	-0.19%	0.46%	-0.01%	0.02%	0.74%	0.00%
Pasco	Pinellas	0.58%	0.72%	0.37%	0.61%	0.93%	0.26%
Pinellas	Hillsborough	0.09%	0.33%	-0.06%	0.63%	1.04%	0.59%
Pinellas	Pasco	0.58%	0.72%	0.37%	0.61%	0.93%	0.26%
Pinellas	Pinellas	0.21%	0.49%	-0.09%	0.20%	0.79%	0.00%
<b>Total Impacts</b>		-0.10%	0.28%	-0.04%	0.11%	0.57%	0.03%

**Figure B-5 Gandy Blvd from 4th St to S Dale Mabry Hwy - Hillsborough**

Project/Event Impacts on 2045 Baseline Travel Characteristics							
Origin County	Destination County	Auto VMT	Auto VHT	Auto Trips	Truck VMT	Truck VHT	Truck Trips
Hillsborough	Hillsborough	-16.67%	-16.43%	-0.09%	-11.56%	-10.98%	-0.12%
Hillsborough	Pasco	-9.42%	-9.73%	0.02%	-5.21%	-4.53%	0.06%
Hillsborough	Pinellas	-35.67%	-36.76%	-2.57%	-22.34%	-22.11%	-4.89%
Pasco	Hillsborough	-9.42%	-9.73%	0.02%	-5.21%	-4.53%	0.06%
Pasco	Pasco	-11.15%	-10.65%	0.01%	-5.22%	-4.16%	0.01%
Pasco	Pinellas	-29.63%	-29.72%	-0.26%	-18.06%	-18.31%	0.03%
Pinellas	Hillsborough	-37.10%	-36.45%	-2.57%	-25.39%	-24.52%	-4.89%
Pinellas	Pasco	-29.63%	-29.72%	-0.26%	-18.06%	-18.31%	0.03%
Pinellas	Pinellas	-32.84%	-33.12%	-0.59%	-22.08%	-21.99%	-0.61%
<b>Total Impacts</b>		-20.28%	-20.03%	-0.29%	-12.91%	-12.38%	-0.33%

**Figure B-6 Big Bend Rd from US-41 to I-75 – Hillsborough**

Project/Event Impacts on 2045 Baseline Travel Characteristics							
Origin County	Destination County	Auto VMT	Auto VHT	Auto Trips	Truck VMT	Truck VHT	Truck Trips
Hillsborough	Hillsborough	-0.02%	3.25%	-0.05%	0.03%	2.27%	-0.03%
Hillsborough	Pasco	0.02%	0.86%	-0.04%	0.02%	1.19%	-0.04%
Hillsborough	Pinellas	-0.27%	0.17%	-0.13%	0.23%	0.88%	0.13%
Pasco	Hillsborough	0.02%	0.86%	-0.04%	0.02%	1.19%	-0.04%
Pasco	Pasco	-0.07%	0.66%	0.01%	0.04%	0.74%	-0.01%
Pasco	Pinellas	0.22%	0.39%	0.19%	0.07%	0.38%	0.09%
Pinellas	Hillsborough	0.17%	0.63%	-0.13%	0.59%	1.25%	0.13%
Pinellas	Pasco	0.22%	0.39%	0.19%	0.07%	0.38%	0.09%
Pinellas	Pinellas	-0.01%	0.29%	0.00%	-0.08%	0.47%	0.00%
<b>Total Impacts</b>		-0.02%	1.62%	-0.02%	0.02%	1.47%	-0.01%

Figure B-7 9 Inch Rain Event

Project/Event Impacts on 2045 Baseline Travel Characteristics							
Origin County	Destination County	Auto VMT	Auto VHT	Auto Trips	Truck VMT	Truck VHT	Truck Trips
Hillsborough	Hillsborough	7.14%	79.24%	-6.36%	-1.15%	84.09%	-6.91%
Hillsborough	Pasco	11.27%	54.61%	-2.81%	-6.92%	27.21%	-6.08%
Hillsborough	Pinellas	3.01%	76.09%	-21.86%	-13.63%	52.75%	-30.58%
Pasco	Hillsborough	11.27%	54.61%	-2.81%	-6.92%	27.21%	-6.08%
Pasco	Pasco	14.75%	38.94%	-4.28%	1.22%	39.56%	-4.29%
Pasco	Pinellas	15.09%	38.52%	-20.86%	-7.95%	13.46%	-25.85%
Pinellas	Hillsborough	-4.34%	38.19%	-21.86%	-5.74%	44.11%	-30.58%
Pinellas	Pasco	15.09%	38.52%	-20.86%	-7.95%	13.46%	-25.85%
Pinellas	Pinellas	6.42%	40.33%	-9.84%	5.15%	55.82%	-7.02%
<b>Total Impacts</b>		8.68%	59.34%	-7.44%	-0.20%	64.22%	-7.19%

Figure B-8 Category 3 Hurricane

Project/Event Impacts on 2045 Baseline Travel Characteristics							
Origin County	Destination County	Auto VMT	Auto VHT	Auto Trips	Truck VMT	Truck VHT	Truck Trips
Hillsborough	Hillsborough	-46.15%	-43.32%	-41.99%	-41.23%	-39.71%	-42.62%
Hillsborough	Pasco	-31.31%	-29.62%	-21.08%	-31.41%	-29.09%	-17.79%
Hillsborough	Pinellas	-99.64%	-99.59%	-99.61%	-99.88%	-99.87%	-99.80%
Pasco	Hillsborough	-31.31%	-29.62%	-21.08%	-31.41%	-29.09%	-17.79%
Pasco	Pasco	-32.91%	-31.32%	-27.49%	-24.77%	-21.93%	-25.95%
Pasco	Pinellas	-98.82%	-98.60%	-97.24%	-98.29%	-98.00%	-96.68%
Pinellas	Hillsborough	-99.25%	-99.23%	-99.61%	-99.75%	-99.76%	-99.80%
Pinellas	Pasco	-98.82%	-98.60%	-97.24%	-98.29%	-98.00%	-96.68%
Pinellas	Pinellas	-90.64%	-88.99%	-74.72%	-94.17%	-93.02%	-81.31%
<b>Total Impacts</b>		-57.74%	-55.10%	-49.63%	-52.62%	-50.84%	-50.18%

## Appendix C. TranSight Methodology (V. 4.0)

### Commute Costs

$$\Delta CC_{ij} = 1 + \frac{1}{S} * \sum_k \left[ \left( \%H_k^{alt} * \frac{VHT_{ij}^{alt}}{trips_{ij}^{alt}} \right) - \left( \%H_k^{base} * \frac{VHT_{ij}^{base}}{trips_{ij}^{base}} \right) \right]$$

where

$\Delta CC_{ij}$  = Change in commuter costs between regions  $i$  and  $j$  (hours)

$\%H_k^{base}$  = Percent of VHT between  $i$  and  $j$  traveled on mode  $k$ : baseline scenario

$VHT_k^{base}$  = Vehicle hours traveled between  $i$  and  $j$  on mode  $k$ : baseline scenario

$trips_k^{base}$  = Vehicle Trips traveled between  $i$  and  $j$  on mode  $k$ : baseline scenario

$\%H_k^{alt}$  = Percent of VHT between  $i$  and  $j$  traveled on mode  $k$ : alternative scenario

$VHT_k^{alt}$  = Vehicle hours traveled between  $i$  and  $j$  on mode  $k$ : alternative scenario

$trips_k^{alt}$  = Vehicle Trips traveled between  $i$  and  $j$  on mode  $k$ : alternative scenario

$$\%H_k^S = \frac{VHT_{ij}^S * Occ * CCRatio}{\sum_j VHT_j^S}$$

where

$\%H_k^S$  = Percent of VHT between  $i$  and  $j$  traveled on mode  $k$ : scenario  $S$

$VHT_k^S$  = Vehicle hours traveled between  $i$  and  $j$  on mode  $k$ : scenario  $S$

$Occ$  = Vehicle occupancy on mode  $k$

$CCRatio$  = Commuting costs mode ratios for mode  $k$

**Transportation Costs**

$$\Delta TC_{ij} = \frac{(VMT_{ij}^{base} / VHT_{ij}^{base})}{(VMT_{ij}^{alt} / VHT_{ij}^{alt})}$$

where

$\Delta TC_{ij}$  = Change in transportation costs between regions *i* and *j*

$VMT_{ij}^{base}$  = Vehicle miles traveled between *i* and *j*: baseline scenario

$VHT_{ij}^{base}$  = Vehicle hours traveled between *i* and *j*: baseline scenario

$VMT_{ij}^{alt}$  = Vehicle miles traveled between *i* and *j*: alternative scenario

$VHT_{ij}^{alt}$  = Vehicle hours traveled between *i* and *j*: alternative scenario

**Accessibly Costs**

$$\Delta AC_{ij} = \frac{(Trips_{ij}^{base} / VHT_{ij}^{base})}{(Trips_{ij}^{alt} / VHT_{ij}^{alt})}$$

where

$\Delta AC_{ij}$  = Change in accessibility costs between regions *i* and *j*

$Trips_{ij}^{base}$  = Vehicle Trips between *i* and *j*: baseline scenario

$VHT_{ij}^{base}$  = Vehicle hours traveled between *i* and *j*: baseline scenario

$Trips_{ij}^{alt}$  = Vehicle Trips between *i* and *j*: alternative scenario

$VHT_{ij}^{alt}$  = Vehicle hours traveled between *i* and *j*: alternative scenario

## Appendix D. Detailed Summary Tables for Project Impacts (2-Day)

### Figure D-1 US 19, Pasco Detailed Economic Impacts

Category	2045	2046	2047	2048	2049	2050
<b>Hillsborough</b>						
Total Employment (individual jobs)	-19.69	-2.58	0.21	1.37	1.83	1.79
Private Non-Farm Employment (individual jobs)	-19.03	-2.14	0.44	1.46	1.82	1.73
Residence Adjusted Employment (individual jobs)	1.21	-2.86	3.50	4.53	4.91	4.69
Population (individuals)	-6.11	-5.69	-3.97	-2.32	-0.79	0.45
Labor Force (individuals)	-4.36	-3.12	-1.96	-0.89	0.05	0.80
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-4.21	-0.46	-0.05	0.15	0.23	0.23
Output (Millions of Fixed 2018 Dollars)	-7.19	-0.89	-0.15	0.21	0.36	0.37
Value Added (Millions of Fixed 2018 Dollars)	-4.18	-0.47	-0.05	0.15	0.23	0.23
Personal Income (Millions of Fixed 2018 Dollars)	2.27	-0.67	0.63	0.90	1.09	1.15
Disposable Personal Income (Millions of Fixed 2018 Dollars)	1.87	-0.58	0.50	0.73	0.89	0.95
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-1.31	-0.15	0.29	0.37	0.42	0.42
PCE-Price Index (2009=100, nation)	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pasco</b>						
Total Employment (individual jobs)	-76.31	-2.86	-1.04	-0.04	0.23	0.12
Private Non-Farm Employment (individual jobs)	-74.03	-1.52	-0.18	0.55	0.68	0.50
Residence Adjusted Employment (individual jobs)	-12.13	-10.97	-11.44	-11.33	-10.94	-10.36
Population (individuals)	-7.05	-9.15	-11.99	-14.17	-15.78	-16.87
Labor Force (individuals)	-6.65	-6.92	-8.68	-9.78	-10.43	-10.70
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-8.61	-0.48	-0.27	-0.14	-0.09	-0.08
Output (Millions of Fixed 2018 Dollars)	-14.60	-0.87	-0.48	-0.24	-0.15	-0.14
Value Added (Millions of Fixed 2018 Dollars)	-8.63	-0.49	-0.27	-0.14	-0.09	-0.08
Personal Income (Millions of Fixed 2018 Dollars)	-6.30	-0.43	-0.72	-0.84	-1.02	-1.22
Disposable Personal Income (Millions of Fixed 2018 Dollars)	-5.06	-0.34	-0.59	-0.71	-0.88	-1.07

Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-4.52	0.02	-0.22	-0.28	-0.37	-0.45
PCE-Price Index (2009=100, nation)	0.01	0.00	0.00	0.00	0.00	0.00
<b>Pinellas</b>						
Total Employment (individual jobs)	-48.95	1.37	4.04	7.07	7.84	7.38
Private Non-Farm Employment (individual jobs)	-45.94	3.60	5.78	8.36	8.77	8.04
Residence Adjusted Employment (individual jobs)	-87.21	1.10	0.85	4.55	5.92	6.09
Population (individuals)	-60.70	-44.56	-35.72	-27.22	-19.87	-13.80
Labor Force (individuals)	-42.82	-26.21	-20.91	-15.67	-11.12	-7.36
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-12.78	-6.12	-4.69	-3.37	-2.51	-1.95
Output (Millions of Fixed 2018 Dollars)	-20.74	-10.00	-7.60	-5.40	-3.98	-3.06
Value Added (Millions of Fixed 2018 Dollars)	-12.54	-5.91	-4.51	-3.21	-2.37	-1.83
Personal Income (Millions of Fixed 2018 Dollars)	-14.76	-2.18	-1.87	-0.84	-0.18	0.23
Disposable Personal Income (Millions of Fixed 2018 Dollars)	-12.31	-2.01	-1.72	-0.85	-0.28	0.08
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-22.03	-0.17	-0.79	-0.38	-0.16	-0.03
<b>PCE-Price Index (2009=100, nation)</b>	<b>0.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Source: TBRPC Remi TranSight, 4.0, 2019.

**Figure D-2 SR 54, Pasco Detailed Economic Impacts**

Category	Units	2045	2046	2047	2048	2049	2050
<b>Hillsborough</b>							
Total Employment (individual jobs)		-13.69	0.10	0.76	1.04	1.08	0.97
Private Non-Farm Employment (individual jobs)		-13.25	0.37	0.92	1.13	1.12	0.98
Residence Adjusted Employment (individual jobs)		-7.09	0.29	1.56	1.81	1.84	1.71
Population (individuals)		-4.72	-3.62	-2.66	-1.77	-1.00	-0.38
Labor Force (individuals)		-3.49	-2.11	-1.42	-0.84	-0.36	0.02
Gross Domestic Product (Millions of Fixed 2018 Dollars)		-2.55	-0.32	-0.17	-0.07	-0.02	-0.01
Output (Millions of Fixed 2018 Dollars)		-4.47	-0.58	-0.31	-0.14	-0.05	-0.02
Value Added (Millions of Fixed 2018 Dollars)		-2.56	-0.33	-0.17	-0.07	-0.02	-0.01
Personal Income (Millions of Fixed 2018 Dollars)		-0.65	-0.12	0.16	0.26	0.32	0.35



Disposable Personal Income (Millions of Fixed 2018 Dollars)	-0.55	-0.12	0.12	0.21	0.26	0.28
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-1.31	-0.01	0.07	0.10	0.12	0.12
PCE-Price Index (2009=100, nation)	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pasco</b>						
Total Employment (individual jobs)	-10.05	1.08	1.22	1.33	1.19	0.96
Private Non-Farm Employment (individual jobs)	-9.43	1.57	1.62	1.65	1.46	1.18
Residence Adjusted Employment (individual jobs)	-9.81	-6.11	-5.65	-5.05	-4.42	-3.82
Population (individuals)	-8.83	-8.49	-8.80	-8.85	-8.72	-8.44
Labor Force (individuals)	-8.05	-5.33	-5.44	-5.31	-5.06	-4.71
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-1.76	-0.49	-0.37	-0.27	-0.21	-0.17
Output (Millions of Fixed 2018 Dollars)	-2.99	-0.87	-0.64	-0.46	-0.35	-0.29
Value Added (Millions of Fixed 2018 Dollars)	-1.77	-0.50	-0.37	-0.27	-0.21	-0.17
Personal Income (Millions of Fixed 2018 Dollars)	-3.65	-0.20	-0.53	-0.55	-0.59	-0.63
Disposable Personal Income (Millions of Fixed 2018 Dollars)	-2.95	-0.19	-0.46	-0.48	-0.53	-0.56
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-3.44	-0.04	-0.22	-0.23	-0.25	-0.26
PCE-Price Index (2009=100, nation)	0.01	0.00	0.00	0.00	0.00	0.00
<b>Pinellas</b>						
Total Employment (individual jobs)	-6.54	-0.48	-0.07	0.02	0.07	0.08
Private Non-Farm Employment (individual jobs)	-6.48	-0.46	-0.08	0.01	0.05	0.06
Residence Adjusted Employment (individual jobs)	0.31	-0.29	0.80	0.83	0.82	0.75
Population (individuals)	0.89	0.46	0.49	0.51	0.55	0.58
Labor Force (individuals)	0.65	0.26	0.28	0.30	0.33	0.34
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-0.81	0.08	0.10	0.10	0.09	0.07
Output (Millions of Fixed 2018 Dollars)	-1.46	0.14	0.18	0.17	0.15	0.13
Value Added (Millions of Fixed 2018 Dollars)	-0.81	0.08	0.10	0.10	0.09	0.07
Personal Income (Millions of Fixed 2018 Dollars)	0.37	-0.04	0.15	0.17	0.18	0.18
Disposable Personal Income (Millions of Fixed 2018 Dollars)	0.31	-0.03	0.12	0.14	0.15	0.15
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	0.46	-0.03	0.07	0.07	0.07	0.07
PCE-Price Index (2009=100, nation)	0.00	0.00	0.00	0.00	0.00	0.00

Source: TBRPC Remi TranSight, 4.0, 2019.

Figure D-3 Gulf Blvd, Pinellas Detailed Economic Impacts

Category	Units	2045	2046	2047	2048	2049	2050
<b>Hillsborough</b>							
Total Employment (individual jobs)		39.49	0.14	1.37	1.73	1.80	1.62
Private Non-Farm Employment (individual jobs)		38.84	-0.17	1.18	1.57	1.64	1.46
Residence Adjusted Employment (individual jobs)		30.00	-0.45	3.99	4.58	4.77	4.54
Population (individuals)		2.19	2.28	3.29	4.13	4.82	5.27
Labor Force (individuals)		2.02	2.12	2.52	2.92	3.23	3.41
Gross Domestic Product (Millions of Fixed 2018 Dollars)		5.39	-0.48	-0.20	-0.06	0.01	0.03
Output (Millions of Fixed 2018 Dollars)		8.58	-0.89	-0.40	-0.15	-0.01	0.03
Value Added (Millions of Fixed 2018 Dollars)		5.36	-0.48	-0.20	-0.06	0.01	0.03
Personal Income (Millions of Fixed 2018 Dollars)		4.38	0.09	1.03	1.21	1.32	1.35
Disposable Personal Income (Millions of Fixed 2018 Dollars)		3.63	0.08	0.86	1.01	1.11	1.14
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)		-0.28	0.08	0.42	0.47	0.50	0.50
PCE-Price Index (2009=100, nation)		0.00	0.00	0.00	0.00	0.00	0.00
<b>Pasco</b>							
Total Employment (individual jobs)		-65.93	-2.73	-1.18	-0.33	-0.06	-0.09
Private Non-Farm Employment (individual jobs)		-64.09	-1.68	-0.54	0.10	0.26	0.18
Residence Adjusted Employment (individual jobs)		-7.76	-8.20	-8.83	-8.94	-8.79	-8.45
Population (individuals)		-2.90	-5.04	-7.63	-9.71	-11.31	-12.46
Labor Force (individuals)		-2.86	-4.35	-6.01	-7.12	-7.86	-8.27
Gross Domestic Product (Millions of Fixed 2018 Dollars)		-7.22	-0.29	-0.14	-0.05	-0.02	-0.02
Output (Millions of Fixed 2018 Dollars)		-12.24	-0.52	-0.24	-0.08	-0.03	-0.04
Value Added (Millions of Fixed 2018 Dollars)		-7.24	-0.29	-0.14	-0.05	-0.02	-0.02
Personal Income (Millions of Fixed 2018 Dollars)		-5.19	-0.31	-0.49	-0.59	-0.73	-0.89
Disposable Personal Income (Millions of Fixed 2018 Dollars)		-4.16	-0.22	-0.39	-0.48	-0.62	-0.77
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)		-3.08	0.04	-0.12	-0.17	-0.24	-0.32
PCE-Price Index (2009=100, nation)		0.00	0.00	0.00	0.00	0.00	0.00
<b>Pinellas</b>							
Total Employment (individual jobs)		-159.79	-8.73	-3.33	1.28	3.40	4.05

Private Non-Farm Employment (individual jobs)	-155.47	-5.92	-1.36	2.65	4.35	4.71
Residence Adjusted Employment (individual jobs)	-160.12	-8.51	-6.15	-1.42	0.95	2.01
Population (individuals)	-60.08	-49.49	-43.22	-36.32	-29.76	-23.89
Labor Force (individuals)	-40.65	-29.90	-25.77	-21.38	-17.22	-13.50
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-25.87	-3.94	-2.79	-1.77	-1.14	-0.77
Output (Millions of Fixed 2018 Dollars)	-43.61	-6.59	-4.60	-2.88	-1.82	-1.20
Value Added (Millions of Fixed 2018 Dollars)	-25.64	-3.86	-2.71	-1.70	-1.09	-0.72
Personal Income (Millions of Fixed 2018 Dollars)	-22.04	-4.02	-3.47	-2.38	-1.62	-1.08
Disposable Personal Income (Millions of Fixed 2018 Dollars)	-18.29	-3.54	-3.07	-2.16	-1.51	-1.05
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-17.83	-0.91	-1.27	-0.86	-0.61	-0.45
PCE-Price Index (2009=100, nation)	0.02	0.00	0.00	0.00	0.00	0.00

Source: TBRPC Remi TranSight, 4.0, 2019.

**Figure D-4 Roosevelt, Pinellas Detailed Economic Impacts**

Category	Units	2045	2046	2047	2048	2049	2050
<b>Hillsborough</b>							
Total Employment (individual jobs)		-15.11	-0.74	-0.16	0.24	0.41	0.44
Private Non-Farm Employment (individual jobs)		-14.65	-0.44	0.04	0.36	0.49	0.49
Residence Adjusted Employment (individual jobs)		-13.58	-0.80	-0.12	0.30	0.50	0.56
Population (individuals)		-4.99	-4.24	-3.70	-3.10	-2.51	-1.98
Labor Force (individuals)		-3.77	-2.67	-2.22	-1.77	-1.36	-1.00
Gross Domestic Product (Millions of Fixed 2018 Dollars)		-2.70	-0.26	-0.16	-0.07	-0.03	-0.01
Output (Millions of Fixed 2018 Dollars)		-4.82	-0.47	-0.28	-0.13	-0.05	-0.01
Value Added (Millions of Fixed 2018 Dollars)		-2.71	-0.27	-0.16	-0.07	-0.03	-0.01
Personal Income (Millions of Fixed 2018 Dollars)		-1.85	-0.34	-0.20	-0.09	-0.02	0.03
Disposable Personal Income (Millions of Fixed 2018 Dollars)		-1.55	-0.30	-0.18	-0.09	-0.03	0.01
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)		-1.35	-0.10	-0.08	-0.04	-0.01	0.00
PCE-Price Index (2009=100, nation)		0.00	0.00	0.00	0.00	0.00	0.00
<b>Pasco</b>							
Total Employment (individual jobs)		-11.17	-0.01	0.14	0.22	0.22	0.17

Private Non-Farm Employment (individual jobs)	-1.74	-1.65	-1.73	-1.71	-1.65	-1.56
Residence Adjusted Employment (individual jobs)	-0.82	-1.16	-1.61	-1.96	-2.22	-2.39
Population (individuals)	-0.77	-0.93	-1.22	-1.40	-1.51	-1.56
Labor Force (individuals)	-1.33	-0.08	-0.05	-0.03	-0.02	-0.02
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-2.24	-0.15	-0.09	-0.05	-0.03	-0.03
Output (Millions of Fixed 2018 Dollars)	-1.33	-0.08	-0.05	-0.03	-0.02	-0.02
Value Added (Millions of Fixed 2018 Dollars)	-1.20	-0.04	-0.10	-0.12	-0.14	-0.17
Personal Income (Millions of Fixed 2018 Dollars)	-0.96	-0.02	-0.08	-0.10	-0.12	-0.15
Disposable Personal Income (Millions of Fixed 2018 Dollars)	-0.74	0.02	-0.03	-0.04	-0.05	-0.06
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-11.17	-0.01	0.14	0.22	0.22	0.17
PCE-Price Index (2009=100, nation)	-1.74	-1.65	-1.73	-1.71	-1.65	-1.56
<b>Pinellas</b>						
Total Employment (individual jobs)	0.00	0.00	0.00	0.00	0.00	0.00
Private Non-Farm Employment (individual jobs)	-4.85	-0.45	-0.13	0.11	0.21	0.24
Residence Adjusted Employment (individual jobs)	-4.70	-0.34	-0.05	0.16	0.25	0.26
Population (individuals)	-5.67	-0.46	-0.05	0.20	0.33	0.37
Labor Force (individuals)	-2.46	-2.04	-1.74	-1.41	-1.09	-0.81
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-1.69	-1.23	-1.03	-0.82	-0.62	-0.45
Output (Millions of Fixed 2018 Dollars)	-0.84	-0.20	-0.13	-0.08	-0.05	-0.03
Value Added (Millions of Fixed 2018 Dollars)	-1.47	-0.33	-0.22	-0.13	-0.08	-0.05
Personal Income (Millions of Fixed 2018 Dollars)	-0.83	-0.19	-0.13	-0.08	-0.05	-0.03
Disposable Personal Income (Millions of Fixed 2018 Dollars)	-0.86	-0.19	-0.11	-0.05	0.00	0.03
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-0.72	-0.17	-0.10	-0.05	-0.01	0.01
PCE-Price Index (2009=100, nation)	-0.83	-0.05	-0.04	-0.02	0.00	0.00

Source: TBRPC Remi TranSight, 4.0, 2019.

Figure D-5 Gandy, Hillsborough Detailed Economic Impacts

Category	2045	2046	2047	2048	2049	2050
<b>Hillsborough</b>						
Total Employment (individual jobs)	-814.58	-15.76	31.88	62.11	70.67	66.46
Private Non-Farm Employment (individual jobs)	-781.40	5.78	46.34	71.37	76.31	69.75
Residence Adjusted Employment (individual jobs)	-695.64	-19.53	39.00	66.98	74.89	70.33
Population (individuals)	-452.01	-345.43	-276.13	-209.93	-151.99	-105.05
Labor Force (individuals)	-337.64	-201.94	-154.08	-110.13	-73.40	-44.15
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-162.69	-31.31	-19.52	-10.44	-5.42	-3.03
Output (Millions of Fixed 2018 Dollars)	-285.76	-56.07	-34.96	-18.88	-9.93	-5.62
Value Added (Millions of Fixed 2018 Dollars)	-163.24	-31.38	-19.46	-10.32	-5.28	-2.88
Personal Income (Millions of Fixed 2018 Dollars)	-88.42	-17.50	-3.72	4.22	8.88	10.87
Disposable Personal Income (Millions of Fixed 2018 Dollars)	-74.29	-15.90	-4.33	2.39	6.42	8.20
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-136.41	-0.74	-0.97	1.77	2.99	3.26
PCE-Price Index (2009=100, nation)	0.16	-0.01	0.00	0.00	0.00	0.00
<b>Pasco</b>						
Total Employment (individual jobs)	-100.67	-13.77	-5.04	-0.45	1.26	1.24
Private Non-Farm Employment (individual jobs)	-98.39	-12.78	-4.72	-0.50	1.07	1.02
Residence Adjusted Employment (individual jobs)	-19.58	-11.08	-11.13	-9.26	-7.18	-5.21
Population (individuals)	-15.95	-15.18	-18.41	-20.90	-22.46	-23.07
Labor Force (individuals)	-16.57	-8.82	-11.84	-12.72	-12.87	-12.36
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-7.84	1.02	1.48	1.63	1.53	1.29
Output (Millions of Fixed 2018 Dollars)	-13.27	1.59	2.47	2.77	2.63	2.23
Value Added (Millions of Fixed 2018 Dollars)	-7.93	1.01	1.48	1.63	1.54	1.30
Personal Income (Millions of Fixed 2018 Dollars)	-1.22	-2.33	1.95	2.65	2.69	2.22
Disposable Personal Income (Millions of Fixed 2018 Dollars)	-0.96	-1.93	1.50	2.01	1.99	1.57
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-7.60	0.64	1.16	1.24	1.06	0.73
PCE-Price Index (2009=100, nation)	0.04	-0.01	0.00	0.00	0.00	0.00
<b>Pinellas</b>						
Total Employment (individual jobs)	-1328.92	-10.14	39.86	89.53	104.22	99.72

Private Non-Farm Employment (individual jobs)	-1278.35	24.00	64.65	106.96	116.30	108.04
Residence Adjusted Employment (individual jobs)	-1656.13	-14.00	-10.07	44.45	64.53	66.96
Population (individuals)	-889.00	-676.60	-559.25	-442.76	-340.00	-253.66
Labor Force (individuals)	-618.96	-401.86	-329.67	-257.14	-192.97	-139.07
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-250.96	-65.27	-47.91	-31.87	-22.10	-16.29
Output (Millions of Fixed 2018 Dollars)	-422.10	-112.81	-82.36	-54.70	-37.76	-27.67
Value Added (Millions of Fixed 2018 Dollars)	-249.34	-64.54	-47.16	-31.16	-21.43	-15.67
Personal Income (Millions of Fixed 2018 Dollars)	-250.33	-36.85	-31.21	-16.68	-7.50	-1.83
Disposable Personal Income (Millions of Fixed 2018 Dollars)	-208.43	-33.51	-28.52	-16.23	-8.35	-3.39
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-301.97	-3.57	-12.33	-6.74	-3.88	-2.24
PCE-Price Index (2009=100, nation)	0.42	-0.03	-0.01	0.00	0.00	0.00

Source: TBRPC Remi TranSight, 4.0, 2019.

**Figure D-6 Big Bend, Hillsborough Detailed Economic Impacts**

Category	Units	2045	2046	2047	2048	2049	2050
<b>Hillsborough</b>							
Total Employment (individual jobs)		-15.55	-1.16	-0.83	-0.53	-0.40	-0.38
Private Non-Farm Employment (individual jobs)		-14.96	-0.74	-0.50	-0.27	-0.19	-0.20
Residence Adjusted Employment (individual jobs)		-15.18	-1.40	-1.02	-0.69	-0.52	-0.46
Population (individuals)		-7.88	-7.70	-7.60	-7.21	-6.65	-6.05
Labor Force (individuals)		-5.72	-4.68	-4.43	-4.07	-3.66	-3.22
Gross Domestic Product (Millions of Fixed 2018 Dollars)		-2.91	-0.34	-0.27	-0.21	-0.17	-0.15
Output (Millions of Fixed 2018 Dollars)		-5.82	-0.64	-0.52	-0.40	-0.33	-0.29
Value Added (Millions of Fixed 2018 Dollars)		-2.98	-0.35	-0.28	-0.21	-0.17	-0.15
Personal Income (Millions of Fixed 2018 Dollars)		-2.24	-0.52	-0.44	-0.36	-0.30	-0.26
Disposable Personal Income (Millions of Fixed 2018 Dollars)		-1.88	-0.46	-0.39	-0.33	-0.29	-0.25
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)		-1.97	-0.32	-0.32	-0.27	-0.23	-0.20
PCE-Price Index (2009=100, nation)		0.00	0.00	0.00	0.00	0.00	0.00
<b>Pasco</b>							

Total Employment (individual jobs)	-4.50	-0.18	-0.08	-0.01	0.00	-0.01
Private Non-Farm Employment (individual jobs)	-4.35	-0.09	-0.01	0.04	0.05	0.03
Residence Adjusted Employment (individual jobs)	-1.40	-1.14	-1.17	-1.14	-1.09	-1.02
Population (individuals)	-1.03	-1.21	-1.47	-1.67	-1.80	-1.88
Labor Force (individuals)	-0.95	-0.84	-1.00	-1.09	-1.13	-1.14
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-0.48	-0.04	-0.03	-0.02	-0.01	-0.01
Output (Millions of Fixed 2018 Dollars)	-0.82	-0.08	-0.05	-0.03	-0.03	-0.02
Value Added (Millions of Fixed 2018 Dollars)	-0.48	-0.05	-0.03	-0.02	-0.01	-0.01
Personal Income (Millions of Fixed 2018 Dollars)	-0.75	-0.06	-0.08	-0.09	-0.10	-0.12
Disposable Personal Income (Millions of Fixed 2018 Dollars)	-0.60	-0.05	-0.07	-0.08	-0.09	-0.11
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-0.50	-0.02	-0.04	-0.04	-0.05	-0.06
PCE-Price Index (2009=100, nation)	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pinellas</b>						
Total Employment (individual jobs)	-14.54	-0.67	-0.47	-0.22	-0.11	-0.09
Private Non-Farm Employment (individual jobs)	-14.06	-0.38	-0.27	-0.08	0.00	0.00
Residence Adjusted Employment (individual jobs)	-13.74	-0.69	-0.58	-0.31	-0.19	-0.14
Population (individuals)	-5.17	-4.75	-4.54	-4.16	-3.73	-3.28
Labor Force (individuals)	-3.45	-2.87	-2.70	-2.45	-2.17	-1.88
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-3.27	-0.22	-0.18	-0.13	-0.10	-0.09
Output (Millions of Fixed 2018 Dollars)	-4.64	-0.37	-0.30	-0.22	-0.17	-0.14
Value Added (Millions of Fixed 2018 Dollars)	-3.04	-0.21	-0.17	-0.12	-0.10	-0.08
Personal Income (Millions of Fixed 2018 Dollars)	-2.39	-0.35	-0.31	-0.24	-0.19	-0.16
Disposable Personal Income (Millions of Fixed 2018 Dollars)	-1.98	-0.31	-0.28	-0.22	-0.18	-0.15
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-1.65	-0.17	-0.19	-0.15	-0.13	-0.11
PCE-Price Index (2009=100, nation)	0.00	0.00	0.00	0.00	0.00	0.00

Source: TBRPC Remi TranSight, 4.0, 2019.

**Figure D-7 9 Inch Rain Event Detailed Economic Impacts**

Category	Units	2045	2046	2047	2048	2049	2050
<b>Hillsborough</b>							
Total Employment (individual jobs)		-2334.47	-56.94	47.19	120.17	143.86	138.90
Private Non-Farm Employment (individual jobs)		-2247.03	-1.13	84.82	144.78	159.53	148.68
Residence Adjusted Employment (individual jobs)		-2119.84	-58.99	38.15	108.98	134.04	132.14
Population (individuals)		-1129.91	-873.41	-716.64	-562.84	-426.33	-312.98
Labor Force (individuals)		-850.50	-522.37	-409.85	-305.45	-216.99	-144.85
Gross Domestic Product (Millions of Fixed 2018 Dollars)		-448.16	-72.81	-47.00	-26.19	-14.41	-8.42
Output (Millions of Fixed 2018 Dollars)		-785.25	-130.54	-84.20	-47.30	-26.28	-15.50
Value Added (Millions of Fixed 2018 Dollars)		-449.80	-73.29	-47.13	-26.13	-14.26	-8.23
Personal Income (Millions of Fixed 2018 Dollars)		-296.45	-47.37	-24.41	-5.10	6.84	13.19
Disposable Personal Income (Millions of Fixed 2018 Dollars)		-248.31	-42.72	-23.42	-7.09	3.14	8.73
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)		-336.42	-4.83	-8.48	-1.50	1.94	3.39
PCE-Price Index (2009=100, nation)		0.34	-0.03	-0.01	0.00	0.00	0.00
<b>Pasco</b>							
Total Employment (individual jobs)		-212.79	-14.01	1.76	11.44	13.29	10.92
Private Non-Farm Employment (individual jobs)		-203.02	-7.06	7.03	15.46	16.49	13.62
Residence Adjusted Employment (individual jobs)		-166.49	-99.65	-93.90	-83.24	-72.20	-61.57
Population (individuals)		-149.69	-140.85	-148.42	-152.17	-152.67	-150.17
Labor Force (individuals)		-139.59	-86.33	-91.94	-91.37	-88.32	-83.29
Gross Domestic Product (Millions of Fixed 2018 Dollars)		-26.38	-5.01	-2.74	-1.13	-0.46	-0.34
Output (Millions of Fixed 2018 Dollars)		-45.66	-9.06	-4.87	-1.96	-0.73	-0.49
Value Added (Millions of Fixed 2018 Dollars)		-26.46	-5.05	-2.74	-1.12	-0.44	-0.31
Personal Income (Millions of Fixed 2018 Dollars)		-56.24	-8.18	-5.68	-4.47	-4.70	-5.76
Disposable Personal Income (Millions of Fixed 2018 Dollars)		-45.41	-7.03	-5.17	-4.38	-4.74	-5.75
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)		-59.88	-0.17	-1.87	-1.67	-2.10	-2.74
PCE-Price Index (2009=100, nation)		0.21	-0.02	0.00	0.00	0.00	0.00
<b>Pinellas</b>							
Total Employment (individual jobs)		-1599.06	-51.84	21.04	85.24	107.43	105.64



Private Non-Farm Employment (individual jobs)	-1540.80	-12.05	49.91	105.49	121.40	115.22
Residence Adjusted Employment (individual jobs)	-1835.44	-51.43	-8.38	58.70	84.69	87.83
Population (individuals)	-978.77	-752.69	-621.97	-491.35	-375.41	-277.90
Labor Force (individuals)	-681.59	-447.35	-366.83	-285.45	-213.03	-152.14
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-302.05	-78.85	-57.26	-38.11	-26.40	-19.48
Output (Millions of Fixed 2018 Dollars)	-501.64	-131.54	-94.58	-62.25	-42.50	-30.91
Value Added (Millions of Fixed 2018 Dollars)	-297.74	-76.87	-55.46	-36.52	-24.99	-18.22
Personal Income (Millions of Fixed 2018 Dollars)	-277.11	-48.64	-35.15	-17.44	-6.09	0.74
Disposable Personal Income (Millions of Fixed 2018 Dollars)	-230.71	-43.56	-32.08	-17.14	-7.44	-1.48
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-334.65	-6.18	-13.42	-6.74	-3.25	-1.37
PCE-Price Index (2009=100, nation)	0.46	-0.04	-0.01	-0.01	0.00	0.00

Source: TBRPC Remi TranSight, 4.0, 2019.

**Figure D-8 Category 3 Hurricane Detailed Economic Impacts**

Category	Units	2045	2046	2047	2048	2049	2050
<b>Hillsborough</b>							
Total Employment (individual jobs)		-1251.65	-60.32	62.93	127.96	148.58	141.04
Private Non-Farm Employment (individual jobs)		-1200.15	-26.26	84.43	140.10	154.20	142.54
Residence Adjusted Employment (individual jobs)		-734.64	-61.75	156.33	214.22	230.66	216.87
Population (individuals)		-696.79	-532.58	-395.28	-267.02	-155.71	-67.58
Labor Force (individuals)		-518.90	-302.00	-210.53	-127.50	-58.82	-5.03
Gross Domestic Product (Millions of Fixed 2018 Dollars)		-254.40	-54.19	-28.73	-11.65	-2.65	0.91
Output (Millions of Fixed 2018 Dollars)		-444.95	-99.12	-53.51	-22.97	-6.64	0.02
Value Added (Millions of Fixed 2018 Dollars)		-254.95	-54.65	-28.87	-11.63	-2.54	1.06
Personal Income (Millions of Fixed 2018 Dollars)		-55.85	-32.29	15.90	32.81	43.11	46.88
Disposable Personal Income (Millions of Fixed 2018 Dollars)		-47.69	-28.96	11.31	25.66	34.53	37.96
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)		-208.12	0.06	9.46	14.71	17.15	17.24
PCE-Price Index (2009=100, nation)		0.32	-0.03	-0.01	0.00	0.00	0.00
<b>Pasco</b>							
Total Employment (individual jobs)		-316.04	-27.41	0.07	16.10	19.25	15.26

Private Non-Farm Employment (individual jobs)	-299.39	-14.77	10.08	24.03	25.74	20.83
Residence Adjusted Employment (individual jobs)	-292.53	-177.72	-167.34	-149.57	-131.05	-113.26
Population (individuals)	-268.22	-254.53	-266.96	-273.50	-274.77	-271.15
Labor Force (individuals)	-248.78	-156.09	-164.71	-163.87	-158.92	-150.73
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-43.81	-11.26	-6.93	-3.92	-2.51	-2.08
Output (Millions of Fixed 2018 Dollars)	-75.70	-20.07	-12.15	-6.74	-4.19	-3.40
Value Added (Millions of Fixed 2018 Dollars)	-43.83	-11.32	-6.92	-3.88	-2.46	-2.02
Personal Income (Millions of Fixed 2018 Dollars)	-89.46	-16.86	-12.42	-10.47	-10.84	-12.63
Disposable Personal Income (Millions of Fixed 2018 Dollars)	-72.25	-14.41	-11.08	-9.83	-10.44	-12.15
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-101.05	-2.66	-4.83	-4.52	-5.18	-6.22
PCE-Price Index (2009=100, nation)	0.37	-0.03	-0.01	0.00	0.00	0.00
<b>Pinellas</b>						
Total Employment (individual jobs)	-5978.98	-287.97	-72.07	128.35	207.92	218.53
Private Non-Farm Employment (individual jobs)	-5789.59	-159.04	22.32	196.29	256.74	253.88
Residence Adjusted Employment (individual jobs)	-6593.31	-279.76	-227.66	-20.31	70.96	100.60
Population (individuals)	-3043.35	-2418.20	-2070.74	-1710.23	-1381.86	-1097.87
Labor Force (individuals)	-2096.12	-1446.94	-1227.41	-1000.79	-793.91	-615.04
Gross Domestic Product (Millions of Fixed 2018 Dollars)	-1019.56	-234.72	-174.01	-118.93	-84.61	-63.63
Output (Millions of Fixed 2018 Dollars)	-1725.68	-391.54	-287.61	-194.59	-136.78	-101.71
Value Added (Millions of Fixed 2018 Dollars)	-1013.35	-229.26	-169.06	-114.55	-80.73	-60.19
Personal Income (Millions of Fixed 2018 Dollars)	-950.43	-171.47	-151.12	-100.82	-67.59	-45.68
Disposable Personal Income (Millions of Fixed 2018 Dollars)	-790.28	-152.38	-134.77	-92.46	-64.19	-45.29
Real Disposable Personal Income (Millions of Fixed 2018 Dollars)	-975.00	-35.09	-60.73	-41.31	-30.67	-24.07
PCE-Price Index (2009=100, nation)	1.21	-0.12	-0.03	-0.02	-0.01	0.00

Source: TBRPC Remi TranSight, 4.0, 20

## Appendix E. Climate Scenarios

Category 1 Storm

Category 1 Storm plus Sea Level Rise High Projection

Category 1 Storm plus Sea Level Rise Intermediate-Low Projection

Category 3 Storm

Category 3 Storm plus Sea Level Rise High Projection

Category 3 Storm plus Sea Level Rise Intermediate-Low Projection

Category 5 Storm

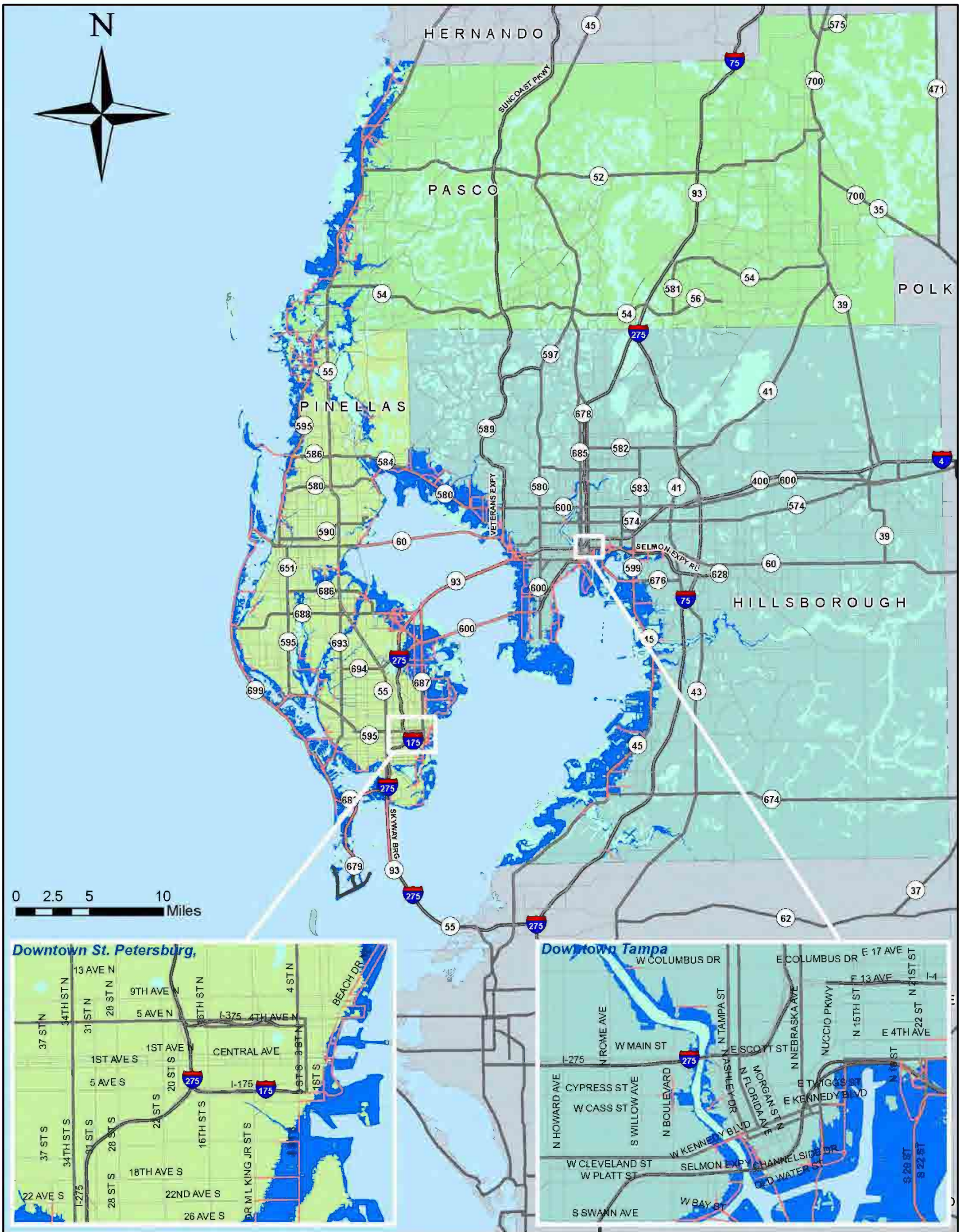
Precipitation - 9 inches of rain over 24 hours (1 day)

Precipitation - 11 inches each day for 3 days (33 total inches)

Summary of impact on Hillsborough County High Criticality Segments

Summary of impact on Pinellas County High Criticality Segments

Summary of impact on Pasco County High Criticality Segments



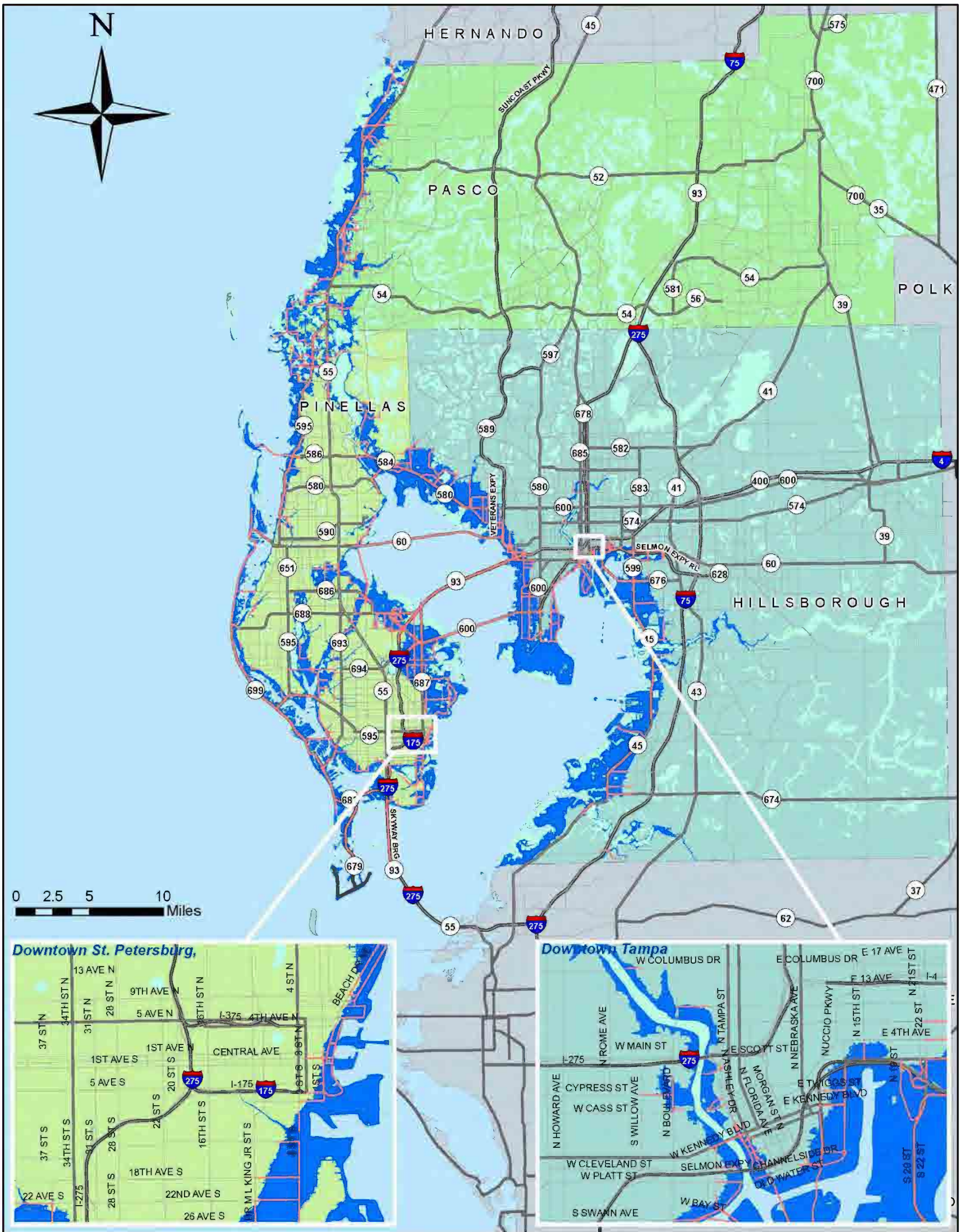
0 2.5 5 10 Miles











### Category 1 Storm

Counties	Transportation Network
Outside Study Area	Unaffected
Hillsborough	Inundated
Pasco	Lakes, Rivers, Streams, Marshes
Pinellas	Inundated Land

Date: 10/17/2018

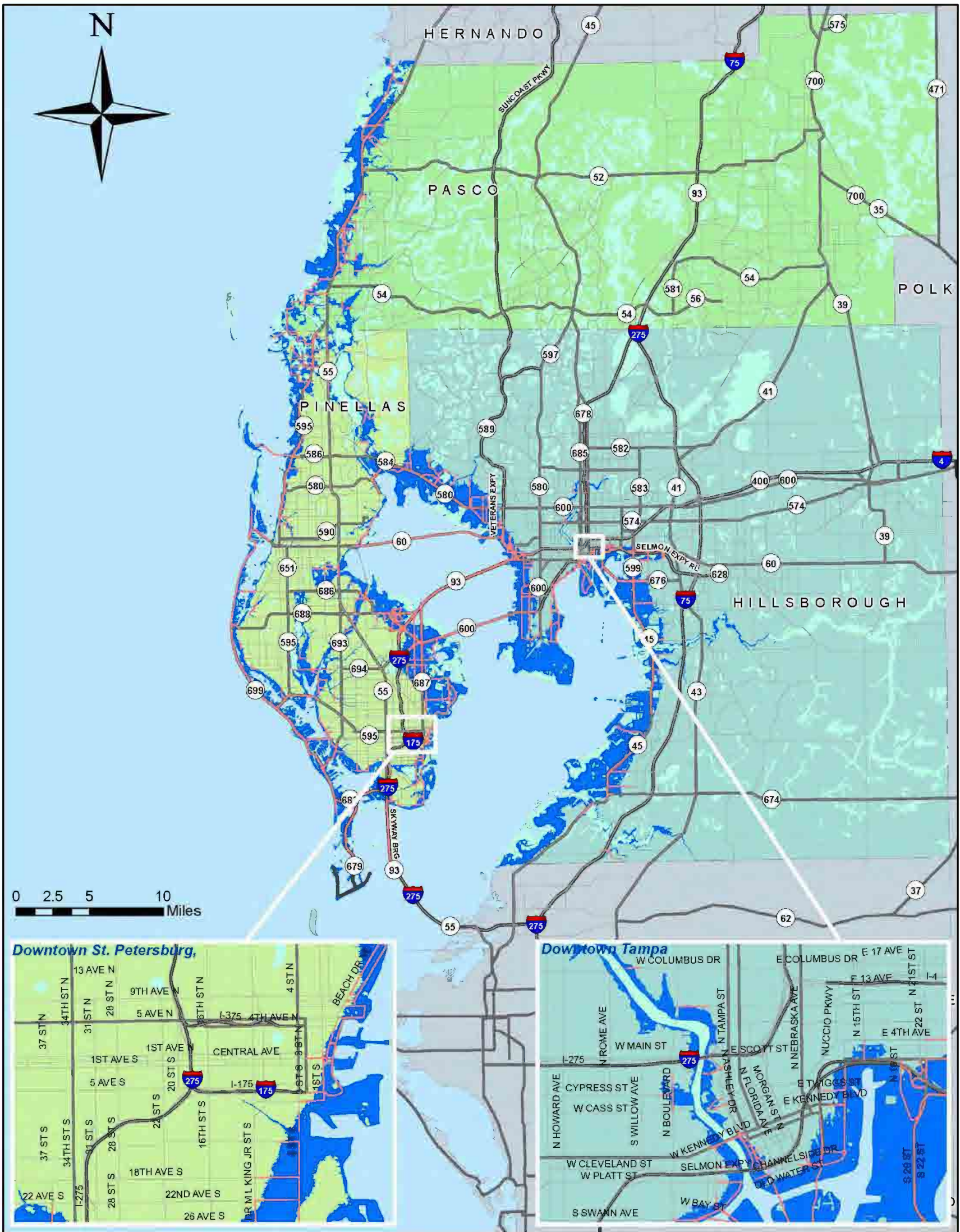


### Category 1 Storm Plus 2045 NOAA High Sea Level Rise Projection

Counties		Transportation Network	
	Outside Study Area		Unaffected
	Hillsborough		Inundated
	Pasco		Inundated Land
	Pinellas		Lakes, Rivers, Streams, Marshes



Date: 10/17/2018

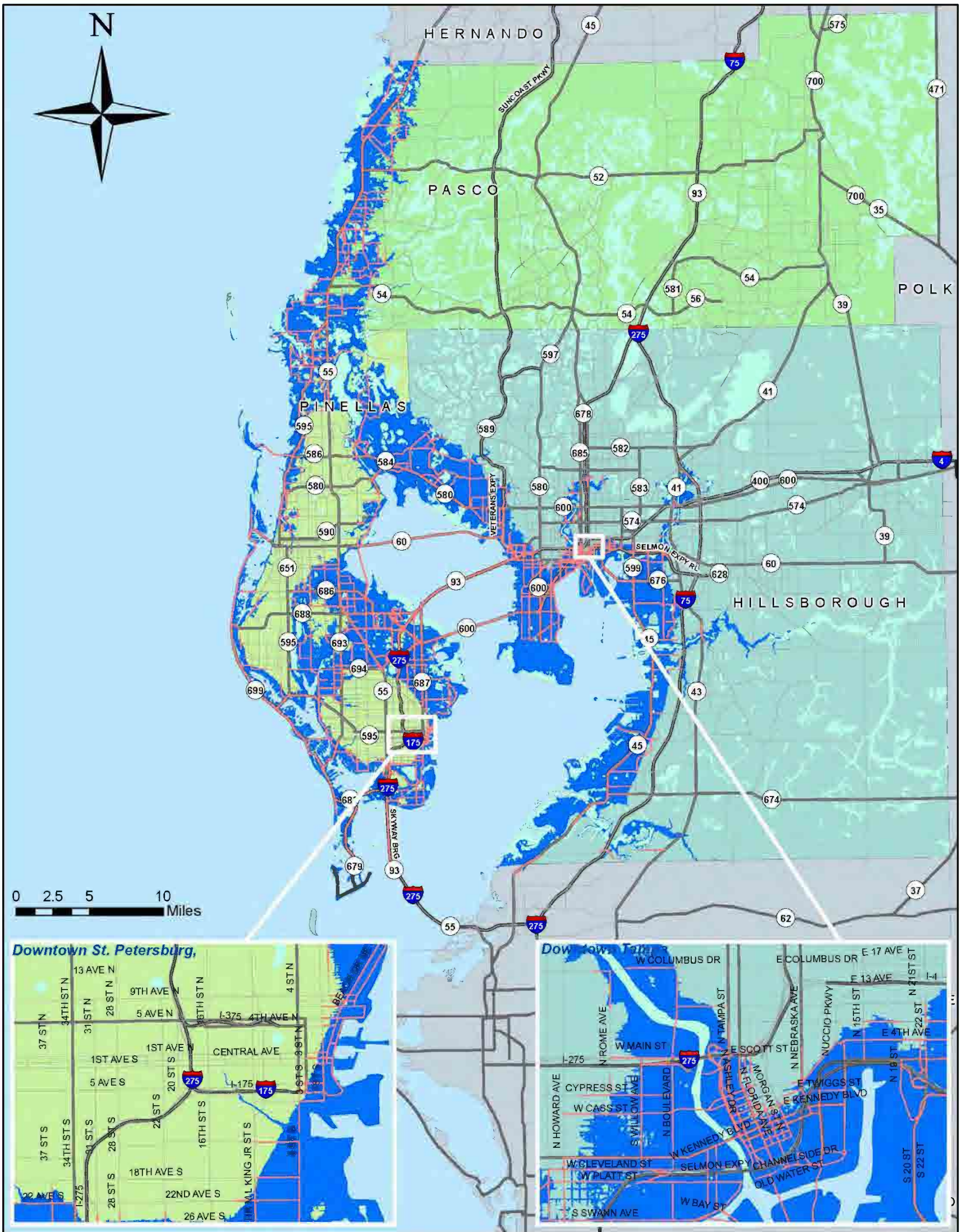


**Category 1 Storm  
Plus 2045 NOAA Intermediate Low Sea Level Rise Projection**

Counties	Transportation Network
Outside Study Area	Unaffected
Hillsborough	Inundated
Pasco	Lakes, Rivers, Streams, Marshes
Pinellas	Inundated Land

Resilient  
**Tampa Bay**  
Transportation

Date: 10/17/2018



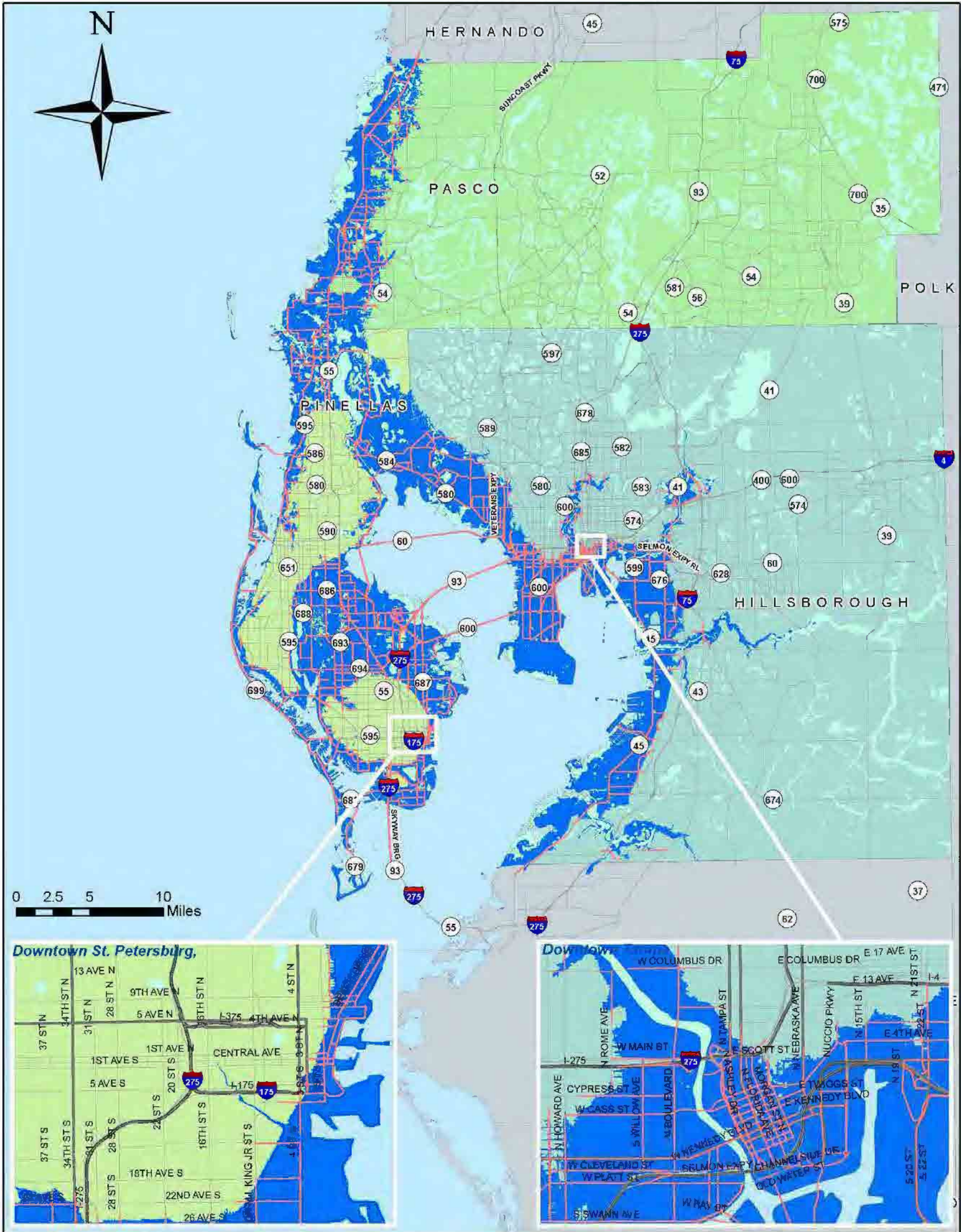
0 2.5 5 10 Miles

### Category 3 Storm

Counties	Transportation Network
Outside Study Area	Unaffected
Hillsborough	Inundated
Pasco	Lakes, Rivers, Streams, Marshes
Pinellas	Inundated Land

Resilient Tampa Bay Transportation

Date: 10/17/2018



0 2.5 5 10 Miles



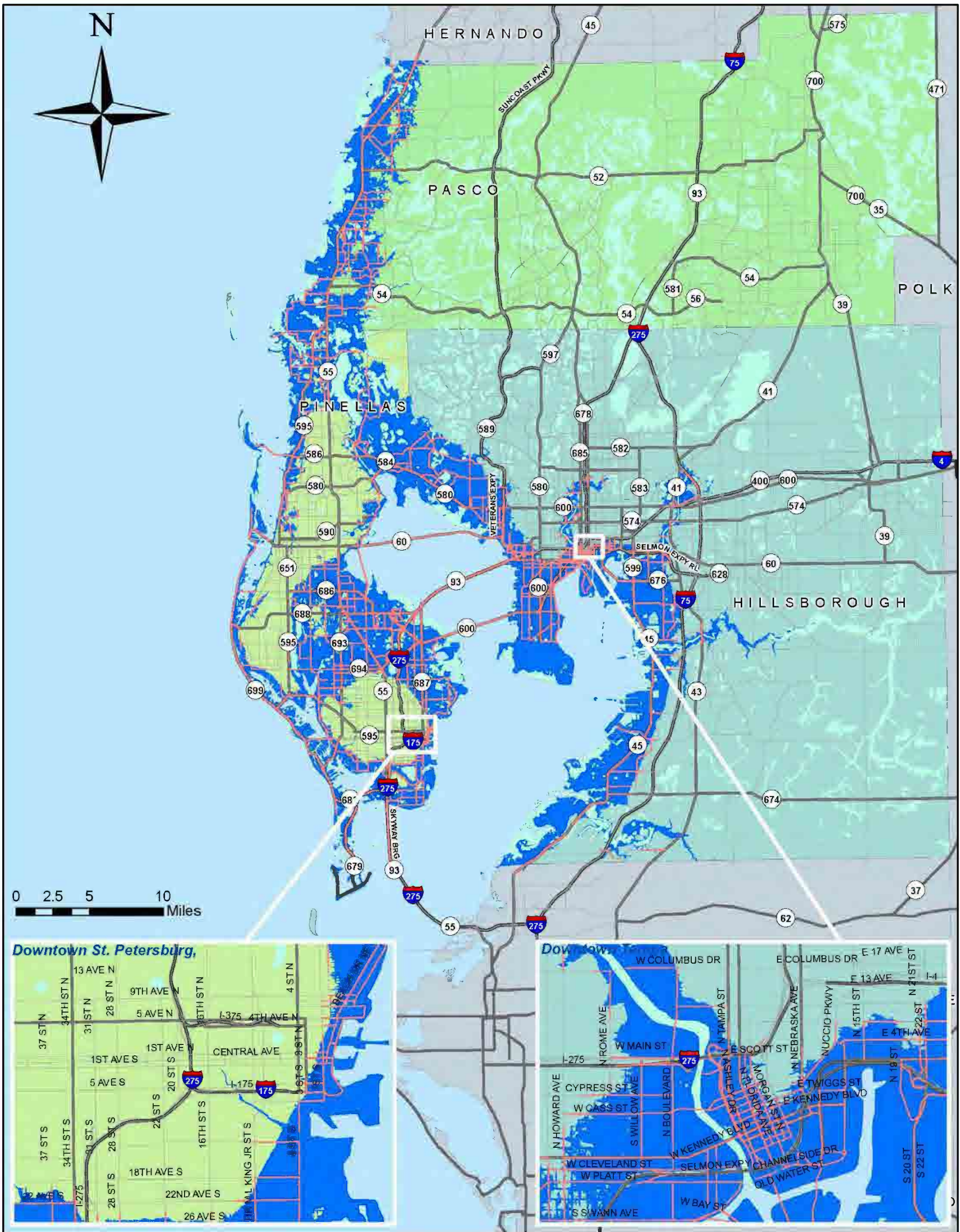
**Category 3 Storm  
Plus 2045 NOAA High Sea Level Rise Projection**

Counties	Transportation Network
Outside Study Area	Unaffected
Hillsborough	Inundated
Pasco	Lakes, Rivers, Streams, Marshes
Pinellas	Inundated Land



Date: 10/17/2018



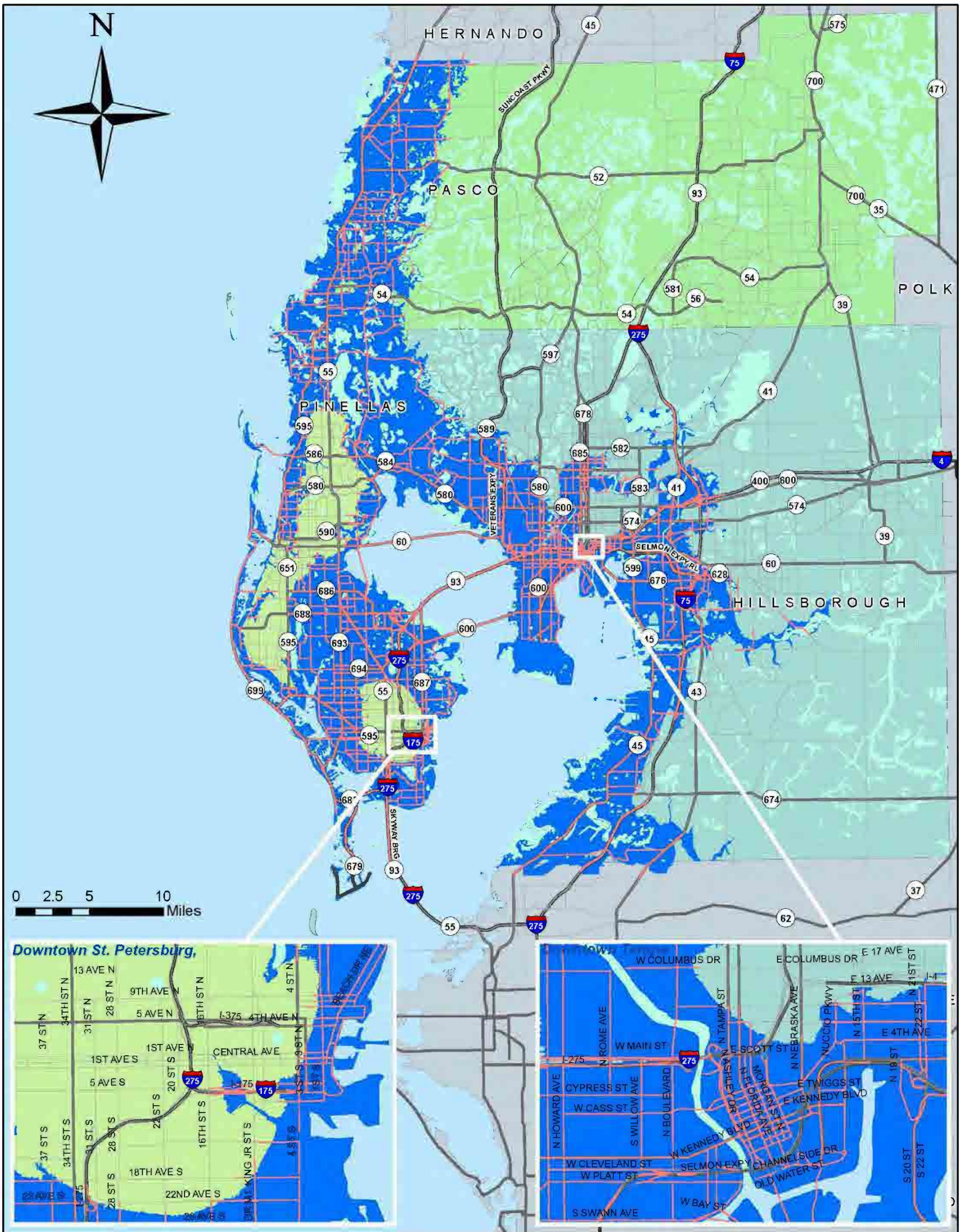


**Category 3 Storm  
Plus 2045 NOAA Intermediate Low Sea Level Rise Projection**

Counties	Transportation Network
Outside Study Area	Unaffected
Hillsborough	Inundated
Pasco	Lakes, Rivers, Streams, Marshes
Pinellas	Inundated Land



Date: 10/17/2018

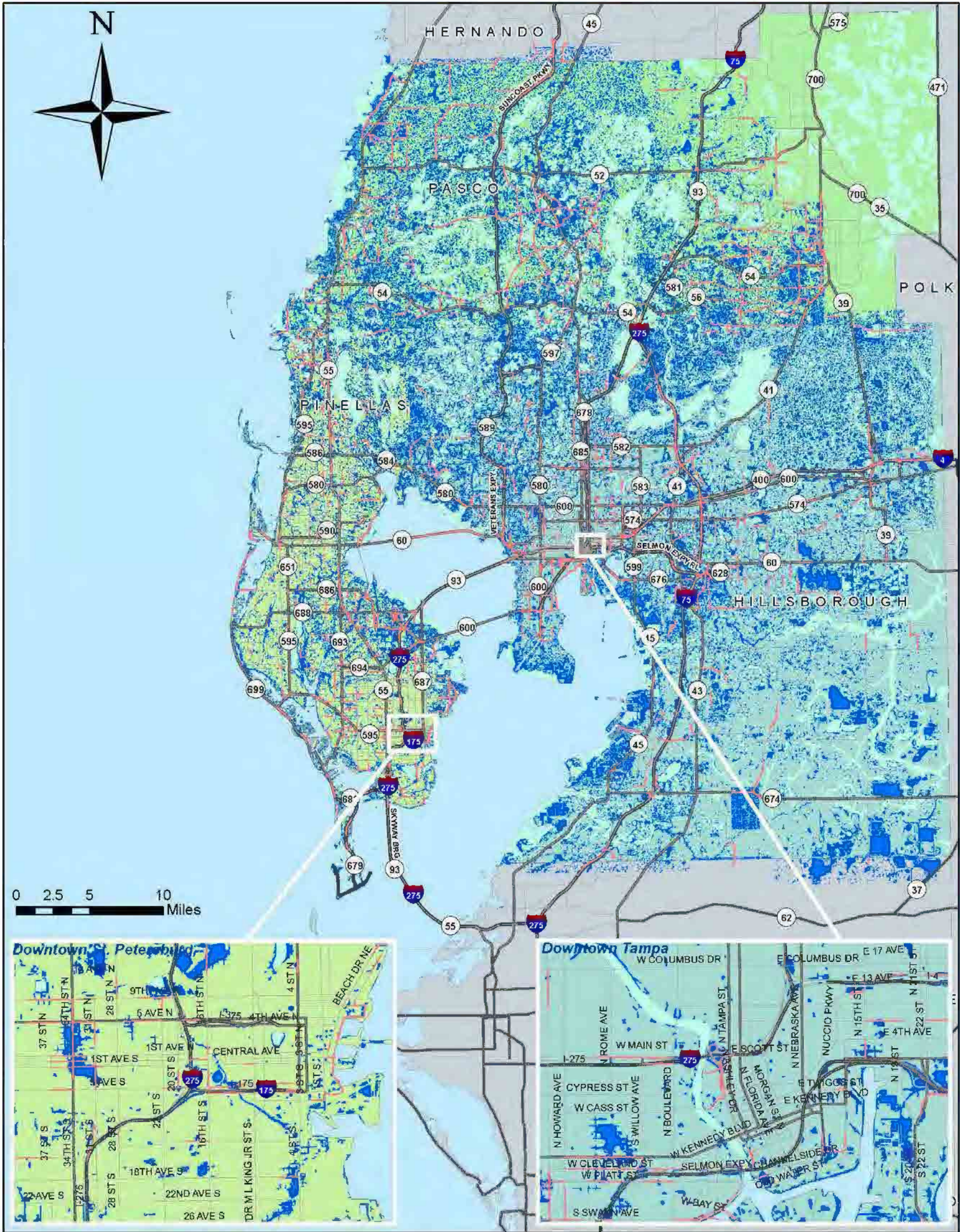


### Category 5 Storm

Counties	Transportation Network
Outside Study Area	Unaffected
Hillsborough	Inundated
Pasco	Lakes, Rivers, Streams, Marshes
Pinellas	Inundated Land



Date: 10/17/2018

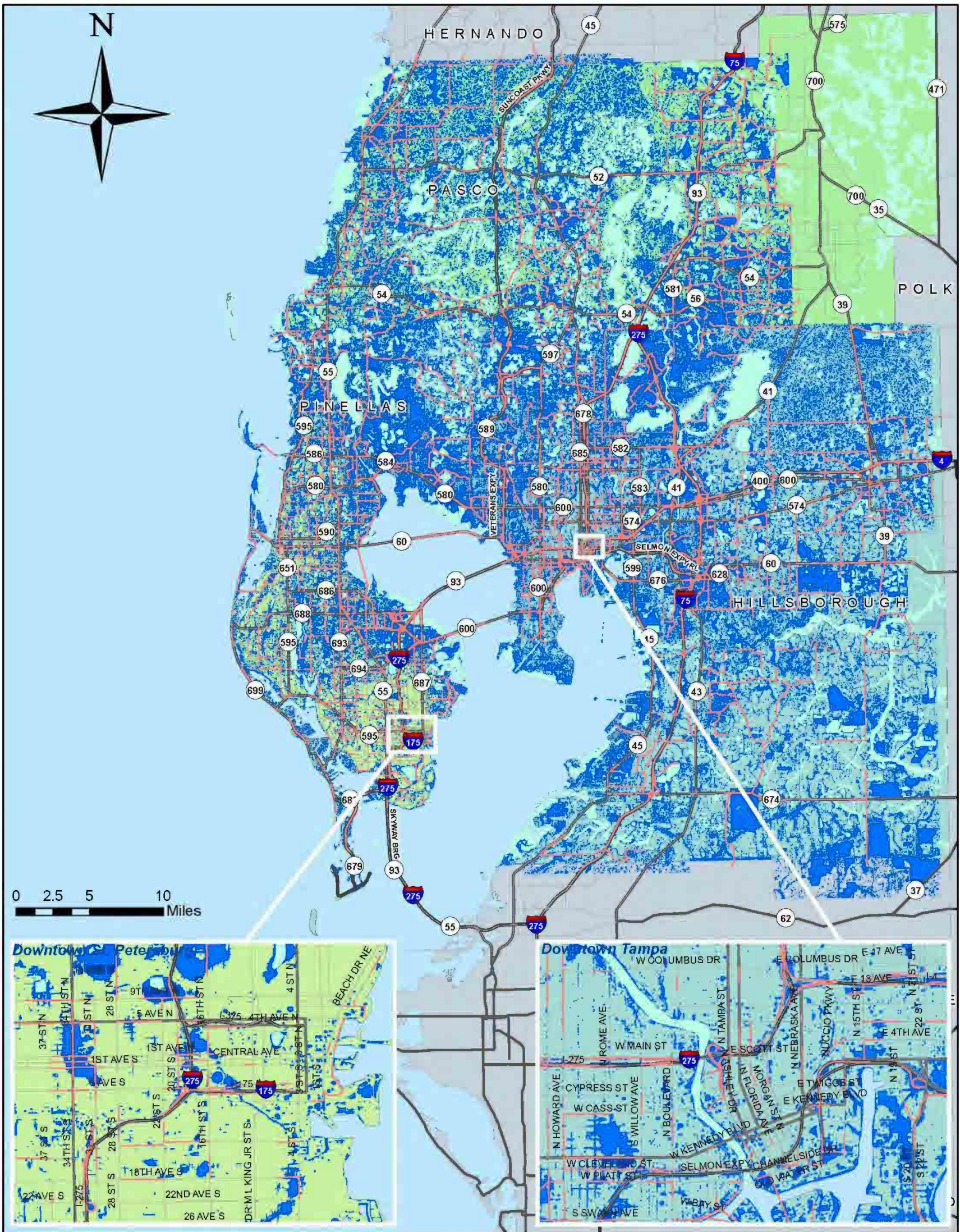


**Precipitation Modeling – 9 Inches in 24 Hours**

- | Counties           | Transportation Network          |
|--------------------|---------------------------------|
| Outside Study Area | Unaffected                      |
| Hillsborough       | Inundated                       |
| Pasco              | Lakes, Rivers, Streams, Marshes |
| Pinellas           | Inundated Land                  |



Notes: Due to the lack of unified DEM source, the hydrology model is not able to produce meaningful results for the eastern part of Pasco County. Date: 11/21/2018



### Precipitation Modeling – 33 Inches in 72 Hours

- | Counties           | Transportation Network          |
|--------------------|---------------------------------|
| Outside Study Area | Unaffected                      |
| Hillsborough       | Inundated                       |
| Pasco              | Lakes, Rivers, Streams, Marshes |
| Pinellas           | Inundated Land                  |



Notes: Due to the lack of unified DEM source, the hydrology model is not able to produce meaningful results for the eastern part of Pasco County.

Date: 11/21/2018

Table E-1 Hillsborough County High Criticality Segments

ID	Road Name	From	To	Length (Miles)	Lane Mile	Criticality Score		Percentage of Roadway Impacted								
						Average	Maximum	Category 1 Storm	Category 1 Storm + High CI R	Category 1 Storm + Int-Low	Category 3 Storm	Category 3 Storm + Int-Low	Category 3 Storm + High CI R	Category 5 Storm	9 Inches Precipitation	33 Inches Precipitation
1	Sun City Center Blvd	SR 674 / US 41	Pebble Beach Blvd / SR 674	5.0	21.0	14.6	16	5%	33%	9%	33%	33%	33%	39%	0%	43%
2	I 75	Exit 240A	19Th Ave	1.7	10.8	16.0	16	43%	48%	48%	64%	67%	64%	75%	0%	58%
3	US 41	3Rd Ave	27Th Ave	2.1	8.3	14.3	15	100%	100%	100%	100%	100%	100%	100%	12%	73%
4	US 41	Mirabay Blvd / Spindle Shell Way	Flamingo Dr	1.8	7.0	14.0	14	54%	100%	69%	100%	100%	100%	100%	0%	0%
5	US 301 S	Mallard Farm Rd	Dixon Dr	0.4	2.5	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	100%
6	Big Bend Rd	Simmons Loop / Simmons Rd	Big Bend Rd / Lincoln Rd	0.8	4.5	14.5	15	0%	0%	0%	0%	0%	0%	0%	0%	0%
7	CR 672	US 41	I 75	1.6	9.5	15.0	15	0%	27%	27%	48%	48%	48%	95%	0%	27%
8	US 41	CR 672	Alice Ave / Gibsonton Dr / US 41 S	4.0	15.8	14.1	16	100%	100%	100%	100%	100%	100%	100%	22%	47%
9	US 41	Pennsylvania Ave / US 41 S	N/A	0.3	1.1	14.0	14	100%	100%	100%	100%	100%	100%	100%	0%	0%
10	Gibsonton Dr	Alafia St	I 75	1.7	6.4	14.2	16	0%	22%	22%	68%	68%	68%	100%	0%	15%
11	I 75	Symmes Rd	Gibsonton Dr	0.0	2.4	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	0%
12	Boyette Rd	Gibsonton Dr / US 301 / US 301 S	#N/A	0.1	0.9	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
13	US 301 S	Cone Grove Rd	Connecting Rd / Duncan Rd	2.9	17.5	14.6	16	0%	0%	0%	33%	45%	45%	54%	0%	0%
14	Bloomington Ave	CR 676A / US 301	Gornton Rd	4.8	13.3	14.6	17	0%	0%	0%	0%	0%	0%	81%	0%	44%
15	CR 676A	I 75	Valleydale Dr	0.2	0.5	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	0%
16	CR 676A	78Th St	Magnolia Park blvd	1.0	3.6	14.0	14	0%	0%	0%	100%	100%	100%	100%	0%	0%
17	I 75	Gibsonton Dr	Brandon Blvd	19.9	195.5	15.8	19	0%	0%	0%	3%	9%	7%	56%	4%	69%
18	50Th St	Port Sutton Rd / US 41	31St Ave	1.3	8.0	14.1	15	100%	100%	100%	100%	100%	100%	100%	0%	10%
19	SR 60	Brandon Town Center Dr	Strawberry Ridge Blvd	6.6	42.4	15.3	18	0%	0%	0%	0%	0%	0%	0%	21%	29%
20	SR 60	I 75	Falkenburg Rd	0.6	4.6	14.0	14	0%	0%	0%	0%	0%	0%	81%	0%	0%
21	US 301	Selmon Expy	Palm River Rd	0.9	4.3	14.2	16	0%	0%	0%	0%	0%	0%	92%	0%	46%
22	I 75	Hobbs St / Woodberry Rd	Grand Regency Blvd / Woodberry Rd / York Dr	0.3	1.1	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
23	SR 574	Dr Martin Luther King Jr Blvd / Williams Rd	Queen Palm Dr	1.5	7.9	14.8	16	0%	0%	0%	0%	0%	0%	41%	0%	41%
24	US 41	Causeway Blvd	I 4	7.6	32.5	15.5	18	55%	62%	62%	82%	87%	83%	96%	0%	49%
25	SR 60	Orient Rd	34Th St	1.3	5.2	14.3	15	0%	64%	36%	78%	78%	78%	100%	0%	30%
26	Adamo Dr	26Th St	Channel Dr	3.6	15.5	15.5	19	71%	71%	71%	76%	76%	76%	76%	0%	31%
27	78Th St	SR 618	N/A	0.1	0.2	14.0	14	0%	100%	100%	100%	100%	100%	100%	0%	0%
28	US 301	Broadway Ave	21St Ave	0.7	2.9	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	70%
29	Columbus Dr	CR 574 / Ramp	Orient Rd	0.6	1.2	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	0%
30	Dr Martin Luther King Jr Blvd	Orient Rd	US 301	0.8	4.8	14.9	15	0%	0%	0%	0%	0%	0%	100%	0%	0%
31	SR 599	44Th St	21St Ave / Melburne Blvd	0.0	0.5	14.0	14	0%	0%	0%	0%	0%	0%	100%	100%	100%
32	SR 599	Palm River Rd / US 41	21St Ave / Melburne Blvd	2.0	11.2	17.0	20	47%	47%	47%	63%	63%	63%	74%	9%	34%
33	Channelside Dr	Kennedy Blvd	14Th St	0.4	1.7	16.5	18	69%	69%	69%	69%	69%	69%	69%	0%	25%
34	Edison Ave	Occident St / SR 60	11Th St	4.1	21.1	15.1	16	18%	30%	18%	70%	93%	77%	99%	14%	25%

ID	Road Name	From	To	Length (Miles)	Lane Mile	Criticality Score		Percentage of Roadway Impacted								
						Average	Maximum	Category 1 Storm	Category 1 Storm + High CI R	Category 1 Storm + Int-Low	Category 3 Storm	Category 3 Storm + Int-Low	Category 3 Storm + High CI R	Category 5 Storm	9 Inches Precipitation	33 Inches Precipitation
35	US 92	Mango Ave	Euclid Ave	2.3	8.6	15.5	17	0%	19%	0%	100%	100%	100%	100%	46%	95%
36	Jefferson St	US 41 Bus	Kennedy Blvd	0.1	0.2	14.0	14	0%	0%	0%	100%	100%	100%	100%	0%	0%
37	Jackson St	Ashley Dr / Kennedy Blvd / SR 60	Jefferson St	0.4	1.3	15.3	16	24%	36%	24%	100%	100%	100%	100%	0%	0%
38	Nebraska Ave	SR 45 / Zack St	Cass St / Nuccio Pky / SR 45	0.1	0.1	14.0	14	0%	0%	0%	100%	100%	100%	100%	0%	0%
39	Selmon Expy	Gandy Blvd	I 75	14.4	114.9	15.6	18	0%	2%	1%	12%	14%	13%	40%	5%	14%
40	Gandy Blvd	US 92	SR 573	5.1	18.0	17.3	19	96%	98%	96%	99%	99%	99%	99%	42%	42%
41	US 92	Perez Park Dr	Mobile Villa Dr	0.0	1.4	14.0	14	0%	0%	0%	0%	0%	0%	100%	48%	100%
42	Hillsborough Ave	Race Track Rd	Orient Rd	17.6	106.0	16.1	19	38%	38%	38%	46%	49%	47%	66%	17%	33%
43	I 4	I 275	Mango Rd	10.2	116.9	16.4	20	0%	0%	0%	2%	2%	2%	55%	11%	55%
44	I 275	Howard Frankland Bridge	Bearss Ave	18.0	191.2	18.4	20	21%	24%	22%	30%	33%	30%	54%	7%	35%
45	Courtney Campbell Cswy	Causeway Bridge	Veterans Expy	6.7	27.7	14.4	17	98%	98%	98%	100%	100%	100%	100%	80%	86%
46	George J Bean Pkwy	Terminal Pky	Veterans Expy	0.6	4.0	14.8	16	75%	75%	75%	82%	82%	82%	82%	17%	75%
47	Veterans Expy	SR 60	Ehrlich Rd	10.5	109.5	15.7	20	24%	28%	25%	48%	53%	50%	86%	19%	55%
48	US 92	Corona St	Cayuga St	5.3	25.7	15.1	19	0%	0%	0%	40%	51%	42%	98%	16%	45%
49	I 4	Exit 14	Park Rd	8.8	49.0	14.2	15	0%	0%	0%	0%	0%	0%	0%	38%	62%
50	Baker St	Park Rd / SR 601 / US 92	Wilder Rd	0.5	2.0	15.0	15	0%	0%	0%	0%	0%	0%	0%	0%	0%
51	Baker St	SR 39 / US 92	Michigan Ave	0.0	1.1	14.7	15	0%	0%	0%	0%	0%	0%	0%	0%	46%
52	Reynolds St	Davis St	Pennsylvania Ave	0.8	1.6	14.1	15	0%	0%	0%	0%	0%	0%	0%	0%	0%
53	Wheeler St	Park St	Herring St	0.3	0.9	14.1	15	0%	0%	0%	0%	0%	0%	0%	0%	31%
54	Collins St	Drane St / SR 39	Reynolds St	0.1	0.3	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
55	Alexander St	Granfield Ave	Baker St / US 92	0.3	0.9	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	22%
56	Thonotosassa Rd	Plant Ave	Alexander St / Oak Ave	0.1	0.3	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	100%
57	Baker St	Alexander St / US 92	Plant Ave / Risk St	0.0	0.3	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
58	Baker St	Lemon St	#N/A	0.1	0.3	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
59	US 92	SR 583	#N/A	0.0	0.1	16.5	17	0%	0%	0%	0%	0%	0%	0%	0%	0%
60	40Th St	Ellicott St	#N/A	0.4	1.5	14.0	14	0%	0%	0%	0%	0%	0%	0%	100%	100%
61	22Nd St	Frierson Ave	Hillsborough Ave	0.1	0.3	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
62	22Nd St	Chelsea St	Osborne Ave	0.5	1.0	14.2	15	0%	0%	0%	0%	0%	0%	0%	0%	29%
63	15Th St	Cayuga St	Osborne Ave	0.1	0.1	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
64	SR 574	Central Ave	Taliaferro Ave	0.1	0.5	17.2	19	0%	0%	0%	0%	0%	0%	0%	0%	0%
65	Lake Ave	Central Ave	Taliaferro Ave	0.1	0.3	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
66	15Th St	15Th St / Nuccio Pky	14Th Ave / 15Th St	0.1	0.1	17.8	18	0%	0%	0%	0%	0%	0%	0%	0%	0%
67	Avenida Rep de Cuba	14Th Ave / 14Th St / AVE Republica De Cuba	13Th Ave / 14Th St	0.0	0.1	20.0	20	0%	0%	0%	0%	0%	0%	0%	0%	0%
68	14Th Ave	15Th St	14Th St / AVE Republica De Cuba	0.0	0.1	15.0	15	0%	0%	0%	0%	0%	0%	0%	0%	0%
69	13Th Ave	14Th St	15Th St	0.1	0.1	17.0	17	0%	0%	0%	0%	0%	0%	0%	0%	0%
70	Nuccio Pky	10Th Ave	Palm Ave	0.0	0.1	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	0%

ID	Road Name	From	To	Length (Miles)	Lane Mile	Criticality Score		Percentage of Roadway Impacted								
						Average	Maximum	Category 1 Storm	Category 1 Storm + High CI R	Category 1 Storm + Int-Low	Category 3 Storm	Category 3 Storm + Int-Low	Category 3 Storm + High CI R	Category 5 Storm	9 Inches Precipitation	33 Inches Precipitation
71	7Th Ave	21St St	22Nd St	0.0	0.1	14.0	14	0%	0%	0%	0%	100%	100%	100%	0%	0%
72	Floribraska Ave	Elmore Ave	Taliaferro Ave	0.1	0.2	18.5	19	0%	0%	0%	0%	0%	0%	0%	0%	0%
73	Cass St	Governor St	Central Ave	0.0	0.2	14.0	14	0%	0%	0%	0%	100%	0%	100%	0%	0%
74	Short Emery St	Cass St	Central Ave / Scott St	0.2	1.4	14.0	14	0%	0%	0%	0%	100%	0%	100%	0%	17%
75	Scott St	Tampa St / US 41 Bus	Jefferson St	0.3	0.9	16.6	17	0%	0%	0%	0%	0%	0%	0%	0%	0%
76	I 275	Kay St / Tampa St / US 41 Bus	Scott St / Tampa St / US 41 Bus	0.0	0.2	16.0	16	0%	0%	0%	0%	0%	0%	0%	0%	0%
77	N Blvd	Laurel St / N Blvd	Green St	0.1	0.2	18.4	20	0%	0%	0%	0%	0%	0%	0%	0%	0%
78	Rome Ave	I 275	I 275	0.0	0.1	17.0	17	0%	0%	0%	0%	0%	0%	100%	0%	0%
79	Howard Ave	Howard Ave / Laurel St	Green St	0.1	0.2	17.2	18	0%	0%	0%	0%	0%	0%	0%	0%	0%
80	Armenia Ave	Laurel St	I 275	0.0	0.1	18.4	19	0%	0%	0%	0%	0%	0%	0%	0%	0%
81	Himes Ave	Laurel St	Green St	0.1	0.3	17.7	19	0%	0%	0%	0%	0%	0%	42%	0%	0%
82	Lois Ave	Lemon St / Lois Ave	Gray St	0.2	0.7	15.8	20	0%	0%	0%	60%	60%	60%	60%	0%	0%
83	Lois Ave	Cypress St	Laurel St	0.3	1.0	14.0	14	0%	0%	0%	100%	100%	100%	100%	0%	100%
84	Cypress St	Lois Ave	Manhattan Ave	0.3	1.5	15.2	18	0%	0%	0%	66%	66%	66%	66%	0%	0%
85	Columbus Dr	Fremont Ave	Rome Ave	0.1	0.5	14.0	14	0%	0%	0%	100%	100%	100%	100%	0%	100%
86	Boy Scout Blvd	CR 587 / SR 589 / West Shore Blvd	Manhattan Ave	0.4	2.4	14.0	14	0%	0%	0%	32%	100%	48%	100%	0%	0%
87	Columbus Dr	Jim Walter Blvd / SR 589	Columbus Dr / Grady Ave	0.3	1.6	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	49%
88	Columbus Dr	SR 616 / US 92	Himes Ave	0.2	1.5	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	0%
89	Cimino Ave	Columbus Dr	Armenia Ave / Tampa Bay Blvd	0.5	1.1	14.2	15	0%	0%	0%	31%	100%	78%	100%	0%	69%
90	Himes Ave	Columbus Dr	Dewey St	0.3	1.2	14.0	14	0%	0%	0%	0%	0%	0%	100%	100%	100%
91	Armenia Ave	Columbus Dr	Wishart Blvd	0.4	3.5	14.4	15	0%	0%	0%	0%	0%	0%	100%	18%	32%
92	SR 574	Dr Martin Luther King Jr Blvd / US 92	Albany Ave	1.5	6.5	14.7	16	0%	0%	0%	0%	16%	0%	100%	10%	26%
93	Himes Ave	Tampa Bay Blvd	Osborne Ave	1.0	4.1	14.5	15	0%	0%	0%	0%	0%	0%	100%	90%	90%
94	Habana Ave	Eddy Dr / Habana Way	Wilder Ave	0.5	1.9	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	48%
95	Dale Mabry Hwy	SR 580	#N/A	0.0	0.1	17.0	17	0%	0%	0%	0%	0%	0%	0%	0%	0%
96	Armenia Ave	Hillsborough Ave	Sligh Ave	1.0	4.0	14.2	15	0%	0%	0%	0%	0%	0%	0%	0%	45%
97	Sligh Ave	Armenia Ave	Albany Ave	0.2	1.0	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	0%
98	Lambright St	Dale Mabry Hwy / Pine Crest Blvd / SR 580 / SR 598	Garsh Loop	0.1	0.3	14.0	14	0%	0%	0%	0%	0%	0%	100%	100%	100%
99	Dale Mabry Hwy	Powhatan Ave / SR 580	Sligh Ave	0.8	4.8	14.8	15	0%	0%	0%	0%	0%	0%	100%	32%	32%
100	Sligh Ave	I 275	Exit 48 / Taliaferro Ave	0.1	0.2	19.0	19	0%	0%	0%	0%	0%	0%	0%	0%	0%
101	Waters Ave	CR 584 / SR 580	N/A	0.1	0.5	15.0	15	0%	0%	0%	0%	0%	0%	100%	100%	100%
102	Waters Ave	Armenia Ave / CR 584	Fremont Ave	0.3	1.4	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	0%
103	Waters Ave	N Blvd	Branch Ave	0.6	2.4	14.0	14	0%	0%	0%	0%	0%	0%	84%	0%	16%
104	Dale Mabry Hwy	Dale Mabry Hwy	Lake Carroll Way / SR 597	0.7	4.4	14.6	15	0%	0%	0%	0%	0%	0%	0%	31%	68%
105	Florida Ave	J L Young Jr Apts	Bougainvillea Ave	1.4	7.6	14.0	14	0%	0%	0%	0%	0%	0%	80%	32%	70%
106	Busch Blvd	N Blvd	Florida Ave / US 41 Bus	0.5	2.1	14.0	14	0%	0%	0%	0%	0%	0%	100%	100%	100%

ID	Road Name	From	To	Length (Miles)	Lane Mile	Criticality Score		Percentage of Roadway Impacted								
						Average	Maximum	Category 1 Storm	Category 1 Storm + High CI R	Category 1 Storm + Int-Low	Category 3 Storm	Category 3 Storm + Int-Low	Category 3 Storm + High CI R	Category 5 Storm	9 Inches Precipitation	33 Inches Precipitation
107	Busch Blvd	I 275	I 275	0.2	1.2	15.0	15	0%	0%	0%	0%	0%	0%	100%	0%	0%
108	Busch Blvd	16Th St / SR 580	18Th St	0.2	1.1	14.0	14	0%	0%	0%	0%	0%	0%	0%	100%	100%
109	Busch Blvd	30Th St	Hidden Shadow Dr / Orangeview Ave	0.7	4.3	14.0	14	0%	0%	0%	0%	0%	0%	0%	39%	39%
110	Spectrum Blvd	40Th St / SR 580	Busch Gdns / Mckinley Dr	0.1	0.4	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
111	Seminole Ave	Seminole Ave	Waters Ave	0.2	0.7	18.0	19	0%	0%	0%	0%	0%	0%	100%	0%	0%
112	Bird St	Seminole Ave	Lamar St	0.1	0.2	18.5	19	0%	0%	0%	0%	0%	0%	0%	0%	0%
113	Waters Ave	CR 584 / Seminole Ave	Huntley Ave	0.1	0.5	17.7	20	0%	0%	0%	0%	0%	0%	50%	0%	0%
114	Nebraska Ave	Hillsborough Ave / US 41	Broad St	4.4	17.7	15.7	17	4%	4%	4%	13%	19%	19%	49%	5%	43%
115	Anderson Rd	Anderson Ave / CR 584 / Waters Ave	Linebaugh Ave	1.1	6.3	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	99%
116	Linebaugh Ave	SR 589	#N/A	0.1	0.5	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	0%
117	Dale Mabry Hwy	Hudson Ln	Stall Rd	0.8	4.5	14.0	14	0%	0%	0%	0%	0%	0%	0%	100%	100%
118	30Th St	113Th Ave	SR 582	0.2	1.0	15.0	15	0%	0%	0%	0%	0%	0%	0%	0%	100%
119	SR 583	50Th St	SR 583	0.5	3.1	14.5	15	0%	0%	0%	0%	0%	0%	0%	0%	0%
120	Fowler Ave	Central Ave	Leroy Collins Blvd	2.7	19.0	15.9	19	0%	0%	0%	0%	0%	0%	0%	0%	67%
121	Fletcher Ave	Dale Mabry Hwy / SR 597	Nebraska Ave	3.4	13.4	14.3	18	0%	0%	0%	0%	0%	0%	0%	0%	10%
122	131St Ave	27Th St	Bruce B Downs Blvd / Holly Dr	0.2	0.4	14.0	14	0%	0%	0%	0%	0%	0%	0%	100%	100%
123	Florida Ave	Bearss Ave / CR 582 / US 41 Bus	Sinclair Hills Rd	0.2	1.0	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
124	Bearss Ave	CR 582 / Florida Ave / US 41 Bus	Nebraska Ave / US 41	0.5	2.4	14.4	18	0%	0%	0%	0%	0%	0%	0%	0%	0%
125	Nebraska Ave	Fletcher Ave	CR 582	1.3	5.1	14.7	15	0%	0%	0%	0%	0%	0%	0%	29%	60%
126	Bearss Ave	Gregory Dr / Turtle Creek Cir	Bruce B Downs Blvd	0.8	4.8	14.6	16	0%	0%	0%	0%	0%	0%	0%	45%	70%
127	Magnolia Dr	CR 582A / Fletcher Ave	N/A	0.1	0.3	15.0	15	0%	0%	0%	0%	0%	0%	0%	0%	0%
128	Bruce B Downs Blvd	#N/A	Elm Leaf / Skipper Rd	1.7	11.4	15.1	18	0%	0%	0%	0%	0%	0%	0%	0%	31%
129	CR 582A	12Th St / Coastal Key Rd	Hidden River Pky / Morris Bridge Rd	5.3	29.4	16.2	19	0%	0%	0%	0%	0%	0%	3%	9%	24%
130	US 41	Chapman Rd / Nebraska Ave	Crenshaw Lake Rd / Whitaker Rd	0.8	4.1	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	100%
131	CR 581	Palm Springs Blvd / Tampa Palms Blvd	Hunters Green Dr	2.3	18.7	14.6	16	0%	0%	0%	0%	0%	0%	0%	0%	61%
132	Bruce B Downs Blvd	CR 581 / Pebble Creek Dr	County Line Rd	1.7	13.6	14.8	15	0%	0%	0%	0%	0%	0%	0%	0%	41%
133	US 41	Newberger Rd	Land O Lakes Blvd / Willow Bend Pky	0.8	5.0	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	100%
134	Bougainvillea Ave	Central Ave	Florence Ave	0.1	0.1	15.0	15	0%	0%	0%	0%	0%	0%	0%	0%	0%



Table E-2 Pinellas County High Criticality Segments

ID	Road Name	From	To	Length (Miles)	Lane Mile	Criticality Score		Percentage of Roadway Impacted								
						Average	Maximum	Category 1 Storm	Category 1 Storm + High SLR	Category 1 Storm + Int-Low SLR	Category 3 Storm	Category 3 Storm + Int-Low SLR	Category 3 Storm + High SLR	Category 5 Storm	9 Inches Precipitation	33 Inches Precipitation
1	I 275	54Th Ave	62Nd Ave	8.5	65.1	15	19	4%	15%	6%	27%	28%	28%	36%	8%	38%
2	I 275	Gandy Blvd	Howard Frankland Bridge	8.5	87.1	15	19	60%	65%	62%	98%	98%	98%	99%	7%	49%
3	I 175	I 275	4Th St	1.2	8.4	17	19	0%	0%	0%	2%	2%	2%	65%	17%	16%
4	I 375	I 275	5Th St	1.3	6.5	16	17	0%	0%	0%	0%	0%	0%	7%	0%	14%
5	22Nd Ave	Luana Ln	16Th St	4.0	17.7	15.5	20	0%	12%	0%	41%	58%	54%	69%	6%	6%
6	Pinellas Bay Way	Sun Blvd	Harbor Way	2.5	9.0	14.3	15	76%	76%	76%	76%	76%	76%	76%	17%	17%
7	54Th Ave	34Th St	12Th St	1.4	5.7	14.2	16	7%	29%	11%	72%	89%	72%	89%	28%	50%
8	Gulf Blvd	30Th Ave / Pass A Grille Way	SR 682 / SR 699	0.4	0.7	14.0	14	100%	100%	100%	100%	100%	100%	100%	0%	0%
9	Gulf Blvd	58Th Ave	68Th St	0.5	2.1	14.3	15	100%	100%	100%	100%	100%	100%	100%	53%	53%
10	SR 693	Blind Pass Rd / SR 699	Bay St	2.3	12.0	14.6	17	79%	79%	79%	92%	92%	92%	100%	4%	35%
11	Blind Pass Rd	78Th Ave	79Th St	0.0	0.1	14.0	14	100%	100%	100%	100%	100%	100%	100%	0%	0%
12	Gulf Blvd	99Th Ave	116Th St	1.3	4.5	14.0	14	100%	100%	100%	100%	100%	100%	100%	44%	44%
13	Treasure Island Cswy	107Th Ave / Gulf Blvd	107Th Ave / 1St St	0.1	0.6	14.0	14	100%	100%	100%	100%	100%	100%	100%	100%	100%
14	54Th Ave	54Th Ave	SR 682	0.0	0.3	14.0	14	100%	100%	100%	100%	100%	100%	100%	0%	0%
15	US 19	54Th Ave	SR 694	8.1	48.5	15.9	18	9%	15%	9%	19%	33%	25%	36%	11%	46%
16	31St St	24Th Ave	22Nd Ave	0.1	0.1	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	0%
17	31St St	10Th Ave	Melrose Ave	0.2	0.4	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
18	49Th St	11Th Ave	The Pinellas Trl	0.2	1.0	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
19	7Th Ave	54Th Ave / SR 682	Burlington Ave	3.0	15.3	14.3	16	49%	54%	54%	68%	68%	68%	74%	38%	38%
20	8Th St	9Th Ave / 9Th St / Dr Martin Luther King Jr St	I 375	1.2	3.9	16.7	19	0%	0%	0%	0%	0%	0%	0%	0%	0%
21	5Th Ave	8Th St	3Rd St	0.0	1.3	15.6	16	0%	0%	0%	0%	0%	0%	0%	0%	0%
22	3Rd St	3Rd Ave	2Nd Ave / SR 687	0.1	0.2	14.0	14	0%	0%	0%	0%	100%	0%	100%	0%	0%
23	3Rd St	5Th Ave	Delmar Ter	0.1	0.2	15.0	15	0%	0%	0%	100%	100%	100%	100%	0%	0%
24	4Th St	6Th Ave	Delmar Ter	0.1	0.5	15.2	18	0%	0%	0%	0%	80%	0%	100%	0%	0%
25	4Th St	1St Ave S	1St Ave N	0.0	0.5	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
26	9Th St	SR 687	22Nd Ave	0.0	0.1	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
27	16Th St N	I 375	Burlington Ave	0.1	0.6	15.7	16	0%	0%	0%	0%	0%	0%	0%	0%	0%
28	16Th St	5Th Ave / Dunmore Ave	Central Ave	0.4	1.3	14.6	17	0%	0%	0%	0%	0%	0%	0%	30%	30%
29	1St Ave	49Th St	20Th St	2.4	4.8	15.2	17	0%	0%	0%	0%	0%	0%	0%	21%	24%

ID	Road Name	From	To	Length (Miles)	Lane Mile	Criticality Score		Percentage of Roadway Impacted								
						Average	Maximum	Category 1 Storm	Category 1 Storm + High SLR	Category 1 Storm + Int-Low SLR	Category 3 Storm	Category 3 Storm + Int-Low SLR	Category 3 Storm + High SLR	Category 5 Storm	9 Inches Precipitation	33 Inches Precipitation
30	1St Ave	Pasadena Ave	58Th St	1.2	2.5	15.6	16	0%	0%	0%	0%	0%	0%	100%	0%	0%
31	Pinellas Way	Central Ave / Pasadena Ave / SR 693	66Th St	0.2	0.8	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	0%
32	66Th St	1St Ave	Central Ave	0.1	0.2	15.5	16	0%	0%	0%	0%	0%	0%	100%	0%	0%
33	49Th St	5Th Ave	15Th Ave	1.3	5.4	14.5	15	0%	0%	0%	0%	0%	0%	0%	0%	0%
34	5Th Ave	SR 595	I 275	3.6	14.6	14.9	17	0%	0%	0%	0%	0%	0%	20%	37%	61%
35	Dr Martin Luther King Jr St	9Th Ave	22Nd Ave	0.8	2.9	15.1	16	0%	0%	0%	0%	0%	0%	0%	0%	0%
36	4Th St	9Th Ave	33Rd St	1.4	6.1	14.3	15	0%	0%	0%	0%	13%	13%	34%	10%	0%
37	22Nd Ave	Dr Martin Luther King Jr St	US 92	0.5	2.0	15.0	15	0%	0%	0%	0%	0%	0%	0%	0%	0%
38	22Nd Ave	28Th St	16Th St	1.0	4.0	15.2	18	0%	0%	0%	0%	0%	0%	0%	25%	38%
39	22Nd Ave	37Th St	US 19	0.3	1.0	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
40	22Nd Ave	49Th St	40Th St	0.8	3.0	14.0	14	0%	0%	0%	0%	0%	0%	0%	67%	67%
41	22Nd Ave	SR 693	58Th St	1.0	4.1	14.2	15	0%	0%	0%	0%	0%	0%	100%	0%	53%
42	SR 595	Tyrone Blvd	22Nd Ave	0.1	0.7	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	0%
43	SR 693	5Th Ave / 66Th St	26Th Ave	1.3	7.5	14.7	15	0%	0%	0%	0%	0%	0%	100%	26%	77%
44	49Th St	22Nd Ave	36Th Ave	0.9	3.3	14.4	15	0%	0%	0%	0%	0%	0%	0%	0%	6%
45	Driveway	30Th Ave / SR 693	51St Ter / 66Th St	1.4	8.2	15.1	17	0%	0%	0%	6%	74%	53%	100%	19%	65%
46	38Th Ave	68Th St	60Th St	0.9	3.7	14.0	14	0%	0%	0%	28%	100%	55%	100%	72%	100%
47	38Th Ave	80Th St / Tyrone Blvd / US 19 Alt	71St St	0.8	3.0	14.0	14	0%	0%	0%	0%	39%	0%	100%	39%	100%
48	38Th Ave	49Th St	40Th St	0.7	3.0	14.3	15	0%	0%	0%	0%	0%	0%	0%	0%	0%
49	38Th Ave	33Rd St	Dr Martin Luther King Jr St	1.9	7.7	14.7	16	0%	0%	0%	0%	0%	0%	0%	15%	15%
50	Dr Martin Luther King Jr St	28Th Ave	36Th Ave / Foster Hill Dr	0.5	2.0	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
51	Dr Martin Luther King Jr St	38Th Ave	42Nd Ave / Monticello Blvd	0.2	0.9	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	0%
52	50Th Ave	24Th St	23Rd St	0.1	0.1	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
53	54Th Ave N	62Nd St	I 275	3.4	14.4	14.6	17	0%	0%	0%	0%	0%	0%	22%	4%	25%
54	35Th St	42Nd St	34Th St / 62Nd Ave / US 19 N	0.7	2.8	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	36%
55	Haines Rd	31St St / 62Nd Ave	US 19 N	0.5	1.1	15.9	17	0%	0%	0%	0%	44%	44%	100%	0%	44%
56	Gulf Blvd	125Th Ave	Bath Club Cir	3.7	14.7	14.2	15	100%	100%	100%	100%	100%	100%	100%	12%	32%
57	SR 666	Gulf Blvd / SR 666 / SR 699	Bay Pines Ter	1.0	4.2	15.2	16	100%	100%	100%	100%	100%	100%	100%	0%	0%
58	Tyrone Blvd N	Bay Pines Blvd / Hoover Blvd	US 19 Alt	1.5	7.3	15.3	17	75%	75%	75%	99%	99%	99%	99%	53%	65%
59	Bay Pines Blvd	100Th Way / Bay Pines Blvd	100Th Way / Bay Pines Blvd	0.3	0.9	14.0	14	100%	100%	100%	100%	100%	100%	100%	0%	68%

ID	Road Name	From	To	Length (Miles)	Lane Mile	Criticality Score		Percentage of Roadway Impacted									
						Average	Maximum	Category 1 Storm	Category 1 Storm + High SLR	Category 1 Storm + Int-Low SLR	Category 3 Storm	Category 3 Storm + Int-Low SLR	Category 3 Storm + High SLR	Category 5 Storm	9 Inches Precipitation	33 Inches Precipitation	
60	Seminole Blvd	54Th Ave / US 19 Alt	72Nd Ave	1.1	5.6	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
61	Gulf Blvd	192Nd Ave	195Th Ave	0.6	0.6	14.0	14	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
62	49Th St	38Th Ave	76Th Ave	2.4	14.3	15.6	16	0%	0%	0%	0%	16%	5%	47%	0%	13%	
63	4Th St	#N/A	116Th Ave / Lincoln Shores	4.5	26.6	15.1	18	88%	93%	93%	100%	100%	100%	100%	5%	34%	
64	Dr Martin Luther King Jr St	57Th Ave	73Rd Ave	1.0	4.1	14.0	14	100%	100%	100%	100%	100%	100%	100%	58%	58%	
65	Dr Martin Luther King Jr St	77Th Ave	118Th Ave	2.5	10.1	15.4	18	98%	98%	98%	98%	98%	98%	98%	28%	71%	
66	Seminole Blvd	Johnson Blvd / Village Dr	86Th Ave	0.6	3.5	14.0	14	0%	0%	0%	48%	75%	48%	100%	0%	0%	
67	US 19	102Nd Ave	106Th Ave	0.3	1.8	14.0	14	0%	0%	0%	100%	100%	100%	100%	0%	0%	
68	Connecting Rd	CR 694 / US 19 Alt	43Rd St	5.8	35.0	14.7	17	39%	50%	46%	72%	100%	93%	100%	12%	48%	
69	Gandy Blvd	43Rd St	Gandy Bridge	8.3	56.8	16.2	20	67%	72%	71%	98%	98%	98%	98%	11%	58%	
70	66Th St	54Th Ave / SR 693	121St Ave	4.2	25.2	14.6	16	0%	8%	0%	82%	94%	82%	99%	12%	66%	
71	71St St	Park Blvd / SR 694	90Th Ave / Bayou Club Blvd	1.1	6.2	14.5	15	0%	47%	0%	100%	100%	100%	100%	0%	47%	
72	Belcher Rd	68Th St	75Th St	0.8	4.6	14.0	14	0%	0%	0%	100%	100%	100%	100%	0%	0%	
73	CR 296	102Nd Ave / Seminole Blvd / US 19 Alt	102Nd Ave / 98Th St	0.7	3.0	14.0	14	0%	0%	0%	100%	100%	100%	100%	0%	0%	
74	Gulf Blvd	SR 688	8Th Ave	0.4	0.8	14.0	14	100%	100%	100%	100%	100%	100%	100%	0%	0%	
75	SR 688	118Th Ave / SR 688	SR 688	0.5	2.1	14.0	14	100%	100%	100%	100%	100%	100%	100%	0%	0%	
76	Gulf Blvd	1St St	Causeway Blvd	0.0	0.5	14.0	14	100%	100%	100%	100%	100%	100%	100%	0%	0%	
77	Wilcox Rd	125Th St / Jackson St	SR 688 / Ulmerton Rd	0.1	0.3	15.0	15	0%	0%	0%	0%	0%	0%	0%	0%	100%	
78	SR 686	Roosevelt Blvd	34Th St	2.8	18.1	16.2	19	82%	91%	89%	97%	97%	97%	97%	11%	53%	
79	Ulmerton Rd	Walsingham Rd	SR 693	5.9	35.2	15.7	18	0%	10%	0%	13%	23%	13%	61%	0%	38%	
80	Ulmerton Rd	SR 688 / SR 693	58Th St	1.0	7.9	16.0	18	7%	13%	13%	41%	81%	66%	84%	5%	25%	
81	Ulmerton Rd	58Th St / SR 688	50Th Way	0.6	5.0	15.0	15	0%	62%	62%	100%	100%	100%	100%	0%	0%	
82	Ulmerton Rd	CR 611 / SR 688	34Th St / Ramp / SR 686	1.3	7.7	14.0	15	41%	48%	41%	97%	97%	97%	97%	5%	33%	
83	SR 688	Roosevelt Blvd	49Th St	1.5	8.7	14.8	15	99%	99%	99%	99%	99%	99%	99%	0%	47%	
84	Bryan Dairy Rd	34Th St	Endeavor Ave	5.2	26.2	14.8	17	0%	20%	8%	96%	99%	99%	99%	18%	65%	
85	Bryan Dairy Rd	Starkey Rd	Endeavor Ave	1.6	9.5	15.0	16	0%	0%	0%	46%	100%	85%	100%	12%	48%	
86	Belcher Rd	CR 296 / Ramp	Belle Oak Blvd	2.7	16.3	14.5	16	0%	0%	0%	41%	100%	95%	100%	20%	83%	
87	Starkey Rd	122Nd Ave / CR 1	Christie Dr	1.2	5.6	14.0	14	0%	0%	0%	0%	75%	0%	100%	0%	84%	
88	9Th Ave	113Th St / SR 688	8Th Ave / Clearwater Largo Rd	1.0	6.2	14.5	15	0%	0%	0%	0%	0%	0%	0%	0%	0%	
89	Clearwater Largo Rd	Bay Dr / SR 686 / US 19 Alt	Rosery Rd	0.8	3.1	14.7	16	0%	0%	0%	0%	0%	0%	0%	0%	0%	

ID	Road Name	From	To	Length (Miles)	Lane Mile	Criticality Score		Percentage of Roadway Impacted									
						Average	Maximum	Category 1 Storm	Category 1 Storm + High SLR	Category 1 Storm + Int-Low SLR	Category 3 Storm	Category 3 Storm + Int-Low SLR	Category 3 Storm + High SLR	Category 5 Storm	9 Inches Precipitation	33 Inches Precipitation	
90	Fort Harrison Ave	16Th Ave	C St / Lakeview Rd	1.2	3.6	15.7	17	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
91	Lakeview Rd	C St / Fort Harrison Ave	Railroad	0.2	0.6	14.7	16	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
92	Missouri Ave	124Th Ave / Seminole Blvd	Rosery Rd	2.9	17.3	15.4	17	0%	0%	0%	0%	0%	0%	5%	0%	23%	
93	CR 1	CR 1 / Willow Ave	Bay Dr / SR 686	0.5	3.1	14.0	14	0%	0%	0%	100%	100%	100%	100%	0%	63%	
94	Belcher Rd	Bay Dr	Willowbrook Dr	0.3	1.4	14.0	14	0%	0%	0%	100%	100%	100%	100%	0%	0%	
95	Roosevelt Blvd	12Th St / The Pinellas Trl	CR 611	6.4	36.6	15.4	18	8%	8%	8%	71%	80%	76%	80%	0%	14%	
96	Missouri Ave	Jasper St	Belleair Rd	0.5	3.1	14.7	15	0%	0%	0%	0%	0%	0%	0%	0%	61%	
97	SR 693	123Rd Ave / Connecting Rd	US 19	1.3	6.3	15.2	16	0%	0%	0%	0%	24%	4%	100%	0%	77%	
98	US 19	70Th Ave	Via Granada	15.0	139.5	15.3	20	4%	6%	5%	38%	49%	47%	55%	14%	39%	
99	SR 60	CR 669 / Gulfview Blvd	SR 60	0.9	2.8	14.7	16	100%	100%	100%	100%	100%	100%	100%	53%	78%	
100	Fort Harrison Ave	Lakeview Rd / Myrtle Ave	Edgewater Dr / Sunset Point Rd	2.8	10.5	15.0	17	15%	15%	15%	15%	15%	15%	34%	35%	49%	
101	Memorial Cswy	SR 60	Missouri Ave / Ramp	0.9	4.3	15.8	17	0%	0%	0%	0%	0%	0%	0%	9%	30%	
102	Court St	Osceola Ave	Myrtle Ave	0.0	2.6	14.8	16	0%	0%	0%	0%	0%	0%	0%	71%	79%	
103	Fort Harrison Ave	Turner St	Court St / SR 60 / US 19 Alt	0.2	0.4	15.0	16	0%	0%	0%	0%	0%	0%	0%	0%	0%	
104	Cleveland St	East Ave / The Pinellas Trl	Myrtle Ave	0.1	0.1	15.0	15	0%	0%	0%	0%	0%	0%	0%	0%	100%	
105	Missouri Ave	Queen St	Rogers St	1.1	6.3	15.9	17	0%	0%	0%	0%	0%	0%	18%	0%	9%	
106	Drew St	Connecting Rd	US 19	0.2	0.8	16.0	17	0%	0%	0%	0%	0%	0%	0%	0%	0%	
107	Drew St	Belcher Rd	Terrace Dr	0.2	0.4	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	100%	
108	Countryside Blvd	11Th St / Druid Rd	121St Ave	4.2	19.5	15.1	18	0%	0%	0%	0%	0%	0%	0%	24%	73%	
109	Gulf To Bay Blvd	Starkey Rd	Mcmullen Booth Rd	4.6	26.3	14.7	17	0%	8%	8%	8%	8%	8%	27%	0%	30%	
110	Mcmullen Booth Rd	CR 611 / Drew St	Featherwood Ct	0.0	0.3	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	0%	
111	McMullen Booth Rd	CR 102 / CR 611 / Enterprise Rd / McMullen Booth Rd	CR 611 / Eastland Blvd / McMullen Booth Rd	0.2	1.2	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	
112	SR 580	3Rd St	US 19	1.3	8.1	14.4	15	0%	0%	0%	0%	0%	0%	0%	0%	0%	
113	SR 580	Belcher Rd / Main St	US 19	0.8	3.4	15.0	16	0%	0%	0%	0%	0%	0%	0%	44%	44%	
114	SR 580	Bass Blvd / Skinner Blvd	CR 1	1.2	5.8	14.9	15	0%	0%	0%	0%	0%	0%	0%	0%	14%	
115	Skinner Blvd	Broadway / Tilden St	Douglas Ave	0.1	0.5	15.0	15	59%	59%	59%	100%	100%	100%	100%	59%	59%	
116	Edgewater Dr	Beltrees St	San Salvador Dr	1.7	3.4	15.1	16	95%	100%	100%	100%	100%	100%	100%	22%	63%	
117	McMullen Booth Rd	Briar Creek Blvd	Landmark Blvd	1.5	9.0	14.0	14	0%	19%	0%	34%	57%	34%	68%	0%	85%	
118	Curlew Rd	Countryside Blvd	SR 584	1.5	9.0	15.0	15	0%	52%	0%	80%	80%	80%	100%	0%	72%	
119	US 19 N	Phoenix Ave	Becketts Way	0.1	0.3	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	

ID	Road Name	From	To	Length (Miles)	Lane Mile	Criticality Score		Percentage of Roadway Impacted									
						Average	Maximum	Category 1 Storm	Category 1 Storm + High SLR	Category 1 Storm + Int-Low SLR	Category 3 Storm	Category 3 Storm + Int-Low SLR	Category 3 Storm + High SLR	Category 5 Storm	9 Inches Precipitation	33 Inches Precipitation	
120	SR 580	Saint Clair Ave	Saint Petersburg Dr	0.4	1.6	14.0	14	100%	100%	100%	100%	100%	100%	100%	100%	0%	100%
121	Forest Lake Blvd	Mears Blvd	Tampa Rd	0.3	1.4	14.0	14	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
122	Tampa Rd	Bay Dr	Burbank Rd / Tampa Rd	4.3	27.7	14.9	17	12%	67%	17%	96%	96%	96%	96%	0%	11%	
123	US 19	Tampa Rd	Pine Ridge Way	1.2	6.4	14.6	15	0%	0%	0%	0%	0%	0%	0%	0%	0%	53%
124	Keystone Rd	Walton Ave	US 19	2.0	7.9	14.3	16	0%	81%	0%	100%	100%	100%	100%	23%	76%	
125	US 19	CR 880 / Klosterman Rd / US 19 N	Klosterman Rd	2.8	14.9	14.6	17	1%	76%	16%	94%	94%	94%	98%	18%	69%	
126	Tarpon Ave	Pinellas Ave	Safford Ave	0.1	0.3	14.0	14	0%	0%	0%	100%	100%	100%	100%	0%	100%	
127	Klosterman Rd	Pinellas Ave	Roberts Rd	0.0	0.2	14.0	14	0%	100%	0%	100%	100%	100%	100%	0%	0%	
128	Pinellas Ave	Valley Rd	Curlew Pl	1.8	3.7	14.4	15	59%	82%	68%	100%	100%	100%	100%	14%	46%	
129	US 19	1St Ave	Brittany Park Blvd	0.3	1.5	14.0	14	0%	0%	0%	0%	100%	100%	100%	0%	0%	
130	Belcher Rd	Belleair Rd	Wistful Vista Dr	0.0	0.2	15.0	15	0%	100%	100%	100%	100%	100%	100%	0%	0%	

Table E-3 Pasco County High Criticality Segments

ID	Road Name	From	To	Length (Miles)	Lane Mile	Criticality Score		Percentage of Roadway Impacted									
						Average	Maximum	Category 1 Storm	Category 1 Storm + High SLR	Category 1 Storm + Int-Low SLR	Category 3 Storm	Category 3 Storm + Int-Low SLR	Category 3 Storm + High SLR	Category 5 Storm	9 Inches Precipitation	33 Inches Precipitation	
1	County Line Rd	I 75	#N/A	0.1	0.6	16.0	16	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2	Land O Lakes Blvd	Land O Lakes Blvd / Willow Bend Pky	Dale Mabry Hwy	1.0	5.9	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3	I 75	Wesley Chappel Blvd	Tupper Rd	0.9	3.2	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	47%
4	SR 56	Oak Grove Blvd	Paseo Dr	6.5	28.4	14.5	17	0%	0%	0%	0%	0%	0%	0%	0%	18%	57%
5	Bruce B Downs Blvd	Bruce B Downs Blvd / SR 56	Vanguard St	0.5	3.2	14.5	16	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
6	Wesley Chapel Blvd	SR 54	Magnolia Blvd / SR 54	3.3	14.1	14.5	16	0%	0%	0%	0%	0%	0%	0%	0%	0%	26%
7	Wesley Chapel Blvd	Old Pasco Rd / SR 54	#N/A	0.0	0.5	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
8	I 75	N/A	Exit 279	0.0	2.6	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
9	Wesley Chapel Blvd	Gateway Blvd	Pointe Pleasant Blvd	1.4	8.7	14.4	15	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%
10	Bruce B Downs Blvd	Stockton Dr	Wesley Chapel Blvd	0.8	4.9	14.9	15	0%	0%	0%	0%	0%	0%	0%	0%	0%	89%
11	SR 54	Boyette Rd	SR 54	1.0	4.9	14.5	15	0%	0%	0%	0%	0%	0%	0%	0%	0%	71%
12	SR 54	Altamont Ln	Collier Pky	8.1	48.6	14.5	16	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%
13	Exit 19	SR 589	Ramp / SR 54	0.1	0.2	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
14	Gunn Hwy	Duck Slough Blvd	Monmouth Dr	2.5	14.9	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	47%
15	Trinity Blvd	CR 996 / Robert Trent Jones Pky	Duck Slough Blvd / Grand Lakes Blvd	1.9	7.4	14.5	16	0%	0%	0%	0%	0%	0%	0%	23%	31%	31%
16	SR 54	CR 1 / Little Rd	Starkey Blvd	1.7	10.3	14.8	16	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
17	Little Rd	Mitchell Blvd / Robert Trent Jones Pky	Old County Rd 54 / Villa Entrada	2.6	15.4	15.2	17	0%	0%	0%	0%	0%	0%	0%	60%	0%	14%
18	SR 54	Crescent Moon Dr	Old County Rd 54	0.4	2.4	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
19	SR 54	CR 595 / Grand Blvd / SR 54	Seven Springs Blvd	1.9	11.1	15.0	15	0%	0%	0%	32%	32%	32%	48%	0%	14%	0%
20	US 19	1St Ave / Phoenix Ave	Continental Dr / US 19 Alt	0.6	3.8	14.0	14	0%	0%	0%	100%	100%	100%	100%	28%	58%	0%
21	US 19	Camry Dr	Beacon Hill Dr	1.3	7.4	14.0	14	0%	20%	0%	68%	76%	68%	100%	0%	23%	0%
22	US 19	High St	Green Key Rd	1.2	7.0	14.6	15	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%
23	Rowan Rd	Baillie Dr / SR 518	Plathe Rd	0.2	1.0	14.0	14	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%
24	Rowan Rd	Baillie Dr / SR 518	Plathe Rd	0.2	1.0	14.0	14	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%
25	Little Rd	Blueberry Dr	Arevee Dr / Ross Ln	0.1	0.4	14.0	14	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
26	Ridge Rd	CR 296 / Ramp	Custom Blvd	0.3	1.4	14.0	14	0%	0%	0%	100%	100%	100%	100%	0%	0%	0%
27	Ridge Rd	High St	US 19	0.4	1.6	14.9	15	100%	100%	100%	100%	100%	100%	100%	0%	69%	0%
28	US 19	Grand Blvd	Richey Rd	2.1	10.6	15.0	15	100%	100%	100%	100%	100%	100%	100%	0%	22%	0%
29	US 19	Butch St	Coventry Dr	1.0	6.3	14.0	14	48%	100%	53%	100%	100%	100%	100%	0%	0%	0%

ID	Road Name	From	To	Length (Miles)	Lane Mile	Criticality Score		Percentage of Roadway Impacted									
						Average	Maximum	Category 1 Storm	Category 1 Storm + High SLR	Category 1 Storm + Int-Low SLR	Category 3 Storm	Category 3 Storm + Int-Low SLR	Category 3 Storm + High SLR	Category 5 Storm	9 Inches Precipitation	33 Inches Precipitation	
30	Regency Park Blvd	Cutty Sark Dr	Embassy Blvd	0.1	0.3	14.0	14	0%	0%	0%	100%	100%	100%	100%	100%	100%	
31	Little Rd	CR 1 / Embassy Blvd / Hilltop Dr / Ramp	SR 52	2.8	17.0	14.5	15	0%	0%	0%	16%	16%	16%	100%	0%	62%	
32	SR 52	Waterson St	Elkton Ave	1.5	8.9	14.0	14	8%	32%	32%	100%	100%	100%	100%	8%	63%	
33	US 19	SR 52	#N/A	0.2	0.5	14.0	14	100%	100%	100%	100%	100%	100%	100%	26%	100%	
34	US 19	Edna Ave	Beach Blvd	0.6	3.7	15.0	15	100%	100%	100%	100%	100%	100%	100%	0%	56%	
35	US 41	CR 1 / Willow Ave	SR 52	2.4	9.8	14.2	15	0%	0%	0%	0%	0%	0%	0%	0%	0%	
36	I 75	SR 52	Blanton Rd	8.4	67.4	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	90%	
37	Trilby Rd	Driveway	US 301	0.4	0.9	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	
38	US 98	Louis Ave	Trilby Rd	0.8	1.6	14.6	15	0%	0%	0%	0%	0%	0%	0%	0%	0%	
39	US 301	Old Lakeland Hwy / SR 35A / US 98	Brittany Park Blvd	7.4	27.3	15.2	18	0%	0%	0%	0%	0%	0%	0%	0%	0%	
40	Lock St	Julian St	SR 578 / US 301 / US 98	0.2	0.3	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	
41	SR 35	Florida Ave	US 301	1.0	2.1	15.0	16	0%	0%	0%	0%	0%	0%	0%	0%	0%	
42	US 301	Townsend Rd	CR 52A / Clinton Ave	1.3	5.0	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	
43	Gall Blvd	Valley Rd	Walton Ave	3.0	14.4	15.5	17	0%	0%	0%	0%	0%	0%	0%	0%	0%	
44	CR 54	Fort King Rd	Orris St	0.8	3.3	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	
45	6Th St	4Th Ave	6Th St / 9Th Ave	0.0	2.9	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	
46	Gall Blvd	Tucker Rd	Palm Grove Dr	0.2	0.8	14.3	15	0%	0%	0%	0%	0%	0%	0%	0%	0%	
47	Gall Blvd	7Th St	South Ave	0.5	2.6	14.5	16	0%	0%	0%	0%	0%	0%	0%	0%	0%	
48	Gall Blvd	6Th St / A Ave	A Ave	0.1	0.2	15.0	15	0%	0%	0%	0%	0%	0%	0%	0%	0%	
49	South Ave	Gall Blvd	7Th St	0.1	0.1	14.0	14	0%	0%	0%	0%	0%	0%	0%	0%	0%	
50	7Th St	Gall Blvd	5Th Ave	0.4	1.2	14.8	15	0%	0%	0%	0%	0%	0%	0%	0%	0%	

# APPENDIX 0

## PUBLIC OUTREACH



# Forward Pinellas Transportation Planning Survey

*...helping organizations make better decisions since 1982*

## Findings Report

**Submitted by:**

ETC Institute  
725 W. Frontier Lane,  
Olathe, Kansas  
66061

**August 2018**





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# Forward Pinellas Transportation Planning Survey

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## Purpose and Methodology

ETC Institute administered a survey to residents of Pinellas County during the summer of 2018 on behalf of Forward Pinellas, the transportation and land use planning agency in Pinellas County. The survey results will be used by community leaders to make transportation decisions and funding priorities for our country. Forward Pinellas sets the priorities for state and federal transportation funding in Pinellas county through the long-range transportation plan. The results of this survey will help identify which transportation improvements are needed most and will help shape the countywide transportation plan.

The five-page survey, cover letter and postage paid return envelope were mailed to a random sample of households in Pinellas County. The cover letter explained the purpose of the survey and encouraged residents to either return their survey by mail or complete the survey online. At the end of the online survey, residents were asked to enter their home address, this was done to ensure that only responses from residents who were part of the random sample were included in the final survey database.

Ten days after the surveys were mailed, ETC Institute sent emails and placed phone calls to the households that received the survey to encourage participation. The emails contained a link to the on-line version of the survey to make it easy for residents to complete the survey. To prevent people who were not residents of Pinellas county from participating, everyone who completed the survey on-line was required to enter their home address prior to submitting the survey. ETC Institute then matched the addresses that were entered on-line with the addresses that were originally selected for the random sample. If the address from a survey completed on-line did not match one of the addresses selected for the sample, the on-line survey was not counted.

The goal was to obtain completed surveys from at least 800 residents. The goal was exceeded with a total of 844 residents completing the survey. The overall results for the sample of 844 households have a precision of at least +/-3.4% at the 95% level of confidence.

This report contains:

- An executive summary of the methodology for administering the survey and major findings,
- charts showing the overall results for most questions on the survey,
- tables that show the results of the random sample for each question on the survey, and
- a copy of the survey instrument.

## Community Priorities and Ideals

Respondents were asked to indicate how strongly they agreed with five different statements regarding community transportation priorities in the community where they live. The two statements with the highest level of agreement based upon the combined percentage of “strongly agree” and “agree” responses were: I feel safe and comfortable walking to the store (70%) and I can drive my car as conveniently with few traffic delays (60%). Respondents least agreed with the following statement: It is convenient to take transit to work or other destinations (34%). Over half (56%) indicated that being able to drive a car conveniently with few traffic delays and feeling safe and comfortable walking to the store are the two most important priorities for their ideal community.

Respondents were then asked to indicate what is most important to them when thinking of their ideal neighborhood. Sixty-nine percent (69%) of respondents indicated their ideal neighborhood would have nearby shops. For shopping and entertainment, most respondents indicated they prefer a “Main Street” (28%) or a walkable downtown (28%), 25% of respondents prefer a variety of different destinations, and 19% prefer a mall or large shopping center.

## Transportation Options

Thirty-two percent (32%) of respondents indicated they would be more likely to take public transportation if transit could get them where they were going more quickly, 14% of respondents indicated they would be more likely to take public transportation if they could reach multiple destinations in a single stop, and 31% of respondents indicated they would not take public transportation.

Respondents were then asked to indicate for what reasons they would most like to see improved transportation options. The three most important transportation improvements to respondents were: improved access to regional destinations (52%), improved access to special events or entertainment destinations (39%), and improved options for their daily commute (37%).

## Planning Priorities

Respondents were asked to indicate how important various planning priorities are to Pinellas County. Based on the sum of “very important” and “important” responses respondents believe the following priorities are most important: reducing crime (93%), protecting the natural environment (89%), improving education (89%), increasing the number of well-paying jobs (87%), and increasing resiliency to hurricanes, sea level rise, or other climate-related hazards (85%). Reducing crime, improving education, and increasing resiliency to hurricanes, sea level rise, or other climate-related hazards are the three most important planning priorities for Pinellas County based on the sum of respondents’ top three choices.

## Investment Opportunities

Respondents were asked to indicate how supportive they would be of having Pinellas County invest in various items. Respondents showed the most support for the following items based upon the sum of “very supportive” and “supportive” responses: roadway maintenance (93%), technology to improve traffic flow (90%), and new roadway capacity (77%). Based on the sum of respondents’ top three choices they are most willing to fund the following items: technology to improve traffic flow and roadway maintenance.

## Collaboration

Respondents believe it is either “very important” or “important” for counties to work together to address building highways (84%) and expanding transit service (78%) in the Tampa Bay area. Respondents believe it is less important for counties to collaborate on building trails and expanding waterborne transportation in the Tampa Bay area.

## Additional Findings

- Eighty-seven percent (87%) of respondents indicated they would still own their own car if on-demand automated vehicles were available to them.
- Eighty-five percent (85%) of respondents believe having frequent, reliable, and convenient transit services nearby improves the economic value of the surrounding area.
- Twenty-two percent of respondents think automated vehicles will have no impact on roadway congestion, 39% think it they will decrease congestion, and 39% think they will increase congestion.
- Sixty-eight percent (68%) of respondents indicated it is “very important” to live within 20-30 minutes of their job.
- Forty-two percent (42%) of respondents think the County should invest in technological solutions to deal with increasing traffic.
- Better timing of traffic signals (70%) and creating rapid transit services (60%) are the two most needed transportation improvements over the next 5-10 years in Pinellas County.
- Better timing of traffic signals (70%) and creating rapid transit services (60%) are the two most needed transportation improvements over the next 5-10 years in Pinellas County. These were also the two most important transportation improvements according to respondents.
- Seventy-four percent (74%) of respondents indicated they strongly agree with the following statement: “a public street serves the community best when people in cars, on bicycles, using public transportation, or walking all feel safe and welcomed.”
- According to respondents, the three most pressing challenges facing Pinellas County over the next 5-10 years are: traffic congestion and travel delays (66%), lack of affordable housing options (38%), and crime and personal safety when traveling (38%).
- Fifty-seven percent (57%) of respondents indicated they are willing to trade lower speed limits in exchange for safer streets.
- Forty-one percent (41%) of respondents indicated they are willing to pay more for more frequent and reliable transit service.
- Forty-four percent (44%) of respondents indicated Pinellas County does not have a quality transportation system.

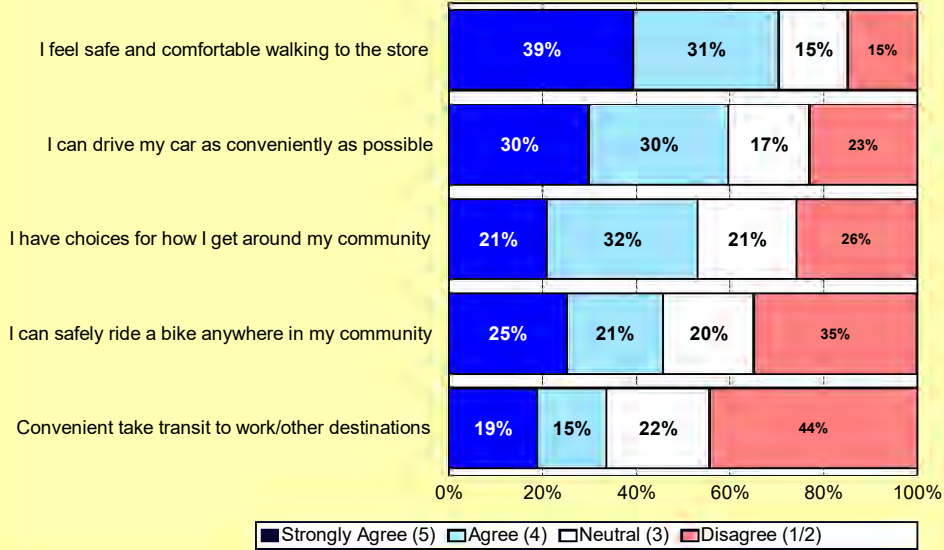
# Section 1

## *Charts and Graphs*

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### Q1. Level of Agreement With Various Statements Regarding Community Priorities

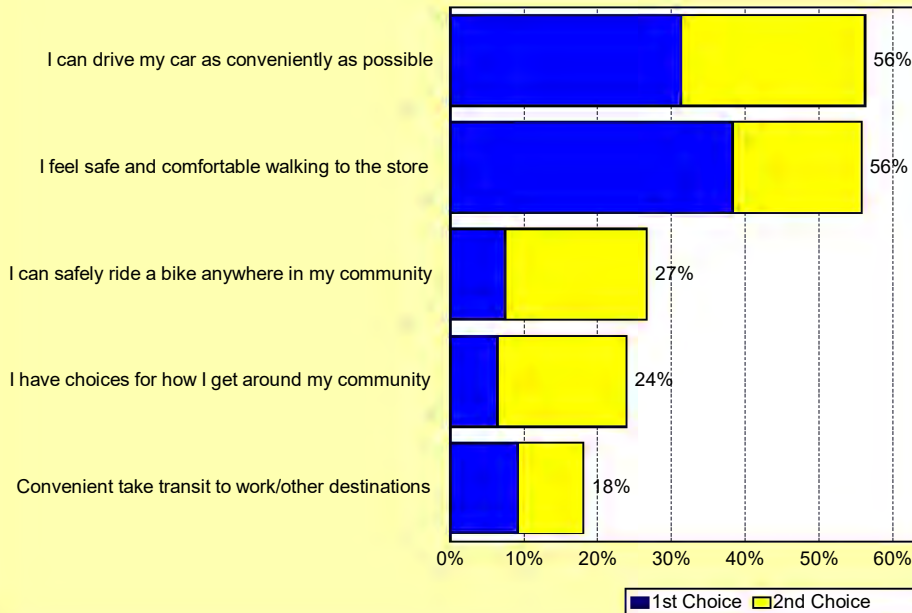
by percentage of respondents who rated the item as a 1 to 5 on a 5-point scale (excluding don't knows)



Source: ETC Institute (2018)

### Q2. Most Important Community Priority

by percentage of respondents who selected the item as one of their top two choices



Source: ETC Institute (2018)

### Q3. My ideal neighborhood...

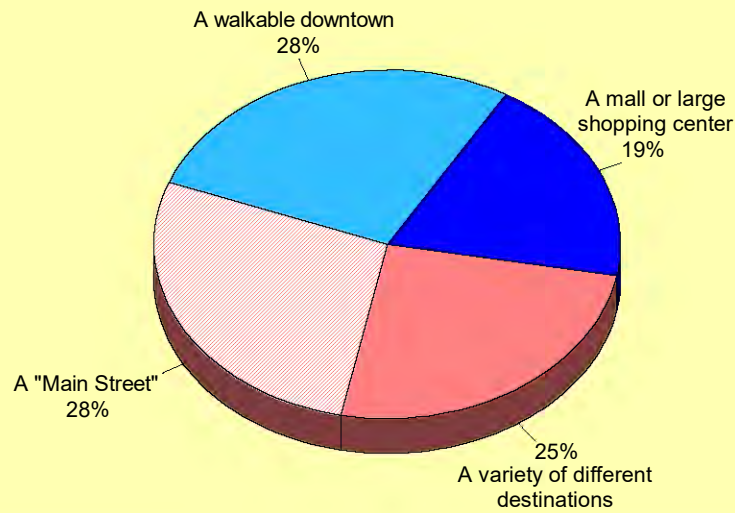
by percentage of respondents



Source: ETC Institute (2018)

### Q4. For shopping and entertainment I prefer...

by percentage of respondents

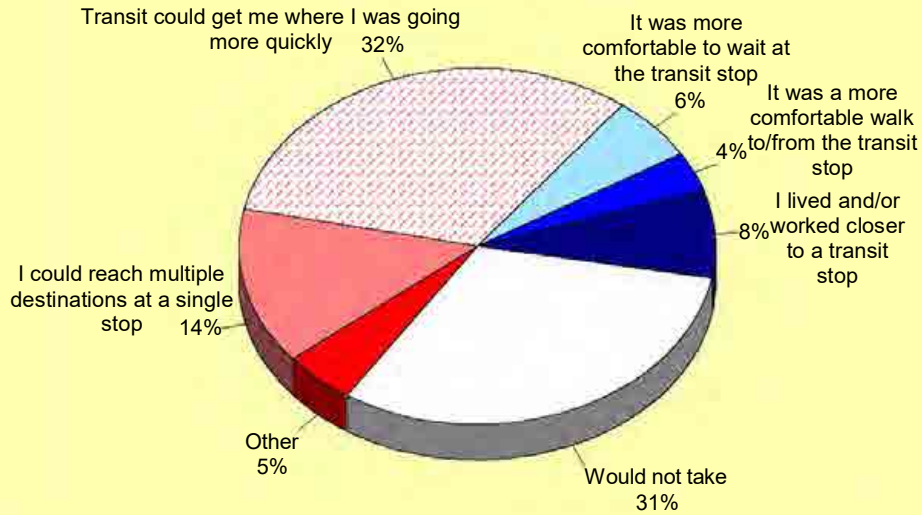


Source: ETC Institute (2018)



### Q5. I would be more likely to take public transportation if...

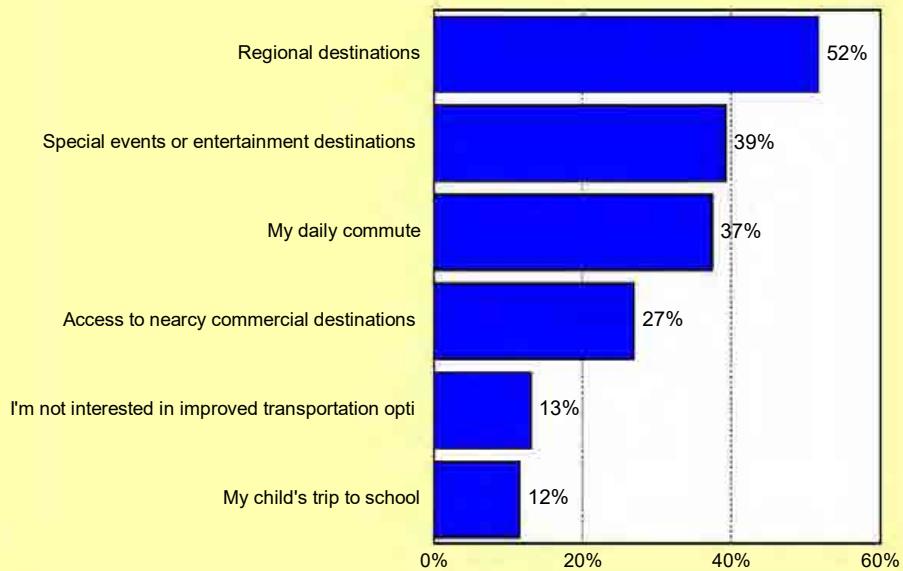
by percentage of respondents



Source: ETC Institute (2018)

### Q6. I would most like to see improved transportation options for...

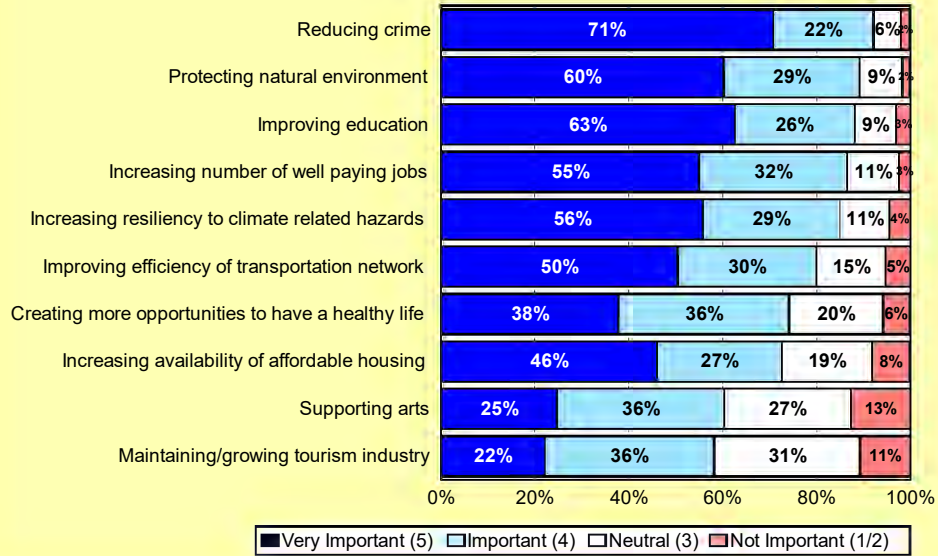
by percentage of respondents



Source: ETC Institute (2018)

### Q7. Level of Importance of Various Planning Priorities for the County

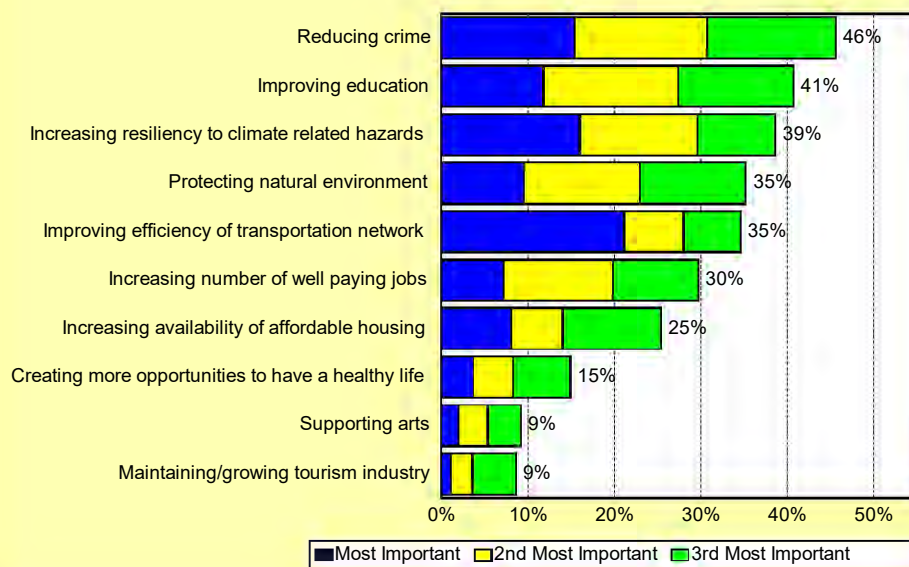
by percentage of respondents who rated the item as a 1 to 5 on a 5-point scale (excluding don't knows)



Source: ETC Institute (2018)

### Q8. Most Important Planning Priorities for Pinellas County

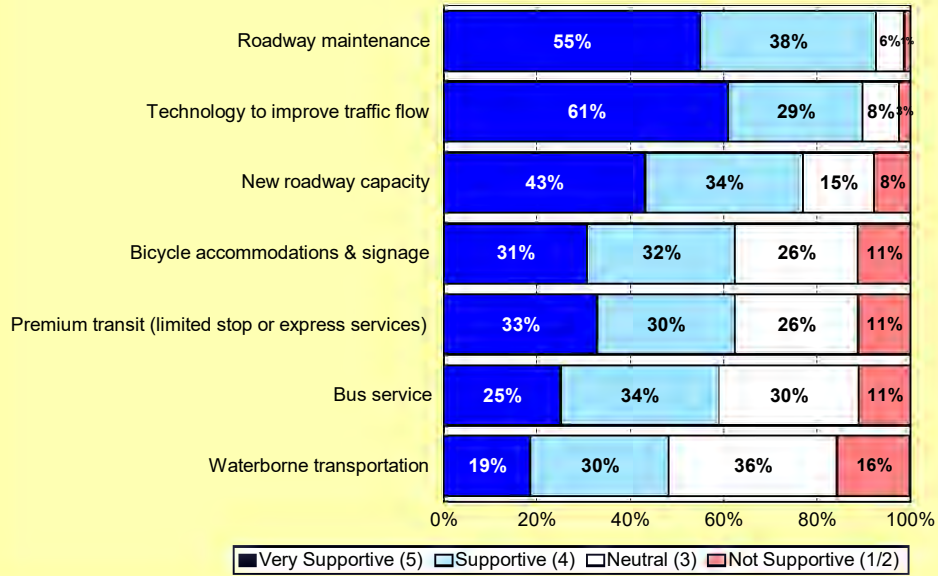
by percentage of respondents who selected the item as one of their top three choices



Source: ETC Institute (2018)

### Q9. Level of Support of Having Pinellas County Invest in Various Items

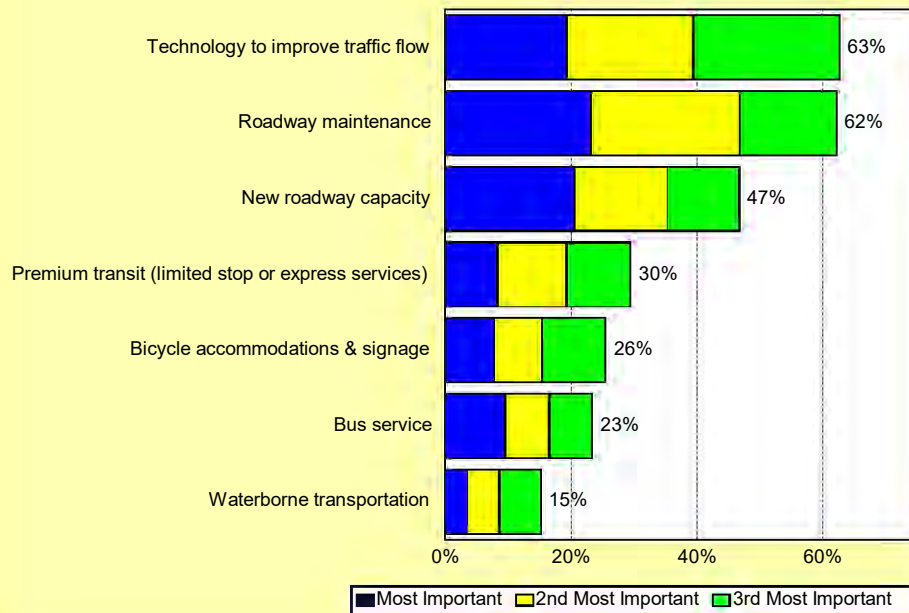
by percentage of respondents who rated the item as a 1 to 5 on a 5-point scale (excluding don't knows)



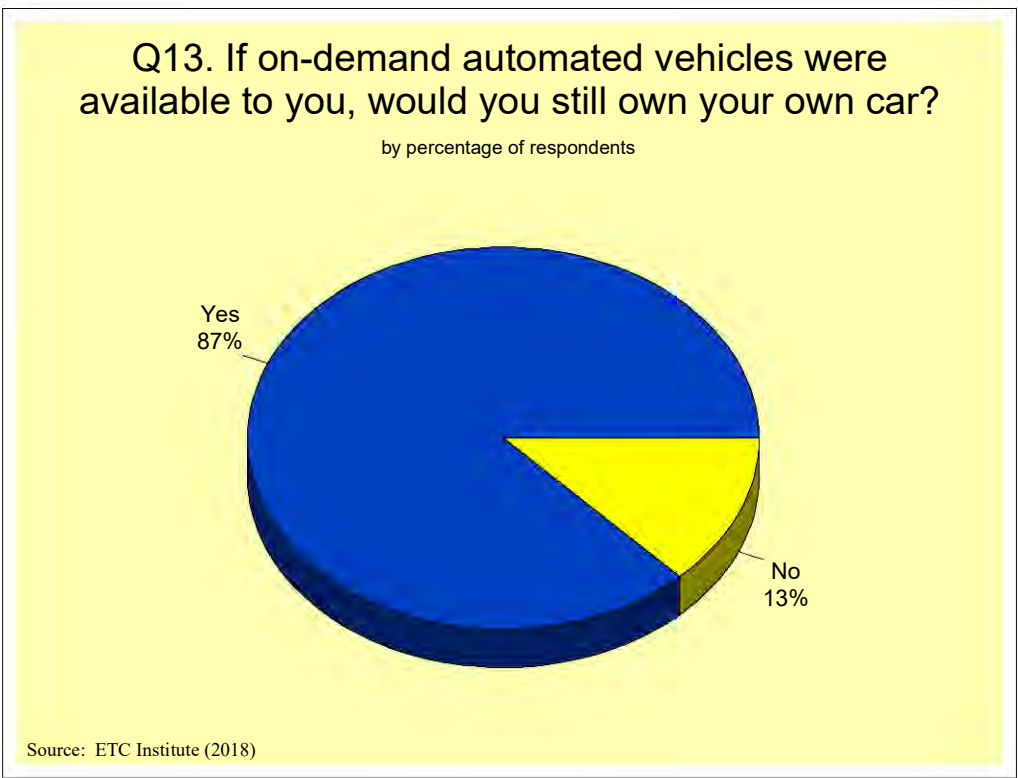
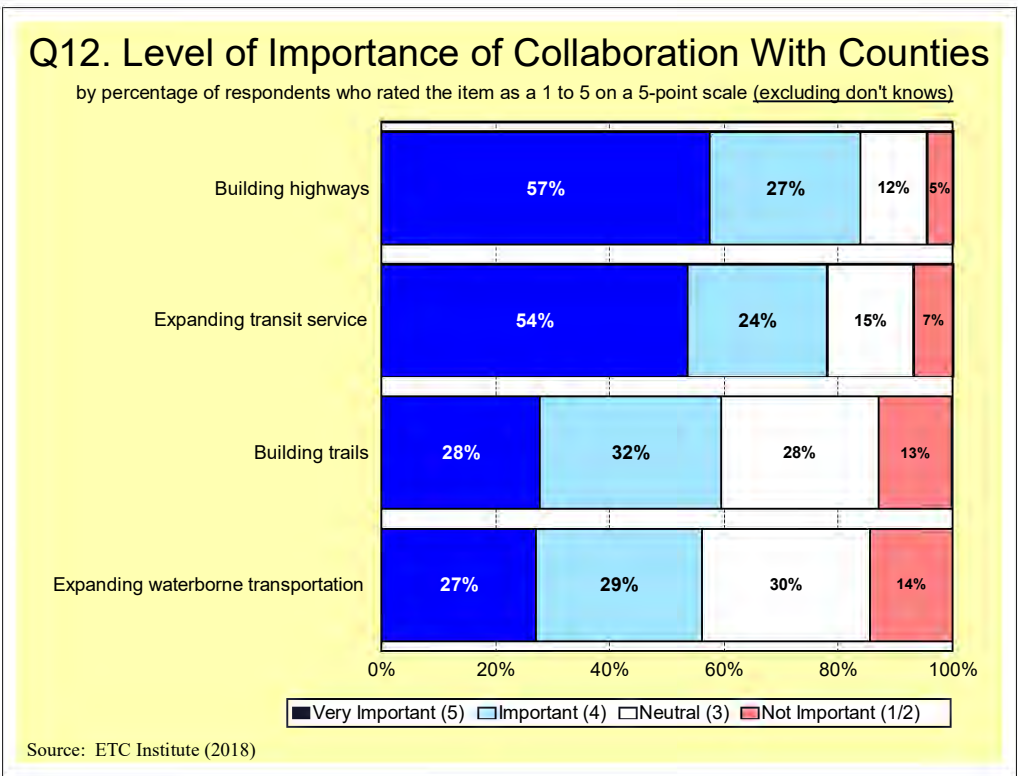
Source: ETC Institute (2018)

### Q10. Items Most Willing to Fund With Tax Dollars

by percentage of respondents who selected the item as one of their top three choices

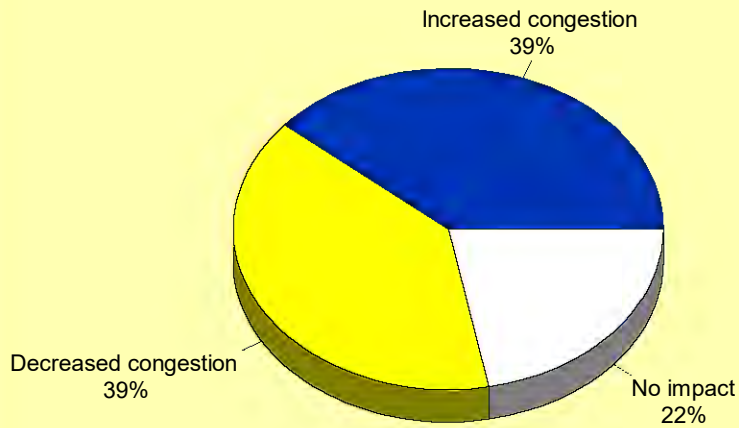


Source: ETC Institute (2018)



### Q14. What impact do you think automated vehicles will have on roadway congestion?

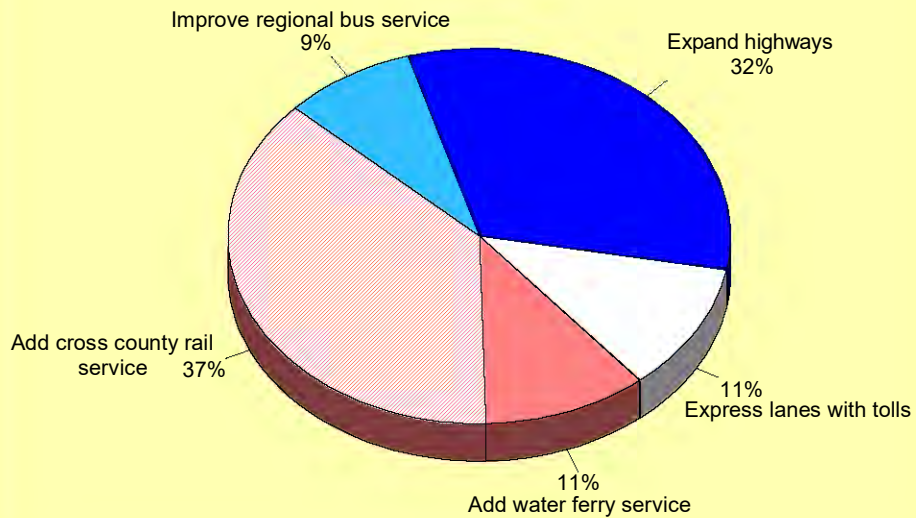
by percentage of respondents



Source: ETC Institute (2018)

### Q15. What do you think should be done to make crossing from Pinellas County into Hillsborough County easier?

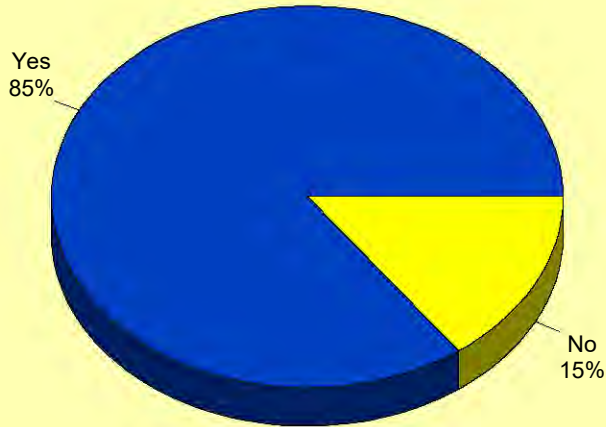
by percentage of respondents



Source: ETC Institute (2018)

### Q16. Do you believe having frequent, reliable, & convenient transit services nearby improves the economic value of the surround area?

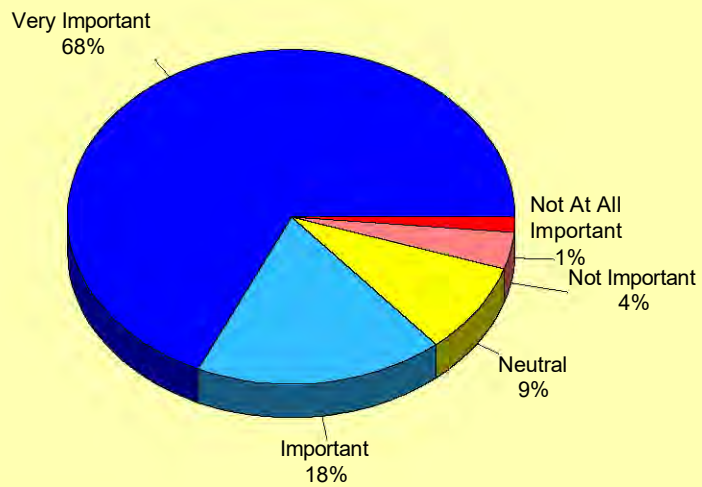
by percentage of respondents



Source: ETC Institute (2018)

### Q17. How important is it to live within 20-30 minutes of your job?

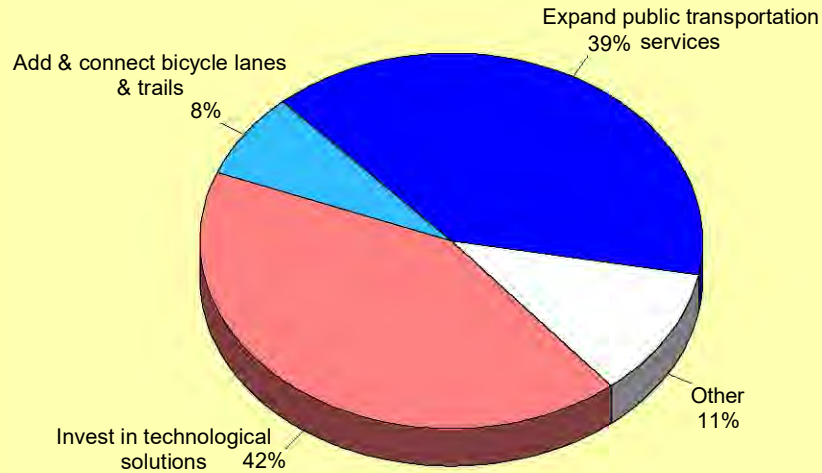
by percentage of respondents



Source: ETC Institute (2018)

### Q18. What do you think should be done to deal with increasing traffic?

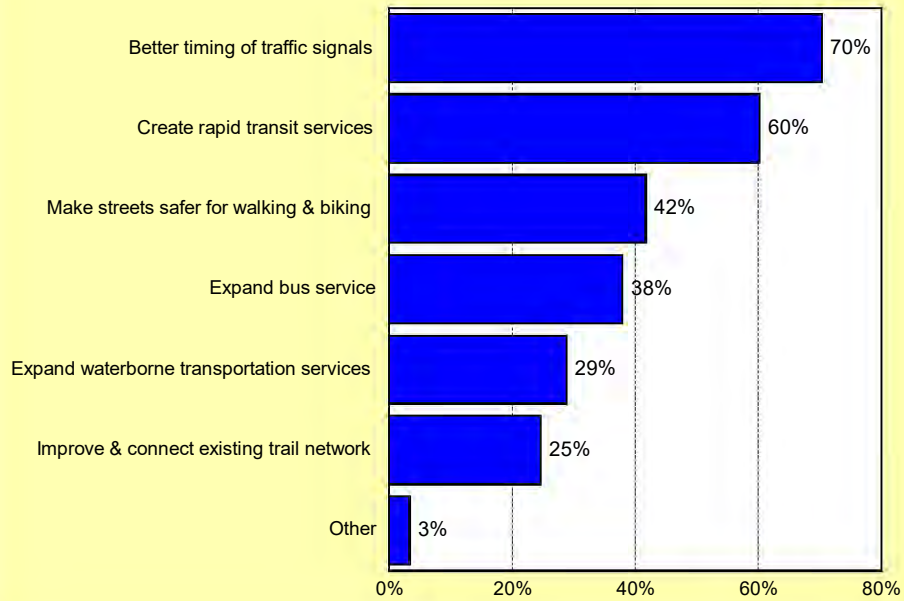
by percentage of respondents



Source: ETC Institute (2018)

### Q19. Most Needed Transportation Improvements

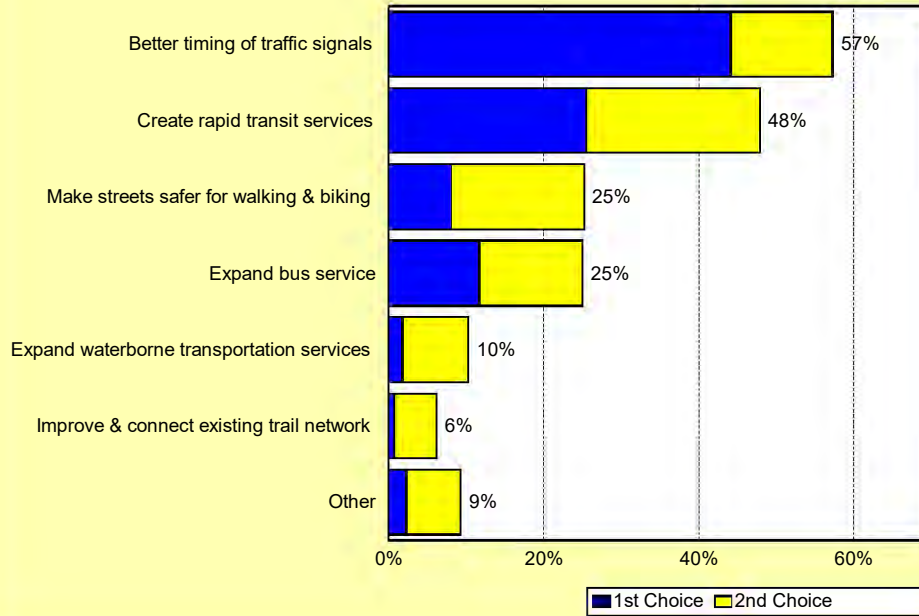
by percentage of respondents (multiple choices could be made)



Source: ETC Institute (2018)

### Q20. Most Important Transportation Choices

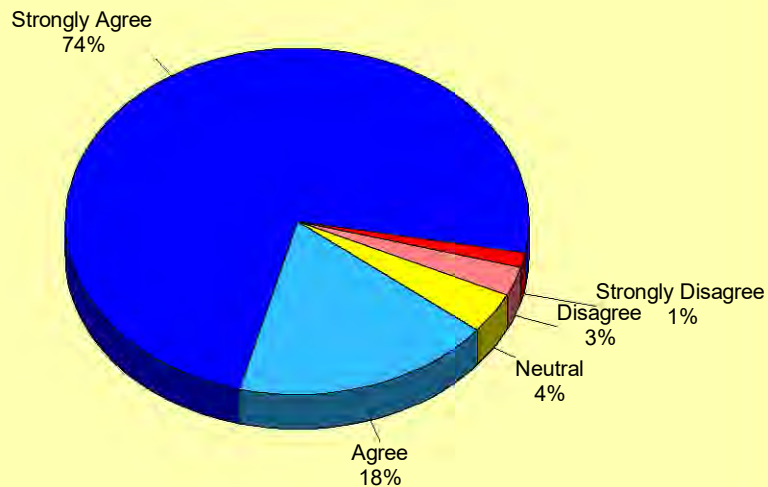
by percentage of respondents who selected the item as one of their top two choices



Source: ETC Institute (2018)

### Q21. "A public street serves the community best when people in cars, on bicycles, using public transportation, or walking all feel safe and welcomed."

by percentage of respondents

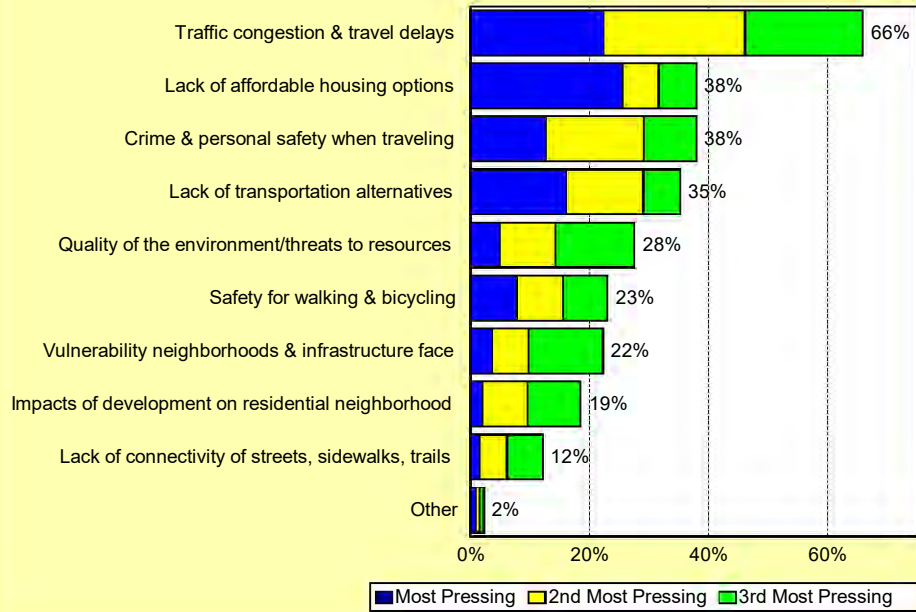


Source: ETC Institute (2018)



### Q22. Most Pressing Challenges Facing Pinellas County

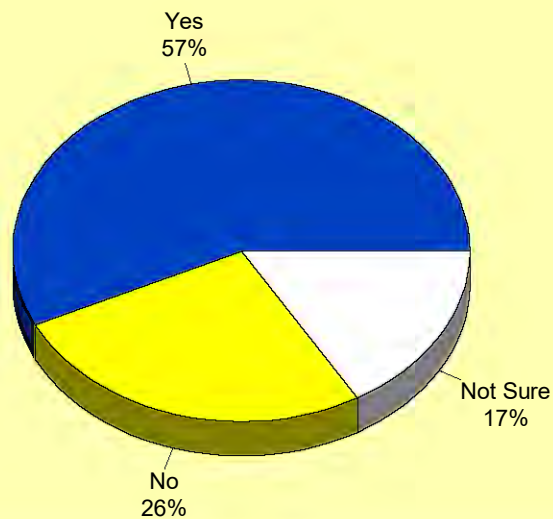
by percentage of respondents who selected the item as one of their top three choices



Source: ETC Institute (2018)

### Q23-1. Are you willing to trade lower speed limits in exchange for safe streets?

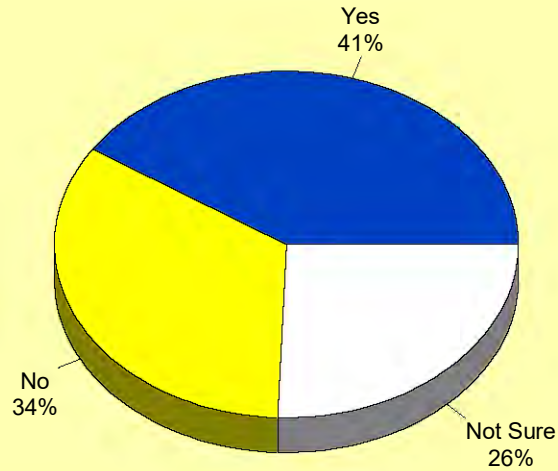
by percentage of respondents



Source: ETC Institute (2018)

### Q23-2. Are you willing to pay more for more frequent and reliable transit service?

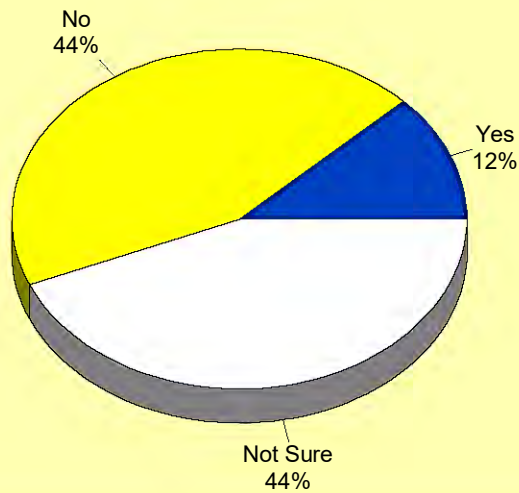
by percentage of respondents



Source: ETC Institute (2018)

### Q23-3. Does Pinellas County have a quality transportation system?

by percentage of respondents



Source: ETC Institute (2018)

### Q24. Demographics: How many years have you lived in Pinellas County?

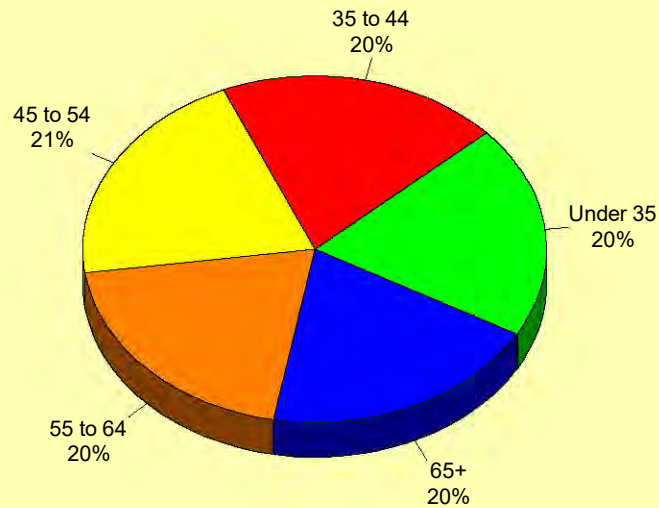
by percentage of respondents



Source: ETC Institute (2018)

### Q25. Demographics: What is your age?

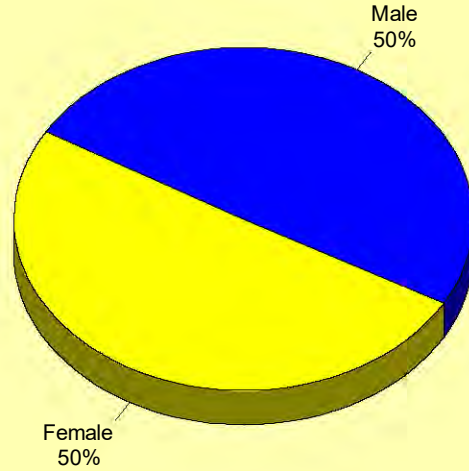
by percentage of respondents



Source: ETC Institute (2018)

### Q26. Demographics: What is your gender?

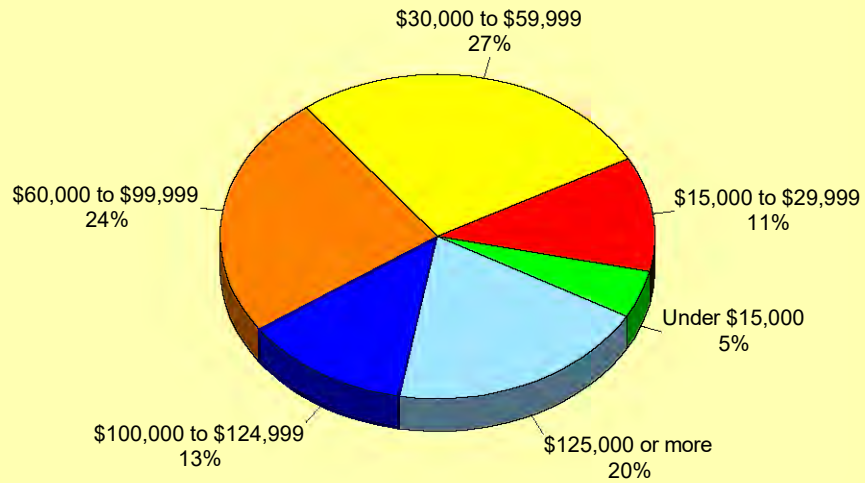
by percentage of respondents



Source: ETC Institute (2018)

### Q27. Demographics: Would you say your total annual household income is...

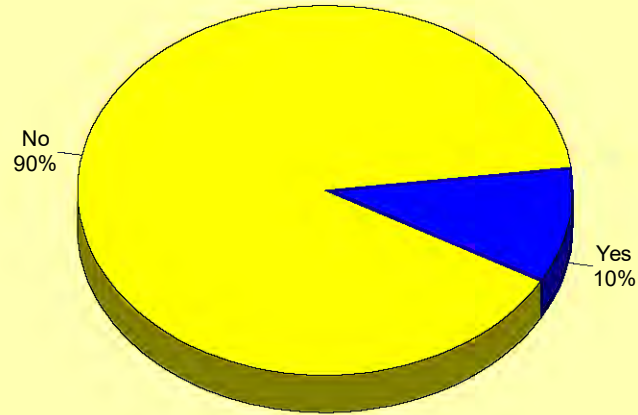
by percentage of respondents



Source: ETC Institute (2018)

### Q28. Demographics: Are you of Hispanic, Latino, or Spanish descent?

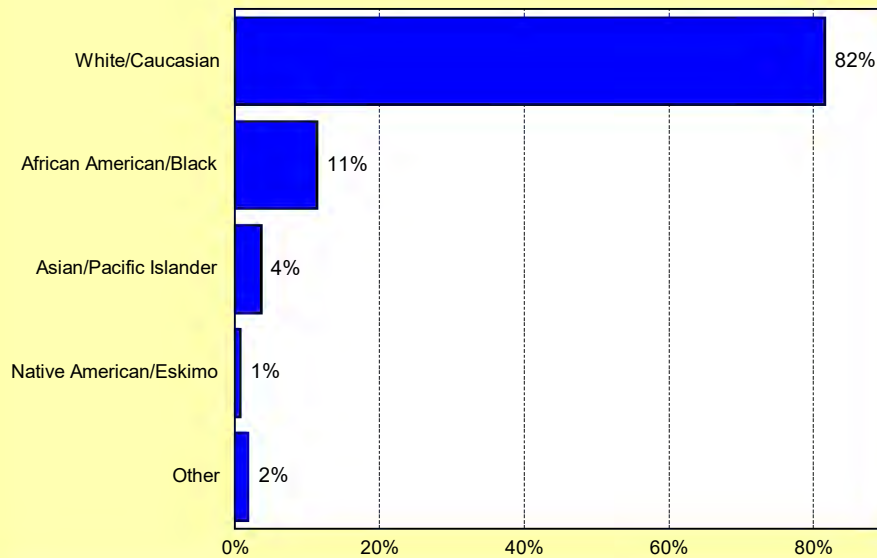
by percentage of respondents



Source: ETC Institute (2018)

### Q29. Demographics: Which of the following best describes your race/ethnicity?

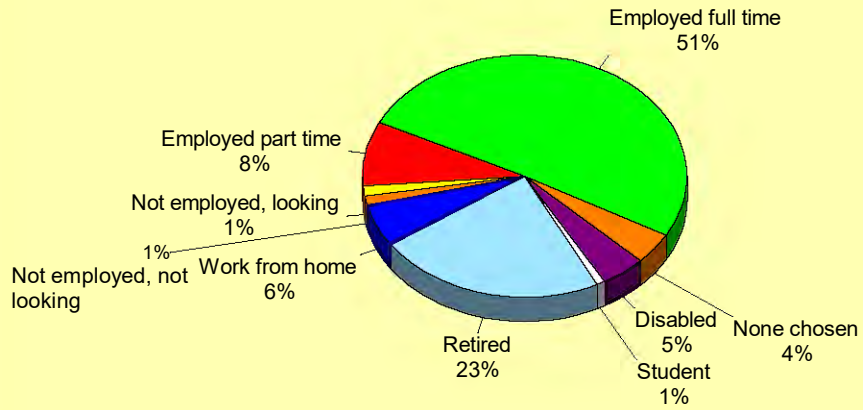
by percentage of respondents (multiple choices could be made)



Source: ETC Institute (2018)

### Q30. Demographics: Which of the following best describes your employment status?

by percentage of respondents



Source: ETC Institute (2018)

## **Section 2**

### ***Tabular Data***

---

**Q1. Community Priorities. Please rate your level of agreement with each of the following statements using a scale of 1 to 5, where 5 means "Strongly Agree" and 1 means "Strongly Disagree."**

(N=844)

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Don't know
Q1-1. I feel safe & comfortable walking to the store	37.6%	29.5%	14.1%	10.0%	4.1%	4.7%
Q1-2. I can drive my car conveniently with few traffic delays	28.6%	28.6%	16.7%	14.2%	7.9%	4.0%
Q1-3. I can safely ride a bike anywhere in my community	22.4%	18.2%	17.4%	19.2%	11.8%	10.9%
Q1-4. It is convenient to take transit to work or other destinations	14.3%	11.3%	16.8%	13.2%	20.7%	23.7%
Q1-5. I have choices for how I get around my community	19.1%	29.3%	19.3%	14.3%	9.1%	8.9%



**WITHOUT "DON'T KNOW"**

**Q1. Community Priorities. Please rate your level of agreement with each of the following statements using a scale of 1 to 5, where 5 means "Strongly Agree" and 1 means "Strongly Disagree." (without "don't know")**

(N=844)

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Q1-1. I feel safe & comfortable walking to the store	39.4%	31.0%	14.8%	10.4%	4.4%
Q1-2. I can drive my car conveniently with few traffic delays	29.8%	29.8%	17.4%	14.8%	8.3%
Q1-3. I can safely ride a bike anywhere in my community	25.1%	20.5%	19.5%	21.5%	13.3%
Q1-4. It is convenient to take transit to work or other destinations	18.8%	14.8%	22.0%	17.2%	27.2%
Q1-5. I have choices for how I get around my community	20.9%	32.1%	21.2%	15.7%	10.0%

**Q2. Which TWO of the items listed in Question 1 are MOST IMPORTANT to you and the members of your household?**

Q2. Top choice	Number	Percent
I feel safe & comfortable walking to the store	323	38.3 %
I can drive my car conveniently with few traffic delays	265	31.4 %
I can safely ride a bike anywhere in my community	63	7.5 %
It is convenient to take transit to work or other destinations	78	9.2 %
I have choices for how I get around my community	54	6.4 %
None chosen	61	7.2 %
Total	844	100.0 %

**Q2. Which TWO of the items listed in Question 1 are MOST IMPORTANT to you and the members of your household?**

Q2. 2nd choice	Number	Percent
I feel safe & comfortable walking to the store	148	17.5 %
I can drive my car conveniently with few traffic delays	210	24.9 %
I can safely ride a bike anywhere in my community	162	19.2 %
It is convenient to take transit to work or other destinations	75	8.9 %
I have choices for how I get around my community	148	17.5 %
None chosen	101	12.0 %
Total	844	100.0 %

**SUM OF TOP 2 CHOICES****Q2. Which TWO of the items listed in Question 1 are MOST IMPORTANT to you and the members of your household? (top 2)**

Q2. Sum of top 2 choices	Number	Percent
I feel safe & comfortable walking to the store	471	55.8 %
I can drive my car conveniently with few traffic delays	475	56.3 %
I can safely ride a bike anywhere in my community	225	26.7 %
It is convenient to take transit to work or other destinations	153	18.1 %
I have choices for how I get around my community	202	23.9 %
None chosen	61	7.2 %
Total	1587	

**Q3. Please indicate which ONE of the following items is MOST IMPORTANT to you when thinking of your ideal neighborhood.**

Q3. What is most important to you when thinking of your ideal neighborhood	Number	Percent
Is far from commercial areas	59	7.0 %
Has nearby shops, schools, restaurants, parks, cultural activities, & other everyday destinations within a 10-minute walk	545	64.6 %
Has large lawns & backyards	96	11.4 %
Has a mix of different kinds of housing (small & large houses, townhomes, small apartment buildings)	35	4.1 %
Other	61	7.2 %
None of the above	36	4.3 %
Not provided	12	1.4 %
Total	844	100.0 %

**WITHOUT "NOT PROVIDED"**

**Q3. Please indicate which ONE of the following items is MOST IMPORTANT to you when thinking of your ideal neighborhood. (without "not provided")**

Q3. What is most important to you when thinking of your ideal neighborhood	Number	Percent
Is far from commercial areas	59	7.1 %
Has nearby shops, schools, restaurants, parks, cultural activities, & other everyday destinations within a 10-minute walk	545	65.5 %
Has large lawns & backyards	96	11.5 %
Has a mix of different kinds of housing (small & large houses, townhomes, small apartment buildings)	35	4.2 %
Other	61	7.3 %
None of the above	36	4.3 %
Total	832	100.0 %

**Q3. Other**

<u>Q3. Other</u>	<u>Number</u>	<u>Percent</u>
Safe	10	16.7 %
Private gated neighborhoods	1	1.7 %
Feeling safe	1	1.7 %
Close to the water	1	1.7 %
Community	1	1.7 %
SHOPPING, RESTURANTS, CULTURAL ACTIIVITIES WITH A SHORT DRIVE	1	1.7 %
Private, gated, large lot	1	1.7 %
Shops, schools, restaurants, parks, cultural activities, etc. within a 10-15 minute bike ride	1	1.7 %
Lower tax, priority to roads and cars only, less government, no section 8 housing, etc.	1	1.7 %
Safe street crossings for people and bikes and cars	1	1.7 %
Pass walks for people to walk on and to ride their bikes	1	1.7 %
BICYCLE SAFE	1	1.7 %
QUIET AND CARE OF PROPERTY	1	1.7 %
Quiet, safe, good neighbors	1	1.7 %
Safety, low crime	1	1.7 %
Diverse	1	1.7 %
Clean and safe	1	1.7 %
Quiet	1	1.7 %
STREETS ARE LIT AT NIGHT	1	1.7 %
SHOPS AND RESTAURANTS WITHIN A 10 MINUTE DRIVE	1	1.7 %
NO MORE SECTION 8	1	1.7 %
WELL LIT STREETS	1	1.7 %
CRIME FREE	1	1.7 %
SAFE, CLEAN, AND FRIENDLY	1	1.7 %
Affordable housing	1	1.7 %
HISTORIC	1	1.7 %
Neighbors who care	1	1.7 %
GOOD SCHOOLS	1	1.7 %
SAFE AND CLEAN	1	1.7 %
Safe sidewalks & roads	1	1.7 %
QUIET, LIMITED LIGHTING AND LOW TRAFFIC	1	1.7 %
CAN GET TO SHOPS EASILY WITHOUT TRAFFIC DELAY	1	1.7 %
Affordable taxes	1	1.7 %
Golf cart community	1	1.7 %
SAFE, FREE FROM VAGRANTS	1	1.7 %
Reduce traffic	1	1.7 %
Safety	1	1.7 %
Gated community	1	1.7 %
NO DRUG DEALERS	1	1.7 %
QUITE AND SAFE	1	1.7 %
TRAFFIC LIGHTS	1	1.7 %

**Q3. Other**

<u>Q3. Other</u>	<u>Number</u>	<u>Percent</u>
Safe, clean, location	1	1.7 %
Safe, close to activities and shops	1	1.7 %
Another source	1	1.7 %
Drug free, safety, police accessibility	1	1.7 %
Nearby shops and large yards	1	1.7 %
CONVENIENCE	1	1.7 %
On or near the water	1	1.7 %
Unique houses and lot sizes, walking paths	1	1.7 %
Waterfront	1	1.7 %
One acre lots	1	1.7 %
Total	60	100.0 %

**Q4. Please indicate which ONE of the following items is your MOST PREFERRED situation when it comes to shopping and entertainment.**

Q4. What is your most preferred situation when it comes to shopping & entertainment	Number	Percent
A mall or large shopping center with plenty of free parking	162	19.2 %
A walkable Downtown with lots of activity	231	27.4 %
A "Main Street" with local shops & restaurants	230	27.3 %
A variety of different destinations that are spread out	211	25.0 %
Not provided	10	1.2 %
Total	844	100.0 %

**WITHOUT "NOT PROVIDED"**

**Q4. Please indicate which ONE of the following items is your MOST PREFERRED situation when it comes to shopping and entertainment. (without "not provided")**

Q4. What is your most preferred situation when it comes to shopping & entertainment	Number	Percent
A mall or large shopping center with plenty of free parking	162	19.4 %
A walkable Downtown with lots of activity	231	27.7 %
A "Main Street" with local shops & restaurants	230	27.6 %
A variety of different destinations that are spread out	211	25.3 %
Total	834	100.0 %

**Q5. Please indicate which ONE of the following items would MOST INCREASE the likelihood that you would take public transportation.**

Q5. What would most increase the likelihood that you would take public transportation	Number	Percent
I lived and/or worked closer to a transit stop	64	7.6 %
It was a more comfortable walk to/from transit stop	30	3.6 %
It was more comfortable to wait at transit stop	49	5.8 %
Transit could get me where I was going more quickly	264	31.3 %
I could reach multiple destinations (e.g. work, shopping) from a single stop	116	13.7 %
Other	41	4.9 %
I would not take public transportation	258	30.6 %
Not provided	22	2.6 %
Total	844	100.0 %

**WITHOUT "NOT PROVIDED"**

**Q5. Please indicate which ONE of the following items would MOST INCREASE the likelihood that you would take public transportation. (without "not provided")**

Q5. What would most increase the likelihood that you would take public transportation	Number	Percent
I lived and/or worked closer to a transit stop	64	7.8 %
It was a more comfortable walk to/from transit stop	30	3.6 %
It was more comfortable to wait at transit stop	49	6.0 %
Transit could get me where I was going more quickly	264	32.1 %
I could reach multiple destinations (e.g. work, shopping) from a single stop	116	14.1 %
Other	41	5.0 %
I would not take public transportation	258	31.4 %
Total	822	100.0 %

**Q5. Other**

<u>Q5. Other</u>	<u>Number</u>	<u>Percent</u>
Light rail	3	7.7 %
CLEAN AND SAFE	3	7.7 %
Public transportation is my only means of transportation	1	2.6 %
There are not enough connections at stops	1	2.6 %
If there were rational schedules that did not take a person over an hour to get somewhere	1	2.6 %
If I felt more safe around some of the people that take public transit	1	2.6 %
Transit to be on time	1	2.6 %
If public transportation was	1	2.6 %
If we had a monorail around the bay or fast train to Orlando, Miami etc.	1	2.6 %
If it were a train/light rail/streetcar system (more reliable & comfortable)	1	2.6 %
I could ride my bike to take public transportation	1	2.6 %
SAFE STOPS	1	2.6 %
FREQUENCY OF TIME FOR TRANSIT	1	2.6 %
24/7 every 30 minutes	1	2.6 %
Transit was faster and ran more often and reached more areas	1	2.6 %
Easy bike boarding	1	2.6 %
Longer service hours	1	2.6 %
Metro/subway	1	2.6 %
TRANSIT TO AIRPORT	1	2.6 %
CONVENIENCE OF NOT USING MY CAR	1	2.6 %
Not expensive	1	2.6 %
All hours	1	2.6 %
I use an adult trike and can not put it on a bus	1	2.6 %
If public transportation had more convenient running times	1	2.6 %
CONVENIENT AND SAFE	1	2.6 %
Convenience	1	2.6 %
I COULDN'T AFFORD A CAR	1	2.6 %
If I lost my license	1	2.6 %
Higher frequency of rides	1	2.6 %
It was safer	1	2.6 %
Understanding of the routes and proximity to where I want to be	1	2.6 %
It should be available for a longer time period then stopping at 8PM	1	2.6 %
If they were clean & appealing to families	1	2.6 %
HEALTH	1	2.6 %
TRAIN, TRAM	1	2.6 %
Total	39	100.0 %



**Q6. Please CHECK ALL of the following items that you would like to see improved.**

<u>Q6. What would you like to see improved</u>	<u>Number</u>	<u>Percent</u>
My daily commute	316	37.4 %
My child's trip to school	97	11.5 %
Special events or entertainment destinations	331	39.2 %
Regional destinations (e.g. airports, universities, Downtown Tampa)	436	51.7 %
Access to nearby commercial destinations	227	26.9 %
<u>I am not interested in improved transportation options</u>	<u>110</u>	<u>13.0 %</u>
Total	1517	

**Q7. Planning Priorities. Please rate the importance of each of the following items as they relate to Pinellas County using a scale of 1 to 5, where 5 means "Very Important" and 1 means "Not at All Important."**

(N=844)

	Very important	Important	Neutral	Not important	Not at all important	Don't know
Q7-1. Improving efficiency of transportation network	48.6%	28.6%	14.2%	2.8%	2.1%	3.7%
Q7-2. Increasing resiliency to hurricanes, sea level rise or other climate related hazards	54.3%	28.2%	10.3%	1.8%	2.5%	3.0%
Q7-3. Creating more opportunities to have a healthy lifestyle	36.8%	35.3%	19.4%	3.4%	2.1%	2.8%
Q7-4. Protecting natural environment	59.0%	28.4%	8.9%	0.8%	0.8%	2.0%
Q7-5. Supporting arts	23.8%	34.4%	26.1%	7.1%	5.2%	3.4%
Q7-6. Improving education	60.5%	24.9%	8.4%	1.3%	1.8%	3.1%
Q7-7. Maintaining/growing tourism industry	21.4%	35.0%	30.1%	6.9%	3.6%	3.1%
Q7-8. Reducing crime	69.3%	21.1%	5.7%	1.2%	0.7%	2.0%
Q7-9. Increasing number of well paying jobs	53.6%	30.7%	10.7%	1.4%	0.9%	2.7%
Q7-10. Increasing availability of affordable housing	44.9%	25.9%	18.7%	3.9%	3.9%	2.6%

**WITHOUT "DON'T KNOW"**

**Q7. Planning Priorities. Please rate the importance of each of the following items as they relate to Pinellas County using a scale of 1 to 5, where 5 means "Very Important" and 1 means "Not at All Important." (without "don't know")**

(N=844)

	Very important	Important	Neutral	Not important	Not at all important
Q7-1. Improving efficiency of transportation network	50.4%	29.6%	14.8%	3.0%	2.2%
Q7-2. Increasing resiliency to hurricanes, sea level rise or other climate related hazards	55.9%	29.1%	10.6%	1.8%	2.6%
Q7-3. Creating more opportunities to have a healthy lifestyle	37.9%	36.3%	20.0%	3.5%	2.2%
Q7-4. Protecting natural environment	60.2%	29.0%	9.1%	0.8%	0.8%
Q7-5. Supporting arts	24.7%	35.6%	27.0%	7.4%	5.4%
Q7-6. Improving education	62.5%	25.7%	8.7%	1.3%	1.8%
Q7-7. Maintaining/growing tourism industry	22.1%	36.1%	31.1%	7.1%	3.7%
Q7-8. Reducing crime	70.7%	21.5%	5.8%	1.2%	0.7%
Q7-9. Increasing number of well paying jobs	55.1%	31.5%	11.0%	1.5%	1.0%
Q7-10. Increasing availability of affordable housing	46.1%	26.6%	19.2%	4.0%	4.0%

**Q8. Which THREE of the items listed in Question 7 should be MOST IMPORTANT to Pinellas County over the next 5-10 years?**

<u>Q8. Top choice</u>	<u>Number</u>	<u>Percent</u>
Improving efficiency of transportation network	178	21.1 %
Increasing resiliency to hurricanes, sea level rise or other climate related hazards	135	16.0 %
Creating more opportunities to have a healthy lifestyle	31	3.7 %
Protecting natural environment	80	9.5 %
Supporting arts	17	2.0 %
Improving education	100	11.8 %
Maintaining/growing tourism industry	9	1.1 %
Reducing crime	130	15.4 %
Increasing number of well paying jobs	61	7.2 %
Increasing availability of affordable housing	68	8.1 %
None chosen	35	4.1 %
Total	844	100.0 %

**Q8. Which THREE of the items listed in Question 7 should be MOST IMPORTANT to Pinellas County over the next 5-10 years?**

<u>Q8. 2nd choice</u>	<u>Number</u>	<u>Percent</u>
Improving efficiency of transportation network	58	6.9 %
Increasing resiliency to hurricanes, sea level rise or other climate related hazards	115	13.6 %
Creating more opportunities to have a healthy lifestyle	39	4.6 %
Protecting natural environment	114	13.5 %
Supporting arts	29	3.4 %
Improving education	132	15.6 %
Maintaining/growing tourism industry	21	2.5 %
Reducing crime	129	15.3 %
Increasing number of well paying jobs	107	12.7 %
Increasing availability of affordable housing	50	5.9 %
None chosen	50	5.9 %
Total	844	100.0 %

**Q8. Which THREE of the items listed in Question 7 should be MOST IMPORTANT to Pinellas County over the next 5-10 years?**

Q8. 3rd choice	Number	Percent
Improving efficiency of transportation network	56	6.6 %
Increasing resiliency to hurricanes, sea level rise or other climate related hazards	76	9.0 %
Creating more opportunities to have a healthy lifestyle	56	6.6 %
Protecting natural environment	103	12.2 %
Supporting arts	32	3.8 %
Improving education	112	13.3 %
Maintaining/growing tourism industry	42	5.0 %
Reducing crime	126	14.9 %
Increasing number of well paying jobs	83	9.8 %
Increasing availability of affordable housing	96	11.4 %
None chosen	62	7.3 %
Total	844	100.0 %

**SUM OF TOP 3 CHOICES**

**Q8. Which THREE of the items listed in Question 7 should be MOST IMPORTANT to Pinellas County over the next 5-10 years? (top 3)**

Q8. Sum of top 3 choices	Number	Percent
Improving efficiency of transportation network	292	34.6 %
Increasing resiliency to hurricanes, sea level rise or other climate related hazards	326	38.6 %
Creating more opportunities to have a healthy lifestyle	126	14.9 %
Protecting natural environment	297	35.2 %
Supporting arts	78	9.2 %
Improving education	344	40.8 %
Maintaining/growing tourism industry	72	8.5 %
Reducing crime	385	45.6 %
Increasing number of well paying jobs	251	29.7 %
Increasing availability of affordable housing	214	25.4 %
None chosen	35	4.1 %
Total	2420	

**Q9. Investment Opportunities. Please indicate how supportive you are of having Pinellas County invest in the following items using a scale of 1 to 5, where 5 means "Very Supportive" and 1 means "Not at All Supportive."**

(N=844)

	Very supportive	Supportive	Neutral	Not supportive	Not at all supportive	Don't know
Q9-1. New roadway capacity	41.0%	32.2%	14.5%	5.1%	2.4%	4.9%
Q9-2. Roadway maintenance	53.4%	36.8%	5.8%	0.7%	0.6%	2.6%
Q9-3. Bicycle accommodations & signage	29.0%	30.0%	24.9%	6.6%	4.1%	5.3%
Q9-4. Waterborne transportation	17.3%	27.6%	33.6%	8.8%	5.8%	6.9%
Q9-5. Bus service	23.9%	32.5%	28.6%	5.5%	5.2%	4.4%
Q9-6. Premium transit (limited stop or express services)	31.2%	28.1%	25.1%	5.3%	5.3%	5.0%
Q9-7. Technology to improve traffic flow	59.0%	27.8%	7.6%	0.9%	1.4%	3.2%

**WITHOUT "DON'T KNOW"**

**Q9. Investment Opportunities. Please indicate how supportive you are of having Pinellas County invest in the following items using a scale of 1 to 5, where 5 means "Very Supportive" and 1 means "Not at All Supportive." (without "don't know")**

(N=844)

	Very supportive	Supportive	Neutral	Not supportive	Not at all supportive
Q9-1. New roadway capacity	43.1%	33.9%	15.2%	5.4%	2.5%
Q9-2. Roadway maintenance	54.9%	37.8%	6.0%	0.7%	0.6%
Q9-3. Bicycle accommodations & signage	30.7%	31.7%	26.3%	7.0%	4.4%
Q9-4. Waterborne transportation	18.6%	29.6%	36.1%	9.4%	6.2%
Q9-5. Bus service	25.0%	34.0%	29.9%	5.7%	5.5%
Q9-6. Premium transit (limited stop or express services)	32.8%	29.6%	26.4%	5.6%	5.6%
Q9-7. Technology to improve traffic flow	61.0%	28.8%	7.8%	1.0%	1.5%

**Q10. Which THREE of the items listed in Question 9 would you be MOST WILLING to fund with your tax dollars?**

Q10. Top choice	Number	Percent
New roadway capacity	174	20.6 %
Roadway maintenance	196	23.2 %
Bicycle accommodations & signage	66	7.8 %
Waterborne transportation	30	3.6 %
Bus service	80	9.5 %
Premium transit (limited stop or express services)	70	8.3 %
Technology to improve traffic flow	163	19.3 %
None chosen	65	7.7 %
Total	844	100.0 %

**Q10. Which THREE of the items listed in Question 9 would you be MOST WILLING to fund with your tax dollars?**

Q10. 2nd choice	Number	Percent
New roadway capacity	124	14.7 %
Roadway maintenance	199	23.6 %
Bicycle accommodations & signage	64	7.6 %
Waterborne transportation	42	5.0 %
Bus service	60	7.1 %
Premium transit (limited stop or express services)	93	11.0 %
Technology to improve traffic flow	170	20.1 %
None chosen	92	10.9 %
Total	844	100.0 %



**Q10. Which THREE of the items listed in Question 9 would you be MOST WILLING to fund with your tax dollars?**

Q10. 3rd choice	Number	Percent
New roadway capacity	96	11.4 %
Roadway maintenance	130	15.4 %
Bicycle accommodations & signage	85	10.1 %
Waterborne transportation	56	6.6 %
Bus service	57	6.8 %
Premium transit (limited stop or express services)	86	10.2 %
Technology to improve traffic flow	197	23.3 %
None chosen	137	16.2 %
Total	844	100.0 %

**SUM OF TOP 3 CHOICES**

**Q10. Which THREE of the items listed in Question 9 would you be MOST WILLING to fund with your tax dollars? (top 3)**

Q10. Sum of top 3 choices	Number	Percent
New roadway capacity	394	46.7 %
Roadway maintenance	525	62.2 %
Bicycle accommodations & signage	215	25.5 %
Waterborne transportation	128	15.2 %
Bus service	197	23.3 %
Premium transit (limited stop or express services)	249	29.5 %
Technology to improve traffic flow	530	62.8 %
None chosen	65	7.7 %
Total	2303	

**Q12. Collaboration. Please indicate how important it is for counties in the Tampa Bay area to work together to address each of the following using a scale of 1 to 5, where 5 means "Very Important" and 1 means "Not at All Important."**

(N=844)

	Very important	Important	Neutral	Not important	Not at all important	Don't know
Q12-1. Building highways	54.1%	25.0%	10.9%	2.6%	1.7%	5.7%
Q12-2. Expanding transit service	51.1%	23.2%	14.5%	3.8%	2.7%	4.7%
Q12-3. Expanding waterborne transportation	25.2%	27.0%	27.5%	8.1%	5.3%	6.9%
Q12-4. Building trails	25.7%	29.4%	25.6%	7.2%	4.7%	7.3%

**WITHOUT "DON'T KNOW"**

**Q12. Collaboration. Please indicate how important it is for counties in the Tampa Bay area to work together to address each of the following using a scale of 1 to 5, where 5 means "Very Important" and 1 means "Not at All Important." (without "don't know")**

(N=844)

	Very important	Important	Neutral	Not important	Not at all important
Q12-1. Building highways	57.4%	26.5%	11.6%	2.8%	1.8%
Q12-2. Expanding transit service	53.6%	24.4%	15.2%	4.0%	2.9%
Q12-3. Expanding waterborne transportation	27.1%	29.0%	29.5%	8.7%	5.7%
Q12-4. Building trails	27.7%	31.7%	27.6%	7.8%	5.1%

**Q13. If on-demand automated vehicles were available to you, would you still own your own car?**

Q13. If on-demand automated vehicles were available to you, would you still own your own car

	Number	Percent
Yes	526	62.3 %
No	78	9.2 %
Don't know	240	28.4 %
Total	844	100.0 %

**WITHOUT "DON'T KNOW"****Q13. If on-demand automated vehicles were available to you, would you still own your own car? (without "don't know")**

Q13. If on-demand automated vehicles were available to you, would you still own your own car

	Number	Percent
Yes	526	87.1 %
No	78	12.9 %
Total	604	100.0 %

**Q14. What impact do you think automated vehicles will have on roadway congestion?**

Q14. What impact will automated vehicles have on roadway congestion	Number	Percent
Increased congestion	186	22.0 %
Decreased congestion	188	22.3 %
No impact	106	12.6 %
Don't know	364	43.1 %
Total	844	100.0 %

**WITHOUT "DON'T KNOW"****Q14. What impact do you think automated vehicles will have on roadway congestion? (without "don't know")**

Q14. What impact will automated vehicles have on roadway congestion	Number	Percent
Increased congestion	186	38.8 %
Decreased congestion	188	39.2 %
No impact	106	22.1 %
Total	480	100.0 %

**Q15. What do you think should be done to make crossing from Pinellas County into Hillsborough County easier?**

Q15. What should be done to make crossing from Pinellas County into Hillsborough County easier	Number	Percent
Expand highways	258	30.6 %
Improve regional bus service	69	8.2 %
Add cross County rail service	299	35.4 %
Add water ferry service	85	10.1 %
Express lanes with tolls	90	10.7 %
Not provided	43	5.1 %
Total	844	100.0 %

**WITHOUT "NOT PROVIDED"****Q15. What do you think should be done to make crossing from Pinellas County into Hillsborough County easier? (without "not provided")**

Q15. What should be done to make crossing from Pinellas County into Hillsborough County easier	Number	Percent
Expand highways	258	32.2 %
Improve regional bus service	69	8.6 %
Add cross County rail service	299	37.3 %
Add water ferry service	85	10.6 %
Express lanes with tolls	90	11.2 %
Total	801	100.0 %

**Q16. Do you believe having frequent, reliable, and convenient transit services nearby improves the economic value (e.g. increases jobs, redevelopment potential, and enhances the tax base) of the surrounding area?**

Q16. Do you believe having frequent, reliable, & convenient transit services nearby improves economic value of surrounding area

	Number	Percent
Yes	599	71.0 %
No	106	12.6 %
Don't know	139	16.5 %
Total	844	100.0 %

**WITHOUT "DON'T KNOW"**

**Q16. Do you believe having frequent, reliable, and convenient transit services nearby improves the economic value (e.g. increases jobs, redevelopment potential, and enhances the tax base) of the surrounding area? (without "don't know")**

Q16. Do you believe having frequent, reliable, & convenient transit services nearby improves economic value of surrounding area

	Number	Percent
Yes	599	85.0 %
No	106	15.0 %
Total	705	100.0 %

**Q17. How important is it to live within 20-30 minutes of your job?**

Q17. How important is it to live within 20-30 minutes of your job

	Number	Percent
Very important	484	57.3 %
Important	127	15.0 %
Neutral	63	7.5 %
Not important	25	3.0 %
Not at all important	11	1.3 %
Not applicable (I don't work/I work from home)	134	15.9 %
Total	844	100.0 %

**WITHOUT "NOT APPLICABLE"****Q17. How important is it to live within 20-30 minutes of your job? (without "not applicable")**

Q17. How important is it to live within 20-30 minutes of your job

	Number	Percent
Very important	484	68.2 %
Important	127	17.9 %
Neutral	63	8.9 %
Not important	25	3.5 %
Not at all important	11	1.5 %
Total	710	100.0 %

**Q18. In Pinellas County, there are few opportunities to widen existing roadways. What do you think should be done to deal with increasing traffic?**

Q18. What should be done to deal with increasing traffic	Number	Percent
Expand public transportation services	311	36.8 %
Add & connect bicycle lanes & trails	59	7.0 %
Invest in technological solutions	328	38.9 %
Other	89	10.5 %
Not provided	57	6.8 %
Total	844	100.0 %

**WITHOUT "NOT PROVIDED"**

**Q18. In Pinellas County, there are few opportunities to widen existing roadways. What do you think should be done to deal with increasing traffic? (without "not provided")**

Q18. What should be done to deal with increasing traffic	Number	Percent
Expand public transportation services	311	39.5 %
Add & connect bicycle lanes & trails	59	7.5 %
Invest in technological solutions	328	41.7 %
Other	89	11.3 %
Total	787	100.0 %

Missing Cases = 57

Response Percent = 93.2 %



**Q18. Other**

<u>Q18. Other</u>	<u>Number</u>	<u>Percent</u>
Light rail	8	10.0 %
Elevated highways	2	2.5 %
TIMING OF TRAFFIC LIGHTS	2	2.5 %
Double decker roads	2	2.5 %
TRAINS	2	2.5 %
Railway	2	2.5 %
Tunnels and elevated express ways	1	1.3 %
Figure out how to widen existing roadways	1	1.3 %
Tolls on express lanes	1	1.3 %
More projects like US 19 or elevated rail system that doesn't impede other traffic	1	1.3 %
GO UP	1	1.3 %
OVERPASS	1	1.3 %
Make everyone buy a helicopter	1	1.3 %
Highway over highway and roads over roads	1	1.3 %
Expand and or do overpass roads like Selmon	1	1.3 %
Mono rail around the County	1	1.3 %
Add a BART like San Francisco has	1	1.3 %
Utilize full potential of I-275 & I-4	1	1.3 %
Railway Transportation	1	1.3 %
THEY HAVE BEEN WIDENING ROADS FOR 50 YEARS	1	1.3 %
Rapid transit/metro	1	1.3 %
Elevated & limited access roads	1	1.3 %
MORE BUS STOPS	1	1.3 %
STOP BUILDING CONDOS	1	1.3 %
FIGURE IT OUT	1	1.3 %
STOP PROMOTING TOURISTS	1	1.3 %
TAKE BIKES OFF ROADWAYS	1	1.3 %
MORE JOBS	1	1.3 %
Railway service	1	1.3 %
Get old people off the road and raise driving age to 18	1	1.3 %
Expand & develop new alternate roads	1	1.3 %
JUST MAKE ROADS SAFER	1	1.3 %
EMINENT DOMAIN	1	1.3 %
FLEXIBLE ALTERNATIVE WORK SCHEDULE AND OPTIONS	1	1.3 %
Limit new development in congested areas	1	1.3 %
Offer tax incentives to promote work from home or flexible work hours	1	1.3 %
More overpasses, less lights	1	1.3 %
Above ground rail system	1	1.3 %
Limit access to highways	1	1.3 %
Restrict growth of business at intersections	1	1.3 %
Time traffic lights	1	1.3 %
REDUCE TOURISM STOP DEVELOPMENT	1	1.3 %

**Q18. Other**

<u>Q18. Other</u>	<u>Number</u>	<u>Percent</u>
Stop building high rises	1	1.3 %
Incentives for scooters and motorcycles	1	1.3 %
Stop building until changes are made	1	1.3 %
LONGER TRAFFIC LIGHTS	1	1.3 %
Improve intersection flow, make safer transit crossings	1	1.3 %
RAISE ROADS	1	1.3 %
REDUCE BUILDINGS	1	1.3 %
Raised roadways	1	1.3 %
Elevated roads	1	1.3 %
Overhead roads	1	1.3 %
Reduce population	1	1.3 %
Build up over current highways	1	1.3 %
New technology, rail system with personal vehicle parking	1	1.3 %
Review permitting/zoning & infill	1	1.3 %
Cycle traffic lights faster	1	1.3 %
LIMITED ACCESS HWY, ELEVATE US 19	1	1.3 %
TRAIN SERVICE	1	1.3 %
TAX BREAKS FOR SHARE RIDES	1	1.3 %
DO NOT BUILD ANYMORE ADDITIONAL HOUSING	1	1.3 %
Increase safety of public transportation	1	1.3 %
Traffic officers to catch speeders, lane changers	1	1.3 %
Eliminate billboards	1	1.3 %
Encourage ride sharing	1	1.3 %
WIDEN ROADS	1	1.3 %
Heighten bridge roads and coordinate traffic lights better	1	1.3 %
Incentive for companies who allow employees to work from home	1	1.3 %
Total	80	100.0 %

**Q19. Looking ahead to the next 5-10 years, which of the transportation improvements listed below do you think are MOST NEEDED in Pinellas County?**

Q19. What transportation improvements are most needed in Pinellas County in next 5 to 10 years	Number	Percent
Better timing of traffic signals to improve traffic flow in major corridors	593	70.3 %
Make streets safer for walking & bicycling	352	41.7 %
Expand bus service to include greater hours/frequency of service	320	37.9 %
Create rapid transit services to destinations across County & Region	508	60.2 %
Expand waterborne transportation services	243	28.8 %
Improve & connect existing trail network	208	24.6 %
Other	28	3.3 %
Total	2252	

**Q19. Other**

Q19. Other	Number	Percent
Light rail	3	11.1 %
More roads and more road maintenance	1	3.7 %
Hillsborough, Pinellas, & Pasco Need to come to a joint agreement regarding DART	1	3.7 %
STOP DEVELOPMENT TOO MANY PEOPLE	1	3.7 %
POTHOLES	1	3.7 %
Improve railroad system	1	3.7 %
Stop wasting money on transit	1	3.7 %
OVERHEAD RAIL SERVICE	1	3.7 %
Railway	1	3.7 %
Rapid transit/metro	1	3.7 %
TRAINS	1	3.7 %
AUTOMATED VEHICLES	1	3.7 %
STOP HIGH DENSITY DEVELOPMENTS	1	3.7 %
Change peak traffic times	1	3.7 %
Over pass major intersections	1	3.7 %
Lane sharing for motorcycles	1	3.7 %
Technological solutions	1	3.7 %
POSSIBLE OVERYPASS SYSTEM	1	3.7 %
Stop over populating	1	3.7 %
More transit shelters and shade leading to them, smaller bus sizes and connecting routes	1	3.7 %
Traffic flow app	1	3.7 %
Ride sharing	1	3.7 %
WIDEN ROADS	1	3.7 %
MORNING COMMUTE TO TAMPA	1	3.7 %
Convince most people to take public transportation	1	3.7 %
Total	27	100.0 %

**Q20. Which TWO of the items listed in Question 19 will be MOST IMPORTANT to Pinellas County over the next 5-10 years?**

<u>Q20. Top choice</u>	<u>Number</u>	<u>Percent</u>
Better timing of traffic signals to improve traffic flow in major corridors	372	44.1 %
Make streets safer for walking & bicycling	68	8.1 %
Expand bus service to include greater hours/frequency of service	99	11.7 %
Create rapid transit services to destinations across County & Region	215	25.5 %
Expand waterborne transportation services	15	1.8 %
Improve & connect existing trail network	6	0.7 %
Other	19	2.3 %
None chosen	50	5.9 %
Total	844	100.0 %

**Q20. Which TWO of the items listed in Question 19 will be MOST IMPORTANT to Pinellas County over the next 5-10 years?**

<u>Q20. 2nd choice</u>	<u>Number</u>	<u>Percent</u>
Better timing of traffic signals to improve traffic flow in major corridors	111	13.2 %
Make streets safer for walking & bicycling	144	17.1 %
Expand bus service to include greater hours/frequency of service	112	13.3 %
Create rapid transit services to destinations across County & Region	189	22.4 %
Expand waterborne transportation services	72	8.5 %
Improve & connect existing trail network	46	5.5 %
Other	59	7.0 %
None chosen	111	13.2 %
Total	844	100.0 %

**SUM OF TOP 2 CHOICES****Q20. Which TWO of the items listed in Question 19 will be MOST IMPORTANT to Pinellas County over the next 5-10 years? (top 2)**

<u>Q20. Sum of top 2 choices</u>	<u>Number</u>	<u>Percent</u>
Better timing of traffic signals to improve traffic flow in major corridors	483	57.2 %
Make streets safer for walking & bicycling	212	25.1 %
Expand bus service to include greater hours/frequency of service	211	25.0 %
Create rapid transit services to destinations across County & Region	404	47.9 %
Expand waterborne transportation services	87	10.3 %
Improve & connect existing trail network	52	6.2 %
Other	78	9.2 %
None chosen	50	5.9 %
Total	1577	

**Q21. Please rate your level of agreement with the following statement: "A public street serves the community best when people in cars, on bicycles, using public transportation, or walking all feel safe and welcomed."**

(N=844)

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not provided
Q21. A public street serves community best when people in cars, on bicycles, using public transportation, or walking all feel safe & welcomed	72.5%	17.8%	3.8%	2.6%	1.5%	1.8%

**WITHOUT "NOT PROVIDED"**

**Q21. Please rate your level of agreement with the following statement: "A public street serves the community best when people in cars, on bicycles, using public transportation, or walking all feel safe and welcomed." (without "not provided")**

(N=844)

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Q21. A public street serves community best when people in cars, on bicycles, using public transportation, or walking all feel safe & welcomed	73.8%	18.1%	3.9%	2.7%	1.6%

**Q22. Which THREE items below are the MOST PRESSING challenges facing Pinellas County over the next 5-10 years?**

<u>Q22. Top choice</u>	<u>Number</u>	<u>Percent</u>
Lack of affordable housing options	216	25.6 %
Lack of transportation alternatives	135	16.0 %
Safety for walking & bicycling	66	7.8 %
Crime & personal safety when traveling	107	12.7 %
Lack of connectivity of streets, sidewalks, & trails	13	1.5 %
Traffic congestion & travel delays on major roadways	189	22.4 %
Impacts of development on residential neighborhoods	17	2.0 %
Quality of environment/threats to natural resources	41	4.9 %
Vulnerability neighborhoods & infrastructure face due to rising sea levels	30	3.6 %
Other	8	0.9 %
None chosen	22	2.6 %
<b>Total</b>	<b>844</b>	<b>100.0 %</b>

**Q22. Which THREE items below are the MOST PRESSING challenges facing Pinellas County over the next 5-10 years?**

<u>Q22. 2nd choice</u>	<u>Number</u>	<u>Percent</u>
Lack of affordable housing options	51	6.0 %
Lack of transportation alternatives	110	13.0 %
Safety for walking & bicycling	65	7.7 %
Crime & personal safety when traveling	138	16.4 %
Lack of connectivity of streets, sidewalks, & trails	39	4.6 %
Traffic congestion & travel delays on major roadways	200	23.7 %
Impacts of development on residential neighborhoods	64	7.6 %
Quality of environment/threats to natural resources	79	9.4 %
Vulnerability neighborhoods & infrastructure face due to rising sea levels	52	6.2 %
Other	5	0.6 %
None chosen	41	4.9 %
<b>Total</b>	<b>844</b>	<b>100.0 %</b>

**Q22. Which THREE items below are the MOST PRESSING challenges facing Pinellas County over the next 5-10 years?**

Q22. 3rd choice	Number	Percent
Lack of affordable housing options	53	6.3 %
Lack of transportation alternatives	52	6.2 %
Safety for walking & bicycling	63	7.5 %
Crime & personal safety when traveling	74	8.8 %
Lack of connectivity of streets, sidewalks, & trails	51	6.0 %
Traffic congestion & travel delays on major roadways	167	19.8 %
Impacts of development on residential neighborhoods	75	8.9 %
Quality of environment/threats to natural resources	111	13.2 %
Vulnerability neighborhoods & infrastructure face due to rising sea levels	105	12.4 %
Other	6	0.7 %
None chosen	87	10.3 %
Total	844	100.0 %

**SUM OF TOP 3 CHOICES**

**Q22. Which THREE items below are the MOST PRESSING challenges facing Pinellas County over the next 5-10 years? (top 3)**

Q22. Sum of top 3 choices	Number	Percent
Lack of affordable housing options	320	37.9 %
Lack of transportation alternatives	297	35.2 %
Safety for walking & bicycling	194	23.0 %
Crime & personal safety when traveling	319	37.8 %
Lack of connectivity of streets, sidewalks, & trails	103	12.2 %
Traffic congestion & travel delays on major roadways	556	65.9 %
Impacts of development on residential neighborhoods	156	18.5 %
Quality of environment/threats to natural resources	231	27.4 %
Vulnerability neighborhoods & infrastructure face due to rising sea levels	187	22.2 %
Other	19	2.3 %
None chosen	22	2.6 %
Total	2404	



**Q22. Other**

<u>Q22. Other</u>	<u>Number</u>	<u>Percent</u>
Crime	2	8.7 %
Education	2	8.7 %
Stop wasting money on more/bigger buses	1	4.3 %
People walking on the streets instead of sidewalks in my neighborhood	1	4.3 %
Change flashing yellow pedestrian lights to stop lights when people are crossing	1	4.3 %
ECONOMIC PROSPERITY	1	4.3 %
Thank you for caring about us who use public transportation	1	4.3 %
Lack of Pinellas County Commissioner term limits	1	4.3 %
HEAT	1	4.3 %
POTHOLES	1	4.3 %
Increase sewage treatment capacity	1	4.3 %
Improve public education administration	1	4.3 %
Lower taxes	1	4.3 %
Distracted drivers	1	4.3 %
BUILD HOMES IN HISTORICAL NEIGHBORHOODS	1	4.3 %
MAJOR HURRICANE	1	4.3 %
Light rail	1	4.3 %
Pumping of toxic waste into ground water supply	1	4.3 %
Deleting bus routes	1	4.3 %
OVER DEVELOPMENT	1	4.3 %
WIDEN ROADS	1	4.3 %
Total	23	100.0 %

**Q23. Please select either "Yes," "No," or "Not Sure" for each of the following questions.**

(N=844)

	<u>Yes</u>	<u>No</u>	<u>Not sure</u>
Q23-1. Are you willing to trade lower speed limits in exchange for safer streets	57.0%	26.4%	16.6%
Q23-2. Are you willing to pay more for more frequent & reliable transit services	40.8%	33.6%	25.6%
Q23-3. Does Pinellas County have a quality transportation system	12.2%	44.0%	43.8%

**Q24. About how many years have you lived in Pinellas County?**

Q24. How many years have you lived in Pinellas

County	Number	Percent
0-5	168	19.9 %
6-10	91	10.8 %
11-15	72	8.5 %
16-20	83	9.8 %
21-30	159	18.8 %
31+	262	31.0 %
Not provided	9	1.1 %
Total	844	100.0 %

**WITHOUT "NOT PROVIDED"****Q24. About how many years have you lived in Pinellas County? (without "not provided")**

Q24. How many years have you lived in Pinellas

County	Number	Percent
0-5	168	20.1 %
6-10	91	10.9 %
11-15	72	8.6 %
16-20	83	9.9 %
21-30	159	19.0 %
31+	262	31.4 %
Total	835	100.0 %

**Q25. What is your age?**

<u>Q25. Your age</u>	<u>Number</u>	<u>Percent</u>
18-34	166	19.7 %
35-44	164	19.4 %
45-54	174	20.6 %
55-64	169	20.0 %
65+	165	19.5 %
Not provided	6	0.7 %
Total	844	100.0 %

**WITHOUT "NOT PROVIDED"****Q25. What is your age? (without "not provided")**

<u>Q25. Your age</u>	<u>Number</u>	<u>Percent</u>
18-34	166	19.8 %
35-44	164	19.6 %
45-54	174	20.8 %
55-64	169	20.2 %
65+	165	19.7 %
Total	838	100.0 %

**Q26. What is your gender?**

<u>Q26. Your gender</u>	<u>Number</u>	<u>Percent</u>
Male	416	49.3 %
Female	422	50.0 %
Not provided	6	0.7 %
Total	844	100.0 %

**WITHOUT "NOT PROVIDED"****Q26. What is your gender? (without "not provided")**

<u>Q26. Your gender</u>	<u>Number</u>	<u>Percent</u>
Male	416	49.6 %
Female	422	50.4 %
Total	838	100.0 %

**Q27. Would you say your total annual household income is...**

<u>Q27. Your total annual household income</u>	<u>Number</u>	<u>Percent</u>
Under \$15K	36	4.3 %
\$15K to \$29,999	86	10.2 %
\$30K to \$59,999	211	25.0 %
\$60K to \$99,999	186	22.0 %
\$100K to \$124,999	97	11.5 %
\$125K+	150	17.8 %
Not provided	78	9.2 %
Total	844	100.0 %

**WITHOUT "NOT PROVIDED"****Q27. Would you say your total annual household income is... (without "not provided")**

<u>Q27. Your total annual household income</u>	<u>Number</u>	<u>Percent</u>
Under \$15K	36	4.7 %
\$15K to \$29,999	86	11.2 %
\$30K to \$59,999	211	27.5 %
\$60K to \$99,999	186	24.3 %
\$100K to \$124,999	97	12.7 %
\$125K+	150	19.6 %
Total	766	100.0 %

**Q28. Are you of Hispanic, Latino, or Spanish descent?**

Q28. Are you of Hispanic, Latino, or Spanish descent	Number	Percent
Yes	81	9.6 %
No	731	86.6 %
Not provided	32	3.8 %
Total	844	100.0 %

**WITHOUT "NOT PROVIDED"****Q28. Are you of Hispanic, Latino, or Spanish descent? (without "not provided")**

Q28. Are you of Hispanic, Latino, or Spanish descent	Number	Percent
Yes	81	10.0 %
No	731	90.0 %
Total	812	100.0 %

**Q29. Which of the following best describes your race/ethnicity?**

<u>Q29. Your race/ethnicity</u>	<u>Number</u>	<u>Percent</u>
African American/Black	95	11.3 %
Asian/Pacific Islander	30	3.6 %
Native American/Eskimo	7	0.8 %
White/Caucasian	689	81.6 %
Other	16	1.9 %
Total	837	

**Q29. Other**

<u>Q29. Other</u>	<u>Number</u>	<u>Percent</u>
Hispanic	3	18.8 %
Mexican	2	12.5 %
Latino	2	12.5 %
Asian of Indian subcontinent	1	6.3 %
Mixed	1	6.3 %
Black & White	1	6.3 %
EGYPTIAN	1	6.3 %
East Indian & Black	1	6.3 %
Asian & Caucasian	1	6.3 %
NORTHERN EUROPEAN	1	6.3 %
African & Asian	1	6.3 %
White Hispanic	1	6.3 %
Total	16	100.0 %

**Q30. Which of the following best describes your employment status?**

Q30. What best describes your employment status	Number	Percent
Employed full time	429	50.8 %
Employed part time	71	8.4 %
Not employed, looking for work	11	1.3 %
Not employed, not looking for work	10	1.2 %
Work from home	49	5.8 %
Retired	192	22.7 %
Student	8	0.9 %
Disabled, not able to work	38	4.5 %
Not provided	36	4.3 %
Total	844	100.0 %

**WITHOUT "NOT PROVIDED"****Q30. Which of the following best describes your employment status? (without "not provided")**

Q30. What best describes your employment status	Number	Percent
Employed full time	429	53.1 %
Employed part time	71	8.8 %
Not employed, looking for work	11	1.4 %
Not employed, not looking for work	10	1.2 %
Work from home	49	6.1 %
Retired	192	23.8 %
Student	8	1.0 %
Disabled, not able to work	38	4.7 %
Total	808	100.0 %



**Q30a. What is the zip code where you work?**

<u>Q30a. What is the zip code where you work</u>	<u>Number</u>	<u>Percent</u>
33701	26	5.7 %
33716	23	5.0 %
33710	17	3.7 %
33713	14	3.1 %
34683	13	2.8 %
33712	13	2.8 %
33607	13	2.8 %
33705	13	2.8 %
33760	13	2.8 %
33770	12	2.6 %
33756	11	2.4 %
33711	11	2.4 %
33773	11	2.4 %
33602	11	2.4 %
33781	11	2.4 %
33759	11	2.4 %
33764	11	2.4 %
33755	10	2.2 %
34698	10	2.2 %
33771	10	2.2 %
33707	9	2.0 %
33772	9	2.0 %
33704	9	2.0 %
33777	8	1.7 %
33762	8	1.7 %
33714	8	1.7 %
34695	7	1.5 %
34677	7	1.5 %
33702	7	1.5 %
33706	7	1.5 %
33763	6	1.3 %
33765	6	1.3 %
33709	6	1.3 %
34684	6	1.3 %
33614	6	1.3 %
34685	5	1.1 %
33774	5	1.1 %
33609	5	1.1 %
33703	4	0.9 %
33782	4	0.9 %
34689	4	0.9 %
33610	4	0.9 %
33776	3	0.7 %
33785	3	0.7 %
33767	3	0.7 %
33744	3	0.7 %

**Q30a. What is the zip code where you work?**

<u>Q30a. What is the zip code where you work</u>	<u>Number</u>	<u>Percent</u>
33619	2	0.4 %
33601	2	0.4 %
33778	2	0.4 %
33815	2	0.4 %
33637	2	0.4 %
33634	2	0.4 %
33647	2	0.4 %
33761	2	0.4 %
33708	2	0.4 %
33611	1	0.2 %
34260	1	0.2 %
33626	1	0.2 %
33620	1	0.2 %
33630	1	0.2 %
34205	1	0.2 %
33635	1	0.2 %
34681	1	0.2 %
34691	1	0.2 %
34652	1	0.2 %
33608	1	0.2 %
33786	1	0.2 %
33715	1	0.2 %
33615	1	0.2 %
34232	1	0.2 %
34654	1	0.2 %
33746	1	0.2 %
33624	1	0.2 %
33612	1	0.2 %
33775	1	0.2 %
33811	1	0.2 %
34655	1	0.2 %
33606	1	0.2 %
33625	1	0.2 %
33579	1	0.2 %
Total	459	100.0 %

**Q31. Would you be interested in participating in a focus group or being part of a research panel to provide more insights regarding transportation and land use related topics in Pinellas County?**

Q31. Would you be interested in participating in a focus group or being part of a research panel	Number	Percent
Yes	249	29.5 %
No	595	70.5 %
Total	844	100.0 %

# Section 3

## Survey Instrument

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**FORWARD PINELLAS**

P: (727) 464.8250

F: (727) 464.8212

forwardpinellas.org

310 Court Street

Clearwater, FL 33756



Dear Resident:

On behalf of Forward Pinellas, the transportation and land use planning agency in Pinellas County, I want to encourage you to take a few minutes to complete this important Survey. Your input will be used by community leaders to make transportation decisions and funding priorities for our county.

Forward Pinellas sets the priorities for state and federal transportation funding in Pinellas County through the long range transportation plan. We are in the process of updating this plan, and the results of this survey will help us identify which transportation improvements are needed most.

With only a limited number of households selected at random to receive the survey, your participation is extremely valuable and will ensure the input of residents in your area are well represented in the survey results that will help shape the countywide transportation plan.

We have selected ETC Institute as our partner for this project. They will compile the results and present a report to the community in a few weeks. A postage-paid return envelope addressed to ETC Institute has been provided for your convenience.

If you have any questions, please contact Chelsea Favero at 727.464.5644 or at [cfavero@forwardpinellas.org](mailto:cfavero@forwardpinellas.org).

Thank you for your support of this important effort.

Whit Blanton, FAICP  
Executive Director

## 2018 Transportation Planning Survey

Please take a few minutes to complete this survey. Your input is an important part of the long-range transportation planning process. As the land use and transportation planning agency for Pinellas County, Forward Pinellas wants to know what is important to you to help shape the future of transportation and development in Pinellas County. Thank you for taking time to complete the survey. When you are finished, please return your completed survey in the postage-paid return envelope. If you prefer, you can complete the survey online at [forwardpinellassurvey.org](http://forwardpinellassurvey.org).

**1. Community Priorities. Please rate your level of agreement with each of the following statements using a scale of 1 to 5, where 5 means "Strongly Agree" and 1 means "Strongly Disagree".**

I want to live in a community where...	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Don't Know
1. I feel safe and comfortable walking to the store	5	4	3	2	1	9
2. I can drive my car conveniently with few traffic delays	5	4	3	2	1	9
3. I can safely ride a bike anywhere in my community	5	4	3	2	1	9
4. It is convenient to take transit to work or other destinations	5	4	3	2	1	9
5. I have choices for how I get around my community	5	4	3	2	1	9

**2. Which TWO of the items listed in Question 1 are MOST IMPORTANT to you and the members of your household? [Write in your answers below using the numbers from the list in Question 1, or circle "NONE".]**

1st: \_\_\_\_ 2nd: \_\_\_\_ NONE

**3. Please indicate which ONE of the following items is MOST IMPORTANT to you when thinking of your ideal neighborhood.**

***"My ideal neighborhood..."***

- |   |  |
|---|--|
| ____ (1) Is far from commercial areas<br>____ (2) Has nearby shops, schools, restaurants, parks, cultural activities, and other everyday destinations within a 10-minute walk<br>____ (3) Has large lawns and backyards | ____ (4) Has a mix of different kinds of housing (small and large houses, townhomes, small apartment buildings)<br>____ (5) Other: _____<br>____ (6) None of the above |
|---|--|

**4. Please indicate which ONE of the following items is your MOST PREFERRED situation when it comes to shopping and entertainment.**

***"For shopping and entertainment I prefer..."***

- |  |   |
|--|---|
| ____ (1) A mall or large shopping center with plenty of free parking<br>____ (2) A walkable downtown with lots of activity | ____ (3) A "Main Street" with local shops and restaurants<br>____ (4) A variety of different destinations that are spread out |
|--|---|

**5. Please indicate which ONE of the following items would MOST INCREASE the likelihood that you would take public transportation.**

***"I would be more likely to take public transportation if..."***

- |   |   |
|---|---|
| ____ (1) I lived and/or worked closer to a transit stop<br>____ (2) It was a more comfortable walk to/from the transit stop<br>____ (3) It was more comfortable to wait at the transit stop<br>____ (4) Transit could get me where I was going more quickly | ____ (5) I could reach multiple destinations (e.g. work, shopping) from a single stop<br>____ (6) Other: _____<br>____ (7) I would not take public transportation |
|---|---|



**6. Please CHECK ALL of the following items that you would like to see improved.**

***"I would most like to see improved transportation options for..."***

- \_\_\_\_(1) My daily commute
- \_\_\_\_(2) My child's trip to school
- \_\_\_\_(3) Special events or entertainment destinations
- \_\_\_\_(4) Regional destinations (e.g. airports, universities, downtown Tampa)
- \_\_\_\_(5) Access to nearby commercial destinations
- \_\_\_\_(6) I am not interested in improved transportation options

**7. Planning Priorities. Please rate the importance of each of the following items as they relate to Pinellas County using a scale of 1 to 5, where 5 means "Very Important" and 1 means "Not at All Important".**

How Important is...	Very Important	Important	Neutral	Not Important	Not at All Important	Don't Know
01. Improving the efficiency of the transportation network	5	4	3	2	1	9
02. Increasing resiliency to hurricanes, sea level rise or other climate-related hazards	5	4	3	2	1	9
03. Creating more opportunities to have a healthy lifestyle	5	4	3	2	1	9
04. Protecting the natural environment	5	4	3	2	1	9
05. Supporting the arts	5	4	3	2	1	9
06. Improving education	5	4	3	2	1	9
07. Maintaining/growing the tourism industry	5	4	3	2	1	9
08. Reducing crime	5	4	3	2	1	9
09. Increasing the number of well-paying jobs	5	4	3	2	1	9
10. Increasing the availability of affordable housing	5	4	3	2	1	9

**8. Which THREE of the items listed in Question 7 should be MOST IMPORTANT to Pinellas County over the next 5-10 years? [Write in your answers below using the numbers from the list in Question 7, or circle "NONE".]**

1st: \_\_\_\_ 2nd: \_\_\_\_ 3rd: \_\_\_\_ NONE

**9. Investment Opportunities. Please indicate how supportive you are of having Pinellas County invest in the following items using a scale of 1 to 5, where 5 means "Very Supportive" and 1 means "Not at All Supportive".**

How supportive are you of Pinellas County investing in...	Very Supportive	Supportive	Neutral	Not Supportive	Not at All Supportive	Don't Know
1. New roadway capacity	5	4	3	2	1	9
2. Roadway maintenance	5	4	3	2	1	9
3. Bicycle accommodations and signage	5	4	3	2	1	9
4. Waterborne transportation	5	4	3	2	1	9
5. Bus service	5	4	3	2	1	9
6. Premium transit (limited stop or express services)	5	4	3	2	1	9
7. Technology to improve traffic flow	5	4	3	2	1	9

**10. Which THREE of the items listed in Question 9 would you be MOST WILLING to fund with your tax dollars? [Write in your answers below using the numbers from the list in Question 9, or circle "NONE".]**

1st: \_\_\_\_ 2nd: \_\_\_\_ 3rd: \_\_\_\_ NONE

**11. In what area(s) of the county are these new investments MOST NEEDED?**

---



---



**12. Collaboration.** Please indicate how important it is for counties in the Tampa Bay area to work together to address each of the following using a scale of 1 to 5, where 5 means "Very Important" and 1 means "Not at All Important".

How important is it for counties to work together to address...	Very Important	Important	Neutral	Not Important	Not at All Important	Don't Know
1. Building highways	5	4	3	2	1	9
2. Expanding transit service	5	4	3	2	1	9
3. Expanding waterborne transportation	5	4	3	2	1	9
4. Building trails	5	4	3	2	1	9

**13. If on-demand automated vehicles were available to you, would you still own your own car?**

\_\_\_(1) Yes    \_\_\_(2) No    \_\_\_(9) Don't know

**14. What impact do you think automated vehicles will have on roadway congestion?**

\_\_\_(1) Increased congestion    \_\_\_(2) Decreased congestion    \_\_\_(3) No impact    \_\_\_(9) Don't know

**15. What do you think should be done to make crossing from Pinellas County into Hillsborough County easier? [Check only ONE]**

\_\_\_(1) Expand highways    \_\_\_(2) Improve regional bus service    \_\_\_(3) Add cross county rail service    \_\_\_(4) Add water ferry service    \_\_\_(5) Express lanes with tolls

**16. Do you believe having frequent, reliable, and convenient transit services nearby improves the economic value (e.g. increases jobs, redevelopment potential, and enhances the tax base) of the surrounding area?**

\_\_\_(1) Yes    \_\_\_(2) No    \_\_\_(9) Don't know

**17. How important is it to live within 20-30 minutes of your job?**

\_\_\_(1) Very Important    \_\_\_(2) Important    \_\_\_(3) Neutral    \_\_\_(4) Not Important    \_\_\_(5) Not at All Important    \_\_\_(9) Not Applicable (I don't work/I work from home)

**18. In Pinellas County there are few opportunities to widen existing roadways. What do you think should be done to deal with increasing traffic? [Check only ONE]**

\_\_\_(1) Expand public transportation services    \_\_\_(2) Add and connect bicycle lanes and trails    \_\_\_(3) Invest in technological solutions    \_\_\_(4) Other: \_\_\_\_\_

**19. Looking ahead to the next 5-10 years, which of the transportation improvements listed below do you think are MOST NEEDED in Pinellas County? [Check ALL that apply]**

\_\_\_(1) Better timing of traffic signals to improve traffic flow in major corridors    \_\_\_(2) Make streets safer for walking and bicycling    \_\_\_(3) Expand bus service to include greater hours/frequency of service    \_\_\_(4) Create rapid transit services to destinations across the county and region    \_\_\_(5) Expand waterborne transportation services    \_\_\_(6) Improve and connect the existing trail network    \_\_\_(7) Other: \_\_\_\_\_

**20. Which TWO of the items listed in Question 19 will be MOST IMPORTANT to Pinellas County over the next 5-10 years? [Write in your answers below using the numbers from the list in Question 19, or circle "NONE".]**

1st: \_\_\_    2nd: \_\_\_    NONE





**21. Please rate your level of agreement with the following statement: "A public street serves the community best when people in cars, on bicycles, using public transportation, or walking all feel safe and welcomed."**

\_\_\_(1) Strongly Agree    \_\_\_(2) Agree    \_\_\_(3) Neutral    \_\_\_(4) Disagree    \_\_\_(5) Strongly Disagree

**22. Which THREE items below are the MOST PRESSING challenges facing Pinellas County over the next 5-10 years? [Write in your answers using the numbers from the list below.]**

- \_\_\_(01) Lack of affordable housing options
- \_\_\_(02) Lack of transportation alternatives
- \_\_\_(03) Safety for walking and bicycling
- \_\_\_(04) Crime and personal safety when traveling
- \_\_\_(05) Lack of connectivity of streets, sidewalks, and trails
- \_\_\_(06) Traffic congestion and travel delays on major roadways
- \_\_\_(07) Impacts of development on residential neighborhoods
- \_\_\_(08) Quality of the environment/threats to natural resources
- \_\_\_(09) The vulnerability neighborhoods and infrastructure face due to rising sea levels
- \_\_\_(10) Other: \_\_\_\_\_

1st: \_\_\_    2nd: \_\_\_    3rd: \_\_\_

**23. Please select either "Yes," "No," or "Not Sure" for each of the following questions.**

	Yes	No	Not Sure
1. Are you willing to trade lower speed limits in exchange for safe streets?	1	2	3
2. Are you willing to pay more for more frequent and reliable transit service?	1	2	3
3. Does Pinellas County have a quality transportation system?	1	2	3

**Demographics**

**24. About how many years have you lived in Pinellas County?** \_\_\_\_\_ years

**25. What is your age?** \_\_\_\_\_ years

**26. What is your gender?** \_\_\_(1) Male    \_\_\_(2) Female

**27. Would you say your total annual household income is...**

- \_\_\_(1) Under \$15,000
- \_\_\_(2) \$15,000 to \$29,999
- \_\_\_(3) \$30,000 to \$59,999
- \_\_\_(4) \$60,000 to \$99,999
- \_\_\_(5) \$100,000 to \$124,999
- \_\_\_(6) \$125,000 or more

**28. Are you of Hispanic, Latino, or Spanish descent?** \_\_\_(1) Yes    \_\_\_(2) No

**29. Which of the following best describes your race/ethnicity? [Check all that apply.]**

- \_\_\_(1) African American/Black
- \_\_\_(2) Asian/Pacific Islander
- \_\_\_(3) Native American/Eskimo
- \_\_\_(4) White/Caucasian
- \_\_\_(5) Other: \_\_\_\_\_

**30. Which of the following best describes your employment status? [Check only one.]**

- \_\_\_(1) Employed full time [Answer Q30a.]
- \_\_\_(2) Employed part time [Answer Q30a.]
- \_\_\_(3) Not employed, looking for work
- \_\_\_(4) Not employed, NOT looking for work
- \_\_\_(5) Work from home
- \_\_\_(6) Retired
- \_\_\_(7) Student
- \_\_\_(8) Disabled, not able to work

**30a. What is the zip code where you work?** \_\_\_\_\_



**31. Would you be interested in participating in a focus group or being part of a research panel to provide more insights regarding transportation and land use related topics in Pinellas County?**

\_\_\_\_(1) Yes [Answer Q31a.]      \_\_\_\_ (2) No

**31a. If you are interested in receiving more information on how you may be able to participate in a future focus group on transportation topics, please provide your name, phone number and email address below. Providing your contact information does not automatically sign you up for focus groups or the research panel. ETC Institute will first provide interested residents with additional information about the process and then residents can decide whether they would like to participate.**

Your Name: \_\_\_\_\_

Phone: \_\_\_\_\_

Your Email: \_\_\_\_\_

**This concludes the survey – Thank you for your time!**

Please return your completed survey in the enclosed postage-paid envelope addressed to:  
ETC Institute, 725 W. Frontier Circle, Olathe, KS 66061

Your responses will remain completely confidential, and will only be used to help guide transportation improvements, allowing us to serve you better. The information to the right will ONLY be used to help identify which areas of the county have various transportation needs. Thank you.



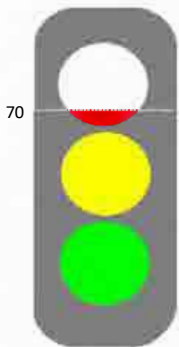
# Advantage PINELLAS

## Resident Survey

Forward Pinellas conducted a statistically-valid survey to Pinellas County households in the summer of 2018. The 844 responses will help guide development of the Advantage Pinellas Plan. Here are a few key themes.



## Pinellas County residents want a safe, efficient transportation system

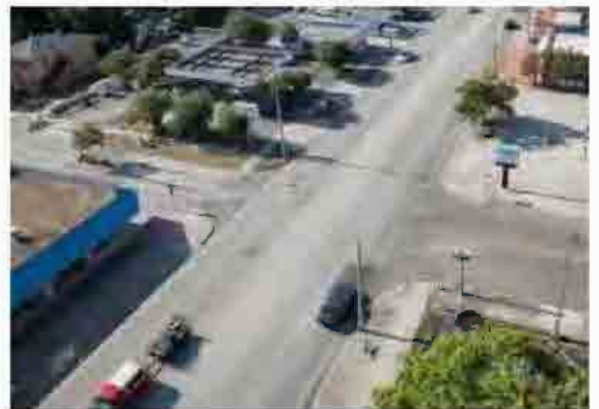


Countywide, 70% of participants indicated better timed traffic signals are their top priority

**57% of participants were willing to exchange lower speeds for safer streets.**

### MLK STREET NORTH COMPLETE STREETS PROJECT, ST PETERSBURG

BEFORE



AFTER

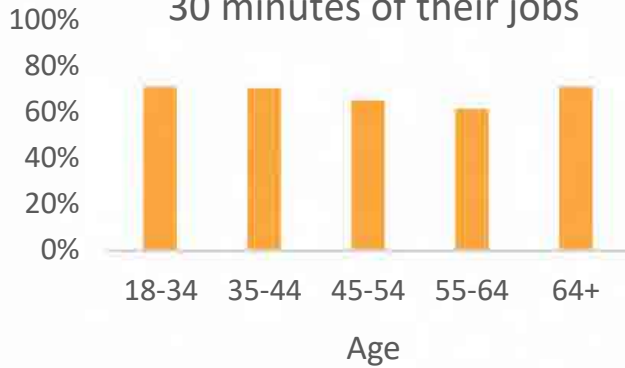


The MLK Street North project is an example of lowering traffic speeds in order to increase safety for all transportation users.

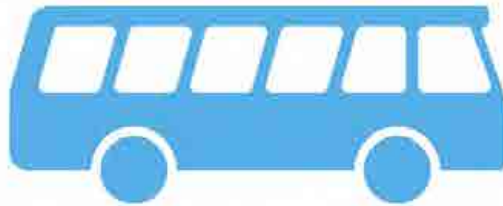


# People want easy access from their neighborhoods to their destinations

Most people said it was “very important” to live within 20-30 minutes of their jobs



69% of people said having shops and destinations nearby is the most important factor in their ideal neighborhood



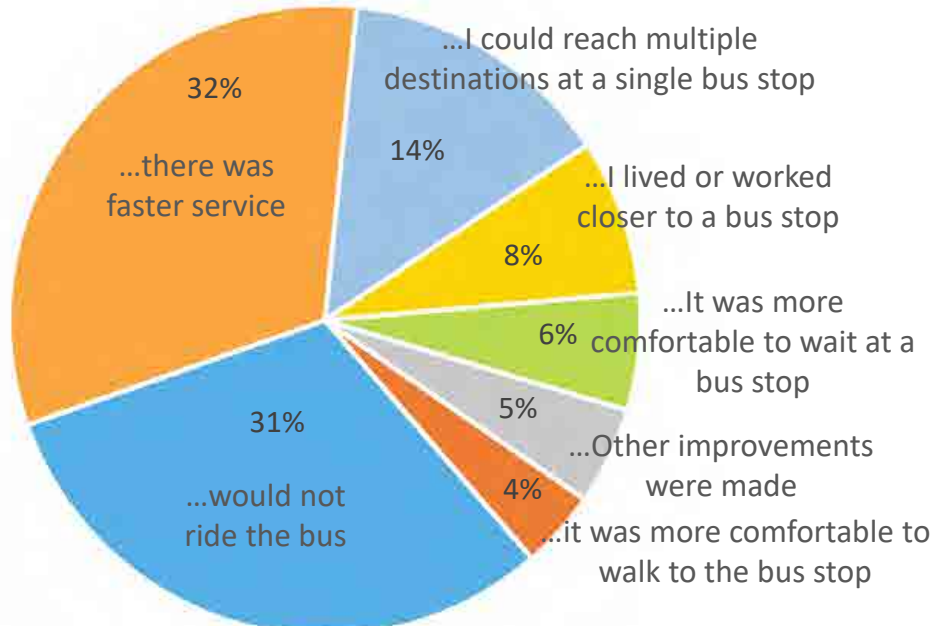
85% believe that frequent, reliable transit improves the area’s economic value



# The biggest barriers to transit are reliability, frequency and efficiency

I would be more willing to take public transportation if...

Most people said they would be more willing to take public transportation if the service was better



# 2045 Tri-County Transportation Plan MetroQuest Survey Results



**November 2018**

**Prepared for**



Prepared by





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## Chapter 1 – Introduction

It's TIME Tampa Bay is a collaboration of the Metropolitan Planning Organizations (MPOs) of Hillsborough, Pasco, and Pinellas Counties. Federal law requires MPOs to evaluate trends, project future growth, and identify fiscally constrained multimodal transportation investments for the next 20 plus years as part of their Long Range Transportation Plan (LRTP) update. It's TIME Tampa Bay represents the first tri-county planning initiative the three counties have undertaken as part of the 2045 LRTP planning process. Together, the MPOs are addressing regional mobility needs in an effort to ensure that connections to jobs, universities, healthcare, airports, state parks and the beaches are accessible to everyone. Each MPO will utilize the results of the tri-county public outreach effort to help identify county-specific, and cross-county, projects that support and enhance regional mobility.



### Public Outreach

The Hillsborough, Pasco and Pinellas MPOs embrace public outreach as it is a critical step to inform the LRTP development process and helps to ensure the LRTP reflects community values, and overall vision. As such, the MPOs together selected an online survey platform – MetroQuest – as the primary public outreach tool for the It's TIME Tampa Bay initiative.

The MetroQuest survey provided the public the opportunity to weigh in on:

- transportation and growth priorities,
- three exaggerated future year growth scenarios
- and a variety of potential roadway and transit projects, community development and funding options.

No single scenario will solve the transportation and mobility needs of the tri-county area—it will take a combination of investments to move people and goods around the region, both today and even more so in the future when the three-county area will add over one million in population. The



purpose of this survey was to help the MPOs identify the best ideas, projects, and policies to evaluate further as part of the 2045 LRTP development that will be completed in 2019.

Toward this end, each MPO will continue to conduct transportation planning for their communities and neighborhoods, in coordination with local city and county land-use planning. Some current/recent examples include the [Brandon Corridors & Mixed-Use Centers](#) study in Hillsborough, the [Master Plan for Gateway/Mid-County](#) in Pinellas, and the [Wesley Chapel Roadway Connection](#) study in Pasco. The [It's TIME Tampa Bay](#) survey builds off these local planning and regional planning initiatives in an effort to address these basic questions:

***How can the Tampa Bay area, from a mobility and development standpoint, best prepare for a thriving future?***

***How should we prepare our region for the next generation?***

### Why it's TIME!

Already among the top 20 most populated regions in the country, the Tampa Bay area is also one of the fastest growing in the country. Visit any part of the tri-county area and you will experience the growth firsthand: construction in Downtown Tampa, St. Petersburg, Wesley Chapel, and numerous other locations. Residents and visitors to our area feel the impacts of this growth on a daily basis as traffic levels continue to increase and daily commutes become longer. Add an additional one million in population to the tri-county area over the next 20 plus years and it is easy to see that now is the time to act to address our regional mobility and travel needs!





# Chapter 2 – Survey Overview

The MetroQuest survey consisted of five screens: Welcome, Priorities, Scenarios, Elements, and Wrap-up. Each screen setup/design, and the corresponding survey results, is discussed in the following chapters.

The Welcome Screen, displayed below, set the context for the project and encouraged people to participate. The visually appealing screen included a brief project background (see text below) and a call to action. The introduction pop-up box was the first information that visitors received when clicking on the survey located to the [It's TIME Tampa Bay](#) website. In an effort to maximize participation, survey participants were eligible to win tickets to a Tampa Bay Buccaneers game, a Tampa Bay Lightning game, or to the performing arts as long as they provided a valid email address on the Wrap-up screen.



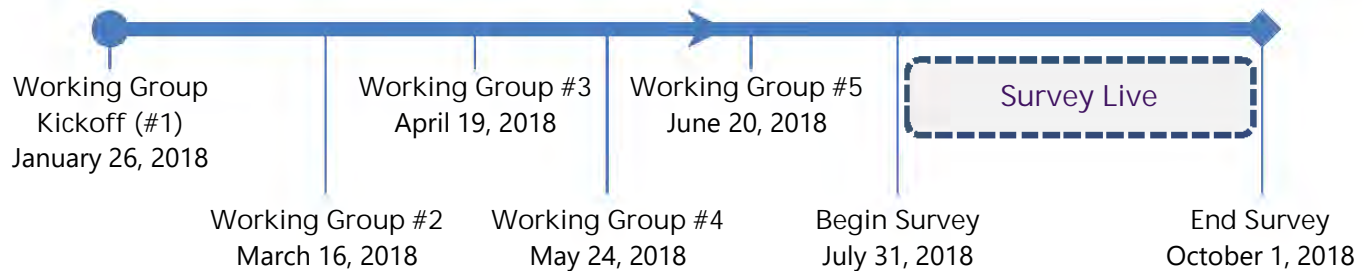
Welcome Screen – Project Background

Transportation, Innovation, Mobility for Everyone!  
 Transportation, land use, and funding are important challenges in our region. By 2045, our region will have over a million more people living and working here. Hillsborough, Pasco and Pinellas counties would like your input on three growth scenarios. Individual elements of each scenario may be combined into a final regional plan.

It will take a combination of investments to move people around our region, both today and in the future. Please take a few minutes to tell us your views on the region’s future transportation system.

## Survey Development/Collection

Development of the MetroQuest survey began in late January 2018. The three MPOs formed a working group comprising staff from the Hillsborough, Pinellas and Pasco MPOs, along with other stakeholders and project consultants. The working group met five times between January and June, with the survey going live at the end of July and ending early October.



The working group reviewed various MetroQuest screens, survey text and images, draft surveys and discussed potential outreach opportunities and marketing strategies. In May 2018, AECOM staff presented an overview of the survey to the Tampa Bay Transportation Management Area Leadership Group (TMA). In May and June, the MPOs conducted testing of the draft survey to check for understanding, ease of use, and to determine the approximate time to complete the survey. Based on feedback, the working group made edits to simplify and shorten the survey. The MPOs approved a final survey in mid-July and MetroQuest completed their final testing the last week of July.

The MetroQuest survey went live on July 31, 2018 and closed October 1, 2018. Over this two-month timeframe, there were 17,762 visitors that clicked on the survey link and 9,666 people answered at least some survey questions. This 54.4% participation rate generally falls in the range for most MetroQuest surveys.

**The approximately 9,600 participants set a new MetroQuest record for surveys conducted in the United States!**

Following a standard review and survey clean-up, the final dataset included 9,575 participants. This set a new record for MetroQuest survey participation in the United States. In total, there were 234,884 data points collected, 10,471 comments provided and over 5,600 participants provided their email address and were eligible to win football, hockey or performing arts tickets. The graph on the right displays strong participation from start to finish due to a strong and steady outreach effort. The survey ended up with 33 straight days with over 100 responses per day (August 13<sup>th</sup> to September 14<sup>th</sup>) and the most responses for a single day (500 participants) were recorded on August 28<sup>th</sup>.



## Public Outreach

The MetroQuest survey was available through the [It's TIME Tampa Bay](http://itstimetampabay.org) website ([itstimetampabay.org](http://itstimetampabay.org)) created specifically for the survey. The website was hosted by the Hillsborough MPO and promoted on the Pinellas and Pasco MPOs websites. The MPOs also worked closely with local media outlets to promote the survey and wish to thank the following marketing partners for a successful campaign.



The working group also developed and reviewed alternative public outreach tools and activities to spread the word and to generate interest in the planning process. Staff from the three MPOs developed a wide range of outreach activities in an attempt to maximize participation representative of the communities within the tri-county area. The following highlights these activities.

- A matching paper survey, and corresponding PowerPoint slideshow, to provide an alternative method to complete the survey
- A Spanish translation of the paper survey and PowerPoint slideshow
- Facebook (265,000 impressions), Twitter (46,000 impressions) and Instagram (54,000 impressions) campaigns throughout the majority of the survey to encourage residents to visit the [It's TIME Tampa Bay](http://itstimetampabay.org) website to complete the survey (34% of the visits to the website came from social media)
- Promotional [It's TIME Tampa Bay](http://itstimetampabay.org) video to encourage individuals to take the survey
- [It's TIME Tampa Bay](http://itstimetampabay.org) ad in the Tampa Bay Times newspaper
- MPO-staffed booth at Florida's Largest Home show over Labor Day weekend (resulting in nearly 700 surveys being completed over the holiday weekend)
- Participation of Beth Alden (Hillsborough MPO Executive Director) and Whit Blanton (Forward Pinellas Executive Director) on a radio talk show (The Current with Roxanne Wilder on Q105) to discuss regional transportation and mobility issues, and to promote the survey
- Hillsborough MPO-printed rack cards included with the Property Appraiser's True in Millage (TRIM) notice, mailed countywide to approximately half million property and business owners
- Pinellas utilized the Nextdoor app to reach communities throughout Pinellas County and also delivered utility mailers to account holders throughout the county.
- Pasco MPO-developed video to highlight the importance of taking the survey to discuss regional travel issues between the three counties
- Numerous Pinellas MPO-posted Facebook advertisements encouraging residents to have their voice heard by completing the survey
- MPO attendance at various small group/community meetings to inform them about the survey, and in some cases to take the survey (Hillsborough MPO attended over 80 meetings)

# Chapter 3 – Survey Participation

The two-month survey run resulted in a large dataset that yielded useful information to help inform the LRTP development process. In total, 9,575 surveys were analyzed. Of this total, 6,544 (68%) provided a home zip code that was located within the tri-county area. Home zip codes were assigned to one of the three counties based on United States Postal Service (USPS) classifications. For example, some zip code boundaries cross county lines, in particular along the Hillsborough-Pasco County line, and as such the survey results were assigned to one county based on the USPS classification.

Figure 1 and Table 1 summarize the overall survey results, by county, as compared to the population of the tri-county area. Hillsborough County respondents represented 61% of all survey responses, which is approximately 13 percentage points higher when comparing the share of survey responses to share of tri-county population.

It is also worth noting that over 3,000 surveys were completed that either did not include a home zip code or included a home zip code outside the tri-county area (these surveys could represent individuals who work in the tri-county area, or travel to or through the area on a regular basis, or some respondents simply may not have wanted to provide their zip code information). Figure 2 displays the distribution of survey responses by home and work zip code.

Figure 1. Survey Response vs. 3-County Area Population

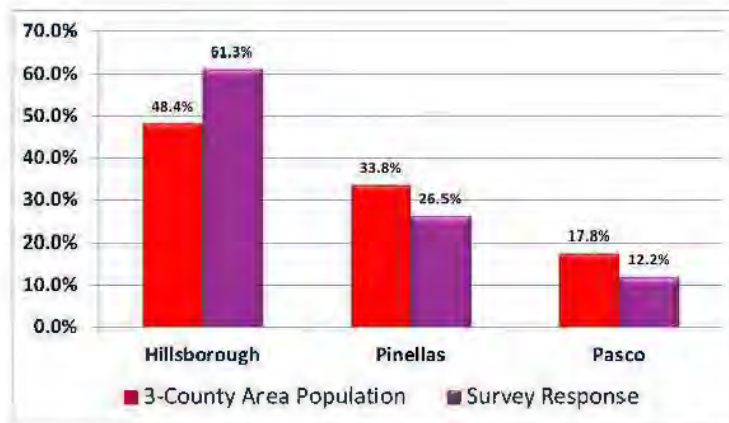


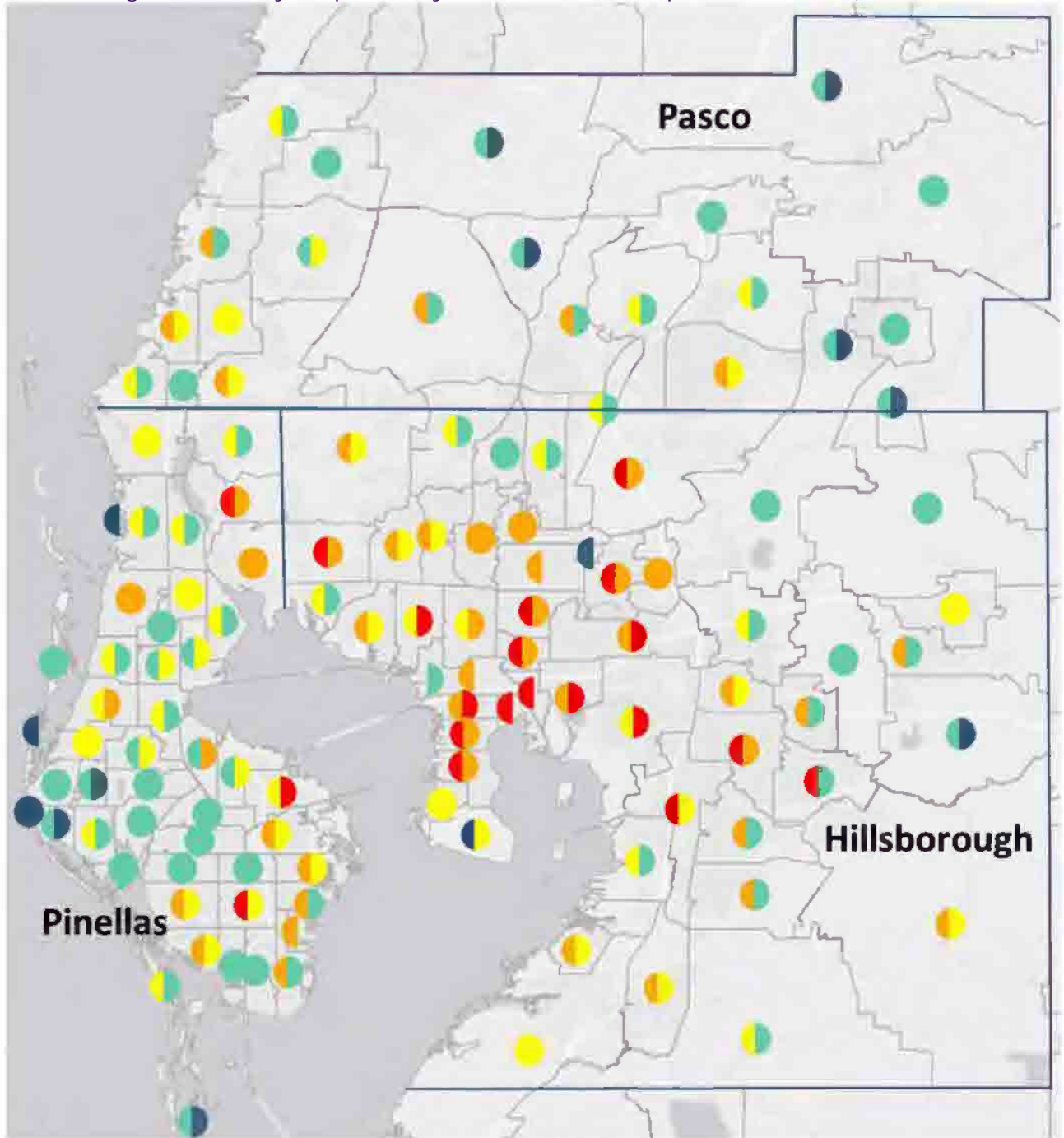
Table 1. Survey Response Overview

County	3-County Area		Survey		
	Population <sup>1</sup>	Percentage	Participants <sup>2</sup>	Percentage	Difference
Hillsborough	1,379,302	48.4%	4,012	61.3%	12.9%
Pinellas	962,003	33.8%	1,731	26.5%	-7.3%
Pasco	505,709	17.8%	801	12.2%	-5.5%
<b>Total</b>	<b>2,847,014</b>		<b>6,544</b>		

<sup>1</sup> SOURCE: BEBR, Bulletin 181, Population Projections by Age, Sex, Race & Hispanic Origin for Florida & Its Counties, 2020 - 2045 with Estimates for 2017 (June 2018).

<sup>2</sup> Survey participants who provided their home zip code.

Figure 2. Survey Response (by Home and Work Zip Code Provided)



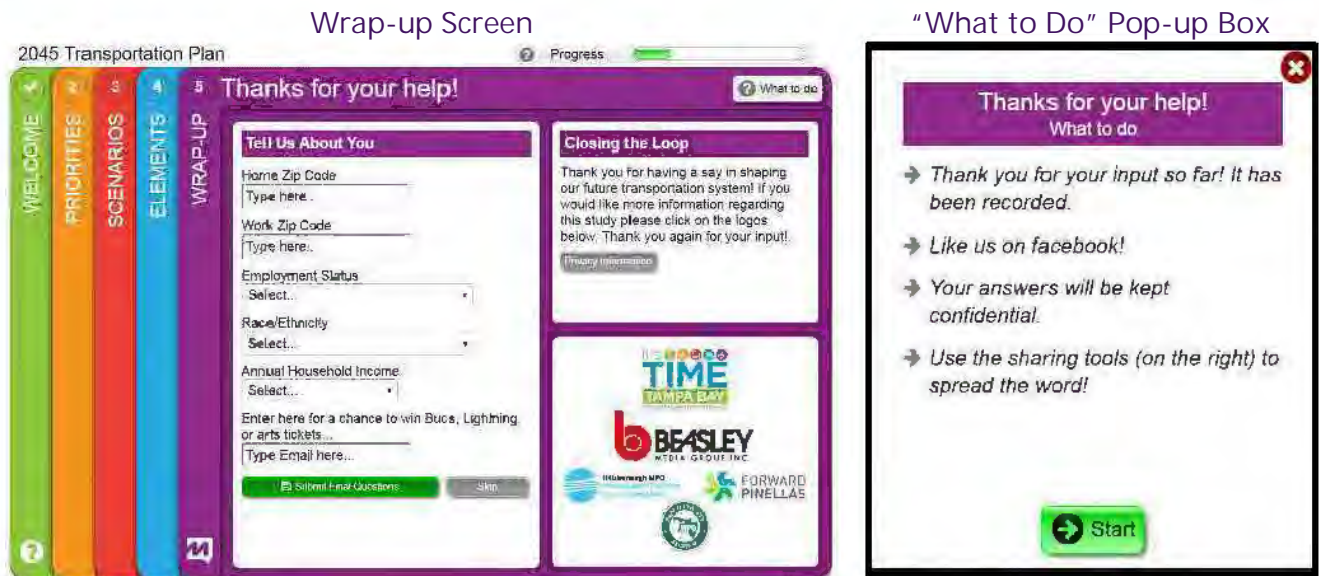
**Zip Code**

Home Work



## Representative Coverage

It was very important to the MPOs to conduct a survey that—from a demographic and geographic coverage standpoint—reflected the tri-county planning area to the best degree possible. The Wrap-up screen collected general demographic data that was useful in better understanding the survey responses for the priorities, scenarios and elements. Providing demographic data was optional and if someone did not answer these questions their already completed survey responses and comments were still recorded and analyzed as part of the final dataset.



- Home Zip Code
- Work Zip Code
- Employment Status
  - Employed Full-time
  - Employed Part-time
  - Currently Unemployed
  - Retired (full-time FL resident)
  - Retired (part-time FL resident)
  - Student
- Race/Ethnicity
  - White
  - Black, or African American
  - Hispanic, Latino or Spanish origin
  - Asian
  - American Indian or Alaskan Native
  - Native Hawaiian or Other Pacific Islander
  - Other
- Annual Household Income
  - \$39,999 or less
  - \$40,000 to \$54,999
  - \$55,000 to \$99,999
  - \$100,000 to \$199,999
  - \$200,000 or more
- Email
  - If a valid email address was provided, the participant was eligible to win tickets to a Tampa Bay Buccaneers game, a Tampa Bay Lightning game, or a performing arts event.

## Privacy Statement

The following privacy statement was included on the Wrap-up screen:

Under Florida law, email addresses are public records. If you do not want your email address released in response to a potential public records request, please do not submit your email address. In accordance with Title VI of the Civil Rights Act of 1964 and other nondiscrimination laws, public participation is solicited without regard to race color, national origin, age, sex, religion, disability, or family status. Read more about the MPO's commitment to non-discrimination and other requirements.

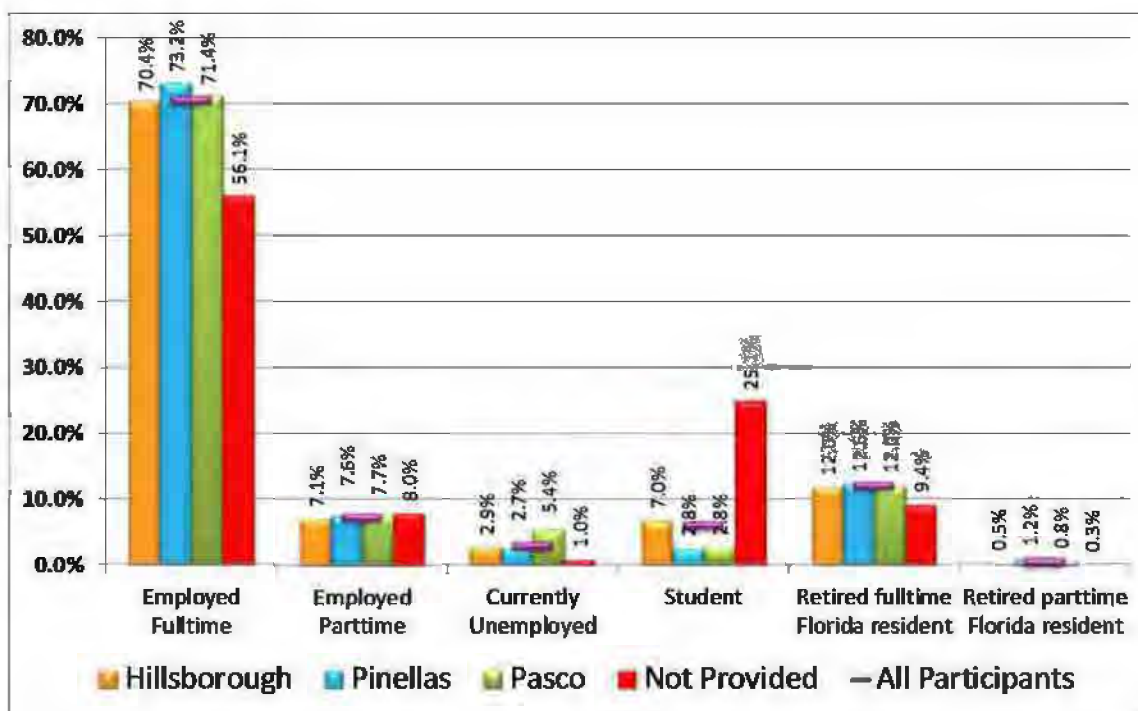
## Survey Responses by Demographics

The following sections provide a breakdown of survey responses by employment status, annual household income, and race/ethnicity.

### Employment Status

Figure 3 shows that full-time employed residents represented the majority of survey respondents (approximately 70%). A portion of the respondents who did not provide their home zip code could have been students participants. Survey respondents who identified as currently unemployed represent approximately 3% of all respondents. This is consistent with the unemployment rates in the region which range between 3% and 5%. Full-time retired respondents represented about 11% of the survey responses, while less than 1% identified themselves as a part-time retired Florida resident. Given this small response rate, the part-time retired Florida residents were combined with the full-time retired Florida residents for the purpose of further survey analysis.

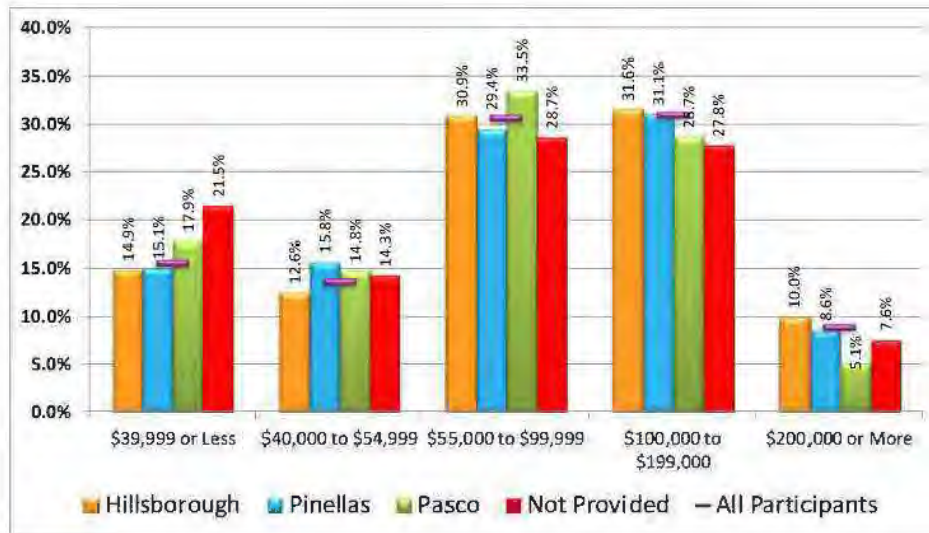
Figure 3. Participants by Employment Status



### Annual Household Income

Figure 4 shows that 70% of survey respondents have an annual household income over \$55,000, and 40% have an income over \$100,000. In general, the survey responses represent a more affluent population as compared to the region’s average, or median income level. For those survey respondents who did not provide a home zip code, 21% indicated that they had an annual household income under \$39,999.

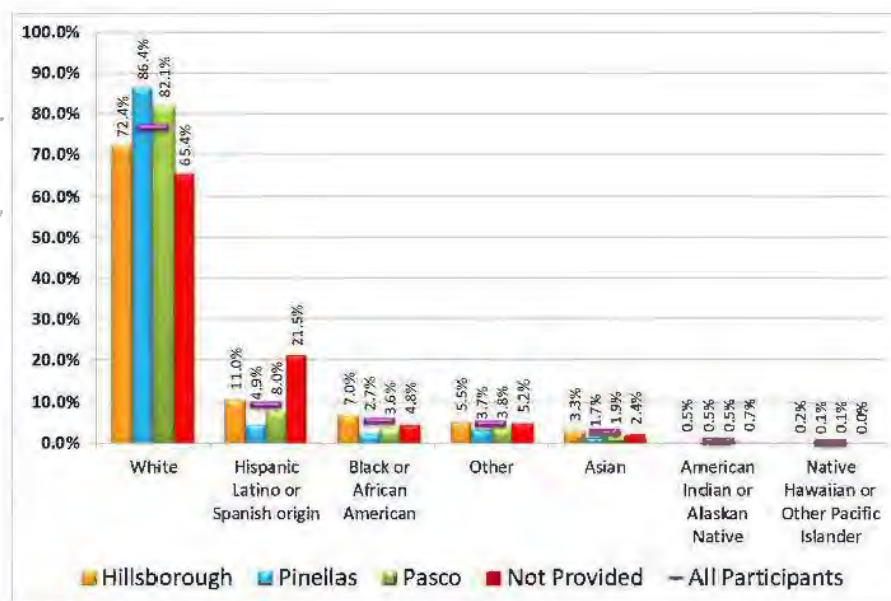
Figure 4. Participants by Annual Household Income



Race/Ethnicity

Figure 5 shows that approximately 77% of all survey respondents identified as white. Pinellas County tended to have a slightly higher white response rate at 86%, while Hillsborough County reported in at 72%. Hillsborough County had the highest response rate by minority populations including 11% who identified as Hispanic, Latino or Spanish origin, and 7% who identified as African American. While these percentages are lower compared to the County totals, they do reflect an extensive outreach effort to try to maximize the survey participation rate among minority groups.

Figure 5. Participants by Race/Ethnicity



Emails

Over 5,600 emails were provided and were eligible for the drawing. A drawing to select the winners was held at a meeting of the Hillsborough MPO Board on Tuesday, October 2, 2018.



## Chapter 4 – Priorities

The second screen of the *It's TIME Tampa Bay* survey (What is Important to You?) included seven priorities. Survey respondents were asked to identify their top five priorities; however, respondents could identify less and still continue on the next screen. The respondents' priorities were then used on the Scenarios screen to show the impact that each scenario has on each selected priority (additional information provided in Chapter 5). The following images display the Priorities screen, along with the "What to Do" pop-up box.



In total, priorities were ranked 39,645 times by all survey participants, which equates to an average of 4.1 priorities identified per survey respondent. The *It's TIME Tampa Bay* priorities and descriptions, as presented in the survey, are listed on the following page. A summary of the top priorities follows the descriptions.

### Comment from Hillsborough Resident (commenting on Traffic Jams)

"More than anything else I would like to not have to drive, with a shorter non-car dependent commute."

### Comment from Pinellas Resident (commenting on Alternatives to Driving)

"Give us a city to city (St. Pete to Tampa) solution, where we can park in one city and go to the other."

### Comment from Pasco Resident (commenting on Shorter Commutes)

"Expanding mass transit and other personal vehicle alternatives, especially to poorer and more underserved areas, would be a massive boon to our region and citizenry."

## It's TIME Tampa Bay Priorities



### Traffic Jams

Reduce amount of time spent sitting in traffic on a typical weekday, which affects productivity, family time, air quality, noise, and other factors.



### Alternatives to Driving

Expand opportunities for walking, biking, buses and rail, carpooling and water ferries.



### Shorter Commutes

Keep the economy moving by shortening commutes so people have access to jobs, and businesses have access to workers.



### Open Space

Protect undeveloped lands, including wetlands and wildlife areas.



### Public Service Costs

Efficiently manage growth to reduce the costs of building and maintaining new water supply lines, sewers, and local roads.



### Equal Opportunity

Improve access to jobs and life-sustaining services for underserved communities.



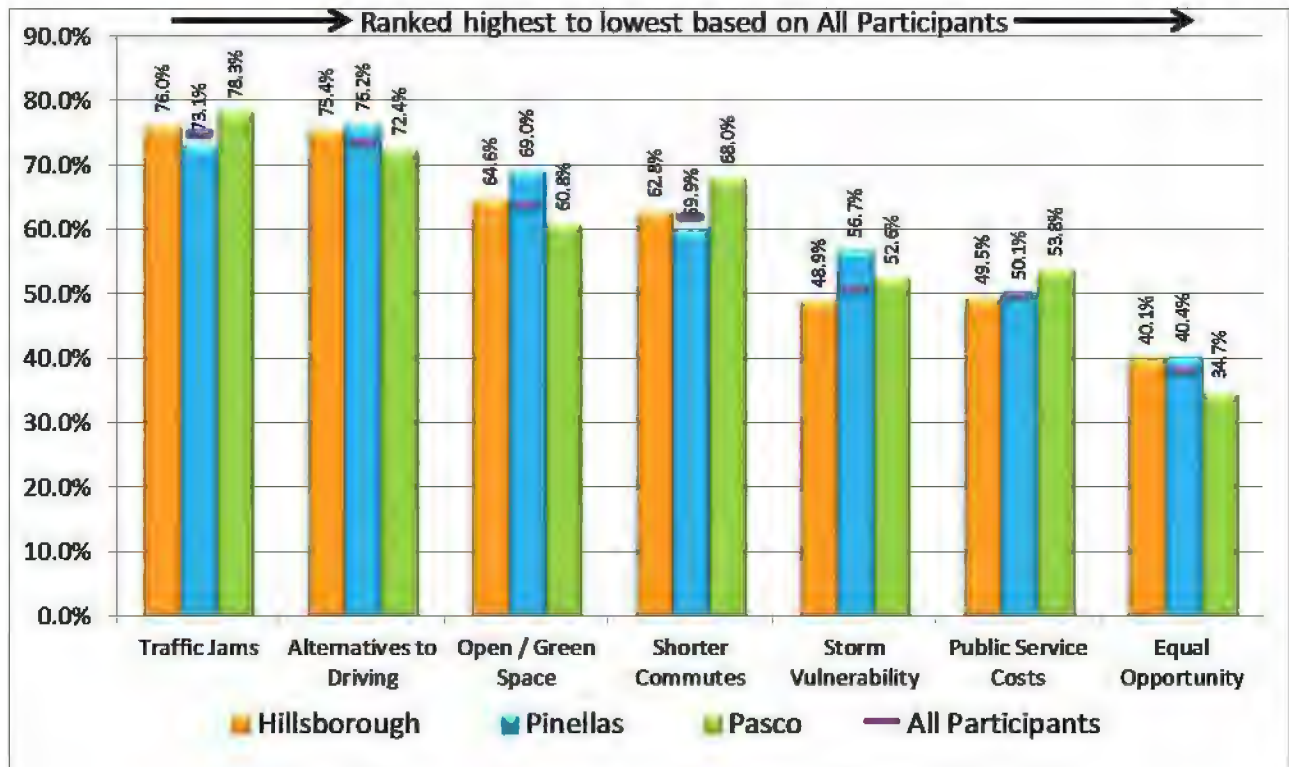
### Storm Vulnerability

Minimize the number of people and jobs located in hurricane evacuation zones.

## Top Priorities

Figure 6 summarizes the percentage of times that each priority was identified on screen 2 of the MetroQuest survey. The figure highlights the responses by county, as compared to the overall survey response by all participants. Traffic jams and alternatives to driving were identified as the top tier priorities. Of the 9,575 surveys, 7,184 (75%) respondents identified traffic jams and 7,059 (74%) respondents identified alternatives to driving as a top priority. Second tier priorities included open / green space which was identified 6,123 (64%) times by respondents, and shorter commutes, identified 5,956 times (62%).

Figure 6. Priority Ratings (by County)



Hillsborough and Pasco County respondents ranked traffic jams as the top priority while a slightly higher number of Pinellas County respondents identified alternatives to driving as their top choice. Pasco County respondents slightly favored shorter commutes as their third priority (over open /green space).

One additional item of note: 57% Pinellas County respondents identified storm vulnerability as a top priority – eight percentage points higher than Hillsborough County respondents and four percentage points higher than Pasco County respondents.

Table 2 on the following page provides a detailed breakdown of the priority ratings.



Table 2. Priority Ratings (Detailed Breakdown)

Number of Times Identified as a Top 5 Priority

	All Participants	Hillsborough	Pinellas	Pasco
Traffic Jams	7,184	3,049	1,265	627
Alternatives to Driving	7,059	3,024	1,319	580
Open / Green Space	6,123	2,593	1,195	487
Shorter Commutes	5,956	2,520	1,037	545
Storm Vulnerability	4,883	1,963	982	421
Public Service Costs	4,768	1,985	868	431
Equal Opportunity	3,672	1,607	700	278
	39,645	16,741	7,366	3,369
Average Number of Priorities Rated:	4.14	4.17	4.26	4.21

NOTE: Darker to lighter green shading (or no shading) indicates the highest to lowest totals.

Percentage of Times Identified as a Top 5 Priority

	All Participants	Hillsborough	Pinellas	Pasco
Traffic Jams	75.0%	76.0%	73.1%	78.3%
Alternatives to Driving	73.7%	75.4%	76.2%	72.4%
Open / Green Space	63.9%	64.6%	69.0%	60.8%
Shorter Commutes	62.2%	62.8%	59.9%	68.0%
Storm Vulnerability	51.0%	48.9%	56.7%	52.6%
Public Service Costs	49.8%	49.5%	50.1%	53.8%
Equal Opportunity	38.3%	40.1%	40.4%	34.7%
Surveys by All Participants/County:	9,575	4,012	1,731	801

Distribution of Responses by Category

Row Labels	All Participants	Hillsborough	Pinellas	Pasco
Traffic Jams	18.1%	18.2%	17.2%	18.6%
Alternatives to Driving	17.8%	18.1%	17.9%	17.2%
Open / Green Space	15.4%	15.5%	16.2%	14.5%
Shorter Commutes	15.0%	15.1%	14.1%	16.2%
Storm Vulnerability	12.3%	11.7%	13.3%	12.5%
Public Service Costs	12.0%	11.9%	11.8%	12.8%
Equal Opportunity	9.3%	9.6%	9.5%	8.3%

## Chapter 5 – Scenarios

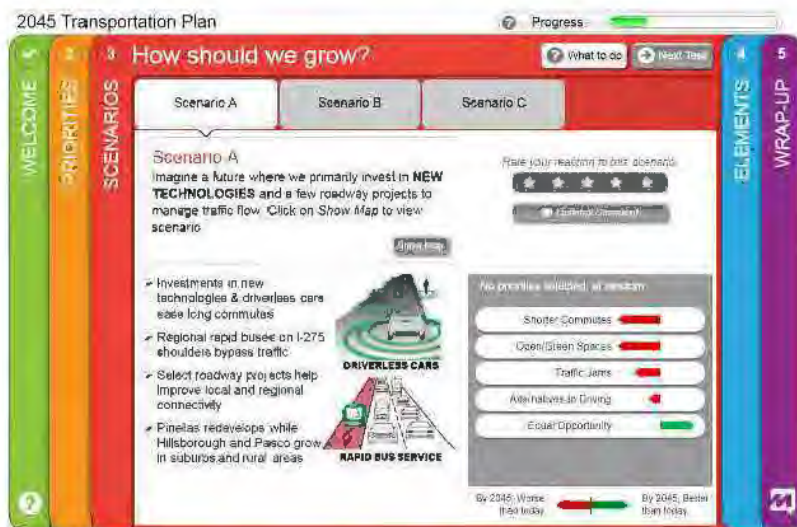
The Scenarios in screen 3 were created to facilitate discussion of three potentially different growth and transportation futures. The intent was to present exaggerated scenarios that would make participants consider the choices/consequences associated with future growth and development, and to ultimately view how each scenario could potentially impact their priorities, and future transportation and mobility options. In some cases, the project elements identified in the scenarios were inspired by other agencies' studies, such as:

- Tampa Bay Next
- Regional Transit Feasibility Plan

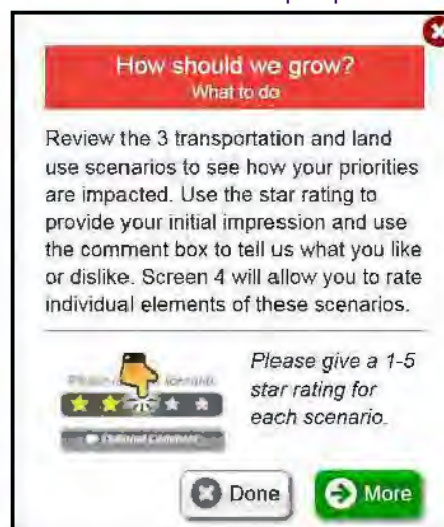
Other scenario projects may include options that are not currently being explored by the sponsoring agency, but were listed nonetheless because they could provide useful insight into what is important to the public. While each scenario is rated from 1 to 5 stars, participants are not rating individual projects; instead they are rating overall themes associated with each scenario to help inform the LRTP development process. Ultimately, one scenario will not solve the region's transportation and mobility issues. It will require a wide range of strategies and policies, addressing both growth and infrastructure, to shape the future transportation system.

The Scenarios screen started by asking the general question “How should we grow?” Based on the priorities a respondent selected on screen 2, the impacts of the transportation and growth on that scenario were communicated by arrows. A red arrow pointing left indicated that particular priority would perform worse than today, by the year 2045. A green arrow pointing right indicated that particular priority would perform better than today, by the year 2045. In both situations, the longer the arrow, the greater negative or positive the impact. Furthermore, participants were encouraged to provide comments that could be used to better understand the survey responses. The scenarios are summarized on the following pages.

Scenarios Screen



“What to Do” Pop-up Box

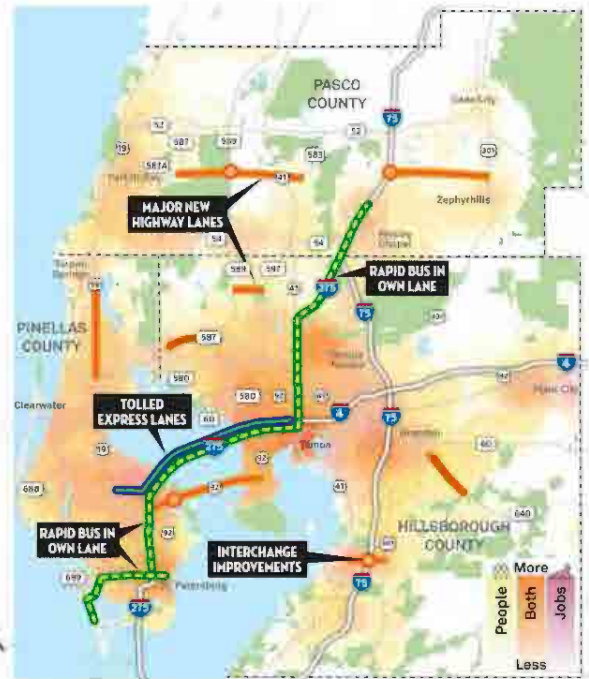


## It's TIME Tampa Bay Scenarios

### Scenario A

Imagine a future where we primarily invest in NEW TECHNOLOGIES and a few roadway projects to manage traffic flow.

- Investments in new technologies & driverless cars ease long commutes
- Regional rapid buses on I-275 shoulders bypass traffic
- Select roadway projects help improve local and regional connectivity
- Pinellas redevelops while Hillsborough and Pasco grow in suburbs and rural areas



### Scenario A Impact on Priorities

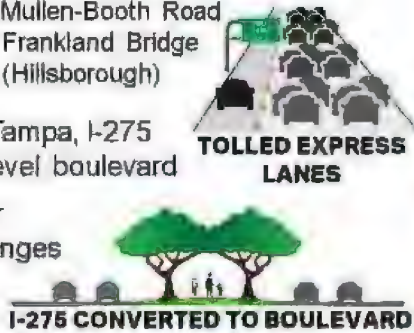


## It's TIME Tampa Bay Scenarios

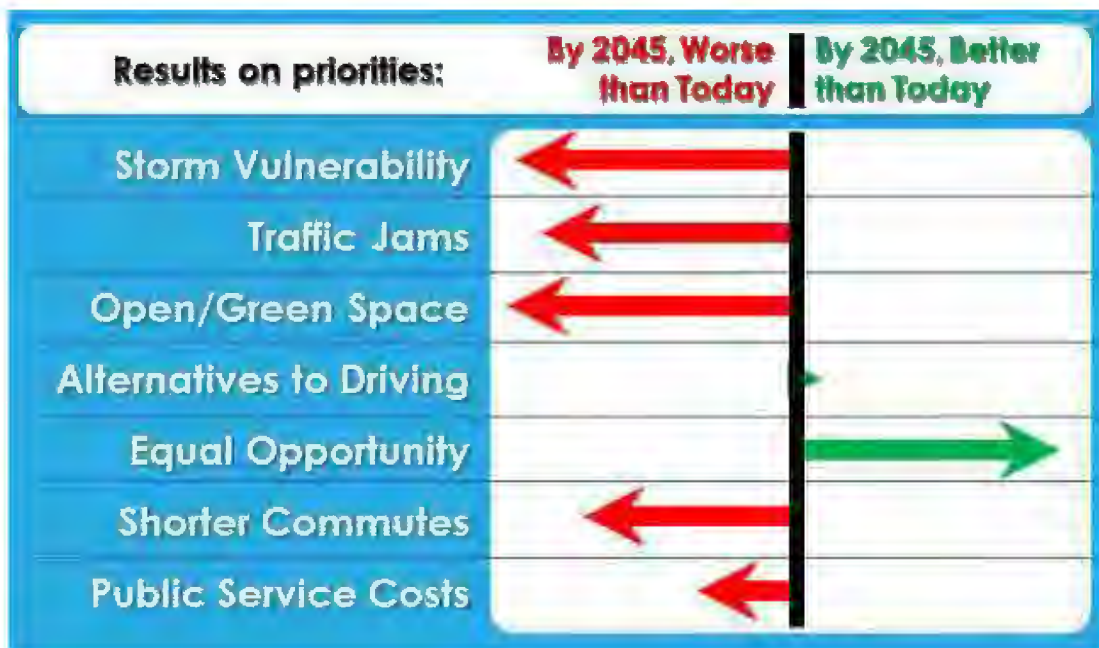
### Scenario B

Imagine a future where we primarily invest in EXPRESSWAY LANES forming an outer loop so traffic does not have to go through the congested center of the region.

- New tolled express lanes create a loop linking the three counties
  - SR 54 (Pasco) to McMullen-Booth Road (Pinellas) to Howard Frankland Bridge to downtown Tampa (Hillsborough)
- North of downtown Tampa, I-275 converted to street-level boulevard
- Growth focused near expressway interchanges with some urban redevelopment



### Scenario B Impact on Priorities



## It's TIME Tampa Bay Scenarios

### Scenario C

Imagine a future where we primarily invest in BUS AND RAIL SERVICES connecting, revitalizing and in-filling the communities that exist today.

- Significant bus and rail investments encourage redevelopment of housing and businesses in our cities & towns
- Rail service on existing train tracks connects the three counties and rapid bus service found on most major roads
- Rail service connects the region to Orlando
- Water ferry service connects Tampa and St. Petersburg, and MacDill AFB and South Hillsborough



### Scenario C Impact on Priorities







Scenario B – Expressway Lanes

Scenario B involved reimagining expressways by adding tolled express lanes and creating an outer loop to facilitate more efficient travel movement through the region. In total, 6,460 participants (3,246 from Hillsborough, 1,352 from Pinellas, and 563 from Pasco as defined by home zip code) rated this scenario. Figure 9 shows that overall the majority of survey respondents had a relatively less than favorable opinion of this scenario. Of all participants, 52% rated this scenario low with 1 or 2 stars. By comparison, only 25% rated this scenario high at 4 or 5 stars.

Figure 10 shows the average rating for Scenario B was 2.53. Pasco County respondents had a slightly higher favorable opinion of this scenario with a rating of 2.77 while Pinellas County respondents rated this scenario lower at 2.35.

Figure 9. Scenario B Rating (1 to 5 Stars)

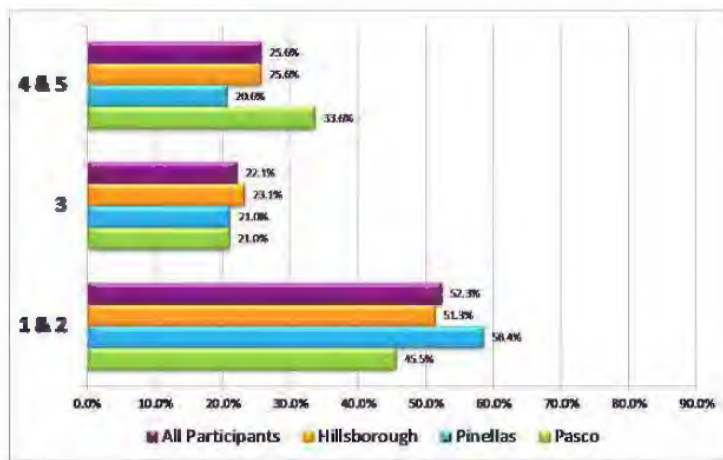
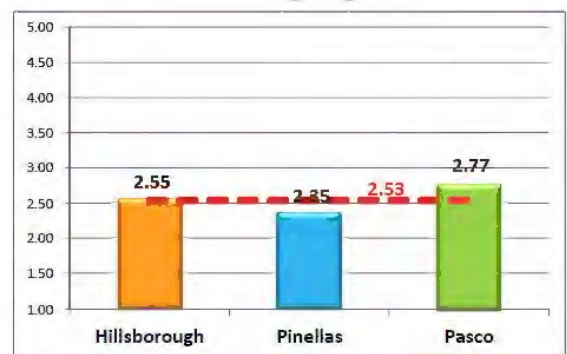


Figure 10. Scenario B Average Rating



**Comment from Hillsborough Resident**  
(works outside the tri-county area)

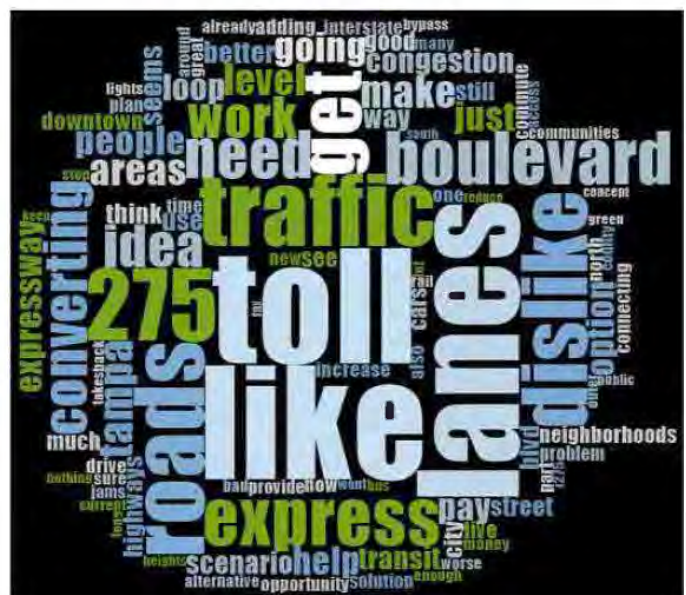
“Expressway lanes have not worked that well in South Florida. Stick with new technologies and alternate forms of transportation (rail, bus, ferry, etc.).”

**Comment from Pinellas Resident**  
(works in Pinellas County)

“Express lanes help for major commutes but do nothing for local traffic. You still have to get to the express lanes somehow and this must be accounted for.”

**Comment from Pasco Resident**  
(works in Hillsborough County)

“I like the idea of an express lane, but I’m not sure how that minimizes the traffic and shortens the commute.”



Scenario C – Transit Focus (Bus and Rail)

Scenario C focuses on regional and statewide transit, mostly bus and rail, improvements. In total, 6,302 participants (3,210 from Hillsborough, 1,320 from Pinellas, and 547 from Pasco as defined by home zip code) rated this scenario. Figure 11 shows overwhelmingly support by survey respondents for this scenario. Of all participants, 75% rated this scenario high with 4 or 5 stars. Pinellas County respondents rated this scenario slightly higher at 78%. By comparison, only 12% of all respondents rated this scenario low at 1 or 2 stars.

Figure 12 shows the average rating for Scenario B was 4.08. Pasco County respondents had a slightly lower rating at 3.96 while Pinellas County respondents rated this scenario slightly higher at 4.16.

Figure 11. Scenario C Rating (1 to 5 Stars)

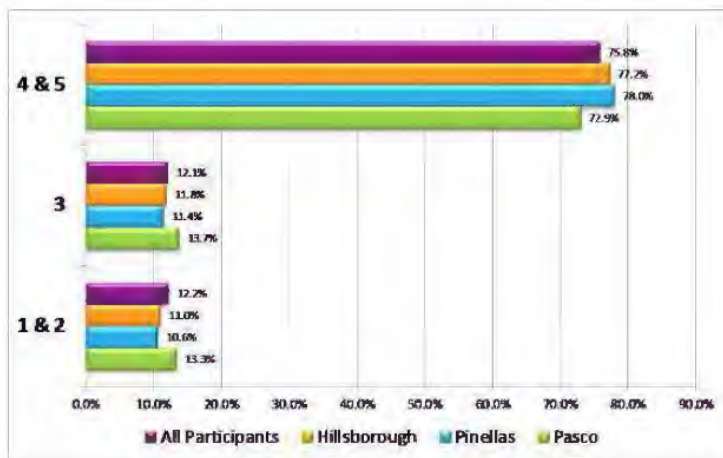
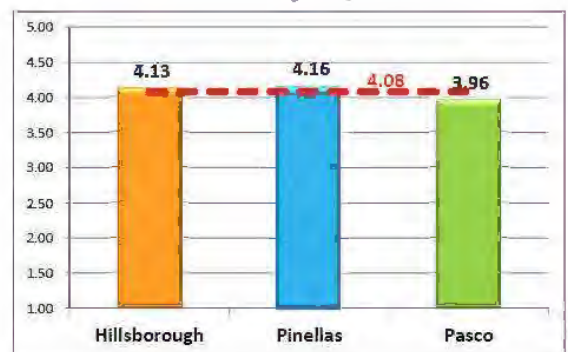


Figure 12. Scenario C Average Rating



**Comment from Hillsborough Resident**  
(works in Hillsborough County)

“Multimodal! This is our future. The only thing I would add is an expanded and modernized streetcar system connecting the urban districts within Tampa. I love the inclusion of the water ferry system as well - we are surrounded by water and need to use it!”

**Comment from Pinellas Resident**  
(works in Hillsborough County)

“This region needs to invest in transit. I live in Pinellas County and there are very few roadway corridors that can be expanded to accommodate the future levels of traffic. The region also needs to invest in walking and biking.”

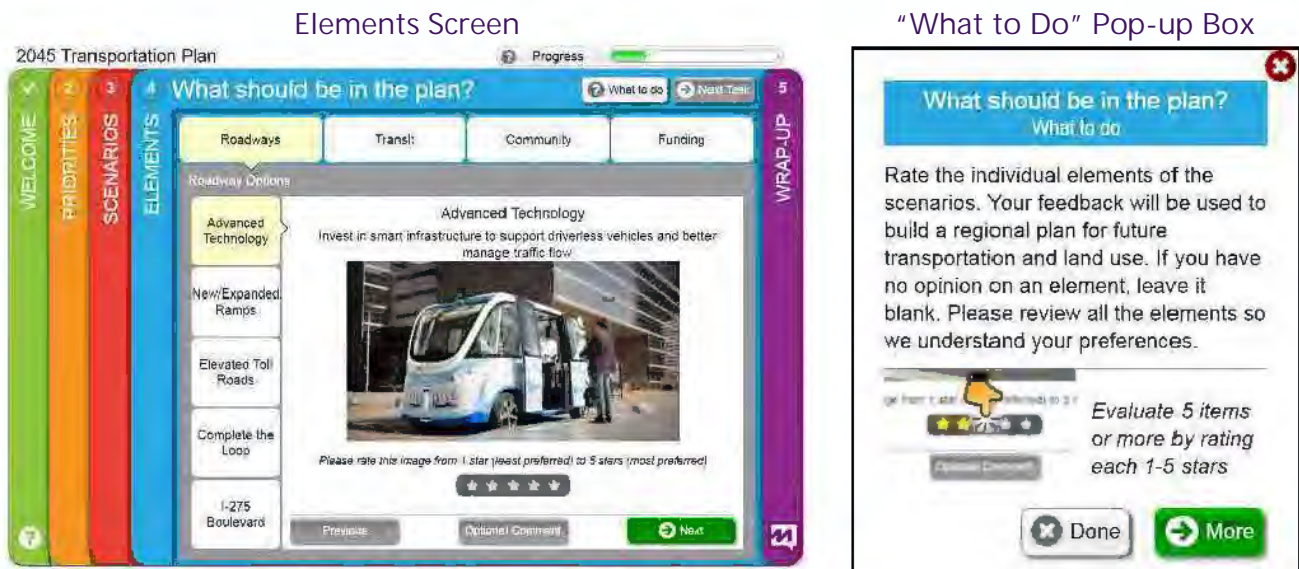
**Comment from Pasco Resident**  
(works in Pasco County)

“I think this (Scenario C) is great because it gives other options to driving everywhere, which can open up job markets that were previously out of reach based on commute.”



# Chapter 6 – Elements

The fourth screen polled respondents about Elements, or components of the three scenarios to facilitate further discussion regarding potential roadway projects, transit projects, community development, and funding options. The Elements screen started with the question, “What Should Be in the Plan?” The intent of the question was to drill down into the ingredients that make up each of the scenarios to help determine what elements should ultimately be included in a hybrid transportation and growth scenario. In total, there were 20 elements – allowing respondents who liked certain aspects of a scenario, but not the entire scenario, to provide more detailed input that could be used to identify key themes.



## It's TIME Tampa Bay Elements

### Roadways

- Advanced Technology
- New/Expanded Ramps
- Elevated Toll Roads
- Complete the Loop
- I-275 Boulevard

### Community

- Expanded Growth Area
- Preserve Neighborhoods
- More/Better Downtowns
- Efficient Use of Land
- Walk & Bike Focus

### Transit

- Expanded Ridesharing
- Express Bus Rapid Transit
- Rail (Local/Regional)
- Water Ferry
- Statewide Rail

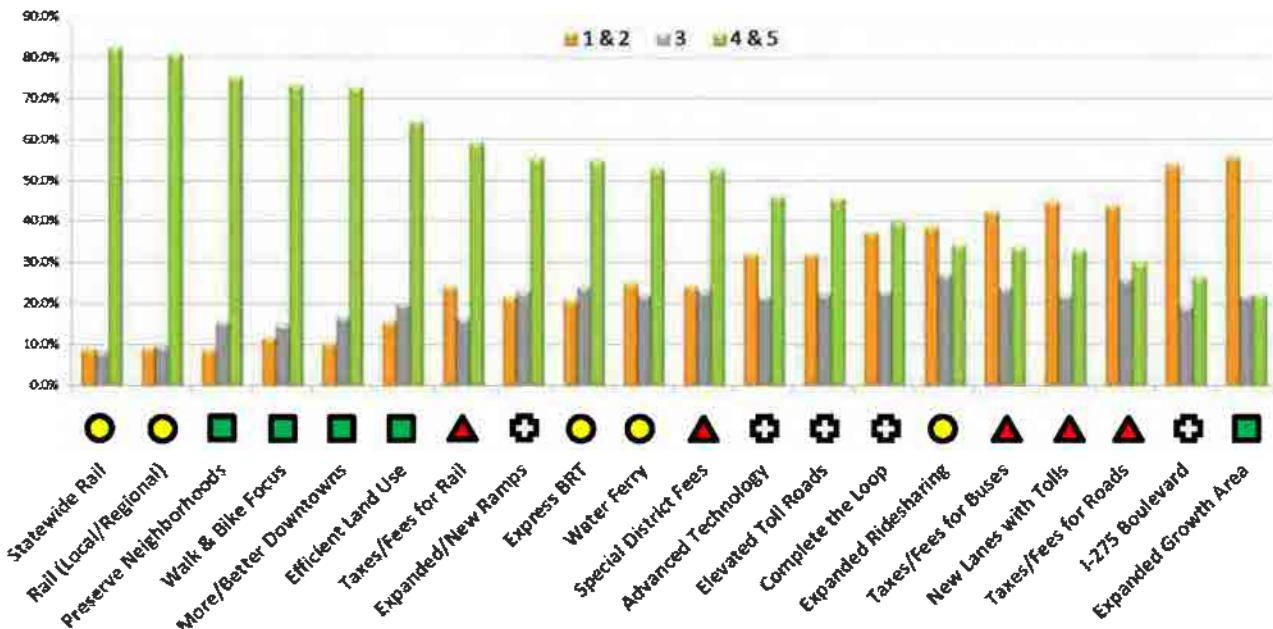
### Funding

- New Lanes with Tolls
- Taxes/Fees for Roads
- Taxes/Fees for Buses
- Taxes/Fees for Rail
- Special District Fees

## Overall Responses

Figure 13 shows all the elements as sorted by average rating (highly supported elements begin on the left side of the graph, and less favored elements on the far right side). The figure includes color-coded symbols to distinguish which of the four elements each response is assigned to (see legend below the graph).

Figure 13. All Elements Ratings



### LEGEND

- Roadway Element
- Transit Element
- Community Element
- Funding Element

The highest overall support was for rail-related projects—both statewide rail connecting to the Tampa Bay area and for local/regional service, such as Light Rail Transit (LRT). The next four highest rated elements focus on community development and growth. Each of these four elements generally focused on more efficient land use—and expanded walking and biking—that would support an expanded regional transit system. By comparison, the fifth community element was an expanded growth area that received the lowest rating of all 20 elements.

Taxes/fees to fund rail rated the highest among the funding elements, with special district fees being the second highest rated funding element. The remaining funding options were less favorable, with over 40% of survey respondents providing low (1 and 2 star) ratings. Of all five funding elements, taxes/fees for roadways was rated the least favorable.

The majority of roadway elements had support and high (4 and 5 star) ratings. The Complete the Loop element had almost a nearly equal level of low and high support, while the I-275 Boulevard Conversion was rated low, with over 50% of survey respondents rating it 1 or 2 stars. Each element is discussed further in the following sections.

## Roadway Elements






Overall, survey participants support New/Expanded Ramps, have a generally positive opinion for Advanced Technology and Elevated Toll Roads, a somewhat neutral opinion on Complete the Loop, and less than positive opinion on the conversion of I-275 to a boulevard. Of the five roadway elements, 55% rated Expanded/New Ramps highly (4 or 5 stars) while 54% rated the I-275 boulevard conversion poorly (1 or 2 stars). Figure 14 summarizes the roadway element ratings.

Figure 14. Roadway Elements (Ratings 1 to 5 Stars)



Table 3 shows expanded/new ramps received the highest roadway element average rating at 3.56. Pasco County respondents rate this slightly higher at 3.79 (0.23 points higher) compared to all participants. Overall, Pasco respondents rated roadway improvements 0.20 to 0.30 points higher compared to the overall average, while having a less favorable opinion of advanced technology and I-275 conversion. Pinellas County respondents had a less favorable rating of the Complete the Loop at 2.79 (0.24 points lower than the overall average 3.03). Pinellas respondents also rated the I-275 conversion 0.14 points lower than the average. Figures 15 to 17 display 1 to 5 ratings by county.

Table 3. Roadway Elements (Average Ratings)

	Expanded/New Ramps 	Advanced Technology 	Elevated Toll Roads 	Complete the Loop 	Convert I-275 to a Boulevard 
<b>All Participants:</b>	<b>3.56</b>	<b>3.23</b>	<b>3.20</b>	<b>3.03</b>	<b>2.49</b>
<b>Hillsborough:</b>	<b>3.56</b>	<b>3.29</b> + 0.06	<b>3.18</b> - 0.02	<b>3.05</b> + 0.02	<b>2.56</b> + 0.07
<b>Pinellas:</b>	<b>3.49</b> - 0.07	<b>3.27</b> + 0.04	<b>3.15</b> - 0.05	<b>2.79</b> <b>- 0.24</b>	<b>2.35</b> <b>- 0.14</b>
<b>Pasco:</b>	<b>3.79</b> <b>+ 0.23</b>	<b>3.09</b> <b>- 0.14</b>	<b>3.41</b> <b>+ 0.21</b>	<b>3.36</b> <b>+ 0.33</b>	<b>2.27</b> <b>- 0.22</b>

NOTES: 1) Average rating is calculated by summing the 1 to 5 star rating for each element and dividing by number of participants for each category.  
2) Green or red text indicates a difference of 0.08 or greater as compared to all survey participants.

Figure 15. Roadway Elements – Hillsborough County Respondents

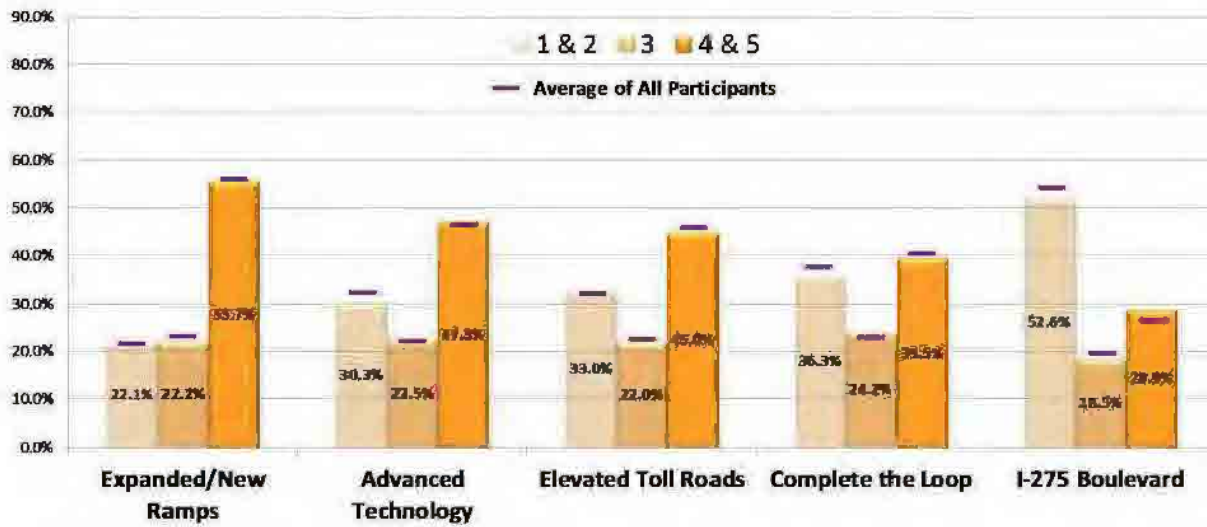


Figure 16. Roadway Elements – Pinellas County Respondents

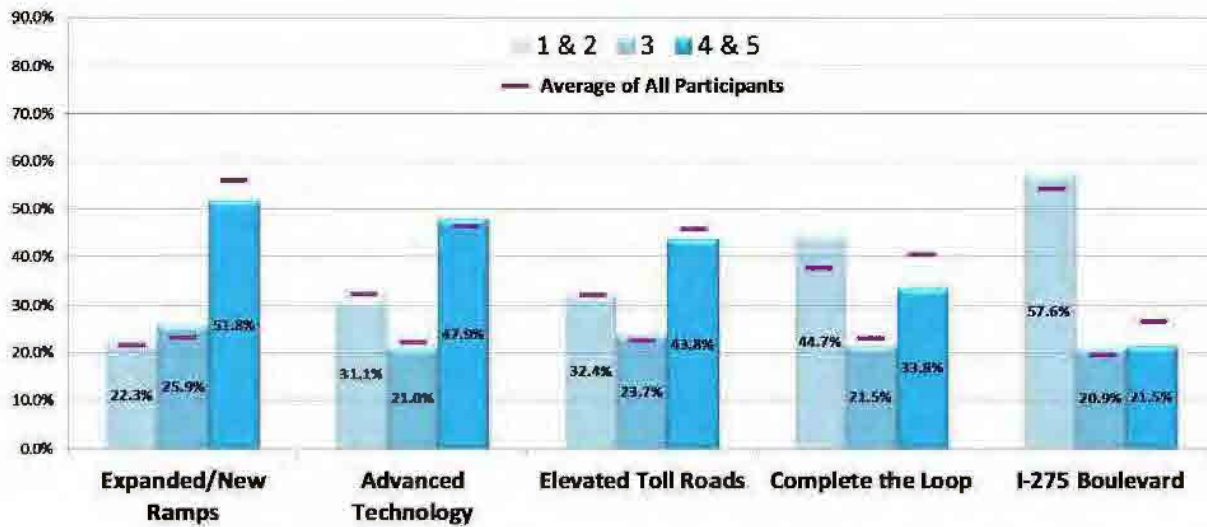


Figure 17. Roadway Elements – Pasco County Respondents



## Individual Roadway Elements

### New / Expanded Ramps

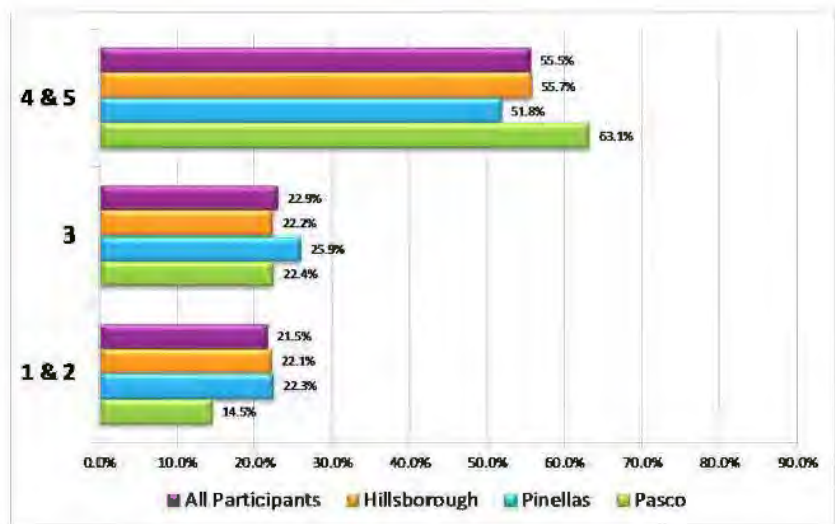
This element includes targeted roadway investment to improve connections and traffic flow between Interstates/regional expressways and the local roadway network. Generally speaking, these improvements are intended to enhance traffic operations and more effectively move traffic to reduce congestion, reduce travel delay and improve travel safety. Figure 18 displays the 1 to 5 star rating this element received among participants from different counties.



#### New/Expanded Ramps

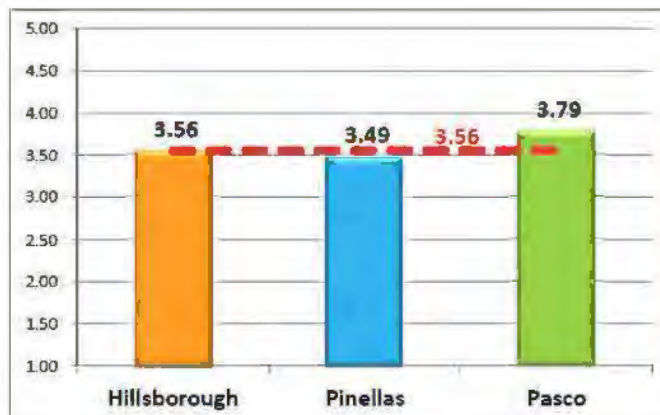
Improve expressway ramps and new road connections to make it easier and safer to enter and exit.

Figure 18. New/Expanded Ramps (Ratings)



The majority of all survey participants favor this type of improvement. In total, among the 6,968 participants who rated this element, approximately 55% rated it highly (four or five stars). Pasco County residents tend to have a more favorable rating of this scenario, coming in approximately 8 percentage points higher compared to all survey participants (63% high rating). By comparison, Pinellas County residents have a slightly less favorable opinion of this element at approximately 3% points lower than the survey average (52% high rating). Figure 19 shows the average rating for this element was 3.56, with Pasco County participants having a higher rating at 3.79.

Figure 19. New/Expanded Ramps (Average Rating)





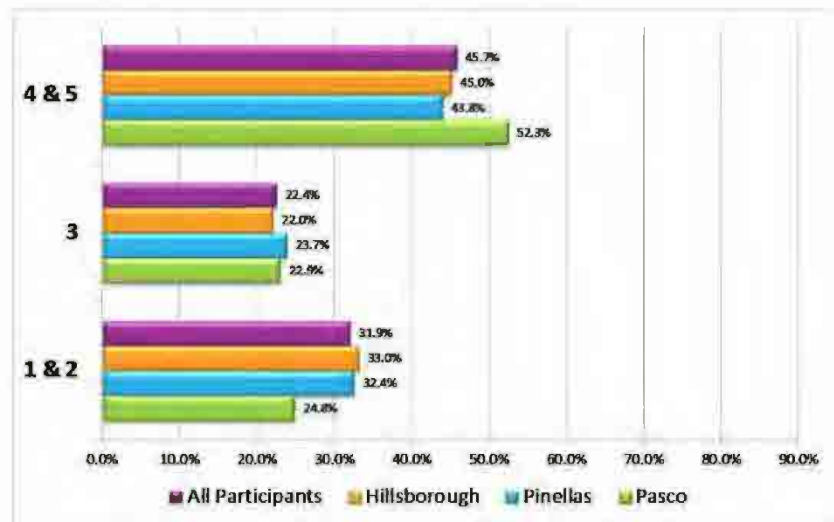
### Elevated Toll Roads

Elevated toll roads would provide greater capacity on area expressways by limiting the number of entry/exit points, helping reduce travel delay and enhance regional travel connections. The elevated toll roads have a secondary benefit as the raised structure has the potential to avoid flooding during hurricanes or other storm events. Figure 20 displays the 1 to 5 star rating for this element among participants from different counties.



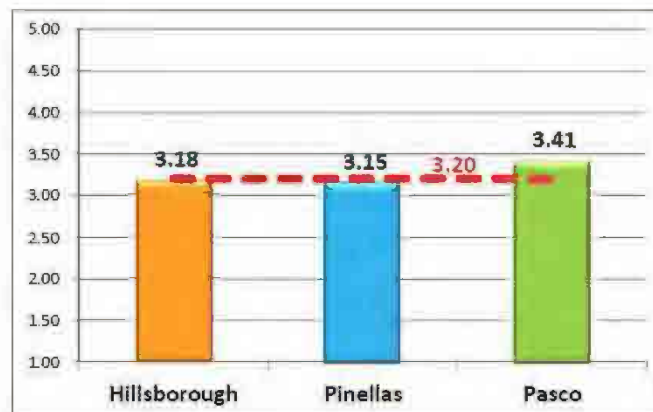
Elevated Toll Roads  
Expressways with limited entry points provide reliable travel times and less delay

Figure 20. Elevated Toll Roads (Ratings)



The majority of all survey participants slightly favored this type of improvement. Among the 6,880 participants who rated this element, approximately 46% gave it a rating of four or five stars. Pasco County residents have a more favorable rating of elevated toll roads—approximately 8-9 percentage points higher compared to all survey participants (52% four or five star rating). By comparison, Pinellas County residents have a slightly less favorable opinion of this element reporting in at approximately 3 percentage points lower than the survey average (44% four or five star rating). Figure 21 shows the average rating was 3.20, with Pasco County respondents coming in at 3.41.

Figure 21. Elevated Toll Roads (Average Rating)



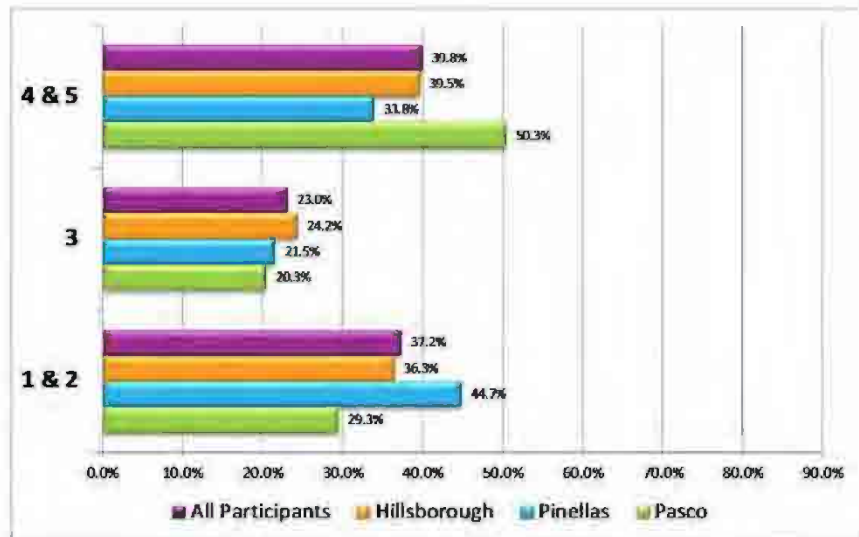
Complete the Beltway Loop

The Complete the Beltway Loop concept would construct a new toll road in Pasco County that would connect I-75 to Pinellas County through Pasco County via the SR 54 and McMullen-Booth Road corridors. This new facility, combined with improvements along I-275 and I-75 would create an outer roadway, or beltway, facility that would move traffic more efficiently away from the Tampa’s urban core area. Figure 22 displays the 1 to 5 star rating for this element among participants from different counties.



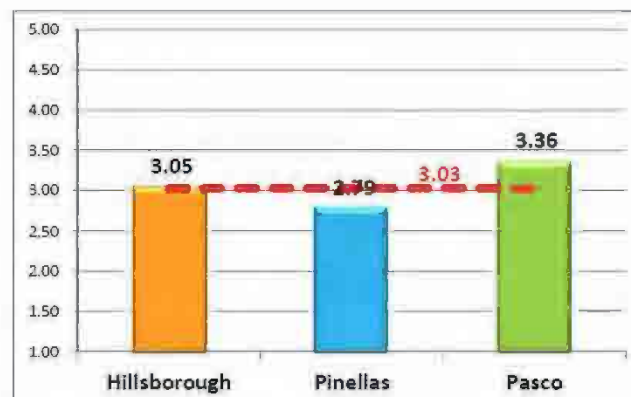
Complete the Loop  
New toll road in Pasco  
connecting I-75 to  
McMullen-Booth Road  
in Pinellas provides  
another travel route  
around the region.

Figure 22. Complete the Loop (Ratings)



The survey participants responded neutrally to this improvement. In total, 6,783 participants rated this element, with approximately 40% rating it high (4 and 5 stars) and 37% rating it low (1 and 2 stars). Pasco County residents tend to have a more favorable rating of this scenario, with 50% rating it 4 and 5 stars. By comparison, Pinellas County residents have a less favorable opinion of this concept, with just 34% rating it 4 and 5 stars and 45% rating it low at 1 and 2 stars. Figure 23 shows the average rating for this element was 3.03, with Pasco County respondents coming in higher at 3.36 and Pinellas County respondents coming lower at 2.79.

Figure 23. Complete the Loop (Average Rating)



### Advanced Technology

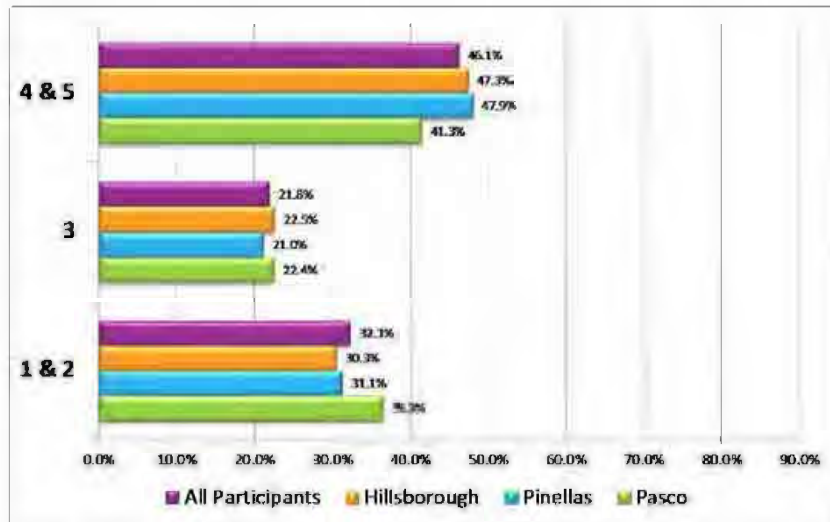
Ever changing technology advancements are quickly turning what used to be visionary transportation concepts into viable future mobility solutions. Autonomous vehicles (AV) and connected networks (CN) show promising signs of being able to address increasing traffic gridlock brought on by urban growth. Vehicle automation also extends into shared mobility services and freight transportation, making the potential benefits of a driverless future staggering. Figure 24 displays the 1 to 5 star rating for this element among respondents from different counties.



### Advanced Technology

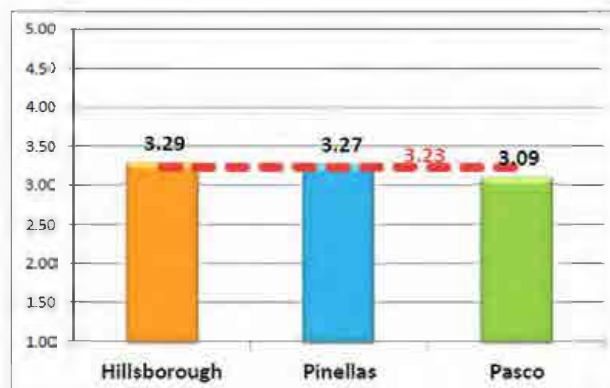
Invest in smart infrastructure to support driverless vehicles and better manage traffic flow.

Figure 24. Advanced Technology (Ratings)



Generally speaking, survey participants favor investment in advanced technology to better manage traffic flow. In total, 46% of the total 7,793 participants rated this element highly (4 or 5 stars). Pasco County residents have a slightly less favorable opinion of advanced technology at 5 percentage points lower than the survey average. Figure 25 shows the overall average rating for all survey respondents was 3.23, with Pasco County respondents coming in slightly lower at a 3.09 average.

Figure 25. Advanced Technology (Average Rating)



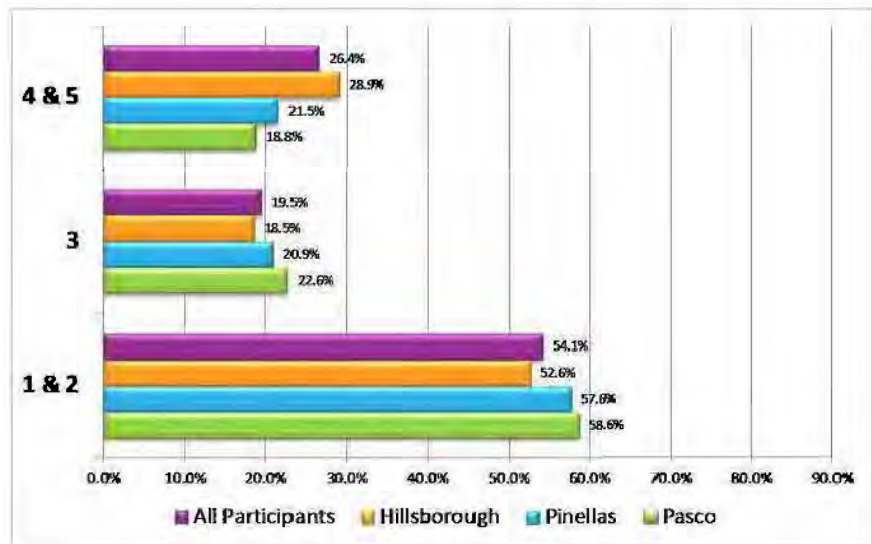
I-275 Boulevard Conversion

The I-275 boulevard conversion is a conceptual improvement that would convert an approximately ten-mile segment of I-275 north of downtown Tampa from an interstate facility to an at-grade boulevard. This improvement would be implemented to help reconnect neighborhoods and promote the use of alternative transportation modes. This conceptual project would be coordinated with improvements to the existing interstate and regional roadway network located on the outer fringe to facilitate the movement of people and goods around the area. Figure 26 summarizes survey respondents’ reaction to an I-275 boulevard conversion.



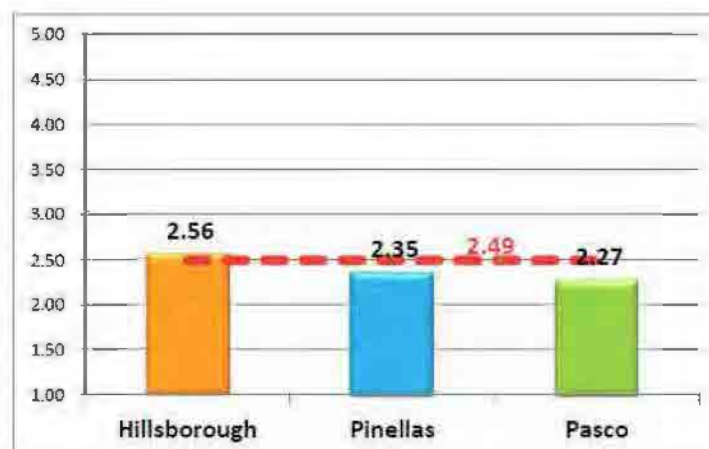
I-275 Boulevard  
Convert I-275 north of downtown Tampa to a street-level boulevard to reconnect Tampa’s core neighborhoods.

Figure 26. I-275 Boulevard Conversion (Ratings)



Overall, survey participants rated this the second lowest of all elements. In total, 6,657 participants rated this element, with approximately 54% rating it low (one or two stars), compared to 26% that rated it high (four or five stars). Pinellas and Pasco County residents tended to give this concept a slightly lower rating at 57% to 59%. Figure 27 displays the average rating for the I-275 conversion was 2.49. Hillsborough County respondents were slightly higher at a rating of 2.56.

Figure 27. I-275 Boulevard Conversion (Average Rating)



## Transit Elements

Overall, there was widespread support for expanding transit options, which is consistent with the Alternative to Driving receiving a high rating for the Priorities. Survey participants overwhelmingly supported Statewide Rail and Local/Regional Rail Service, generally supported Express BRT Service and Water Ferry and tended to have a less favorable opinion regarding Expanded Ridesharing, where there were more neutral and low ratings than high. Each of the transit elements is discussed in more detail in the following section. Figure 28 summarizes the transit element ratings.

Figure 28. Transit Elements (Ratings 1 to 5 Stars)

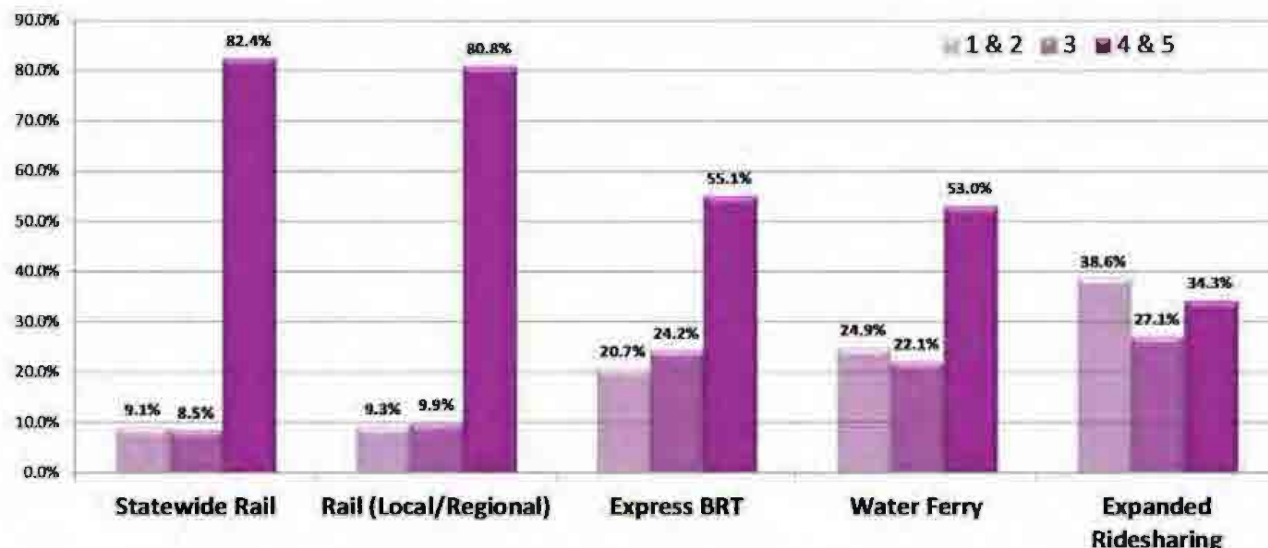


Table 4 summarizes the transit element average ratings, which show relatively little variation between counties. The two exceptions are Expanded Ridesharing and Water Ferry where Pasco County respondents were 0.13 to 0.18 points less likely to support these modes. Statewide Rail received the highest average rating (4.35) within the transit category, followed closely by Local/Regional Rail (4.28). Of the five transit elements, the Expanded Ridesharing was the only element to receive an average rating below three (2.93 rating). Figures 29 to 31 display the responses by county.

Table 4. Transit Elements (Average Ratings)

	Statewide Rail	Rail (Local/Regional)	Express BRT	Water Ferry	Expanded Ridesharing
<b>All Participants:</b>	<b>4.35</b>	<b>4.28</b>	<b>3.54</b>	<b>3.49</b>	<b>2.93</b>
<b>Hillsborough:</b>	<b>4.37</b>	<b>4.33</b>	<b>3.50</b>	<b>3.51</b>	<b>2.94</b>
	+ 0.02	+ 0.05	- 0.04	+ 0.02	+ 0.01
<b>Pinellas:</b>	<b>4.41</b>	<b>4.32</b>	<b>3.56</b>	<b>3.56</b>	<b>2.97</b>
	+ 0.06	+ 0.04	+ 0.02	+ 0.07	+ 0.04
<b>Pasco:</b>	<b>4.40</b>	<b>4.26</b>	<b>3.59</b>	<b>3.36</b>	<b>2.75</b>
	+ 0.05	- 0.02	+ 0.05	- 0.13	- 0.18

NOTES: 1) Average rating is calculated by summing the 1 to 5 star rating for each element and dividing by number of participants for each category.  
 2) Green or red text indicates a difference of 0.08 or greater as compared to all survey participants.

Figure 29. Transit Elements – Hillsborough County Respondents

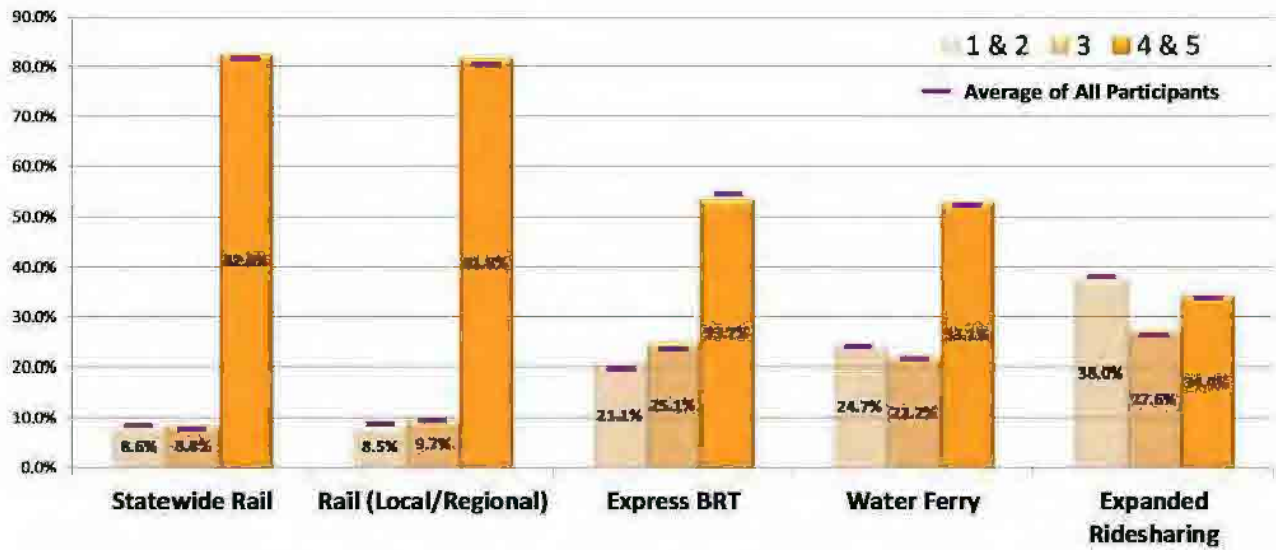


Figure 30. Transit Elements – Pinellas County Respondents

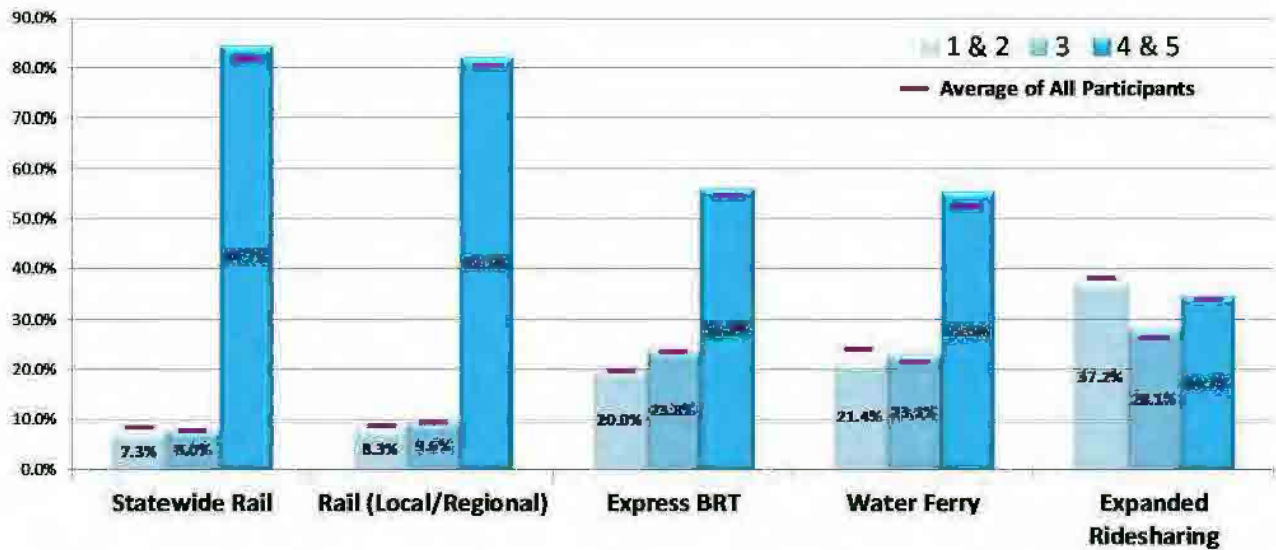
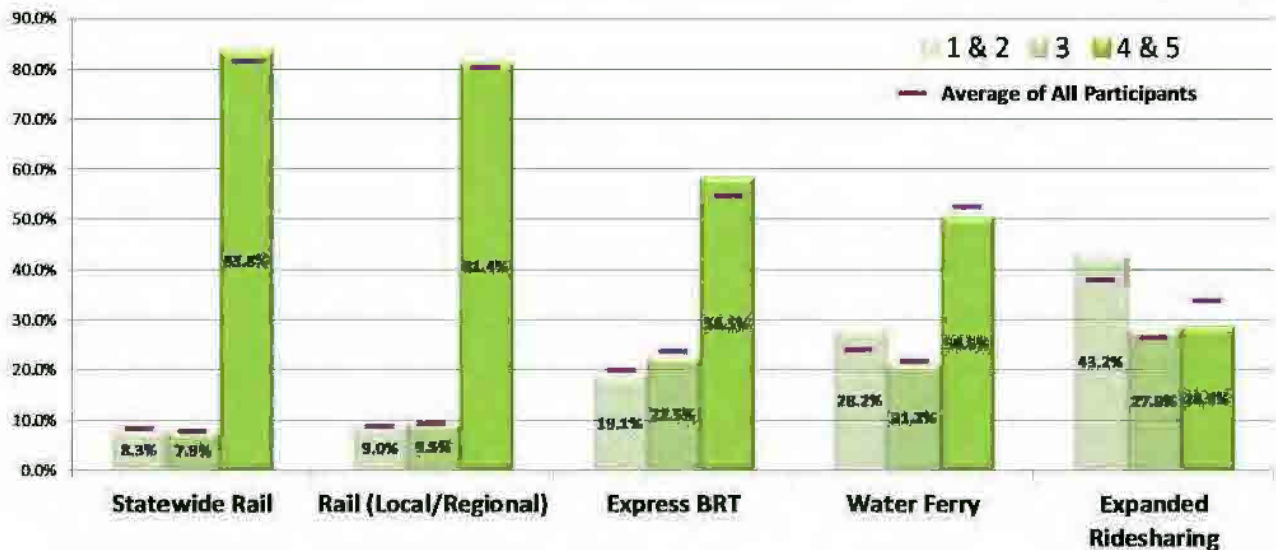


Figure 31. Transit Elements – Pasco County Respondents



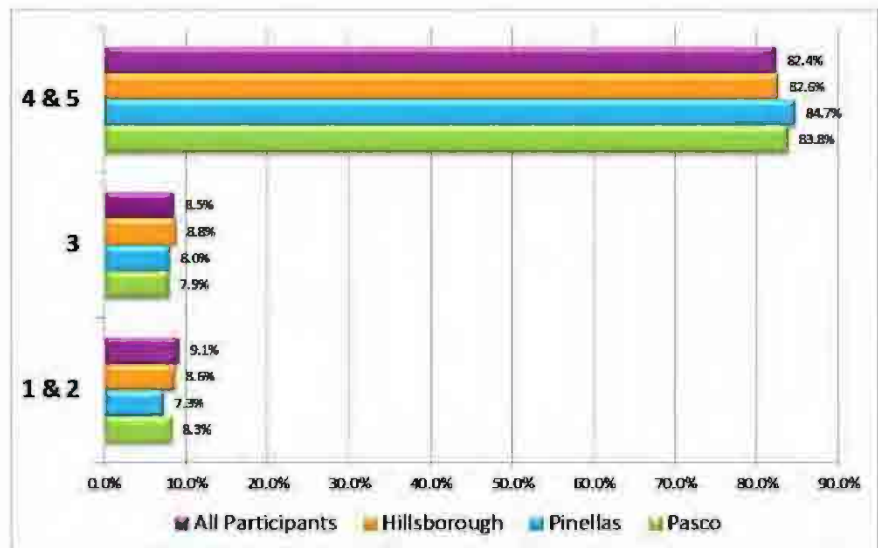
Statewide Rail

A statewide rail system would provide a commuter passenger rail service connecting the Tampa Bay region to Orlando and other regions throughout Florida. This concept would provide Tampa Bay residents and out of state visitors an alternative to having to drive the I-4 corridor. Figure 32 summarizes survey respondents’ reaction to a statewide rail connection to Tampa Bay.



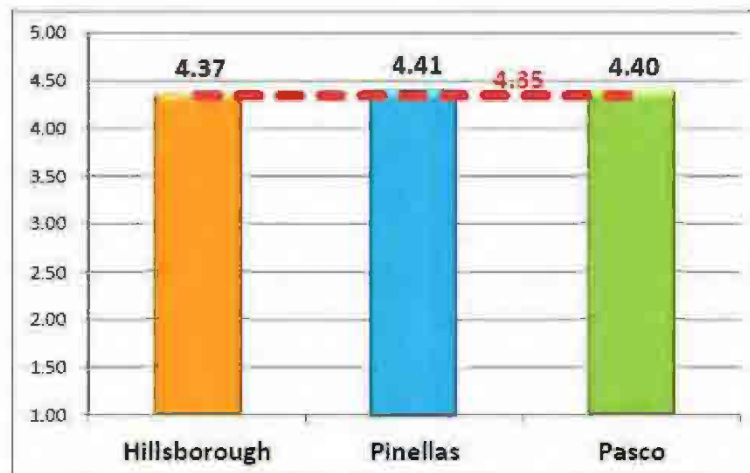
Statewide Rail  
Connect the Tampa Bay  
region to Orlando and  
other regions around  
Florida.

Figure 32. Statewide Rail (Ratings)



As noted above, survey participants responded positively to this type of improvement. In total, among the 6,614 participants who rated this element, approximately 82% rated it four or five stars. All three counties had an equal favorability rating (83%-85%). Figure 33 shows the overall average rating for all survey respondents was 4.35. As the overall average falls below the three county averages, this would indicate that survey respondents who did not provide a home zip coded rated this element slightly lower compared to those who provided their home zip code.

Figure 33. Statewide Rail (Average Ratings by County)



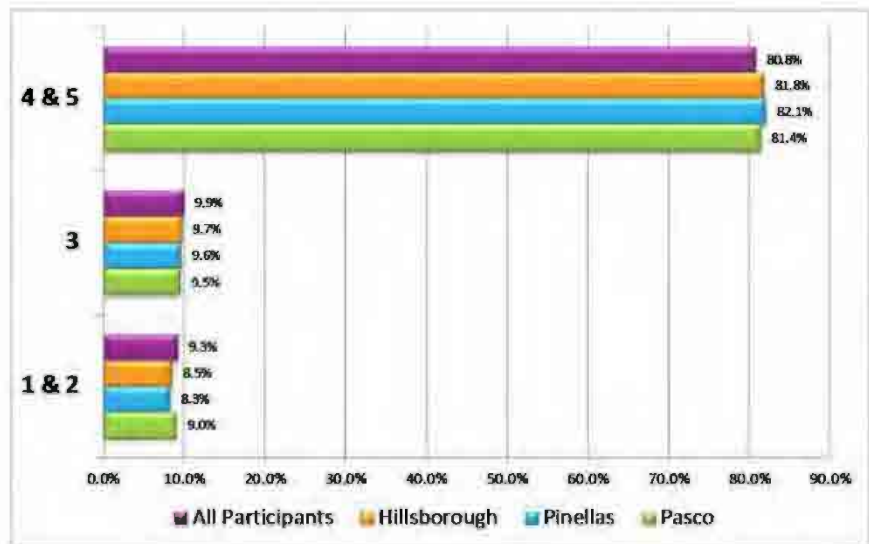
### Rail Service

This concept would utilize mostly existing rail lines, along with some new rail connections along major travel corridors, to provide regional/local rail transit service. In scenario C, the rail service would connect the three counties and would continue north to connect to Hernando County. Figure 34 summarizes survey respondents’ reaction to implementing a rail service within the Tampa Bay tri-county area.



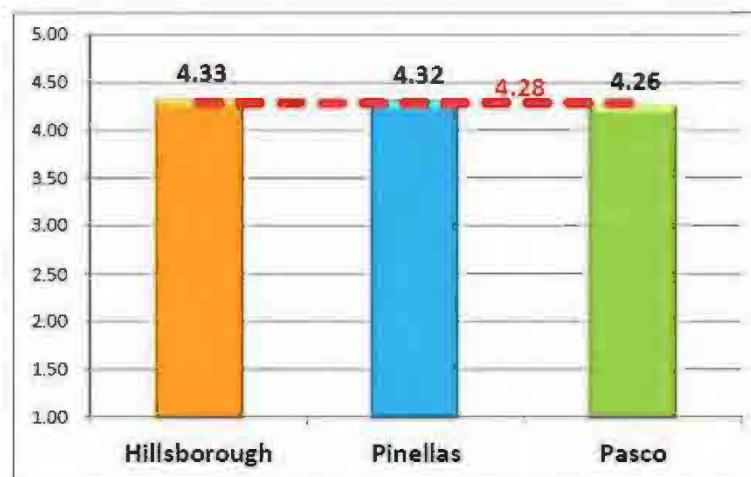
**Rail Service**  
Use mostly existing rail lines, and some new rail connections along major roads, to provide regional rail service.

Figure 34. Regional/Local Rail Service (Ratings)



Nearly 81% of survey participants favor this improvement and rated it high (4 or 5 stars). By comparison, only 9% of all survey participants rated this concept low (1 or 2 stars). In total, 6,666 participants rated this element. All three counties had an equal favorability rating (between 81% and 82%). Figure 35 displays the average rating of 4.28, with Hillsborough and Pinellas Counties only slightly higher.

Figure 35. Regional/Local Rail Service (Average Ratings by County)





Express Bus & BRT Service

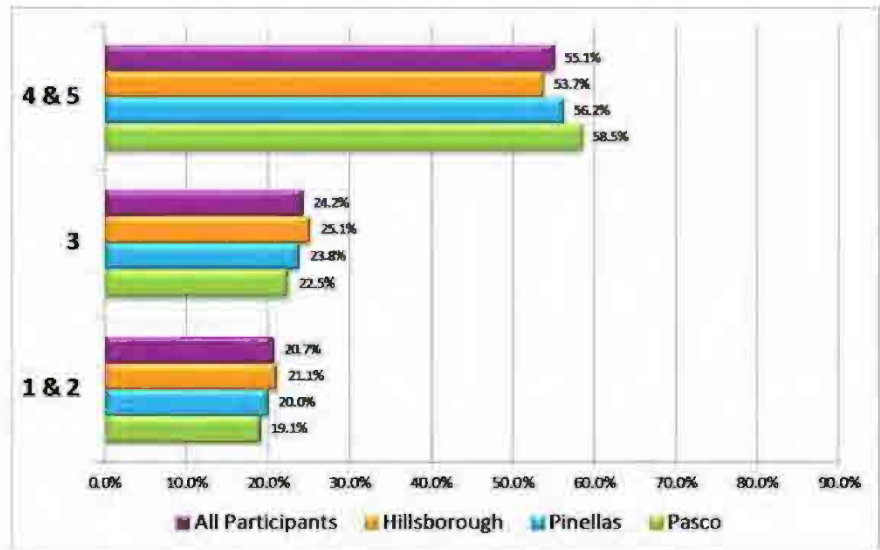
This concept builds off the exaggerated Scenario C which included additional BRT projects throughout the tri-county area, including a BRT route along Central Avenue in Pinellas County. Figure 36 displays survey respondents’ ratings for this element.



Express Bus & BRT Service

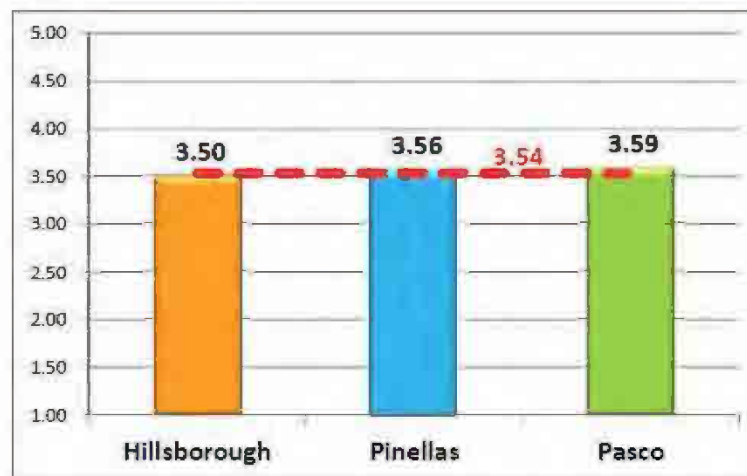
Make express bus service more frequent and run some buses in their own lanes (Bus Rapid Transit).

Figure 36. Express Bus and Bus Rapid Transit (Ratings)



The survey participants responded positively to this improvement. Fifty-five percent of the total 6,626 participants gave this element a rating of four or five stars. All three counties had a nearly equal favorability rating (54% to 59%), with Pasco County slightly more favorable than Hillsborough and Pinellas Counties. Figure 37 shows the average rating was 3.54, which was fairly consistent across all three counties.

Figure 37. Express Bus and Bus Rapid Transit (Average Ratings by County)



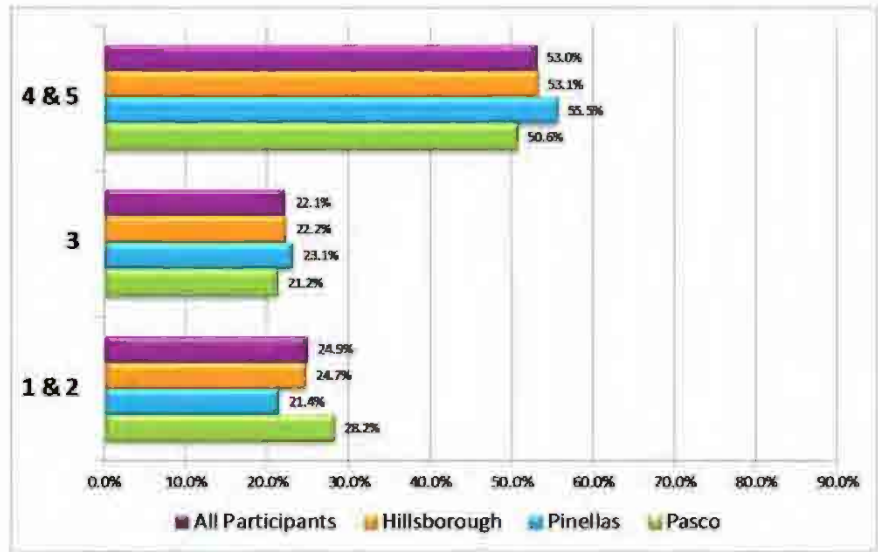
### Water Ferry

This concept builds off a 2016/2017 trial run of a downtown St. Petersburg to downtown Tampa water ferry service. This service, which returns in November 2018, would be expanded to connect to MacDill Air Force base and South Hillsborough. Figure 37 shows the participant ratings for this element.



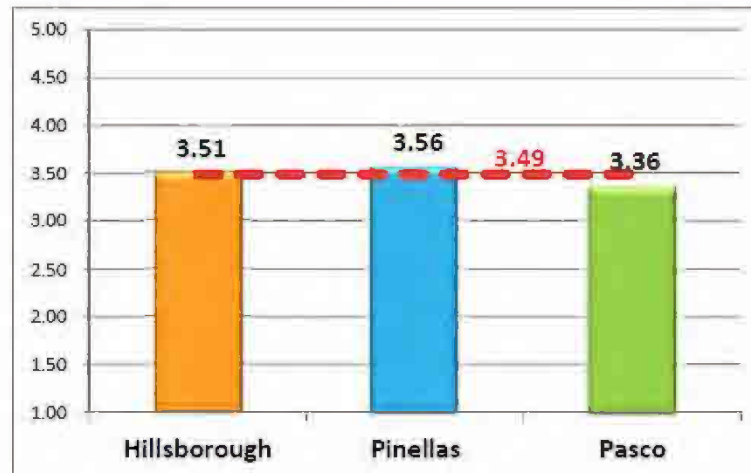
**Water Ferry**  
Connect the downtowns of Tampa and St. Petersburg, and MacDill AFB and South Hillsborough.

Figure 38. Water Ferry (Ratings)



The survey participants responded positively to this type of improvement. In total, 6,575 participants rated this element, with approximately 53% rating it four or five stars. Pinellas County responded most favorably (56%, average score 3.56) and Pasco County responded somewhat less favorably (51%, average score 3.36). Figure 38 shows the average rating was 3.49.

Figure 39. Water Ferry (Average Ratings by County)



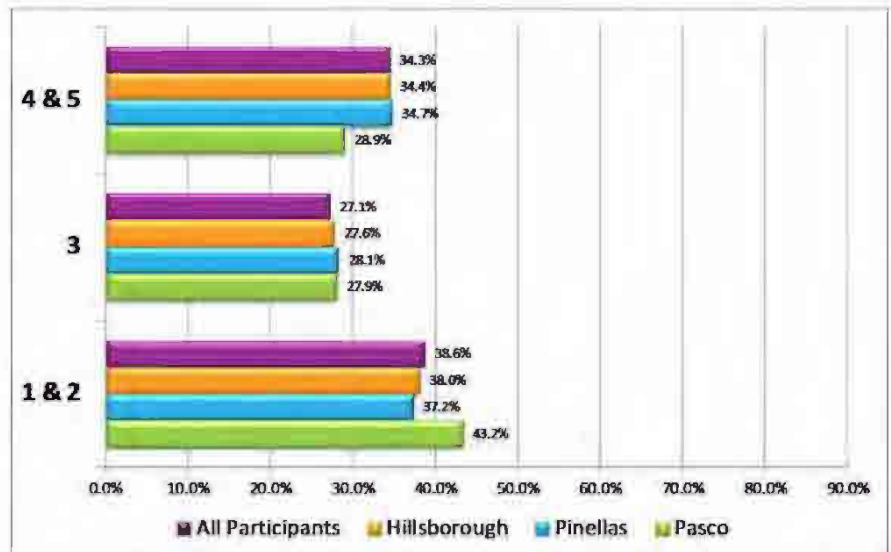
### Expanded Ridesharing

Over the past decade, ridesharing has emerged as important travel mode in urban environments—drawing both praise and criticism. Depending on the context and local policies, it can enable people to avoid single-occupancy vehicle travel for some trips, such as making first- and last-mile connections to transit; however, it can also add to urban congestion and attract riders away from transit. This element focuses on using ridesharing to provide alternatives that would boost access to transit and decrease the need for car ownership. Figure 40 displays the ratings for this element.



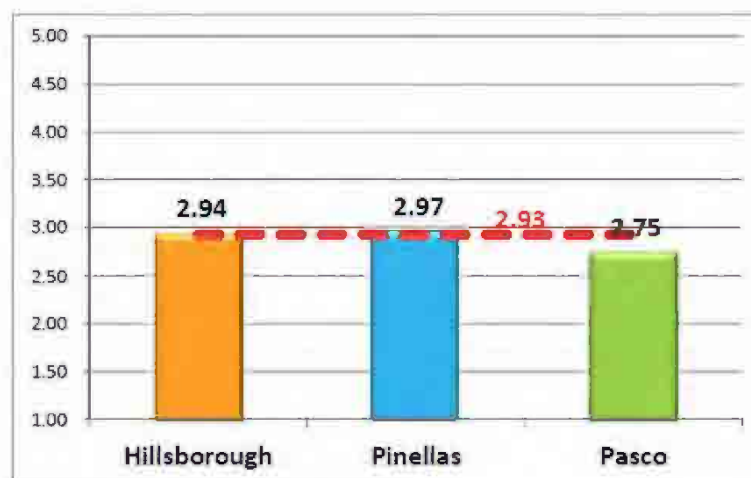
Expanded Ridesharing  
Encourage more  
rideshare options (e.g.  
Uber/Lyft) to travel  
without having to own a  
car while improving  
connections to transit.

Figure 40. Expanded Ridesharing (Ratings)



The survey participants responded somewhat negatively to this type of improvement. In total, 7,350 participants rated this element, of whom fewer rated it favorably (34%) than negatively (39%). Pasco County responded most negatively to expanded ridesharing (43%) and Pinellas County responded least negatively to this (37%). Figure 40 shows the average rating was 2.93, with Pasco County reporting a slightly lower average at 2.75.

Figure 41. Expanded Ridesharing (Average Ratings by County)



## Community Elements

Overall, survey participants rated most community elements very favorably. Preserving Neighborhoods, Walk & Bike Focus, and More/Better Downtowns all received over 72% high approval (4 or 5 stars). The exception is the Expanded Growth Area, which received only 22% high approval. Figure 42 provides a summary of the community elements.

Figure 42. Community Elements (Ratings 1 to 5 Stars)

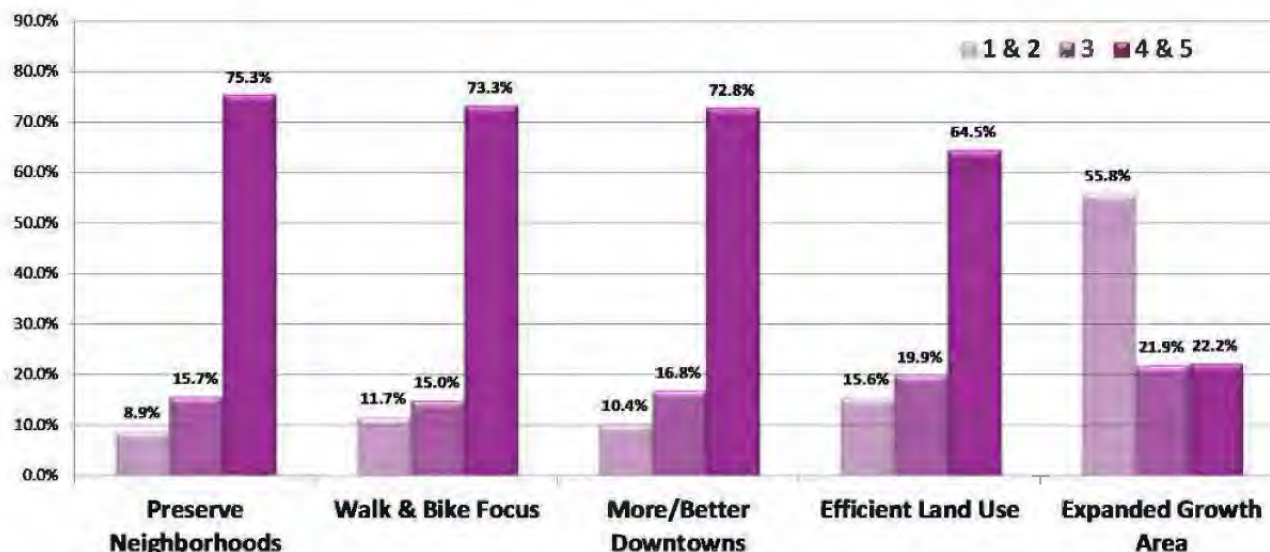


Table 5 provides the average ratings for the five community elements, including the variance of individual counties from the total average. The highest rated were Preserve Neighborhoods, followed closely by Walk & Bike Focus and More/Better Downtowns—all around 4.10. The Expanded Growth Area was the only element to receive an average rating below 3 (2.40 rating), even in the county where it garnered the most support, Pasco County (2.71). Each of the community elements is discussed in more detail in the following section. Figures 43 to 45 display the responses by county.

Table 5. Community Elements (Average Ratings)

	Preserve Neighborhoods	Walk & Bike Focus	More/Better Downtowns	Efficient Land Use	Expanded Growth Area
<b>All Participants:</b>	<b>4.13</b>	<b>4.11</b>	<b>4.07</b>	<b>3.82</b>	<b>2.40</b>
<b>Hillsborough:</b>	4.13 —	4.13 + 0.02	4.11 + 0.04	3.89 + 0.07	2.39 - 0.01
<b>Pinellas:</b>	4.22 + 0.09	4.20 + 0.09	4.08 + 0.01	3.72 - 0.10	2.26 - 0.14
<b>Pasco:</b>	4.08 - 0.05	3.93 - 0.18	3.97 - 0.10	3.76 - 0.06	2.71 + 0.31

NOTES: 1) Average rating is calculated by summing the 1 to 5 star rating for each element and dividing by number of participants for each category.  
2) Green or red text indicates a difference of 0.08 or greater as compared to all survey participants.

Figure 43. Community Elements – Hillsborough County Respondents

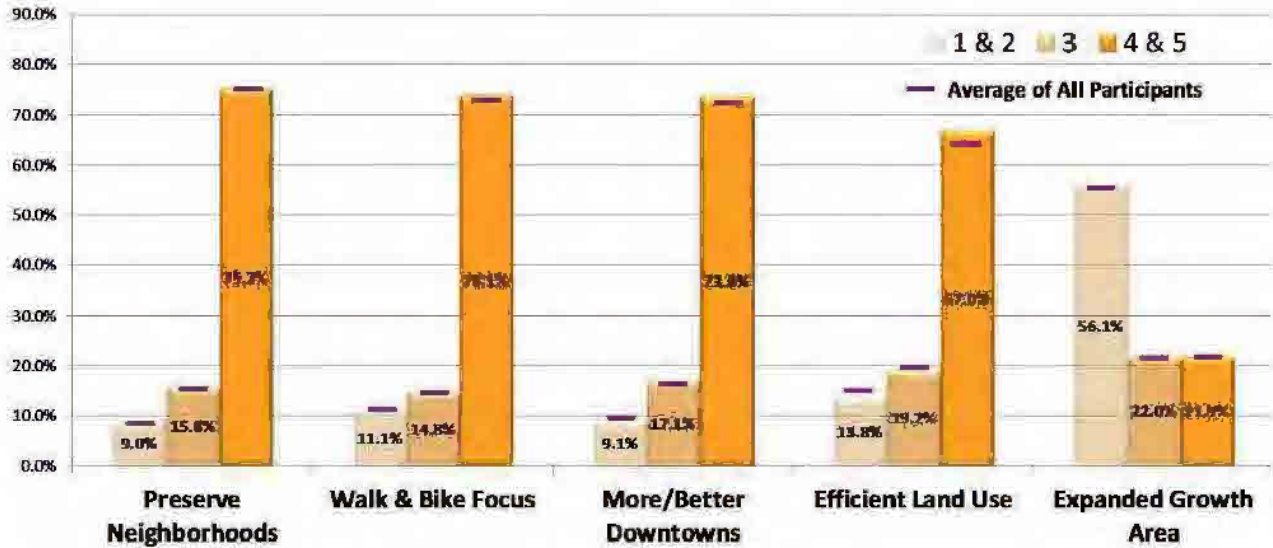


Figure 44. Community Elements – Pinellas County Respondents

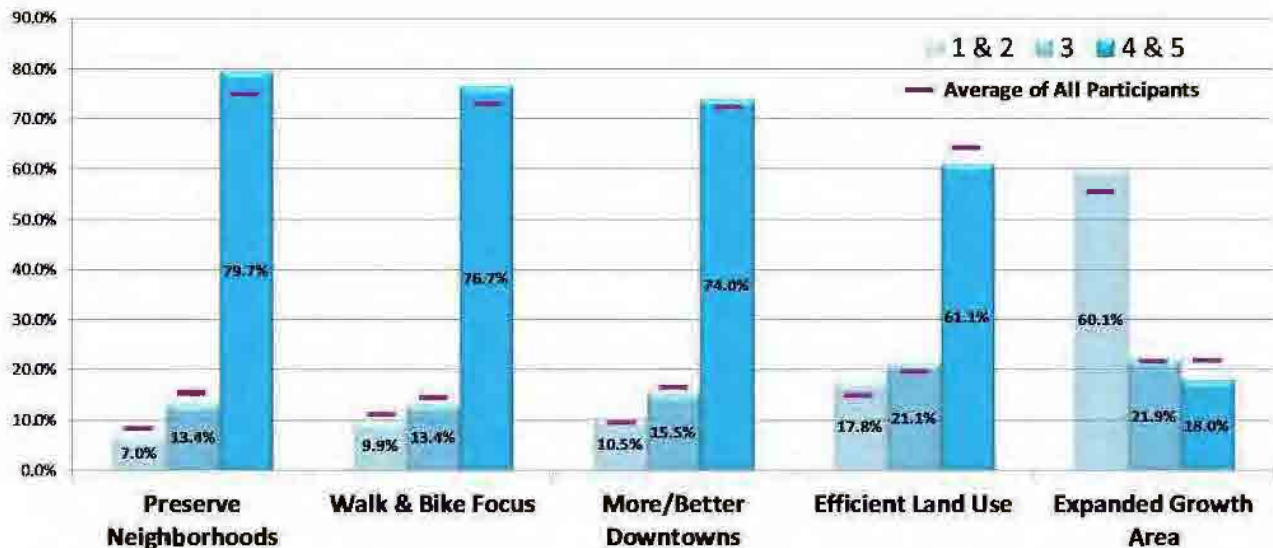
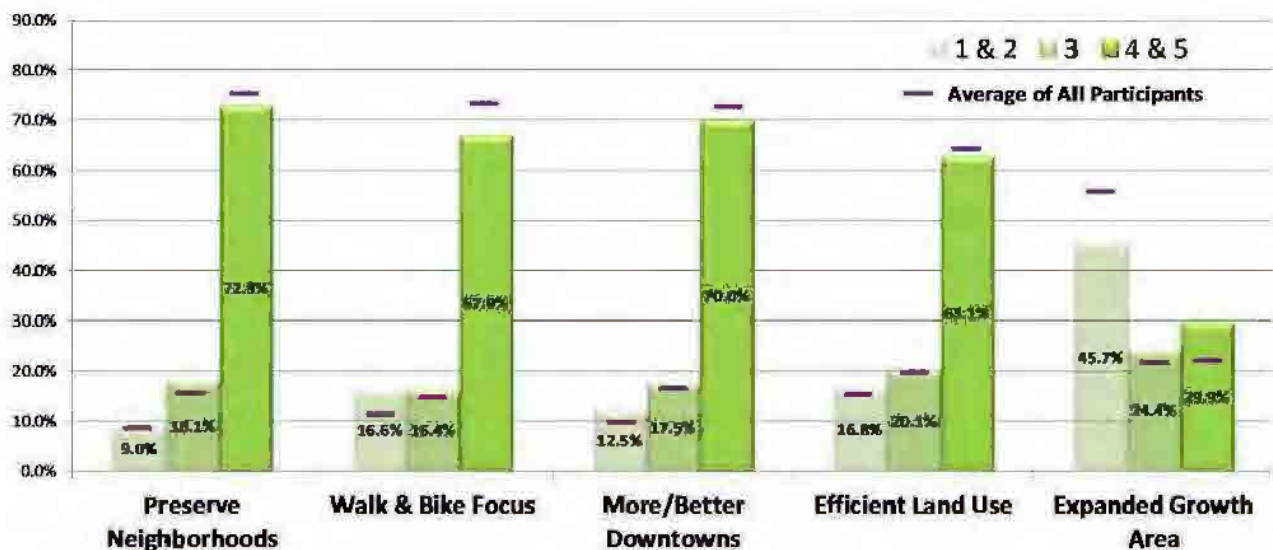


Figure 45. Community Elements – Pasco County Respondents



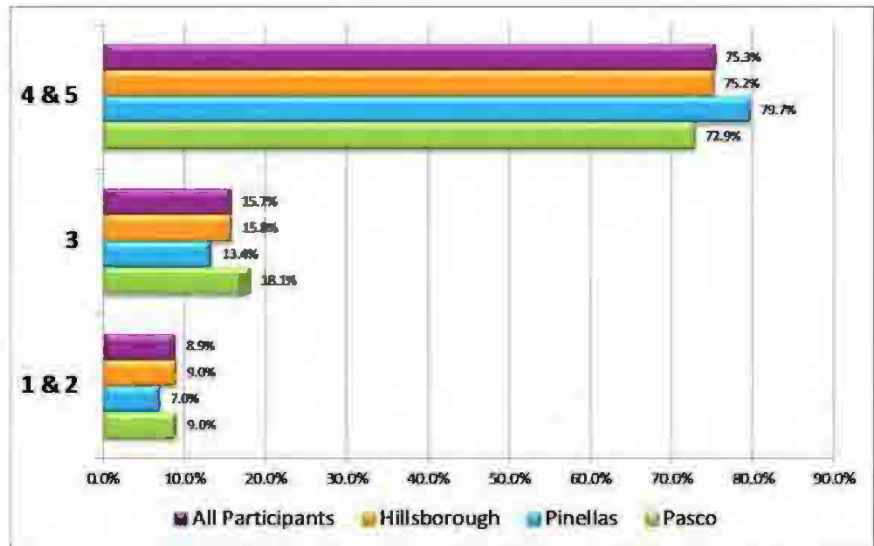
### Preserve Neighborhoods

As our communities grow older and more established, time can take its toll on the buildings, landscape, and infrastructure that make them unique and full of character. This element would dedicate investment to ensuring that neighborhoods that are older and may be in decline receive targeted attention to improve conditions, hopefully serving as a catalyst to encourage further reinvestment by residents and businesses. Figure 46 displays the ratings for this element, overall and by county.



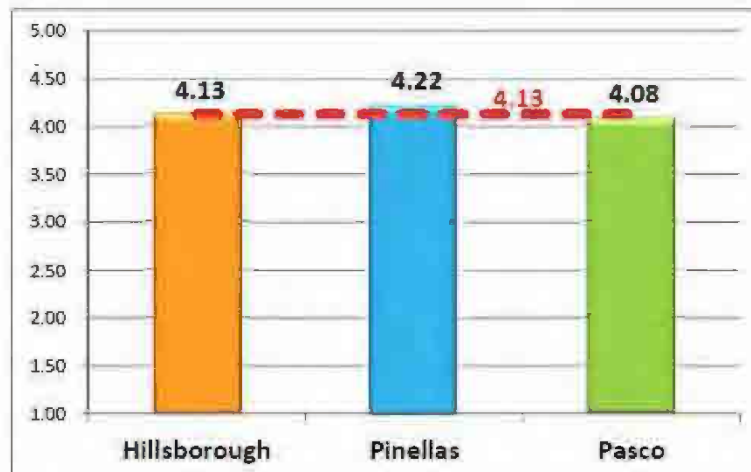
Preserve Neighborhoods  
Revitalize older neighborhoods in cities and suburbs, and promote reinvestment.

Figure 46. Preserve Neighborhoods (Ratings)



The survey participants responded positively to this type of improvement. In total, 6,571 participants rated this element, and approximately 75% rated it four or five stars. Pasco County responded slightly less positively (73% rating 4 or 5 stars), as might be expected given the County is experiencing primarily new development, and Pinellas County responded most favorably (80% rating 4 or 5 stars). Figure 47 shows the average rating was 4.13, with relatively little difference by county.

Figure 47. Preserve Neighborhoods (Average Ratings by County)



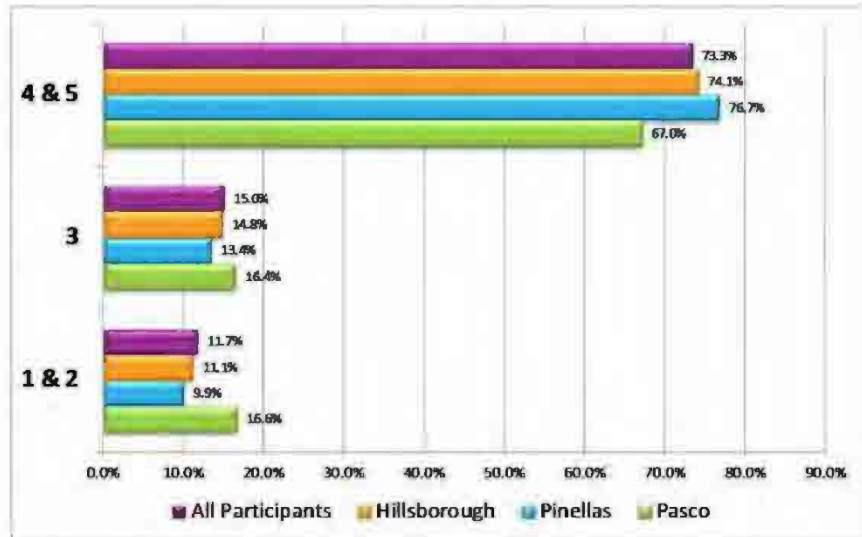
Walk & Bike Focus

This element would focus resources on pedestrian and cycling infrastructure to both destination-oriented and recreational trips. Improved connectivity of pedestrian infrastructure (like sidewalks) and bike network can improve first- and last-mile connections to transit and enable more non-motorized trips to work, schools, and shops. In the area of recreational travel, protected or off-street paths provide greater comfort and a more safe and pleasant environment for people of all abilities. Figure 48 shows the ratings for the element across all participants and by county.



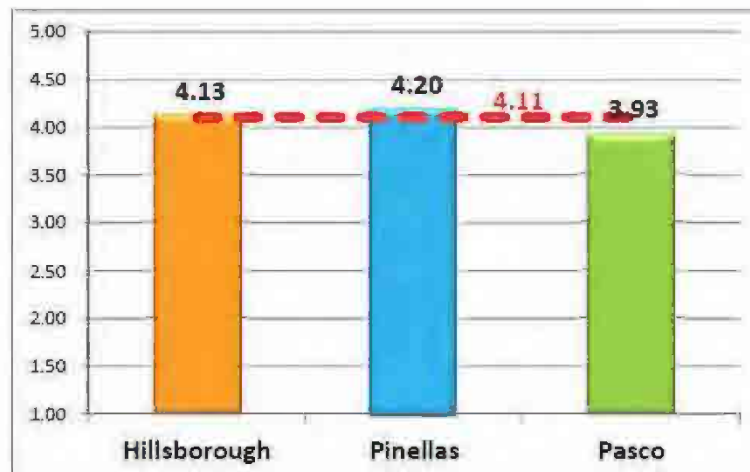
Walk & Bike  
Sidewalks and bike lanes provide more connections to transit and neighborhoods.

Figure 48. Walk & Bike Focus (Ratings)



The survey participants responded positively to this type of improvement. In total, 6,491 participants rated this element, with approximately 73% giving it four or five stars. Pasco County responded slightly less positively (67% rating 4 or 5 stars) and Pinellas County responded most favorably (77% rating 4 or 5 stars), consistent with a higher priority focus on identifying alternatives to driving. Figure 49 shows the average rating was 4.11, with Pinellas reporting in at 4.20.

Figure 49. Walk & Bike Focus (Average Ratings by County)



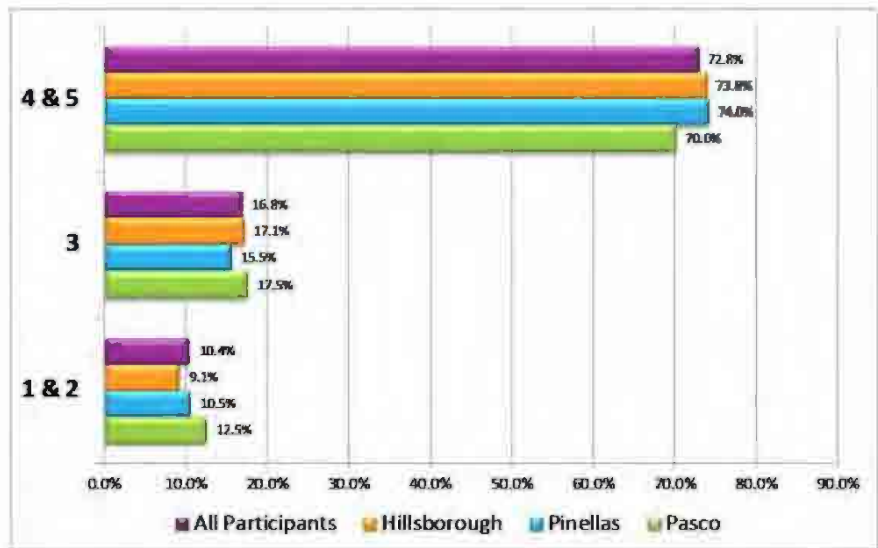
More/Better Downtowns

This element emphasizes the importance of creating more or better downtowns by directing resources and tailoring land use policies to encourage such commercial districts. These downtowns would typically have a mix of shops, offices, and housing options located in mid- and high-rise buildings near transit stations to revitalize the area with larger day-time and night-time populations. Figure 50 shows the ratings for this element.



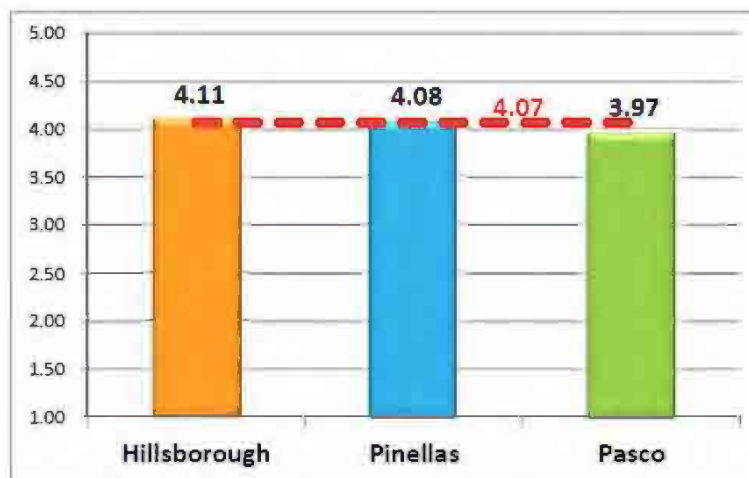
**More/Better Downtowns**  
Revitalize commercial districts with a mix of mid-rise and high-rise office and housing options near transit stations.

Figure 50. More/Better Downtowns (Ratings)



The survey participants responded positively to this type of improvement. In total, 6,499 participants rated this element, with 73% giving it four or five stars. Pasco County responded slightly less positively (70% rating 4 or 5 stars) and Pinellas County responded most favorably (74% rating 4 or 5 stars). Figure 51 shows the average rating was 4.07, with relatively little difference between counties

Figure 51. More/Better Downtowns (Average Ratings by County)





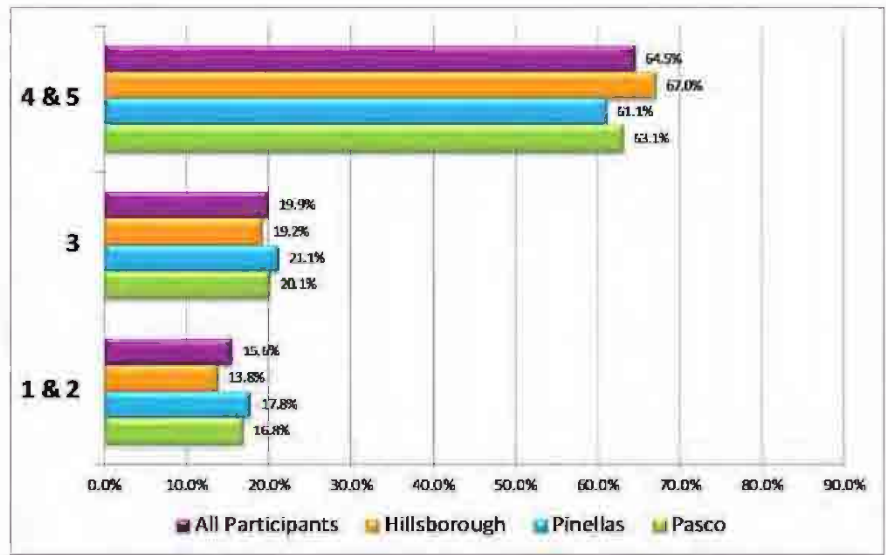
Efficient Use of Land

Efficient use of land is an element that would enable or encourage higher density of new construction in areas where it is currently prohibited or poorly incentivized. By doing so, expansion into currently undeveloped areas will slow and there will be less need to support long auto commutes or to distribute public services to developments far from existing communities. Figure 52 shows the ratings that this element received in the survey.



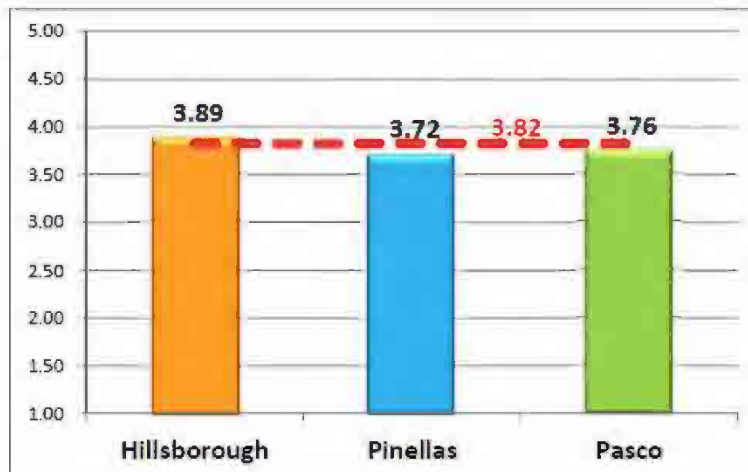
Efficient Use of Land  
New construction is higher density – such as, more Main Streets and townhomes – allowing more gradual planned expansion into rural lands.

Figure 52. Efficient Use of Land (Ratings)



The survey participants responded positively to this type of improvement. In total, 6,456 participants rated this element, with 65% giving it four or five stars. Pinellas County responded slightly less positively (61% rating 4 or 5 stars) and Hillsborough County responded most favorably to this (67% rating 4 or 5 stars). Figure 53 shows the average rating was 3.82, with little difference observed between Counties.

Figure 53. Efficient Use of Land (Average Ratings by County)



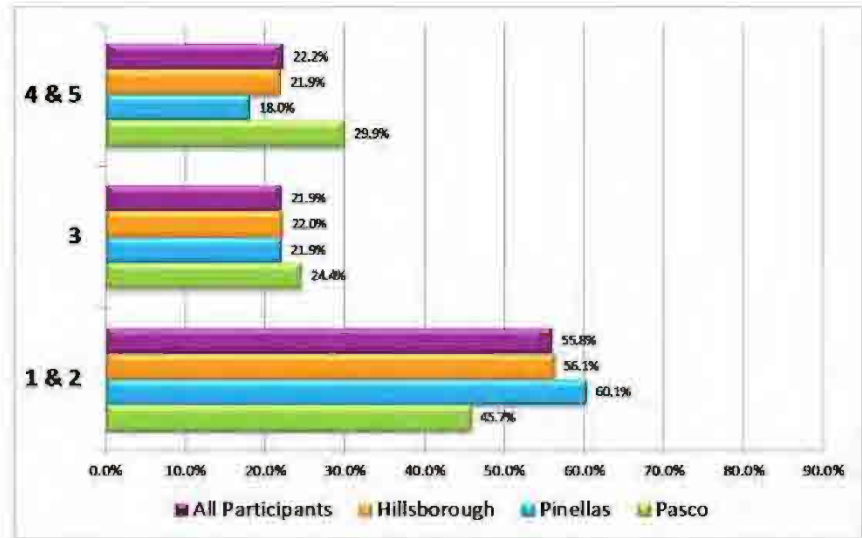
### Expanded Growth Area

In contrast to the previous element, Expanded Growth Area would support continued outward expansion, with new development occurring in currently rural areas. This low-density approach to development has been the traditional mode of expansion for much of the second half of the 20<sup>th</sup> century, corresponding with a boom in road construction and public desire for large-lot single-family homes. Expanded growth also generally increases the cost of providing public services. Figure 54 shows the support that this element received from survey participants.



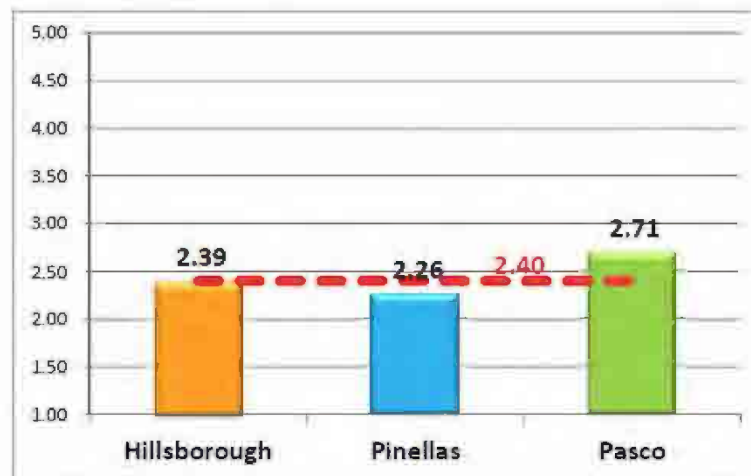
Expanded Growth Area Development expands outward, including growing into rural areas.

Figure 54. Expanded Growth Area (Ratings)



The survey participants responded negatively to this type of improvement. In total, 7,154 participants rated this element, with approximately 56% giving it 1 or 2 stars. Pinellas County responded most negatively to this (61% rating 1 or 2 stars) and Pasco County responded less negatively to this (46% rating 1 or 2 stars). The average rating was 2.40, as shown in Figure 55.

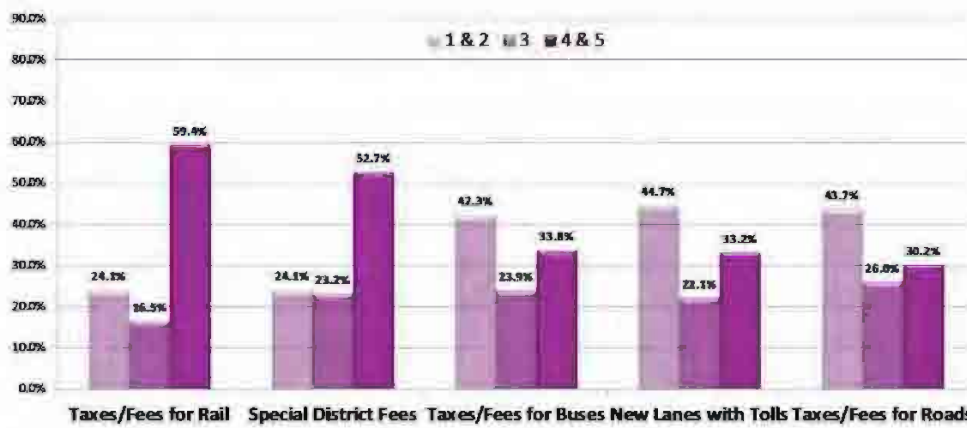
Figure 55. Expanded Growth Area (Average Ratings by County)



## Funding Elements

Overall, survey participants have a generally positive view of Taxes/Fees for Rail and Special District Fees, and a somewhat negative opinion of Taxes/Fees for Buses, New Lanes with Tolls, and Taxes/Fees for Roads. Of the five funding elements, at least half of respondents gave a high rating (4 or 5 stars) to Taxes/Fees for Rail (59%) and Special District Fees (53%). Among the other elements, only about a third of survey respondents rated them highly; the most negative ratings went to New Lanes with Tolls (45%), followed by Taxes/Fees for Roads (44%) and Taxes/Fees for Buses (42%). Figure 56 summarizes the roadway element ratings for all survey participants, and Figures 57 to 59 provide the ratings summary by county.

Figure 56. Funding Elements (Ratings 1 to 5 Stars)



Taxes/Fees for Rail received the highest average rating within the funding element category at 3.61; Pasco County rated it slightly lower compared at 3.49, while Pinellas County rated it a little higher (3.70). Overall, Pasco County respondents rated funding elements related to driving/roadways higher and transit and special district funding elements lower than the tri-county average. The funding elements tied for the lowest ratings were New Lanes with Tolls and Taxes/Fees for Roads (2.76). Table 6 summarizes the funding element average ratings based on a 1 to 5 star rating. Each of the elements is discussed in more detail in the following section.

Table 6. Funding Elements (Average Ratings)

	Taxes/Fees for Rail 	Special District Fees 	Taxes/Fees for Buses 	New Lanes with Tolls 	Taxes/Fees for Roads 
<b>All Participants:</b>	<b>3.61</b>	<b>3.47</b>	<b>2.84</b>	<b>2.76</b>	<b>2.76</b>
<b>Hillsborough:</b>	<b>3.67</b> + 0.06	<b>3.54</b> + 0.07	<b>2.87</b> + 0.03	<b>2.73</b> - 0.03	<b>2.79</b> + 0.03
<b>Pinellas:</b>	<b>3.70</b> + 0.09	<b>3.51</b> + 0.04	<b>2.90</b> + 0.06	<b>2.75</b> - 0.01	<b>2.75</b> - 0.01
<b>Pasco:</b>	<b>3.49</b> - 0.12	<b>3.37</b> - 0.10	<b>2.76</b> - 0.08	<b>2.95</b> + 0.19	<b>2.86</b> + 0.10

NOTES: 1) Average rating is calculated by summing the 1 to 5 star rating for each element and dividing by number of participants for each category.  
2) Green or red text indicates a difference of 0.08 or greater as compared to all survey participants.

Figure 57. Funding Elements – Hillsborough County Respondents

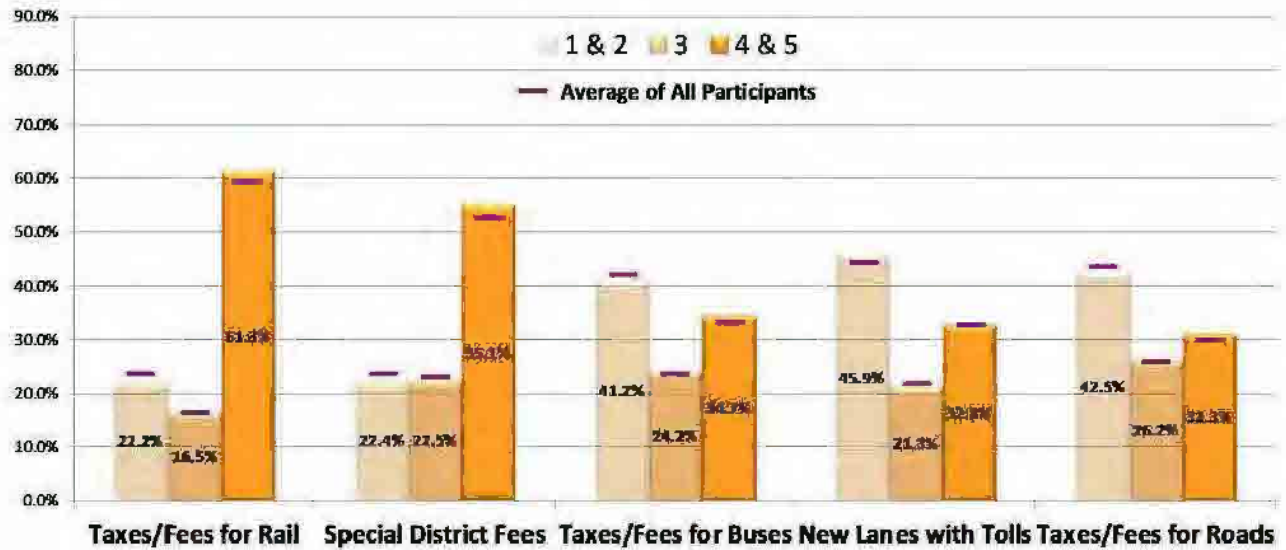


Figure 58. Funding Elements – Pinellas County Respondents

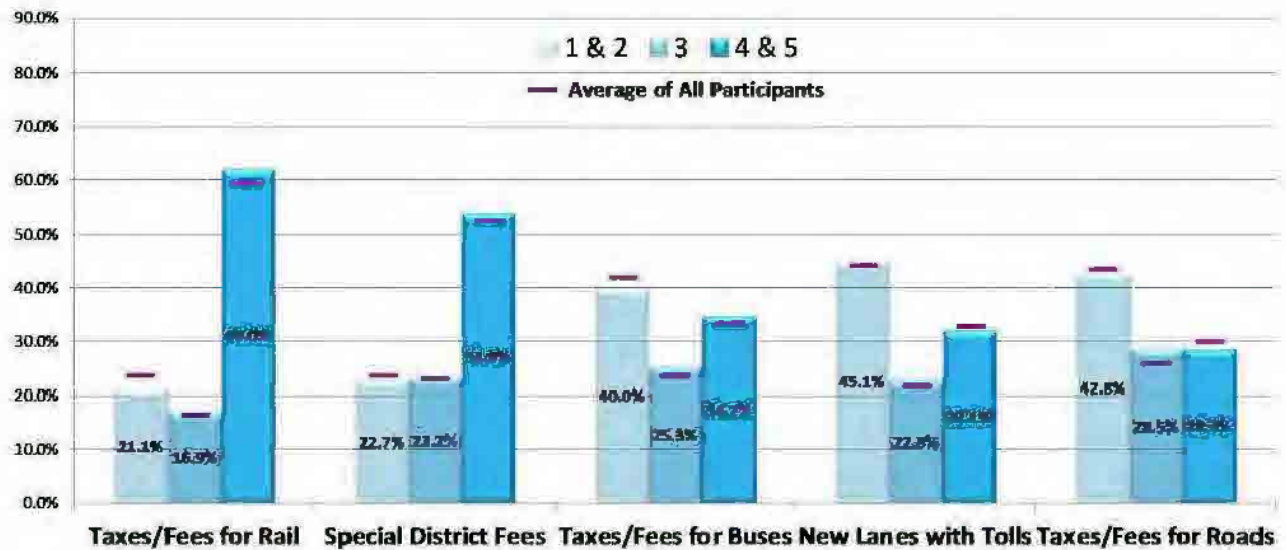
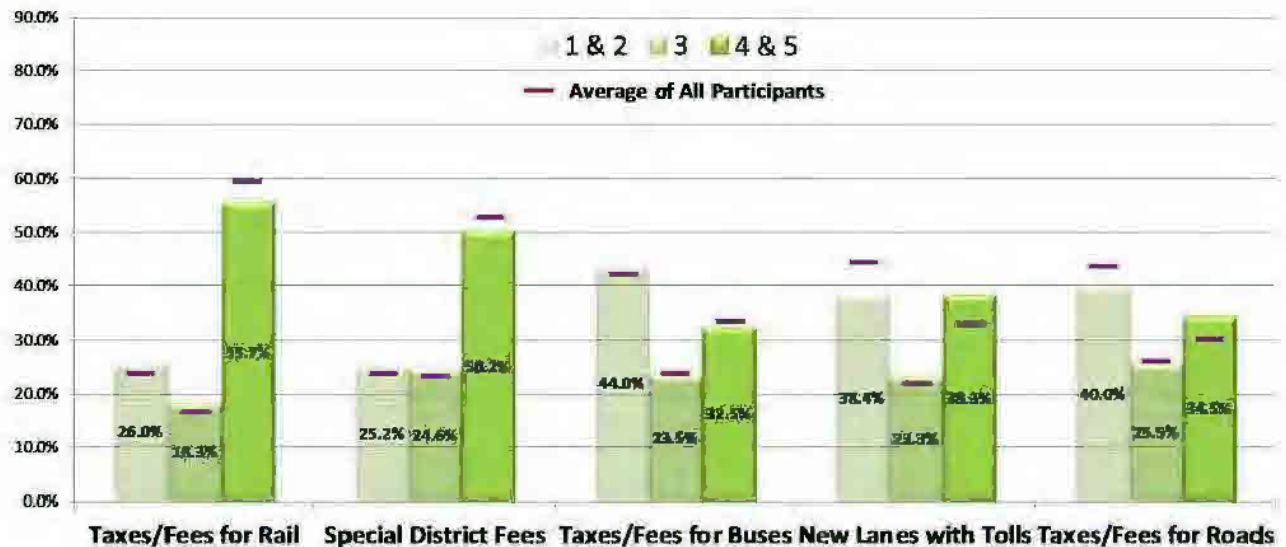


Figure 59. Funding Elements – Pasco County Respondents



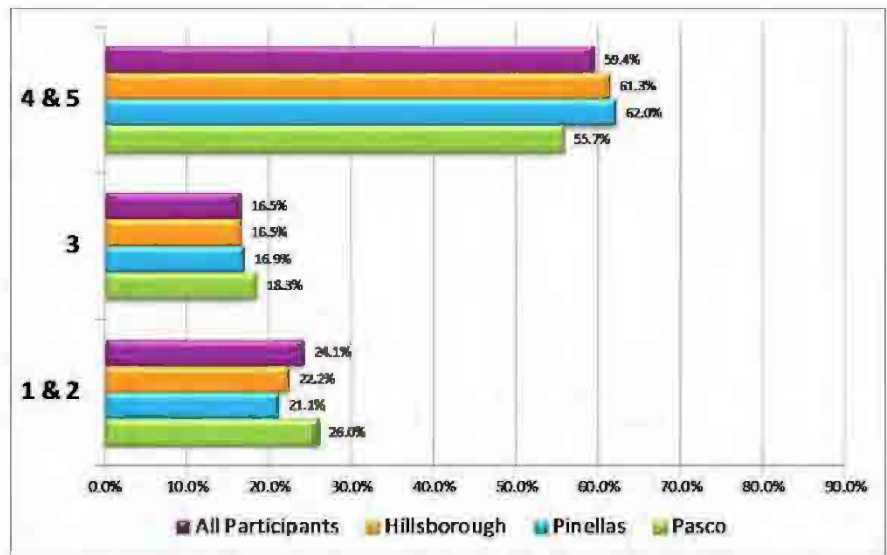
Taxes/Fees to Fund Rail

The Taxes/Fees to Fund Rail element would seek to raise local taxes and/or fees to build a regional rail system. At this juncture no specific fiscal mechanism is identified (e.g., retail sales tax, property tax increment, development impact fees), so support of this funding element can be interpreted as support for rail infrastructure improvements and willingness to raise new funding to this end (rather than relying on existing funds or revenue streams). Figure 60 shows ratings that this funding element received in the survey.



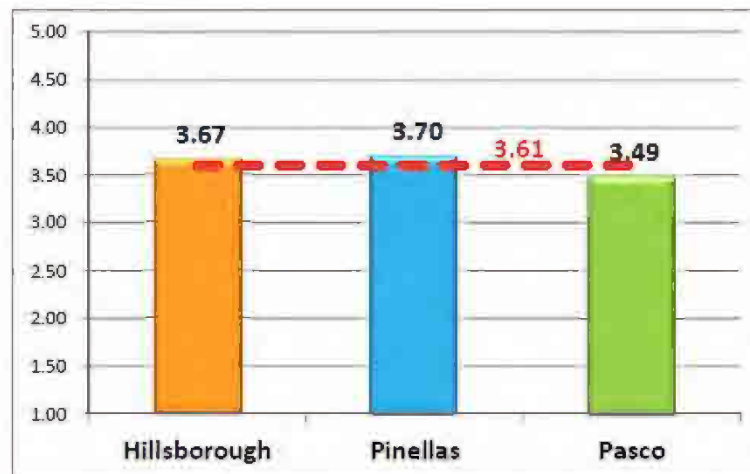
Taxes/Fees to Fund Rail  
Raise local taxes and/or  
fees to build a regional  
rail system.

Figure 60. Taxes/Fees to Fund Rail (Ratings)



The majority of survey respondents responded positively to this funding strategy. In total, of the 6,518 participants who rated this element, 59% rated it 4 or 5 stars. Pinellas County responded most positively (62% rating 4 or 5 stars) and Pasco County responded least positively (56% rating 4 or 5 stars). Figure 61 shows the average rating was 3.61, with Pasco County having a slight less favorable view of this element at 3.49.

Figure 61. Taxes/Fees to Fund Rail (Average Ratings by County)



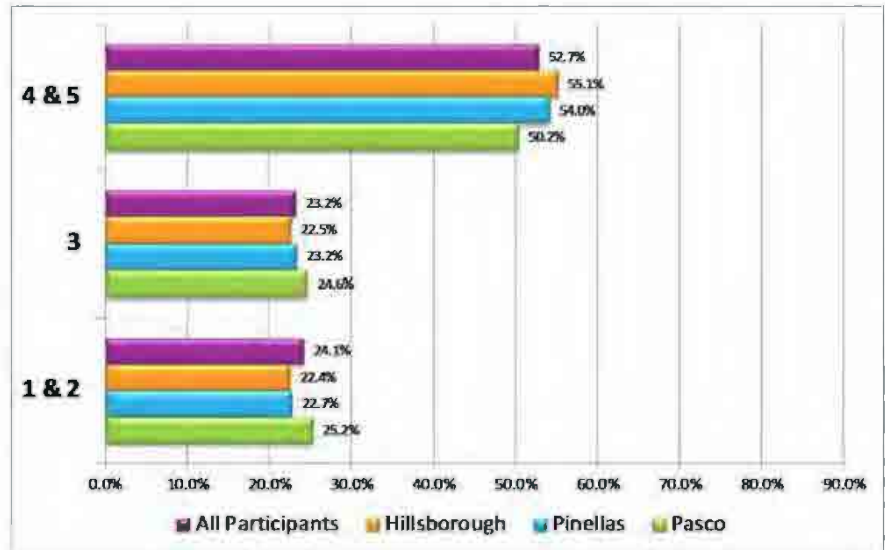
### Special District Fees

The Special District Fees element would implement local fees or taxes to fund community improvements in designated areas. At this juncture no specific fiscal mechanism is identified (e.g., tax increment financing, benefit assessment district, development impact fees), so support of this funding element can be interpreted as support for revitalizing priority communities (perhaps due to a history of disinvestment or catalytic importance) and willingness to raise new funding to this end. Figure 62 shows ratings that this funding element received in the survey.



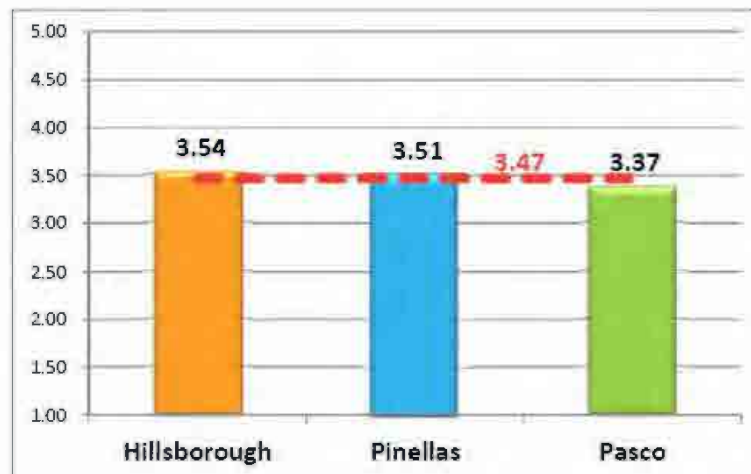
Special District Fees  
Developers and/or local  
property owners pay  
fees/taxes for community  
improvements in  
designated areas.

Figure 62. Special District Fees (Ratings)



The survey participants responded positively to this to this funding strategy. In total, 6,451 participants rated this element, with 53% rating it 4 or 5 stars. Hillsborough County responded most favorably (55% rating 4 or 5 stars) and Pasco County responded slightly less positively (50% rating 4 or 5 stars). Figure 63 shows the average rating was 3.47, with little variation between counties.

Figure 63. Special District Fees (Average Ratings by County)



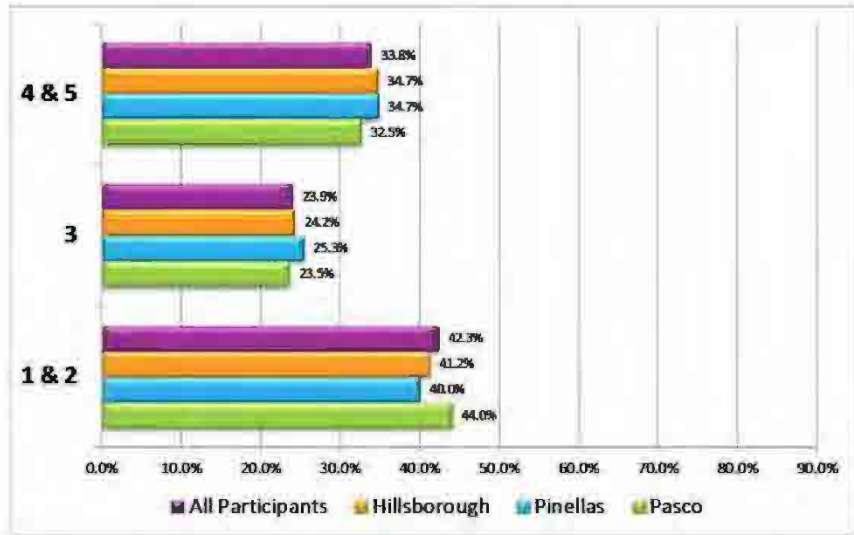
Taxes/Fees to Fund Buses

The Taxes/Fees to Fund Buses element would seek to raise local taxes and/or fees to improve regional and local bus service. At this juncture no specific fiscal mechanism is identified (e.g., retail sales tax, property tax increment, development impact fees), so support of this funding element can be interpreted as support for bus service improvements and willingness to raise new funding to this end (rather than relying on existing funds or revenue streams). Figure 64 shows the ratings that this funding element received in the survey.



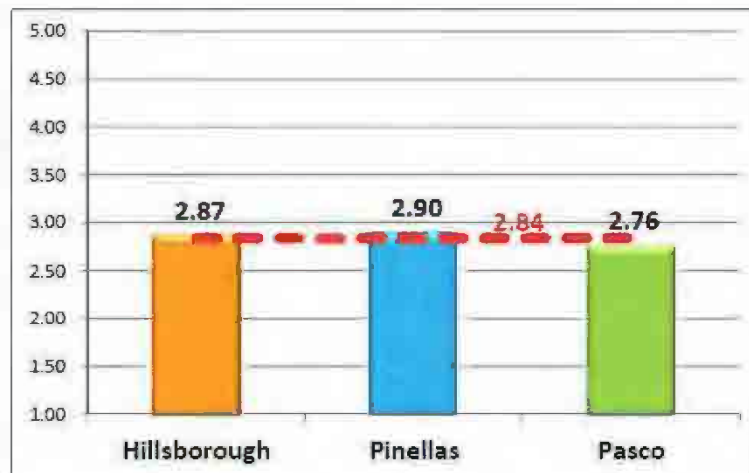
Taxes/Fees to Fund Buses  
 Raise local taxes and/or fees to improve local and regional bus service.

Figure 64. Taxes/Fees to Fund Buses (Ratings)



The survey participants responded slightly negatively to this to this funding strategy. In total, 6,471 participants rated this element, with approximately 42% rating it 1 or 2 stars. Pasco County responded most negatively to this (44% rating 1 or 2 stars) and Hillsborough County responded least negatively (41% rating 1 or 2 stars). Figure 65 shows the average rating was 2.84, with little variation between counties.

Figure 65. Taxes/Fees to Fund Buses (Average Ratings by County)



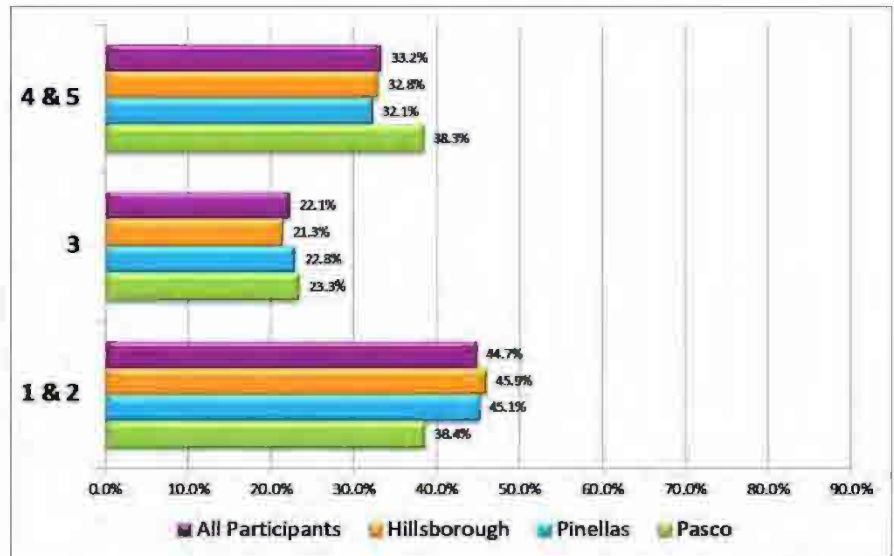
New Lanes with Tolls

New Lanes with Tolls would build new express lanes with variable tolls to manage traffic flow. While there has been discussion of new lanes with tolls on some area roadways, the overall concept for this funding element can be interpreted as support for expanded roadway capacity funded at least in part by toll revenues. Variable (or dynamically priced) tolls allow for more control over roadway demand, and thus can result in more reliable express lane travel times and higher toll revenues to fund these improvements. Figure 66 shows the ratings that this funding element received in the survey.



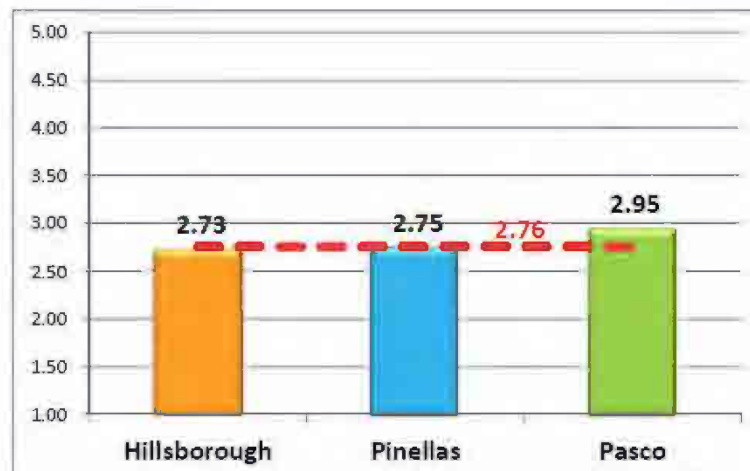
New Lanes with Tolls  
Build new express lanes  
with variable tolls to  
manage traffic flow.

Figure 66. New Lanes with Tolls (Ratings)



The survey participants responded negatively to this to this funding strategy. In total, 7,134 participants rated this element, with approximately 45% rating it 1 or 2 stars. Hillsborough County responded most negatively (46% rating 1 or 2 stars) and Pasco County was evenly divided on this issue (38% 4 or 5 stars and 38% 1 or 2 stars). Figure 67 shows the average rating was 2.76, with Pasco County coming in slightly higher in support of this element at 2.95.

Figure 67. New Lanes with Tolls (Average Ratings by County)





Taxes/Fees to Fund Roads

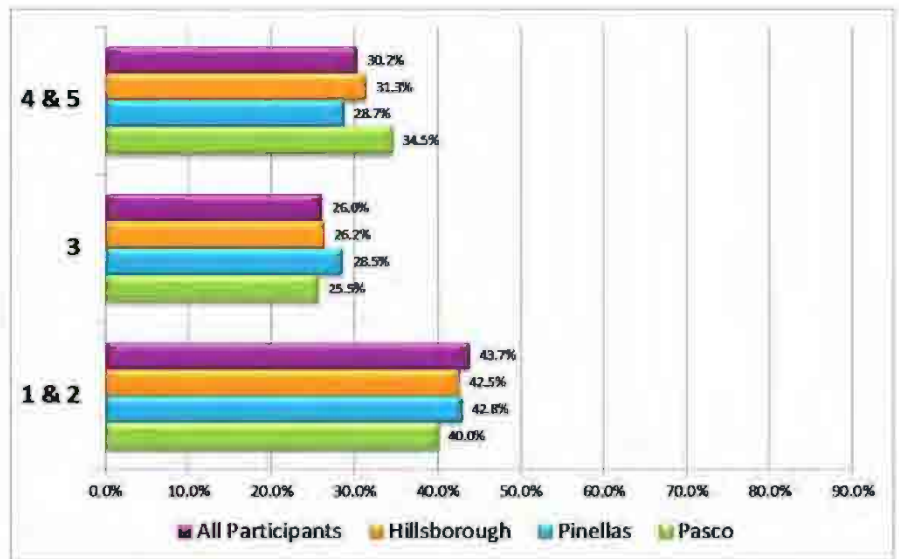
The Taxes/Fees to Fund Roads element would seek to raise local taxes and/or fees to build more roads. At this juncture, no specific fiscal mechanism is identified (e.g., retail sales tax, property tax increment, development impact fees), so support of this funding element can be interpreted as support for more roadway capacity and willingness to raise new funding to this end (rather than relying on existing funds or revenue streams). Figure 68 shows the ratings that this funding element received in the survey.



Taxes/Fees to Fund Roads

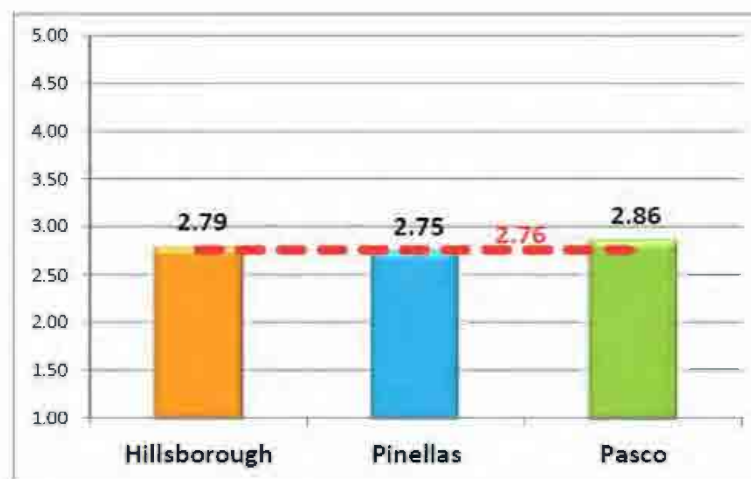
Raise local taxes and/or fees to build more roadway projects.

Figure 68. Taxes/Fees to Fund Roads (Ratings)



The largest share of survey respondents responded negatively to this funding strategy. In total, 6,517 participants rated this element, with approximately 44% rating it negatively. Pinellas County responded most negatively to this (43% 1 or 2 stars) and Pasco County responded least negatively (40% rating 1 or 2 stars). Figure 69 shows the average rating was 2.76, for all survey participants. Pasco County respondents had a slightly higher approval of this element at 2.86.

Figure 69. Taxes/Fees to Fund Roads (Average Ratings by County)



## Chapter 7 – Conclusion

It's [TIME Tampa Bay](#) involved extensive coordination and outreach between the Hillsborough, Pinellas and Pasco County MPOs. The survey reached over 18,000 visitors and included 9,575 survey participants – a new MetroQuest record for the United States! This large dataset contains a wealth of information that will be used to inform the development of a hybrid scenario that will guide the remaining LRTP development efforts.

### Survey Highlights

Beginning with the priorities, it was clear that the primary focus of the survey responses were on addressing traffic congestion, and supporting alternatives to driving. Both of these priorities were identified by 74% to 75% of all survey respondents – the highest of all priorities. A second tier of priorities, protecting open/green space and shorter commutes, were identified by 62% to 63% of survey respondents. The remaining priorities were identified 50% or lower.

The response to exaggerated scenarios questions highlighted a clear desire among survey participants for new mobility options that would provide an alternative to driving. The preference for a statewide rail and regional rail system dominated the survey responses, and appeared also in the high ratings for rail transit and rail funding in the Elements section. Projects or funding mechanisms to expand the roadway network tended to receive comparatively lower levels of support, even when they included advanced technology to improve efficiency.

From a growth and development standpoint, generally speaking, respondents did not want to continue to expand outward, as shown in support for efficient use of land and more/better downtowns, as well as negativity towards an expanded growth area. Investments that focus on improving existing communities such as preserving neighborhoods and a walk & bike focus) also performed well, highlighting a common desire to improve the communities that already exist rather than expanding into open/rural areas on the fringe of Hillsborough and Pasco Counties.

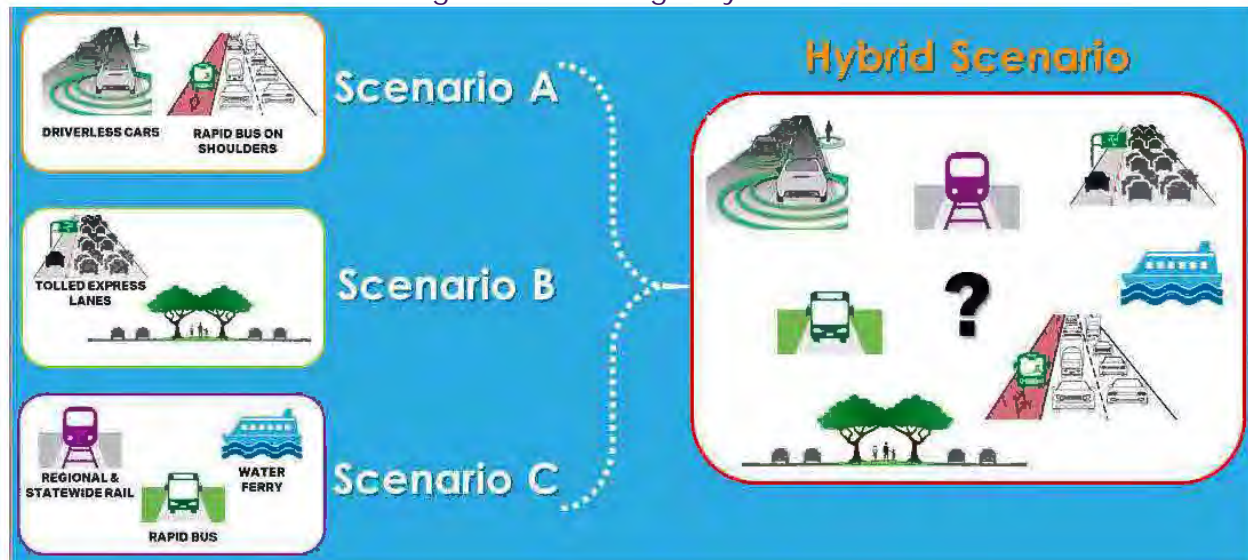
### Guidance for 2045 Plan “Hybrid Scenario”

The [It's TIME Tampa Bay](#) exaggerated scenarios were intended to help create a hybrid 2045 scenario, based on the best and most well-supported pieces of the scenarios and elements. The primary purpose of the Scenario planning process was to help:

- Visualize long-term implications of today's decisions
- Explore “what-ifs” about things we control, and things we don't
- Build consensus with quantitative feedback to determine what long-range outcomes are the most widely accepted

Figure 70 conceptually shows how the scenarios and elements were pulled together to help identify which components would ultimately become part of a hybrid scenario. This hybrid scenario will help inform future year LRTP multimodal projects and supportive growth policies and funding strategies.

Figure 70. Building a Hybrid Scenario



Key themes from this outreach effort—comprising issues related to land use and different transportation modes—are summarized below.

### Land Use

In the Hybrid Scenario, the MPOs and other transportation agencies will coordinate with local governments to support the creation of comprehensive plans that are compatible with the priorities identified within the Tri-County Transportation Plan. These priorities include:

#### Reinvesting in neighborhoods

In recent years there has been a resurgence of many of our urban core areas as evidenced by redevelopment and denser development in some neighborhoods. This reinvestment means we can make more efficient use of existing infrastructure, encourage newer affordable housing and stimulate more neighborhoods to improve. On-going upgrades to infrastructure and improving services in these areas can help sustain these revitalization efforts which will lead to more connected and inviting communities. Reinvestment can take many forms: improved sidewalks and cycle tracks, green infrastructure implementation for both stormwater and aesthetic benefits, grant funding to finance renovation of buildings in disrepair, installation of comfortable bus shelters, etc.

#### Strengthening downtowns and creating more downtown-like places

Downtowns are key areas for investment, thanks to the efficiencies that come with higher activity levels and shorter distances between people and businesses. Such development patterns are also key for an effective and efficient transit network, which has been identified as one of the key priorities in this outreach effort. Implementing policies conducive to higher density development at key nodes, as well as supporting the construction of mixed-use buildings (including market rate and affordable housing) via incentives, partnerships, or policies, will support this goal.

#### Minimizing outward growth

The complement of strengthening downtowns is reducing the amount of outward growth that occurs. The area is expected to grow significantly—both in population and economic activity—in

coming years, and keeping that growth manageable and sustainable will be a key component of ensuring that our communities are right-sized for our needs. Minimizing outward growth also helps reduce the cost of providing necessary public services that come with outward expansion. This outreach effort clearly demonstrates that of all transportation, growth and funding elements considered that an expanded growth area was the lowest rated, and least desirable, of all possible options.

### Transportation

Within the sphere of transportation, identifying specific types of projects and investments—if not individual projects—is an area where each MPO can provide clear guidance, building off of their own analysis and expertise as well as public outreach efforts like this survey. The following highlights transportation priorities that can help guide future planning efforts:

#### Rail

Based on the results of this survey, rail projects should be considered as part of on-going LRTP efforts. This could include regional rail projects, like expanding the connection of Brightline from Southeast Florida through Orlando to Tampa, or developing a rail network through inter-county coordination and partnership. Streetcar service should also be considered in support of strengthened downtowns or reinvestment in historic communities. No matter the form, it is important to integrate such projects with planned connections to other complimentary transportation resources, such as Bus Rapid Transit or express bus stations.

Funding is always a critical topic for rail projects due to their higher upfront capital costs compared to bus projects. Nevertheless, tax funding for rail improvements gained significant support from responses in this survey. Evaluating potential local funding mechanisms such as tax increment financing, benefit assessment districts, rideshare fees, ad valorem vehicle taxes, sales tax, etc., to support a potential rail or other fixed guideway transit project, should be considered as part of on-going LRTP planning efforts.

#### Walking and Biking

Walking and biking improvements play an important role as part of an overall comprehensive transportation system. Being able to provide an attractive and low-cost alternative to a solo car trip can reduce congestion at the local level, which can translate to fewer traffic jams, shorter commutes, and increased alternatives to driving—all priorities identified in this study. Most transit trips begin and end with a walk or bike trip, so improved non-motorized connections can boost the potential market for transit agencies to draw their riders from, as well as provide increased opportunities for recreational travel and public health. In addition, better alternatives to driving is a progressive benefit for our communities' low-income or otherwise disadvantaged residents.

#### Road

Safety and reliability of the area roadways has been, and will continue to be, one of the top priorities of the MPOs and other transportation agencies. Based on this survey, one of the most widely supported targeted roadway improvements was the construction of new and expanded interchange ramps. Being able to move between the expressways and local roadways smoothly and safely,

without the unpredictability of chokepoints at ramps limited in either capacity or quantity, should be explored in on-going LRTP planning efforts.

The use of elevated toll roads is another roadway concept that received general support and should also be considered in further planning efforts to potentially help reduce travel delay, reduce the need for more right-of-way, enhance regional travel connections, and function as primary evacuation routes during hurricanes or major storm events. The potential congestion management benefits of this type of improvement could also potentially benefit traffic operations in the Downtown Tampa interchange area, as well as along SR 54, with potential connections between these facilities via I-75 and I-4. However, it is worth noting there was clearly a negative feeling towards the concept of “closing the loop” in Pinellas County, which included the use of an elevated toll road in the McMullen/East Lake corridor.

### Technology

While it did not garner the same level of enthusiasm as the future multimodal scenario, a scenario illustrating a roadway network improved by the implementation of technological advances did elicit the support of many survey respondents. These technology advances can be simple and straightforward, such as smart technology that is used to coordinate traffic signal timings to move traffic more effectively, enhance safety and reduce travel delay. Another example is the use of dynamically priced toll lanes to enhance traffic flow and increase the predictability of travel times in tolled lanes, while keeping some lanes free for less time-sensitive travelers.

Other technology advances might include the implementation of transit signal priority systems, enabling buses operating in congestion to improve their on-time rates and thus become more attractive to potential riders. Or perhaps the use of automated shuttles—a.k.a. microtransit—to ferry people to and from transit stations; such shuttles are already being rolled out in small-scale pilot projects as of 2018—something that was nearly unimaginable just a handful of years ago. The implementation of automated buses is a technological advancement that would dramatically reduce the operating costs of many transit agencies, though its initial roll-out seems more likely in BRT-style routes with dedicated guideways rather than mixed traffic.

Regardless of the project, technology will continue to advance at a rapid pace and future transportation and mobility applications will benefit from these advancements. Based on the responses from this survey, the use of technology should be considered in on-going LRTP planning efforts. At a minimum, it is important to continue the discussion of advanced technology as part of an on-going process to educate the public about the potential transportation and mobility benefits—ultimately with the goal of helping the public become more comfortable with technology over time.



# Kimley-Horn & Associates Advantage Pinellas

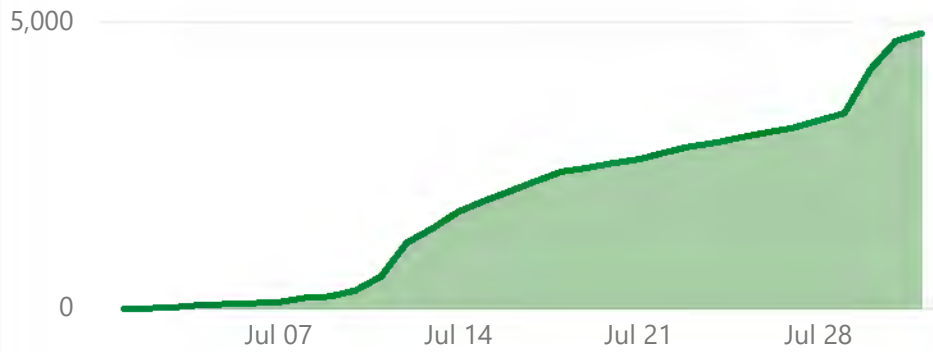
Jul 01, 19 - Aug 01, 19

Screen 1 / Site Traffic



## Traffic Dashboard.

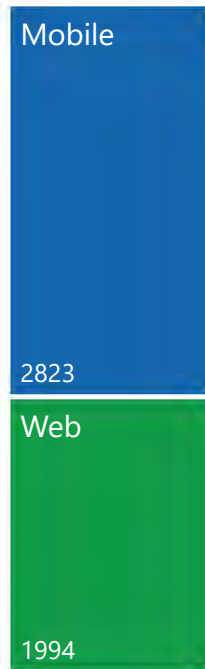
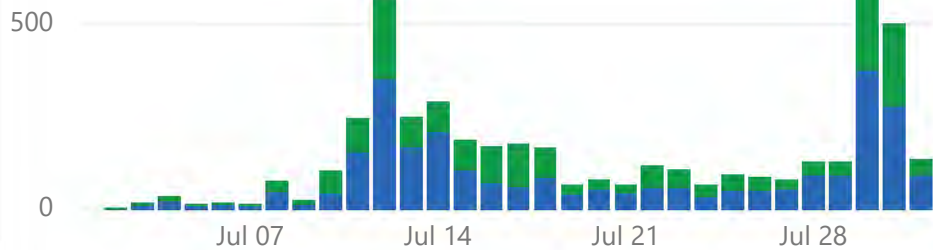
Total Participants



# 4817

## Participants

Participants by Date



Data points for this Site:

Participants: **4817**

All data points: **171661**

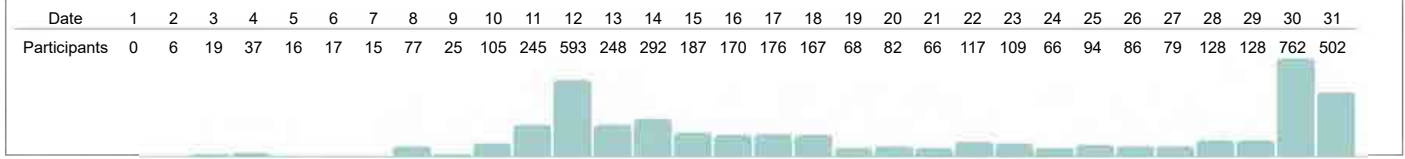
All comments: **5058**



Kimley-Horn & Associates | Advantage Pinellas

Jul 01, 19 - Aug 01, 19 | Screen 1 / Site Traffic

**July 2019**



**August 2019**





Kimley-Horn & Associates

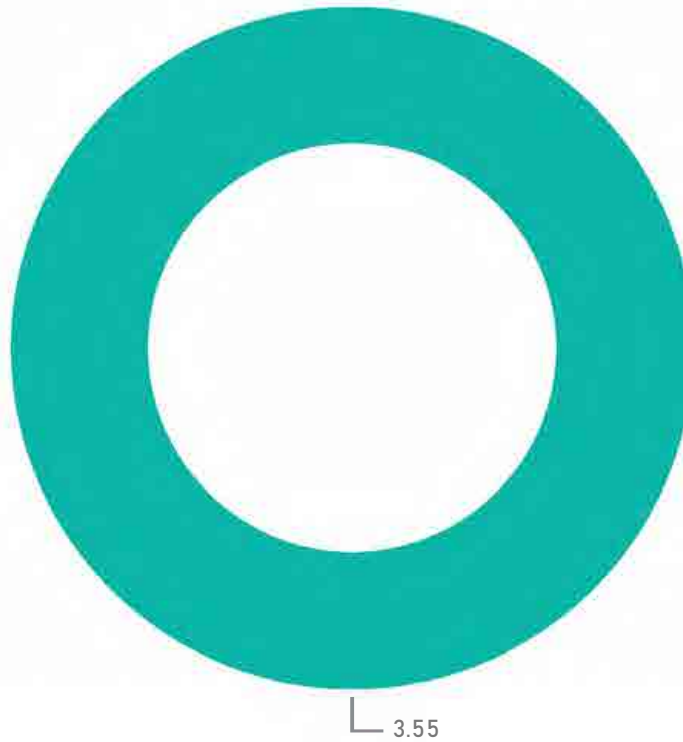
# Advantage Pinellas

Jul 01, 19 - Aug 01, 19

Screen 2



Panels: Bicycle Pedestrian Bus Service Emerging Soluti... Passenger Rail ... Streets Highways All Panels



Data points for this Screen:

Ratings: **89898**      Comments: **3895**



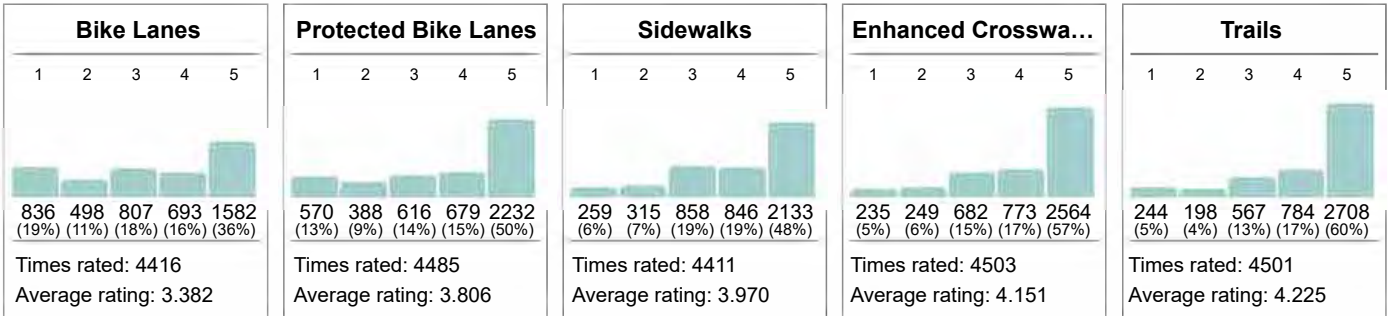


Kimley-Horn & Associates | Advantage Pinellas

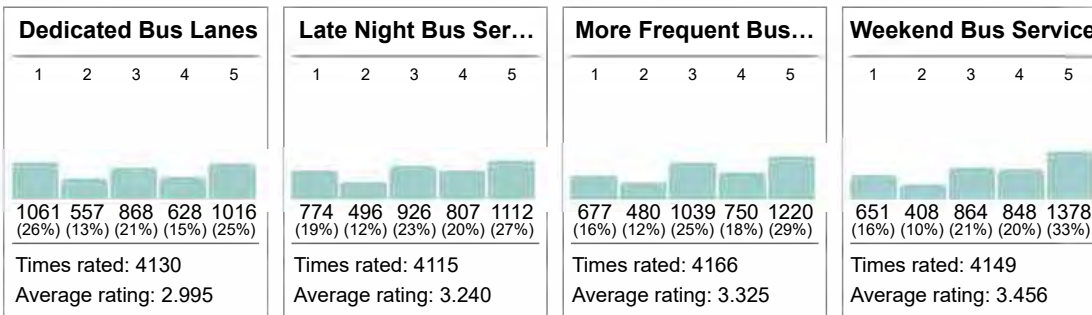
Jul 01, 19 - Aug 01, 19 | Screen 2

↓ Below: Each rating item, showing how many times each item was given each rating, sorted by average rating.

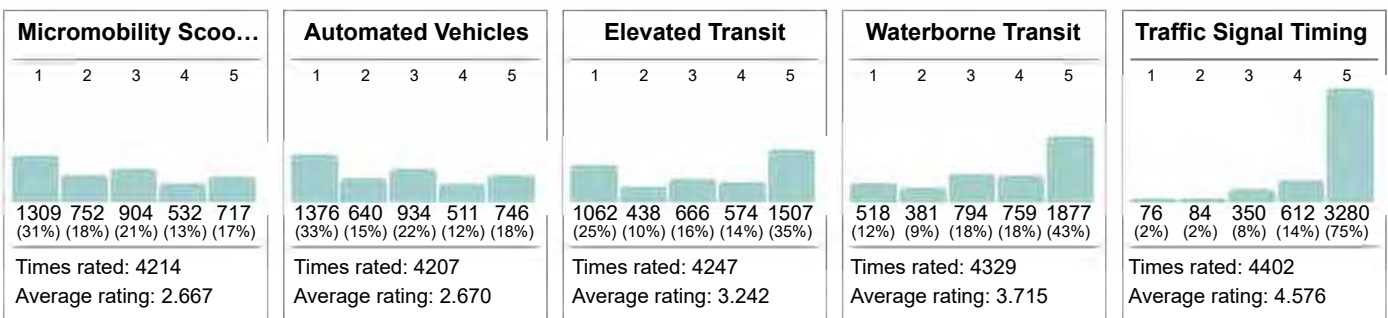
### Bicycle Pedestrian



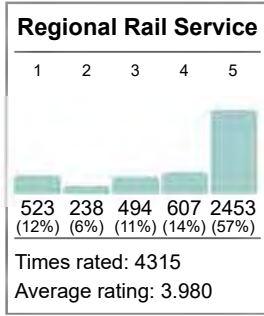
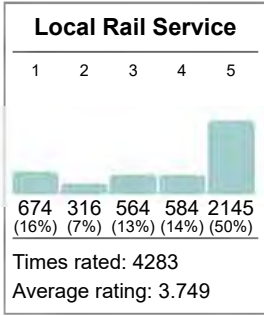
### Bus Service



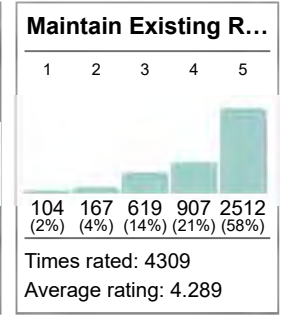
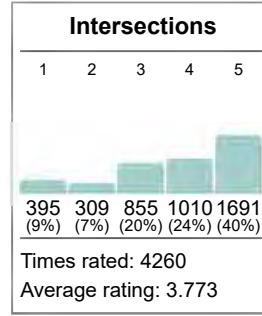
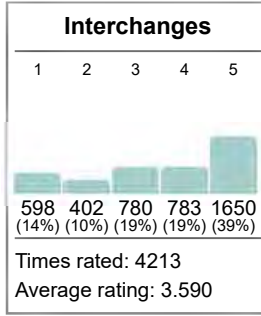
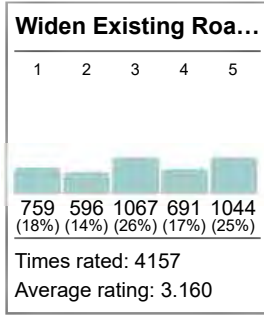
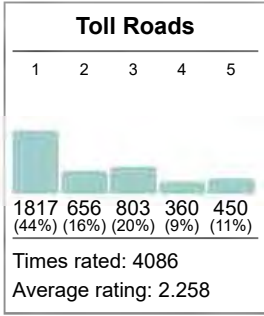
### Emerging Solutions



### Passenger Rail Service



## Streets Highways





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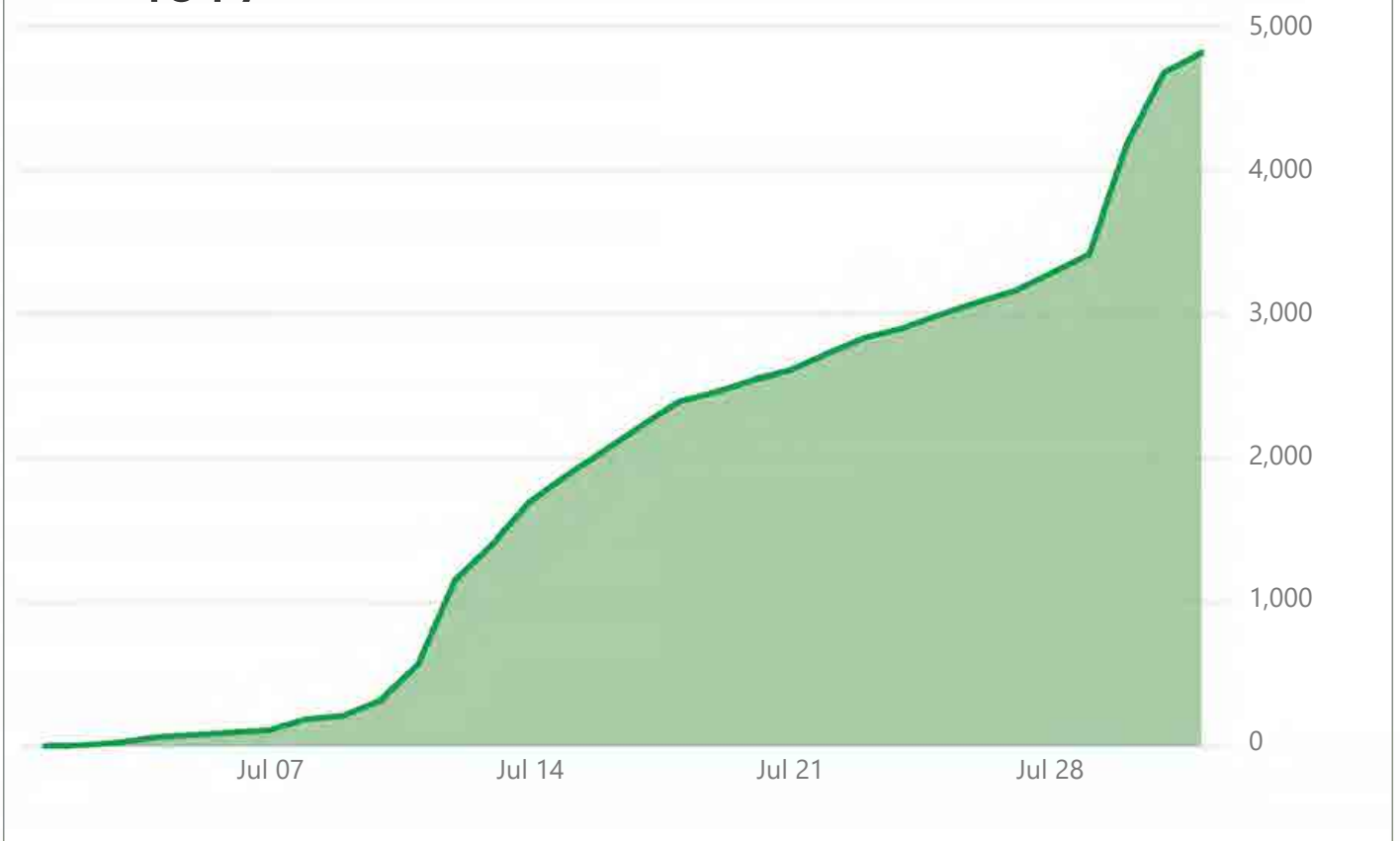
# Advantage Pinellas

Jul 01, 19 - Aug 01, 19

Screen 3



## Participants 4817



Data points for this Screen:

Data points: **30464**



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Jul 01, 19 - Aug 01, 19 | Screen 3

**i** Distributions of the number of items dropped into each category.

'Amount' refers to the number of chips/coins dropped into a category, and 'Count' is the number of participants that used that many chips/coins in that category.

**Bicycle Pedestrian**

Count: 893 10941151691 264 136 56 26 15 5 20  
 Amount: 0 1 2 3 4 5 6 7 8 9 10

Participants: 4351 Total: 8088 Average 1.859

**Bus Rapid Transit**

Count: 20191184805 270 52 16 2 2 1  
 Amount: 0 1 2 3 4 5 6 7 8

Participants: 4351 Total: 3926 Average 0.902

**Bus Service**

Count: 18071318820 291 66 31 7 6 1 2  
 Amount: 0 1 2 3 4 5 6 7 8 10

Participants: 4349 Total: 4362 Average 1.003

**Rail Service**

Count: 1219753 836 804 368 208 77 38 16 4 29  
 Amount: 0 1 2 3 4 5 6 7 8 9 10

Participants: 4352 Total: 8531 Average 1.960

**S3\_Remaining**

Count: 408439 19 23 41 25 33 34 25 20 5  
 Amount: 0 1 2 3 4 5 6 7 8 9 10

Participants: 4348 Total: 1301 Average 0.299

**Streets Highways**

Count: 752 833 971 807 400 261 114 73 50 25 64  
 Amount: 0 1 2 3 4 5 6 7 8 9 10

Participants: 4350 Total: 10561 Average 2.428

**Transportation Technology**

Count: 116611591077603 222 81 29 5 6 2 6  
 Amount: 0 1 2 3 4 5 6 7 8 9 10

Participants: 4356 Total: 6750 Average 1.550



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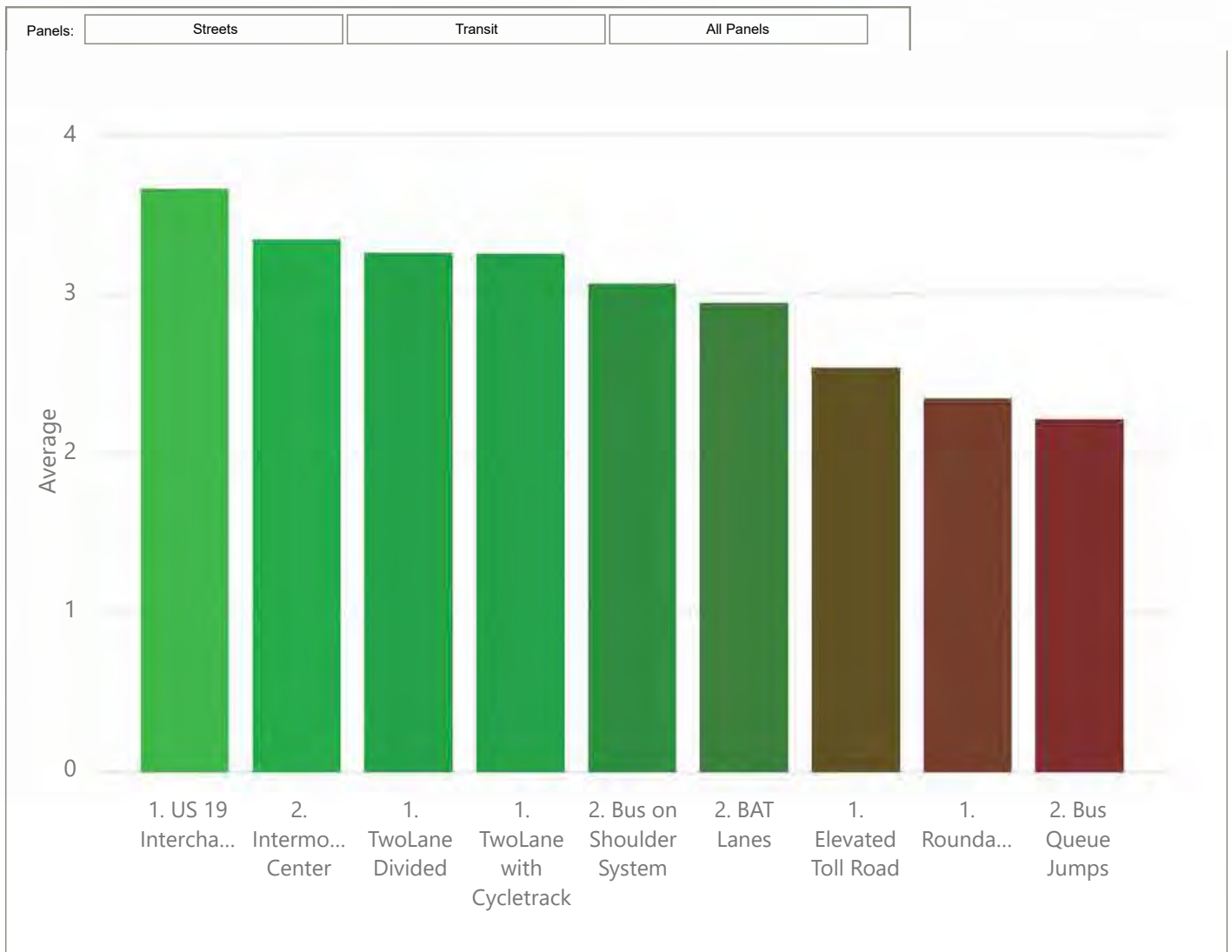
# Advantage Pinellas

Jul 01, 19 - Aug 01, 19

Screen 4



The average rating of each item for all participants.



Data points for this Screen:

Ratings: **33954**

Comments: **1163**

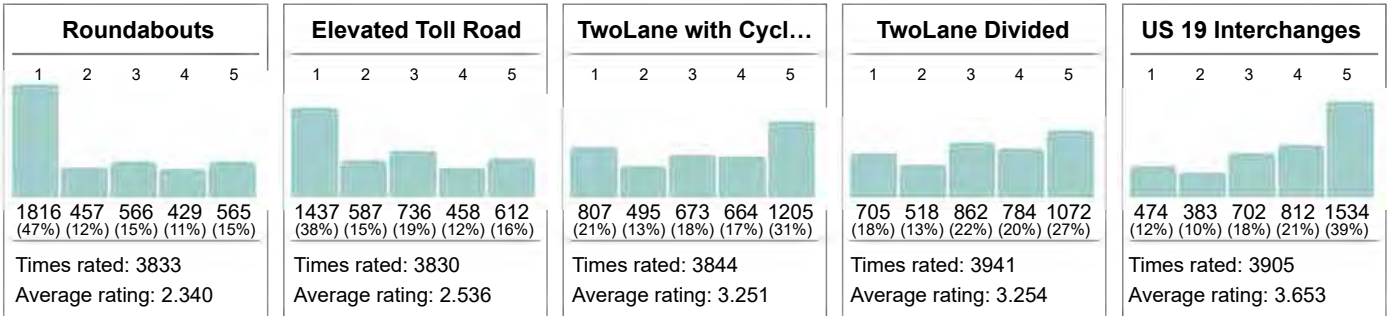


Kimley-Horn & Associates | Advantage Pinellas

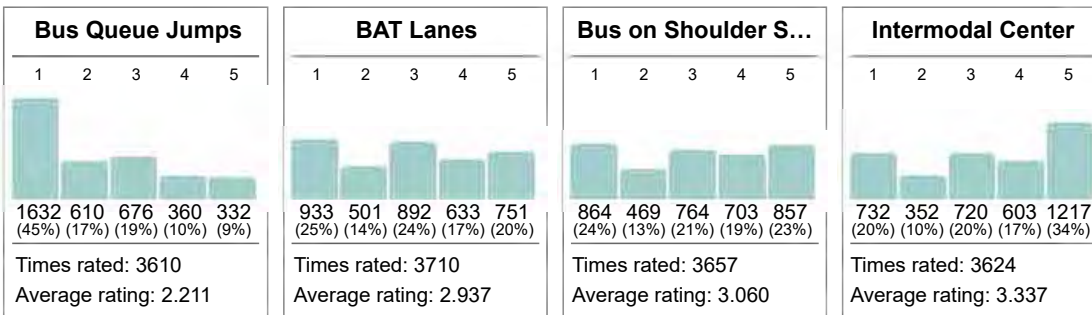
Jul 01, 19 - Aug 01, 19 | Screen 4

↓ Below: Each rating item, showing how many times each item was given each rating, sorted by average rating.

### Streets



### Transit





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# Advantage Pinellas

Jul 01, 19 - Aug 01, 19

Screen 5

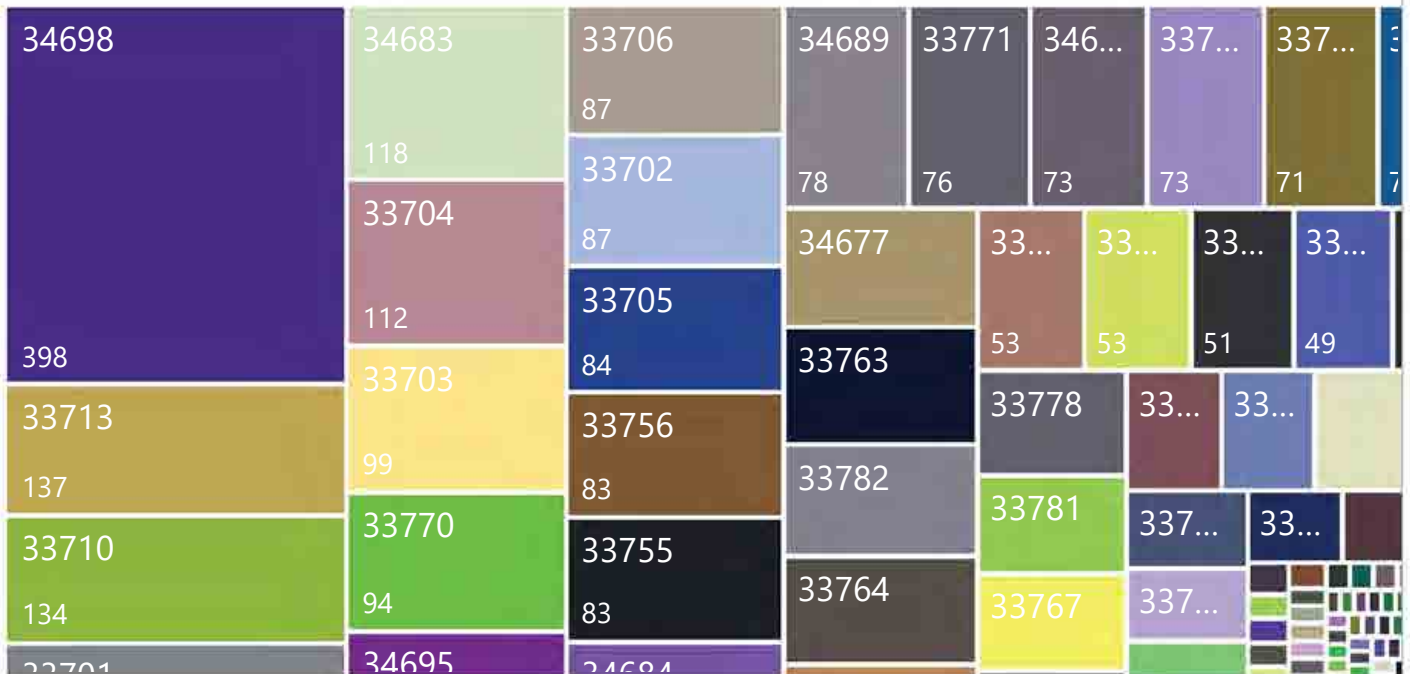


An alternative view of answers in 'treemap' form. Choose questions at the top.

Question

What is your home zip code

Answer



Data points for this Screen:

Responses: **15880**

Private: **1465**



Kimley-Horn & Associates | Advantage Pinellas

Jul 01, 19 - Aug 01, 19 | Screen 5

↓ Below: Wrap Up questions showing answer breakdowns.

What is your total household income	
589	50000 to 74999
539	100000 to 149999
486	25000 to 49999
470	75000 to 99999
417	150000 and greater
416	Prefer not to answer
149	10000 to 24999
20	1 to 9999
17	0
<hr/>	
3103	Total

What of these best describes you	
1646	Employed working 40 or more h...
1071	Retired
544	Employed working 139 hrsweek
78	Disabled not able to work
72	Not employed NOT looking for ...
68	Not employed looking for work
<hr/>	
3479	Total

Which best describes your race	
2998	White
120	From multiple races
107	Some other race
39	Black or AfricanAmerican
20	Asian
13	American Indian or Alaskan Native
2	Native Hawaiian or other Pacific...
<hr/>	
3299	Total

What is your home zip code
<i>Too many responses have been given for this view. See excel download for data.</i>

What is your work zip code
<i>Too many responses have been given for this view. See excel download for data.</i>



# FOCUS GROUP REPORT

## ADVANTAGE PINELLAS



### Advantage PINELLAS

ENGAGE. ADAPT. CONNECT.



FORWARD  
PINELLAS

# FOCUS GROUP REPORT

Advantage Pinellas

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## APPENDIX

### ATTENDANCE RECORD

#### FOCUS GROUP MEETING #1

- Handout
- Presentation Slides
- Flipchart Notes

#### FOCUS GROUP MEETING #2

- Handout
- Completed Questionnaires

#### FOCUS GROUP MEETING #3

- Information Packet
- Presentation Slides
- Flipchart Notes

# FOCUS GROUP REPORT

## Advantage Pinellas Long Range Transportation Plan

### INTRODUCTION

Forward Pinellas, in its capacity as the Metropolitan Planning Organization (MPO) for Pinellas County, conducted a two-year planning process to prepare a new long range transportation plan (LRTP). Branded as Advantage Pinellas, the LRTP was adopted by the Forward Pinellas Board on November 13, 2019. Advantage Pinellas demonstrates how projected available revenues will be spent on transportation investments over the next 20 years to improve mobility and economic opportunity countywide.

In fall 2018, Forward Pinellas convened a focus group for the LRTP planning effort as a follow up to a statistically valid opinion survey of Pinellas County residents. The focus group met initially in November 2018 and twice more in 2019. Through discussions with the Advantage Pinellas focus group, Forward Pinellas staff hoped to gain a deeper understanding of the survey results and obtain other information of relevance to the planning effort.

### METHODOLOGY

#### Participant Selection

Forward Pinellas emailed a ‘call for focus group participants’ to 414 persons who had taken the statistically valid survey, indicated a willingness to participate in future public involvement activities, and provided an email address.<sup>1</sup> The call for participants was emailed on November 5, 2018, three weeks in advance of the first focus group meeting, which was held on November 27, 2018.

Research indicated that the ideal size of a focus group for a noncommercial topic—in this case, long-range transportation planning—is five to eight participants. To help ensure that the Advantage Pinellas focus group meetings captured a diversity of perspectives, Forward Pinellas sought seven participants each from north county, mid county, and south county areas<sup>2</sup> to participate in three facilitated discussions over the course of one year. With expected meeting absences and group attrition over time, the 21-member focus group would likely yield the ideal group size for each meeting.

The call for participants sent to the pool of 414 survey respondents indicated Forward Pinellas’ intent to select 21 persons for the focus group, seven each from the three areas of the county, on a first-come, first-served basis. Forward Pinellas received 35 affirmative responses to the call for participants, 17 from north-county residents, 11 from mid-county residents, and seven from south-county residents (see Table 1 on page 2). The first seven persons to respond from each area were invited to the November 27 focus group meeting. A waiting list was generated to draw from as needed for future meetings.

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<sup>1</sup> A total of 419 persons indicated willingness to participate in future public involvement activities, however, five did not provide an email address.

<sup>2</sup> For this effort, north county is defined as the area from the Pinellas/Pasco County Line to Sunset Point Road; mid-county is defined as the area from Sunset Point Road to Bryan Dairy Road; and south county is defined as the area from Bryan Dairy Road to the Pinellas/Manatee County Line.

Table 1  
**RESPONSE TO CALL FOR FOCUS GROUP PARTICIPANTS**  
 Advantage Pinellas Long Range Transportation Plan

<b>Respondents to Statistically Valid Survey Interested in “Future Public Involvement Activities”</b>	<b>North-County Area</b> <i>Pinellas/Pasco County Line to Sunset Point Rd</i>	<b>Mid-County Area</b> <i>Sunset Point Rd to Bryan Dairy Rd</i>	<b>South-County Area</b> <i>Bryan Dairy Rd to Pinellas/Manatee County Line</i>
Total	113	144	157
Affirmative response to ‘Call for Focus Group Participants’	17	11	7

## Meeting Site Selection

The focus group meetings were held in the East Community Library at St. Petersburg College located at 2465 Drew Street in the City of Clearwater. The library was selected for its mid-county location and accessibility from major roads. Focus group meetings were held on weekday evenings from 6-8 p.m.

## Performance Measures

Two surveys were administered to focus group participants to measure the performance of the focus group process and outcomes relative to LRTP development and Forward Pinellas’ public engagement programs in general. The first survey, conducted at the second focus group meeting, was designed to identify basic demographic information about the focus group. The second survey was distributed at the final focus group meeting to determine value of the proceedings and results to the participants.

## FOCUS GROUP MEETINGS

The Advantage Pinellas focus group was convened three times over the course of the year leading up to the adoption of Advantage Pinellas on November 13, 2019. The focus group meetings were scheduled and held on November 27, 2018, April 11, 2019, and October 3, 2019, to inform the second year of the two-year LRTP planning process. The first year of planning had been devoted to a statistically valid preference survey of county residents and a robust data collection and analysis effort to better understand existing conditions, trends, and future possibilities.

The focus group meeting programs, attendance, discussion, and results are described in the remainder of this report.

## Focus Group Meeting #1

### PROGRAM

At the November 27 focus group meeting, the participants signed-in and received a handout with general information about the meeting program and facilities. The meeting began with a presentation by Whit Blanton, Forward Pinellas Executive Director, explaining the purpose of the meeting and providing contextual information about Pinellas County and the Tampa Bay region. The presentation slides and other meeting materials are provided in the Appendix.

After the presentation, the focus group participants were distributed among two tables, each with a facilitator and scribe. Effort was made to balance the participants at each table based on where they lived in Pinellas County. The meeting facilitators then posed a series of questions about various plan-related topics to which the participants voiced their observations.

**ATTENDANCE**

Of the 21 persons comprising the focus group, 17 attended the first meeting. One focus group member was joined by their spouse and another’s spouse attended in their place. This brought the total meeting attendance to 18. Table 2 shows the geographic representation of the meeting participants. Also, in attendance were Forward Pinellas staff Al Bartolotta (facilitator), Whit Blanton (facilitator), Chelsea Favero (floater), and Hilary Lehman (scribe), and Vrana Consulting staff Tammy Vrana (scribe).

Table 2  
**FOCUS GROUP MEETING #1 - GEOGRAPHIC REPRESENTATION**  
 Advantage Pinellas Long Range Transportation Plan

<b>Pinellas County Sub-Area</b>	<b>North County Area</b> <i>Pinellas/Pasco County Line to Sunset Point Rd</i>	<b>Mid-County Area</b> <i>Sunset Point Rd to Bryan Dairy Rd</i>	<b>South County Area</b> <i>Bryan Dairy Rd to Pinellas/Manatee County Line</i>
<b>Number of Participants</b>	<b>7</b>	<b>7</b>	<b>4</b>
<b>Zip Codes Represented</b>	34677 (2) 34683 (2) 34689 34695 34698	33761 33755 33765 (2) 33767 (2) 33756	33704 33708 33712 33772



*Participants at Focus Group Meeting #1 on November 2018.*

**DISCUSSION**

The focus group discussion was prompted by a series of questions categorized under the eight topics listed below. A summary of the discussion and general viewpoints expressed in selected participant quotes is provided on the following pages.

*Discussion topics:*

- #1 – Advantages and Challenges
- #2 – Travel in Pinellas County
- #3 – Transit Service
- #4 – Transportation Efficiency and Improvement
- #5 – Economic Value of Transportation
- #6 – Land Use
- #7 – Transportation Innovation
- #8 – Transportation Priorities

## TOPIC #1 – ADVANTAGES AND CHALLENGES

Questions and Summary of Responses:

### **1.1: Aside from weather and natural amenities, what are some of the advantages of living in Pinellas County?**

#### *SUMMARY OF RESPONSES*

The top response to the advantages of living in Pinellas County was the convenience of having a wide range of nearby destinations, including Tampa International Airport, major league sports venues, and other entertainment. Other responses were walkable neighborhoods; unique, walkable small towns, downtowns, and communities; quiet, residential character; established neighborhoods where children can safely play outside; high-quality parks (local, county, and state); Pinellas Trail connections to destinations; ability to bike to workplaces; less traffic congestion than in other places; public services delivery; upkeep of public lands and facilities; strong regional economy and employment opportunities; lower cost of living; friendly, laid-back people; nearby family; and sense of community felt through support for Penny for Pinellas.

### **1.2: What's keeping us from taking full advantage of the opportunities and the good things about Pinellas County? What are the challenges that you see us facing relative to transportation and development primarily?**

#### *SUMMARY OF RESPONSES*

Overwhelmingly, better transit service, particularly bus service, was on people's minds when responding to this set of questions. Better transit was described as bus service that would functionally substitute for driving, especially for a growing senior population. To make transit service competitive with automobile travel, the participants felt that transit service had to be faster, predictable, and more broadly available in terms of routes, frequency (e.g., 15 to 30-minute headways), and periods of the day (e.g. 24-hour service). The distances between places in Pinellas lends itself to transit. It was recognized that the attractiveness of the county to a 'creative class' workforce and tourists would be enhanced by high-quality transit service. The participants liked the prospect of being able to do productive things while traveling by bus (e.g., reading and relaxing). Transit service could alleviate traffic congestion worsened by a growing commuter population originating from surrounding counties. Currently, traffic congestion in the region is a deterrent to long-distance car trips by some Pinellas County residents.

Other opportunities mentioned were making road crossings easier and safer for biking to a wide range of destinations and protecting sparse remaining greenspaces in the face of development pressures.

#### *GENERALIZED VIEWPOINT – ADVANTAGES AND CHALLENGES*

*“Everything is convenient.”*

*“I love the small town qualities that we have here. There are so many downtown districts that you are never really far from one.”*

*I'm hoping that bus transportation will be better by then than it is now, because it is terrible.”*

## TOPIC #2 – TRAVEL IN PINELLAS COUNTY

### *Questions and Summary of Responses:*

#### **2.1. Generally, how do you get around the county? Are you using any other transportation modes or would you like to use any other modes?**

##### *SUMMARY OF RESPONSES*

Most participants said they drive to get around in the county, while a few said they walk or bike to destinations within or proximate to their neighborhood, including workplaces. Many indicated a desire to use trolleys and ferries but cited impediments to doing so such as limited payment options, inconsistent timing, poor wayfinding to parking and pick up areas, and lack of special pricing for residents. One participant said he tried using the bus for a cross-county trip to Tarpon Springs but found the travel time too long to be practical.

Walk and bike travel are viewed as being geographically limited due to high-speed roads. Bike travel would be safer and less stressful if bike lanes were separated from motor vehicle traffic, side streets provided better connectivity, and signage and painted lanes delineated space for cyclists. It was noted that driver attitudes about sharing streets and roads with other users is more of a problem in the Tampa Bay region than in other metro areas and that Florida roads were built for cars, not people.

A need for traffic safety education was noted. Participants felt that speeding was pervasive and largely unchecked and described the behavior as a cultural norm. Conversely, some participants spoke of slow moving roads (“Every day, 20 miles per hour, not even congested, just people driving slow, taking their time.”). Other issues voiced were cut-through traffic in neighborhoods and poor walk/bike accessibility to shopping centers (“there is no easy way for the bicycles to get in there. It's all compressed and tight”). There was also concern about drivers that do not follow crosswalk rules, indicating the need for better signage, especially for tourists. Red-light running was thought to be a product of traffic signal synchronization. Flashing signals like those used in Europe were suggested.

#### **2.2. What is the best thing and the worst thing about traveling in Pinellas County?**

##### *SUMMARY OF RESPONSES*

##### *The best things about traveling in Pinellas County:*

- Pinellas Trail overpasses (“awesome;” “have saved countless lives”)
- U.S. 19 overpasses for effectiveness in improving safety and congestion
- “The buses here are really nice.”

##### *The worst things about traveling in Pinellas County:*

- Buses don't run at certain times and bus stops are far apart
- Traffic signal cycles are constantly changed, which creates confusion
- Turning movements at intersections with ‘no right on red’ rule can be confusing (“distractions”)
- McMullen Booth Road, which will only worsen by the growing commuter population coming into Pinellas for good-paying jobs
- Short U.S. 19 off-ramps, which cause confusion and traffic backups
- Limited access segments of U.S. 19 that become full access in north and south county, which are confusing and dangerous, especially to tourists
- Going to the beach during spring break, summer, and holidays

- Moving people to multiple employment centers versus one major center more easily served by transit
- Transit service is not good enough to attract choice riders. Transit should serve places where a lot of people want to go (e.g., sports arena and the airport) and make it easy for people to access transit (e.g., close enough to walk to and park-and-ride lots)

GENERALIZED VIEWPOINT – TRAVEL IN PINELLAS COUNTY

*“If it was a nice bus and I could get there faster or I could get to work faster, I’d rather do that. I would pay more than what I pay for transportation driving myself if I can sit back and relax and not worry about it.”*

**TOPIC #3 – TRANSIT SERVICE**

*Questions and Summary of Responses:*

**3.1. Why haven't you used public transportation?**

*SUMMARY OF RESPONSES*

Most of the participants to which this question was posed had used the bus but realized the bus service did not work for them. One participant said “It's never been in my paradigm to use public transportation. It's always been get in the car.”

**3.2. If rail or express bus service were offered, where do you think it should go?**

*SUMMARY OF RESPONSES*

The airport was the only location suggested in response to this question. However, over the course of the meeting, other locations mentioned were sports arena, Clearwater Beach, and Tampa via the Courtney Campbell Causeway. Concern was voiced over the lack of density in Pinellas (except downtown St. Petersburg) and a general unwillingness of drivers to park at the mall to take a bus to their destination.

**3.3. If the transit company had all the money it needed to make whatever improvements it wanted to, what do you think would make transit a real viable mode of transportation for you?**

*SUMMARY OF RESPONSES*

To be a viable mode of travel in Pinellas County, participants said that transit service needs to be faster and predictable (consistent timing), have dedicated travel lanes and free/low-cost park-and-ride lots, and go to fun destinations (e.g., sports arena).

GENERALIZED VIEWPOINT – TRANSIT SERVICE

*“I would love to take the bus to places, but they are not quite good enough right now, or it's not bad enough right now that it's a good value proposition.”*



## TOPIC #4 – TRANSPORTATION EFFICIENCY AND IMPROVEMENT

*Questions and Summary of Responses:*

### **4.1. Eighty percent of the survey respondents said they want efficient transportation. What does efficient transportation mean to you?**

#### *SUMMARY OF RESPONSES*

It was suggested that an efficient transportation system would provide travel options and offer the ability to use travel time constructively (e.g., reading, listening to a podcast, texting without endangering others, and decompressing after a stressful day).

Efficient highway travel depends on well-sequenced traffic signals (“I don't want to be waiting when no one is driving by the cross street because that seems to happen a lot.”). It should not take 12 to 15 minutes to commute two miles (“If you get the lights wrong, it can make a 15 minute difference in the commute.”) Frequently changed signal patterns and resulting backups were noted frustrations. The high-crash rate and potential to be in a crash was offered as an inefficiency. Participants questioned the short-lived benefit of road widening projects (“You get maybe four to five extra cars per signal but there is so much more friction.”).

To be efficient, transit service must be dependable, timely, conveniently located, and easy to understand and use. Efficient transportation means having safe bicycle routes to destinations beyond your neighborhood (“I would like to see more bike trails.”). Car-sharing services such as Uber, were noted as being “very effective.”

Specific aspects of the transportation system noted as being inefficient were driving on West Bay Drive (“absolutely terrible”); biking the Dunedin Causeway Trail; and backups most of the day at Curlew Road at U.S. 19 due to the changed signal pattern.

### **4.2. What does improved transit and transportation service mean to you? What do you want to see done to make transportation better? What does improvement look like to you?**

#### *SUMMARY OF RESPONSES*

The discussion started with what improved transit looks like. Suggestions included reasonable cost to users, better locations, more direct routes, and reasonable travel times (“doesn't take two hours to get somewhere”). As to the type of transit technology, participants were open to whatever is most effective and efficient (“I want shared public transportation. I don't care what it is, bus, rapid transit, trains.”), especially for work trips (“work time is the worst”). Water transportation was viewed as a “huge opportunity” in our region. Cross-bay service was suggested including service from Clearwater to Tampa near the Courtney Campbell Causeway with park-and-ride lots and other conveniences to make it attractive to commuters and visitors.

One participant appreciated the hierarchy of thoroughfares shown in the introduction presentation. Some roads need to be fast but not all. U.S. 19 and S.R. 60 were cited as examples of roads having primary functions of speed, throughput, and regional connectivity, while streets have multiple productive functions beyond throughput (e.g., shops and residential neighborhoods). It was noted that retail uses along U.S. 19 and Gulf to Bay Boulevard conflict with their throughput function. The term ‘stroad’ was used to describe such roads. It was suggested that signalized left-turns could be managed better to improve traffic circulation in the street grid surrounding Gulf to Bay Boulevard between Highland and Belcher (“There are some creative things you could do”). The highway design practice of adding lanes at signalized intersections and transitioning back to fewer lanes after the signal was a noted frustration due to drivers cutting in front of others at the last moment.

### 4.3. Are there things we can take from other cities that could be useful here?

#### *SUMMARY OF RESPONSES*

California, particularly Southern California, was noted for their use of toll roads and light rail (“traffic is terrible but thank goodness they have some of these other things”). During discussions for other questions, other cities’ attributes were identified including:

- Chicago, IL – High density development; built around traditional neighborhoods; transit serves major venues; and “Everything is 24 hours and everything is really close.”
- Dallas, TX – Mixed use development
- Denver and Aurora, CO – Mixed use development; light rail; and above-grade road improvements that did not harm nearby businesses
- Hillsborough County, FL – Sales tax increase to fund transit and other transportation projects
- Minneapolis, MN – Light rail service and the addition of spurs and hubs
- Washington DC – Light rail; everybody said nobody is going to ride it but everybody is riding it. Now, they’re adding spurs and hubs
- Orlando, FL – Tourism taxes
- Oslo, Norway – Commuter ferry service
- St. Petersburg, FL – High-density residential development; bicycle master plan and improvements; and Central Avenue BRT project
- Indianapolis, IN – Downtown redevelopment expanded housing and the trail network. (“It’s been an amazing transformation.”) Neighborhoods are similar to those in Pinellas.
- Washington, DC – Light rail service and the addition of spurs and hubs

The discussion extended beyond the scope of the question. One participant asked about the expense of bus service on Clearwater Beach given low ridership on buses. Another participant made a comparison to bus ridership in St. Petersburg (“the bus station is always packed.”)

Relative to express bus service, the frequency of stops is important (“The Jolly Trolley has a load of stops. Depending on traffic, it is better to drive.”). The ability to bring bikes and beach gear on the bus are valued features. Participants said that transit service has to be affordable (“The ferry is not going to work at \$17.50 a ride.”). Relative to a countywide bus system, one participant said, “in certain areas it works but to cover a whole county with the PSTA, maybe that’s the wrong approach” and suggested that car-sharing (e.g., Uber) might be a quicker and cheaper alternative for longer distance travel.

The discussion turned to the cost of transportation and whether it was self-sustaining for operations and maintenance (“Let’s make sure the \$2 covers the cost of the bus”). One participant used toll roads as an example of self-supporting transportation (“Build a toll road and you can increase the toll. Everybody accepts that.”). The same participant estimated that 90 percent of spending has gone into building highways (“Americans have always been in love with cars.”) and that taxpayers will not pay for any solution that takes 15 years to pay for itself. Hillsborough County’s successful sales tax referendum was cited (“people are willing to step up to the plate”), which led to the comment that people have to be convinced there will be a reasonable return (“it doesn’t always have to be in dollars”). Several participants recommended a countywide tourism tax. It was noted that tourists are “a big part of the traffic.” It was suggested that the county could attract more international tourists by making it easy for them to get to the beach and the revenues generated could fund a rail system.

*“There is just not enough space to build an efficient transportation system to move as many cars as are out there.”*

## TOPIC #5 – ECONOMIC VALUE OF TRANSPORTATION

*Questions and Summary of Responses:*

### **5.1. How does good transportation affect the economic value of where you live?**

#### *SUMMARY OF RESPONSES*

Better transportation allowing quicker, easier, or cheaper travel between home and work was viewed as increasing the value of property. One participant said that the house closest to the best transportation is going to be a better price than all the other ones due to lower transportation costs. Several comments were made about the benefits of single-car households including the ability to spend more on housing and other needs (e.g., medical bills). It was noted that for “younger family starting out here, housing is way more expensive.” One of the participants who lives in a walkable neighborhood had down-sized to one car (“I can walk everywhere; take an Uber.”). Street connectivity in north county were seen as an impediment to getting around and potentially affecting home values. It was acknowledged that expenses associated with owning a car would continue to rise. (“Car insurance here is so much more expensive than it is anywhere else because there are so many cars, so many bad drivers.”)

The lack of businesses or great jobs in north county was questioned along with the perspective that “companies are not going up there largely because of the transportation.” In the absence of good-paying jobs and low-cost transportation options, “the cost of housing percentage-wise is higher than some of the other places. The solution is higher incomes.” Another concern is inadequate worker parking in areas with higher development intensity (“some of them are starting to charge for it”).

The discussion turned to the availability of land for economic development such as business incubators and housing (“My impression is that it is a huge challenge.”). Unlike surrounding land rich counties, Pinellas County has “twice the people and half the land.”

### **5.2. How do you think transportation and land development address the need for better paying jobs?**

#### *SUMMARY OF RESPONSES*

In response to this question, a connection was made between transportation and locational decisions made by employers (“Transportation is the big thing that manufacturers or people that want to move jobs here look at.”). During another discussion, it was pointed out that retaining businesses offering “real” jobs would require bringing down household transportation costs, which currently exceed affordable levels in Pinellas communities (“I think that's a long-term goal just to make sure this continues to be a healthy county.”). Noted was the significant cost savings of owning fewer cars (“if you're just starting out, being able to live with one fewer car is a huge savings.”). A participant spoke from personal experience of challenges recruiting employees when cross-county travel is tremendously time consuming; effectively limiting their workforce pool to a smaller geographic area. Young workers with families “can't make the transportation work—connecting to and from school—and that really holds us back.”

*“Access to jobs that a better transit network might open up, I think would be a big deal.”*

## TOPIC #6 – LAND USE

*Questions and Summary of Responses:*

### **6.1. Are there any types of land uses you would like to see, or see more of, within your community or neighborhood?**

#### *SUMMARY OF RESPONSES*

The participants suggested the following land use additions to their neighborhood or area of the county:

- Preservation of locally-owned businesses (Clearwater Beach)
- Land use and architectural controls to preserve the character of traditional, historic neighborhoods
- Dining and social scenes like St. Petersburg’s in north County
- Mixed use in downtown Clearwater
- Greater trail connectivity in north county to make it easier/safer bike to other cities with dining scenes (e.g., Dunedin)
- More charging stations for electric cars (“becoming more of a thing”)
- Countywide bike master plan like St. Petersburg’s

One participant asked if the economic impact of the Pinellas Trail loop had been assessed and questioned whether taxpayers who were paying for it would use it. In response, another participant shared an observation that businesses with bike racks along the trail were always packed.

A connection was made between high-rise developments in downtown St. Petersburg and the attraction of people and businesses, which prompted a question about changes in residential density. (“That seems to be the root of the problem.”).

### **6.2. One of our issues is that we are too spread out in terms of transit, rather than people living close to their jobs and shopping. Do you think we need more mixed-use communities in Pinellas County?**

#### *SUMMARY OF RESPONSES*

Building activity in major U.S. cities was noted as largely being mixed use with a wide variety of land uses including residential, retail, industrial, and healthcare and served by light rail and elevated highways. There was discussion with varying opinions about the effect of the U.S. 19 overpasses on nearby businesses.

Remarks were made about cities that are developing in an efficient way and demonstrating that “if you build it first, people will use it eventually.” Participants recognized the opportunity for successful transit service in St. Petersburg because of the density of “people living downtown and adjacent to downtown.” Adjusting land use policies is needed to accommodate similar development patterns in other areas of the county. Promoting the merits of mixed use will be important to public acceptance.

One participant cautioned the others about comparing Pinellas County to large cities like Indianapolis, Dallas, Washington, DC, and Chicago because of differences in populations, densities, high-rise development, and

number of workers flowing daily into a city center. It was noted that Pinellas County is more of a ‘bedroom community’ than a major employment center.

A suggestion was made to connect Tampa residents to Clearwater Beach with transit service, especially on the weekends, to relieve congested streets and reduce drinking and driving.

*GENERALIZED VIEWPOINT – LAND USE*

*“You are not going to get in your car from your neighborhood to go to Clearwater Mall and take a bus. You are going to just drive. If downtown Clearwater was as dense as downtown Orlando or downtown St. Pete, it would be a totally different county.”*

*“Mass transit survives on density.”*

## TOPIC #7 – TRANSPORTATION INNOVATION

### *Questions and Summary of Responses:*

**7.1. Technology seems to be advancing at a rapid rate. How do you see that affecting your mobility options? What are your hopes? What are your fears? What are your expectations?**

### *SUMMARY OF RESPONSES*

#### *Technology expectations:*

The discussion started with the possibility that Generation Z will not obtain driver licenses because of broad availability of driverless cars. Some participants thought the timeframe for this scenario was unlikely due to myriad safety and legal issues associated with autonomous vehicles (“we are way far away from being able to trust them”). It was noted that, eventually, this technology will make a significant difference in the lives of people who are physically unable to drive. The discussion turned to telecommuting and the impact it is currently having on demand for office space and car-parking areas (“That really has seemed to explode and change the nature of office space and retail.”). Online shopping with delivery services are expected to reduce trips by consumers preferring to avoid traffic and parking lots. Consumers will “not have to go to three or four different stores.” Improved telecommunications will support more people working from home and can order stuff online so there will be less people on the road.

#### *Technology hopes:*

There was hope among the participants that advances in communication technologies would make it easier to use transit, such as the Google Transit app. Car sharing businesses, like Uber and Lift, were praised (“gave us an extra year or so without an extra car”). There was optimism that technology would relieve some congestion by shifting more trips to bus.

#### *Technology fears:*

There was skepticism that autonomous vehicle technology would improve transportation network efficiency. One participant expressed concern that the effect of autonomous vehicles would not be positive, citing issues with roadway space allocation from cars carrying only packages and conflicts with pedestrians, bicycles, and

non-autonomous vehicles (“you're still going to have people driving cars, you’re still going to have people walking and biking.”). One participant said that technology seems like a pipe dream and questioned the timeframe for autonomous vehicles as well as liability issues. Another asked what would happen if the system fails (“If we get so dependent on electronic aspects of it by themselves, that's so susceptible to power failures and wind damage to antennas.”).

GENERALIZED VIEWPOINT – TRANSPORTATION INNOVATION

*“I think it’s going to make transportation more efficient.  
Faster, more accessible.”*

## TOPIC #8 – TRANSPORTATION PRIORITIES

*Questions and Summary of Responses:*

### **8.1. If you look out 10 years from now, what would you want to see happen in years six through 10?**

*SUMMARY OF RESPONSES*

The responses to this question included safer walking and biking environments; a more dependable, accountable, and convenient transportation system that serves older residents who are no longer able to drive; a sales tax increase to fund congestion-related transportation improvements; real-time traffic counts to better understand and respond to first-mile/last-mile connection needs; and more focus on efficient bus routes to convince voters that we have a better operating network (“I think the Central Avenue BRT is a great example where you're going to have a service that works a lot better, and that can start to change the way people think about transit.”).

### **8.2. In terms of transportation in Pinellas County, what would you like to see the money focused on?**

*SUMMARY OF RESPONSES*

*Funding for transit:*

Suggestions for transit-related spending included a “strong bus system” because the county “can only handle so many cars.” One participant noted the improbability of building a light rail system and suggested a “great hub and spoke bus system” as an alternative. One recommendation was to focus on projects that “make it easier and more appealing to take a bus” or use other non-driving modes “instead of projects to make it easier to drive places.” To change travel behavior, incentive “is what is lacking.” Other considerations posed were using the Pinellas Trail corridor for transit and building regional high speed rail with connections to local transit and trail networks “to the extent that it would maintain itself.” Light rail or overhead suspension technologies like those in Europe were mentioned along with using the CSX line for transit (“would be a plus for the future”).

*Funding for roads:*

Relative to roads, a recommendation was made for funding a limited-access loop road to facilitate north-south and east-west travel and relieve congested city streets. Related suggestions included widening Drew Street, Gulf to Bay Boulevard, or another east-west corridor and building more overpasses on U.S. 19. Along this line of thinking, another recommendation was to make it easier for Pasco County’s growing commuter population to travel to and from St. Petersburg employment centers. Additional overpasses on U.S. 19 and East Lake Road/McMullen Booth Road were offered as a potential solution. An associated suggestion was to limit turning movements at the intersection of McMullen Booth Road and Drew Street to right turns only to allow

continuous traffic flows between NE Coachman Road and 49th Street. Diagonal roads, like Haines Road in St. Petersburg, were noted for making travel quicker (“it’s like the old railroad tracks, as the crow flies”).

*Funding for pedestrian and bicycle improvements:*

Popular among the participants was focusing funding on bicycle facilities serving commuter and recreational cyclists. Participants felt that improvements should address safety and destination accessibility. It was noted that ideally streets would have adequate sidewalks and bike lanes (“not just the two-foot bike lanes”) yet acknowledged the prevalence of constrained rights-of-way. Suggestions to address limited right-of-way width included separating bike lanes and motor vehicle travel lanes with painted rumble strips and building wider sidewalks to accommodate walking and biking.

*Funding in general:*

There appeared to be consensus for further capitalizing on tourism spending as a revenue source. Several participants felt that county tourism would not be adversely affected by higher taxes (“if I had to pay extra to go to Disney, if that’s something I want to do, then I’m going to pay for it.”). The dramatic transformation of Clearwater Beach was noted as bringing both challenges (e.g., congested roads) and benefits (e.g., revenues). In addressing challenges, it was suggested that transportation spending be focused more so on year-round residents than tourists.

One participant was adamant that transportation projects should only include those that residents are willing to fund and added that people would not abandon their cars even if gas prices spiked. Another participant countered that a “strong alternative” would affect driving habits (“when gas prices were at \$3 or \$4 a gallon, you look at the driving habits, they changed”). Given relatively low wages in the region, it was suggested that “you have to have an alternative for the people.”

*GENERALIZED VIEWPOINT – TRANSPORTATION PRIORITIES*

*“A solution is not just one package. It is a bunch of solutions to get to the ultimate.”*

## Focus Group Meeting #2

### PROGRAM

The April 11 meeting participants were asked to voice their opinions about Pinellas County’s advantages and challenges as well as a list of projects being considered for priority status and funding. These insights on community needs, opportunities, and priorities would be used to shape the Advantage Pinellas LRTP. A brief demographic survey was also distributed at the meeting.

The participants divided into two groups with generally the same distribution as at their first meeting and were asked to consider two general questions:

- 1) *What are we doing really well now that is distinctive about Pinellas County and sets us apart?*
- 2) *What are some of our challenges, that if we work on and solved, could be one of our advantages in the future?*

The meeting participants then were asked to consider six Advantage Pinellas topics in terms of two considerations (see Table 3 on page 14). Participants were given a questionnaire to record their responses.

Table 3  
**'PINELLAS ADVANTAGES AND CHALLENGES' FOCUS GROUP ACTIVITY**  
 Advantage Pinellas Long Range Transportation Plan

Advantage Pinellas Topics	Framing Considerations
<ol style="list-style-type: none"> <li>1. Attractive and Unique Destinations</li> <li>2. A Resilient Community</li> <li>3. Safe and Healthy Communities</li> <li>4. Strong Economic Opportunity</li> <li>5. Mobility and Accessibility for Everyone</li> <li>6. A Collaborative Vision for the Future</li> </ol>	<ul style="list-style-type: none"> <li>• <b>Pinellas County NOW:</b> A current feature or characteristic of Pinellas County that could be strengthened and reinforced through implementation of the Advantage Pinellas plan</li> <li>• <b>Pinellas County POTENTIAL:</b> A future aspirations that could be achieved through a shared vision for our community (e.g., a strategic land use or transportation investment)</li> </ul>

The completed questionnaires and other meeting materials are included in the Appendix.

**ATTENDANCE**

Table 4 shows the geographic representation of the 14 focus group members in attendance at the second focus group meeting. Meeting support staff in attendance included Al Bartolotta (facilitator), Whit Blanton (facilitator), Chelsea Favero, (floater), and Hilary Lehman (scribe), and Tammy Vrana (scribe).

Table 4  
**FOCUS GROUP MEETING #2 - GEOGRAPHIC REPRESENTATION**  
 Advantage Pinellas Long Range Transportation Plan

Pinellas County Sub-Area	North County Area <i>Pinellas/Pasco County Line to Sunset Point Rd</i>	Mid-County Area <i>Sunset Point Rd to Bryan Dairy Rd</i>	South County Area <i>Bryan Dairy Rd to Pinellas/Manatee County Line</i>
<b>Number of Participants</b>	<b>6</b>	<b>6</b>	<b>2</b>
<b>Zip Codes Represented</b>	34677 (3) 34683 (2) 34695 34698	33755 33765 (2) 33767 33756 (2)	33708 33772



Participants at Focus Group Meeting #2 on April 11, 2019.



**DISCUSSION**

The focus group observations and ideas pertaining to the Advantage Pinellas topics are provided in this section.

**ADVANTAGE PINELLAS TOPIC #1 – ATTRACTIVE AND UNIQUE DESTINATIONS**

PINELLAS COUNTY “NOW”	PINELLAS COUNTY “POTENTIAL”
<ul style="list-style-type: none"> <li>• Beaches (5)</li> <li>• Beaches → St. Pete, Clearwater</li> <li>• Award-winning beaches (2)</li> <li>• Beautiful, world-class beach community</li> <li>• Water → Gulf-to-Bay/beached/parks (great now)</li> <li>• Waterfront</li> <li>• St. Petersburg waterfront</li> <li>• Natural settings</li> <li>• Good natural resources</li> <li>• Parks and recreation areas (2)</li> <li>• County park system</li> <li>• Award-winning state parks</li> <li>• Bayfront Park</li> <li>• Trail network (2)</li> <li>• Cultural amenities (Chihuly)</li> <li>• Entertainment → Ruth Eckerd Hall, Capital Theater, Straz, Marine Aquarium</li> <li>• Concerts</li> <li>• Outdoor movies</li> <li>• Dining</li> <li>• Craft beer/wine</li> <li>• Farmers markets</li> <li>• Holiday events; county advertisements</li> <li>• Improvement in local events is good (Sand Castle event, speed boat races)</li> <li>• There are many unique destinations in our county</li> <li>• Each city has its own specific unique destination</li> <li>• We have several attractive destinations</li> <li>• Vibrant downtowns</li> <li>• Downtown St. Petersburg</li> <li>• We're making good strides in attractiveness with enhancement of downtown Clearwater leading to the beaches</li> <li>• Historical → Downtown St. Petersburg, etc.</li> <li>• Walkable communities (2)</li> <li>• Car-free days/times</li> <li>• Health</li> <li>• Active winters</li> <li>• Diversity</li> <li>• City government-focused</li> </ul>	<ul style="list-style-type: none"> <li>• We can build on this [attractive destinations, walkable communities, natural settings, award-winning state parks and beaches], if we protect our natural resources and build new “Dunedins”</li> <li>• We want to keep people (more residents) moving to enjoy our features, our small towns, state parks, downtowns, and, of course, beaches</li> <li>• How can we make natural resources more accessible to tourists and locals?</li> <li>• Getting to those areas [unique destinations in cities] without driving is a challenge</li> <li>• All could be better for pedestrians → leverage great weather (Pinellas Trail!)</li> <li>• Driving and parking are challenging → better flow</li> <li>• Connect entire county and Hillsborough via trails or modern transport</li> <li>• We need more transit options</li> <li>• More thought about mixed use spaces</li> <li>• I feel attractiveness is not a priority-planting more trees? Decorative lighting?</li> <li>• Future Clearwater</li> <li>• Downtown Clearwater → more to do</li> <li>• Increase local fairs and festivals</li> <li>• Car-free days</li> </ul>

(#) Denotes frequency of comment.

## ADVANTAGE PINELLAS TOPIC #2 – A RESILIENT COMMUNITY

<b>Pinellas County “Now”</b>	<b>Pinellas County “Potential”</b>
<ul style="list-style-type: none"> <li>• Outside of weather-related issues, I have not seen many situations that require resiliency</li> <li>• Political climate is not as bad here as it is in other parts of the state</li> <li>• Coastal safety</li> <li>• Scientologists</li> <li>• We will always bounce back in time-we have already bounced higher than the recession</li> <li>• period</li> <li>• We have to protect our natural resources starts</li> <li>• with estuaries and mangroves.</li> <li>• Sense of community for everyone; meet people → R.E. Olds Days</li> <li>• Tourism/local residents</li> <li>• 24 cities to help coordinate; able to recover quickly</li> <li>• Well-prepared for Irma, etc.</li> <li>• Diversity, inclusiveness</li> <li>• The community currently has an opportunity for major growth</li> <li>• Good diversity of jobs</li> <li>• Both good and bad educational infrastructure</li> <li>• Cultural events</li> <li>• People helping people</li> </ul>	<ul style="list-style-type: none"> <li>• Wind? Solar investment? → both commercial and residential</li> <li>• Peaks and valleys of economy</li> <li>• Natural disasters</li> <li>• Affordable housing → micro neighborhoods, public parks, pools, amenities</li> <li>• Need neighborhoods not divided by major highways</li> <li>• As long as we as a whole continue to look back as well as ahead and communicate our values, we will remain resilient.</li> <li>• We want to be known for our destinations and industry. Everything else will come with it.</li> <li>• We need to be more self-sustaining in terms of jobs. BP oil spill hurt many small businesses; red tide hurt businesses.</li> <li>• Protect mangroves from cutting</li> <li>• Mixed use land use plans</li> <li>• Need to provide better awareness [storm surge]</li> <li>• Not the strongest diversification (economic)</li> <li>• 20-minute neighborhoods</li> <li>• More affordable housing is needed for the future</li> <li>• Power grid can be improved to accommodate solar panels</li> <li>• We still have an opportunity to prepare for a major storm (i.e., updated evacuation zones)</li> <li>• Need to address storm-surge vulnerability → 66% of jobs/industry in surge area</li> <li>• Pay for maintenance and replacement costs</li> <li>• Need to make sure we don't fall behind [education]</li> <li>• Affordable housing Need to plan for sea-level rise</li> <li>• More roadways for some areas</li> </ul>

## ADVANTAGE PINELLAS TOPIC #3 – SAFE AND HEALTHY COMMUNITIES

<b>Pinellas County “Now”</b>	<b>Pinellas County “Potential”</b>
<ul style="list-style-type: none"> <li>• Unique neighborhoods → sense of identity</li> <li>• Have great natural resources and lots of non-polluting industry</li> <li>• Many outdoor spaces for activity, parks with exercise stations, trails</li> <li>• Trail network → bridges</li> <li>• Pinellas Trail is great</li> </ul>	<ul style="list-style-type: none"> <li>• Need to connect [unique neighborhoods with sense of identity]</li> <li>• Improve road safety for bikes/pedestrians → signage, alternate routes, overpasses/ underpasses?</li> <li>• Sidewalks</li> <li>• Crosswalks</li> <li>• Lights</li> </ul>

### ADVANTAGE PINELLAS TOPIC #3 – SAFE AND HEALTHY COMMUNITIES

Pinellas County “Now”	Pinellas County “Potential”
<ul style="list-style-type: none"> <li>• Strong community centers</li> <li>• Hospitals and doctors</li> <li>• Hospitals dispersed</li> <li>• EMS, police, fire sustainable</li> <li>• Law enforcement</li> <li>• Community police presence</li> <li>• Community policing</li> <li>• Safe; I'm not sure</li> <li>• In the rural communities I visit, they appear safe and healthy</li> <li>• Downtown Clearwater at night does not seem as safe</li> <li>• New York broken windows</li> </ul>	<ul style="list-style-type: none"> <li>• Increased lighting in some areas would be a fix for the future</li> <li>• Need to improvement in crossing the streets, especially 4-6 lane roads</li> <li>• Should have more opportunities for healthy lifestyles-walk or bike to destinations</li> <li>• Getting around → walk/bike (right turn on red)</li> <li>• Healthy → Equip our hospitals with more doctors. They seem to be running ramped.</li> <li>• Need to deal with increasing average age's access to health care</li> <li>• Better transportation options for elderly and young without cars</li> <li>• Continue to build more community spaces for residents</li> <li>• Many more mixed areas</li> <li>• Currently, most communities have or offer community policing but how and where they can go to take advantage of these options are needed</li> <li>• Partnership; events promoting unity; increased awareness</li> <li>• Insurance</li> </ul>

### ADVANTAGE PINELLAS TOPIC #4 – STRONG ECONOMIC OPPORTUNITY

Pinellas County “Now”	Pinellas County “Potential”
<ul style="list-style-type: none"> <li>• For tourist-type businesses, yes</li> <li>• For corporate jobs, not so much</li> <li>• Currently, there is a pretty strong economy, at least that is what I am told. In my gut, there is much skepticism.</li> <li>• Good employment; currently 3.1% unemployment</li> <li>• Wages adequate</li> <li>• Solid labor base</li> <li>• Remote workers</li> <li>• Good place to start a business. Need to make sure economic development focuses on growing companies that are already here. Some call it economic gardening.</li> <li>• Economically, the community is growing but we miss out on major opportunities (corporate headquarters) due to transportation issues</li> <li>• Good educational opportunities; libraries</li> </ul>	<ul style="list-style-type: none"> <li>• Need to attract larger companies while ensuring we can accommodate influx of employees (housing, schools, stores, etc.). Many of our college graduates leave the area for better opportunities elsewhere.</li> <li>• Attract corporations (mid to large); keep young people here</li> <li>• Increasing medium size businesses</li> <li>• We're predominantly a service based economy. Need more medium-sized industry business districts like the Tampa Westshore District. Think \$50 million companies, not Jabil.</li> <li>• Small business development</li> <li>• Economic gardening</li> <li>• Attract tech companies; business applications and health care. Manufacturing has environmental problems.</li> <li>• Lean in to technology-driven opportunity</li> </ul>

## ADVANTAGE PINELLAS TOPIC #4 – STRONG ECONOMIC OPPORTUNITY

<b>Pinellas County “Now”</b>	<b>Pinellas County “Potential”</b>
<ul style="list-style-type: none"> <li>• Expensive, affordable housing is older and decaying</li> <li>• Lively cities</li> <li>• Stagnant</li> <li>• Local economy cannot flourish with major/high speed transportation as only option</li> <li>• By continuing to make sound decisions while looking forward to what we project our industries will be and considering how we will attract top young talent to live and play here</li> </ul>	<ul style="list-style-type: none"> <li>• Embrace technological advances → build infrastructure for electric cars, connectivity, etc.</li> <li>• Electric car infrastructure</li> <li>• Solar → Why does the county not have a cooperative to ago solar"?</li> <li>• Solar buses?</li> <li>• Workers → Lure them here; home workers; internet</li> <li>• Housing → High rise (Gateway)</li> <li>• Population growth → Millennials and retirees</li> <li>• Air BNB legislation, Uber at airport, Grub hub</li> <li>• Land use should be in conjunction with utility connections/investments</li> <li>• Education, streamlined processes</li> <li>• Deal with the vulnerability of storm surge</li> <li>• Deal with insurance costs</li> </ul>

## ADVANTAGE PINELLAS TOPIC #5 – MOBILITY AND ACCESSIBILITY FOR EVERYONE

<b>Pinellas County “Now”</b>	<b>Pinellas County “Potential”</b>
<ul style="list-style-type: none"> <li>• Trails</li> <li>• Greenways</li> <li>• Wall springs lookout tower is a great example; large ramp to top, wider sidewalks</li> <li>• Most places set up to have everything a resident would need within biking distance</li> <li>• Too much time on the road; construction</li> <li>• Challenges with public transportation; outdated, restricted</li> <li>• Do not see much of a problem here</li> <li>• Studies show more lanes equal more traffic; induced demand (Source: University of Pennsylvania)</li> <li>• By planning out our spaces and enforcing current code?</li> <li>• Mix city [illegible]</li> </ul>	<ul style="list-style-type: none"> <li>• We want to be an equitable destination; a place for everyone to enjoy</li> <li>• Model surrounding cities (Tampa, St. Petersburg)</li> <li>• Traffic calming in residential areas</li> <li>• Improved roadway systems; local and interstate</li> <li>• Tampa Bay better connected</li> <li>• Ride share/commuter transportation from Pasco (Chicago "L")</li> <li>• Currently, we have a need to make our community accessible to everyone. We have to think about our handicapped community and children to make it safer and more accessible</li> <li>• I think mobility is not a forethought in our aging community</li> <li>• Improve road safety for bikes/pedestrians → signage, alternate routes, overpasses/ underpasses?</li> <li>• Address road crossings</li> <li>• Lots of investment seen in road improvements (throughput) but what about slower/cheaper 'traffic" → speed comes at a cost. Overpasses by schools are great examples.</li> <li>• More than roads</li> <li>• Transit, roads, improved transit in the future</li> <li>• People movers for highest congested areas</li> </ul>

## ADVANTAGE PINELLAS TOPIC #5 – MOBILITY AND ACCESSIBILITY FOR EVERYONE

Pinellas County “Now”	Pinellas County “Potential”
	<ul style="list-style-type: none"> <li>• Most places set up to have everything a resident would need within biking distance; but it is dangerous as roads are configured now and there are gaps in connectivity</li> <li>• Paris → no cars in city one time per week. They can do this because of land use</li> <li>• Need lots of improvements to bus</li> <li>• Transit system needs work</li> <li>• Sidewalks- crosswalks</li> </ul>

## ADVANTAGE PINELLAS TOPIC #6 – A COLLABORATIVE VISION FOR THE FUTURE

Pinellas County “Now”	Pinellas County “Potential”
<ul style="list-style-type: none"> <li>• Activity city councils; county administration</li> <li>• Advantage Pinellas planning</li> <li>• Cross-county trails</li> <li>• Courtney Campbell Trail</li> <li>• Care for the environment</li> <li>• Individual cities working well</li> <li>• Local control of many municipalities is a huge advantage; decisions are closer to the people but can make big projects more difficult</li> <li>• A great place to live, work, play for all</li> <li>• I don't feel the longer term residents enjoy a collaborative vision for our Tampa Bay area</li> </ul>	<ul style="list-style-type: none"> <li>• We need to clearly communicate these plans to the residents (television, newspapers, Facebook)</li> <li>• With younger generations moving in and people from bigger or more efficient areas will come much more collaboration and idea sharing</li> <li>• Intra/inter county challenges, vision</li> <li>• Work more with surrounding counties so that we are all strengthened</li> <li>• Appreciate the focus on a few chosen "thoroughfares" with branching neighborhoods but how to keep them from being dividing lines</li> <li>• Equitable access to great features</li> <li>• Need to develop stronger requirements to land density versus transport Buses</li> <li>• Ways to pay for it all</li> <li>• We will need more toll roads</li> </ul>

After completing the Pinellas Advantages questionnaire and discussing their observations, the focus group participants were given a list of priority projects being considered for funding in the Advantage Pinellas plan. The meeting facilitators asked the participants to consider the list and provide their thoughts. Their responses are indicated in Table 5 beginning on page 20.

Table 5  
**FOCUS GROUP PRIORITIES - DRAFT 2045 NEEDS PLAN PROJECTS**  
 Advantage Pinellas Long Range Transportation Plan

<b>TABLE LEGEND</b>							
<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 20px; height: 10px; background-color: white;"></div> Project selected by 1 person  <div style="border: 1px solid black; width: 20px; height: 10px; background-color: yellow;"></div> Project selected by 2 persons  <div style="border: 1px solid black; width: 20px; height: 10px; background-color: lightcoral;"></div> Project selected by 3 persons  <div style="border: 1px solid black; width: 20px; height: 10px; background-color: orange;"></div> Project selected by 4 persons  <div style="border: 1px solid black; width: 20px; height: 10px; background-color: darkorange;"></div> Project selected by 5 persons                 </div>							
Map #	Facility	From	To	Total Lanes		Jurisdiction	Notes
				Existing	2045 Need		
<b>NEW ROADS/CONNECTIONS</b>							
4	Burbank Rd	Douglas Rd	Tampa Rd		2D	Oldsmar	New connection
<b>Comment about #4:</b> With sidewalk? Good idea.							
5	Disston Av Ext	Woodhill Dr	Meres Blvd	N/A	2U	Tarpon Springs	Also added S Disston Av
6	Meres Blvd	Alt US 19 (SR 595)	US 19 (SR 55)	N/A-2U	2U/2D	Tarpon Springs	New road connection
8	16 <sup>th</sup> Ave SE	Lake Av	Starkey Rd	N/A	2E	County	New connection
<b>WIDENING OF EXISTING ROADS</b>							
11	Starkey Rd	Flamevine Av	Brian Dairy Rd	4D	6D	County	
<b>Comment about #11:</b> No!							
12	Starkey Rd	Bryan Dairy Rd	SR 688 (Ulmerton Rd)	4D	6D	County	
<b>Comment about #12:</b> No!							
13	Starkey Rd	SR 688 (Ulmerton Rd)	East Bay Dr	4D	5D/6D	County	
<b>Comment:</b> No!							
14	Park St N	54 <sup>th</sup> Av N	S of Park Blvd	4D	6D	County	
Map #	Facility	From	To	Total Lanes	Jurisdiction	Notes	
16	Douglas Rd	Commerce Blvd	Burbank Rd	Existing	2045 Need	Oldsmar	
20	US 19 (Tampa Rd Interchange)	N of CR 95		6D + 2AUX	6P	FDOT	
<b>Comment about #20:</b> No.							
21	US 19 (Alderman Rd Intersection)	N of Nebraska Av		6D + 2AUX	TBD	FDOT	Evaluating at-grade options

<b>Comment about #21:</b> No.							
22	US 19 (Klosterman Rd Intersection)	S of Timberlane Rd		6D + 2AUX	TBD	FDOT	Evaluating at-grade options
24	Gandy Blvd	Gandy Bridge	N/A	4D	4P	FDOT	Bridge replacement + express lane + trail
26	Curlew Rd	Alt US 19	Veterans Exp		4P	FDOT	Elevated Managed Lanes in median
<b>Comment about #26:</b> No. No way. A must. Tolled? Tolled? 😞							
27	East Lake Rd	Tampa Rd	Trinity Blvd	4D	6D	County	Corridor is currently policy constrained; evaluating options
<b>Comment about #27:</b> A must. Widen. We need more improvements.							
<b>COMPLETE STREETS/ENHANCEMENT PROJECTS</b>							
11	Belcher Rd	Druid Rd	NE Coachman Rd	4U	4E	County	
16	Sunset Point Rd	Alt US 19 (SR 595)	Keene Rd	2U	2E	County	
<b>Comment about #16:</b> Need sidewalk.							
18	Alt US 19	Live Oak St	Anclote Blvd	2U	2E	FDOT	
19	Alt US 19	Brevard St	Klosterman Rd	2U	2E	FDOT	
<b>Comment about #19:</b> No.							
20	Alt US 19	Orange St	Tampa Rd	2U	2E	FDOT	
21	SR 590/NE Coachman Rd	Drew St	McMullen Booth Rd	2U	2E	FDOT	
25	Skinner Blvd	Alt US 19	Bass Blvd	4U	2D	FDOT	

**Additional focus group comments on the project list:**

- #15 – Would ease traffic but biggest problem is southbound traffic turning right from Forest Lake into SR 580. Need to be careful about pedestrian/trail traffic also crossing at this intersection
- #15 – Not without pedestrian overpass
- Big fan of any and all “complete street” projects, especially with extra-wide sidewalks and divided/protected bike lanes.
- In any project, taking the opportunity for a divided bike lane, expanded sidewalk (or any sidewalk in the case of Douglas), or pedestrian overpass or safe crossing is my priority.
- CSX – Commuter rail
- CSX line (sold?) – project not funded

- CSX
- Let's go CSX!
- Possible commuter rail
- No tolls!
- Need expressway – North Pinellas, Hillsborough, E+W
- 2045 horizon – include interim projects before 2045
- Imputed demand – If you widen the roads, more traffic will come to fill them (University of Pennsylvania Study)

#### DEMOGRAPHIC SURVEY

The second meeting of the focus group concluded with a brief demographic survey of the meeting participants. The purpose of the survey was to gain a better understanding of the background characteristics of the focus group. In total, 13 participants took part in the survey, the responses to which are summarized below:

#### **QUESTION #1: How many years have you lived in Pinellas County?**

**Responses:**

1 Year or Less	1.01 to 10 Years	10.01 to 20 Years	20.01 to 30 Years	More than 30 Years	Average Years Lived in Pinellas	Median Years Lived in Pinellas
2	0	3	1	7	32	31

#### **QUESTION #2: What is your age?**

**Responses:**

Under Age 25	Age 25 to 65	Age 65 and Over	Average Age	Median Age
0	9	4	51	47

#### **QUESTION #3: What is your gender?**

**Responses:**

Male	Female
7	6

#### **QUESTION #4: Would you say your total annual household income is...**

**Responses:**

Under \$15,000	\$15,000 to \$29,999	\$30,000 to \$59,999	\$60,000 to \$99,999	\$100,000 to \$124,999	\$125,000 or more
	1	x	3		8



**QUESTION #5: Are you of Hispanic, Latino, or Spanish descent?**

Responses:

Yes	No
-	13

**QUESTION #6: Which of the following best describes your race/ethnicity?**

Responses:

African American	Asian/Pacific Islander	Native American/Eskimo	White	Other
3	-	-	10	-

**QUESTION #7: Which of the following best describes your employment status?**

Responses:

Employed		Not Employed		Work from Home	Retired	Student	Disabled, not able to work
Full Time	Part Time	Looking for Work	Not Looking for Work				
8				4	4		

**QUESTION #8: What is the zip code where you live?**

Responses:

North County		Mid County		South County	
RESPONSES	ZIP CODES	RESPONSES	ZIP CODES	RESPONSES	ZIP CODES
6	34677 (3) 34683 (2) 34695	5	33755 33756 33765 (3)	2	33708 33772

**QUESTION #9: What is the zip code where you work?**

Responses:

North County		Mid County		South County		Other County	
RESPONSES	ZIP CODES	RESPONSES	ZIP CODES	RESPONSES	ZIP CODES	RESPONSES	ZIP CODES
4	34677 (2) 34683 (2)	4	33755 (2) 33761 33765	-	-	1	33603

## Focus Group Meeting #3

### PROGRAM

The program for the October 3, 2019, focus group meeting began with an overview of the planning process for the Advantage Pinellas LRTP. Chelsea Favero, the Forward Pinellas project manager for the LRTP, explained that the long-range transportation plan for Pinellas County is updated every five years. During the two-year planning process, countywide mobility needs through year 2045 were identified based on:

- Population and employment projections
- Travel conditions and changing travel patterns in the county and region
- Screening-level corridor evaluations to identify types of needed transportation projects
- Public input

The resulting list of ‘needs’ projects were then prioritized and aligned with available revenues for implementation over the 2045 timeframe. The proposed projects and funding allocation will be considered by the public and, ultimately, the Forward Pinellas board for adoption in the long-range transportation plan.

After a recap of the first and second focus group meetings, the meeting participants were asked to weigh in on whether the proposed list of priority projects resonated with their discussions over the past year. The focus group had received information on the general types of projects being proposed. During Meeting #3, the participants reviewed the proposed ‘cost-feasible’ projects, including road and active transportation projects. The various revenue sources and allocations available to pay for multimodal transportation projects and restrictions for their use were explained.

Refer to the Appendix for the presentation slides and additional meeting materials.

### ATTENDANCE

Table 6 below shows the geographic representation of the six participants that attended the final focus group meeting. Also, in attendance were Forward Pinellas staff Chelsea Favero (facilitator), Al Bartolotta (facilitator), and Hilary Lehman (floater), and Vrana Consulting staff Tammy Vrana (scribe).

Table 6  
**FOCUS GROUP MEETING #3 - GEOGRAPHIC REPRESENTATION**  
 Advantage Pinellas Long Range Transportation Plan

<b>Pinellas County Sub-Area</b>	<b>North County Area</b> <i>Pinellas/Pasco County Line to Sunset Point Rd</i>	<b>Mid-County Area</b> <i>Sunset Point Rd to Bryan Dairy Rd</i>	<b>South County Area</b> <i>Bryan Dairy Rd to Pinellas/Manatee County Line</i>
<b>Number of Participants</b>	<b>1</b>	<b>4</b>	<b>1</b>
<b>Zip Codes Represented</b>	34695	33755 33765 (2) 33767	33772

### DISCUSSION

The focus group’s reaction to the proposed cost-feasible projects, funding allocations by mode, and implementation timing over the 2045 plan timeframe are provided in the following. The focus group asked several clarifying questions but, in the end, were in full agreement with staff’s proposal and appreciative of the focus group process and results.

### *PROJECT FUNDING*

- There was money that wasn't available for transit because it wasn't matching. Would a funding match by local government double the County's amount for transit?
- Is there reason to believe that local governments won't put all that money into more roads?
- For the desired spending, it sounds like people were thinking about new projects and expansion, not necessarily maintenance. Does maintenance take a big piece of the spending?
- Would there be an increase in the gas tax or would we leverage what we are already paying?

### *ROAD PROJECTS LIST*

- For all of the projects listed in Seminole, there is a great need for them.
- What is the status of the US 19 interchanges at SR 580 and Curlew Road?
- For the I-275 express lane project, how does that relate to the hardening of the shoulders?
- Is an express lane two people in a car? I read in an article that in Atlanta they are switching express lanes from two or three people in a car to toll lanes.
- How does dynamic pricing for a toll lane make the traffic pattern improve? I don't understand that at all. That's the most ludicrous thing I've ever heard. You build a toll road for people to use it and then you price it so they can't. That doesn't make any sense.
- Dynamic pricing is used on I-95 toll lanes in south Florida. At the highest price, the lanes are still congested. People are willing to pay.
- There is a very simple solution. Build another toll lane. You get all the money from the toll revenues.
- They figure out the elasticity of the toll pricing. How expensive can the tolls be and still have people willing to use them. There is a ceiling that they are legally allowed to charge. Toll pricing was studied and it was found that people are willing to pay.
- I think there are a lot of people who live in Pinellas and work in Hillsborough and vice versa that would be willing to do that (pay tolls).
- In south Florida, the toll lanes are interesting relative to transit. Express buses use the lanes in Miami, which allows people from all walks of life to benefit from these lanes. It's pretty quick, quicker than driving, and a person just has to pay the bus fare.
- Is the county responsible for the conceptual design of the transportation system? In other word, is there an entity that looks 20 years into the future at the geographic pattern and where transit, overpasses, and cars should ideally be? The concept should be what should we do and then work on the funding.
- Do we know what travel is going to look like in 40 years?
- These people know. They already have a concept.
- Some of the funding is designated by law. Is that designated by law because of how the state or county residents voted?
- What is happening with the intersection of Belcher Road and SR 60? It's a nightmare.
- A few months ago there was an article in the newspaper about the intersection of Belcher and SR 60. The article said there was a proposal to stop left turns at the intersection.
- Essentially, the left turn would become a U-turn with a signal.
- Would they have to buy land for right-of-way for that?
- Would that be enough space to accommodate that amount of traffic?

### *INTERSECTIONS*

- Does the 10% category in the plan include traffic signal timing technology?

- I'm seeing some improvements already. At US 19 and Curlew Rd, the signal as through traffic go first and the left turn traffic next. This gets the through traffic moving so the left-turning cars are not waiting to get into their queue. This helps move traffic.
- I learned in the Pinellas Citizens Academy there is growing interest in roundabouts. They are much more effective for traffic control and are safer.
- I live on Clearwater Beach and that roundabout is the worst thing in the world. People don't know what to do. It's not a stop sign; it's a yield sign.
- Two-lane roundabouts would work well if we educated people.
- Roundabouts work even after a hurricane when the power is knocked out.
- Roundabouts produce time savings because you don't have to stop and wait at a signal and they have a tiny fraction of the number of wrecks.
- Roundabouts cost about half as much as a signalized intersection.

#### *TRANSIT SERVICE*

- Do we have information about the proportion of ridership on buses moving between Hillsborough and Pinellas? What is the capacity of a bus?
- The capacity of a bus is 35 riders. There are only six express bus trips per day and that service ends at 5:30 p.m. These buses are not empty.
- I think a big reason that people do not use transit is they are unaware of it.
- Transit buses need to consider people's schedules. That way people can get to work at an average time and people who do not drive can get to the doctor or recreational activities. It needs to fit our schedules.
- The single most important thing to get more people to use transit, to make it more valuable, is frequency. And, service needs to be earlier in the morning and later in the evening.
- It's a chicken-egg situation.
- The other challenge is that if you ride the bus somewhere it does not get you where you are going because the county is so spread out.
- While there are places like that in Pinellas County, there are point-to-point destinations where it is easy to walk to the bus. A lot of people live in downtown St. Petersburg.
- That go to Hillsborough? I'm surprised to hear that. If there are 35 people to a bus, six times per day, it doesn't sound like a lot of people.
- Roughly 80,000 people travel between Pinellas and Hillsborough Counties per day.
- We're talking about adding more buses. At 35 people times six buses a day, that's 210 people. Why would you improve something that take 200 people when there 20,000 people trying to get in lanes?
- Hillsborough is providing frequent bus service now. I think the hardened shoulders on I-275 will be valuable for that express service.
- What is to keep drivers from using the shoulders intended for transit?
- The tolls are now collected by taking a picture of your license tag. They could put those up instead of relying on law enforcement.
- Transit service must be publicized and marketed adequately.
- From what I've heard on this focus group, I see the need committees for transit service, pedestrian safety, and others.
- What is the percentage increase in transit ridership per year?

- The decrease in ridership is not entirely fair because there were service cuts.
- Again, it's a chicken-egg thing.
- Are the people on the transit committee geographically diverse—from each city in Pinellas County—to be able to represent the needs of different people?
- PSTA's charter does require geographic distribution.
- There was a nice article in the paper about a woman in Pinellas County who rides the bus all the time.
- I've tried to ride the bus but it just takes so much time.
- We have to learn the transit schedules and work it into our schedules. You have to be able to work transit into your schedule.
- Are park-n-ride facilities included in the plan for transit?
- In terms of stops to load the buses, how much of that is boarding versus discharging? I would use the 80-20 rule. That would be sufficient enough to start with.
- It depends on the area. If the location is an industrial area, you will see a lot of people getting off at one spot.
- PSTA can tell how many people are getting on and off at any given stop. They use counting software connected to GIS mapping.
- Commuters get on the bus to ride to work on a limited number of buses at a time.
- My college-aged granddaughters use Uber and Lyft to get around. They don't drive. It's much easier. That generation doesn't even think about riding a bus. When I lived in the San Francisco Bay area, I rode BART, which was very smooth. I rode from one place to another, got on, got off, walked a block, and was done. But if I'm going to the grocery store or a restaurant, I'm not going to ride the bus and be bouncing all around.
- We have a lot of single parents that buses are their only form of transportation. They have to take the bus to the grocery store and get themselves home.
- But that is 1% of the population.
- That could be 5-10% depending on the area.
- Even if it's 5%, we are talking about a lot of money for 5% of the population. There are new technologies and new solutions that are coming out.
- When you are talking about a lot of money, what do you mean?
- We're spending 24% of the funds for 5% percent of the population.
- The plan for buses is valuable for much more than 5% of the population, but 5% of the population are unable to afford a car and rely on bus transport because they have no other option. The hope would be that by improving the bus system, we would attract people who might have that option but the bus would work for them. That would be one less car. Even 10 people on a bus is significant for taking drivers off the road.
- Then we wouldn't have to worry about congestion. At first, we would have to make that investment to achieve critical mass. Then there would be enough people taking transit and we wouldn't have to be pouring money into roads.
- Transit is a geometry problem at the root. There is only so much space. Where there is more people in their cars than space, you have congestion. Transit is a good way to take the space that people in cars take up and compress it to almost nothing.
- Unless the buses are empty. I live on Clearwater Beach. I drive the causeway. My wife and I play a game to guess how many people are on the bus. If we see more than three people, we say, "wow,

that's really something." You have a great big bus taking the space of three cars holding as many as one car. Even the Jolley Trolley has three people on it.

- I've tracked this very closely. If a bus is only carrying three people, that routes is not going to survive.
- Was it the time of day when people would be going to work at the restaurants or hotels? Those workers, such as housekeepers, go to work early.
- What about people who are elderly and the bus is their only way to get to the doctor?
- I'm surprised because the beach routes tend to do well.
- The only time we see more is the bus that goes from the parking lot to the marina. That one is full. These are mostly tourists that go back and forth. For people to park downtown and take the bus to the beach, that doesn't work because they have to carry all their stuff.
- In terms of road projects, it looks like all areas of the county are being touched on. I understand all projects cannot be done at once and you have to pick the priorities.
- Given all the restrictions, I think you have done a good job. Kudos to Forward Pinellas. I'm just looking for the bigger plan. I think it's very interesting that your grandchildren are willing go without cars. The next step is to get them to take the bus.
- There are a lot of students at SPC that would like to take the bus to multiple campuses.
- Generation Z isn't pursuing driver licenses as much as the former generations.

#### *OFF-THE-TOP PROGRAM ALLOCATIONS*

- Is there any correlation to population growth within the county? Will these programs relate to growth areas? There seems to be a lot more growth in the St. Pete area.
- I think 30 or 40 years ago people wouldn't have wanted to build their house close to an industrial park. People wanted to be away from that. Now, the types of industry has changed and has fewer negative aspects.
- People want to live next to offices and shops. Attitudes have a changed about residential being located close to jobs.
- There are still a lot of people who live in Pinellas and commute to Tampa.
- When you look at the number of lanes that cross the county lines, we cannot get more lanes than that. We can't physically fix intercounty travel.
- The Courtney Campbell Causeway is not that much better than the Howard Frankland Bridge.
- As for as the focus on getting to the beach, residents may not want additional traffic. What has been the discussion on widening roads to Clearwater Beach? If there were tolls on the bridges, people would still go.
- My wife wants to make Clearwater Beach for residents only!
- I was a parent with little children, do you think I am going to park in a parking lot and take children on the bus? You would be there only a couple of hours and their clothes would be wet. I wouldn't go to the beach.
- I have taken the ferry.

#### *PARKING*

- Parking is a problem, too. It costs \$3 per hour to park at Clearwater Beach.
- You would think that the elected officials on Clearwater Beach would use space that becomes available to build a parking garage. Instead, condominiums and hotels are built and filled.
- There are public parking garages on Clearwater Beach.

- Every new hotel on Clearwater Beach has five or six floors of parking.
- Have those parking garages been communicated anywhere? In the paper?
- If you are a visitor at a hotel, that's great. But, if you are someone going to a restaurant across the street, we all have seen people wandering around the streets looking for parking.
- There isn't really parking available as some of the restaurants at the beach. Parking gets less and less and less. That's why it becomes more and more important that we have different forms of transportation to go to the beach. We need options.
- Clearwater is changing their parking payment app. I just got an email today that the city is changing from Park Mobile to something else. The app says we no longer take these forms of payment and that you have to change to this.

#### *ACTIVE TRANSPORTATION PROJECTS*

- I think this is great, great progress. I love it. I would certainly like to see more frequent connections but you've done a such a great job splitting the funds between the modes. I think this is a really valuable transportation investment for the county.
- The trail now is going to go past the Clearwater stadium to Drew Street then across Gulf-to-Bay Boulevard. How do we get across Gulf-to-Bay Boulevard?
- The trail overpasses are significant, impressive.
- There are separated bike lanes planned at 13th Street near the SPC campus. That's a fast road that needs something separated.
- All of these projects are needed but I'm sure there are other needed projects that didn't make the list.

#### *FUTURE FUNDING FOR TRANSPORTATION*

- Does the county get 60% of the funding because they have a bigger area to cover?
- Is the 5-cent gas tax something that is voted on by residents?
- If Pinellas County goes with a sales tax increase, I'm hoping we have a better plan than Hillsborough's so ours isn't legally challenged.
- I like a transportation sales tax. Anybody that spends money would pay that.
- Is this an extra percent on top of the 7% we pay now for Penny for Pinellas?
- How much is budgeted today? This is one billion dollars over 10 years. How much do we spend today (of Penny for Pinellas) on transportation support? How big of an increase is this? What is the percentage increase in transportation spending?
- How do you interface and when do you interface with the locals for these decisions?
- Local funding is a local issue so that would be an independent decisions.
- Do you have to appeal to the taxpayers? Do you have a program that takes your budget and says this is what we are proposing to do? You have a County Commissioner but they are just one out of five. To get these things passed you have to go to the citizens to tell them you want pass this. How do we know this?? Is there a program that interfaces with all of them? Are there brochures that are sent around?
- Forward Pinellas does public outreach. Is the plan to go forward with this plan?

#### *CONCLUDING REMARKS*

- I think you have done a fantastic job.

- Over three meetings, we have gained a tremendous amount of knowledge of how this really works. The outreach programs to citizens allow us to provide input to our local officials to say, “Hey, we really want this. We spent a lot of time doing this.” There are not a lot people that stand up at those budget meetings.

**EXIT SURVEY**

At the conclusion of Focus Group Meeting #3, the participants were asked to complete an exit survey about the focus group process and outcomes. The survey results below will help Forward Pinellas assess the effectiveness and overall value of convening focus groups for future planning efforts.

**QUESTION #1: How do you feel about your participation in the Advantage Pinellas focus group process (circle one)?**

Very Negative	Somewhat Negative	Neutral	Somewhat Positive	Very Positive
-	-	-	-	6

*Please explain why you chose the answer above.*

RESPONDENT	COMMENTS
1	The process was well organized, extremely informative. Staff did a great job keeping the conversations constructive.
2	I have learned a lot about transportation and what it takes to accomplish these projects.
3	Staff expertise outstanding.
4	Gained a lot of knowledge on the process. I really respect the transparency.
5	Good/open discussions - listening and answering our questions.
6	It was very informative and it felt like a great opportunity to share input.

**QUESTION #2: Did you feel you came away with a better understanding of our transportation system and planning process in Pinellas County (circle one)? Y/N**

RESPONSES	
Yes	No
6	-

*Please explain.*

RESPONDENT	COMMENT
1	The explanation on limitations of funding were informative.
2	The amount of work involved to accomplish one project and the cost.
3	Able to provide direct impact.



RESPONDENT	COMMENT
4	Very detailed discussion of the process and funding.
5	Good overall view – good details.
6	Much learning.

**QUESTION #3: Do you feel confident that your feedback will be reflected in the final plan (circle one)? Y/N**

RESPONSES		
Yes	No	Left Blank
5	-	1

**Please explain.**

RESPONDENT	COMMENTS
1	Good allocation from off-the-top survey.
2	The committee leaders said we helped them.
3	-
4	There are a lot of positive changes forthcoming to make Pinellas a better place to live or visit.
5	Good notes/feedback from earlier meetings included in the recommendations.
6	This is a tough one. I hope so 😊

**QUESTION #4: What was your main takeaway from this focus group process?**

RESPONDENT	COMMENTS
1	The county needs to get serious about funding transportation.
2	All the work involved.
3	Broaden awareness/knowledge of planning meetings and planning/allocation of available/planned funding.
4	-
5	Much better understanding of the challenges. Good input from group.
6	I really want to live/work/play in walking distance and I want to help build my community that way.

# APPENDIX

## ATTENDANCE RECORD

### FOCUS GROUP MEETING #1 MATERIALS

- Presentation
- Handout
- Flipchart Notes

### FOCUS GROUP MEETING #2 MATERIALS

- Handout
- Completed Questionnaires

### FOCUS GROUP MEETING #3 MATERIALS

- Presentation
- Handout
- Flipchart Notes

# ATTENDANCE RECORD

# WELCOME BACK! PLEASE SIGN-IN BY CHECKING THE BOX FOR TODAY'S MEETING.

FOCUS GROUP MEETING #3 | ADVANTAGE PINELLAS LONG RANGE TRANSPORTATION PLAN

LAST NAME	FIRST NAME	ZIP	COUNTY DIVISION	AREA	MEETING #1 11/27/18	MEETING #2 04/11/19	MEETING #3 10/03/19
Beverly	Deasie	33702	01 S	SP			
Keirn	Guy	33704	01 S	SP	X		
Slezak	Carol	33708	01 S	SP			
Kinsey	David	33708	01 S	MB	X	X	
Panyard	Timothy	33708	01 S	SP			
Grant	Cheryl	33712	01 S	SP	X		
Meinsen	Joyce	33772	01 S	SEM	X	X	X
Keller	Andrew	34677	02 N	OLD	X	X	
Keller	Lauren	34677	02 N	OLD		X	
Velett	Greg	34677	02 N	ELK	X	X	
Curls	Jennifer	34683	02 N	PH	X	X	
Curls	Rob	34683	02 N	PH	X	X	
Jennings	Joan	34689	02 N	TS			
Kennedy	Melissa	34689	02 N	TS	X		
Fogarty	James	34695	02 N	SH	X	X	X
Kimball	Laurie	34698	02 N	DUN	X		
Slaughter	Jason	33758	03 M	CLW			
Lee	Gerry	33761	03 M	CLW	X		
Taylor	Meg	33755	03 M	CLW	X	X	X
Benjamin	Gary	33765	03 M	CLW	X	X	X
Johnson	Kimberly	33765	03 M	CLW	X	X	X
Staskiel	Jim	33767	03 M	CLW	X		
Ogilvie	Steve	33767	03 M	CLW	X	X	X
Rivers	Edwin	33756	03 M	CLW		X	
Rivers	Retha	33756	03 M	CLW	X	X	

# FOCUS GROUP MEETING #1 MATERIALS

**HANDOUT**

**PRESENTATION SLIDES**

**FLIPCHART NOTES**

**Handout – Task Force Meeting #1, November 27, 2018**

November 27, 2018

# FOCUS GROUP MEETING #1

**Advantage PINELLAS** | Long Range Transportation Plan

## IN THIS ISSUE

- Welcome!
- Comfort Breaks
- Meeting Ground Rules
- What's Next?

## Welcome!

Forward Pinellas thanks you for spending your evening with us. Your input during this Focus Group meeting and two additional meetings in 2019 will help us develop a relevant, responsive, and forward-thinking long range transportation plan for Pinellas County.

## Comfort Breaks

Please help yourself to refreshments and breaks at anytime during the meeting. Other beverage choices are available in the vending machines in the lobby. Restrooms are located off the lobby, across from our room.

## Meeting Ground Rules

To help this evening's meeting run smoothly and make the most productive use of everyone's time, please the observe the following meeting ground rules:

1. Expect and appreciate absolute candor.
2. Engage in constructive/productive dialogue and feedback.
3. Don't hold back. Feel free to express your opinions, while staying on topic.
4. Value each response and welcome new ideas.
5. Allow everyone the opportunity to speak.
6. Avoid sidebar discussions and negative body language.
7. Feel free to challenge, criticize, and/or disagree during the discussion, but please do so respectfully.
8. Ask questions for clarity and provide honest answers.
9. Respect and build on the strength that diverse perspectives offer.

*thank you!*

## What's Next?

The next Focus Group meeting will be held during Spring 2019. About 2-3 weeks prior to the meeting, you will be notified of the meeting date and other details.

In the interim, if you have questions or suggestions, feel free to contact Tammy Vrana at [tvrana@vciplanning.com](mailto:tvrana@vciplanning.com) or (727) 415-1200.



ENGAGE. ADAPT. CONNECT.

**Presentation Slides – Task Force Meeting #1, November 27, 2018**



**Forward Pinellas**  
Focus Group #1

November 2018

Advantage PINELLAS  
MANAGE CONNECT

1

ADVANTAGE

FORWARD PINELLAS  
Integrating Land Use & Transportation

Why Forward Pinellas?

- Special Act in 2014 created a 13-member board for countywide land use and transportation planning
- Align resources and plans that help to achieve a compelling vision for Pinellas County, our individual communities and our region
- Provide leadership and technical assistance for 25 local governments

RPC PINELLA REGIONAL PLANNING COUNCIL

MPO

2

ADVANTAGE

- Regional Transit Feasibility Plan
- Central Avenue Bus Rapid Transit
- Many Partners
  - FDOT
  - TBARTA
  - Multiple MPOs and transit providers
  - Regional Planning Council

3

ADVANTAGE

1910-1949      1950-1959      1990-Present

Existing residential units      New residential units

4

ADVANTAGE

**Unique Pinellas – Population Density**

Persons Per Square Mile By County

County	Persons Per Square Mile
Pinellas	3514
Hillsborough	1352
Pasco	677
Manatee	496

Journey to Work Travel Time

County	Travel Time
Pinellas	24.4
Hillsborough	26.8
Pasco	30.3
Manatee	25.1

Source: BEBR 2017

5

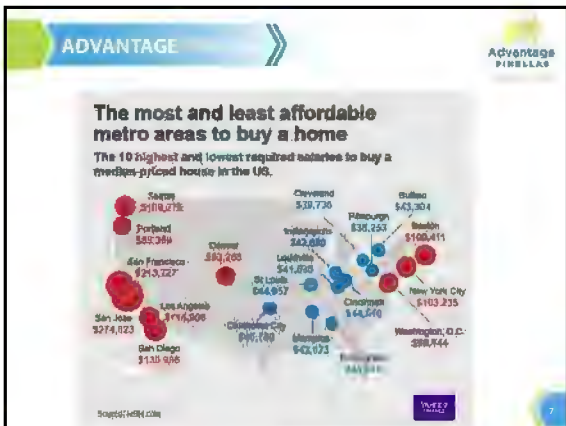
ADVANTAGE

**Unique Pinellas – Housing + Transportation Costs**

Pinellas 57%	Hillsborough 58%	Pasco 57%
Safety Harbor: 68%	Tampa: 56%	NPR: 46%
Largo: 51%	Plant City: 55%	Wesley Chapel: 66%
St. Pete: 56%	Temple Terrace: 56%	Trinity: 76%
Clearwater: 58%		

Source: H+T Index, Center for Neighborhood Technology

6



7

### Framework for Regional Long Range Transportation Plan: One Long Range Plan for the Tampa Bay Area – “Three Ring Binder”

- Regional**
  - Regional Element – requires Hillsborough, Pasco and Pinellas to agree upon regional investments and revisions to those investments
  - Scenarios for the future
- Hillsborough**
  - Local Elements – provides autonomy to local MPOs to set priorities for local projects and supporting policies
- Pasco**
  - These local elements may be changed without approval from the full region
- Pinellas**

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### Housing

Countywide Plan allows Forward Pinellas to:

- Provide residential density bonuses for affordable or workforce housing
- Require transit station area planning to incorporate consideration of affordable or workforce housing

Transit-Oriented Development planning guides growth to areas within easy access of transit

Accessory dwelling units and other regulatory tools

9

### Access to Transportation

- Identifying areas of opportunity for connecting to jobs
  - Joe’s Creek Greenway Trail
- Improving transit service
  - Central Ave BRT
- Incentivize mixed use housing and redevelopment
  - Gateway Master Plan & U.S. 19 Corridor
- Encourage transportation mode share
  - Complete Streets Program

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**THANK YOU!**

Whit Blanton, FAICP  
wblanton@forwardpinellas.org

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Blue focus group ①

1) How do you get around?

- Walk - old Northeast
- Driving, but when downtown, like to walk.
- Tried to use trolley in Clw, gave up  
Mr and Mrs Side streets - avoid 19, golf to bagy
- Had to use public transportation to get from St. Pete to Tarpon - 1.5 hrs
- Bike + walk in Oldsmar - great trails, but bike lanes end before work

1

②

- Not enough separated bike lanes in county - dangerous
- No easy way for bikes to get to shopping centers, places ppl want to go
- In other places, bikes rule - it's an attitude thing. Build roads for cars, not ppl
  - No accommodations for bikes, walkers
  - No light at crosswalk on Clw Beach by trenches
- Better job with signage, tourists don't know where they're going

2

Speeding a problem? ③

- 60% - 80% of roads on county are probably over limit
- Depends on road; alt 19 goes slower, not that congested
  - 2 lane road, trail, lots of lights
  - No practical solution to those problems
- Making wider bike lanes won't solve traffic problems.
- No way to expand many of streets
- 19 is better than it was

3

Best/Worst things? ④

Best	Worst
<ul style="list-style-type: none"> <li>◦ walking</li> <li>◦ overpasses + underpasses for trails. connectivity for trail systems</li> <li>◦ US 19 overpasses</li> </ul>	<ul style="list-style-type: none"> <li>◦ Buses - not frequent</li> <li>◦ Signal pacing, signage</li> <li>◦ Pasco growth, McMullen Booth congestion anticipated impacts</li> <li>◦ Elevated portion of 19 ends suddenly</li> <li>◦ Missed opportunity - waterborne transpo</li> <li>◦ Not one central location ppl are looking to get to</li> </ul>

4

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- How do we pay for this? Are we

8

9

### Pinellas Advantages

- comfortable (know way)
- Pinella Trail
- \$ spent to make County function & look good
- Ride bike to work
- small town quality - close to other communities
- convenience to almost everything
- Access to major league sports, theater (regional assets)
- Does not have Tampa's congestion
- cities care about providing quality services + customer svc

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### Advantages (continued)

### challenges facing us

- Mobility for people who can no longer drive. Transit takes a long time to travel.
- Congestion in surrounding communities makes it difficult to leave local town.
- lack of quality transit that offers convenience; not frequent
- bike access is lacking
- Can't walk to nearby destinations

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### Challenges (continued)

- lack of train travel - comfortable, fast
- buses are slow / don't show up
- can't make transit work for lifestyle/work
- young persons participating in planning

What does "efficient" transportation mean?

- dependable - predictable
- timely
- conveniently located
- well-timed traffic signals (delay when someone is forming sequences (changes))
- decent public transportation - crossing bottlenecks
- can use travel time to be productive/relax
- uber to get around when recreating
- more bike trails (E w trail Dun-SH) (Michigan Peln Curless)

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How much improvement has been experienced by widening projects?

### How does transportation & land dev affect high wage jobs in Pinellas

- Employers look at transportation system quality
- Employee households have to have multiple vehicles or can't make transportation work otherwise

### How does transportation affect economic value of where you live?

- increases value when you can get places easily
- owning fewer cars = more \$ for housing; other expenses
- allows downsizing vehicles car expenses rising

Flipchart Notes – Task Force Meeting #1, November 27, 2018 (continued)

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- location of residence is affected by location of employment. (decision making)
- parking demand & supply (pricing/land) - need other way for employees to get to work
- smaller streets that are connected

How will  
What does technology change our transportation needs?

- Δ's are probably far off
- Probably won't make system more efficient
  - bunch of cars, bikes, peds
- Drive down car ownership rate - save <sup>household</sup> \$
- Possibly relieve congestion (telecommuting)
- Better communication | transportation info
- Reduce impacts on environment

Electric Vehicles

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Home delivery reducing trips 6

Easy to understand travel alternatives

Challenges of autonomous vehicles (pipe dream)

- liability of system breakdown/failure

Telecommunication to reduce trips/increase convenience

- Better internet

Will be faster, more efficient

Won't allow self selection (produce)

What does "improved" transportation mean to you?

- reasonable cost to user
- greater locations w/ transit service
- more frequent transit service
- more direct transit service
- more public transportation (less hassle during commute)
- some fast roads but not all roads (streets)
  - resolve conflicts - peds/shopping/biking

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What would you want to see done in next 10 years?

- walkability / bikability
- more dependable, convenient system for aging population
  - able to walk to bus stop and catch a bus
- funding to address needs (sales tax increase, for example) & rising cost of owning a car
- improve transit routing over broad service (Hillsborough example)
- infrastructure to support access to regional transportation options (connectivity)
- assessment: needs on real-time data to support greater integration

# FOCUS GROUP MEETING #2 MATERIALS

**HANDOUT**

**COMPLETED QUESTIONNAIRES**

**Handout – Task Force Meeting #2, April 11, 2019**



April 11, 2019

# FOCUS GROUP MEETING #2

Advantage PINELLAS | Long Range Transportation Plan

## Welcome!


Forward Pinellas thanks you for spending another evening with us. Your input will help us develop a relevant, responsive, and forward-thinking long range transportation plan for Pinellas County.

## Comfort Breaks

Please help yourself to refreshments and breaks anytime. Restrooms are located across the lobby.

## Meeting Activities

### PART 1 ..... 6-7 PM

- A. Pinellas Advantages 
- B. Building a Game Plan
  - 1) Review and reflect on the Pinellas Advantages
  - 2) Consider answers to the following questions:
    - As a community... Where are we now?*
    - Where do we want to be?*
    - How is the best way to get there?*
  - 3) Take 10 minutes to write down your thoughts
  - 4) Discuss

### PART 2 ..... 7-8 PM

- A. Needs Projects for the Advantage Pinellas Plan
- B. Project Priorities
  - 1) Review list of needed transportation projects
  - 2) Discuss projects and add your thoughts on which should be priorities

## What's Next?

The third and final Focus Group meeting will be scheduled during Summer 2019. Watch your inbox for further details.

*Questions or suggestions?* Contact Tammy Vrana at tvrana@vciplanning.com or (727) 415-1200.



### IN THIS ISSUE

- Welcome!
- Comfort Breaks
- Meeting Activities
- Pinellas Advantages
- What's Next?

## Pinellas Advantages

### Attractive and Unique Destinations

Land use policies; complete streets; lifestyle options; tourism; beaches

### A Leader in a Changing Economy and Environment

Coastline/resiliency; high-tech/manufacturing/HQs; sunshine/solar; AV/CF; Gateway Master Plan; land use and transportation linkage

### Safe, Equitable and Accessible Communities

Public safety; access; transportation safety; health; population diversity; security

### Strong Economic Opportunity

Education; workforce housing/connections; affordability; public transportation (multimodal, tourism

### Mobility Options

20 minute neighborhoods; freight; trails; transportation-disadvantaged

### A Collaborative Vision for the Future

Regional; collaborative; engaged residents; partners; elected officials; 'community of communities'

## Completed Questionnaires – Task Force Meeting #2, April 11, 2019

## PINELLAS ADVANTAGES

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- Where are we now?
- How do we get there?
- Where do we want to be?

### 1. Attractive and Unique Destinations

Beaches  
Tarpon Springs  
Parks

### 2. A Resilient Community

Cultures events  
more roadways from some areas  
People helping people -  
Affordable housing

### 3. Safe and Healthy Communities

Side walks  
Crosswalks  
Street Lights ~~outs~~

### 4. Strong Economic Opportunity

several big employers  
Balance with small business  
↳ Parking

### 5. Mobility and Accessibility for Everyone

Transit system needs work  
Side walks - crosswalks

### 6. A Collaborative Vision for the Future

We will need more toll roads  
ways to pay for it all

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- How do we get there?
- Where do we want to be?

### 1. Attractive and Unique Destinations

- Best beaches in the world; wonderful small towns; compact large cities;
- Relatively compact county
- Need to ensure growth can occur where it can be accommodated by transit
- Need to allow communities to react and adapt to inevitable change

### 2. A Resilient Community

- Power grid can be improved ~~if it~~ to accommodate solar panels
- Need to address storm surge vulnerability - 66% of jobs/industry in surge area
- Good diversity of jobs • Pay for maintenance & replacement costs
- Both good & bad educational infrastructure - need to make sure we don't fall behind.
- Need to plan for sea level rise.

### 3. Safe and Healthy Communities

- Need improvement in crossing the streets; especially 4-6 lane roads
- Should have more opportunities for healthy lifestyles - walk or bike to destinations
- Have great natural resources and lots of non-polluting industry
- Need to deal with increasing average age; access to healthcare

### 4. Strong Economic Opportunity

- Good place to start a business
- Need to make sure economic development focuses on growing companies that are already here - some call it "economic gardening"
- Deal with insurance costs
- Deal with the vulnerability of storm events

### 5. Mobility and Accessibility for Everyone

- Most places set-up to have everything a resident would need w/in biking distance; but it is dangerous as roads are configured now and there are gaps in connectivity
- Need lots of improvement to bus;

### 6. A Collaborative Vision for the Future

- Local control of many municipalities is a huge advantage - decisions are closer to the people. Can make big projects more difficult.

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- How do we get there?
- Where do we want to be?

### 1. Attractive and Unique Destinations

✓ ~~the~~ city has its own specific unique destination  
each  
however getting to those areas w/o driving is a  
challenge. we need more transit options (dependable)

### 2. A Resilient Community

~~the city~~ currently has an opportunity for major growth  
community. More affordable housing needed for future  
we still have an opportunity to prepare for a  
major storm (i.e., updated evacuation zones)

### 3. Safe and Healthy Communities

currently most communities have or offers community  
policing but how and where they can go to take  
advantage of these options are needed.

Increased lighting in some areas would be a fix for  
the future

### 4. Strong Economic Opportunity

Economically the community is growing but we miss  
out on major opportunities (Corp. headquarters) due  
to transportation issues.

### 5. Mobility and Accessibility for Everyone

currently we have a need to make our community  
accessible to everyone. we have to think about our  
handicap community and children to make it safer  
and more accessible.

### 6. A Collaborative Vision for the Future

work more with surrounding counties so that  
we are all strengthened

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- Where are we now?
- How do we get there?
- Where do we want to be?

### 1. Attractive and Unique Destinations

- BEAUTIFUL, WORLD CLASS BEACH COMMUNITY
- WATERFRONT
- 

### 2. A Resilient Community

- 
- DIVERSITY, INCLUSIVENESS
- 20 MINUTE NEIGHBORHOOD

### 3. Safe and Healthy Communities

- 
- PARTNERSHIP, EVENTS PROMOTING UNITY, INCREASED AWARENESS
- 

### 4. Strong Economic Opportunity

- STAGNANT;
- EDUCATION, STREAMLINED PROCESSES,
- ECONOMIC GARDENING

### 5. Mobility and Accessibility for Everyone

- OUTDATED, RESTRICTED
- MODEL SURROUNDING CITIES (TAMPA, ST PETE)
- 

### 6. A Collaborative Vision for the Future

-

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- Where are we now?
- How do we get there?
- Where do we want to be?

### 1. Attractive and Unique Destinations

Benches, cultural activities (Chilly) active winters  
Driving and parking are challenging  
Better flow

### 2. A Resilient Community

Well prepared for Irma, etc.  
Not the strongest diversity - economic

### 3. Safe and Healthy Communities

Pinellas trail is great  
Strong community centers  
Better transportation options for elderly; young w/ cars

### 4. Strong Economic Opportunity

Good educational opportunities, libraries  
Expensive, affordable housing is older and decaying  
Lively cities

### 5. Mobility and Accessibility for Everyone

Too much time on the road  
Construction  
Challenges w/ public transportation

### 6. A Collaborative Vision for the Future

individual cities working well, intra/inter-county challenges  
"vision"

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- Where do we want to be?

### 1. Attractive and Unique Destinations

Beach, St. Pete Waterfront, Future Ctr., DM Fruit Park  
Conary Park System, DIVERSITY

### 2. A Resilient Community

Mixed use land use plans, able to recover quickly,  
24 cities to help coordinate, need to provide  
better insurance.

### 3. Safe and Healthy Communities

Good dispersed, many more mixed areas, Hosp dispersed  
Current Econ Police & Fire sustainable.

### 4. Strong Economic Opportunity

Good employment, current 3.1% unemployment  
wages adequate,

### 5. Mobility and Accessibility for Everyone

TRANSIT, ROADS,  
improved transit in future, people move for  
highest costed areas

### 6. A Collaborative Vision for the Future

Need to develop stronger requirements  
for land density vs. Transport.



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- Where do we want to be?

### 1. Attractive and Unique Destinations

DT Clwr - more to do      walkable communities      car-free day  
beaches award winning      ciba suit - focused  
St. Pete DT      vibrant dt

### 2. A Resilient Community

some of community - for everyone  
Tourism local residents  
communicatory      meet people  
police presence      RE Olds Days      protect mangroves  
cutting

### 3. Safe and Healthy Communities

getting around      walk/bike  
right turn on red  
insurance

### 4. Strong Economic Opportunity

attract corporations (mid to large)      keep young people here  
Housing - high rise (gateway)  
attract - manufacturing (env. problems)      attract tech      business applications

### 5. Mobility and Accessibility for Everyone

Wall springs - wide sidewalks      workers - lure them      healthcare tech companies  
greenways      here  
more than roads      home workers.  
road crossings      ↓ St. Pete      build infrastructure  
remote      solar wind  
workers      electric  
care about      internet  
environment

### 6. A Collaborative Vision for the Future

courtesy Campbell Hill  
buses

## PINELLAS ADVANTAGES

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- Where are we now?
- How do we get there?
- Where do we want to be?

### 1. Attractive and Unique Destinations

We have several attractive destinations, walkable communities, natural settings. Award winning state parks/beaches. We can build on this if we protect our natural resources and build new "Destinations"

### 2. A Resilient Community

<sup>Parks</sup>  
we need to be more self-sustaining in terms of jobs. BP oil spill hurt many small businesses, Red tide hurt businesses. We have to protect our natural resources, starts with Estuaries, mangroves

### 3. Safe and Healthy Communities

many outdoor spaces for activity, parks with exercise stations, trails  
continue to build more community spaces for residents

### 4. Strong Economic Opportunity

we're predominantly a services based economy.  
need more medium sized industry business districts like the Tampa West Shore district. Think IBM companies Not Jabil

### 5. Mobility and Accessibility for Everyone

Vall Springs lookout tower is a great example. Large Ramp to top. wider sidewalks, traffic calming in residential areas

### 6. A Collaborative Vision for the Future

A great place to live, work, play, for all. Equitable access to great features.

## PINELLAS ADVANTAGES

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- Where are we now?
- How do we get there?
- Where do we want to be?

### 1. Attractive and Unique Destinations

Tarpon, Brooker Creek, Dunedin, DTCLW, St Pete  
Gulfport, Safety Harbor  
I feel attractiveness is not a priority - planting more trees? More decorative lighting? Thought about mixed use spaces  
There are many unique destinations in our county -  
We want to keep people (more residents) moving to enjoy our features - our small towns, state parks, downtowns & of course beaches)

### 2. A Resilient Community

We will always bounce back in time - we have already bounced higher than the recession period.  
As long as we as a whole continue to look back as well as ahead & communicate our values we will remain resilient.  
We need to be known for our destinations + industry - every thing else will come with

### 3. Safe and Healthy Communities

Safe - I'm not sure -  
Healthy - Equip our hospitals w/ more Drs - They seem to be running ramps -

### 4. Strong Economic Opportunity

Currently there is a pretty strong economy - at least that is what I'm told - In my gut - there is much skepticism.  
- By continuing to make sound ~~decisions~~ <sup>business</sup> decisions while looking forward to ~~what~~ what we project our industries will be & consider how we will attract top young talent to live & play here.

### 5. Mobility and Accessibility for Everyone

I think mobility is not a fore thought in our aging community -  
By planning out our spaces & enforcing current code?

We want to be an equitable destination - a place for everyone to enjoy

### 6. A Collaborative Vision for the Future

I don't feel the longer term residents enjoy a collaborative vision for our Tampa Bay area - with younger generations moving in & people from other brighter or more efficient areas will come much more collaboration & idea sharing.

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- Where are we now?
- How do we get there?
- Where do we want to be?

• Studies show more lanes = more traffic → induced demand  
 University of Pennsylvania  
 MK City of Paris - No cars in city  
 h/wk → they run do their because of land use

holiday events - county advertisements  
 farmers markets  
 concerts  
 craft beer  
 wine  
 health

1. Attractive and Unique Destinations

- Beaches
- Parks
- Trail Network

> good natural resources  
 but how can we make more accessible to tourists + locals

• Connect entire county + hillsborough via trails or modern transport

2. A Resilient Community

(peaks + valleys of economy)  
 natural disasters

affordable housing → micro neighborhoods  
 → public parks / pools / amenities  
 Need: Neighborhoods not divided by major highways

3. Safe and Healthy Communities

\*NY Broken windows

Trail Network → bridges (BPI)

Unique Neighborhoods → sense of identity but need to connect

4. Strong Economic Opportunity

• Local economy cannot flourish w/ major/high speed transpo as only option  
 Lean in to technology-driven opportunity

remote workers

Air BNB legislation, Uber @ airport, grabhub

Solar → why does the county not have a co-op to "go solar"? → solar buses? → electric car infrastructure

5. Mobility and Accessibility for Everyone

Ride Share / commuter transpo from Pasco (Chicago "L")

6. A Collaborative Vision for the Future

Cross county trails

# PINELLAS ADVANTAGES

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- Where are we now?
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- Where do we want to be?

## 1. Attractive and Unique Destinations

BENCHES - ST PETE, CLWTR

DINING -

ENTERTAINMENT - RUTH ECK, CAPITAL, STRAZ, MARINE ACQUA.

PARKS & RECREATION

## 2. A Resilient Community

EX SCIENTOLOGISTS

## 3. Safe and Healthy Communities

HOSPITALS / DRS  
LAW ENFORCEMENT

## 4. Strong Economic Opportunity

SOLID LABOR FORCE

SMALL BUSINESS DEVELOP.

INCREASING MEDIUM SIZE BUS.

POPULATION GROWTH - MIDDLECLASS, RETIRED.

## 5. Mobility and Accessibility for Everyone

IMPROVED ROADWAY SYSTEMS, LOCAL + INTERSTATE

TRAINS, T13 BETTER CONNECTED

## 6. A Collaborative Vision for the Future

ACTIVITY CITY COUNCILS, COUNTY ADMIN  
ADVANT PINELLAS PLANNING

### TOURISM

1<sup>ST</sup> - LIGHT RAIL - ORL / TPT BAY

2 - TOLL RDS EMBELLISHED;

ECONIC RX → LEADS TO  
MASS TRANSIT DEVELOPMENT

TPT GULF - N/PH

### LOCAL

20-21/22/23 US 19 FLYOVERS TARIU KLOSTER

11-13 MS STARKEY RD  
27- MS E. LAKE RD  
26-EW CUREW RD

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### 1. Attractive and Unique Destinations

Water → ~~ocean~~ gulf + bay / beaches / parks → great now,  
Historical → downtown St Pete, etc ("car-free days/times") <sup>tracks its progress</sup>

All could be better for pedestrians → leverage great weather

### 2. A Resilient Community

Coastal safety

(Pinellas trail!)

wind? / Solar investment (both commercial + residential)

### 3. Safe and Healthy Communities

Improve road safety for bikes / pedestrians → signage, alternate routes, etc  
↳ overpasses / underpasses?

### 4. Strong Economic Opportunity

Embrace technological advances → build infrastructure for electric cars, connectivity, etc. Land use should be in conjunction with utility connections / investments

### 5. Mobility and Accessibility for Everyone

See #3 - lots of investment seen in road improvements (throughput)  
but what about slower / cheaper "traffic" → speed comes at a cost. Overpasses by schools are great examples

### 6. A Collaborative Vision for the Future

Appreciate the focus on a few chosen "thoroughfares" with branching neighborhoods, but how to keep them from being dividing lines?

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- How do we get there?
- Where do we want to be?

### 1. Attractive and Unique Destinations

- We're making good strides in Attractiveness with the enhancement of downtown Clearwater, leading to the beaches.
- Improvement in local events is good (sandcastle event, speed boat races, REH) maybe increase local fairs + festivals

### 2. A Resilient Community

- Outside of weather-related issues, I have not seen many situations that require resiliency. Political climate is not as bad here as it is in other parts of the state.

### 3. Safe and Healthy Communities

- In the rural communities I visit, they appear safe + healthy.
- Downtown Clearwater at night does not seem as safe

### 4. Strong Economic Opportunity

For tourist type businesses, yes. For corp jobs, not so much.  
Need to attract larger companies while ensuring we can accommodate influx of employees (housing, schools, stores, etc). Many of our college graduates leave the area for better opp'tys elsewhere

### 5. Mobility and Accessibility for Everyone

Don't see much of a problem here.

### 6. A Collaborative Vision for the Future

We need to clearly communicate these plans to the residents (TV, newspapers, etc) - FB.

## DRAFT 2045 NEEDS PLAN ROADWAY PROJECTS

Project ID	Project Name	Location	Description	Existing	2045 Needs	Jurisdiction	Notes
				Total Lanes	Total Lanes		
<b>New Roads/Connections</b>							
1	I-275	Northbound 275	Westbound Ulmerton Rd			FDOT	New Interchange
2	Ramp to Gandy Blvd WB	NB I-275 Off Ramp	SB I-275 Off Ramp to WB Gandy Blvd		1	FDOT	New Ramp
3	Roosevelt Boulevard Stage 3 of	W of I-275 Interchange	SR 686 (Roosevelt Blvd) W of 9th Street	4D	6D	FDOT	New Interchange
4	Burbank Rd	Douglas Rd	Tampa Rd		2D	Oldsmar	New Connection
5	Disston Ave Extension	Woodhill Dr	Meres Blvd	N/A	2U	Tarpon Springs	Also added S Disston Ave
6	Meres Blvd	Alt US 19 (SR 595)	US 19 (SR 55)	N/A-2U	2U/2D	Tarpon Springs	New Road Connection
7	126th Ave N	US 19 (SR 55)	W of 49th St N	N/A-2U	2D	County	PD&E is underway
8	16th Ave SE	Lake Ave	Starkey Rd	N/A	2E	County	New Connection
9	142nd Ave N	Starkey Rd	Belcher Rd	N/A	2E	County	New Connection
10	102nd Ave N	18th St N	Halkey-Roberts Pl N	N/A	2D	N/A	New road construction over interstate
<b>Proposed Widening of Existing Roads</b>							
11	Starkey Rd	Flamevine	Bryan Dairy Rd	4D	6D	County	
12	Starkey Rd	Bryan Dairy Rd	SR 688 (Ulmerton Rd)	4D	6D	County	
13	Starkey Rd	SR 688 (Ulmerton Rd)	East Bay Dr	4D	5D/6D	County	
14	Park St N	54th Ave N	S of Park Blvd	4D	6D	County	
15	Forest Lakes Blvd	SR 580	SR 584	2D	4D	County	
16	Douglas Rd	Commerce Blvd	Burbank Rd	2U	2D	Oldsmar	
17	Gandy Blvd	US 19 (SR 55)	E of Grand Ave	6D	6D	FDOT	Add frontage roads; improve intersections
18	Gandy Blvd	E of Grand Ave	W of I-275	6D	6D	FDOT	Add frontage roads; improve intersections
19	Gandy Blvd	West of I-275	W of 9th Street	6D	4P	FDOT	Add frontage roads; improve intersections
20	US 19 (Tampa Interchange)	North of CR 95	N of Nebraska Ave	6D + 2AUX	6P	FDOT	
21	US 19 (Alderman Intersection)	N of Nebraska Ave	S of Timberlane Rd	6D + 2AUX	TBD	FDOT	Evaluating at-grade options
22	US 19 (Klosterman Intersection)	S of Timberlane Rd	South of Lake Street	6D + 2AUX	TBD	FDOT	Evaluating at-grade options
23	SR 694 (Gandy Blvd)	East of SR 687 (4th Street N)	West end of Gandy Bridge	4D	4P	FDOT	Add frontage roads/overpasses
24	Gandy Blvd	Gandy Bridge	N/A	4D	4D+2X	FDOT	Bridge Replacement + express lane + trail
25	I-275	at 31st St S				FDOT	Interchange modifications
26	Curlew Rd.	Alt US 19	Veterans Expressway		4P	FDOT	Elevated Managed Lanes in median
27	East Lake Rd	Tampa Rd	Trinity	4D	6D	County	Corridor is currently policy constrained; evaluating options

NEED EXPAN  
NORTH PINE  
HILLS  
E + W

DD Carr  
COAMIS



### Complete Street/Enhancement Projects

1	62nd Ave N	66th St	49th St	2U	2D	County	
2	62nd Ave N	49th St N	34th St N	2U	2D	County	
3	Belcher Rd (71st St)	38th Av N	54th Av N	2U	2D	County	
4	Nursery Rd	Highland Ave	Belcher Rd	2U	2E	County	
5	Nursery Rd	Belcher Rd	US 19 (SR 55)	2U	2E	County	
6	16th Ave SE	Seminole Blvd	Donegan Rd	2U	2E	County	
7	16th Ave SE	Donegan Rd	Lake Ave	2U	2E	County	
8	142nd Ave N	Belcher Rd	66th St N	2U	2E	County	
9	Belleair Rd	Keene Rd	US 19 (SR 55)	2U	2E	County	
10	Highland Ave	East Bay Dr	Belleair Rd	2U	2E	County	
11	Belcher Rd	Druid Rd	NE Coachman Rd	4U	4E	County	
12	102nd Ave N	137th St N	125th St N	2U	2E	County	
13	102nd Ave N	125th St N	113th St N	2U	2E	County	
14	102nd Ave N	113th St N	Seminole Blvd	4D	4E	County	
15	22nd Ave S	58th St S	34th St S	4U	4E	County	
16	Sunset Point Rd	Alt US 19 (SR 595)	Keene Rd	2U	2E	County	
17	Indian Rocks Rd	Walsingham Rd	West Bay Dr	2U	2E	County	
18	Alt US 19	Live Oak St	Ancote Blvd	2U	2E	FDOT	
19	Alt US 19	Brevard St	Klosterman Rd	2U	2E	FDOT	
20	Alt US 19	Orange St	Tampa Rd	2U	2E	FDOT	
21	SR 590/NE Coachman Rd	Drew St	McMullen-Booth Rd	2U	2E	FDOT	
22	113th St/Duhme Rd	150th Ave	Park Blvd	6D	4D	County	
23	54th Ave N	Lown Street	34th St	4D/4U	2D	County	
24	Drew St	Osceola Ave	Saturn Avenue	4U	2D	FDOT	
25	Skinner Boulevard	Alt 19	Bass	4U	2D	FDOT	
26	Cleveland St	Myrtle Ave	Missouri Ave	4D	2D	Clearwater	
27	Tyrone Blvd Overpass Removal/	Pinellas Trall Crossing	71st St N	4D Grade Separated	4D At Grade	FDOT	4D at Grade + Trall Overpass

E = Enhancement Project (complete streets); U = Undivided; D = Divided; P = Partially Controlled Access; X = Express Lanes

## DRAFT 2045 NEEDS PLAN ROADWAY PROJECTS

Item	Location	Route	Type	Existing	2045 Needs	Jurisdiction	Notes
				Total Lanes	Total Lanes		
<b>New Roads/Connections</b>							
1	I-275	Northbound 275	Westbound Ulmerton Rd			FDOT	New Interchange
2	Ramp to Gandy Blvd WB	NB I-275 Off Ramp	SB I-275 Off Ramp to WB Gandy Blvd		1	FDOT	New Ramp
3	Roosevelt Boulevard Stage 3 of	W of I-275 Interchange	SR 686 (Roosevelt Blvd) W of 9th Street	4D	6D	FDOT	New Interchange
4	Burbank Rd	Douglas Rd	Tampa Rd		2D	Oldsmar	New Connection
5	Disston Ave Extension	Woodhill Dr	Meres Blvd	N/A	2U	Tarpon Springs	Also added S Disston Ave
6	Meres Blvd	Alt US 19 (SR 595)	US 19 (SR 55)	N/A-2U	2U/2D	Tarpon Springs	New Road Connection
7	126th Ave N	US 19 (SR 55)	W of 49th St N	N/A-2U	2D	County	PD&E is underway
8	16th Ave SE	Lake Ave	Starkey Rd	N/A	2E	County	New Connection
9	142nd Ave N	Starkey Rd	Belcher Rd	N/A	2E	County	New Connection
10	102nd Ave N	18th St N	Halkey-Roberts PI N	N/A	2D	N/A	New road construction over interstate
<b>Proposed Widening of Existing Roads</b>							
11	Starkey Rd	Flamevine	Bryan Dairy Rd	4D	6D	County	
12	Starkey Rd	Bryan Dairy Rd	SR 688 (Ulmerton Rd)	4D	6D	County	
13	Starkey Rd	SR 688 (Ulmerton Rd)	East Bay Dr	4D	5D/6D	County	
14	Park St N	54th Ave N	S of Park Blvd	4D	6D	County	
15	Forest Lakes Blvd	SR 580	SR 584	2D	4D	County	
16	Douglas Rd	Commerce Blvd	Burbank Rd	2U	2D	Oldsmar	
17	Gandy Blvd	US 19 (SR 55)	E of Grand Ave	6D	6D	FDOT	Add frontage roads; improve intersections
18	Gandy Blvd	E of Grand Ave	W of I-275	6D	6D	FDOT	Add frontage roads; improve intersections
19	Gandy Blvd	West of I-275	W of 9th Street	6D	4P	FDOT	Add frontage roads; improve intersections
20	US 19 (Tampa Interchange)	North of CR 95	N of Nebraska Ave	6D + 2AUX	6P	FDOT	
21	US 19 (Alderman Intersection)	N of Nebraska Ave	S of Timberlane Rd	6D + 2AUX	TBD	FDOT	Evaluating at-grade options
22	US 19 (Klosterman Intersection)	S of Timberlane Rd	South of Lake Street	6D + 2AUX	TBD	FDOT	Evaluating at-grade options
23	SR 694 (Gandy Blvd)	East of SR 687 (4th Street N)	West end of Gandy Bridge	4D	4P	FDOT	Add frontage roads/overpasses
24	Gandy Blvd	Gandy Bridge	N/A	4D	4D+2X	FDOT	Bridge Replacement + express lane + trail
25	I-275	at 31st St S				FDOT	Interchange modifications
26	Curlew Rd.	Alt US 19	Veterans Expressway		4P	FDOT	Elevated Managed Lanes in median
27	East Lake Rd	Tampa Rd	Trinity	4D	6D	County	Corridor is currently policy constrained; evaluating options

## Complete Streets/Enhancement Projects

1	62nd Ave N	66th St	49th St	2U	2D	County	
2	62nd Ave N	49th St N	34th St N	2U	2D	County	
3	Belcher Rd (71st St)	38th Av N	54th Av N	2U	2D	County	
4	Nursery Rd	Highland Ave	Belcher Rd	2U	2E	County	
5	Nursery Rd	Belcher Rd	US 19 (SR 55)	2U	2E	County	
6	16th Ave SE	Seminole Blvd	Donegan Rd	2U	2E	County	
7	16th Ave SE	Donegan Rd	Lake Ave	2U	2E	County	
8	142nd Ave N	Belcher Rd	66th St N	2U	2E	County	
9	Belleair Rd	Keene Rd	US 19 (SR 55)	2U	2E	County	
10	Highland Ave	East Bay Dr	Belleair Rd	2U	2E	County	
11	Belcher Rd	Druid Rd	NE Coachman Rd	4U	4E	County	
12	102nd Ave N	137th St N	125th St N	2U	2E	County	
13	102nd Ave N	125th St N	113th St N	2U	2E	County	
14	102nd Ave N	113th St N	Seminole Blvd	4D	4E	County	
15	22nd Ave S	58th St S	34th St S	4U	4E	County	
16	Sunset Point Rd	Alt US 19 (SR 595)	Keene Rd	2U	2E	County	
17	Indian Rocks Rd	Walsingham Rd	West Bay Dr	2U	2E	County	
18	Alt US 19	Live Oak St	Anclote Blvd	2U	2E	FDOT	
19	Alt US 19	Brevard St	Klosterman Rd	2U	2E	FDOT	
20	Alt US 19	Orange St	Tampa Rd	2U	2E	FDOT	
21	SR 590/NE Coachman Rd	Drew St	McMullen-Booth Rd	2U	2E	FDOT	
22	113th St/Duhme Rd	150th Ave	Park Blvd	6D	4D	County	
23	54th Ave N	Lown Street	34th St	4D/4U	2D	County	
24	Drew St	Osceola Ave	Saturn Avenue	4U	2D	FDOT	
25	Skinner Boulevard	Alt 19	Bass	4U	2D	FDOT	
26	Cleveland St	Myrtle Ave	Missouri Ave	4D	2D	Clearwater	
27	Tyrone Blvd Overpass Removal	Pinellas Trail Crossing	71st St N	4D Grade Separated	4D At Grade	FDOT	4D at Grade + Trail Overpass

E = Enhancement Project (complete streets); U = Undivided; D = Divided; P = Partially Controlled Access; X = Express Lanes

# 15 → would ease traffic, but biggest problem is SB traffic turning right from Forest Lake onto SR 590 → need to be careful about pedestrian/trail traffic also crossing at this intersection

Big fan of any + all "complete streets" projects, esp w/ extra-wide sidewalks and/or divided/protected bike lanes

# DRAFT 2045 NEEDS PLAN ROADWAY PROJECTS

*VELETT*

ID	Location	From	To	Existing	2045 Needs	Jurisdiction	Notes
				Total Lanes	Total Lanes		
<b>New Roads/Connections</b>							
1	I-275	Northbound 275	Westbound Ulmerton Rd			FDOT	New Interchange
2	Ramp to Gandy Blvd WB	NB I-275 Off Ramp	SB I-275 Off Ramp to WB Gandy Blvd		1	FDOT	New Ramp
3	Roosevelt Boulevard Stage 3 of	W of I-275 Interchange	SR 686 (Roosevelt Blvd) W of 9th Street	4D	6D	FDOT	New Interchange
4	Burbank Rd	Douglas Rd	Tampa Rd		2D	Oldsmar	New Connection
5	Disston Ave Extension	Woodhill Dr	Meres Blvd	N/A	2U	Tarpon Springs	Also added S Disston Ave
6	Meres Blvd	Alt US 19 (SR 595)	US 19 (SR 55)	N/A-2U	2U/2D	Tarpon Springs	New Road Connection
7	126th Ave N	US 19 (SR 55)	W of 49th St N	N/A-2U	2D	County	PD&E is underway
8	16th Ave SE	Lake Ave	Starkey Rd	N/A	2E	County	New Connection
9	142nd Ave N	Starkey Rd	Belcher Rd	N/A	2E	County	New Connection
10	102nd Ave N	18th St N	Halkey-Roberts Pl N	N/A	2D	N/A	New road construction over interstate
<b>Proposed Widening of Existing Roads</b>							
11	Starkey Rd	Flamevine	Bryan Dairy Rd	4D	6D	County	
12	Starkey Rd	Bryan Dairy Rd	SR 688 (Ulmerton Rd)	4D	6D	County	
13	Starkey Rd	SR 688 (Ulmerton Rd)	East Bay Dr	4D	5D/6D	County	
14	Park St N	54th Ave N	S of Park Blvd	4D	6D	County	
15	Forest Lakes Blvd	SR 580	SR 584	2D	4D	County	
16	Douglas Rd	Commerce Blvd	Burbank Rd	2U	2D	Oldsmar	
17	Gandy Blvd	US 19 (SR 55)	E of Grand Ave	6D	6D	FDOT	Add frontage roads; improve intersections
18	Gandy Blvd	E of Grand Ave	W of I-275	6D	6D	FDOT	Add frontage roads; improve intersections
19	Gandy Blvd	West of I-275	W of 9th Street	6D	4P	FDOT	Add frontage roads; improve intersections
20	US 19 (Tampa Interchange)	North of CR 95	N of Nebraska Ave	6D + 2AUX	6P	FDOT	
21	US 19 (Alderman Intersection)	N of Nebraska Ave	S of Timberlane Rd	6D + 2AUX	TBD	FDOT	Evaluating at-grade options
22	US 19 (Kloeserman Intersection)	S of Timberlane Rd	South of Lake Street	6D + 2AUX	TBD	FDOT	Evaluating at-grade options
23	SR 694 (Gandy Blvd)	East of SR 687 (4th Street N)	West end of Gandy Bridge	4D	4P	FDOT	Add frontage roads/overpasses
24	Gandy Blvd	Gandy Bridge	N/A	4D	4D+2X	FDOT	Bridge Replacement + express lane + trail
25	I-275	at 31st St S				FDOT	Interchange modifications
26	Curlew Rd.	Alt US 19	Veterans Expressway		4P	FDOT	Elevated Managed Lanes in median
27	East Lake Rd	Tampa Rd	Trinity	4D	6D	County	Corridor is currently policy constrained; evaluating options

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A MUST  
A MUST

### Complete Streets/Enhancement Projects

1	62nd Ave N	66th St	49th St	2U	2D	County	
2	62nd Ave N	49th St N	34th St N	2U	2D	County	
3	Belcher Rd (71st St)	38th Av N	54th Av N	2U	2D	County	
4	Nursery Rd	Highland Ave	Belcher Rd	2U	2E	County	
5	Nursery Rd	Belcher Rd	US 19 (SR 55)	2U	2E	County	
6	16th Ave SE	Seminole Blvd	Donegan Rd	2U	2E	County	
7	16th Ave SE	Donegan Rd	Lake Ave	2U	2E	County	
8	142nd Ave N	Belcher Rd	66th St N	2U	2E	County	
9	Belleair Rd	Keene Rd	US 19 (SR 55)	2U	2E	County	
10	Highland Ave	East Bay Dr	Belleair Rd	2U	2E	County	
11	Belcher Rd	Druid Rd	NE Coachman Rd	4U	4E	County	
12	102nd Ave N	137th St N	125th St N	2U	2E	County	
13	102nd Ave N	125th St N	113th St N	2U	2E	County	
14	102nd Ave N	113th St N	Seminole Blvd	4D	4E	County	
15	22nd Ave S	58th St S	34th St S	4U	4E	County	
16	Sunset Point Rd	Alt US 19 (SR 595)	Keene Rd	2U	2E	County	
17	Indian Rocks Rd	Walsingham Rd	West Bay Dr	2U	2E	County	
18	Alt US 19	Live Oak St	Anclote Blvd	2U	2E	FDOT	
19	Alt US 19	Brevard St	Klosterman Rd	2U	2E	FDOT	
20	Alt US 19	Orange St	Tampa Rd	2U	2E	FDOT	
21	SR 590/NE Coachman Rd	Drew St	McMullen-Booth Rd	2U	2E	FDOT	
22	113th St/Duhme Rd	150th Ave	Park Blvd	6D	4D	County	
23	54th Ave N	Lown Street	34th St	4D/4U	2D	County	
24	Drew St	Osceola Ave	Saturn Avenue	4U	2D	FDOT	
25	Skinner Boulevard	Alt 19	Bass	4U	2D	FDOT	
26	Cleveland St	Myrtle Ave	Missouri Ave	4D	2D	Clearwater	
27	Tyrone Blvd Overpass Removal	Pinellas Trail Crossing	71st St N	4D Grade Separated	4D At Grade	FDOT	4D at Grade + Trail Overpass

E = Enhancement Project (complete streets); U = Undivided; D = Divided; P = Partially Controlled Access; X = Express Lanes

## DRAFT 2045 NEEDS PLAN ROADWAY PROJECTS

Project #	Project Name	Agency	Location	Existing	2045 Needs	Jurisdiction	Notes
				Total Lanes	Total Lanes		
<b>New Roads/Connections</b>							
1	I-275		Northbound 275	Westbound Ulmerton Rd		FDOT	New Interchange
2	Ramp to Gandy Blvd WB		NB I-275 Off Ramp	SB I-275 Off Ramp to WB Gandy Blvd	1	FDOT	New Ramp
3	Roosevelt Boulevard Stage 3 of		W of I-275 Interchange	SR 686 (Roosevelt Blvd) W of 9th Street	4D	FDOT	New Interchange
4	Burbank Rd		Douglas Rd	Tampa Rd		Oldsmar	New Connection <i>with sidewalk</i> <span style="font-size: small;">good idea</span>
5	Disston Ave Extension		Woodhill Dr	Meres Blvd	N/A	Tarpon Springs	Also added S Disston Ave
6	Meres Blvd		Alt US 19 (SR 595)	US 19 (SR 55)	N/A-2U	Tarpon Springs	New Road Connection
7	126th Ave N		US 19 (SR 55)	W of 49th St N	N/A-2U	County	PD&E is underway
8	16th Ave SE		Lake Ave	Starkey Rd	N/A	County	New Connection
9	142nd Ave N		Starkey Rd	Belcher Rd	N/A	County	New Connection
10	102nd Ave N		18th St N	Halkey-Roberts Pl N	N/A	N/A	New road construction over interstate
<b>Proposed Widening of Existing Roads</b>							
11	Starkey Rd		Flamevine	Bryan Dairy Rd	4D	County	
12	Starkey Rd		Bryan Dairy Rd	SR 688 (Ulmerton Rd)	4D	County	
13	Starkey Rd		SR 688 (Ulmerton Rd)	East Bay Dr	4D	County	
14	Park St N		54th Ave N	S of Park Blvd	4D	County	
15	Forest Lakes Blvd		SR 580	SR 584	2D	County	<i>Not without - need sidewalk</i> <span style="font-size: small;">pedestrian overpass</span>
16	Douglas Rd		Commerce Blvd	Burbank Rd	2U	Oldsmar	
17	Gandy Blvd		US 19 (SR 55)	E of Grand Ave	6D	FDOT	Add frontage roads; improve intersections
18	Gandy Blvd		E of Grand Ave	W of I-275	6D	FDOT	Add frontage roads; improve intersections
19	Gandy Blvd		West of I-275	W of 9th Street	6D	FDOT	Add frontage roads; improve intersections
20	US 19 (Tampa Interchange)		North of CR 95	N of Nebraska Ave	6D + 2AUX	FDOT	
21	US 19 (Alderman Intersection)		N of Nebraska Ave	S of Timberlane Rd	6D + 2AUX	FDOT	Evaluating at-grade options
22	US 19 (Klosterman Intersection)		S of Timberlane Rd	South of Lake Street	6D + 2AUX	FDOT	Evaluating at-grade options
23	SR 694 (Gandy Blvd)		East of SR 687 (4th Street N)	West end of Gandy Bridge	4D	FDOT	Add frontage roads/overpasses
24	Gandy Blvd		Gandy Bridge	N/A	4D	FDOT	Bridge Replacement + express lane + trail
25	I-275		at 31st St S			FDOT	Interchange modifications
26	Curlew Rd.		Alt US 19	Veterans Expressway		FDOT	Elevated Managed Lanes in median <span style="font-size: small;">talked?</span>
27	East Lake Rd		Tampa Rd	Trinity	4D	County	Corridor is currently policy constrained; evaluating options

Non-car

Complete Streets/Enhancement Projects

1	62nd Ave N	66th St	49th St	2U	2D	County	
2	62nd Ave N	49th St N	34th St N	2U	2D	County	
3	Belcher Rd (71st St)	38th Av N	54th Av N	2U	2D	County	
4	Nursery Rd	Highland Ave	Belcher Rd	2U	2E	County	
5	Nursery Rd	Belcher Rd	US 19 (SR 55)	2U	2E	County	
6	16th Ave SE	Seminole Blvd	Donegan Rd	2U	2E	County	
7	16th Ave SE	Donegan Rd	Lake Ave	2U	2E	County	
8	142nd Ave N	Belcher Rd	66th St N	2U	2E	County	
9	Belleair Rd	Keene Rd	US 19 (SR 55)	2U	2E	County	
10	Highland Ave	East Bay Dr	Belleair Rd	2U	2E	County	
11	Belcher Rd	Druid Rd	NE Coachman Rd	4U	4E	County	
12	102nd Ave N	137th St N	125th St N	2U	2E	County	
13	102nd Ave N	125th St N	113th St N	2U	2E	County	
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15	22nd Ave S	58th St S	34th St S	4U	4E	County	
16	Sunset Point Rd	Alt US 19 (SR 595)	Keene Rd	2U	2E	County	
17	Indian Rocks Rd	Walsingham Rd	West Bay Dr	2U	2E	County	
18	Alt US 19	Live Oak St	Anclote Blvd	2U	2E	FDOT	
19	Alt US 19	Brevard St	Klosterman Rd	2U	2E	FDOT	
20	Alt US 19	Orange St	Tampa Rd	2U	2E	FDOT	
21	SR 590/NE Coachman Rd	Drew St	McMullen-Booth Rd	2U	2E	FDOT	
22	113th St/Duhme Rd	150th Ave	Park Blvd	6D	4D	County	
23	54th Ave N	Lown Street	34th St	4D/4U	2D	County	
24	Drew St	Osceola Ave	Saturn Avenue	4U	2D	FDOT	
25	Skinner Boulevard	Alt 19	Bass	4U	2D	FDOT	
26	Cleveland St	Myrtle Ave	Missouri Ave	4D	2D	Clearwater	
27	Tyrone Blvd Overpass Removal/	Pinellas Trail Crossing	71st St N	4D Grade Separated	4D At Grade	FDOT	4D at Grade + Trail Overpass

E = Enhancement Project (complete streets); U = Undivided; D = Divided; P = Partially Controlled Access; X = Express Lanes

CSX - commuter rail

Imputed demand → if you widen the roads more traffic will come to fill them

in any project, taking the opportunity for a divided bike lane, expanded sidewalk (or any sidewalk in the case of Douglas), or pedestrian overpass or safe crossing is my priority

University of Pennsylvania study

## DRAFT 2045 NEEDS PLAN ROADWAY PROJECTS

Mile	Location	From	To	Existing	2045 Needs	Jurisdiction	Notes
				Total Lanes	Total Lanes		
<b>New Roads/Connections</b>							
1	I-275	Northbound 275	Westbound Ulmerton Rd			FDOT	New Interchange
2	Ramp to Gandy Blvd WB	NB I-275 Off Ramp	SB I-275 Off Ramp to WB Gandy Blvd		1	FDOT	New Ramp
3	Roosevelt Boulevard Stage 3 of	W of I-275 Interchange	SR 686 (Roosevelt Blvd) W of 9th Street	4D	6D	FDOT	New Interchange
4	Burbank Rd	Douglas Rd	Tampa Rd		2D	Oldsmar	New Connection
5	Disston Ave Extension	Woodhill Dr	Meres Blvd	N/A	2U	Tarpon Springs	Also added S Disston Ave
6	Meres Blvd	Alt US 19 (SR 595)	US 19 (SR 55)	N/A-2U	2U/2D	Tarpon Springs	New Road Connection
7	126th Ave N	US 19 (SR 55)	W of 49th St N	N/A-2U	2D	County	PD&E is underway
8	16th Ave SE	Lake Ave	Starkey Rd	N/A	2E	County	New Connection
9	142nd Ave N	Starkey Rd	Belcher Rd	N/A	2E	County	New Connection
10	102nd Ave N	18th St N	Halkey-Roberts Pl N	N/A	2D	N/A	New road construction over interstate
<b>Proposed Widening of Existing Roads</b>							
11	Starkey Rd	Flamevine	Bryan Dairy Rd	4D	6D	County	
12	Starkey Rd	Bryan Dairy Rd	SR 688 (Ulmerton Rd)	4D	6D	County	
13	Starkey Rd	SR 688 (Ulmerton Rd)	East Bay Dr	4D	5D/6D	County	
14	Park St N	54th Ave N	S of Park Blvd	4D	6D	County	
15	Forest Lakes Blvd	SR 580	SR 584	2D	4D	County	
16	Douglas Rd	Commerce Blvd	Burbank Rd	2U	2D	Oldsmar	
17	Gandy Blvd	US 19 (SR 55)	E of Grand Ave	6D	6D	FDOT	Add frontage roads; improve intersections
18	Gandy Blvd	E of Grand Ave	W of I-275	6D	6D	FDOT	Add frontage roads; improve intersections
19	Gandy Blvd	West of I-275	W of 9th Street	6D	4P	FDOT	Add frontage roads; improve intersections
20	US 19 (Tampa Interchange)	North of CR 95	N of Nebraska Ave	6D + 2AUX	6P	FDOT	
21	US 19 (Alderman Intersection)	N of Nebraska Ave	S of Timberlane Rd	6D + 2AUX	TBD	FDOT	Evaluating at-grade options
22	US 19 (Kloserman Intersection)	S of Timberlane Rd	South of Lake Street	6D + 2AUX	TBD	FDOT	Evaluating at-grade options
23	SR 694 (Gandy Blvd)	East of SR 687 (4th Street N)	West end of Gandy Bridge	4D	4P	FDOT	Add frontage roads/overpasses
24	Gandy Blvd	Gandy Bridge	N/A	4D	4D+2X	FDOT	Bridge Replacement + express lane + trail
25	I-275	at 31st St S				FDOT	Interchange modifications
26	Curlew Rd.	Alt US 19	Veterans Expressway		4P	FDOT	Elevated Managed Lanes in median
27	East Lake Rd	Tampa Rd	Trinity	4D	6D	County	Corridor is currently policy constrained; evaluating options

4  
3  
2

2  
3  
4

1  
5

2045 - Horizon: include interim projects before 2045

No Tolls !!!



## Complete Streets/Enhancement Projects

1	62nd Ave N	66th St	49th St	2U	2D	County	
2	62nd Ave N	49th St N	34th St N	2U	2D	County	
3	Belcher Rd (71st St)	38th Av N	54th Av N	2U	2D	County	
4	Nursery Rd	Highland Ave	Belcher Rd	2U	2E	County	
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7	16th Ave SE	Donegan Rd	Lake Ave	2U	2E	County	
8	142nd Ave N	Belcher Rd	66th St N	2U	2E	County	
9	Belleair Rd	Keene Rd	US 19 (SR 55)	2U	2E	County	
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11	Belcher Rd	Druid Rd	NE Coachman Rd	4U	4E	County	
12	102nd Ave N	137th St N	125th St N	2U	2E	County	
13	102nd Ave N	125th St N	113th St N	2U	2E	County	
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15	22nd Ave S	58th St S	34th St S	4U	4E	County	
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18	Alt US 19	Live Oak St	Anclote Blvd	2U	2E	FDOT	
19	Alt US 19	Brevard St	Klosterman Rd	2U	2E	FDOT	
20	Alt US 19	Orange St	Tampa Rd	2U	2E	FDOT	
21	SR 590/NE Coachman Rd	Drew St	McMullen-Booth Rd	2U	2E	FDOT	
22	113th St/Duhme Rd	150th Ave	Park Blvd	6D	4D	County	
23	54th Ave N	Lown Street	34th St	4D/4U	2D	County	
24	Drew St	Osceola Ave	Saturn Avenue	4U	2D	FDOT	
25	Skinner Boulevard	Alt 19	Bass	4U	2D	FDOT	
26	Cleveland St	Myrtle Ave	Missouri Ave	4D	2D	Clearwater	
27	Tyrone Blvd Overpass Removal/	Pinellas Trail Crossing	71st St N	4D Grade Separated	4D At Grade	FDOT	4D at Grade + Trail Overpass

E = Enhancement Project (complete streets); U = Undivided; D = Divided; P = Partially Controlled Access; X = Express Lanes

Possible commuter rail

CSX line (sold?) - project not funded

## DRAFT 2045 NEEDS PLAN ROADWAY PROJECTS

ID	Location	From	To	Existing	2045 Needs	Jurisdiction	Notes
				Total Lanes	Total Lanes		
<b>New Roads/Connections</b>							
1	I-275	Northbound 275	Westbound Ulmerton Rd			FDOT	New Interchange
2	Ramp to Gandy Blvd WB	NB I-275 Off Ramp	SB I-275 Off Ramp to WB Gandy Blvd		1	FDOT	New Ramp
3	Roosevelt Boulevard Stage 3 of	W of I-275 Interchange	SR 686 (Roosevelt Blvd) W of 9th Street	4D	6D	FDOT	New Interchange
4	Burbank Rd	Douglas Rd	Tampa Rd		2D	Oldsmar	New Connection
5	Disston Ave Extension	Woodhill Dr	Meres Blvd	N/A	2U	Tarpon Springs	Also added S Disston Ave
6	Meres Blvd	Alt US 19 (SR 595)	US 19 (SR 55)	N/A-2U	2U/2D	Tarpon Springs	New Road Connection
7	126th Ave N	US 19 (SR 55)	W of 49th St N	N/A-2U	2D	County	PD&E is underway
8	16th Ave SE	Lake Ave	Starkey Rd	N/A	2E	County	New Connection
9	142nd Ave N	Starkey Rd	Belcher Rd	N/A	2E	County	New Connection
10	102nd Ave N	18th St N	Halkey-Roberts Pl N	N/A	2D	N/A	New road construction over interstate
<b>Proposed Widening of Existing Roads</b>							
11	<del>Starkey Rd</del>	<del>Flamevine</del>	<del>Bryan Dairy Rd</del>	4D	6D	County	
12	<del>Starkey Rd</del>	<del>Bryan Dairy Rd</del>	<del>SR 688 (Ulmerton Rd)</del>	4D	6D	County	
13	<del>Starkey Rd</del>	<del>SR 688 (Ulmerton Rd)</del>	<del>East Bay Dr</del>	4D	5D/6D	County	
14	Park St N	54th Ave N	S of Park Blvd	4D	6D	County	
15	Forest Lakes Blvd	SR 580	SR 584	2D	4D	County	
16	Douglas Rd	Commerce Blvd	Burbank Rd	2U	2D	Oldsmar	
17	Gandy Blvd	US 19 (SR 55)	E of Grand Ave	6D	6D	FDOT	Add frontage roads; improve intersections
18	Gandy Blvd	E of Grand Ave	W of I-275	6D	6D	FDOT	Add frontage roads; improve intersections
19	Gandy Blvd	West of I-275	W of 9th Street	6D	4P	FDOT	Add frontage roads; improve intersections
20	US 19 (Tampa Interchange)	North of CR 95	N of Nebraska Ave	6D + 2AUX	6P	FDOT	
21	US 19 (Alderman Intersection)	N of Nebraska Ave	S of Timberlane Rd	6D + 2AUX	TBD	FDOT	Evaluating at-grade options
22	US 19 (Klosterman Intersection)	S of Timberlane Rd	South of Lake Street	6D + 2AUX	TBD	FDOT	Evaluating at-grade options
23	SR 694 (Gandy Blvd)	East of SR 687 (4th Street N)	West end of Gandy Bridge	4D	4P	FDOT	Add frontage roads/overpasses
24	Gandy Blvd	Gandy Bridge	N/A	4D	4D+2X	FDOT	Bridge Replacement + express lane + trail
25	I-275	at 31st St S				FDOT	Interchange modifications
26	<del>Curlew Rd.</del>	<del>Alt US 19</del>	<del>Veterans Expressway</del>		4P	FDOT	<del>Elevated Managed Lanes in median</del>
27	East Lake Rd	Tampa Rd	Trinity	4D	6D	County	Corridor is currently policy constrained; evaluating options

NO!

1.

2.

NO!

3.

## Complete Streets/Enhancement Projects

1	62nd Ave N	66th St	49th St	2U	2D	County	
2	62nd Ave N	49th St N	34th St N	2U	2D	County	
3	Belcher Rd (71st St)	38th Av N	54th Av N	2U	2D	County	
4	Nursery Rd	Highland Ave	Belcher Rd	2U	2E	County	
5	Nursery Rd	Belcher Rd	US 19 (SR 55)	2U	2E	County	
6	16th Ave SE	Seminole Blvd	Donegan Rd	2U	2E	County	
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10	Highland Ave	East Bay Dr	Belleair Rd	2U	2E	County	
11	Belcher Rd	Druid Rd	NE Coachman Rd	4U	4E	County	
12	102nd Ave N	137th St N	125th St N	2U	2E	County	
13	102nd Ave N	125th St N	113th St N	2U	2E	County	
14	102nd Ave N	113th St N	Seminole Blvd	4D	4E	County	
15	22nd Ave S	58th St S	34th St S	4U	4E	County	
16	Sunset Point Rd	Alt US 19 (SR 595)	Keene Rd	2U	2E	County	
17	Indian Rocks Rd	Walsingham Rd	West Bay Dr	2U	2E	County	
18	Alt US 19	Live Oak St	Anclote Blvd	2U	2E	FDOT	
19	Alt US 19	Brevard St	Klosterman Rd	2U	2E	FDOT	
20	Alt US 19	Orange St	Tampa Rd	2U	2E	FDOT	
21	SR 590/NE Coachman Rd	Drew St	McMullen-Booth Rd	2U	2E	FDOT	
22	113th St/Duhme Rd	150th Ave	Park Blvd	6D	4D	County	
23	54th Ave N	Lown Street	34th St	4D/4U	2D	County	
24	Drew St	Osceola Ave	Saturn Avenue	4U	2D	FDOT	
25	Skinner Boulevard	Alt 19	Bass	4U	2D	FDOT	
26	Cleveland St	Myrtle Ave	Missouri Ave	4D	2D	Clearwater	
27	Tyrone Blvd Overpass Removal/	Pinellas Trail Crossing	71st St N	4D Grade Separated	4D At Grade	FDOT	4D at Grade + Trail Overpass

4.  
5  
+

E = Enhancement Project (complete streets); U = Undivided; D = Divided; P = Partially Controlled Access; X = Express Lanes

# DRAFT 2045 NEEDS PLAN ROADWAY PROJECTS

No.	Project	Location	Description	Existing	2045 Needs	Jurisdiction	Notes
				Total Lanes	Total Lanes		
<b>New Roads/Connections</b>							
1	I-275	Northbound 275	Westbound Ulmerton Rd			FDOT	New Interchange
2	Ramp to Gandy Blvd WB	NB I-275 Off Ramp	SB I-275 Off Ramp to WB Gandy Blvd		1	FDOT	New Ramp
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5	Disston Ave Extension	Woodhill Dr	Meres Blvd	N/A	2U	Tarpon Springs	Also added S Disston Ave
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15	Forest Lakes Blvd	SR 580	SR 584	2D	4D	County	
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27	East Lake Rd	Tampa Rd	Trinity	4D	6D	County	Corridor is currently policy constrained; evaluating options

widen ↑ we need more improvements

no way  
budget  
idea

### Complete Streets/Enhancement Projects

1	62nd Ave N	66th St	49th St	2U	2D	County	
2	62nd Ave N	49th St N	34th St N	2U	2D	County	
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E = Enhancement Project (complete streets); U = Undivided; D = Divided; P = Partially Controlled Access; X = Express Lanes

Lets Go CSX!

## FOCUS GROUP MEETING #3 MATERIALS

**INFORMATION PACKET** (accompanied meeting invitation)

**PRESENTATION SLIDES**

**FLIPCHART NOTES**

**Information Packet – Task Force Meeting #3, October 3, 2019**



September 27, 2019

Dear Advantage Pinellas Focus Group Member:

**Forward Pinellas would like to thank you** for participating in our focus group meetings over the course of the last year. The feedback you have provided has helped us get to where we are today in the development of our next long range transportation plan, "Advantage Pinellas." Your input has helped to identify the county's most important transportation issues and the types of improvements needed to address them. It has also confirmed the predominant themes of what we have heard over the last two years of our public outreach activities.

During that outreach, **we have heard loud and clear that both residents and visitors want more choices in how we get around Pinellas County.** People recognize that we cannot keep widening our roadways to solve traffic congestion. They want strategic investments in mobility options that serve the needs of all road users, including drivers, bicyclists, pedestrians and transit users, while maintaining our existing infrastructure.

The graphic below highlights how Forward Pinellas is proposing to invest transportation funding in Pinellas County through the Advantage Pinellas Plan based on that community input. As we will address at the October 3rd focus group meeting, our ability to allocate funds to categories other than roadways is somewhat limited by restrictions to state and federal funding requirements.

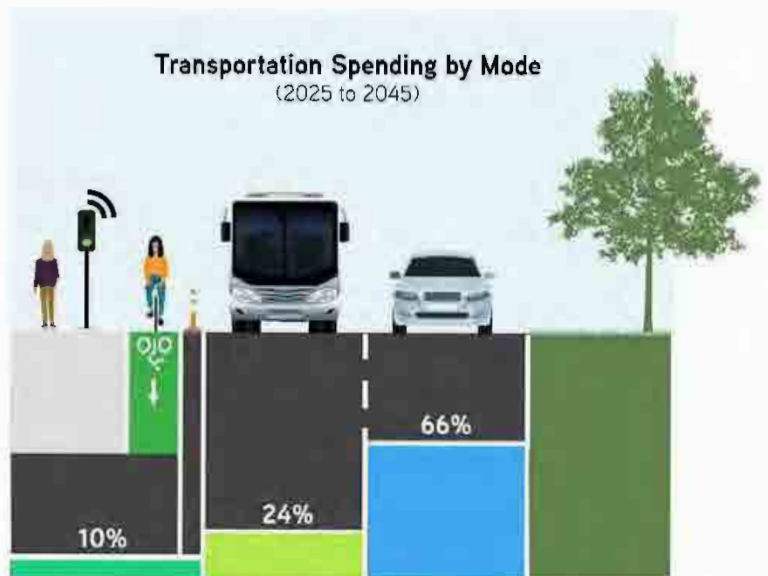
On the following pages, I have provided examples of some of the Advantage Pinellas Plan projects we will be looking to advance in the coming years with the revenues available to us. **At the October 3rd focus group meeting, we look forward to hearing your thoughts on this proposed funding distribution and on some of the projects being considered for the plan.**

Again, thank you for your participation on the Advantage Pinellas Focus Group. Your contributions are helping lead the way to a more mobile Pinellas.

Sincerely,

**FORWARD PINELLAS**

Chelsea Favero, AICP  
Advantage Pinellas Project Manager





## PROJECT TYPE #1

**Improving our streets to add sidewalks, bicycle accommodations and to improve drainage.**



### ***Example projects to be advanced:***

- 62<sup>nd</sup> Avenue North from 49<sup>th</sup> Street to US 19/34<sup>th</sup> Street
- Forest Lakes Boulevard from SR 580 to SR 584
- Belleair Road from US 19 to Keene Road



## Advantage PINELLAS

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### PROJECT TYPE #2

**Hardening the shoulders of the interstate so that buses can drive on them when there is congestion and traffic is moving at 35 miles per hour or less.**



#### ***Example projects to be advanced:***

- Buses on shoulder of I-275 in Pinellas County

## PROJECT TYPE #3

**Constructing interchanges along US 19 to that vehicles driving north or south do not have to stop at traffic lights.**



### ***Example projects to be advanced:***

- US 19 Interchange construction at Curlew Road
- US 19 interchange construction at Tampa Road



## Advantage PINELLAS

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### PROJECT TYPE #4

**Providing local and cross-county bus service.**



#### ***Example projects to be advanced:***

- Regional bus service along I-275 into Tampa
- Regional bus service along Gandy Blvd. into Tampa
- Local bus service along most major roads in Pinellas County

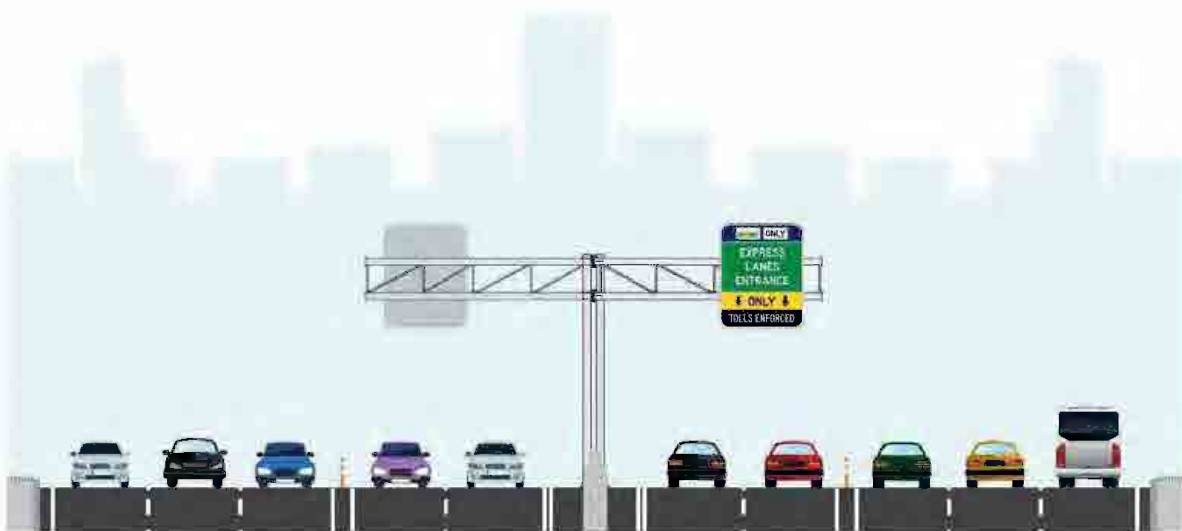


## Advantage PINELLAS

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### PROJECT TYPE #5

**Constructing additional lanes along the interstate that are tolled at rates that change depending upon the level of congestion along the corridor.**



#### ***Example projects to be advanced:***

- Tolled express lanes along I-275 from I-375 to the Howard Frankland Bridge



## Advantage PINELLAS

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### PROJECT TYPE #6

**Widening roadways to include additional lanes for vehicles, while also improving sidewalks and bicycle accommodations.**



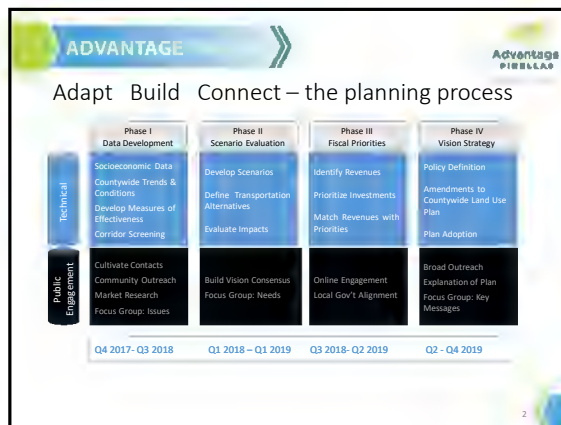
#### ***Example projects to be advanced:***

- Widening Starkey Road from 54th Ave. N up through East Bay Dr to 6 lanes

**Presentation Slides – Task Force Meeting #3, October 3, 2019**



1



2

### Focus Group #1 – General Observations

- › Advantages and Challenges for Pinellas County
- › How do you get around Pinellas County?
- › Transit Service
- › Transportation Efficiency and Improvement
- › Economic Value of Transportation
- › Land Use
- › Innovation

3

### Focus Group #1 – What We Heard

- › *“I would love to take the buses to places, but they are not quite good enough right now, or it’s not bad enough right now that it’s a good value proposition.”*
- › *“There is just not enough space to build an efficient transportation system to move as many cars as are out there.”*
- › *“A solution is not just one package. It is a bunch of solutions to get to the ultimate.”*

4

### Focus Group #2 – ‘Advantages’

- › Attractive and Unique Destinations
- › A Resilient Community
- › Safe and Healthy Communities
- › Strong Economic Opportunity
- › Mobility and Accessibility for Everyone
- › A Collaborative Vision for the Future

5

### ‘Advantages’ – What We Heard

- › *“Should have more opportunities for healthy lifestyles-walk or bike to destinations”*
- › *“Embrace technological advances → build infrastructure for electric cars, connectivity, etc.”*
- › *“Improve road safety for bikes/pedestrians → signage, alternate routes, overpasses/underpasses?”*
- › *“Transit system needs work”*

6



ADVANTAGE

Focus Group #2 – Needed Projects

Roadway Projects

7

7

ADVANTAGE

Focus Group #2 – What We Heard

- › “I’m a big fan of any and all ‘complete street’ projects, especially with extra wide sidewalks”
- › “If you widen the roads, more traffic will come to fill them”
- › Rail on the CSX line
- › US 19 in north county needs to be improved

8

8

ADVANTAGE

Consistent Outreach Results

- › Time the traffic signals
- › Improve transit service
- › Improve bike/ped
- › Maintain roads
- › Limit roadway expansion

9

9

ADVANTAGE

Funding Our Priorities

- › Four main sources:
  - › Strategic Intermodal System
  - › Local Funds
  - › TMA Funds
  - › Other Arterials

10

10

ADVANTAGE

Strategic Intermodal System (SIS)

- › Limited to SIS Facilities
- › Roads, Intermodal Centers, Rail, Ports
- › Allocated by State
- › Transit on SIS facilities not included

11

11

ADVANTAGE

Local Funds

- › Highly Flexible – Covers all modes
- › Based on local priorities
- › Can be used to match state/federal funds
- › Nearly 100% committed for local needs

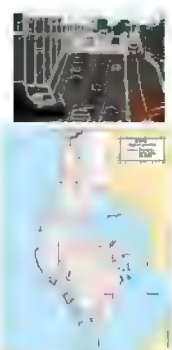
12

12

**ADVANTAGE**

### Other Arterials

- › For non-SIS state roads
- › Can be used for local, parallel/reliever roads and transit
- › For non-state roads, must include a 50% local match
- › Few state capacity projects and limited local matching funding in Pinellas



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13

**ADVANTAGE**

### TMA Funds

- › Highly Flexible – Covers all modes
- › Based on MPO priorities
- › Recommendation:
  - › Complete Streets
  - › Technology
  - › Transit Capital
    - › Local and Regional
  - › Active Trans. Projects
  - › Trail Overpasses



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**ADVANTAGE**

### Cost Feasible Plan

- › Complete Streets
  - › \$1m/annually
- › Technology
  - › \$1m/annually
- › Transit Capital
  - › \$1.5m/annually for bus replacements
  - › \$500k for regional capital



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15

**ADVANTAGE**

### Cost Feasible Plan

- › Active Trans. Projects
  - › \$62m for priority corridors
- › Trail Overpasses
  - › Minimum of 4 overpasses at high-conflict trail crossings

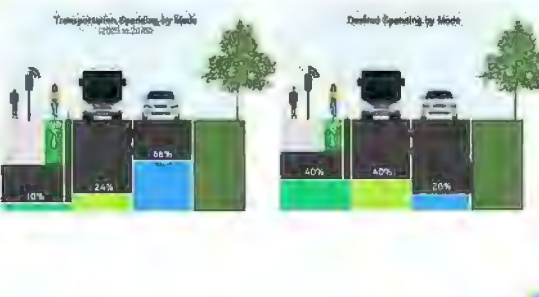


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16

**ADVANTAGE**

### Transportation Operating by Mode (2015 to 2030)



Advantage PINELLAS

17

**ADVANTAGE**

### Next Steps

- › Finalize Cost Feasible Plan
- › Developing Documentation
- › Focus Group – early October
- › Plan Adoption- November



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18

ADVANTAGE PINELLAS

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PINELLAS

## Today's Agenda

- › Reaction to spending breakdown
- › Do projects reflect where you think our funding should be going?
- › Any comments on the phasing/timing or projects?

19

19

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PINELLAS

# Questions?



FORWARD  
PINELLAS  
OUR PLAN FOR THE FUTURE

20

20

Flipchart Notes – Task Force Meeting #3, October 3, 2019

Post-it

- Transit is a geometry problem
- sometimes buses are empty (clear belt)
- Buses w/ few people - routes want survive
- Branch routes tend to do well
- Roads:
  - = Looks like all areas of the county are being
  - four miles - I understand all places but bridge it are
  - = Looks good - would like to have a tolling
  - can't rent pursuing driver licenses as many
- Bike/ped / technology included in one pot
- Pinellas Citizens Academy advocates for RBTs
- Is population change considered?
- Attitudes have changed about residential close to jobs (offices, industrial)
- can't physically fit <sup>inter</sup> county travel

1

Post-it

Focus Group Mtg #3

- Status 580 / Curlew Rd?
- How does 275 project relate to the hardening project?
- Is express lane 3 people in a car?
- How does toll lane help w/ traffic?
- Doesn't make sense.
- Just build another toll lane - solution
- There is a ceiling for toll + people are willing to pay
- Express buses on toll lanes makes sense
- What is the proportion of ridership <sup>capacity</sup> <sub>bus</sub>

2

Post-it

- Express bus service ends @ 5:30pm
- These buses are not empty
- Transit buses need to consider people's schedules (needs, must be convenient)
- Frequency makes transit more valuable
- That's a chicken-egg situation
- Parts of our county are not spread out
- 80K people travel between Pinellas + Hillsborough per day
- must market service adequately
- need committees for transit + bike/ped
- PSTA Riders Advisory Committee
- MRS CAC
- who is responsible for transportation planning?

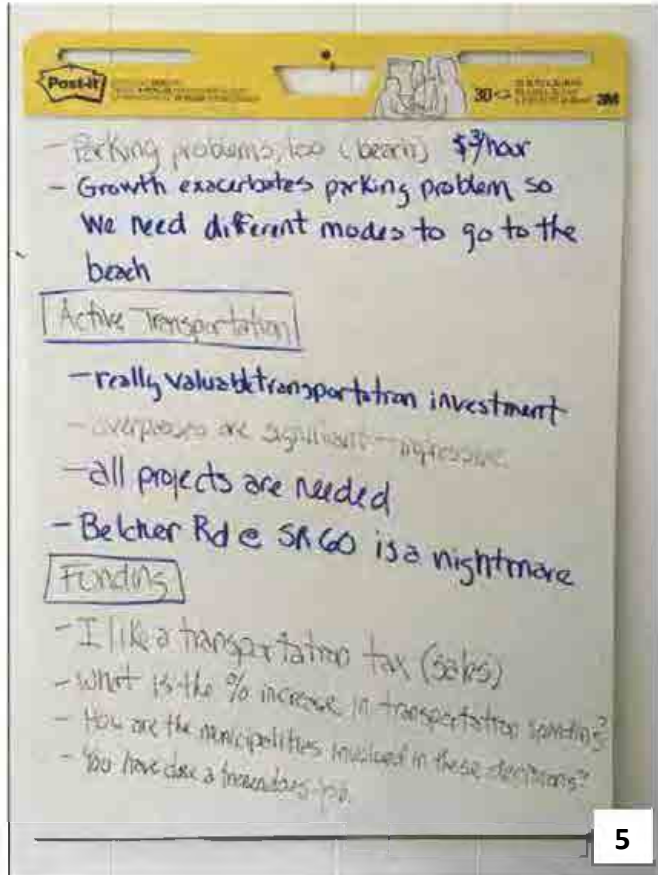
3

Post-it

- What is the % change in transit ridership per year? Decrease but service was cut.
- Are the committees geographically diverse? PSTA specifically
- You have to be able to work transit into your schedule
- Is park-n-ride space included?
- Even 10 people on a bus is significant (drivers off the road)
- Use of Uber/Lift has taken a share of trips (college students)
- Buses + groceries?
- cost per trip (transit)

4

Flipchart Notes – Task Force Meeting #3, October 3, 2019 (continued)





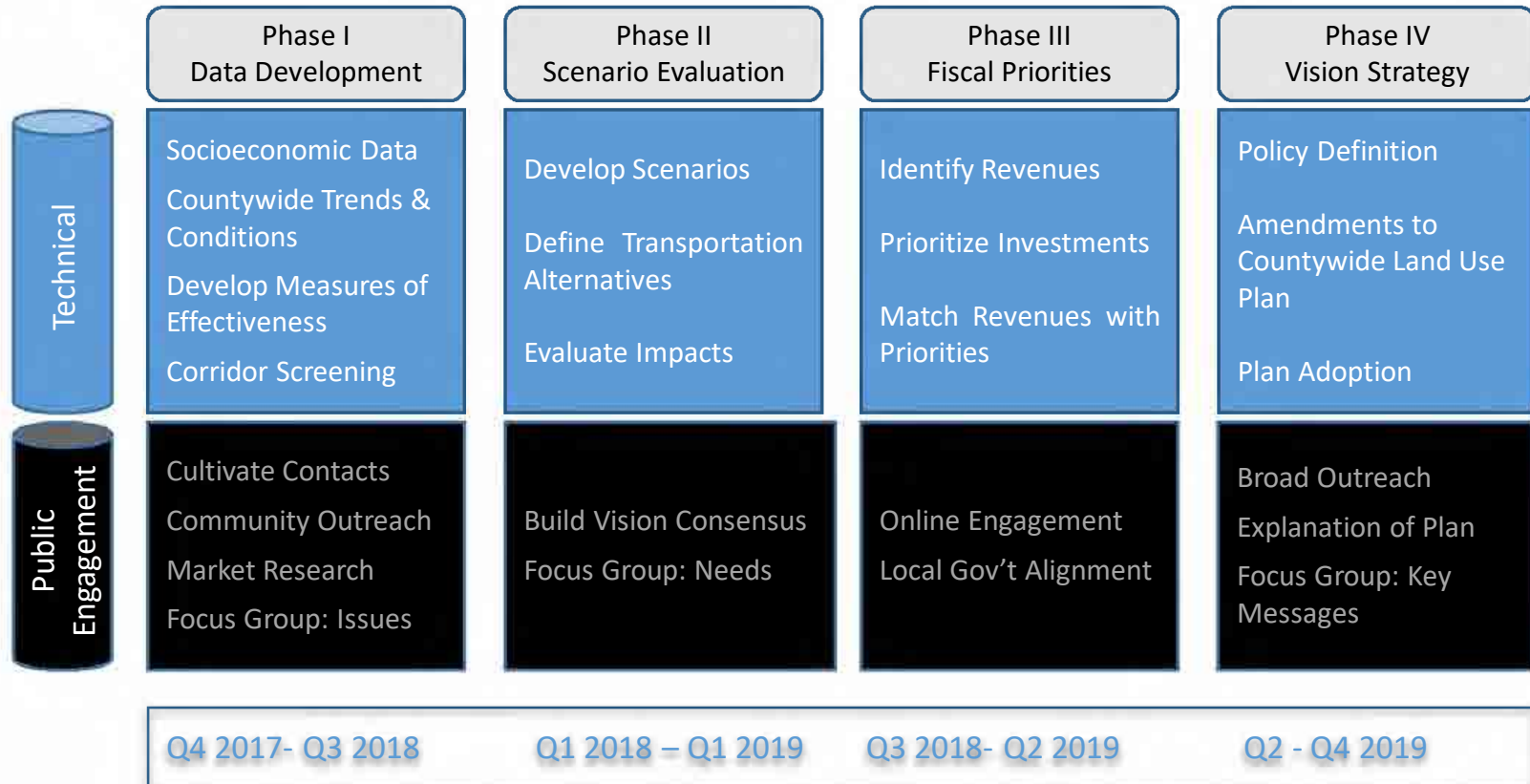


# Advantage **PINELLAS**

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## Adapt Build Connect – the planning process

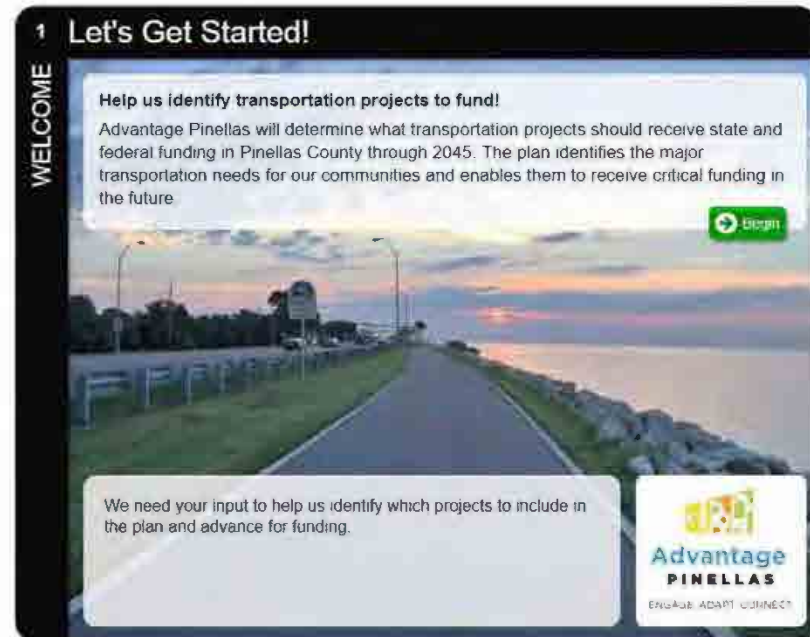




## Survey Results

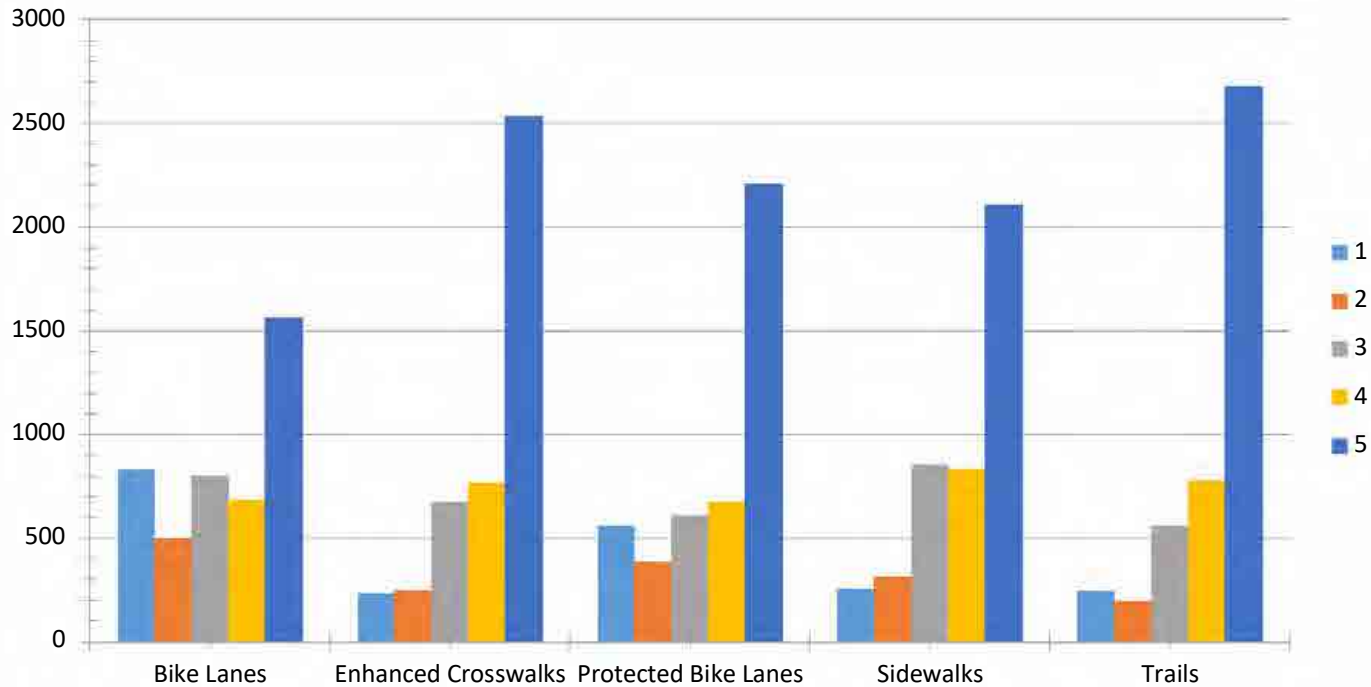
- › 4,817 participants
- › 5,058 comments
- › 171,661 data points

Total Participants



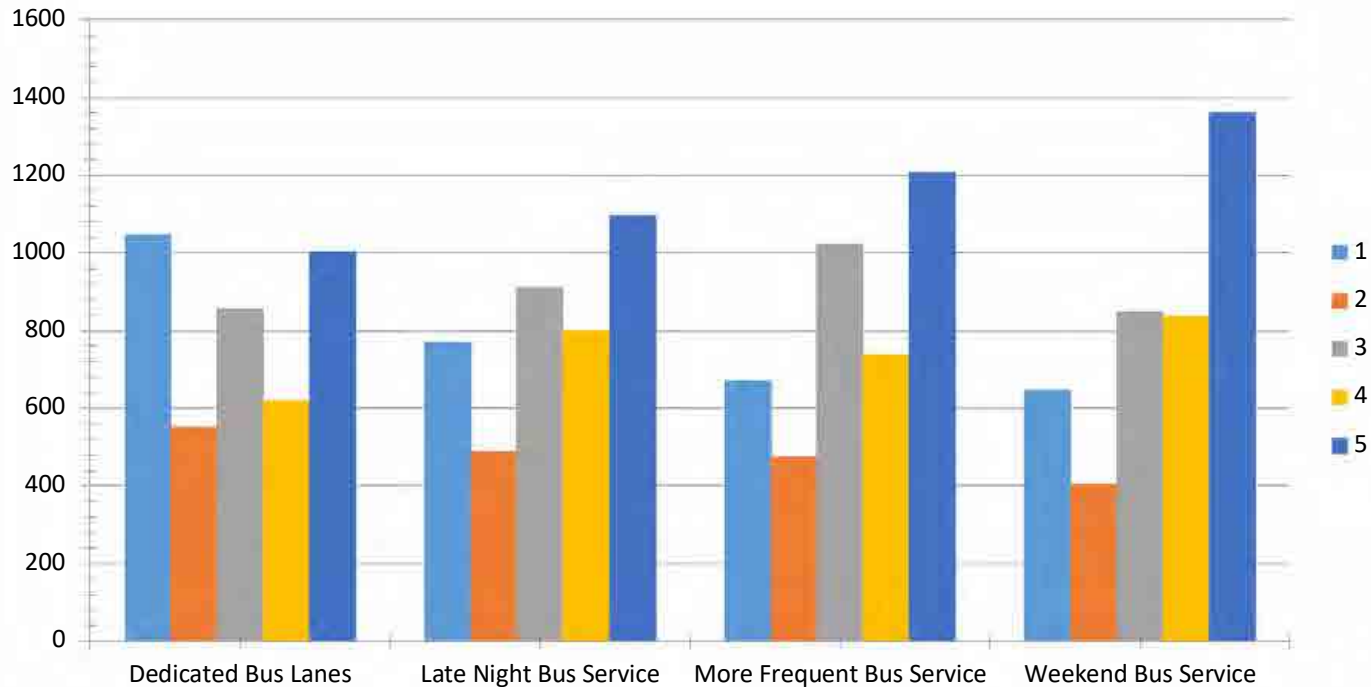
# Rating Specific Components

Bicycle / Pedestrian



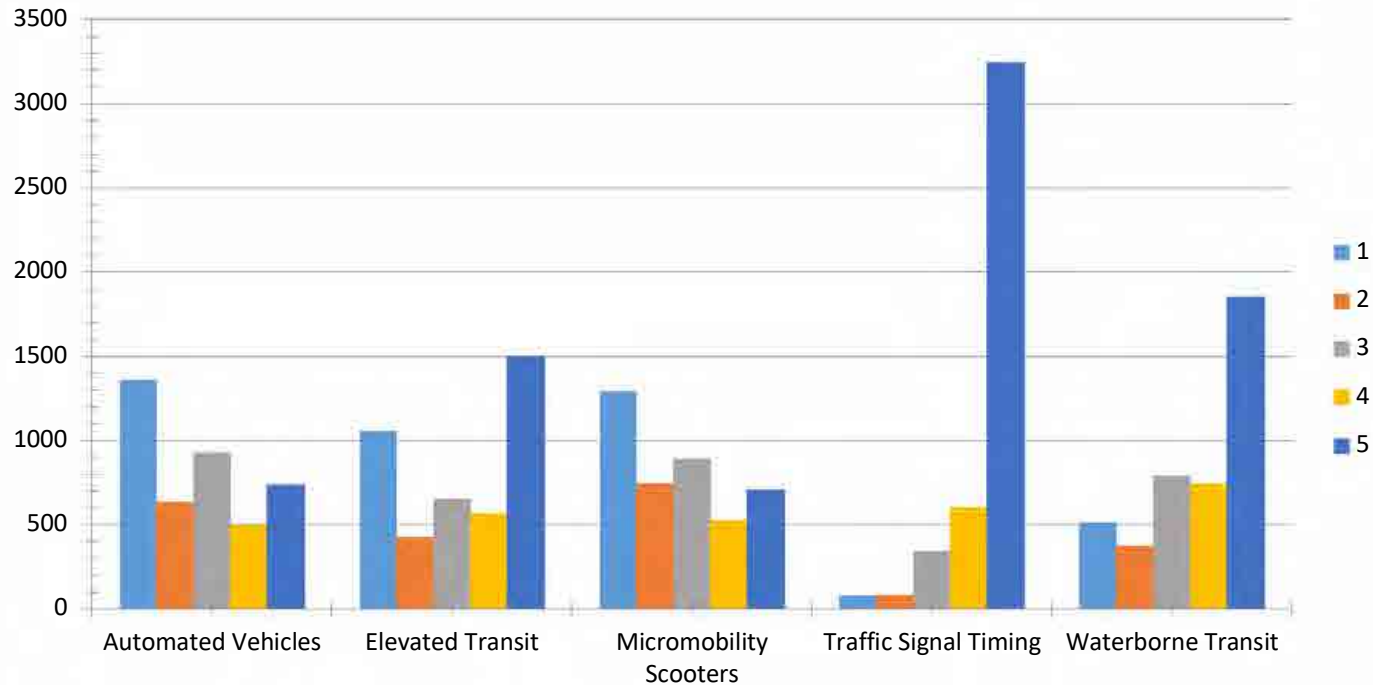
# Rating Specific Components

Bus Service



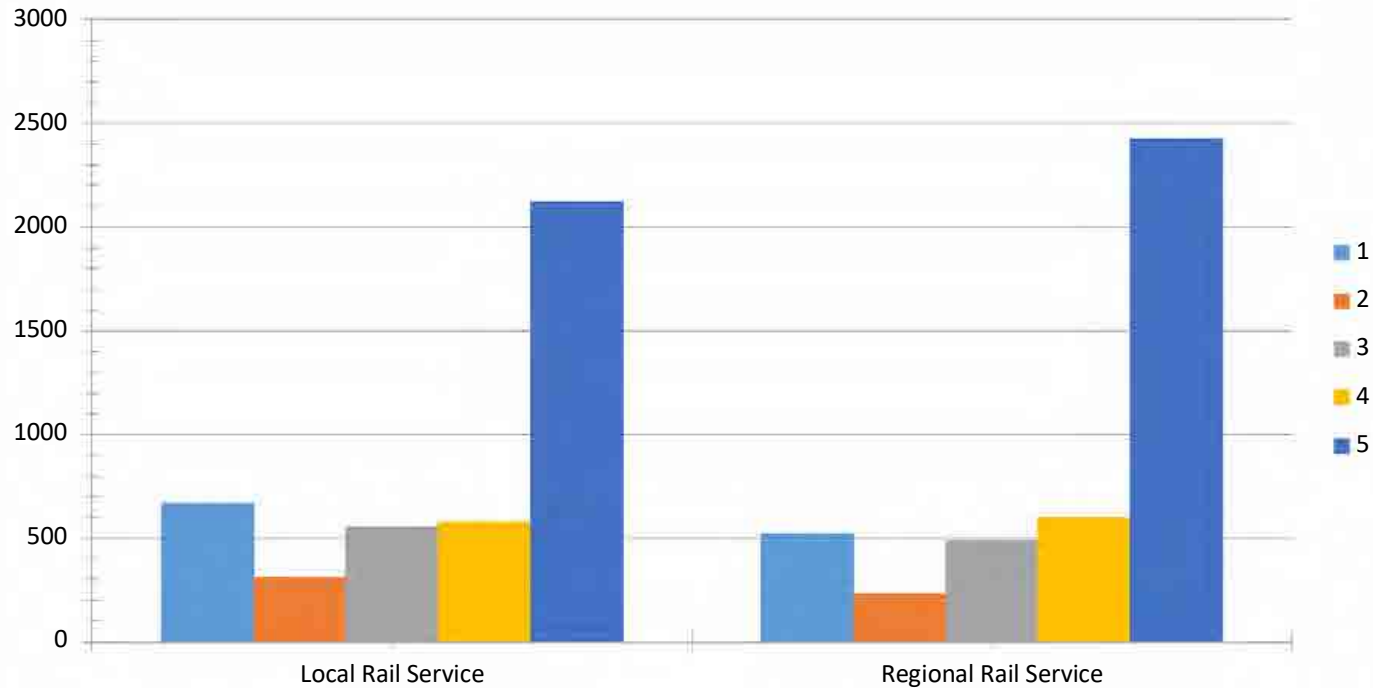
# Rating Specific Components

Emerging Solutions



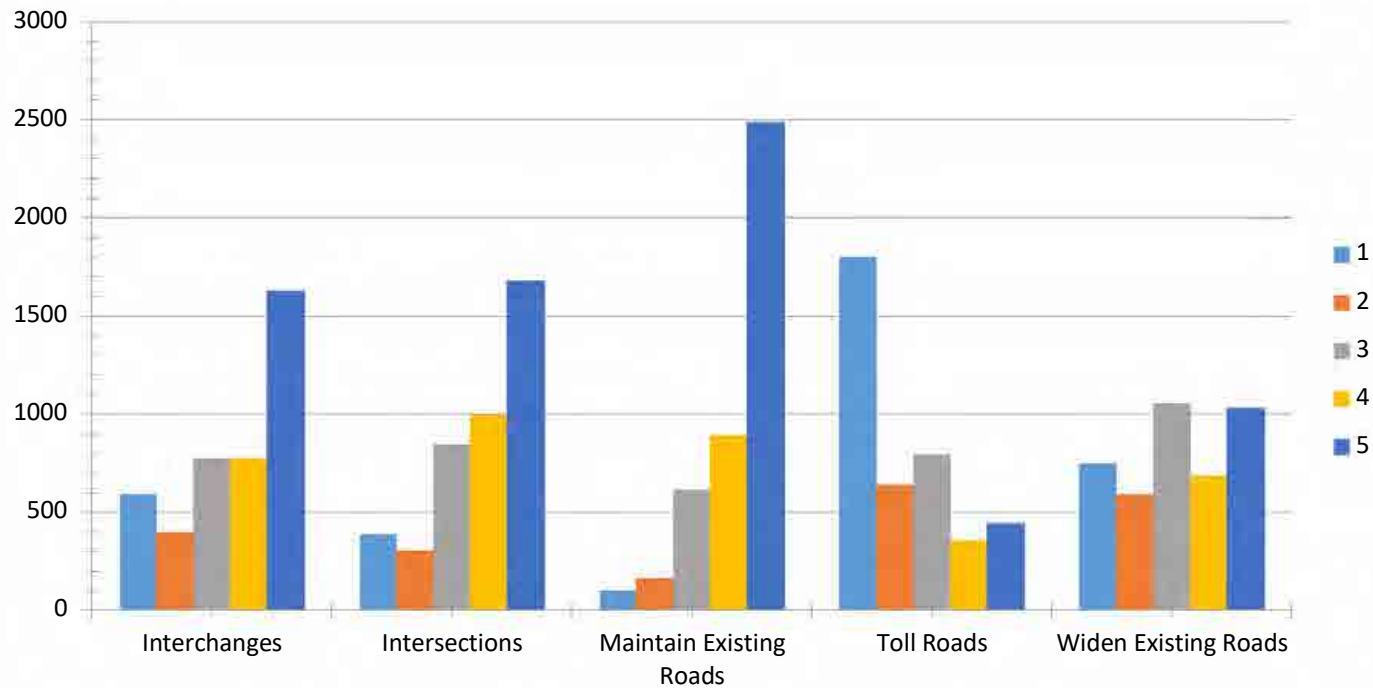
# Rating Specific Components

Passenger Rail Service

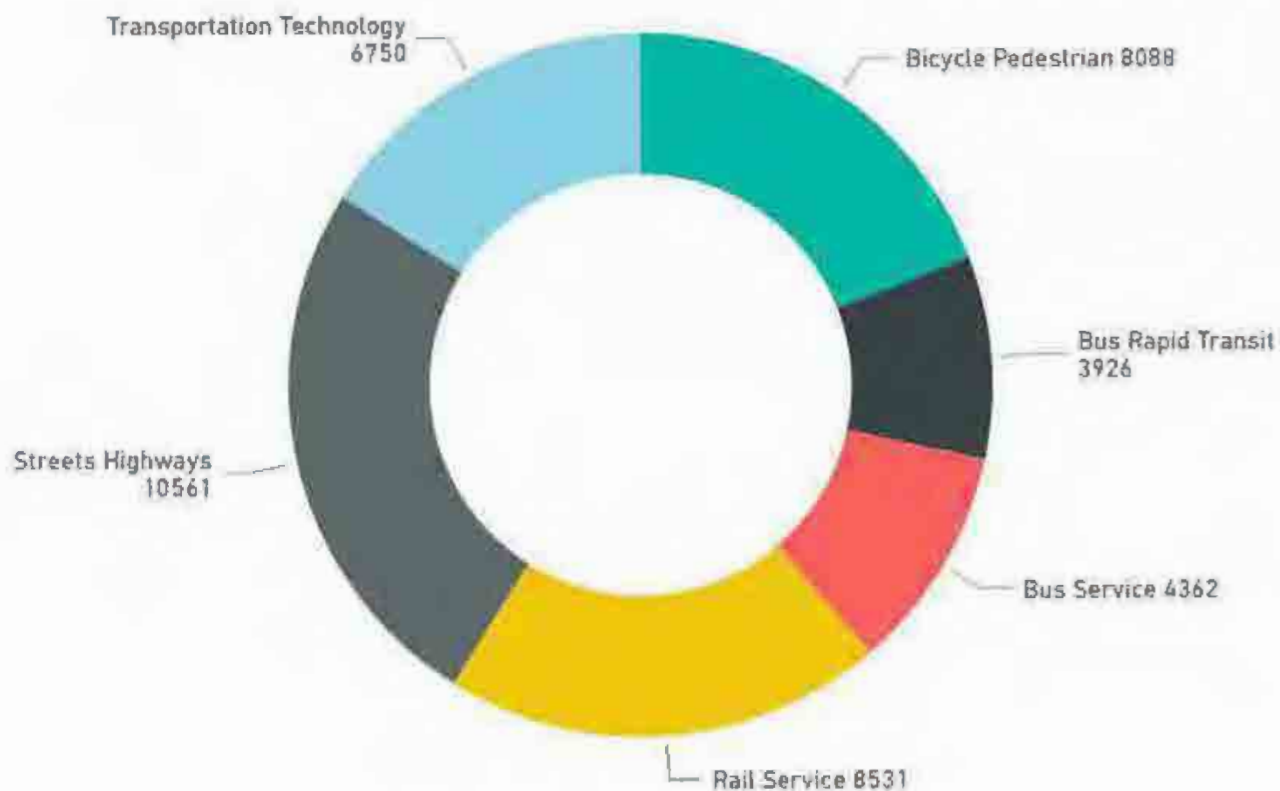


# Rating Specific Components

Streets and Highways



# Investing in Modes

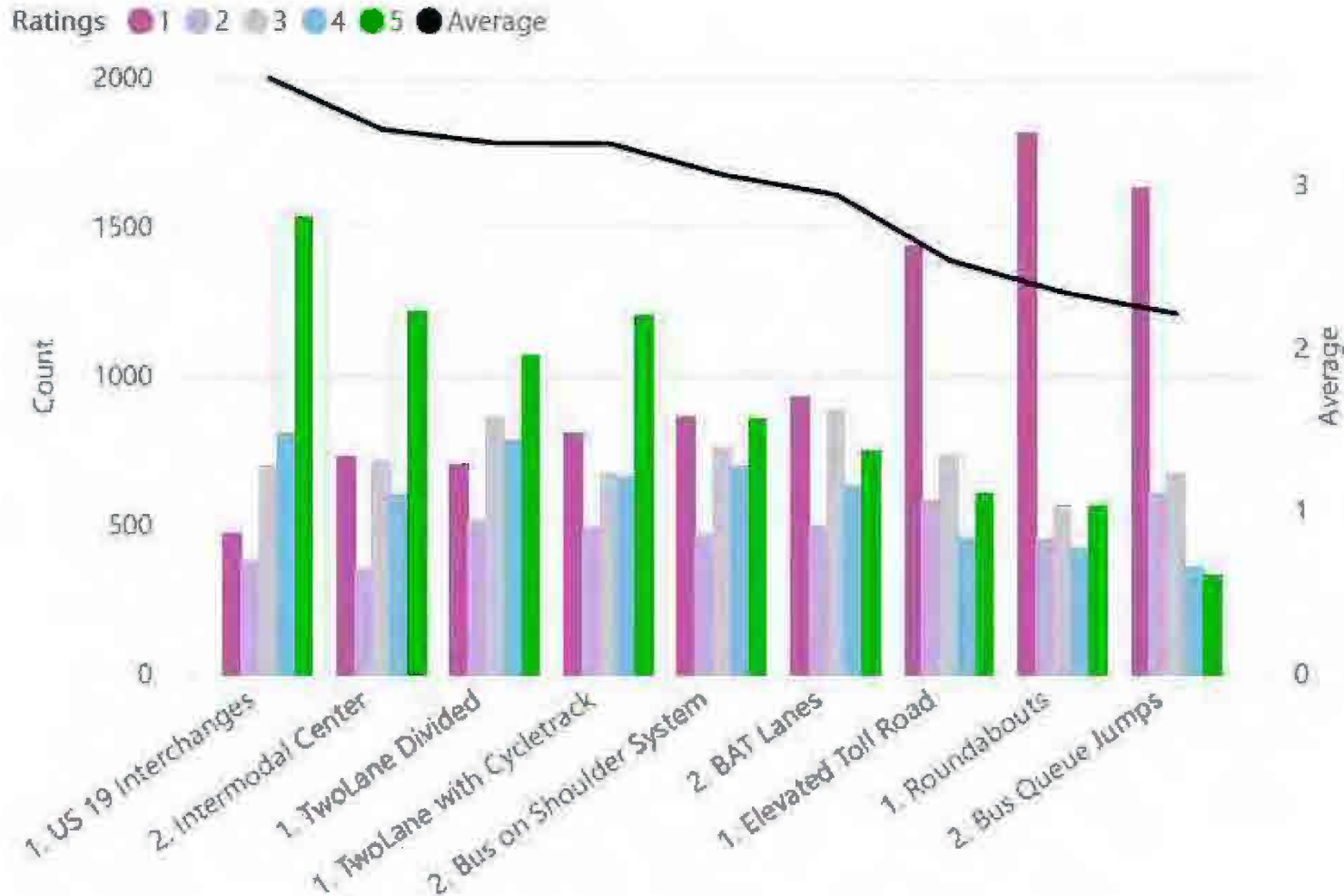


## Reactions to Images





## Reactions to Images



## › Consistent Outreach Results

- › Statistically Valid Survey
- › It's Time Tampa Bay
- › Advantage Pinellas
- › 'Ball Game'



# Themes to guide the vision and project prioritization process



Attractive &  
Unique  
**Destinations**



A **Resilient**  
Community



Safe & **Healthy**  
Communities



Strong  
**Economic**  
Opportunity



Mobility &  
**Accessibility**  
for Everyone



A  
**Collaborative**  
Vision for the  
Future

## Next Steps

- › Aligning Revenues with Projects
- › Developing Documentation
- › Focus Group – early October
- › Plan Adoption- November



# Enhance Transit Services

- › Better connect local workforce to jobs, training and housing that's affordable.
- ›
- › Maintain existing service in state of good repair.



# Enhance Transit Services

What are we trying to better connect?

**Indicators** help us identify these.



What corridors connect them?

These are our **investment corridors.**



Which corridors should we prioritize for enhanced transit?

These are our **priority corridors.**

# What are we trying to better connect?

## Where are the jobs and training?

Employment/  
Workforce Training

Indicators

**Employment densities**

**Opportunity zones**

**Workforce development areas**

## Where are the people?

Population Indicators

**Population densities**

**Minority/Low Income Areas**

**Zero car households**

## Where is housing that is affordable?

Housing Indicators

**Housing units affordable to lower income households**

**Existing investments in housing that is affordable**

## Where might future development occur?

Redevelopment opportunities

**Commercial indicators**

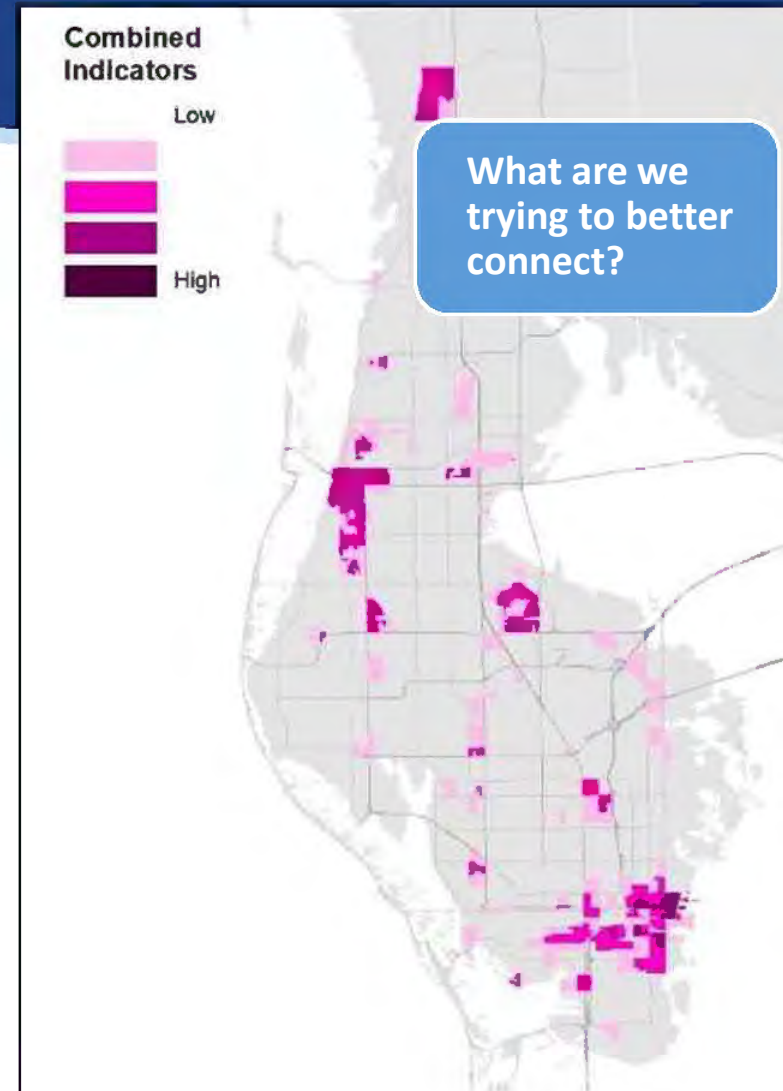
**Age > 1980**

**Underutilized currently**

**Large, >1 acre**

# Combining the indicators

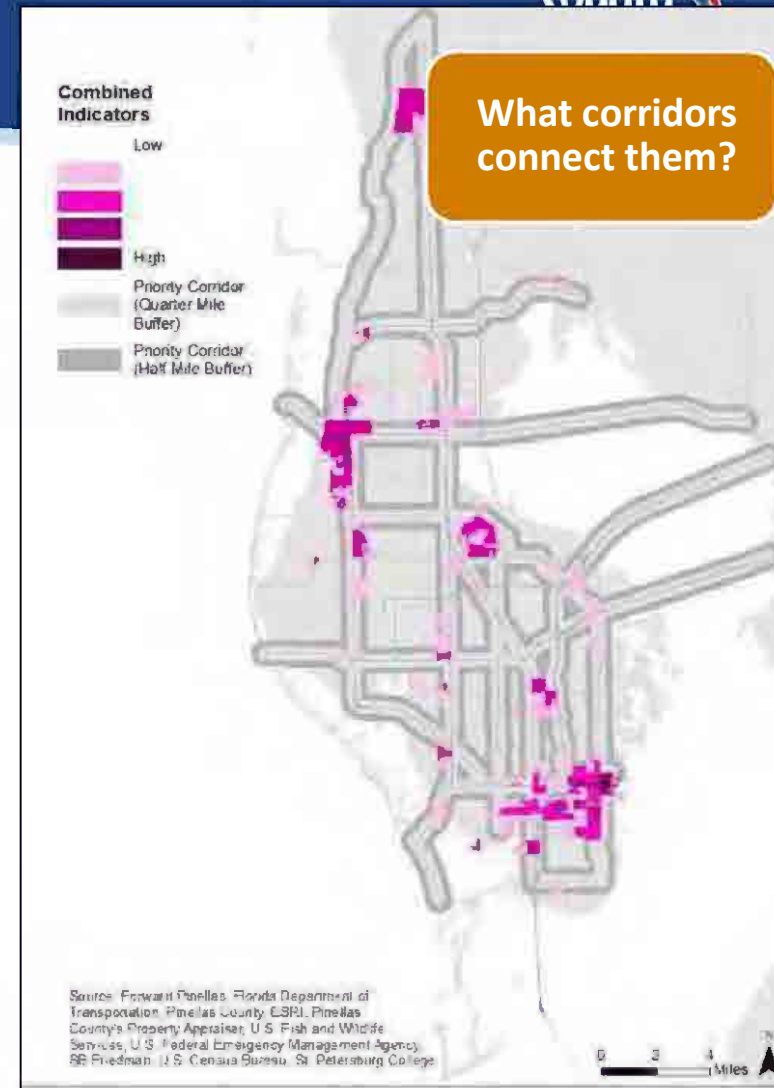
- › Where are the jobs and training?
- › Where are the people?
- › Where is housing that is affordable?
- › Where might future development occur?





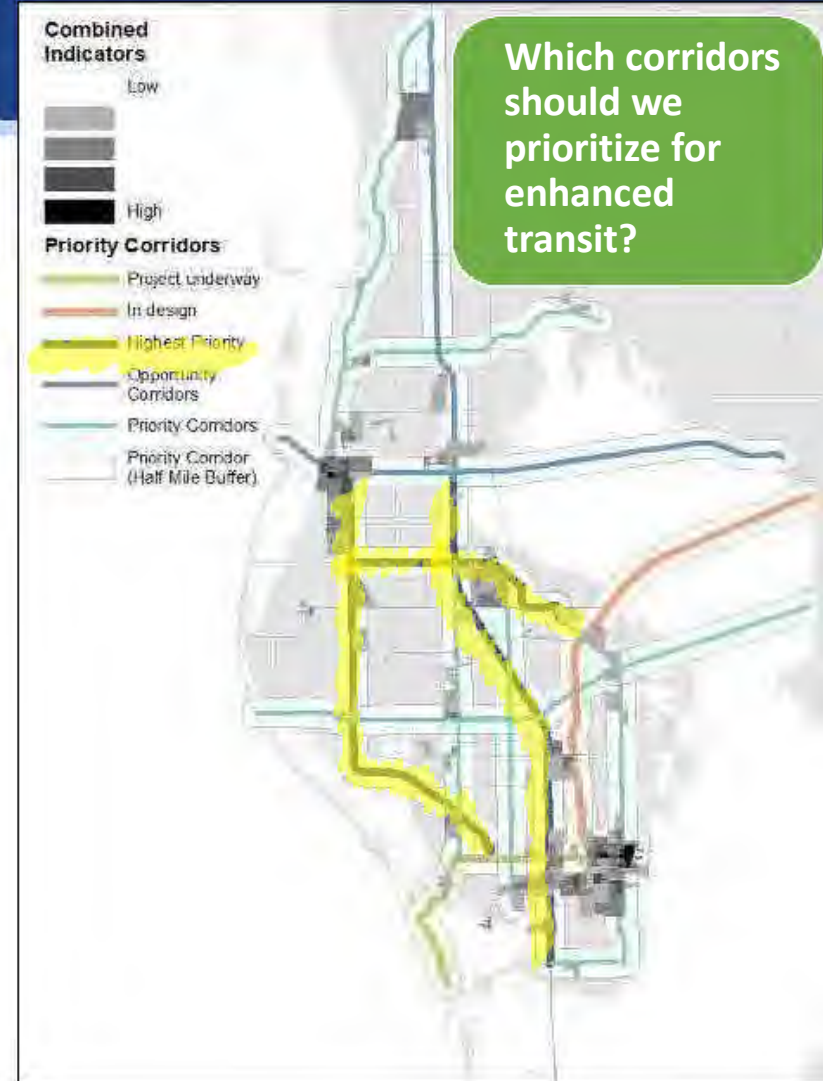
# Investment Corridors

- Data-driven approach
- Public and private sector investments
- Reinforced by Countywide Plan (Advantage Pinellas)



# Priority Corridors

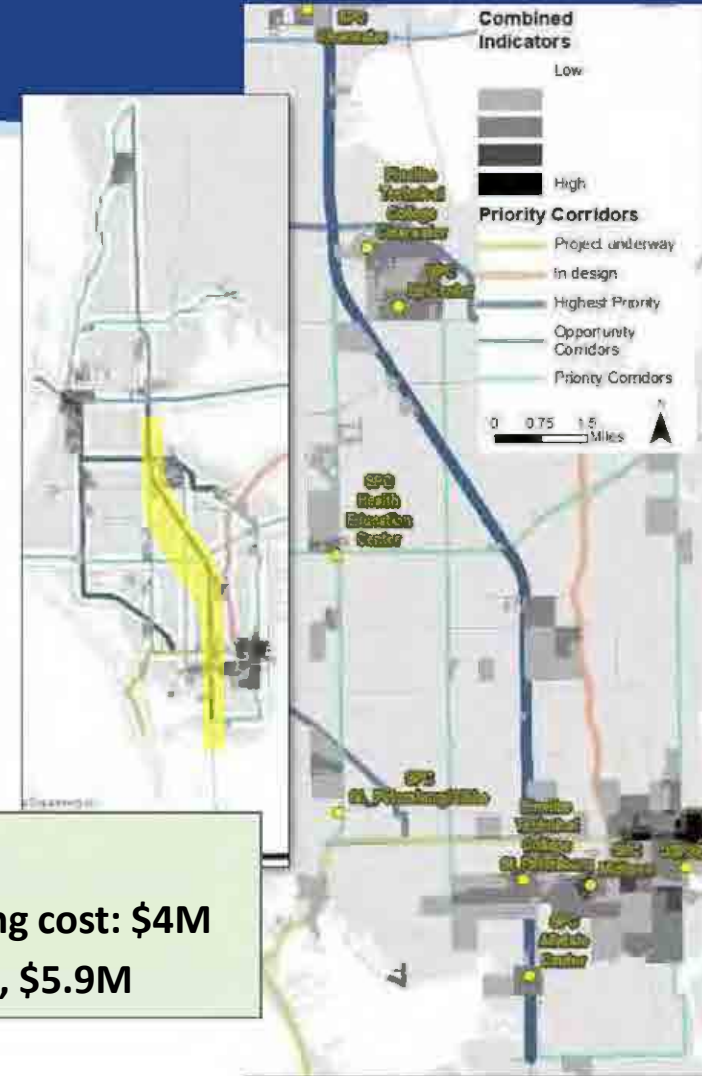
- › Transit service on these corridors is intended to be:
  - Focused on destination
  - Fast and reliable
- › Three priority corridors:
  - U.S. 19 South
  - Roosevelt Blvd./East Bay Drive
  - U.S. Alt. 19 - South



# U.S. 19 South

- › Connects several workforce development opportunities with:
  - High population densities
  - Low income areas
  - Zero-car households
- › Multiple activity centers and CRAs along the corridor:
  - Lealman CRA
  - South St. Petersburg CRA
  - Skyway Marina District

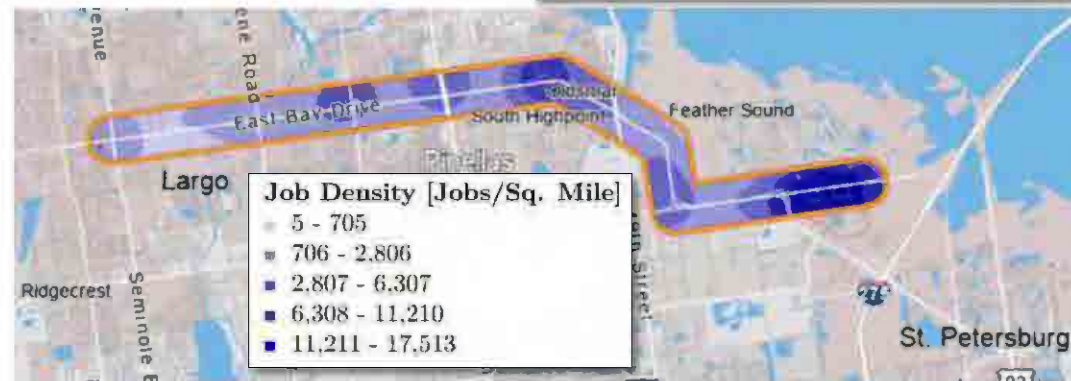
**Proposed Transit Service:**  
**Estimated annual operating cost: \$4M**  
**Estimated capital: 8 buses, \$5.9M**



# Roosevelt Blvd./East Bay Drive

- Connects residential areas with medical, office and manufacturing jobs
- About 15% of people in the corridor had an income below poverty
- Supports Gateway Master Plan and Intermodal Center Feasibility Study

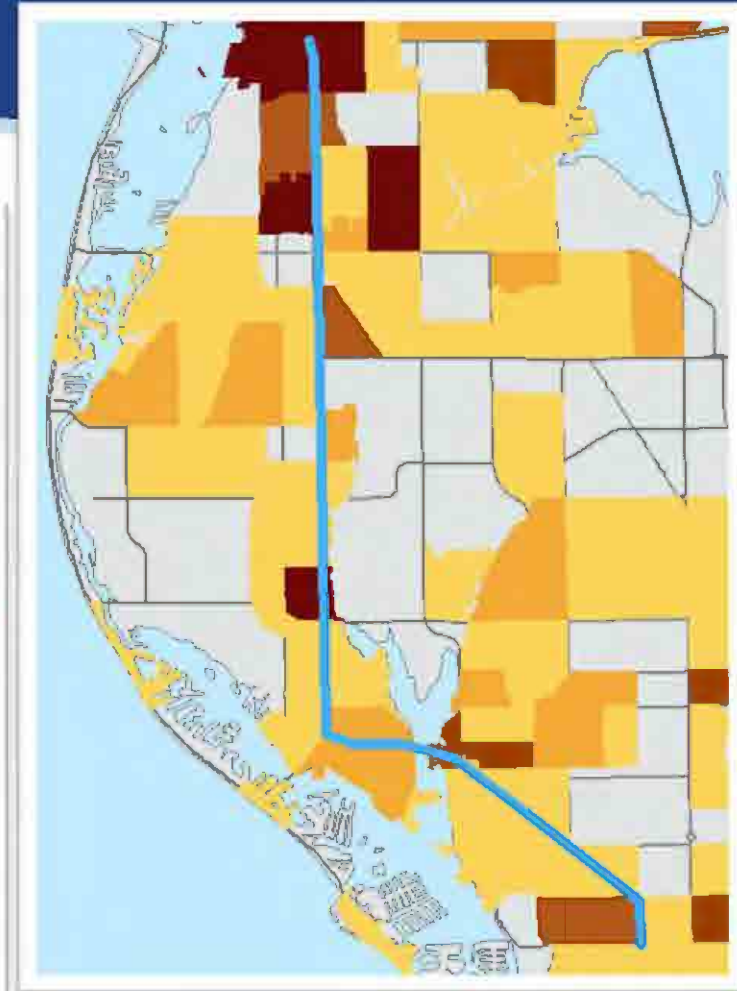
**Proposed Transit Service:**  
**Estimated annual operating cost: \$3.2M**  
**Estimated capital cost: 8 buses, \$5.2M**



# U.S. Alt. 19 South

- Connects downtown Clearwater, downtown Largo and west St. Petersburg
- Touches 4 opportunity zones and 5 activity centers
- 5,500+ houses with no cars

**Proposed Peak Hour Service:  
Estimated annual operating  
cost: \$3.2M  
Estimated capital costs:  
\$9.8M, 13 buses**



# Maintain and Strategically Enhance Transit Service

- › Maintain existing service
- › Outcome: Continue to provide services at the same level it is today in other areas
- › Capital Cost: \$70M  
Annual O&M: \$15M
- › Expand specialized services as needed:
  - Seniors
  - Veterans
  - Disabled residents

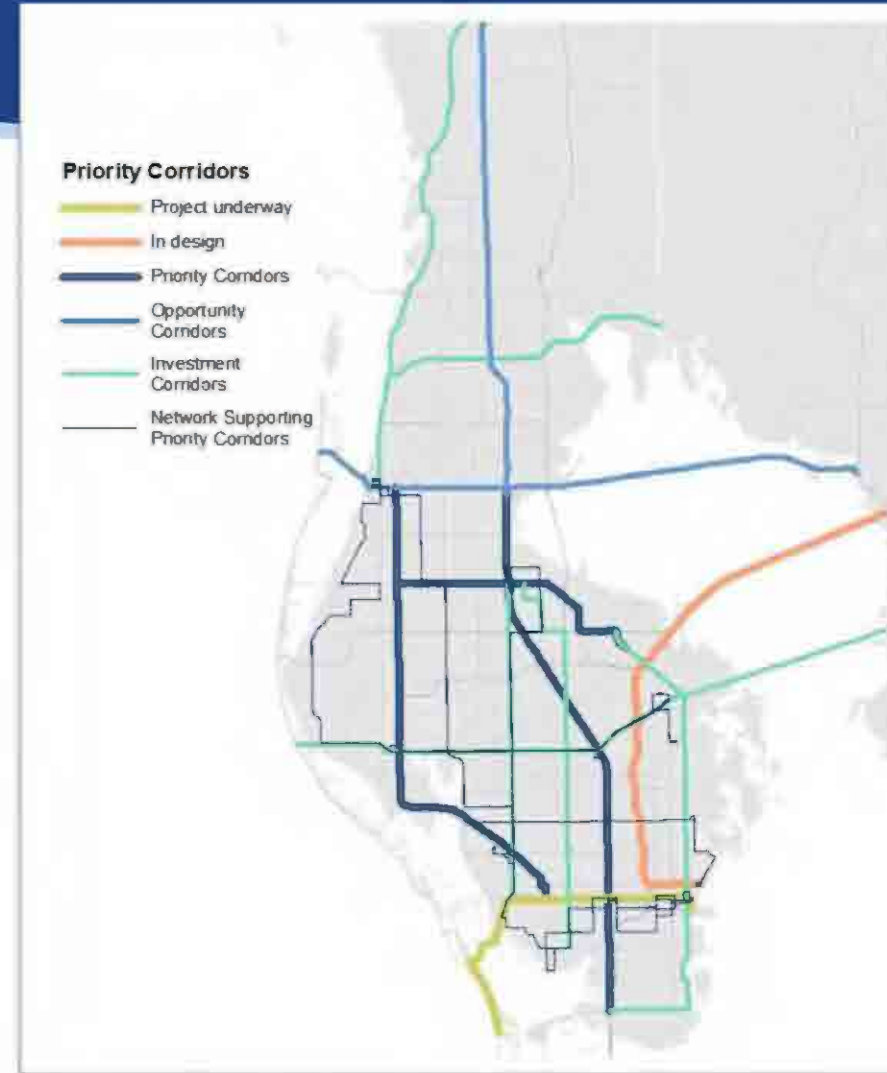


# Enhance Transit Service

## › Feeder routes to support priority corridors

› Outcome: Faster, more reliable service connecting job and training sites with housing that is affordable

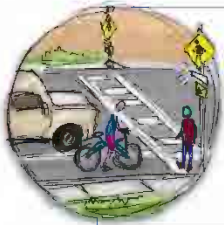
› **Capital cost: \$39.5M**  
**Annual O&M: \$4.6M**



# Intended outcomes



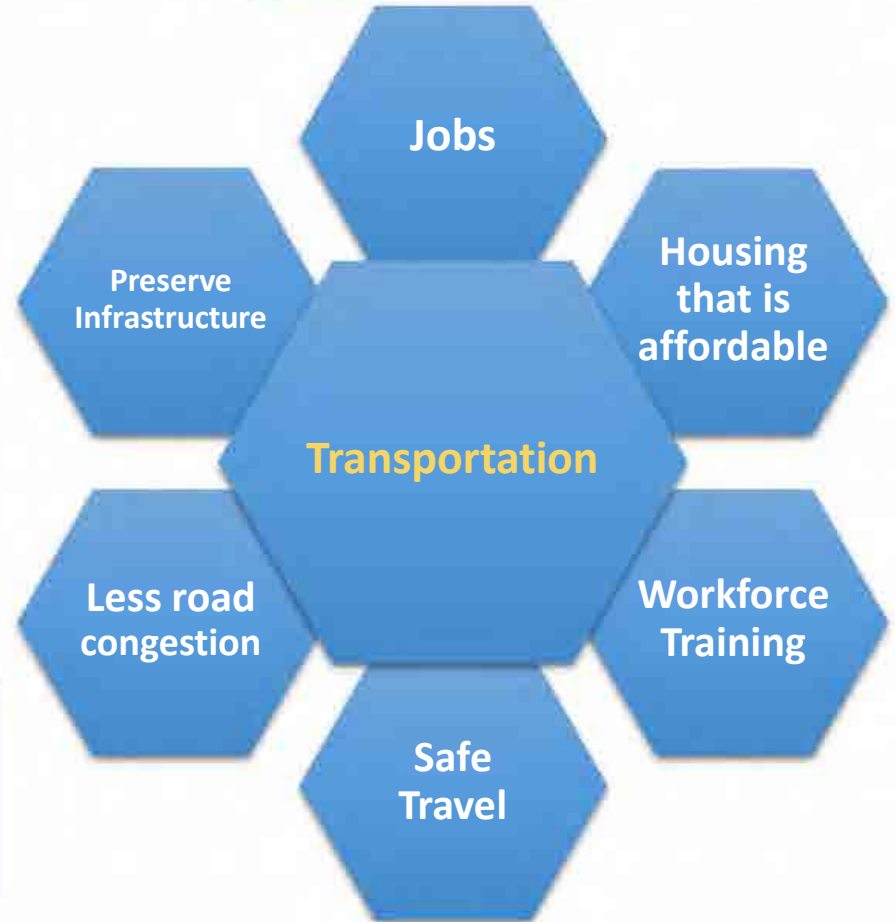
**Reduced Road  
Congestion**



**Safer Transportation  
Corridors**






**Enhanced Transit  
Services**





# Anticipated Program Costs

Program Area		Capital Costs	Annual O&M
	Reduced Road Congestion	\$64,000,000	\$75,000
	Make Transportation Corridors Safer	\$197,635,000	\$1,385,000
	Enhance Transit Services	\$130,400,000	\$30,000,000
<b>TOTAL</b>		<b>\$ 392,035,000</b>	<b>\$31,460,000</b>

\* Does NOT include costs for programs within incorporated areas

# Funding Options



## Local Option Fuel Tax

- 5 additional cents—\$179M over 10 years
- Currently split 60% County – 40% Cities



## Transportation Sales Surtax

- 1/2 cent—\$1.01B over 10 years
- 1/4 cent—\$500M over 10 years



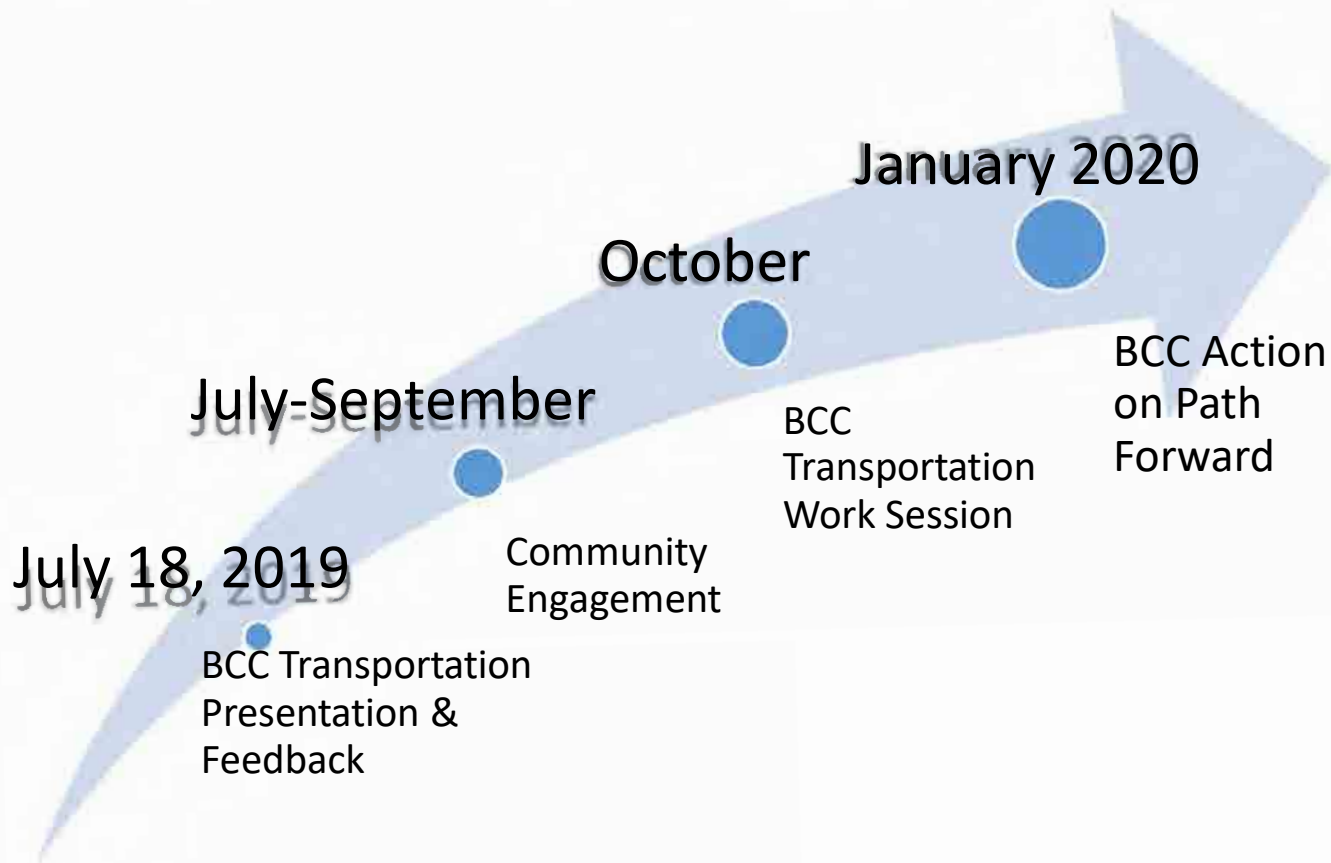
## Ad Valorem Taxes (increased millage rates)

- General Fund millage—\$79.4M estimated revenue per 1 mill (FY19)
- PSTA millage—\$67.8M estimated revenue per 1 mill (FY19)

# Complementary Efforts

- › Joint Review Committee
  - › Allocation of Penny 4 funds set aside for housing & economic development
  - › Recommended guidelines and policy by Nov. 2019
- › Countywide Housing Strategy
  - › Working group established this month defining needs and approach
  - › BCC workshop in early 2020
- › Investment Corridor Redevelopment Strategy
  - › Economics, urban design, regulatory reform
  - › Considerations for “value capture”
  - › Underway in fall 2020

# Steps forward



# Questions?



FORWARD  
PINELLAS  
Integrating Land Use & Transportation

# Advantage Pinellas: A New Transportation Plan



**Advantage**  
**PINELLAS**

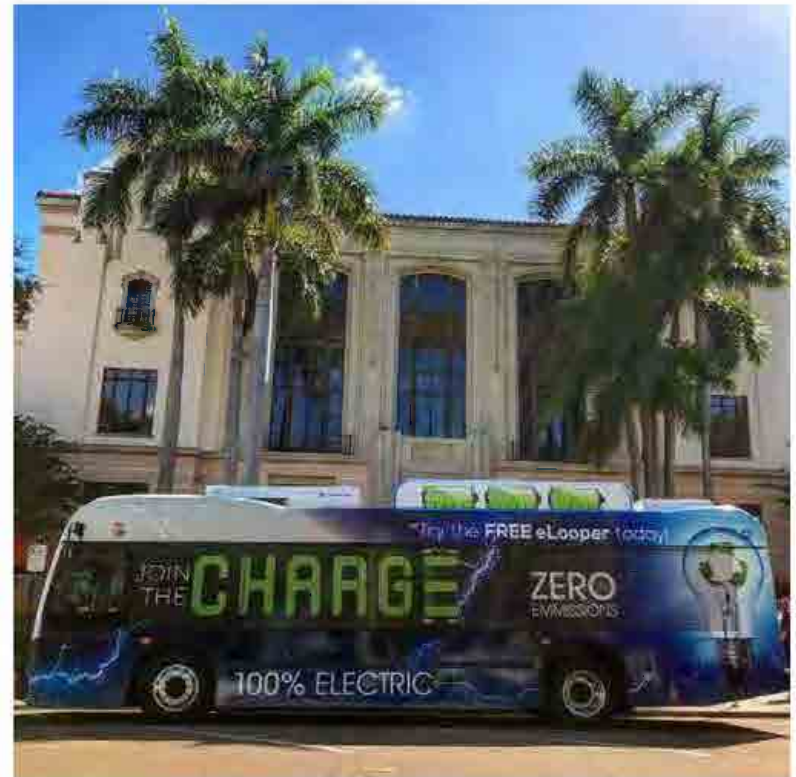
ENGAGE. ADAPT. CONNECT.



# What is Advantage Pinellas?

# What is Advantage Pinellas?

- › Aligned strategy to improve mobility and support redevelopment
  - › LRTP + Community Bus Plan
- › First long range plan since the merger of land use & transportation planning
- › Focuses redevelopment through core transit corridors and station framework
  - › Gives clear mission to our joint efforts





# Strong Framework: Pinellas By Design

- › Our economic future depends on planned redevelopment
  - › To improve our quality of life through better accessibility
  - › To channel growth into identified centers, corridors and districts
  - › All while preserving and enhancing existing neighborhoods

› Centers



› Corridors



› Districts



# Advantage Pinellas – Our Advantages

- › Attractive & Unique Destinations
- › A Resilient Community
- › Safe & Healthy Communities
- › Strong Economic Opportunity
- › Mobility & Access for Everyone
- › A Collaborative Vision for the Future



# A New Approach

## Unique Pinellas – Housing + Transportation Costs

Pinellas 57%

Safety Harbor: 68%

Largo: 51%

St. Pete: 56%

Clearwater: 58%

Hillsborough 58%

- Tampa: 56%

- Plant City: 55%

- Temple Terrace: 56%

Pasco 57%

- NPR: 46%

- Wesley Chapel 66%

- Trinity: 76%

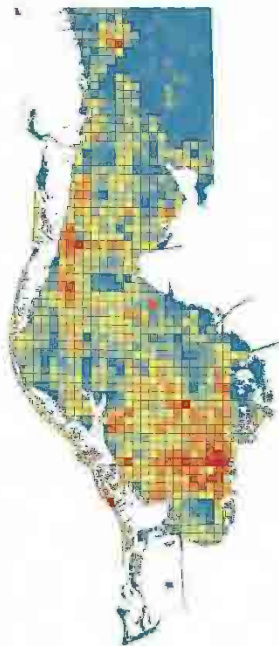


Average Commute: 24.4 mins

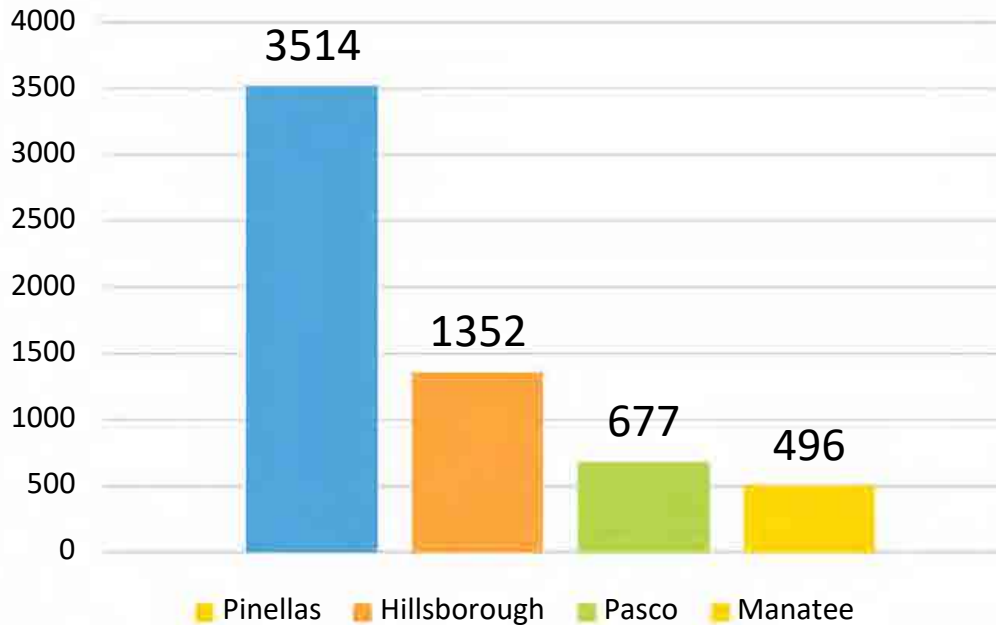
Average Commute: 27.3 mins

Average Commute: 31.6 mins

# Unique Pinellas – Population Density



Persons Per Square Mile By County



24 min   27 min   30 min   25 min

Journey to Work Travel Time



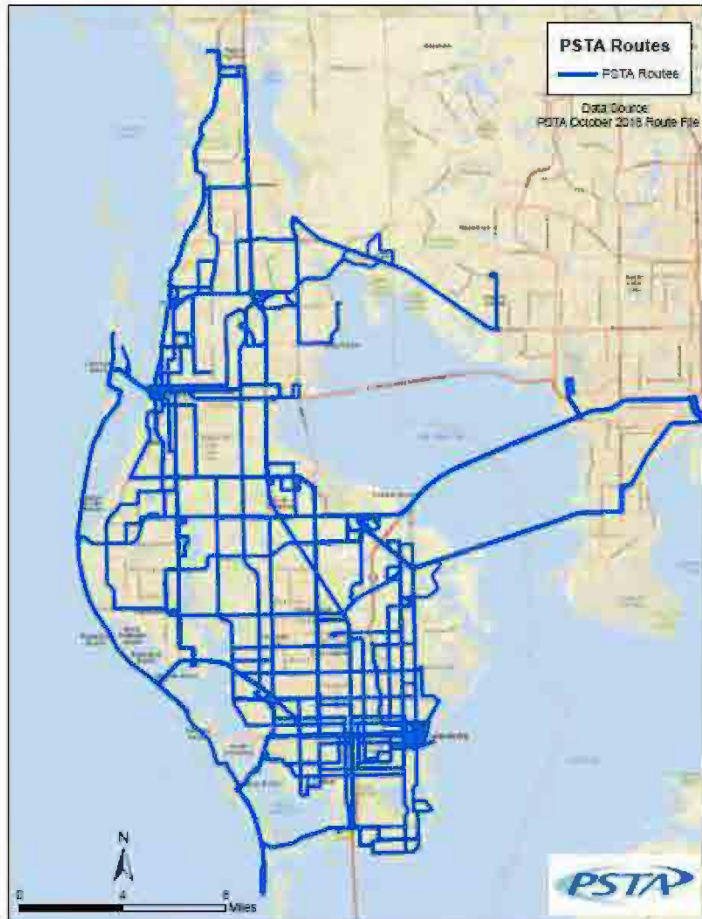
Source: BEBR 2017

## Strong Road & Trail Network Investment



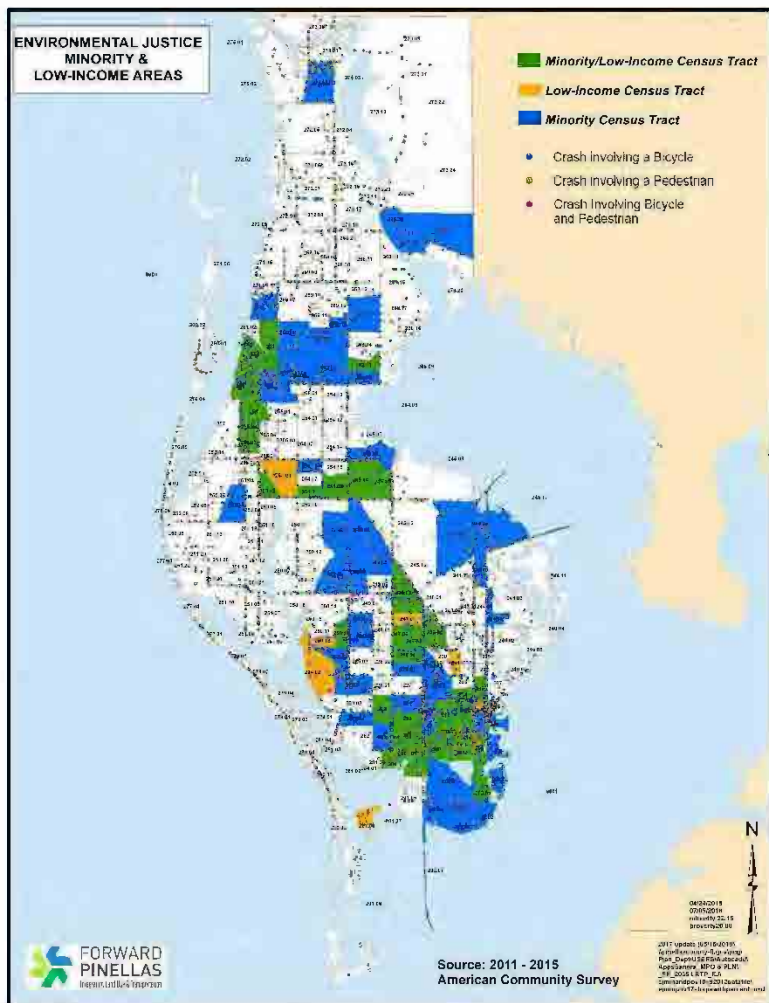
- › FDOT is valued partner
- › About \$880M in Penny money spent on roadway improvements from 1990-2018
- › Committed funding to Intelligent Transportation System/Advanced Traffic Management System
- › Nearing completion of the 75-mile Pinellas Trail Loop

# Lack of Transit Investment



- › Frequency, number of routes have generally stayed the same – 42 routes
- › From 1990-2017, population has increased:
  - › From 834K -> 949K in Pinellas
  - › From 1.1M->2.8M in tri-county region
- › Number of trips increased by 63% over generally same period
- › Service still focused on weekdays, daytime

# Transit Access Increases Equity

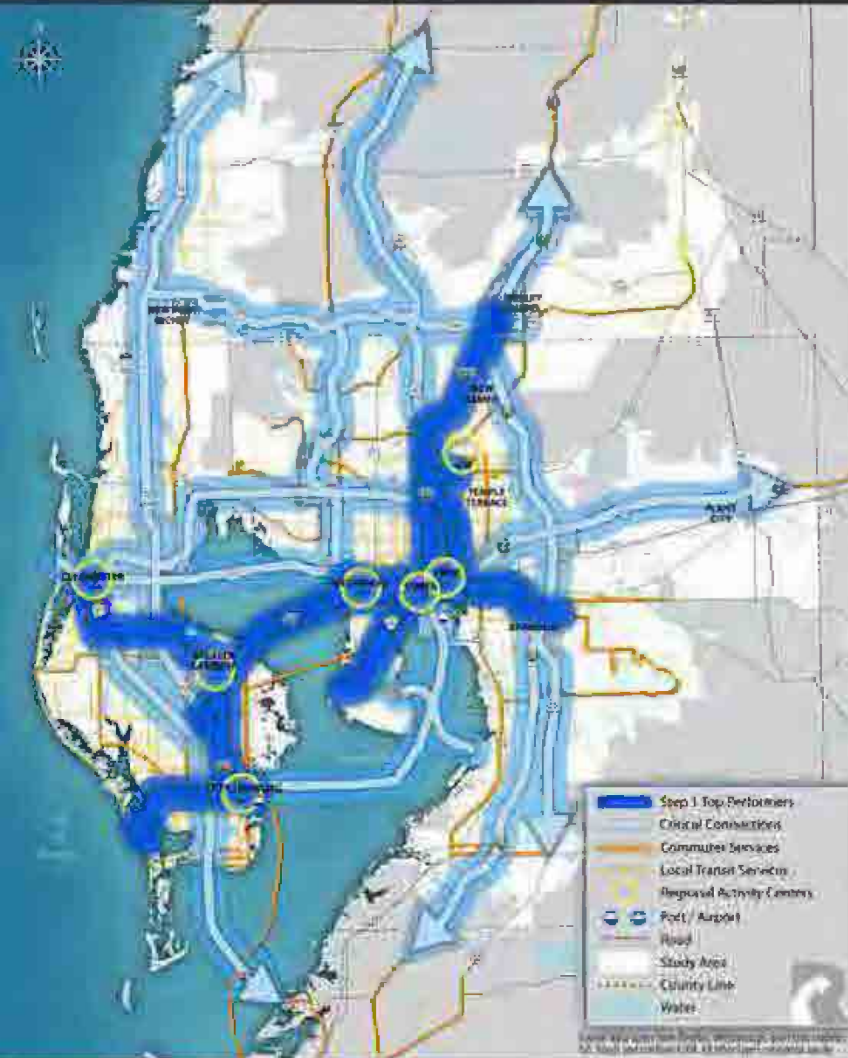


- › USF recently found lack of transit availability is a primary driver of the poverty rate in Tampa Bay
  - › Actionable way to decrease poverty
  
- › Transit has strong link to safety & health



# REGIONAL TRANSIT VISION

THE TOP PERFORMERS AND CRITICAL REGIONAL CONNECTIONS WOULD SERVE THE FOLLOWING WITHIN 1/2 MILE OF EACH CONNECTION BY 2040



SERVES APPROX.  
**6 IN 10**  
JOBS (2040)

SERVES APPROX.  
**5 IN 10**  
RESIDENTS (2040)



SERVES APPROX. **2,100**  
JOBS PER MILE (2040)

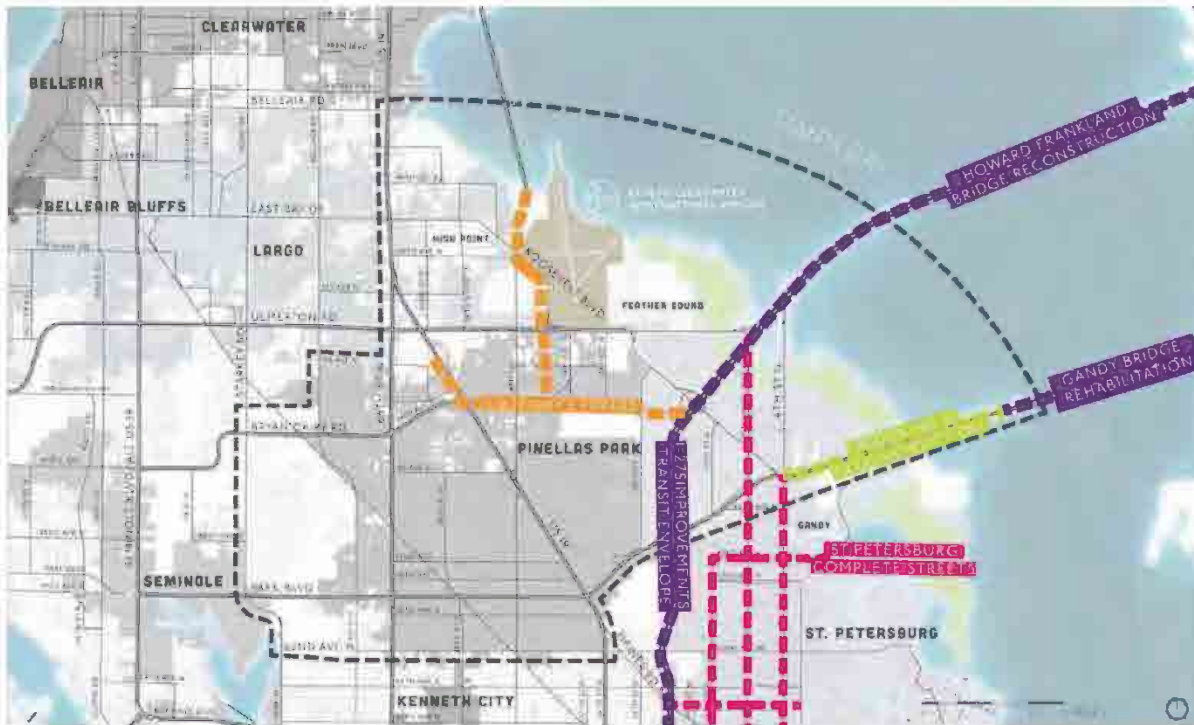
SERVES APPROX. **3,000**  
RESIDENTS PER MILE (2040)



SERVES APPROX.  
**6 IN 10**  
RESIDENTS WITHOUT CARS  
(2040)

## Gateway Area Master Plan

MAJOR PROJECTS



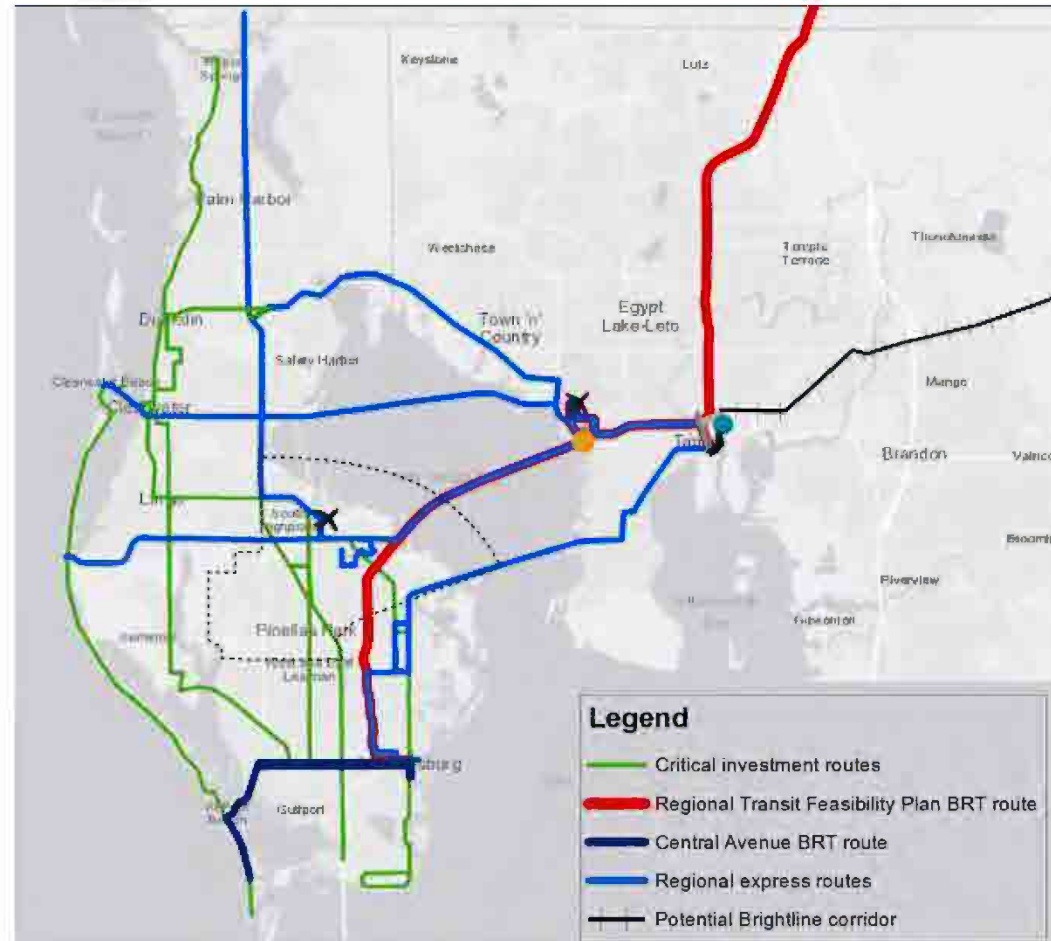
30 square mile study area includes four local governments (St. Petersburg, Largo, Pinellas Park, and Pinellas County)

- SPOTlight Emphasis Areas: integrating land use & transportation
- Connectivity & access, economic opportunity and housing affordability
- \$1M+ funding partnership with FDOT matching local funds
- FDOT-led Intermodal Center Feasibility Study for the Gateway Area
- Final stages

# Plan Development

## Five Point Plan

1. Define Premium Transit corridors
2. Refine corridor redevelopment plans
3. Establish discretionary/ dedicated funding source
4. Prioritize corridors for state/federal funding
5. Ensure clarity & transparency of roles



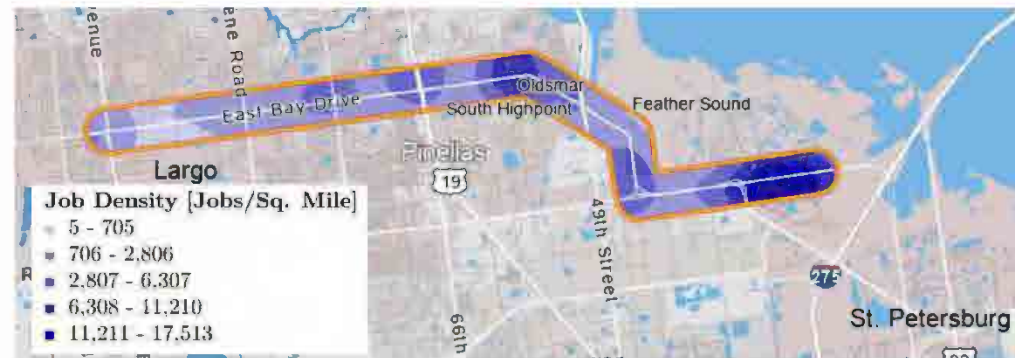
# Investment Corridors

- › 34<sup>th</sup> Street / US 19 South (on draft priority list)
- › US Alt 19 South
- › Roosevelt / East Bay
- › US 19 North
- › I-275 Regional BRT Corridor

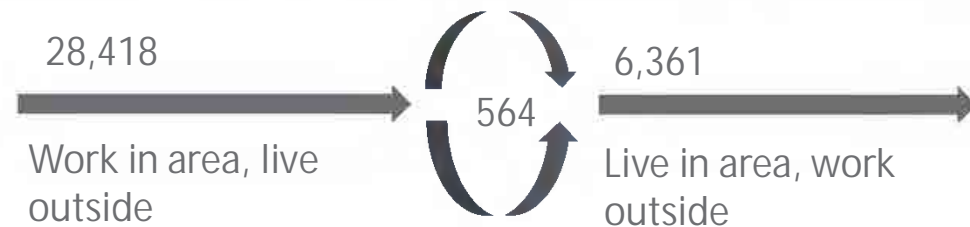


## Example: Roosevelt/ East Bay

- › Connects residential areas with medical, office and manufacturing jobs
- › Gateway Master Plan and Intermodal Center Feasibility Study under development
- › Connects to planned I-275 regional transit
- › Limited stop, all day service estimate:
- › \$2.6-3.3 million annual operating cost
- › 8 buses, \$5.2M capital cost



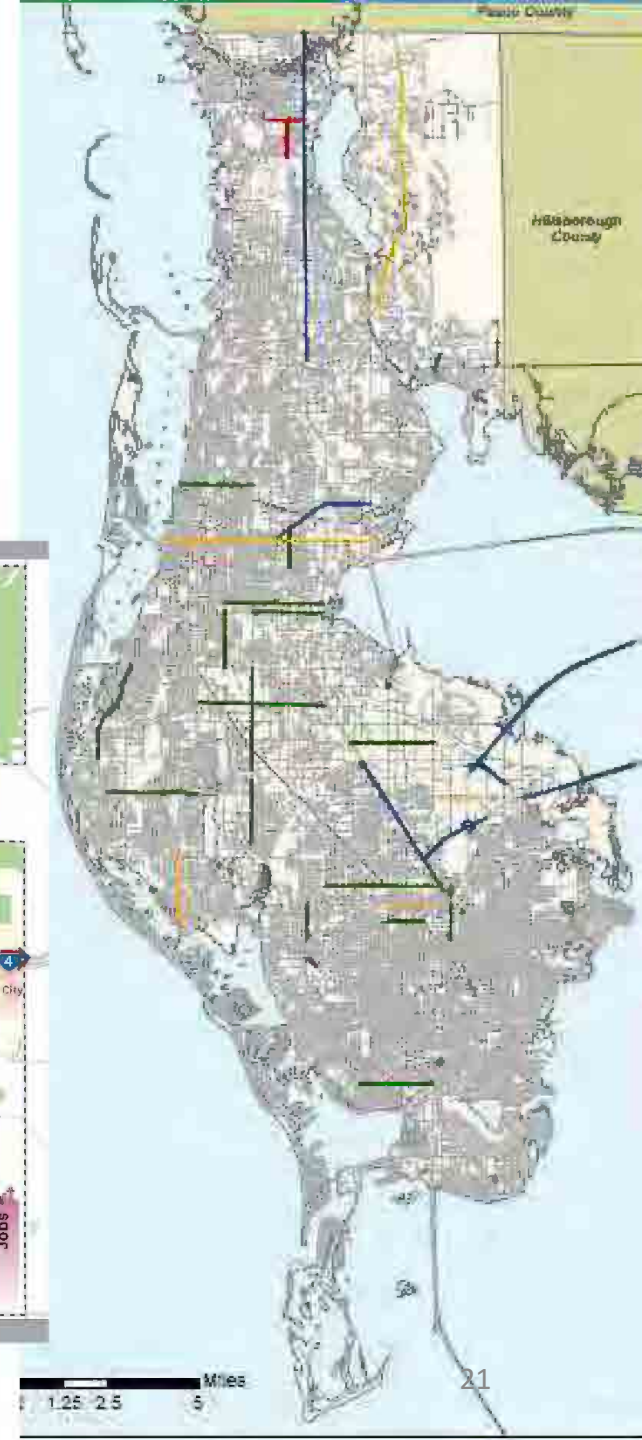
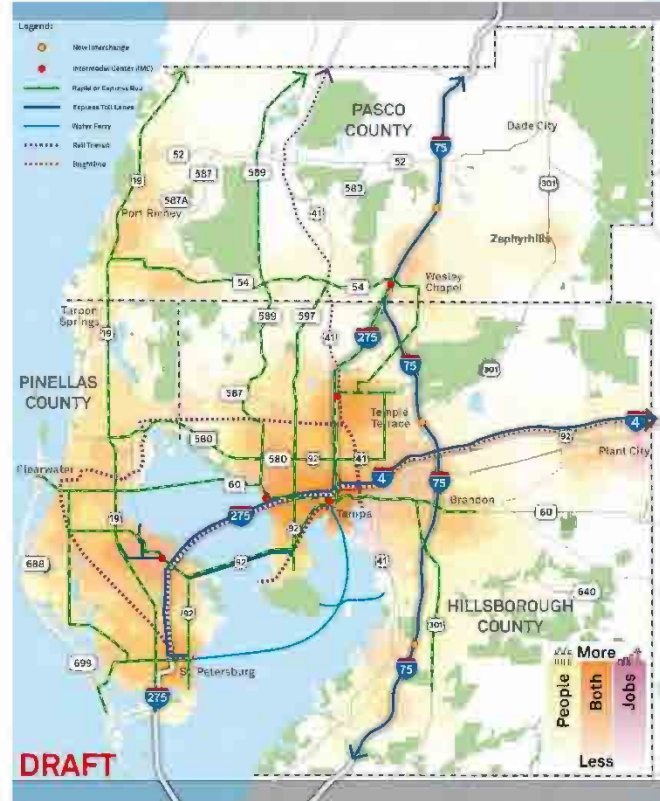
Source: US Census "On The Map" Tool



About 15% of people in the vicinity of the corridor had an income below poverty

## Needs Assessment

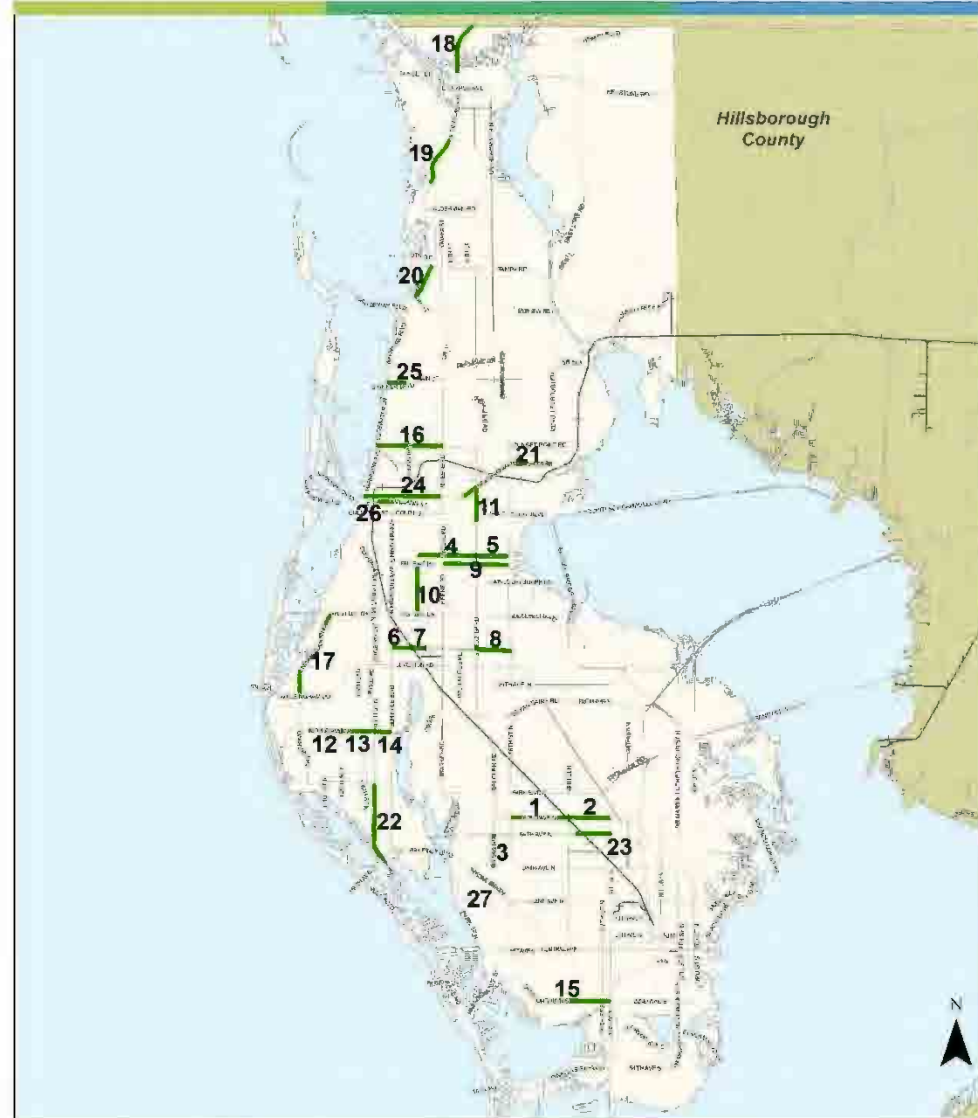
- › Roadway Network Adjustments
- › Priority Transit Corridors



## Enhancement Projects

- Context sensitive improvements
- No physical capacity added
- Operational improvements

### COMPLETE STREETS / ENHANCEMENTS PROJECTS



Data Source: U.S. Department of Transportation, 2016. Map Produced: April 9, 2019.  
 H:\USERS\Trans\LRTP\LRTP 2045\Needs Assessment\needs shapes\2045needs\_enhancements.mxd



# Capacity

- New Connections or Widening
- New Highway Ramps
- Testing Toll Facilities



Data Source: U.S. Department of Transportation 2016. Map Produced: April 10, 2019.  
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# I-275 Pinellas Corridor

- In PD&E phase
- Lane continuity from 54<sup>th</sup> Avenue South to Gandy Boulevard
- Evaluating two express lanes in each direction from Downtown St. Petersburg (I-375) to north of 4<sup>th</sup> street North
- Opportunity to integrate transit on corridor

Public hearing scheduled for Spring 2019  
Construction funded in 2024



# Gateway Expressway

- Construction is underway
- Anticipated completion in 2022
- Add one Express Lane in each direction on I-275
- Constructs 2 New Elevated Expressways
  - From US 19 to I-275
  - From the Bayside Bridge to I-275



# Howard Frankland Bridge

- Construction of a new bridge includes:
  - 4 southbound general purpose lanes
  - 2 express lanes in each direction
- Envelope on new bridge designed to support future light rail
- Bike/pedestrian trail will connect Pinellas and Hillsborough Counties



Cost Estimate: \$814.4 Million  
Contract Award: November 8, 2019  
Construction to begin 2020

# What Have We Heard?

# It's TIME Tampa Bay

- › Regional survey in summer 2018 – Pasco, Pinellas, Hillsborough
- › 3 scenarios to evaluate
- › Transit-focused scenario ranked highest regionally; Pinellas rated even higher
- › Highway-focused scenario ranked lowest regionally; Pinellas rated even lower



# Pinellas Survey Results

Biggest barriers to transit:  
reliability, frequency and  
efficiency

- › 54% would be willing to take transit if service was better
- › 41% are willing to pay more for frequent, reliable service
- › Comfort at transit stop: 6%

Want a safe, efficient system

- › 70% believe timing traffic signals is top priority
- › 57% willing to exchange lower speeds for safer streets
- › 90% support investing in technology to improve traffic flow

Want easy access to destinations

- › Ideal neighborhood has nearby shops – 69%
- › Desire improved access to regional destinations – 52%
- › 85% believe frequent, reliable transit improves economic value



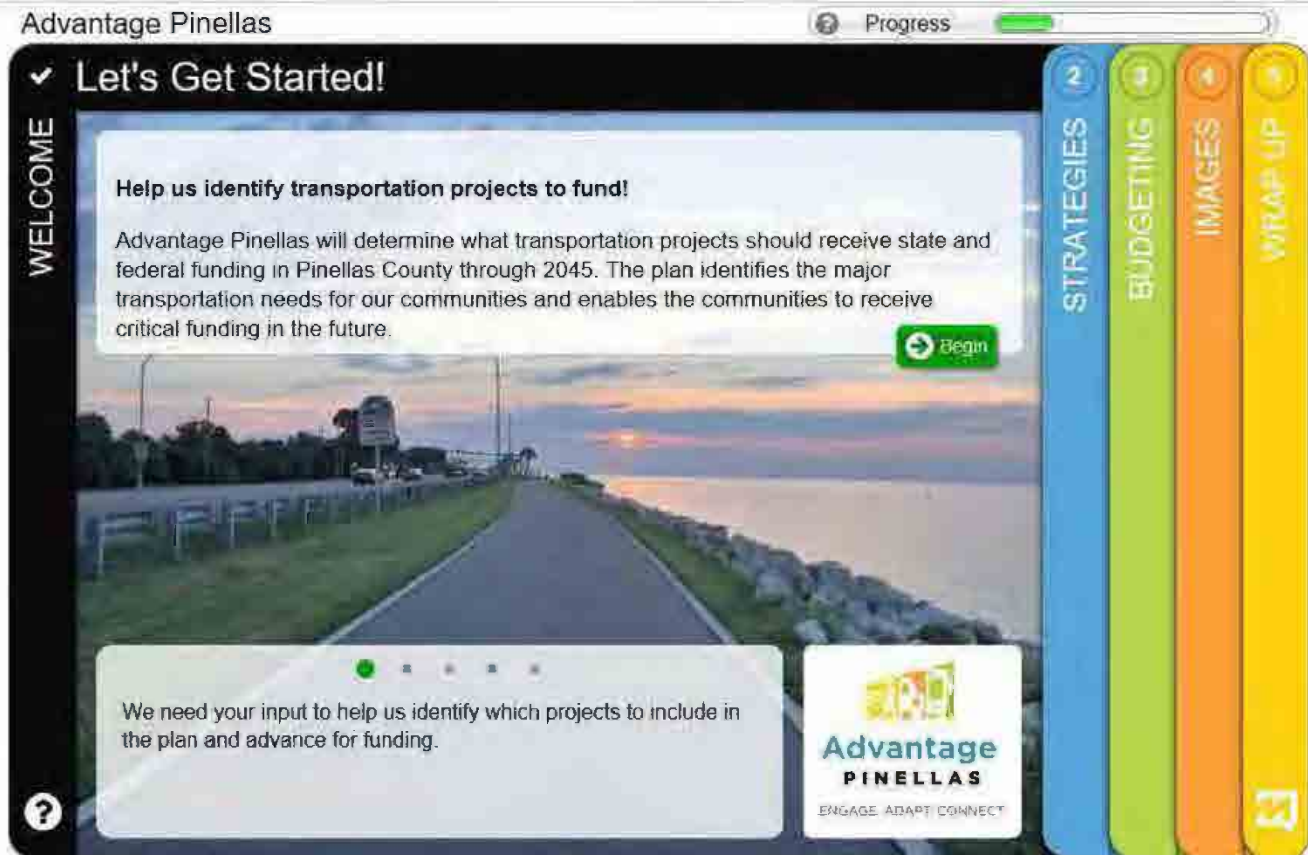
“A solution is not just  
“I would love to take the buses to  
“There is not enough space to  
places, but they are not quite good  
build an efficient transportation  
enough right now, or it's not bad  
system to move primarily cars as  
enough right now about it's a good  
are out there.”  
value proposition.”



# Next Steps

- › Refine operating and capital costs, define metrics to evaluate success (e.g. baseline and increased ridership, passengers per revenue mile above system average, passengers per revenue hour above system average)
- › Align local plans, priorities and initiatives (housing, redevelopment, parking, complete streets)
- › Discuss preferred countywide transportation funding options and priority corridors
- › Adopt financially feasible Advantage Pinellas plan (by November)

# Take our survey!



[AdvantagePinellas.Metroquest.com](http://AdvantagePinellas.Metroquest.com)

# Questions?

Whit Blanton, FAICP

[wblanton@forwardpinellas.org](mailto:wblanton@forwardpinellas.org)

727.464.8712

# Transportation Funding Context



**Advantag**  
**PINELLA**

ENGAGE. ADAPT. CON



# Workshop Objectives

- › Clarity on improved mobility and associated funding needs for our county and its communities
- › Understanding potential funding sources, opportunities and constraints
- › Guidance on a transportation funding strategy to develop further
- › Explore actions that move us forward regionally

# What is Advantage Pinellas?

- › Aligned strategy to improve mobility and support redevelopment
  - › LRTP + Community Bus Plan
- › First long range plan since the merger of land use & transportation planning
- › Focuses redevelopment through core transit corridors and station framework
  - › Gives clear mission to our joint efforts



# Advantage Pinellas – Our Advantages

- › Diverse and growing economy
- › Multiple distinctive downtowns and districts, with a strong sense of identity
- › Outstanding beaches, parks/green space, trail network
- › Proximity of neighborhoods to great places
- › Opportunities for quality redevelopment



# Strong Framework: Pinellas By Design

- › Our economic future depends on planned redevelopment
  - › To improve our quality of life through better accessibility
  - › To channel growth into identified centers, corridors and districts
  - › All while preserving and enhancing existing neighborhoods

› Centers



› Corridors



› Districts



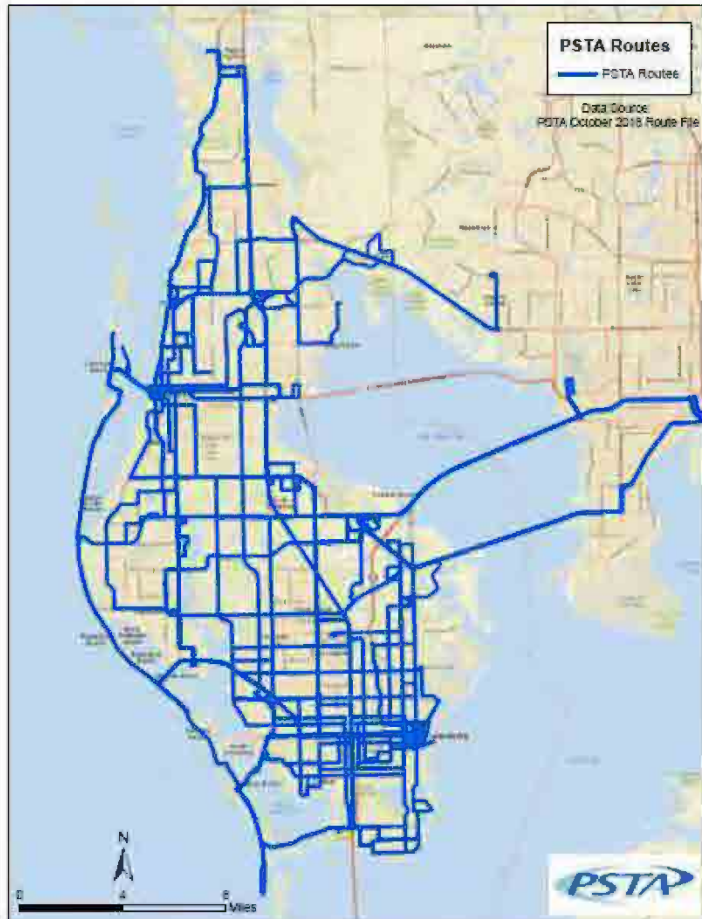


# Strong Road & Trail Network Investment



- › FDOT is valued partner
- › About \$880M in Penny money spent on roadway improvements from 1990-2018
- › Committed funding to Intelligent Transportation System/Advanced Traffic Management System
- › Nearing completion of the 75-mile Pinellas Trail Loop

# Lack of Transit Investment



- › Number of routes have generally stayed the same – 42 routes
- › Frequency has not significantly increased
- › Number of trips increased by 63% over same period
- › Service still focused on weekdays, daytime

## Unique Pinellas – Housing + Transportation Costs

Pinellas 57%

Safety Harbor: 68%

Largo: 51%

St. Pete: 56%

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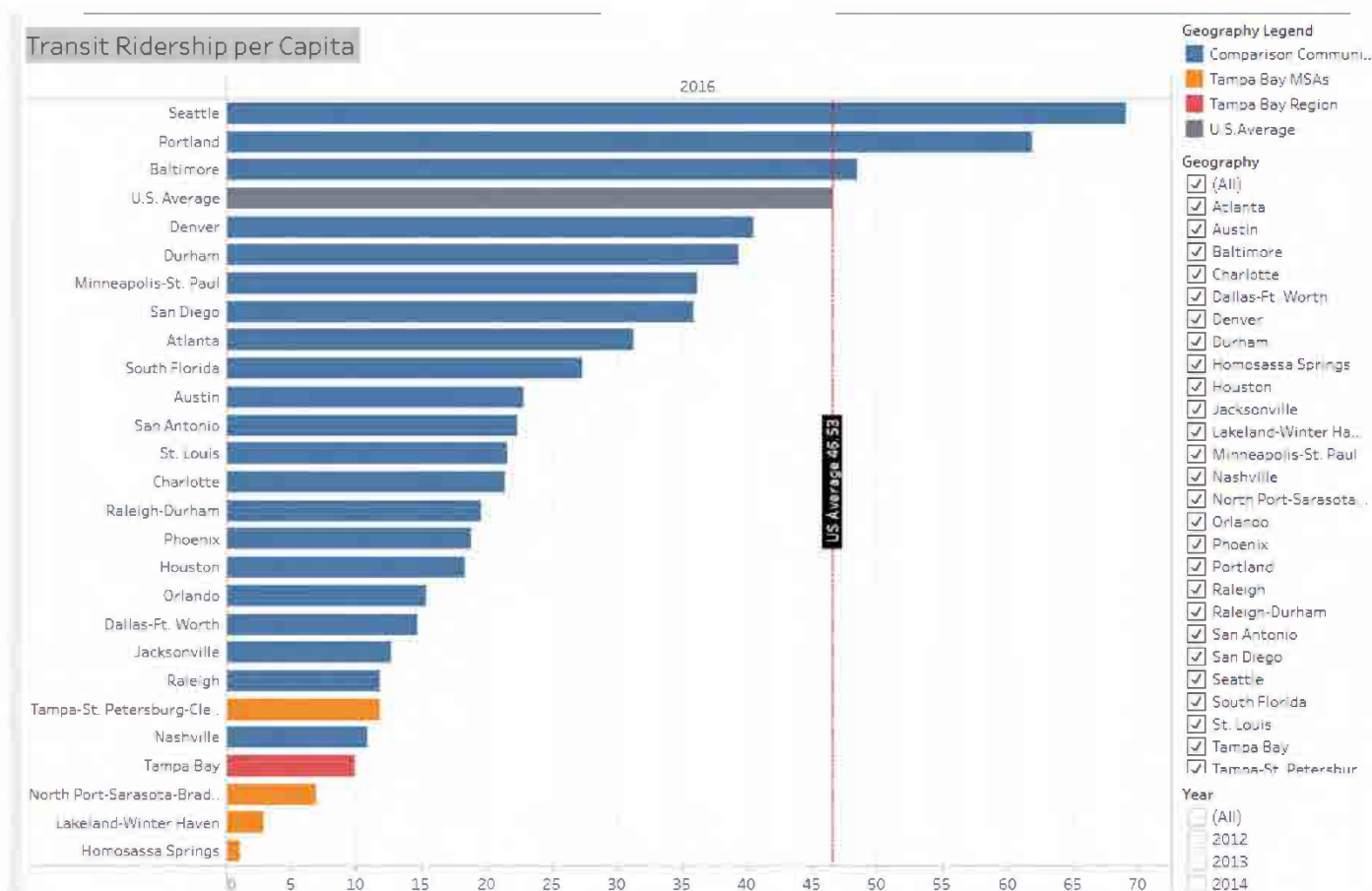
- Wesley Chapel 66%

- Trinity: 76%



Source: H+T Index; Center for Neighborhood Technology

# Tampa Bay Partnership Regional Indicators



# Hillsborough Penny Sales Tax

**\$280 MILLION IN YEAR 1**

## INVESTING IN ROADS AND SAFETY


-  Reducing Congestion with Computerized Traffic Lights
-  Improved Intersections and Roads
-  Fixing Potholes and Resurfacing Streets
-  Safety and Crash Reduction
-  New Walking and Biking Options



## EXPANDED TRANSIT OPTIONS

-  Express Routes to Connect Commuters
-  More Efficient Neighborhood Bus Service
-  Service to Over 100,000 Seniors and Disabled Citizens

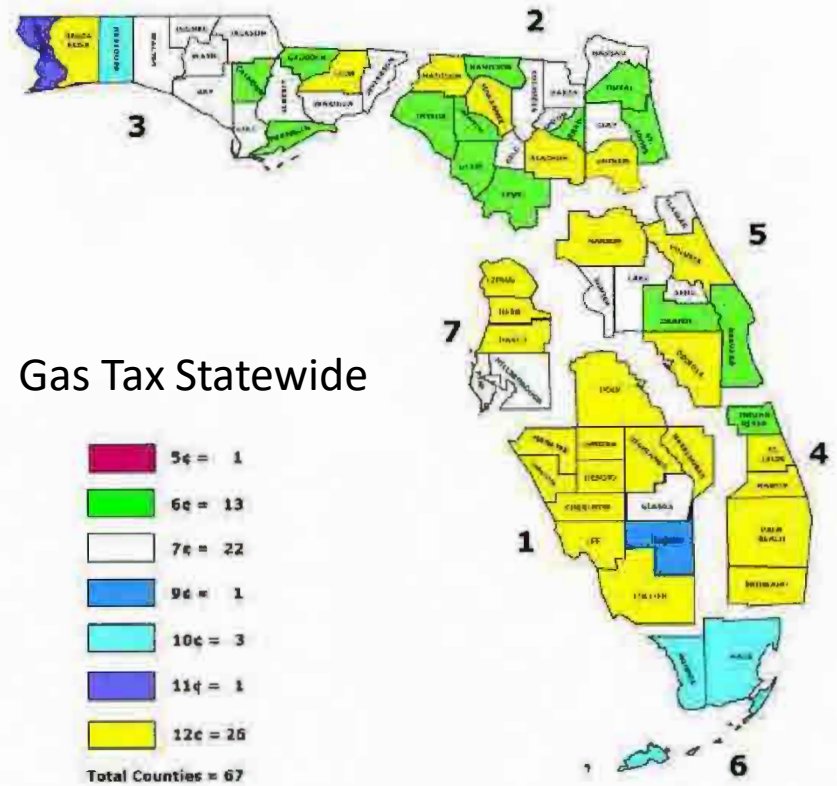
## OVERSIGHT (1% of funding)

-  Ensure that funds are being spent properly, fairly and transparently

allfor   
**TRANSPORTATION**

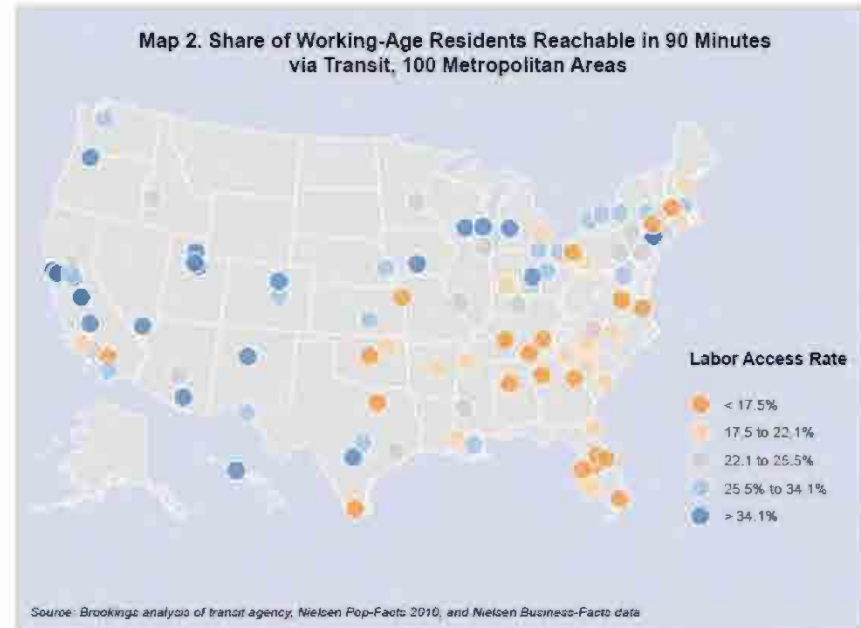
# Commitment of Local Resources

- › Increasingly important to have a local match and the ability to operate/maintain projects
  
- › What types of revenue can we provide to match federal and state funds



# Investing in Transit - ROI

- › 10% expansion in transit service → annual wage increase of \$53-\$194 / worker (Urban Studies, 2013)
- › Over ¾ of all jobs in the 100 largest U.S. metro areas are in neighborhoods with transit service (Brookings, 2012)
- › Property values perform 42% better near public transportation (APTA)
- › Better job accessibility significantly decreases unemployment duration and leads to better-paying jobs (National Bureau of Economic Research, 2014)
- › Public transportation spending → 31% more jobs than new roads and bridges (SmartGrowth America, 2011)



# Success from our Peers - Indianapolis

- › What did we learn from peer exchange with Indianapolis?
- › Referendum: income tax rate not to exceed 0.25%
  - › Connected bus network
  - › Increased service frequency
  - › Extended hours
  - › 3 new rapid transit lines
- › Increased access to jobs





# THE MARION COUNTY TRANSIT PLAN

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## YOUR INPUT, YOUR TRANSIT.

---

### Significant improvements to **local bus network**

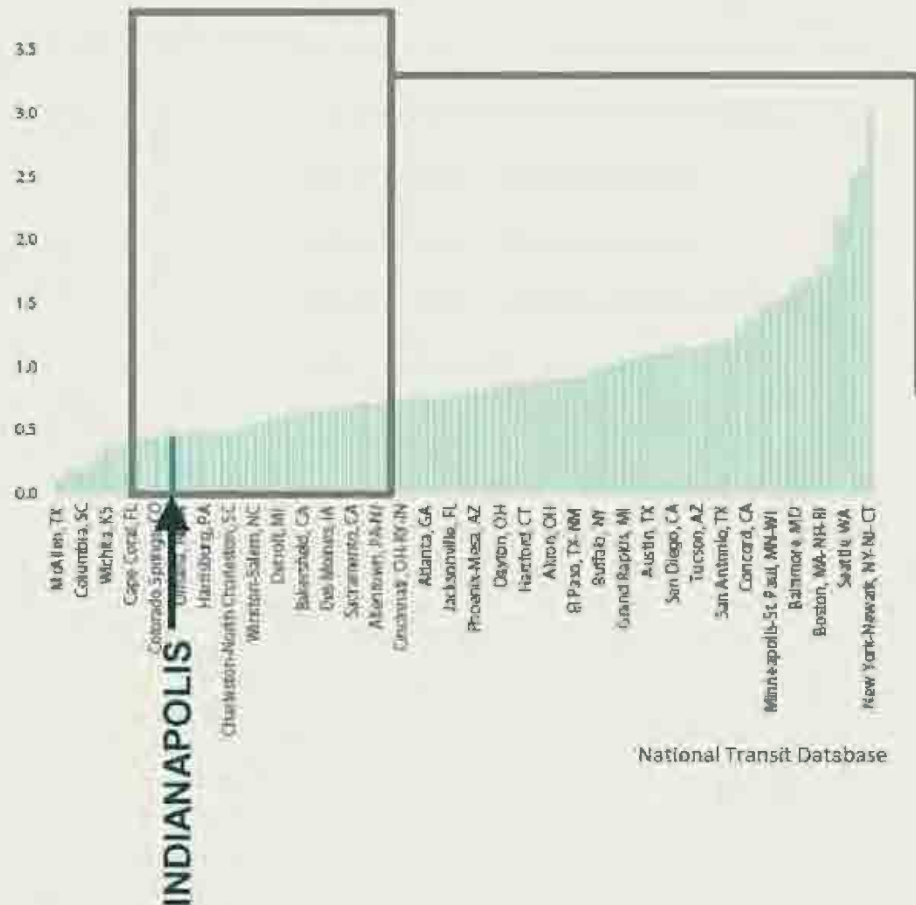
- shorter waits, later hours
- easier transfers
- every route every day

### 3 **rapid transit** lines along high-ridership corridors

- Red Line Phases 2 & 3
- Blue Line
- Purple Line

# IF APPROVED, CENTRAL INDIANA WOULD MOVE UP FROM 86<sup>th</sup> to 65<sup>th</sup>

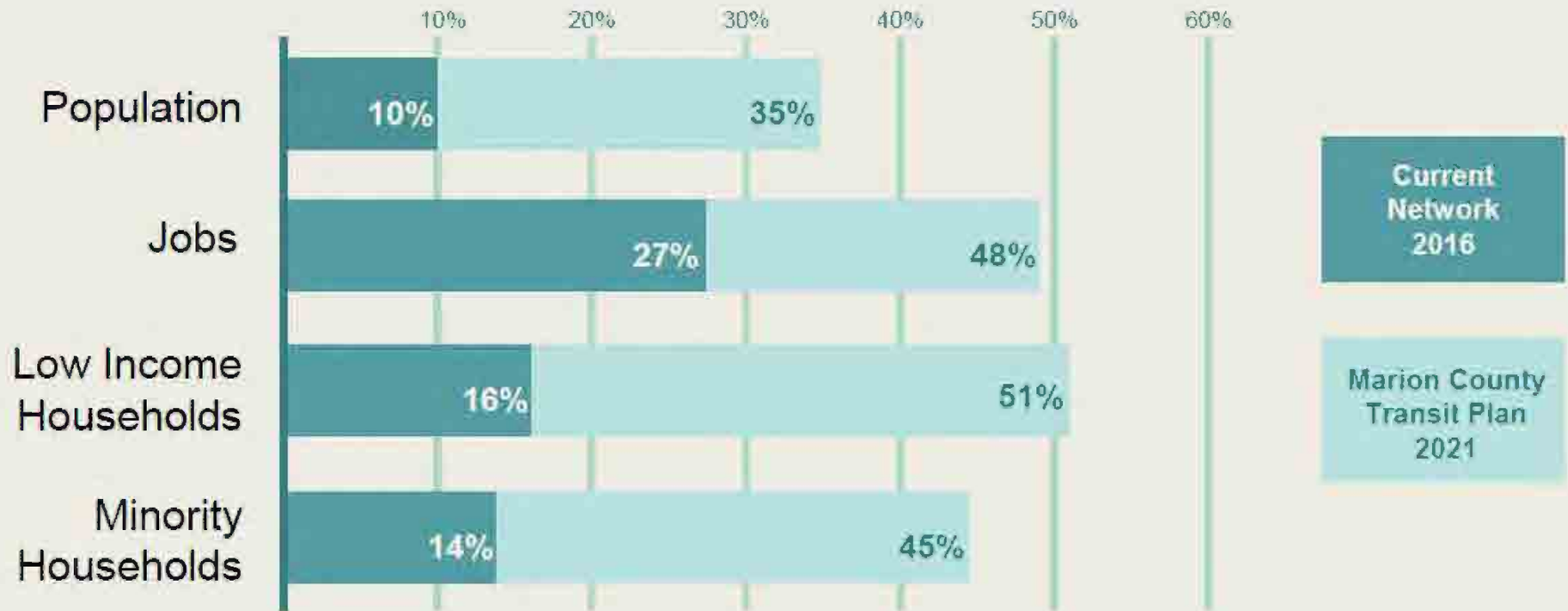
Assuming nothing changes in other regions



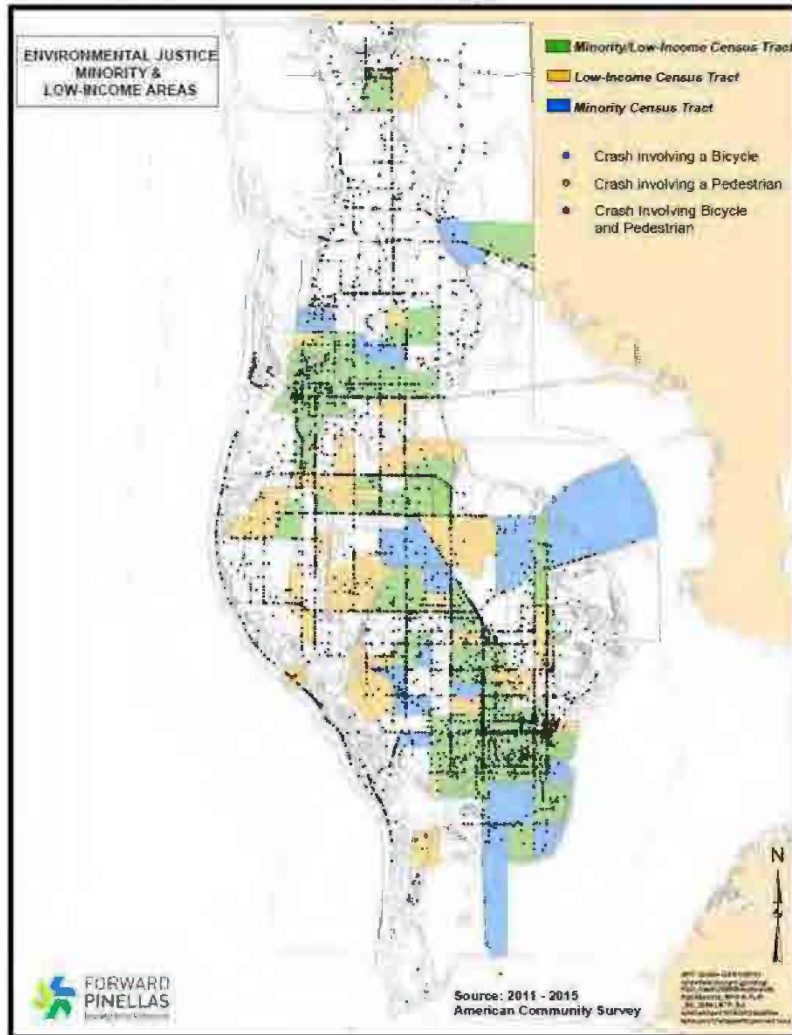
- 60 Virginia Beach, VA
- 61 Allentown, PA-NJ
- 62 Lancaster, PA
- 63 Scranton, PA
- 64 Sacramento, CA
- 65 Raleigh, NC
- 66 Nashville-Davidson, TN
- 67 Des Moines, IA
- 68 Sarasota-Bradenton, FL
- 69 Tampa- St. Petersburg, FL
- 70 Bakersfield, CA
- 71 Richmond, VA
- 72 Knoxville, TN
- 73 Detroit, MI
- 74 Kansas City, MO-KS
- 75 Riverside-San Bernardino, CA
- 76 Winston-Salem, NC
- 77 Provo-Orem, UT
- 78 Little Rock, AR
- 79 Charleston-North Charleston, SC
- 80 Worcester, MA-CT
- 81 Youngstown, OH-PA
- 82 Harrisburg, PA
- 83 Chattanooga, TN-GA
- 84 Mission Viejo-Lake Forest-San Clemente, CA
- 85 Omaha, NE-IA
- 86 **INDIANAPOLIS, IN**
- 87 Baton Rouge, LA
- 88 Colorado Springs, CO
- 89 Memphis, TN-MS-AR
- 90 Birmingham, AL

# MORE ACCESS TO FREQUENT SERVICE

The **red** routes on the maps



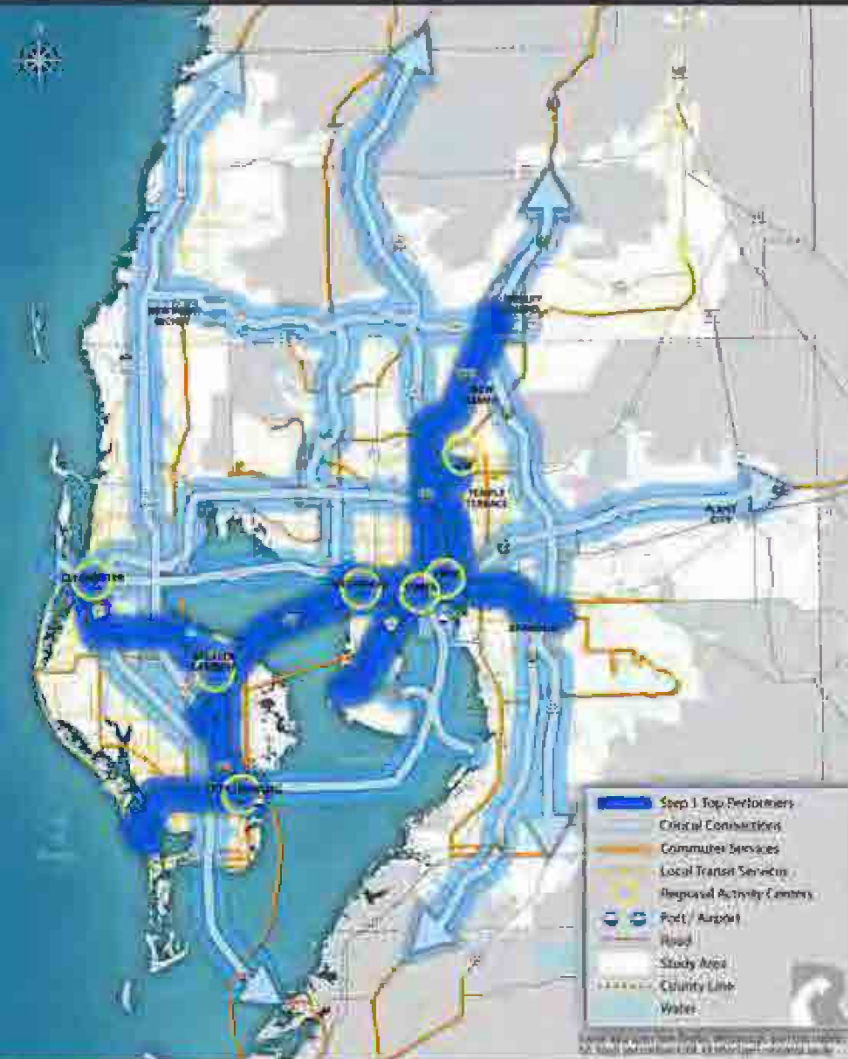
# Transit Access Increases Equity



- › USF recently found transit availability is a primary driver of the poverty rate in Tampa Bay
  - › Actionable way to decrease poverty
- › Access to transit is a safety issue as well

# REGIONAL TRANSIT VISION

THE TOP PERFORMERS AND CRITICAL REGIONAL CONNECTIONS WOULD SERVE THE FOLLOWING WITHIN 1/2 MILE OF EACH CONNECTION BY 2040



SERVES APPROX.  
**6 IN 10**  
JOBS (2040)

SERVES APPROX.  
**5 IN 10**  
RESIDENTS (2040)



SERVES APPROX. **2,100**  
JOBS PER MILE (2040)

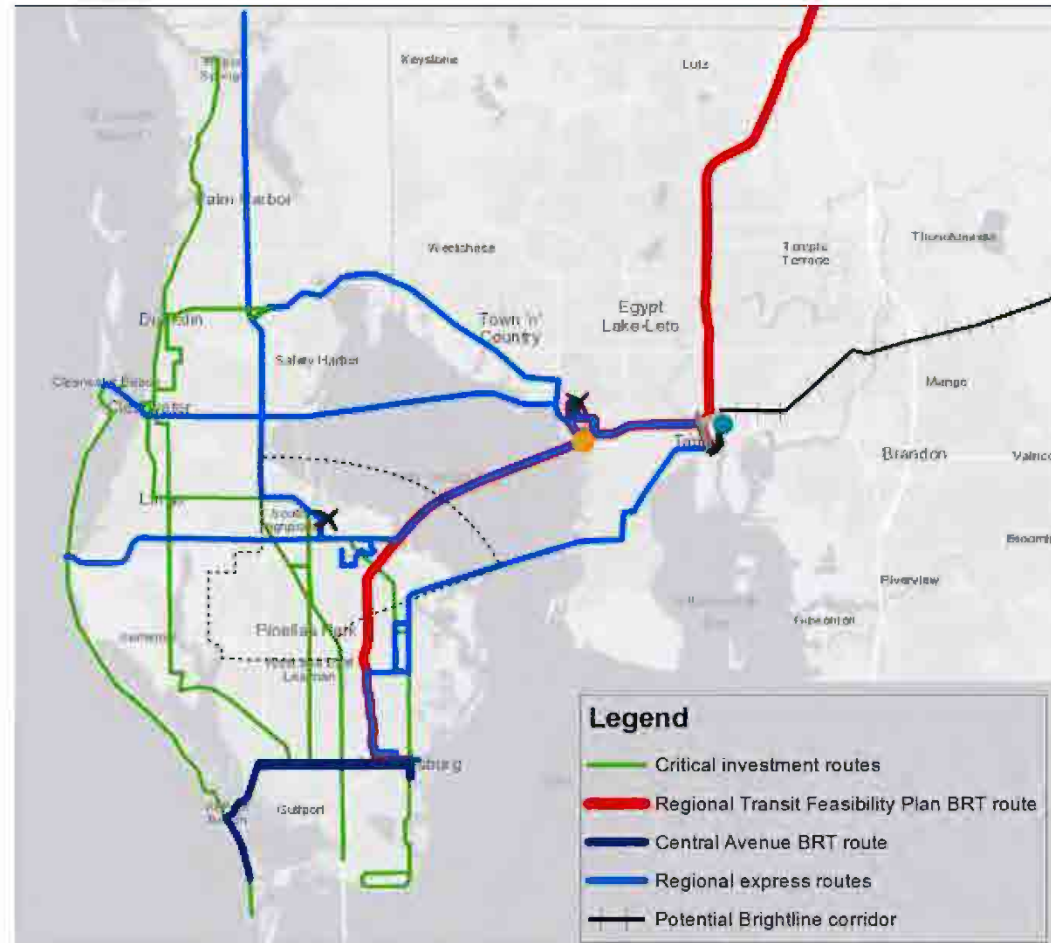
SERVES APPROX. **3,000**  
RESIDENTS PER MILE (2040)



SERVES APPROX.  
**6 IN 10**  
RESIDENTS WITHOUT CARS  
(2040)

## Five Point Plan

1. Define Premium Transit corridors
2. Refine corridor redevelopment plans
3. Establish discretionary/ dedicated funding source
4. Prioritize corridors for state/federal funding
5. Ensure clarity & transparency of roles



# What Have We Heard?

## Ranked Expectations: Top Five by Region

North	Mid	South	Beaches
 Availability of jobs for my skill set	 Availability of jobs for my skill set	 Presence of parks and public spaces	 Availability of public transit
 Presence of parks and public spaces	 Presence of parks and public spaces	 Presence of communities where you can live, work and play	 Availability of jobs for my skill set
 Presence of communities where you can live, work and play	 Availability of public transit	 Cultural events, social activities, and recreation opportunities	 Cultural events, social activities, and recreation opportunities
 Availability of public transit	 Cultural events, social activities, and recreation opportunities	 Access to government services and information	 Presence of parks and public spaces
 Access to government services and information	 Presence of communities where you can live, work and play	 Sense of community	 Presence of communities where you can live, work and play



# It's TIME Tampa Bay

- › Regional survey in summer 2018 – Pasco, Pinellas, Hillsborough
- › 3 scenarios to evaluate
- › Transit-focused scenario ranked highest regionally; Pinellas rated even higher
- › Highway-focused scenario ranked lowest regionally; Pinellas rated even lower



# Pinellas Survey Results

Biggest barriers to transit:  
reliability, frequency and  
efficiency

- › 54% would be willing to take transit if service was better
- › 41% are willing to pay more for frequent, reliable service
- › Comfort at transit stop: 6%

Want a safe, efficient system

- › 70% believe timing traffic signals is top priority
- › 57% willing to exchange lower speeds for safer streets
- › 90% support investing in technology to improve traffic flow

Want easy access to destinations

- › Ideal neighborhood has nearby shops – 69%
- › Desire improved access to regional destinations – 52%
- › 85% believe frequent, reliable transit improves economic value



“A solution is not just  
“I would love to take the buses to  
“There is not enough space to  
places, but they are not quite good  
build an efficient transportation  
enough right now, or it's not bad  
system to move primarily cars as  
enough right now about it's a good  
are out there.”  
value proposition.”

# Today's Agenda

- › Partner Presentations
- › Small Group Discussions and Reporting
- › Interactive Polling Exercise
- › Panel Discussion with Lunch
- › Regional Coordination Recommendations & Feedback