metroplan orlando
A REGIONAL TRANSPORTATION PARTNERSHIP

Funding Guidance

Transportation Systems Management & Operations (TSM&O) Master Plan

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1 Introduction

Transportation Systems Management and Operations (TSM&O) is a philosophy of operating and managing a transportation network with technology strategies and clear performance measures to optimize performance outcomes. While TSM&O has been increasingly integrated into the region's transportation planning process, there is still much opportunity to expand this integration. Due to increasing travel demands, limited resources, right-of-way constraints, and other factors, mobility and congestion issues cannot be fully addressed without actively implementing TSM&O solutions. The need for streamlined guidance and support to promote TSM&O projects has been widely recognized by transportation agencies and partners in the Central Florida region.

Consistent themes of the MetroPlan Orlando TSM&O Master Plan Steering Committee are to promote inclusion of TSM&O considerations in all project development cycle phases and to coordinate program resources to support TSM&O projects. Funding availability is a key factor in determining whether TSM&O recommendations can move forward to project deployment. This Funding Guidance summary is developed as a supporting resource for engineers and planners seeking to identify funding for all phases (planning, construction, operation, maintenance) of TSM&O projects.

This Funding Guidance is divided into two sections:

- Funding and Programming Protocol
- Funding Eligibility

The funding and programming protocol outlined here draws from FDOT Work Program (WP) guidance, Regional ITS Architecture, current statewide and district-level practices. This guidance also considers any existing maintenance agreements and the established guidelines for local support. Further information includes specifics of federal, state, and local funding sources, detailing their eligibility criteria and the requirements applicable to TSM&O projects. Lastly, this document helps to identify any existing gaps and provides a succinct summary of the recommendations pertaining to the funding of TSM&O initiatives.

1.1 FUNDING AND PROGRAMMING PROTOCOL

These funding and programming protocols are established through reviews of the Regional ITS Architecture, FDOT Work Program guidance, current practices across the state, funding rules, and agreements among FDOT, MetroPlan Orlando, other Metropolitan/Transportation Planning Organizations (M/TPOs), and local agencies.
TSM&O projects are typically identified by transportation stakeholders through a coordinated review of the region's traffic, safety, and transit requirements. The District 5 Regional ITS Architecture (RITSA) outlines the stakeholders responsible for implementing TSM&O solutions, including FDOT District(s), MPOs, Florida's Turnpike Enterprise, transit authorities, local government engineering and traffic departments, and other relevant local agencies. FDOT District 5 has been leading the effort to identify and deploy ITS/TSM&O projects in the East Central Florida Region.

FDOT's statewide Ten-Year ITS Cost Feasible Plan (CFP) is the main guidance for ITS projects on the five major limited-access corridors in the Florida Intrastate Highway System (FIHS) and Florida's Turnpike. ITS/TSM&O projects in the ITS CFP are identified by FDOT's District Offices in cooperation with Florida's Turnpike Enterprise. In addition to the ITS CFP, the Florida's Strategic Intermodal System Plan (SIS) also recommends ITS/TSM&O strategies as part of projects with statewide and interregional significance.[1]

[1] FDOT Ten-Year Cost Feasible Plan: https://www.fdot.gov/traffic/its/projects-deploy/ten-year-cfp.shtm

FDOT District 5 and the agencies within the MetroPlan Orlando planning area have launched numerous arterial management projects. TSM&O projects on arterials are proposed by FDOT District 5, local agencies, or MetroPlan Orlando, and each of the agencies has varying roles and responsibilities with Operations and Maintenance (O&M). The roles for O&M depend on a variety of factors including system type, project location, existing agreements, and end-user benefits.

Once a TSM&O project is identified, it requires evaluation in relation to other transportation projects within the region. MetroPlan Orlando and FDOT District 5 collaborate to prioritize these projects, considering regional transportation needs and available resources. The availability of funding is a crucial determinant for advancing a TSM&O project to programming in the Transportation Improvement Program (TIP) or FDOT's Work Program (WP).

Depending on the project, funding can come from federal, state, or local sources. As funds are made available, FDOT and MetroPlan Orlando will coordinate and decide how funds will be allocated. MetroPlan Orlando will make recommendations regarding surface transportation, congestion mitigation, air quality and federal transit projects. FDOT and MetroPlan Orlando will work together to fund major transportation projects with federal and state funds. These agencies will also coordinate with local agencies for support from local funds.

ITS/TSM&O projects on the major limited-access corridors are usually funded by the statewide ITS Set Aside Funds (DITS). ITS/TSM&O projects on SIS corridors may also be eligible for DITS if they meet certain requirements. Through ITS CFP, SIS Plan, and in coordination with regional partners, FDOT has built a mature active management system on interstate highways and SIS corridors, along with various TSM&O components, such as network surveillance and adaptive signal control, data collection and archiving, ramp signals, and transit automatic vehicle location systems.

It is also important to secure operation and maintenance funds for a TSM&O project at an early stage. A proportion of DITS funding is set aside each year for operation and maintenance of eligible TSM&O projects by an allocation formula. However, the set-aside DITS fund is often insufficient. Other state funds and toll revenues are frequently used to supplement DITS to fund TSM&O operations and maintenance.

Compared with those on interstates or SIS corridors, TSM&O projects on arterials generally rely upon inter-agency collaboration. TSM&O projects and associated communications networks may be proposed, planned for, designed, built, operated, and maintained by FDOT or local agencies. A common practice is for FDOT to help in the planning, design, and deployment/building phases of arterial TSM&O projects, while local agencies are responsible for the operations and maintenance. Signal operation and maintenance agreements are often used to outline responsibilities among FDOT and local agencies.

District Dedicated Revenue (DDR) and District Inhouse Support (DIH) are currently the main state funding sources for operations and maintenance of projects on arterials. However, state funds are constrained and the competition for them is very high. There are opportunities to use federal funding (Surface Transportation Block Grant Program (STBG), National Highway Performance Program (NHPP), and Congestion Management and Air Quality Program (CMAQ)) for TSM&O operations, which have not been fully exercised. As such, close coordination between FDOT and MetroPlan Orlando is important for allocating federal funds for arterial TSM&O projects, especially for operations.

1.2 FUNDS AND ELIGIBILITY

This section summarizes federal, state, and local funding options as well as their eligibilities and requirements for applying to various phases of TSM&O projects. Due to competing demands, the amount of an eligible fund available for TSM&O may be small. Therefore, a combination of several funds is usually needed to provide sufficient support

for a TSM&O project's four categories/phases: planning, construction, operation, and maintenance.[2] **Table 1-1** provides an overview of notable Federal funding sources for TSM&O projects.

Table 1-1: Federal Funds for TSM&O Projects

Federal Funding Program	Eligible Facilities	Planning & Design	Capital & Construction	Operations	Maintenance
Surface Transportation Block Grant Program (STBG)	May not be on local roads or rural minor collectors	✓	✓	✓	×
National Highway Performance Program (NHPP)	National Highway System	✓	✓	✓	×
Highway Safety Improvement Program (HSIP)	All Public Roads	✓	✓	×	×

1.3 SURFACE TRANSPORTATION BLOCK GRANT PROGRAM (STBG)

The Surface Transportation Block Grant Program (STBG), previously known as Surface Transportation Program (STP), is a flexible Federal-aid highway program to provide funding for addressing State and local transportation needs. In general, STBG projects may not be used on a road functionally classified as a local road or a rural minor collector unless the road is on a Federal-aid highway system, with a few exceptions. Both capital and operating cost of TSM&O projects may be eligible for STBG. Examples of eligible activities as described in the FAST Act § 1109(a), 23 U.S.C. 133(c) include:

- "Infrastructure-based capital improvements for intelligent transportation systems, including the installation of vehicle-to-infrastructure communication equipment.
- Operational improvements[3] and capital and operating costs[4] for traffic monitoring, management, and control facilities and programs.
- Projects and strategies designed to support congestion pricing, including electronic toll collection and travel demand management strategies and programs."

1.4 NATIONAL HIGHWAY PERFORMANCE PROGRAM (NHPP)

The FAST Act National Highway Performance Program (NHPP) continues its general terms under the FAST Act. NHPP provides support for the construction of new facilities on the National Highway System (NHS) as well as projects to ensure investments meet their performance targets that were established in a State's asset management plan for the NHS. Projects generally need to be located on the National Highway System to be eligible for NHPP, with a few exceptions, as described in FAST Act § 1106; 23 U.S.C. 119.

Both capital and operating cost of TSM&O projects may be eligible for NHPP. Examples of eligible activities include:

[2] More information about programming can be found in FDOT Work Program Instructions, found here: http://www.fdot.gov/workprogram/Development/WP_instructions.shtm.

[3] The term "operational improvement"—(A) means (i) a capital improvement for installation of traffic surveillance and control equipment, computerized signal systems, motorist information systems, integrated traffic control systems, incident management programs, and transportation demand management facilities, strategies, and programs, and (ii) such other capital improvements to public roads as the Secretary may designate, by regulation; and(B) does not include resurfacing, restoring, or rehabilitating improvements, construction of additional lanes, interchanges, and grade separations, and construction of a new facility on a new location (23 U.S.C. 101(a)(18)).

[4] The term "operating costs" includes labor costs, administrative costs, costs of utilities and rent, and other costs associated with the continuous operation of traffic control, such as integrated traffic control systems, incident management programs, and traffic control centers (23 U.S.C. 101(a)(18)).

- "Infrastructure-based intelligent transportation systems capital improvements, including the installation of vehicle-to-infrastructure communication equipment.
- Capital and operating costs for traffic and traveler information monitoring, management, and control facilities and programs.
- Operational improvements on National Highway System[5] (NHS) or a Federal-aid highway[6] not on the NHS, and construction of a transit project eligible for assistance under chapter 53 of Title 49, U.S.C., if:

(i) The highway project or transit project is in the same corridor as, and in proximity to, a fully access-controlled highway on the NHS;

(ii) The construction or improvements will reduce delays or produce travel time savings on the fully access-controlled highway described in clause (i) and improve regional traffic flow; and

(iii) The construction or improvements are more cost-effective, as determined by benefit-cost analysis, than an improvement to the fully access-controlled highway on the NHS." [FAST Act § 1106; 23 U.S.C. 119]

1.5 HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

The Highway Safety Improvement Program (HSIP) continues to provide funding for projects that aim at reducing traffic fatalities and serious injuries on all public roads[7], including non-State-owned public roads and roads on tribal lands. The HSIP requires that "*HSIP funds be used for safety projects that are consistent with the State's strategic highway safety plan (SHSP) and that correct or improve a hazardous road location or feature or address a highway safety problem.*" [FAST Act § 1113; 23 U.S.C. 148]

In contrast to the non-exhaustive eligibility list under MAP-21, the FAST Act limits HSIP eligibility to only those listed in statute—most of which are infrastructure-safety related. Operation and maintenance costs of TSM&O projects are not eligible for NSIP. Examples of eligible activities include:

- "Installation of a priority control system for emergency vehicles at signalized intersections.
- Installation of vehicle-to-infrastructure communication equipment.
- Installation of a traffic control or other warning device at a location with high crash potential.
- Pedestrian hybrid beacons.
- The FAST Act continues the prohibition on the use of HSIP funds for the purchase, operation, or maintenance of an automated traffic enforcement system (except in a school zone). [FAST Act § 1401]
- Construction and operational improvements on high-risk rural roads." [FAST Act § 1113; 23 U.S.C. 148]

[5] National Highway System, per FAST ACT all principal arterials.

[6] Federal-Aid Highway: the Federal-Aid Highway Program supports State highway systems by providing financial assistance for the construction, maintenance and operations of the Nation's 3.9 million-mile highway network, including the Interstate Highway System, primary highways and secondary local roads. (https://www.fhwa.dot.gov/federal-aidessentials/federalaid.cfm)

[7] Public Road: Any road under the jurisdiction of and maintained by a public authority (federal, state, county, town or township, local government, or instrumentality thereof) and open to public travel. (FHWA)

2 State Funds

Table 2-1: State Funds for TSM&O Projects

State Funding Program	Eligible Facilities	Planning and Design	Capital / Construction	Operations	Maintenance
Statewide ITS Set Aside Funds (DITS)	State Highway System (in ITS plan or on SIS)	✓	✓	✓	✓
District Dedicated Revenue (DDR)	State Highway System	✓	✓	✓	✓
State Primary Fund for Highways and Public Transit (DS)	State Highway System	✓	✓	✓	×
Unrestricted State Primary (D)	State Highway System	✓	×	✓	✓
Statewide Primary Matching Funds for Inter/Intrastate Highways (DI)	State Highway System	✓	✓	✓	×
Advance Construction Funds (ACNP, ACCM, ACSA, ACSU)	State Highway System	✓	✓	✓	×

2.1 STATEWIDE ITS SET ASIDE FUNDS (DITS)

In 2002, FDOT developed the Ten-Year ITS Cost Feasible Plan (CFP) to help deployment of ITS projects on the five major limited-access corridors in the Florida Intrastate Highway System (FIHS), and Florida's Turnpike. The plan requires FDOT to set aside at least $25 million of the statewide strategic intermodal system (SIS) funds annually as the statewide ITS Set Aside Funds (DITS) for capital, operations, and periodic maintenance cost of ITS projects along these major corridors like I-4 and Florida's Turnpike. Although the CFP focuses on deploying ITS on these corridors, ITS/TSM&O projects on other freeways, highways or arterials may be eligible for the statewide ITS set aside funds if:

(1) they are on a SIS corridor, and

(2) they are part of the Quick Fix Improvement Program or they are considered to improve capacity.

The Work Program Instructions list the following examples of eligible projects:

- Capital projects: constructing ITS infrastructure, installing ITS devices, acquisition of software, construction of traffic management centers (TMCs), regional transportation management centers (RTMCs), deployment of information systems to support advanced traveler information (ATIS) and innovative technology deployment (ITD) formerly known as commercial vehicle information systems and networks (CVISN), construction of communications infrastructure, systems engineering, ITS architecture, construction inspection, testing and acceptance activities, and evaluations of ITS deployments.
- Operation contracts: contracts to operate TMCs and any contracts for service needed for incident management, providing traveler information services, or general services for ITS program management.
- Periodic maintenance: including major ITS upgrades or equipment replacement projects. However, routine maintenance activities, which include everyday occurrence of hardware replacement of field devices, TMC

equipment, communication equipment, or software maintenance, are not eligible for the DITS funds and should be funded with district maintenance funds.

2.2 DISTRICT DEDICATED REVENUE (DDR)

The district dedicated revenue, statutorily known as the "State Comprehensive Enhanced Transportation Systems Tax", is collected pursuant to Chapter 206.608 FS[8] and allocated to the district. It is required that the DDR funds be spent in the district, and to the maximum extent feasible, in the county where the fund was collected. The DDR funds may be used to support planning and design, capital or construction, operations, and maintenance cost of ITS projects on the state highway system.

2.3 STATE PRIMARY MATCHING FUND FOR HIGHWAYS AND PUBLIC TRANSIT (DS/DPTO)

Florida Statutes Section 206.46(3) requires a minimum of 15% of all state revenues deposited into the State Transportation Trust Fund be committed to Public Transportation programs and the remainder for any legitimate state transportation purpose. The DS fund may be used to support planning and design, capital or construction, and operations cost of ITS projects on the state highway system.

2.4 UNRESTRICTED STATE PRIMARY (D)

Unrestricted State Primary funds can be used to support projects on the state highway system. The D fund may be used to support planning and design, capital or construction, operations, and maintenance cost of ITS projects. ITS routine maintenance (M&O contract) projects may be funded by D fund.

2.5 STATEWIDE INTER/INTRASTATE HIGHWAYS (DI)

Statewide Inter/Intrastate Highways funds are usually applied to projects on the Inter/Intrastate highways for planning, construction, and operation.

2.6 ADVANCE CONSTRUCTION FUNDS (ACNP, ACCM, ACSA, ACSU)

The advance construction (AC) funds in Title 23, Section 115 allow states to start a project without sufficient Federal-aid obligation authority to cover the Federal share of project costs and to convert an advance-constructed project to a Federal-aid project and receive subsequent reimbursements when the sufficient obligation authority becomes available in the future. The AC funds enable a state to conserve obligation authority and maintain flexibility in its transportation funding program. The AC funds are eligible for planning and design, capital or construction, and operations cost of ITS projects.

[8] Florida Statutes, Chapter 206. 608. (http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&Search_String=&URL=0200-0299/0206/Sections/0206.608.html)

3 Local Funds

Table 3-1: Local Funds for TSM&O Projects

Funding Source	Eligible Facilities	Planning and Design	Capital / Construction	Operations	Maintenance
Fuel Tax	All Public Roads	✓	✓	✓	✓
Sales Tax/Surtax	All Public Roads	✓	✓	✓	✓
Signal Operation & Maintenance Agreement	All Public Roads	×	×	✓	✓
Impact Fee	All Public Roads	✓	✓	×	×
Mobility Fee	All Public Roads	✓	✓	✓	×
General Revenue	All Public Roads	✓	✓	✓	✓
Tax Increment Financing (TIF) / Community Redevelopment Agencies (CRA)	All Public Roads	✓	✓	✓	✓
Public Private Partnership	All Public Roads	✓	✓	✓	✓
Downtown Development Authority (DDA) / Special District	All Public Roads	✓	✓	✓	✓
Transportation Management Association (TMA)	All Public Roads	✓	✓	✓	✓
Parking and Other Fees	All Public Roads	✓	✓	✓	✓

3.1 FUEL TAX

Fuel taxes serve as significant revenue sources for local governments to finance transportation projects, originally aimed at enhancing transportation infrastructure. In Florida, two fuel taxes, namely the Ninth-Cent Fuel Tax and the Local Option Fuel Tax, are designated exclusively for transportation needs.

The Ninth-Cent Fuel Tax, authorized in 1972 by s. 336.021 of the Florida Statutes, initially required countywide voter approval. However, in 1993, legislative changes enabled its imposition by an extraordinary vote of the county's Board of Commissioners, facilitating its implementation irrespective of county size. Fifty-three out of Florida's 67 counties have adopted the Ninth-Cent Fuel Tax. Revenues generated can be allocated for various transportation

expenditures, including public transportation operations, roadway maintenance, drainage, street lighting, traffic engineering, bridge maintenance, and transportation capital projects.

Established in 1983, the Local Option Gas Tax (LOGT) permits counties to impose a tax ranging from one to six cents per gallon on motor fuel and diesel. A majority vote of county commissioners or a county-wide referendum is required for its implementation. Additionally, a second LOGT, authorized in 1993, enables counties to impose an additional one to five cents per gallon, allowing for a maximum tax of 11 cents per gallon on gasoline. This tax must be approved by an extraordinary vote of the county commission or a county-wide referendum. Like the Ninth-Cent Fuel Tax, proceeds from the LOGT must be shared with municipalities and can be utilized for transportation expenditures as outlined in Florida Statutes Section 336.025(7).

Currently, all 67 counties in Florida have implemented a Local Option Fuel Tax, with 26 counties imposing the maximum 11 cents per gallon.

3.2 DISCREATIONARY FUEL TAX

The Discretionary Sales Surtax, governed by s. 212.055(1) F.S., stands as another vital revenue source for local governments, particularly for transportation initiatives. This authority for local sales tax imposition has been shared with lower levels of government since 1976. Among the various types of local option taxes established, two have been prominently utilized for transportation purposes: the Charter County and Regional Transportation System (Sales) Surtax, and the Local Government Infrastructure Surtax.

The Charter County and Regional Transportation System (Sales) Surtax permits a levy of up to 1% of the taxable transaction to support fixed guideway rapid transit systems. Legislative revisions have periodically expanded its uses and eligibility criteria for counties. As of the latest modification in 2002, 31 counties are eligible to impose this tax. Notably, Duval and Miami-Dade Counties have enacted this tax at a rate of 0.5%.

On the other hand, the Local Government Infrastructure Surtax empowers each county's governing authority to levy a discretionary sales surtax of 0.5% or 1% to finance various public facilities, including transportation, sanitary sewer, solid waste, drainage, potable water, educational, parks, and recreational facilities. Other counties in Florida have implemented a one-penny sales tax increase in 2016, projected to generate $2.7 billion over a decade to enhance roadways, bridges, and other public infrastructure. These funds may also be eligible for future Transportation Systems Management & Operations (TSM&O) projects.

3.3 TRAFFIC SIGNAL MAINTENACE AND COMPENSATION AGREEMENT

Signal operation and maintenance agreements serve as crucial frameworks for delineating responsibilities between the Florida Department of Transportation (FDOT) and local agencies. The statewide signal maintenance agreement is commonly utilized by FDOT districts to reimburse local agencies for maintenance costs. However, in certain instances, the reimbursement provided may only partially cover the overall expenses.

In 2018, FDOT introduced a new contract with increased reimbursement rates for managing signals on state roads. Although these higher rates have been welcomed, some agencies have not yet signed the new maintenance agreement. Their hesitation stems from the realization that despite the enhanced rates, they still fall short of covering the full costs associated with maintaining urban signal systems.

Notably, the agreement currently only addresses maintenance of state road approaches at intersections. This limitation poses a challenge, particularly in cases where intersecting arterials also bear significant traffic volumes. Consequently, agencies are left grappling with the financial burden of maintaining these arterial signals without adequate reimbursement under the existing agreement.

3.4 IMPACT AND MOBILITY FEES

Florida has been at the forefront of growth management, continually evolving strategies to address transportation impacts stemming from new developments. This evolution has given rise to various funding mechanisms for transportation projects, including impact fees, transportation concurrency, and mobility fees.

Traditionally, impact fee programs primarily targeted roadway capacity enhancements, such as lane additions and road widening. In contrast, mobility fees or similar transportation mitigation programs offer a more comprehensive approach, extending their applicability to diverse project phases and types, including those with TSM&O potential.

As outlined in the Mobility Fee Guidebook (April 2016), seven counties and 17 cities in Florida have implemented mobility fee programs or adopted more flexible impact fee structures. These innovative programs empower local governments to finance not only roadway capacity and construction improvements but also transit-supportive projects like bus shelters, sidewalks, and bicycle amenities. Furthermore, some progressive programs even allocate mobility fees for both transit capital investments and operating expenses, reflecting a holistic approach to transportation planning and funding.

3.5 GENERAL REVENUE

Local governments heavily rely on general revenue to sustain transportation projects, drawing from a variety of sources including intergovernmental transfers, property taxes, sales taxes, and miscellaneous charges and incomes. Although intergovernmental transfers from state and federal entities constitute the largest portion of local governments' general revenue, property taxes stand out as the most frequently utilized and flexible funding source for local transportation initiatives (Urban-Brookings Tax Policy Center, 2014).

3.6 TAX INCREMENT FINANCING (TIF)/COMMUNITY REDEVELOPMENT AGENCIES (CRA)

Public investment in infrastructure, particularly transportation facilities, has the potential to boost adjacent land values and generate additional property tax revenues. Tax Increment Financing (TIF) emerges as a valuable mechanism for capturing this increased property tax revenue and directing it towards improvements in distressed, underdeveloped, or underutilized areas of a community where development may otherwise stagnate (Various, 2001).

In Florida, Chapter 163, Part III of the state law empowers county governments or local municipalities to establish Community Redevelopment Areas (CRAs) utilizing Tax Increment Financing. These CRAs designate a specific area or district for redevelopment activities, with a "frozen value" determined for properties within the area before redevelopment efforts commence. Tax revenues generated from properties based on these frozen values continue to support general government purposes. However, any incremental increase in property tax revenue resulting from enhanced property values, known as the "increment," is earmarked to fund redevelopment projects within the CRA. These projects encompass various endeavors such as transportation infrastructure updates, building renovations, congestion management, public transit services, and affordable housing initiatives.

Currently, there are 220 Community Redevelopment Areas established across the State of Florida. TIF/CRA mechanisms hold the potential to provide critical support for Transportation Systems Management & Operations (TSM&O) projects throughout their lifecycle, including planning, construction, operation, and maintenance.

3.7 PUBLIC-PRIVATE PARTNERSHIP

Public-private partnerships (P3s) represent collaborations between public agencies and private sector entities aimed at facilitating the delivery and financing of transportation projects by fostering increased private sector involvement (FHWA, 2017). These partnerships play a pivotal role in advancing Smart City initiatives, with many initiatives being supported by communications or technology companies.

For instance, Kansas City has joined forces with Cisco and a consortium of business partners to implement a Smart+Connected City framework. Through public-private partnerships, this initiative aims to establish an ecosystem for developing applications such as smart lighting, intelligent Wi-Fi networks, digital kiosks, a development data portal, and innovations in smart water management.

Similar examples include AT&T who had partnered with the Dallas Innovation Alliance (DIA) to launch the DIA Smart Cities Living Lab in the City of Dallas. This collaboration underscores the role of public-private partnerships in advancing Smart City initiatives by fostering innovation and leveraging technology to address urban challenges.

In the realm of Transportation Systems Management & Operations (TSMO), public-private partnerships are instrumental in paving the way for connected and automated vehicles in the future. TSMO relies on data and monitoring to identify locations for improvements, and future advancements may incorporate predictive capabilities to proactively mitigate congestion or prevent accidents.

The Florida Department of Transportation (FDOT) has also demonstrated success in developing numerous projects through public-private partnerships, underscoring the effectiveness of such collaborations in delivering innovative transportation solutions and enhancing mobility.

3.8 DOWNTOWN DEVELOPMENT BOARD (DDB)/SPECIAL DISTRICTS

Downtown Development Boards (DDBs) are independent taxing districts that support economic development, community redevelopment, marketing, coordinator and facilitation among private and governmental entities. The City of Orlando currently has a DDB who is responsible for the planning, implementation and administration of the city's core area redevelopment and development program. DDBs provide support for various projects, including public transit, traffic management, pedestrian and bicyclist safety, street furniture, landscaping, and lighting.

3.9 TRANSPORTATION MANAGEMENT ASSOCIATION (TMA)

Transportation Management Associations (TMAs) and Transportation Management Initiatives (TMIs) are non-profit organizations that provide transportation services in a particular area through employer sponsorships and local government support.

3.10 PARKING AND OTHER FEES

User fees, including parking fees, congestion fees, and vehicle miles traveled fees, may also provide good funding for TSM&O projects. If these user fees are considered, it will be important for TSM&O practitioners to be engaged in the policy discussions to ensure the use of revenue is available for capacity, operations, and maintenance activities.

4 Grants and Third-Party Funding

Local governments can enhance their ability to fund transportation projects by strategically leveraging federal grants and third-party funding opportunities. To begin, they should meticulously identify available funding sources, such as grants from agencies like the Federal Highway Administration (FHWA) or private foundations. Developing a comprehensive transportation plan that aligns with the priorities of these funding sources is crucial. This plan should be inclusive, engaging stakeholders like community members, businesses, and advocacy groups to garner support and refine project proposals.

When applying for federal grants, local governments must thoroughly understand the requirements and deadlines of each program, crafting competitive applications that clearly articulate project goals and benefits. Exploring public-private partnerships (PPPs) can also provide additional financing options and innovative solutions for infrastructure development. Additionally, seeking matching funds and collaborating with neighboring jurisdictions or regional planning organizations can further amplify resources and funding opportunities. Monitoring legislative developments and advocating for policies that support local transportation priorities is essential for staying abreast of changes in funding availability and eligibility criteria. Building a track record of successful project delivery and continuously evaluating and improving funding strategies and project delivery mechanisms will strengthen a local government's capacity to secure and leverage funding for future transportation initiatives.

Examples of specific programs that can be targeted to pursue funding for TSM&O projects can be found summarized below:

4.1 REBUILDING AMERICAN INFRASTRUCTURE WITH SUSTAINABILITY AND EQUITY (RAISE)

RAISE grants provide funding for surface transportation projects that emphasize sustainability, economic competitiveness, and equity. Eligible projects include road, bridge, transit, port, and rail infrastructure improvements, as well as projects that promote safety, environmental sustainability, and multimodal connectivity. Projects are evaluated based on criteria such as safety, economic competitiveness, environmental sustainability, quality of life, innovation, and partnerships. Funding levels vary from year to year, and grants are awarded through a competitive selection process.

4.2 INFRASTRUCTURE FOR REBUILDING AMERICA (INFRA)

INFRA grants support large-scale transportation infrastructure projects that address critical infrastructure needs and improve the efficiency, safety, and reliability of the transportation system. Eligible projects include highway and bridge improvements, freight rail enhancements, port infrastructure upgrades, and intermodal freight facilities. Projects are evaluated based on criteria such as economic vitality, safety, environmental sustainability, innovation, and project readiness. INFRA grants are awarded competitively, and funding levels vary depending on congressional appropriations.

4.3 REGIONAL INFRASTRUCTURE ACCELERATORS (RIA)

The Regional Infrastructure Accelerators program aims to support the planning and development of major infrastructure projects at the regional level. RIAs provide technical assistance and funding to help regions plan, finance, and implement transformative transportation infrastructure projects. The program focuses on projects that improve regional connectivity, enhance economic competitiveness, promote equity, and address climate change and resilience challenges. RIAs are part of the Biden administration's broader efforts to advance infrastructure investments and support regional collaboration.

4.4 RURAL OPPORTUNITIES TO USE TRANSPORTATION FOR ECONOMIC SUCCESS (ROUTES) INITIATIVE

The ROUTES Initiative provides funding and technical assistance to support transportation projects in rural communities. It aims to improve rural transportation infrastructure, enhance access to economic opportunities, and address challenges such as connectivity, safety, and freight movement. ROUTES grants may fund a variety of projects, including road and bridge improvements, transit services, broadband deployment, and workforce development initiatives. The initiative prioritizes projects that promote innovation, collaboration, and equitable outcomes for rural residents.

4.5 ADVANCED TRANSPORTATION AND CONGESTION MANAGEMENT TECHNOLOGIES DEPLOYMENT (ATCMTD)

The ATCMTD program provides funding for projects that deploy advanced transportation technologies to improve mobility, safety, and efficiency. Eligible projects may include the deployment of intelligent transportation systems (ITS), connected and automated vehicle (CAV) technologies, real-time traffic management systems, and innovative mobility solutions. The program prioritizes projects that address congestion, enhance transportation system reliability, promote environmental sustainability, and demonstrate innovative approaches to transportation management and operations. ATCMTD grants are awarded competitively, and funding levels vary depending on congressional appropriations.

4.6 AUTOMATED DRIVING SYSTEM (ADS) DEMONSTRATION GRANTS

ADS Demonstration Grants support pilot projects and demonstrations of automated driving systems (ADS) technologies. These grants enable state and local governments, tribal communities, and other stakeholders to test and evaluate ADS technologies in real-world settings. Projects may include testing automated vehicles (AVs) on public roads, developing infrastructure to support AV operations, and conducting research on the safety, mobility, and environmental impacts of AV deployment. Funding levels for ADS Demonstration Grants depend on available appropriations and the scope of the proposed projects.

4.7 STRENGTHENING MOBILITY AND REVOLUTIONIZING TRANSPORTATION (SMART)

The SMART grant program provides funding for innovative transportation projects that leverage emerging technologies and approaches to improve mobility, enhance safety, and reduce environmental impacts. Eligible projects may include the deployment of advanced transportation technologies such as connected and automated vehicles (CAVs), intelligent transportation systems (ITS), mobility-on-demand services, electric and alternative fuel vehicles, and innovative transportation infrastructure. The program encourages collaboration among transportation agencies, technology providers, research institutions, and other stakeholders to develop and implement transformative transportation solutions. SMART grants support projects that address key transportation challenges, including congestion, accessibility, equity, environmental sustainability, and resilience. Funding for SMART grants is awarded competitively, with emphasis placed on projects that demonstrate innovation, scalability, replicability, and potential to significantly impact transportation outcomes. The SMART grant program aims to accelerate the adoption of cutting-edge transportation technologies and practices, foster collaboration and knowledge-sharing across the transportation industry, and drive improvements in mobility and quality of life for communities nationwide.

4.8 MOBILITY INNOVATION DEPLOYMENT (MID) PROGRAM

The MID Program provides funding to support the deployment of innovative transportation technologies and strategies that improve mobility and accessibility. Eligible projects may include the deployment of on-demand mobility services, mobility-as-a-service (MaaS) platforms, electric and shared mobility options, and other innovative transportation solutions. The program prioritizes projects that address transportation equity, enhance connectivity in underserved communities, and leverage emerging technologies to improve transportation outcomes. MID grants are awarded competitively, and funding levels vary depending on available appropriations and project scope.

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