metroplan orlando
A REGIONAL TRANSPORTATION PARTNERSHIP

2045

Metropolitan Transportation Plan

Technical Series #12

Multimodal Needs

Summary of Findings

Adopted: 12/09/2020

What is in this document?

This technical series describes the process for developing the Multimodal Needs List within the 2045 Metropolitan Transportation Plan (MTP). The process of identifying needs within this plan differs from previous plans. In the 2030 & 2040 Long Range Transportation Plans, needs were primarily identified based on highway capacity and roadway widening projects. 2045 MTP needs are based on a multi-criteria assessment, which aligns system performance with the 2045 MTP goals and objectives set by the MetroPlan Orlando Board. This new approach results in a plan that better addresses the multimodal needs of the entire transportation system and the diverse people who use it.

The quantitative methodology described within this document was used as a basis for the Needs List. Additional qualitative reviews were also conducted based on existing MPO plans, state and local government priorities, and mode-specific plans to ensure that the complete needs list incorporates the full range of existing transportation needs.

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Needs Identification Process

Consistent with the Federal Highway Administration's (FHWA) Transportation Performance Management (TPM) guidance, MetroPlan Orlando followed a data-driven and context-informed approach to identify and assess candidate transportation projects for prioritization in the 2045 MTP. This process began by identifying the multimodal needs of the region. The needs identification process included an evaluation of each functionally classified road within the region to determine how both current and future performance measures score within a data model that combines over 28 performance measures. The performance measures were strategically assigned to align with the goals and objectives of the MTP, thereby providing a process in which the needs are a representation of the transportation network's ability to meet the MPO's goals and performance targets.

The following three-step process was used to identify the multimodal needs:

1) **Development of Future Conditions (2045 Socioeconomic Data and E+C Network)**

   The Central Florida Regional Planning Model V7 (CFRPM) was used to evaluate the impact of future growth based on anticipated 2045 socioeconomic data and the existing plus committed (E+C) roadway network.

2) **Multimodal Needs Assessment**

   Utilizing a corridor-level needs assessment based on existing and projected socioeconomic data, multimodal needs and opportunities were identified and combined with the existing needs included in previous plans, priority lists, and studies.

3) **Agency Review and Finalizing Needs**

   Following the compilation of the long list of needs, agency partners participated in a review to confirm the quantitative process and ensure that local needs were reflected. The needs list was then grouped into categories which match the MPO's funding framework, to prepare for prioritizing and identifying cost feasible needs.

This process differs significantly from previous LRTPs, which primarily used the measure of a roadways volume-to-capacity to determine which roadways should be identified as a capacity need.

Since the previous 2040 update, both MetroPlan Orlando and the local agency partners have shifted towards a complete network assessment in processes and plans. Using several different methods to analyze multimodal needs accounts for people walking and cycling, those using public transit and automobiles, while also considering the movement of freight, goods and services.

The 2045 MTP builds upon this shift in assessing needs in the transportation network by combining the existing local agency plans with the needs identified within the data model. The Model was also used in the project prioritization process (see Technical Series #6 for more details) to aid in the development of the cost feasible plan.

Development of Future Conditions

The Central Florida Regional Planning Model Version 7 (CFRPM) was utilized to evaluate the impact of socioeconomic data between the Base Year 2015 and Future Year 2045 for the existing growth trends and for the alternative future growth scenarios. In addition, the 2045 roadway network was modified to reflect an E+C "plus" network, which included funded roadway capacity projects from the latest FDOT Work Program and Prioritized Project List (PPL), "plus" major roadway projects from the Central Florida Expressway Authority (CFX) Master Plan.

Socioeconomic Data and Scenario Planning

In previous LRTPs, a comparison of the future year's forecasted socioeconomic data (population and employment) to the existing socioeconomic data was only used as a method for validating and displaying the anticipated growth in the region. In this MTP, the socioeconomic data provided the necessary validation of growth but also laid the framework for a quantitative assessment of alternative futures. Based on the four (4) scenarios (defined below and detailed in Technical Series #8), socioeconomic data was modified for the future year 2045 to determine the impact to the multimodal roadway network, if the current growth trends do not continue.

The four (4) scenarios' primary assumptions are shown in Figure 12.1.

Figure 12.1 | Alternative Future Scenarios

1. Traditional Trends

What happens if historic trends and behaviors continue unchanged

2. Tech Transformations

Major technology and innovation changes make Central Florida a destination for businesses and a younger workforce

3. Disruption Dilemmas

Pandemics or other emergencies disrupt the region's population, visitor, and economic growth, affecting travel and development patterns

4. Climate Consequences

Frequent extreme weather events and major sea level rise for the state's coastal residents to move inland

Source: MetroPlan Orlando, 2045 MTP, Technical Series #8

Population and Employment Projections

Tables 12.1 and 12.2 provide a summary of the socioeconomic data for the base year and each 2045 scenario.

Table 12.1 | Base Year and 2045 Population

County	Base Year 2015	2045 Population by Scenario			
		Scenario 1	Scenario 2	Scenario 3	Scenario 4
Orange	1,213,443	1,974,012	1,517,210	1,974,012	2,455,400
Osceola	313,899	655,186	433,898	655,186	755,600
Seminole	449,141	588,820	514,892	588,820	694,200
Total	**1,976,483**	**3,218,018**	**2,466,000**	**3,218,018**	**3,905,200**

Source: MetroPlan Orlando, 2045 MTP, Scenario Planning

Table 12.2 | Base Year and 2045 Employment

County	Base Year 2015	2045 Employment by Scenario			
		Scenario 1	Scenario 2	Scenario 3	Scenario 4
Orange	809,785	1,364,337	1,079,859	1,379,379	1,685,620
Osceola	93,859	276,410	180,881	253,390	337,003
Seminole	186,966	364,489	289,809	372,499	422,889
Total	**1,090,610**	**2,005,236**	**1,550,549**	**2,005,268**	**2,445,512**

Source: MetroPlan Orlando, 2045 MTP, Scenario Planning

Existing Plus Committed Network

The existing plus committed (E+C) transportation network serves as a basis for identifying the future multimodal needs within the 2045 MTP. The development of this network ensures that we are capturing the existing conditions on the transportation network, while accounting for projects which are already programmed and funded within the next five years based on the adopted Transportation Improvement Program (TIP).

To develop the E+C network, projects which have been completed between the model base year (2015) and plan adoption year (2020) were included. In addition, projects with funding identified from 2020 through 2025 in the MetroPlan Orlando's TIP are considered "committed" in the 2045 MTP's Cost Feasible Plan and are to be implemented by FDOT and local agencies as top priorities.

2045 Multimodal Needs Assessment

The needs assessment within the 2045 MTP was conducted in a comprehensive manner, with the understanding that we can't build our way out of congestion through roadway capacity projects alone. The needs list was derived through both qualitative and quantitative approaches, with an identification of needs and opportunities which align with the region's transportation goals and objectives. Existing transportation plans were reviewed to capture previously identified needs which should be carried through the process and compared to the quantitative analyses () included within this plan for project prioritization.

The *data model* is an objective-driven and data informed analysis which encompasses 28 performance indicators from key data sources such as Signal Four Analytics (crash data), cellular/location-based data (StreetLight), the Central Florida Regional Planning Model (CFRPMv7), and local government data. The process followed a scoring system to assess the multimodal needs of each corridor based on the premise that goal areas and performance indicators are created equal. To account for the impact of the alternative scenarios, performance indicators which are impacted by future socioeconomic changes were scored as the average of each scenario. Based on the review of existing plans and the data model assessment, long lists of 2045 multimodal needs were developed for the following categories:

- **Roadway Network** – The roadway network needs include roadway widening, new roads, complete streets, and freight & goods movement focused project improvements.
- **Regional TSM&O** – The regional TSM&O needs list includes those roadways which have an operational, safety, or intelligent transportation system (ITS) need. The analyses utilized existing plans, the constrained roadway network, and key operational (reliability) and safety performance metrics to determine magnitude of need.
- **Transit System** – The transit system needs include operations infrastructure, new/enhanced bus and rail service, premium transit service, and commuter rail. The needs list was developed in large part through review of existing plans, supported by an identification of solutions for regional connectivity. The data model was also utilized to identify areas which have the highest levels of population and employment, with no existing service. The transit system needs assessment is described in greater detail in Technical Series #11.
- **Pedestrian & Bicycle** – The pedestrian & bicycle needs include filling sidewalk gaps, adding bicycle facilities, regional trails, crosswalks and other safety related improvements along the transportation network. The pedestrian & bicycle needs assessment is described in greater detail in Technical Series #9.

Constrained Roadway Facilities

Roads constrained by public policy, environmental implications, and/or physical situations were identified by each county and municipality. Some facilities, regardless of need, cannot be expanded beyond the number of lanes identified. Those constrained by policy could become unconstrained only in the event of policy change by the local government or agency. The constrained list provided a key differentiator of need type within this MTP. If a corridor was below the constrained number of lanes, and the need existed based on overall scoring in the data model, the corridor was included in the needs list as a capacity project up to the constrained number of lanes. If a need was identified based on the Data on a constrained corridor, the need type was identified as a Complete Street or an operational need, which could include improvements to intersections to address reliability deficiencies and/or safety challenges.

Review of Existing Plans and Studies

Existing transportation improvement plans were reviewed to capture previously studied and documented needs from regional, state, and local plans, priority lists, studies, and initiatives. Identified projects were revised or removed as required to avoid redundancy and incorporate any new information available since the plan/study's completion. Projects already substantially underway, complete, or with construction funded in the current Transportation Improvement Program (TIP) were removed. Table 12.3 identifies the sources used to inform the projects/opportunities included under each need type.

Table 12.3 | Existing Needs Sources by Need Type

Source	Needs Type
MetroPlan Orlando 2021-2040 Prioritized Project List	All
MetroPlan Orlando 2020/21-2024/25 Transportation Improvement Program	All
Orange County Transportation Initiative (2020)	All
FDOT Freight Mobility and Trade Plan	Roadway Network
Osceola County Transportation Vision Plan	Roadway Network
Seminole County 2040 Transportation Plan	Roadway Network, TSM&O, Ped/Bike
Sales Tax Capital Plan (2015-2025) Seminole County Potential Major Projects	Roadway Network
Oviedo Transportation Master Plan (Preliminary)	Roadway Network
Central Florida Expressway Authority 2040 Master Plan	Roadway Network
Florida's Turnpike Enterprise Work Program	Roadway Network
FDOT 2040 SIS Multimodal Cost Feasible and Unfunded Needs Plans	Roadway Network, TSM&O, Transit
Orange County Transit Plan	Transit
LYNX Transit Development Plans & LYNX FORWARD Route Optimization Study	Transit
Other LYNX & Municipal Transit Studies (US 192 Alternatives Analysis, SR 50, SR 436)	Transit
FDOT Routes of Significance	TSM&O
MetroPlan Orlando ITS Master Plan	TSM&O
MetroPlan Orlando Corridor Safety Studies	TSM&O
MetroPlan Orlando Blueprint 2040 LRTP	Transit
Osceola County TSM&O Strategic Plan	TSM&O, Transit
Safety Emphasis Corridors (MetroPlan Orlando PBSAP)	TSM&O, Ped/Bike

Neighboring M/TPO Needs and Priorities

As part of the continuing, cooperative and comprehensive planning process, MetroPlan Orlando coordinates with its neighboring M/TPO counterparts and FDOT on a regular basis. These processes are coordinated through multiple channels, including the Central Florida MPO Alliance and active participation in FDOT's LRTP Update / CFRPM Monthly Meetings throughout 2019 and 2020. In addition, by mutual agreement, MetroPlan Orlando and the Lake-Sumter MPO coordinate to ensure continuity across urban planning boundaries.

Florida M-CORES

The Multi-use Corridors of Regional Economic Significance (M-CORES) Program has been created by Section 338.2278, Florida Statutes (F.S.) to revitalize rural communities, encourage job creation and provide regional connectivity while leveraging technology, enhancing quality of life and public safety, and protecting the environment and natural resources. The Florida Department of Transportation (FDOT) is charged with assembling task forces to study three specific corridors:

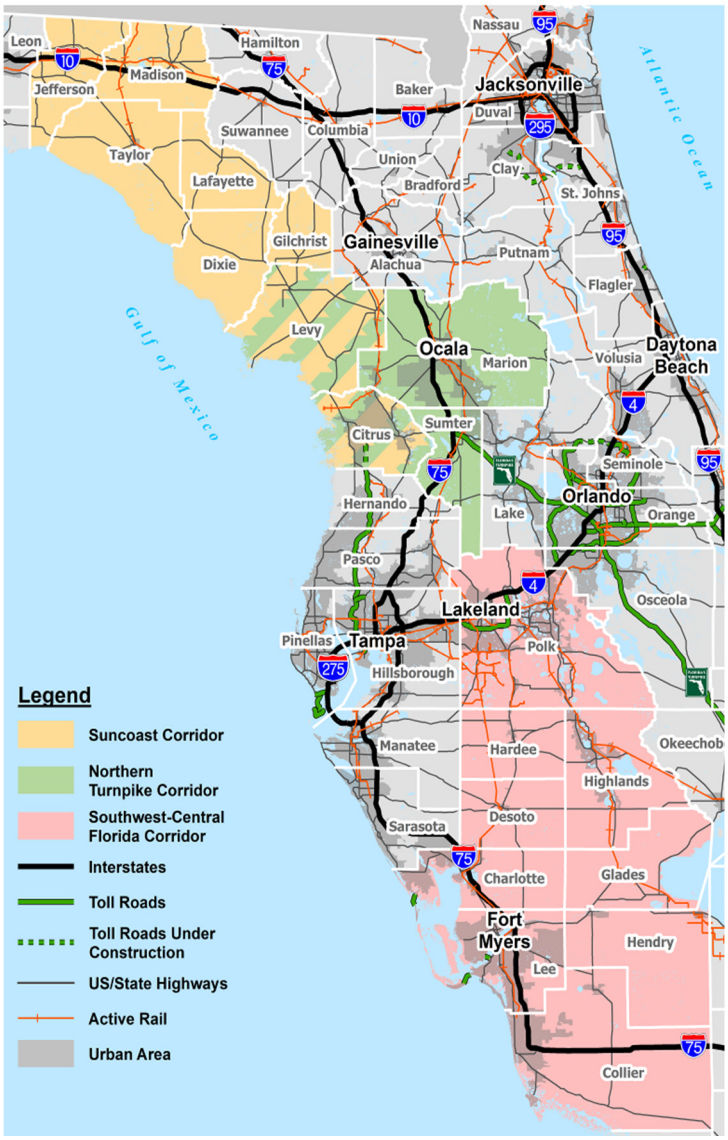
The Suncoast Corridor, extending from Citrus County to Jefferson County. Study area spans eight (8) counties, from Citrus County to Jefferson County.

The Northern Turnpike Corridor, extending from the northern terminus of Florida's Turnpike northwest to the Suncoast Parkway. Study area spans four (4) counties - Citrus, Sumter, Marion, and Levy.

The Southwest-Central Florida Corridor, extending from Collier County to Polk County. Study area spans nine (9) counties, from Collier County to Polk County as depicted in Figure 12.2.

The objective of the M-CORES Program is to advance the construction of regional corridors that will accommodate multiple modes of transportation and multiple types of infrastructure. The Program benefits include, but are not limited to, addressing issues such as hurricane evacuation; congestion mitigation; trade and logistics; broadband, water, and sewer connectivity; energy distribution; autonomous, connected, shared, and electric vehicle technology; other transportation modes, such as shared-use non-motorized trails, freight and passenger rail, and public transit; mobility as a service; availability of a trained workforce skilled in traditional and emerging technologies; protection or enhancement of wildlife corridors or environmentally sensitive areas; and protection or enhancement of primary springs protection zones and farmland preservation.

Figure 12.2 | Florida M-CORES Study Areas



Source: FDOT, 2020

Additional information is available at www.floridamcores.com

LRTP/MTP Considerations

None of these corridors intersect the MetroPlan Orlando area; however, planning for successful projects within this region may require coordinating with regional planning partners in the M-CORES study areas with regard to collecting and analyzing transportation data for projects that may be affected by the M-CORES Program.

MPOs and TPOs are responsible for actively involving all affected parties in an open, cooperative, and collaborative process when developing MTPs and TIPs. Regional coordination is required since M-CORES projects affect more than one MPO. Public participation required for the development of LRTP and TIP is neither affected nor replaced by the public engagement activities conducted as part of the M-CORES corridor development process.

MetroPlan Orlando will use travel demand forecasts generated by the Florida Turnpike Statewide Model for M-CORES projects. As such, MetroPlan Orlando will coordinate all M-CORES related analyses with FDOT for consistency purposes.

The proposed projects within the M-CORES corridors will be tolled facilities and will be part of the Florida's Turnpike Enterprise system and the Strategic Intermodal System (SIS). The projects will be included in the LRTP and TIP/STIP in accordance with guidance provided in the FDOT MPO Program Management Handbook. FDOT is working with each corridor Task Force to develop purpose and need, guiding principles, and potential paths/courses. Each Task Force will submit its evaluation report to the Governor, the President of the Senate, and the Speaker of the House of Representatives by November 15, 2020. As the M-CORES Program progresses to Project Development and Environment (PD&E), design and construction phases, FDOT will identify projects, prepare cost estimates, and coordinate with affected MPOs/TPOs to add identified projects into the LRTP and TIP. Subject to the economic and environmental feasibility statement requirements of Section 338.223, F.S., projects may be funded through Turnpike revenue bonds or right-of-way and bridge construction bonds or financing by the Florida Department of Transportation Financing Corporation; by advances from the State Transportation Trust Fund; with funds obtained through the creation of public-private partnerships; or any combination thereof. FDOT also may accept donations of land for use as transportation rights-of-way or to secure or use transportation rights-of-way for such projects in accordance with Section 337.25, F.S. To the maximum extent feasible, construction of the M-CORES projects will begin no later than December 31, 2022, and the corridors will be open to traffic no later than December 31, 2030.

East Central Florida Corridors Task Force

The Florida Department of Transportation reinitiated its "New Corridors Program" in 2013 to take the lead on conducting visionary, long-term planning activities to meet the state's future needs for moving both people and goods. This was to be done by transforming existing highways into multi-modal corridors and developing new multi-modal corridors where they were needed. Governor Rick Scott issued Executive Order 13-319 establishing the East Central Florida Corridor Task Force. The Task Force was charged with developing recommendations for future transportation corridors to improve connectivity between established and emerging economic centers in portions of Brevard, Orange and Osceola Counties.

Osceola / Brevard County Connectors Study

In March 2020, CFX began a Concept, Feasibility, and Mobility (CF&M) Study of the Osceola/Brevard County Connectors. The study will develop and evaluate transportation alternatives from Osceola County to Brevard County with the goal of connecting to Interstate 95 (I-95). Two corridors, as recommended by the East Central Florida Corridor Task Force, are being analyzed. The Task Force's Corridor D would connect northeast Osceola County to northern Brevard County, while Corridor F would connect northeast Osceola County to central/southern Brevard County. The study will determine if yet-to-be-identified alternatives are feasible from an engineering and environmental standpoint.

The study area is bound by the planned Osceola Parkway Extension expressway to the west and Interstate 95 (I-95) to the east, a distance of approximately 30 miles. The northern study area boundary, starting on the west, extends along the Osceola and Orange County line, then enters Orange County to intersect with SR 520, west of Nova Road. The southern boundary, starting on the west, runs approximately 2.5 miles south of existing Nova Road eastward to Deer Park Road for approximately 15 miles before it turns south to US 192.

Public involvement and interagency coordination will be an integral part of the assessment process, and opportunities for public participation will be provided. CFX anticipates holding public meetings in Osceola and Brevard counties as part of this study. For more information, including a detailed study area map, visit: https://www.cfxway.com/agency-information/plans-studies/project-studies/osceola-brevard-county-connector/

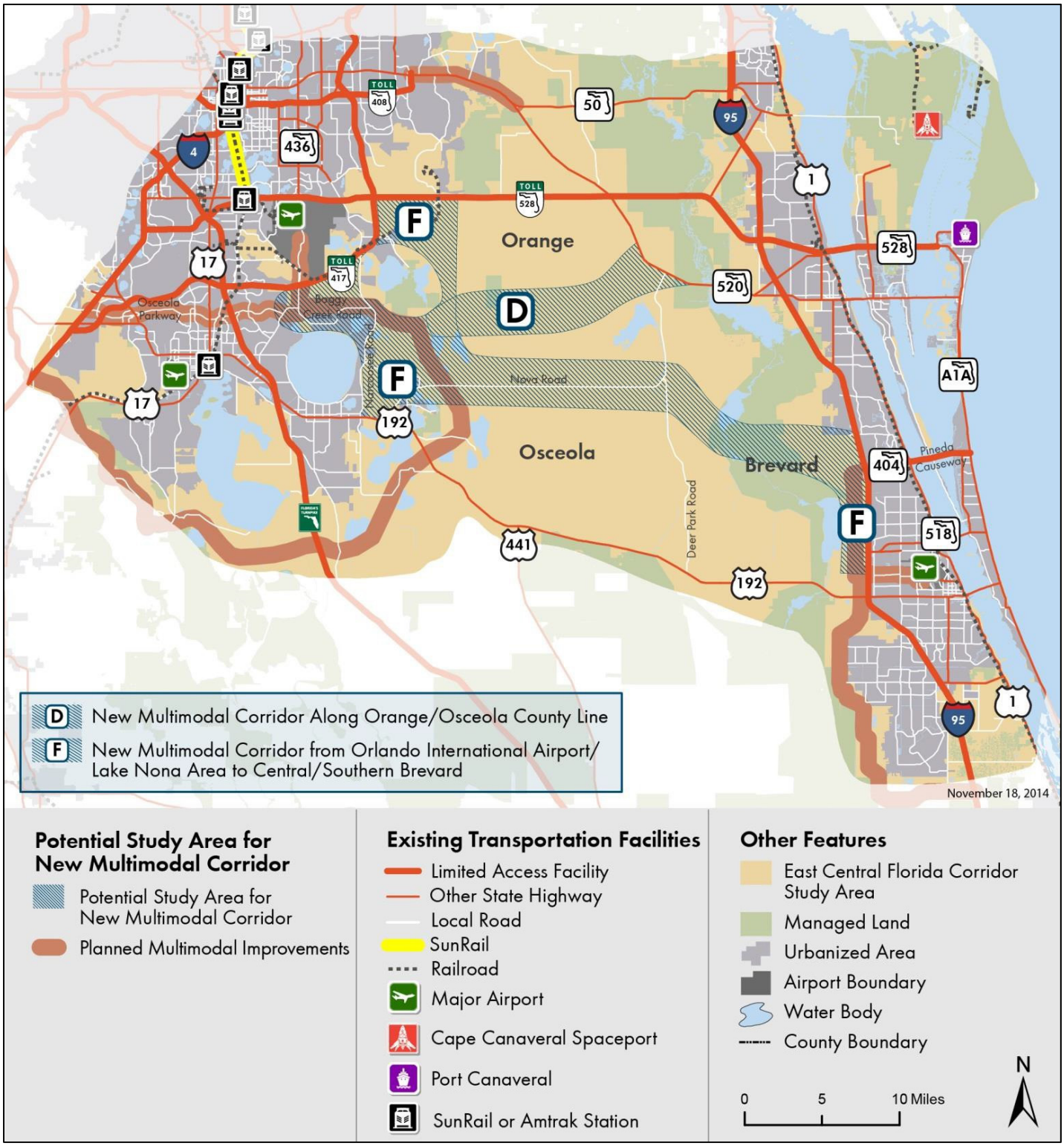
LRTP/MTP Considerations

The 2045 MTP incorporates, in concept, the recommendations of the East Central Florida Corridor Task Force. The following items are of particular importance:

- The need to improve existing corridors in the study area: SR 528, SR 50, SR 520, and US 192;
- Improvements to existing corridors and the development of new corridors shall be multi-modal; and
- Four new corridors: two north/south and two east/west are identified for further study and evaluation. These are shown on Figures 12.3 and 12.4, respectively.

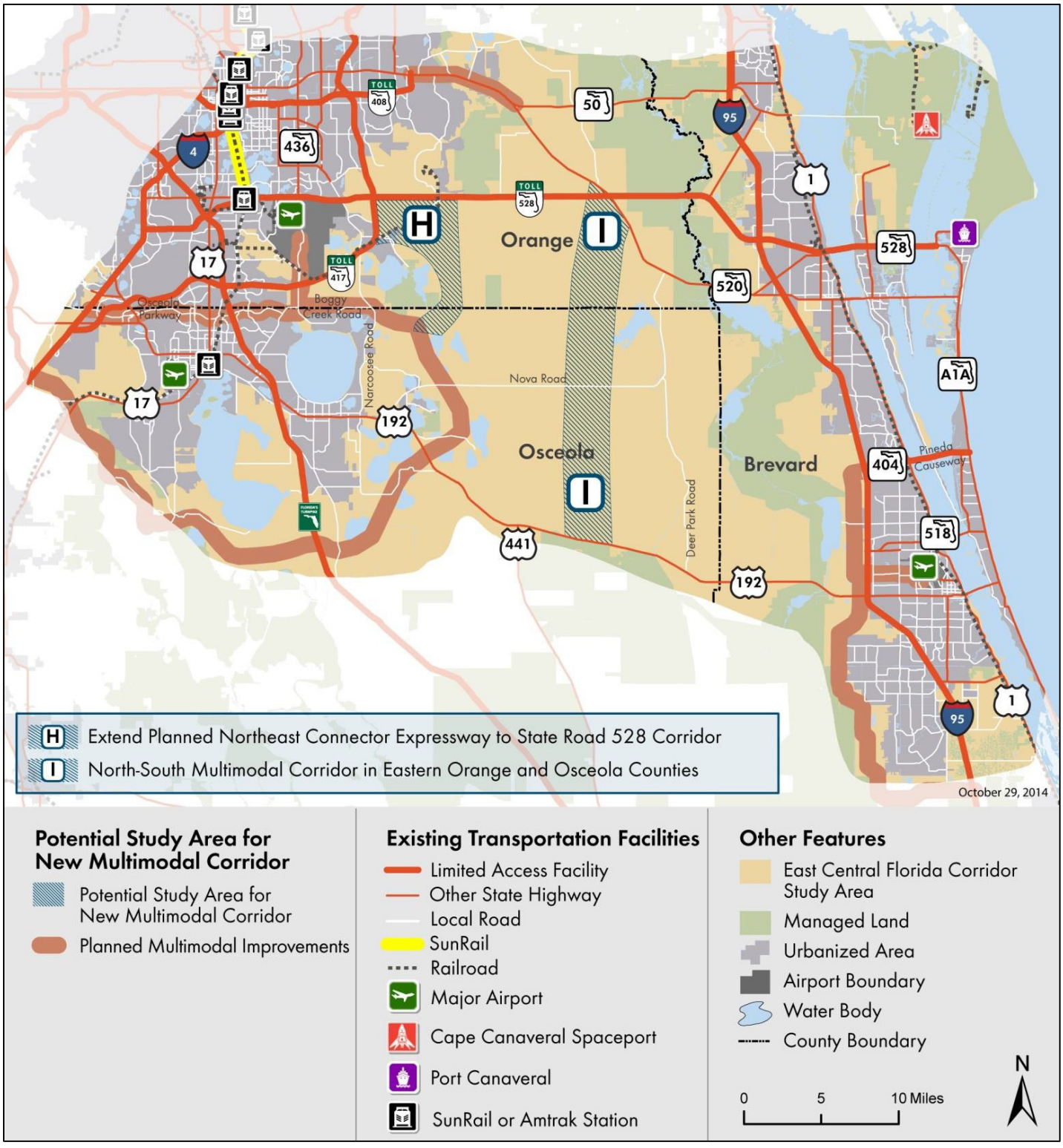
Information on the recommended transportation improvements needed in the East Central Florida Corridor have not been developed in sufficient detail at this point to incorporate in the cost-feasible element of the 2045 MTP. Furthermore, federal and state laws require that adopted MPO long range plans be cost-feasible and funding sources for these projects have not been identified. Therefore, it is recommended that these conceptual projects only be incorporated in the multimodal needs plan at this time.

Figure 12.3 | Recommended Study Areas for New East-West Transportation Corridors



Source: FDOT, 2014

Figure 12.4 | Recommended Study Areas for New North-South Transportation Corridors



Source: FDOT, 2014

Four Corners – One Vision Initiative

The Four Corners takes its name from the point on the map where Lake, Orange, Osceola and Polk counties meet. Because of the number of jurisdictions involved (four counties, three MPOs/TPOs, two FDOT districts, and a several transit providers), and the presence of multiple transportation issues that cross jurisdictional lines, transportation planning in the *Four Corners* presents especially complicated challenges.

The description of Four Corners transportation needs that follows is based on a compilation of information developed separately and shared by the Lake-Sumter MPO, Polk TPO and MetroPlan Orlando as a starting point for a longer-term effort to coordinate transportation planning. This effort is supported by the Four Corners One Vision Initiative.[1]

Participants in the Transportation Subgroup of the Four Corners Initiative are working to develop a joint understanding of transportation needs in the Four Corners at the MPO/TPO level and at the county level, and to develop coordinated and cooperative approaches to future planning for the area. Beginning in 2021, discussions of the Transportation Subgroup will explore:

- Joint discussion of county level and MPO/TPO level needs in the Four Corners area by the counties and MPO/TPOs
- Joint identification of common county-level and regional priorities in the Four Corners by the counties and MPO/TPOs, based on each jurisdiction's existing priorities
- Possible joint study of Four Corners Transportation needs
- Where appropriate, coordination of capital, Transportation Systems Management and Operations (TSMO) and transit projects across county, MPO/TPO and FDOT district lines

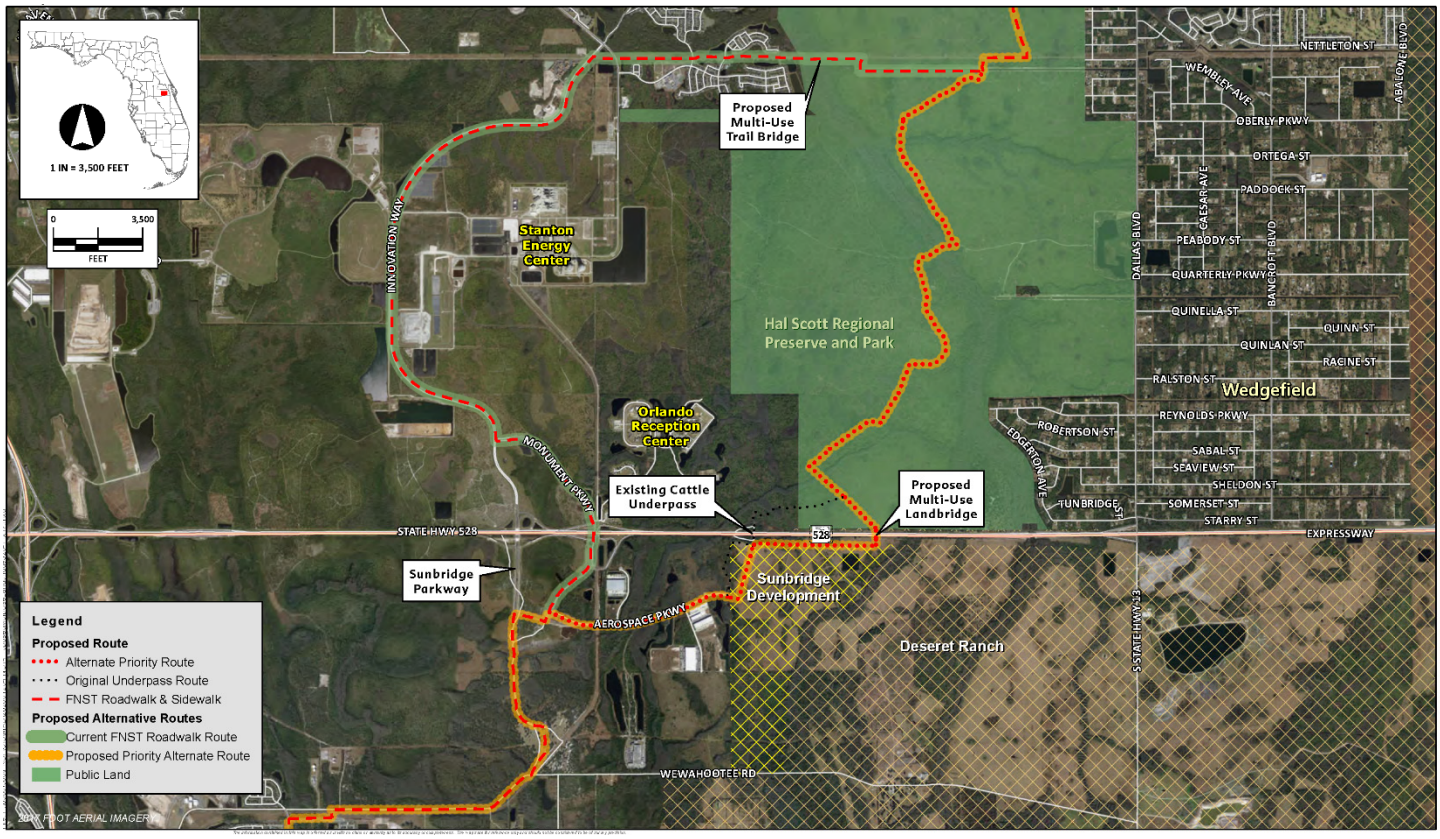
Over time, this approach will result in more coordinated and effective transportation planning, and a transportation network that better meets the needs of the Four Corners area.

[1] Four Corners One Vision an initiative of the Four Corners Area Council. The initiative is structured as a public private partnership. A Steering Committee composed of one public sector representative and one private sector representative from each of the four counties directs the effort, and the initiative is jointly and equally funded by the Council and the four counties. Four Corners One Vision is focused on planning for the future, and on catalyzing coordinated private sector action and government services now to promote the ability of the Four Corners to function smoothly as a unique, district place.

Florida National Scenic Trail

In an effort to close the gaps of the Florida National Scenic Trail, the United States Forestry Service and the Florida Greenways and Trails Foundation propose the construction of either a multi-use land bridge or pedestrian bridge crossing over SR 528 located between Farm Access #1 and the Econolochatchee River (see Florida National Scenic Trail Proposed Multi-Use Land Bridge exhibit in Figure 12.5 below). This crossing would connect the proposed Sunbridge Development on the south to the Hal Scott Regional Preserve and Park to the north. The 2045 MTP includes this scenic trail connection as a multimodal need. At this time, the project is not eligible for the federal funds identified in this Plan although its identification as a regional need qualifies and supports the proposed land/trail bridge over SR 528 for federal and/or state discretionary grants.

Figure 12.5 | Florida National Scenic Trail – Proposed Multi-Use Landbridge



Source: United States Forestry Service, January 2020

Evaluation Criteria

Table 12.4 outlines the needs evaluation criteria considered per Goal Area. As shown, and through coordination with stakeholders, each goal was equally weighted for the assessment and prioritization of needs. A full description of each of the evaluation criteria, including scoring logic and scoring thresholds can be found in Technical Series #6.

Table 12.4 | Needs Evaluation Criteria by Goal Area

Goal Area	Evaluation Criteria (Performance Indicator)	Analysis Period	Data Source	Scenario Impact (Y/N)	Goal Weight	Weighted Score*
Safety & Security	Crash Rate	Existing	Signal Four Analytics (2016-18)	N	20%	0.25
	Fatal & Serious Injury Crash Rates	Existing		N		0.25
	Number of Pedestrian & Bicycle Crashes	Existing		N		0.25
	Evacuation Route Designation	Existing	Division of Emergency Management	N		0.25
Reliability & Performance	Travel Time Reliability (Auto)	Existing	StreetLight Data	N	20%	0.20
	Unreliability on Constrained Corridor	Existing	StreetLight Data	N		0.20
	Fiber Optic Presence	Existing	Maintaining Agencies	N		0.20
	Segment Actively Monitors/Managed	Existing		N		0.20
	Relative Change: Future Congested Speeds	Existing + Future	CFRPM V7	Y		0.20
Access & Connectivity	Transit System Headways	Existing	LYNX	N	20%	0.17
	Population: ½ Mile of Non-Transit Corridor	Existing + Future	CFRPM V7, LYNX	Y		0.17
	Jobs: ½ Mile of Non-Transit Corridor	Existing + Future		Y		0.17
	Food & Healthcare Locations: ½ Mile of Corridor	Existing	LOTIS	N		0.17
	Cultural & Recreational Locations: ½ of Corridor	Existing		N		0.17
	Centrality Analysis Score (Critical Sidewalk Need)	Existing		N		0.17
Health & Environment	Bicycle Level of Traffic Stress	Existing	LOTIS	N	20%	0.17
	Residential Density: ¼ Mile of Multimodal Facility	Existing + Future	CFRPM V7, LYNX	Y		0.17
	Non-Residential Density: ¼ Mile of Multimodal Facility	Existing + Future		Y		0.17
	Public Health Indicator Rates	Existing	Healthy Mobility Tool	N		0.17
	Intensity & Proximity: Environmental Justice Populations	Existing	American Community Survey	N		0.17
	Relative Change: Vehicle Miles Traveled	Existing + Future	CFRPM V7	Y		0.17
Investment & Economy	Percentage of Commercial Vehicle Traffic (% Truck)	Existing	LOTIS	N	20%	0.14
	Statewide Truck Bottlenecks	Existing	National Performance Management Research Data Set (NPMRDS)	N		0.14
	Intensity & Proximity: Freight Intensive Land Uses	Existing + Future	CFRPM V7	Y		0.14
	Relative Change: Vehicle Hours Traveled	Existing + Future		Y		0.14
	Cost Burdened Households: ¼ Mile of Corridor	Existing	American Community Survey	N		0.14
	Percentage of Visitor Traffic	Existing	Central Florida Visitor Study - 2018	N		0.14
	Cost of Congestion	Existing + Future	CFRPM V7, U.S. Census	Y		0.14

* The weighted score was applied to normalize performance indicators across goals. This process restricts goal areas with more performance indicators to score higher than goal areas with fewer performance indicators.

Long Lists of Multimodal Needs

Based on the existing plans review and data analysis, a long list of needs was developed for the four (4) major need categories. A description, example, and selection criteria are provided for each set of needs in the section below.

Roadway Network Needs

The roadway network needs include traditional capacity improvements, largely defined by existing local priorities/plans, complete street needs, and freight needs. The constrained roadway network provided a key indicator to differentiate between a capacity or complete street need. Capacity needs were identified on congested, unconstrained roadway segments. While other roadways needs were identified as complete streets for two-lane constrained roadways or complete streets plus operational improvements for multi-lane roadways. Additional details regarding the Freight and Goods Movement within the region can be found in Technical Series #7.

Table 12.5 | Roadway Network Needs Derivation

	Widening / New Road	Complete Streets	Freight & Goods
Description	Roadway capacity, either by constructing new lanes on an existing section or by constructing a new facility	Non-capacity multimodal context-sensitive projects that use a combination of bicycle & pedestrian, transit and intersection improvements to improve safety and efficiency on constrained roadways without adding lanes	Projects intended to improve freight mobility, safety, and efficiency or to provide for additional freight parking
Examples	Add lanes, construct new roadways	Sidewalks, bike lanes, special use lanes, comfortable and accessible public transportation stops, frequent and safe crossing opportunities, median islands, accessible pedestrian signals, curb extensions, narrower travel lanes, roundabouts, and more	Add, improve, and optimize freight parking facilities and manage reliability and safety; capacity, intersection/ interchange and ramp geometry improvements
Criteria	Top 100 needs based on cumulative score, which have the potential to widen beyond the existing section	Constrained corridors which scored highest in the access and connectivity, health & environment, or investment and economy goal areas	Corridors which were identified as a Statewide Top 25 freight bottleneck, corridors which serve freight activity centers, and regional truck parking needs along I-4

Regional TSM&O Needs

A list of Transportation Systems Management & Operations (TSMO) needs are also included in the 2045 MTP. These are relatively low-cost projects that improve reliability and efficiency on existing roadways without adding capacity and use such methods as adding turn lanes at intersections, computerized traffic signal systems, dynamic message signs, etc. The TSM&O Needs derivation focused on three improvement categories: operational, safety, and technology.

Table 12.6 | Regional TSM&O Needs Derivation

	Operational	Safety	Technology / ITS
Description	Implementation of strategies designed to improve operational performance without adding capacity	TSM&O strategies designed specifically to improve safety along corridors and at intersections	Intelligent Transportation Systems (ITS) and technologies aimed to improve facility performance and increase network connectivity
Examples	Intersection improvements, signal retiming, lane geometry reconfigurations, alternative intersection treatments	Access management, reduced conflict points, phasing adjustments, alternative intersection treatments, safety countermeasures	Fiber infrastructure, active management fiber in place; those with coordinated or interconnected signals; those with CCTVs, Bluetooth devices, Dynamic Message Signs, or Microwave Vehicle Detection System in place, adaptive traffic signals
Criteria	Corridors which are constrained and score the highest in the reliability and performance goal criteria	Corridors which score the highest in the Safety and Security goal criteria	Corridors which have been identified as a need and are not currently actively managed

Transit System Needs

The regional transit system needs includes operations infrastructure, fixed route bus needs, commuter rail (SunRail) needs, and new routes and services. The sources of these needs include the FDOT SIS Multi-Modal Unfunded Needs Plan, LYNX Transit Development Plans, LYNX FORWARD Route Optimization Study, the Orange County Transportation Initiative including the Orange County Transit Plan, and MetroPlan Orlando's 2040 Plan and Prioritized Project List.

Table 12.7 | Transit System Needs Derivation

	Operations Infrastructure	New/Enhanced Service	Premium Transit Service	Commuter Rail
Description	Infrastructure and facility improvement or upgrade projects needed to support existing and accommodate expanded transit service	Improvements to existing transit service levels, such as expanded hours or increased frequency	Premium transit modes provide higher comfort, capacity, speed, and frequency than typical local bus operations	Heavy rail transit typically designed to connect outlying suburban or residential areas with a Central Business District (CBD) or employment center
Examples	New bus transfer facilities, railroad track upgrades, park and ride expansions	Expanded hours, increased frequency, or introduction to an area previously not served by fixed route and on-demand modes of service	Light rail, bus rapid transit (BRT), and streetcars	New commuter rail lines. Commuter rail is considered premium service, but has been categorized separately in the MTP
Criteria	N/A. Projects identified in existing plans and studies	Corridors that serve large areas of population or employment with no existing service	N/A. Projects identified in existing plans and studies	N/A. Projects identified in existing plans and studies

Pedestrian & Bicycle Needs

The Pedestrian and Bicycle Needs include critical sidewalk needs, crosswalk needs, bicycle connection opportunities, trails/shared use paths, and safety emphasis corridors. For sidewalks, a critical gap assessment was conducted to identify needs which would provide the greatest benefit to the overall network. The bicycle infrastructure needs were established through an evaluation of bicycle level of traffic stress, which identifies the level of comfort for a cyclist based on the characteristics of the adjacent roadway and surrounding land use. In addition to these quantitative measures, trail / multi-use paths and safety emphasis corridors were included, consistent with existing plans. The pedestrian & bicycle needs assessment is provided in greater detail in Technical Series #9.

Table 12.8 | Pedestrian & Bicycle Needs Derivation

	Critical Sidewalk Needs	Crosswalk Opportunities	Bicycle Connection Opportunities
Description	Construction of sidewalks to fill the most "critical" gaps	Construction of pedestrian crossing infrastructure including mid-block crossings and safety enhancements	Construction of bicycle lanes with mixed traffic or on separated facilities
Examples	Sidewalks, ADA improvements, operations & maintenance, safety improvements	Crosswalks, safety improvements	Buffered bike lanes, separated facilities, trail/shared use paths improvements
Criteria	Based on critical need methodology which prioritizes sidewalk gaps based on the overall connectivity of the street network and factors such as functional classification, proximity to schools, transit, and parks	Segments that are 1,200' or more away from an existing signalized crossing AND have at least one pedestrian/bicycle crossing related crash recorded in the past 5 years	Based on Level of Traffic Stress (LTS) methodology and its application for identifying gaps in the bicycle network that would leverage existing low stress streets

Multimodal Needs and Funding Eligibility

The last step in developing the multimodal needs list was to regroup the overall long list of needs from the four (4) major categories, into a framework which is consistent with the funding categories of the MPO. Understanding that the development of needs in this MTP was based on methodologies which differed from previous assessments, the long list of needs was thoroughly vetted through agency review, prior to assigning the needs into the funding categories. A description of each needs and funding group is provided in the section below while the complete list of needs for each category can be found in the Cost Feasible Plan; Table 6 through Table 18.

Interstate Highway and Strategic Intermodal System (SIS) Needs

This group includes the needs identified on the Interstate and SIS Highway system. The needs are primarily capacity related, with an additional recognition of the freight needs along I-4.

Toll Network Needs

The toll funded needs were identified in cooperation with Florida's Turnpike Enterprise and the Central Florida Expressway Authority (CFX).

National / State Highway System Needs

This list includes capacity, complete streets, TSM&O, and bicycle & pedestrian projects for roadways on the state system. In preparing the National Highway and State Road project list for the 2045 Plan, MetroPlan Orlando developed lists of unfunded projects that have been prioritized for funding based on their potential to help achieve federal performance measure targets set for Safety, Travel Time Reliability (auto and freight), Bridge and Pavement Condition; and consistent with the remaining 2045 Plan Goals and Objectives.

Off-System State Highway System Capacity Needs

Similar to the assessment for on-system roadways, the off-system capacity needs were identified based on existing plans, and through the assessment within the data model. The off-system capacity needs reflect those roadways which have a need and are not constrained.

Transportation Systems Management and Operations Needs

The TSM&O category includes projects pertaining to safety, incident management, Transportation Demand Management, and other related activities, for off-system roadways (on-system roadways were included in the NHS Needs List above).

Complete Streets Needs

The Multimodal System Roadway and Complete Streets needs list includes projects off the state road system that are functionally classified. The needs in this list include non-capacity multimodal context-sensitive projects that use a combination of bicycle & pedestrian, transit and intersection improvements to improve safety and efficiency on constrained roadways without adding lanes.

Pedestrian and Bicycle Needs

The list of Pedestrian and Bicycle needs include: local and regional trail projects that can be used by cyclists and pedestrians for recreation and commuting, on-street bicycle lanes, critical sidewalk improvements (particularly for safety purposes around public schools and transit routes), and other projects that will improve overall bicycle and pedestrian mobility.

Regional Transit Needs

Regional Transit Needs were identified based on existing plans and vision projects which promote regional bus and rail connectivity on key corridors. The Regional Transit Needs list also focuses on identifying areas with the region which have the supporting land use for transit, with no existing service.

Locally Funded Needs (Orange + Osceola + Seminole Counties)

The Locally Funded Needs include various capacity, complete street, operational, safety, and ITS projects, which were identified through the Roadway Network and Regional TSM&O needs assessments and are candidates to be funded locally.

2045 MTP Multimodal Needs can be viewed online using MetroPlan Orlando's Data Viewer, an interactive map: **https://metroplanorlando.org/maps-tools/dataviewer**

Note: Detailed needs lists for each category can be found in the Cost Feasible Plan; Table 6 through Table 18.

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A REGIONAL TRANSPORTATION PARTNERSHIP

250 South Orange Avenue • Suite 200 • Orlando, Florida 32801

www.MetroPlanOrlando.org

407-481-5672