

TECHNICAL APPENDIX A

PLAN AND DATA SUMMARY REVIEW



Connect 2045 Plan and Data Summary Review

This document provides a summary of the planning documents and studies that were reviewed and considered during the development of Connect 2045, the long range transportation plan for the River to Sea TPO. Each of the following documents is summarized to highlight key elements, notable findings, and relevance to the development of Connect 2045:

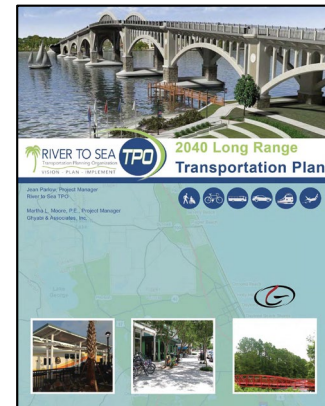
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R2CTPO 2040 LRTP

The River to Sea TPO's 2040 Long Range Transportation Plan (adopted September 23, 2015) was developed with the goals of providing a balanced and efficient multimodal transportation system; supporting economic development; enhancing connectivity and transportation choices; improving safety and security; continuing to provide and create new quality places; providing transportation equity; and encouraging public participation.

While identifying the required roadway capacity projects, the 2040 LRTP set aside \$103.7 million to support other project types including Intelligent Transportation Systems (ITS) technologies, traffic operations and safety improvements, bicycle and pedestrian projects, multi-use trails, and transit projects. Approximately \$38 million was allocated for Local Initiative projects that include Complete Streets (streets that accommodate all users), roundabouts, major technology improvements, and climate adaptation.



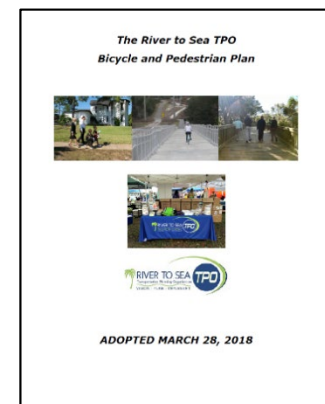
Relevance to Connect 2045: The 2040 LRTP has laid the groundwork for the development of Connect 2045 by outlining priorities above and beyond enhancing roadway capacity (e.g. technology and climate adaptation), placing an emphasis on providing a multimodal transportation system for all users, and focusing available financial resources to achieve these objectives. In order to comply with federal requirements, the TPO is updating the LRTP within five years of the adoption of the previous plan.

R2CTPO Bicycle and Pedestrian Plan

The R2CTPO's Bicycle and Pedestrian Plan (adopted March 28, 2018) outlines a vision, goals, and objectives for providing a safe, accessible, and connected network of bicycle, pedestrian, and trail facilities for the TPO's planning area and respective regional connections.

The plan provides data related to bicycle crashes, pedestrian crashes, and the location of high crash intersections. Inventories of bicycle, pedestrian, and regional trail facilities are also provided.

The Bicycle and Pedestrian Plan provides background on the concept of Complete Streets, related FDOT policy, and how it may be implemented within varying local contexts. The plan also outlines bicycle pedestrian facility design considerations including wayfinding, markings, crosswalks, and signal timings.



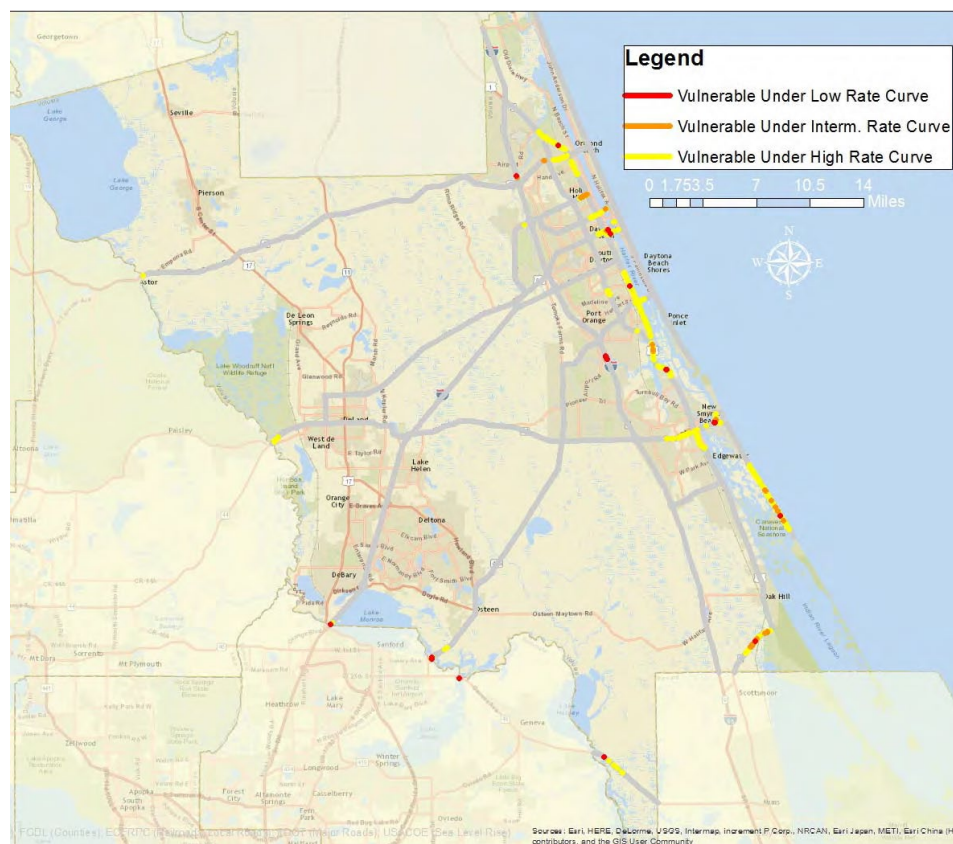
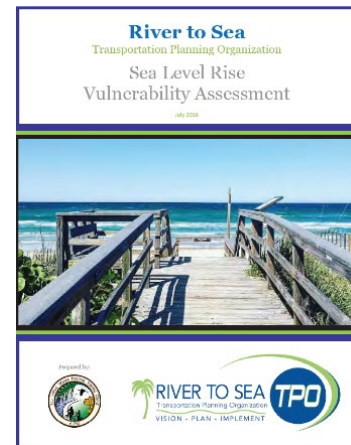
Relevance to Connect 2045: This plan conveys the TPO's commitment to bicycle and pedestrian planning, safety, and project implementation – all of which will inform the goals and objectives of Connect 2045. As the goals of this plan were inspired by the 2040 LRTP, Connect 2045 and the recently adopted Bicycle and Pedestrian plan should also be consistent and complement each other. The data and facility design considerations provided informed the development of Connect 2045.

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R2CTPO Sea Level Rise Vulnerability Assessment

The Sea Level Rise Vulnerability Assessment prepared by the East Central Florida Regional Planning Council (ECFRPC) for the River to Sea TPO (adopted September 28, 2016) identifies vulnerable facilities that may be impacted by sea level rise, erosion, and coastal flooding. Because the TPO's planning area includes low-lying coastal areas, it is important to assess these potential impacts during advanced planning and considering future investments in transportation infrastructure and protecting current assets. Scenarios and modeling used the 2040, 2070, and 2100 planning horizons and utilized the U.S. Army Corps of Engineers Low, Intermediate, and High projection rate curves.

The vulnerability analysis was performed for designated evacuation routes, the major roadway network, scenic byways, railroads, facilities (e.g. public works facilities, emergency operations centers, airports, fleet storage), and sidewalks/trails. Varying levels of impact were modeled for each infrastructure type. The map below depicts evacuation routes that may be vulnerable to sea level rise under each scenario by the year 2100.



Relevance to Connect 2045: The Sea Level Rise Vulnerability Assessment's recommendations and approach supported development of the Connect 2045 Resiliency Scenario, including establishment of the vulnerability horizon for evaluating needs projects.

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Resilient Volusia County and Resilient Flagler County

The Resilient Volusia County study (adopted September 27, 2017 and prepared by the ECFRPC), and the Resilient Flagler County study (adopted September 26, 2018 and prepared by the Northeast Florida Regional Council) both assessed the impacts that sea level rise may have on coastal flooding levels and the extent of a 100-year storm event for low, intermediate, and high sea level rise scenarios for the years 2040, 2070, and 2100. Similar to the R2CTPO Sea Level Rise Vulnerability Assessment, these studies analyzed designated evacuation routes, transportation facilities, emergency management centers, as well as analysis of impacts based on land uses.

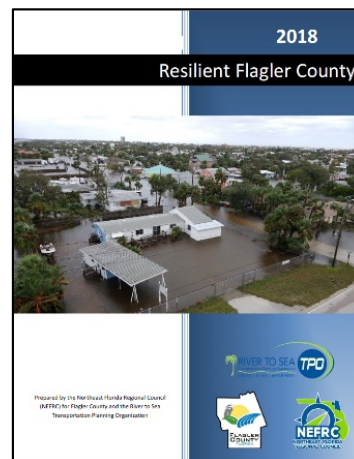
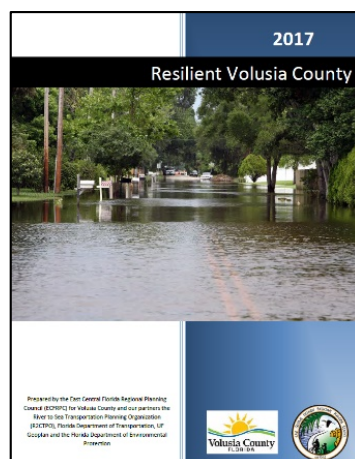
USACE SLR Projections
Feet of RSLR (relative to MSL)
Daytona Beach Shores, FL

	Low	Intermediate	High
2040	0.37 ft	0.57 ft	1.22 ft
2070	0.59 ft	1.14 ft	2.85 ft
2100	0.82 ft	1.86 ft	5.15 ft

For example, an analysis of evacuation routes estimated large impacts to SR A1A, US 1, and portions of I-95, with the low projection rate curve shows potential flooding of approximately 40 miles (total of flooded segments) of routes in Volusia County and at least 20 total miles of routes in Flagler potentially flooded.

The study provides considerations and recommendations specific to emergency preparedness, land use planning, and transportation planning. These include recommendations directly related to the long-range transportation planning process and building consensus on policies and strategies to prepare for these possible impacts.

Relevance to Connect 2045: These studies supported development of the Connect 2045 Resiliency Scenario. They recommend combining the findings of the R2CTPO Sea Level Rise Vulnerability Assessment to develop areas of priority to be incorporated into Connect 2045. Additionally, each respective study suggests planning efforts should not only consider roadways that may be susceptible to sea level rise, but those that may be undercut by erosion/increased wave action, roadways near stormwater facilities, as well as bridge approaches and spans over water.



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East Central Florida Regional Resiliency Action Plan

Completed in December 2018, the East Central Florida Regional Resiliency Action Plan (ECF RRAP) was developed by the ECFRPC for Volusia and Brevard counties. The Action Plan focuses on a five-year planning horizon focused on Leadership and Strategy; Economic and Society; Infrastructure and Environment; and Health and Wellbeing.

The ECF RRAP includes socio-economic profiles for both counties, a summary of stakeholder engagement findings, a regional planning for sea level rise recommendation, and an action plan matrix. This matrix includes specific tasks for implementing the plan and their relationship to other plans, including long-range transportation plans.



Relevance to Connect 2045: The ECF RRAP identifies specific action items related to a range of plans including long range transportation plans (see matrix excerpt below). For example, an Objective of the Action Plan is to "Preserve and adapt the built environment to keep people safe from and mitigate current and future natural hazards." A related task is to "Develop prioritization process and funding mechanisms for infrastructure projects in Adaptation Action Areas. Incorporate into CIP, stormwater master plan, long range transportation plan, and other appropriate plans and procedures." Other action items assign the TPO as the appropriate agency responsible to complete or lead respective tasks. The Action Plan also includes a formal recommendation related to the use of a range of sea level rise projections for short-, medium-, and long-term planning, which informed development of the Connect 2045 Resiliency Scenario.

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Goal	Objective	Action	Agency	Task	Year	Related Plans
Infrastructure & Environment	IE5: Incorporate resiliency into local and regional plans, policies, processes and objectives.	IE5.1	NASA Port Canaveral Patrick Air Force Base All Jurisdictions FDOT TPOs	Utilizing input gathered from the RRAP Sea Level Rise Steering Committee, update policies, plans and procedures with the RRAP recommendation for planning for sea level rise and for use in the geographic delineation of an "Adaptation Action Area" where appropriate.	1	Comprehensive Plan Land Development Regulations Long Range Transportation Plan TPO Priority Project Methodology Local Mitigation Strategy Others
		IE5.2	Planning Department	Determine if Adaptation Action Area designation and policies are appropriate for the jurisdiction. If determined appropriate, develop policies and maps to identify the area, purpose and other related policies.	1	Comprehensive Plan
		IE5.3	All Jurisdictions	Create cross-discipline review committees to assist in the audit of various plan goals policies and strategies as they relate to resilience and review impacts of new projects and developments in regards to resilience.	1	All plans
		IE5.4	All Local Jurisdiction Commission All Jurisdictions	Adopt an "Adaptation Action Area" that includes the 100-year floodplain, the adopted sea level rise hazard zone, and the Coastal High Hazard Zone (Category 1 Storm Surge).	2	Comprehensive Plan Land Development Regulations
		IE5.5	Planning Department	Assess other plans to reference Adaptation Action Areas and incorporate language as appropriate.	2	
		IE5.6	Planning Department Sustainability Board	Audit Comprehensive Plan to ensure that resiliency strategies are adequately addressed and policies are compatible in all applicable sections. Add/adjust appropriate language where needed.	2	Comprehensive Plan

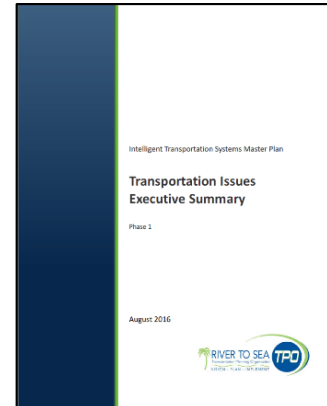
Infrastructure & Environment: Incorporate resiliency into local and regional plans, policies, processes and objectives.

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R2CTPO Intelligent Transportation Systems Master Plan, Phase I

The R2CTPO ITS Master Plan, Phase I (adopted August 2016) includes a vision, goals, and objectives consistent with the 2040 LRTP; an inventory of existing ITS elements and organizational relationships; and stakeholder interviews with Volusia and Flagler counties, municipalities, FDOT District 5, law enforcement agencies, Voltran, and SunRail.

A technical memorandum provides an overview of existing and planned ITS infrastructure within the R2CTPO boundary, and general overview of the types of communication infrastructure utilized by various agencies including FDOT District 5 its related services (e.g. Florida 511, Regional ITS Architecture, Traffic Incident Management). A qualitative assessment of the existing ITS system notes that are some challenges related to communication breakdowns between agency networks, and other interagency coordination issues. Staff shortages, aging equipment, maintenance, and the need for specialized training are other issues facing the ITS system. It is noted that each local transportation agency has a focus on connecting traffic signals to a common ITS network, automated vehicles, and pedestrian/bicycle data collection.



Relevance to Connect 2045: The R2CTPO ITS Master Plan (Phase I) supported development of the Connect 2045 Technology Scenario by providing an understanding of the current state of ITS infrastructure opportunities and challenges.

R2CTPO Transportation Systems Management and Operations (TSM&O) Master Plan, Phase 2

TSM&O is an approach to improving the performance and efficiency of the transportation network by addressing traffic-related problems and minimizing congestion through the utilization of ITS, signal system control, and other management and operational strategies. The R2CTPO TSM&O Master Plan, Phase 2 (adopted June 27, 2018) provides an overview of various TSM&O strategies and based on a scoring and ranking of roadway segments within the LRTP network and offers recommendations regarding the most applicable strategies and projects.

Overall strategies identified to improve operations include traffic operations/management; system communications and interconnectivity; maintenance and construction; incident management; emergency management; traveler information; public transportation management; information management; and emerging technologies. The Plan recommended four TSM&O deployments (Early Deployment, East Volusia, West Volusia, and Flagler) for which high-level cost analyses were performed to approximate the funding requirements for each.

Relevance to Connect 2045: The TSM&O Master Plan, Phase 2, supported development of the Connect 2045 Technology Scenario. This plan ranks SIS, Regional, Non-Regional, and Collector roadway segments within the LRTP network to determine where TSM&O strategies are expected to provide the greatest benefit and optimum return on investment. It also includes four (4) recommended TSM&O deployments with related cost information. The segment rankings and associated scoring methodology were considered in the identification and prioritization of technology projects within Connect 2045.

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Guidance for Assessing Planning Impacts and Opportunities of Automated, Connected, Electric and Shared-Use Vehicles (ACES)

This May 2018 document was developed by FDOT to provide guidance to MPOs regarding ACES and on how to best account for emerging technologies and shared mobility within respective planning processes and long-range transportation plans.

This guide also provides a table that includes potential impacts of ACES on common LRTP goals. For example, when considering an LRTP goal of providing choices in transportation, ACES technology's potential impact on mode choice may be a potential decrease in individual vehicle ownership.

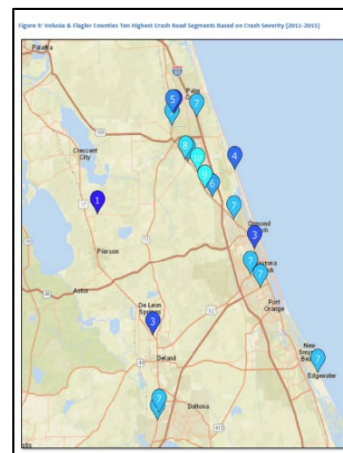
Relevance to Connect 2045: The Connect 2045 Technology Scenario utilized the FHWA ACES scenarios, recommended in this guidance, that are a component of the Central Florida Regional Planning Model, version 7.



R2CTPO 2017 Crash Analysis Report

This report (adopted September 27, 2017) provides a detailed review and analysis of crash data for Volusia and Flagler County, covering the period from 2011-2015. Both roadway segments and intersections were analyzed based on crash frequency and severity, as well as the types of crashes (rear-end, left-turn, sideswipe, right angle, head-on, impaired driving, distracted driving, crashes involving bicyclists/pedestrians).

Of note, annual crash totals increased substantially over the study period, with rear-end collisions accounting for 28% of the total. The sample figures below from the report show the crash rates (annual crashes per annual 100 million vehicle miles traveled for Volusia and Flagler counties over the course of the study period. In relation to the state, rates in both counties were lower than the those statewide (185.69 in 2011 and 325.42 in 2015).



The report recommends more detailed review of the high-crash intersection and roadway segments, rear-end collisions, motorcycle crashes, and crash-related behavior to identify causes and potential countermeasures.

Relevance to Connect 2045: With safety being a consistent high priority of R2CTPO, and a goal of the 2040 LRTP, data and recommendations of this report were considered in the development of Connect 2045 through identification and prioritization of projects and programming.

Figure 2: Volusia County Total Crashes (2011-2015)

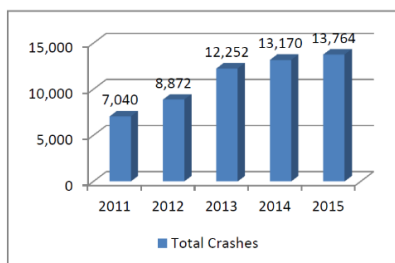
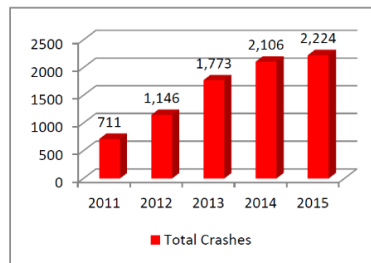


Figure 3: Flagler County Total Crashes (2011-2015)



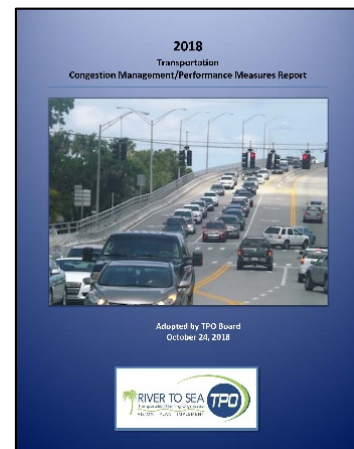
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R2CTPO Transportation Congestion Management/Performance Measures Report

The R2CTPO updated and refined its Congestion Management Process (CMP) in concert with the 2040 LRTP. This Congestion Management/Performance Measures Report was adopted October 24, 2018. The CMP addresses the multimodal transportation network within the TPO's Metropolitan Planning Area that includes the National Highway System (NHS), Interstate System, Strategic Intermodal System (SIS), State Highway System (SHS), and Off-System Arterial and Collector roadways.

The CMP provides performance measures to evaluate the network over time. R2CTPO developed the initial performance evaluation of the transportation system as prescribed in the CMP, as well as an overall "Performance Scorecard" that includes key performance measures and provides a snapshot of how the transportation system is functioning. The scorecard identified unfavorable trends in auto demand, auto safety, bicycle and pedestrian safety, and total crashes. Some favorable trends were found related to transit demand.

Relevance to Connect 2045: The Congestion Management Process and the on-going evaluation of system performance informed development of Connect 2045 by contributing to the identification and prioritization of planned improvements. This report includes measures related to PM1 – Safety and has adopted required performance measures (adopted 1/24/18 and updated 2/27/19). Measures and targets for PM 2 – Pavement and Bridge Condition were adopted 10/24/18. Data for system performance was included in this report and measures and targets for PM 3 were adopted 10/24/18. Transit Asset Management Plan Targets were also adopted 10/24/18.



River to Sea Transportation Planning Organization

Table 1 Transportation System Performance Scorecard

PERFORMANCE (All Public Roads)

Measure	2012	2013	2014	2015	2016	Trend
Flagler County						
Auto Demand						
Daily vehicle miles traveled ¹	2,887,406	2,882,335	3,054,788	3,670,670	3,746,531	
Total centerline miles	984	986	986	986	986	
Auto Safety						
Total Fatalities	15	16	24	12	35	
Total Injuries	765	849	817	1,023	828	
Total Property Damage Only	335	466	619	709	594	
Bicycle Safety						
Fatalities	0	2	1	0	1	
Injuries	23	31	35	34	33	
Pedestrian Safety						
Fatalities	2	0	0	2	5	
Injuries	26	26	18	25	19	
Intersection Related Crashes						
Total Crashes	342	415	507	601	621	
Volusia County						
Auto Demand						
Daily Vehicle Miles Traveled ²	14,723,818	14,872,278	15,194,907	15,688,513	16,260,142	
Total centerline miles	3,861	3,857	3,862	3,800	3,857	
Auto Safety						
Total Fatalities	97	90	86	87	122	
Total Injuries	4,702	5,210	5,251	5,750	5,872	
Total Property Damage Only	3,178	4,339	4,607	4,840	4,824	
Transit Demand						
Volcan Ridership (fixed routes)	8,570,829	8,734,117	8,729,807	8,857,749	8,248,464	
Volcan Revenue Miles	1,283,548	1,299,359	1,285,143	1,405,217	1,535,413	
Volcan Revenue Hours	80,803	82,553	82,522	84,468	101,968	
Passenger Trips per Revenue Mile	1.37	1.46	1.41	1.39	1.33	
Passenger Trips per Revenue Hour	22.80	22.62	22.46	20.38	18.92	
Surfball Ridership	NA	NA	29,247	44,715	46,869	
Transit Safety						
Volcan Collision	21	38	51	109	11	
Volcan Total Fatalities	0	0	0	0	0	
Volcan Total Injuries	8	36	19	28	24	
Surfball Crashes	NA	NA	14	11	11	
Bicycle Safety						
Fatalities	1	4	4	4	5	
Injuries	180	351	175	193	171	
Pedestrian Safety						
Fatalities	16	19	25	17	14	
Injuries	179	224	233	199	221	
Intersection Related Crashes						
Total Crashes	2,104	2,944	3,061	3,274	3,457	

Favorable
 Neutral
 Unfavorable

1. "Vehicle miles traveled" (VMT) is the total number of miles traveled by all vehicles on the nation's public roads. It is calculated by multiplying the number of vehicles by the number of miles traveled. It is a measure of the volume of traffic on the nation's public roads. It is a key indicator of the health of the nation's transportation system. It is a key indicator of the health of the nation's transportation system. It is a key indicator of the health of the nation's transportation system.

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Table 23 Flagler and Volusia County Auto Crashes

Year	2012	2013	2014	2015	2016	5-Yr Rolling Average
Flagler County						
Fatalities	15	16	24	12	25	18.4
Fatality Rate ¹³	1.45	1.52	1.85	0.89	1.81	1.505
Injuries	765	849	817	1,023	828	856.4
Injury Rate ¹⁴	73.87	80.70	62.97	76.16	60.22	70.787
Property Damage Only	335	466	619	709	594	198.06
Property Damage Only Rate ¹⁵	32.35	44.30	47.71	52.78	43.21	40.067
Volusia County						
Fatalities	97	90	86	87	122	96.4
Fatality Rate ¹³	1.80	1.66	1.55	1.51	2.05	1.715
Injuries	4,702	5,210	5,251	5,750	5,872	5357
Injury Rate ¹⁴	87.49	95.98	94.68	100.41	98.81	95.475
Property Damage Only	3,178	4,339	4,607	4,840	4,824	4357.6
Property Damage Only Rate ¹⁵	59.13	79.93	83.07	84.52	81.18	77.567

Table 2 FDOT MAP-21 Mobility Performance Measures Development

River to Sea TPO				
Measures	2014	2015	2016	2017
Percent of Person-Miles Traveled on the Interstate that are reliable	100%	100%	100%	100%
Percent of Person-Miles Traveled on the Non-Interstate NHS that are reliable	51%	47%	39%	89%
Truck Travel Time Reliability Index on the Interstate	1.12	1.20	1.19	1.2

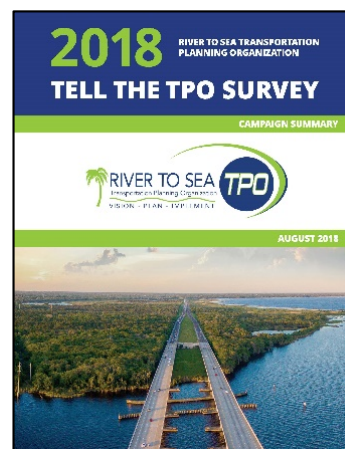
Source: Florida Department of Transportation

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R2CTPO “Tell the TPO” Survey

The 2018 “Tell the TPO” Community Transportation Survey Campaign was launched on April 30, 2018 and ran through June 30, 2018 and received a total of 2,176 responses. A summary of the survey from August 2018 showed a 73% increase in number of responses over the 2016 survey, as well as a wider variety of geographic areas responding.

Based on the responses to the nine questions included in the survey, key findings included: providing travel choices is a priority; fluctuations in carpool/SunRail may be attributable to usage of Uber/taxis; investing in safety and convenience would make travel choices (transit, bicycle/pedestrian facilities) more attractive; roadway safety and efficiency is valued; and maintaining good operations along International Speedway Boulevard is a priority.



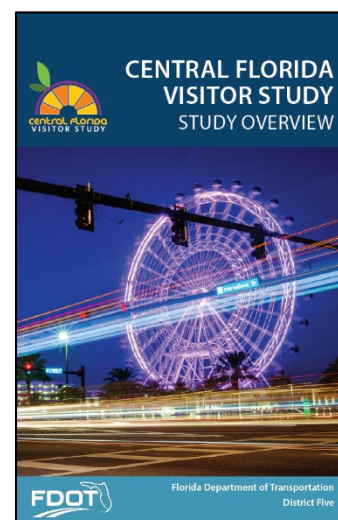
Relevance to Connect 2045: The results of the 2018 “Tell the TPO” Survey provided an understanding of recently collected preferences and priorities from the TPO’s planning area and informed development of the Connect 2045 survey.

FDOT District Five Central Florida Visitor Study

The Central Florida Visitor Study (July 2019) was conducted by the Florida Department of Transportation District Five to explore visitor travel within the region, recommend ways to best capitalize on tourism assets, and recommend strategies to best prepare for expected growth within the 10-county Central Florida region. Daytona Beach, Daytona International Speedway, and Daytona Beach International Airport are identified as Central Florida Visitor Activity Centers.

The results of the study were documented in an Executive Summary, Visitor Data Dictionary (guide to locate and utilize existing data for transportation), Global Review of Visitor Attractions (for identification of transportation best practices), TransValU Visitor Module (tool designed to evaluate the economic assessments of proposed transportation investments in Florida), Visitor Data Analysis Report, and Scenario Planning & Recommendations.

The first recommendation from the study is to institutionalize visitor mobility analysis and planning, and to support MPO’s in meeting FAST ACT requirements by accounting for visitor transportation and considering projects that enhance travel and tourism in the LRTP process. One of the new provisions in the FAST Act is the creation of the National Advisory Committee on Travel and Tourism Infrastructure (NACTTI). The Committee’s objective is to provide information, advice, and recommendations on matters relating to the role of intermodal transportation in facilitating mobility with respect to travel and tourism activities.



Relevance to Connect 2045: This study and related data supported consideration of programs and improvements for Connect 2045 that support tourism activities, access to tourist attractions, and economic development. Connect 2045’s Technical Scoring Criteria included provisions that give higher priority to projects that provide improved access to tourism/activity centers and ecotourism locations.

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Votran Transit Development Plan (TDP) Major Update

The Votran TDP (October 2016) summarizes baseline conditions of the study area, reviews existing transit services within Volusia County, summarizes public involvement activities, reviews other plans that influence transit, provides a situational appraisal of the current planning/policy environment, analyzes potential service gaps and latent demand, provides goals and objectives, summarizes potential transit alternatives, and includes a 10-year financial plan. In addition, the TDP identifies potential improvements with their respective financial impact, and potential revenue sources to utilize for implementation.

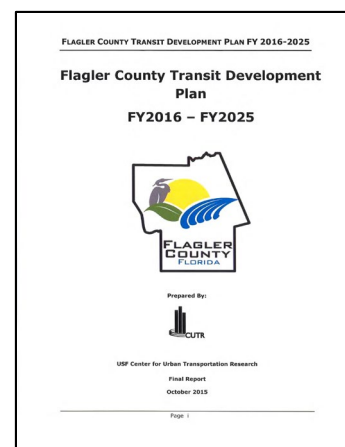
Relevance to Connect 2045: The Votran TDP's proposed service enhancements, proposed capital enhancements, and 10-year financial plan provided the basis for addressing transit service and needs within the LRTP. The TDP was considered in developing the Cost Feasible Plan and in Scenario Planning.



Flagler County Transit Development Plan (TDP)

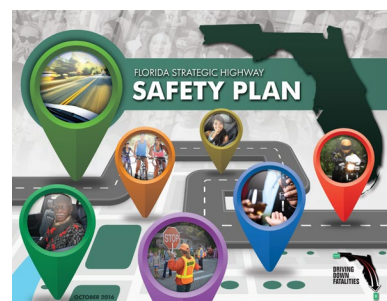
The Flagler County Transit Development Plan (October 2015) includes an assessment of demographics and commuting patterns in the county; evaluation of demand response service, operations, and financial performance; summary of public input; vision, goals, objectives, and strategies; appraisal of land use, existing infrastructure, and other local, regional, and state plans; and an identification of needs and opportunities to enhance service with a summary of costs and projected revenues.

Relevance to Connect 2045: The Flagler County TDP includes proposed service enhancements and potential new fixed route services. The TDP was considered in developing the Cost Feasible Plan and in Scenario Planning. Statewide Safety Plans



Florida Strategic Highway Safety Plan

The 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. The SHSP is updated at least every five years by FDOT in coordination with statewide, regional, and local traffic safety partners and was last updated in October 2016. The SHSP is focused on the roadway component of transportation safety. The SHSP and safety plans for other modes align with the Florida Transportation Plan and national programs funded by the Federal Highway Administration (FHWA), the Federal Motor Carrier Safety Administration (FMCSA), and the National Highway Traffic Safety Administration (NHTSA).



Relevance to Connect 2045: Connect 2045 incorporates the SHSP emphasis areas and considers the priorities, goals, countermeasures, strategies, or projects for the metropolitan planning area contained in the Highway Safety Improvement Program (HSIP), including the Strategic Highway Safety Plan (SHSP) required under 23 U.S.C. 148. The SHSP emphasis areas are documented in the Transportation Plan chapter on page 6-35.

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FDOT Florida Highway Safety Plan

FDOT's 2020 Highway Safety Plan (HSP) is Florida's action plan for distribution of NHTSA highway safety funds. The Plan is based on Florida's SHSP goals and objectives, crash data and Federal requirements.

Relevance to Connect 2045: Development of Connect 2045 considered HSP data and information, in companion with the SHSP, to define safety goals, objectives, needs and priorities. Funded activities in the TPO planning area within the 2020 HSP include campaigns focused on motorcycle safety and sharing the road. Allied efforts such as these support Connect 2045's safety goal to eliminate or reduce crash-related fatalities and serious injuries.



Florida Transportation Plan

Vision Element

The Florida Transportation Plan (FTP) Vision Element (May 2020) defines the vision and goals for Florida's transportation system for the next 25 years, based on comprehensive input from the public and statewide, regional, and local partners. The Vision Element considers the potential implications of growth, diversity, development, innovation, global integration, and risks/disruptions on the state's transportation system.



Relevance to Connect 2045: Connect 2045 was developed with consideration for the long-term vision set forth in this FTP document. For example, Connect 2045 included scenarios to explore both the potential implications of emerging technologies on transportation in the TPO's planning area, as well as the potential vulnerability of transportation infrastructure due to project sea level rise. Both of these topics are addressed in the "Where are we going?" section of the Vision Element.

Policy Element

The FTP Policy Element (December 2015) is Florida's 25-year long-range transportation plan as required by both state and federal law. It is the single overarching statewide plan guiding Florida's transportation future. It is a plan for all of Florida created by, and providing direction to, the Florida Department of Transportation (FDOT) and the many partner organizations that are involved in planning and managing transportation throughout the state. It was developed in close cooperation with Florida's 27 MPOs [23 C.F.R. 450.216(g)] and is the result of extensive public input. The plan encompasses seven goal areas with supporting objectives to guide planning and programming.



Relevance to Connect 2045: Each MPO's/TPO's long range transportation plan must consider the goals and objectives identified in the Florida Transportation Plan (FTP) [s.339.175(7)(a), F.S.]. The goals of Connect 2045 were developed to reflect the FTP's goals (see matrix on page 2-9).

Connect 2045 Plan and Data Summary Review

Strategic Intermodal System Policy Plan

Florida's Strategic Intermodal System (SIS) is the high priority network of transportation facilities important to the state's economic competitiveness. The SIS Policy Plan (March 2016) establishes the policy framework for planning and managing Florida's SIS. The Plan is a primary emphasis of FTP implementation and aligns with the FTP Policy Element. The SIS Policy Plan includes three objectives to guide future SIS plans and investments which are Interregional Connectivity, Intermodal Connectivity and Economic Development.

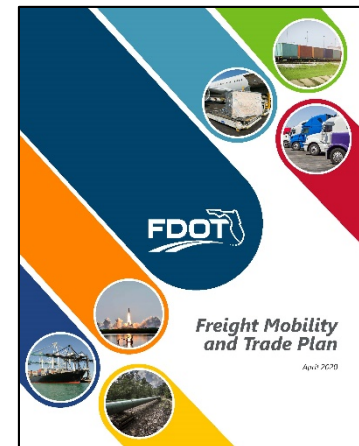


Relevance to Connect 2045: L RTPs must identify transportation facilities that include major roadways, airports, seaports, spaceports, commuter rail systems, transit systems, and intermodal or multimodal terminals that will function as an integrated metropolitan transportation system. L RTPs must also give emphasis to those transportation facilities that serve national, statewide, or regional functions [s. 339.175(7) F.S.]. In fulfillment of these requirements, Connect 2045 documents SIS facilities within the Cost Feasible Plan. The SIS Policy Plan objectives of interregional connectivity, intermodal connectivity, and economic development are also reflected in the Connect 2045 goals and objectives, and the plan's technical criteria scoring.

Florida Freight Mobility and Trade Plan

In 2013 and 2014, FDOT developed the first Freight Mobility and Trade Plan (FMTP) designed to set the stage for freight planning in Florida, raise awareness, and galvanize the freight community. FDOT recently updated the FMTP which was released in April 2020. This new document built upon the foundation set by the previous FMTP by using tactical and strategic approaches to implement immediate opportunities while also positioning Florida for future possibilities. One key recommendation from both FMTP efforts was that freight issues and needs shall be given emphasis in all appropriate transportation plans including the MPO long range transportation plans.

Relevance to Connect 2045: The goals and objectives of Connect 2045 were developed to be consistent with the FMTP objectives. The relationship of these plans is outlined in Table 2-8 on page 2-27. Connect 2045's Technical Scoring Criteria included a provision that gives higher priority to projects that are within designated freight corridors or serving high truck volumes. The TPO also supports the state freight planning process and has coordinated with FDOT to set appropriate performance targets for the measurement of Truck Travel Time Reliability (Truck travel time reliability ratio (TTTR) on the Interstate system).



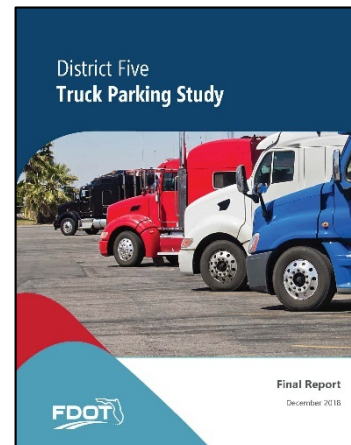
Connect 2045 Plan and Data Summary Review

FDOT District Five Truck Parking Study

The availability of safe, and legal truck parking is directly related to the safety of commercial vehicle operators and the general traveling public, as well being instrumental to economic competitiveness. FDOT District Five's Truck Parking Study (December 2018) assesses existing truck parking capacity and future demand within the District, including R2CTPO's planning area.

Figure 10 | Corridor-Level Truck Parking Supply and Demand, Interstate Highways

Interstate 4	Interstate 75	Interstate 95
Average Demand: 481	Average Demand: 518	Average Demand: 472
Available Spaces: 89	Available Spaces: 728	Available Spaces: 424



According to the study's truck parking location summary, there is one privately-operated location at Love's Travel Center on US 1 (107 truck parking spaces) in Volusia County, and two public truck parking locations in Flagler County at Mile Marker 286 on I-95 Northbound and Southbound, with each having 41 parking spaces.

Relevance to Connect 2045: Continued population growth and economic activity will increase freight transportation demand, and in turn increase demand for sufficient truck parking within the TPO's planning area. Connect 2045 considered the location of existing truck parking facilities, estimated parking space demand ranges for the corridors evaluated within the planning area (I-4, I-95, SR 44, SR 100, US 17), and freight intensive/truck trip generating land uses within the planning area.

Local Government Comprehensive Plans

The adopted Comprehensive Plans of the local governments listed below were reviewed in the process of developing Connect 2045:

- Volusia County
- Flagler County
- City of Bunnell
- City of Daytona Beach
- City of Daytona Beach Shores
- City of DeBary
- City of Deland
- City of Deltona
- City of Edgewater
- City of Flagler Beach
- City of Holly Hill
- City of Lake Helen
- City of New Smyrna Beach
- City of Oak Hill
- City of Orange City
- City of Ormond Beach
- City of Palm Coast
- City of Port Orange
- City of South Daytona

Relevance to Connect 2045: The Future Land Use Element of each respective Comprehensive Plan was utilized in the development of the Connect 2045's socioeconomic forecasts. Similarly, the Transportation Element of each plan provided adopted level of service standards and identified constrained corridors as potential needs. Connect 2045 was developed to be consistent with these plans. Staff from member local governments also participated in oversight of plan development through participation on the TPO's LRTP Subcommittee and Technical Coordinating Committee.

Connect 2045 Plan and Data Summary Review

Central Florida Regional Planning Model (CFRPM)

The CFRPM v7 is maintained by FDOT District Five and covers the nine counties within the District, including Flagler and Volusia counties. The model considers factors such as population, socioeconomic data, land use, trip generation, trip distribution, and modal split to project traffic levels and patterns in the designated planning horizon.

Relevance to Connect 2045: The CFRPM was utilized as a primary travel demand forecasting tool in the development of the Needs Assessment and Cost Feasible Plan within the LRTP. Related documentation is provided in Technical Appendices B & C.

Daytona Beach International Airport Master Plan

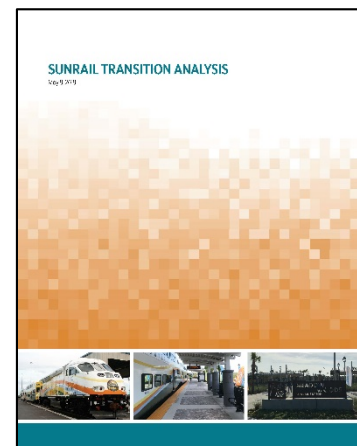
Last updated in 2003, the Daytona Beach International Airport Master Plan evaluated the airport's existing conditions and makes recommendations to accommodate projected activity and demand. The master plan identifies the roadway network providing access to the terminal and airport property, with a stated goal of maintaining convenient and uncongested highway access to the airport. An objective of designing and implementing traffic management plans for special events to ensure consistent airport access is also notable. The recommended development plan for the airport depicts property to be acquired and lands reserved for future aviation development.

Relevance to Connect 2045: The Airport Master Plan was recently updated in September 2020 and is currently awaiting adoption. Once adopted, the update to the Airport Master Plan will be evaluated to identify any planned improvements at the airport that may impact the regional transportation network and the prioritization of projects within the LRTP.

SunRail Transition Analysis

The SunRail Transitional Analysis (May 9, 2019) provides a summary of information relevant to creating a framework for the transition of SunRail operations from FDOT to the five local funding partners (City of Orlando, Orange County, Osceola County, Seminole County, and Volusia County) comprising the Central Florida Commuter Rail Commission (CFCRC) in 2021. The transition framework addresses administrative structure, proposed interlocal agreements, transit provider agreements & coordination, and recommendations encompassing activities for the CFCRC to consider as it enters the upcoming transition period.

Relevance to Connect 2045: The development of Connect 2045 considered the forthcoming SunRail transition of responsibility to local funding partners and incorporates by reference the SunRail Transition Analysis report included in the Connect 2045 Library. This includes the financial/budget reports and proposed interlocal agreements, as well as the recommendations to perform an assessment of last-mile connections and to develop a Transit Development Plan. This will be important when considering not only the future of SunRail service within the TPO's planning area, but for investments in connectivity and access to SunRail stations through bicycle/pedestrian infrastructure, bus service, and complementary paratransit services.



Connect 2045 Plan and Data Summary Review

LPGA Boulevard Sub-Area Study

Completed in October 2019, the LPGA Sub-Area Study provides an evaluation of the effect of approved and planned development on state, county, and major city roadways by 2040 within an approximately 35 square mile area around the I-95/LPGA Boulevard interchange. There has been considerable growth and development within the study area including the Tanger Outlet Mall, Trader Joe's Distribution Center, and Margaritaville. The study assessed operating conditions and capacity constraints on these roadways and developed five (5) future scenarios to evaluate the benefits of additional transportation infrastructure within the study area.

Scenario 3 ("Northern Relief"), which includes the extension of Hand Avenue from Williamson Boulevard to Tymber Creek Road Extension provided the greatest benefit in reducing congestion on deficient facilities compared to the amount of required infrastructure. The study also notes the following segments were found to be near or over capacity in multiple scenarios and should be on the radar of the TPO: Dunn Avenue, Tomoka Farms Road to Williamson Boulevard; Mason Avenue, Fentress Boulevard to Bill France Boulevard; Tymber Creek Road Extension, LPGA Boulevard to Minto Latitudes; and Tymber Creek Road Extension, Riverbend Road to SR 40.

Relevance to Connect 2045: The data obtained on the roadway segments in the study area, as well as the alternatives and cost estimates related to each of the future scenarios, were considered in the identification and prioritization of projects in the development of Connect 2045.

