

Active Transportation and Demand Management

ATDM Program Brief: Linking Demand Management and Traffic Management

Transportation system users face many choices when planning their entire travel trip. Destination, mode, route, time-of-day, and what facility or lane to use are types of choices for travelers to consider. Linking transportation demand management (TDM) and traffic management programs enhances the ability of transportation stakeholders to address mobility and reliability concerns in travelers' decision-making processes and enable users to make informed decisions throughout their trip.

Traffic managers can contribute real-time system conditions data, implement traffic control devices and strategies, and provide real-time travel information. TDM professionals arm the traveling public with knowledge of their transportation mode, route, and service options and may have unique, lesser-known ways and business models to get information out, especially to targeted populations (e.g., the mobility disadvantaged, employers, transit users, and the freight community). The difference between TDM and traffic management has become less distinct in recent years due to the widespread availability of apps and more targeted, actionable information that can improve traveler choices.

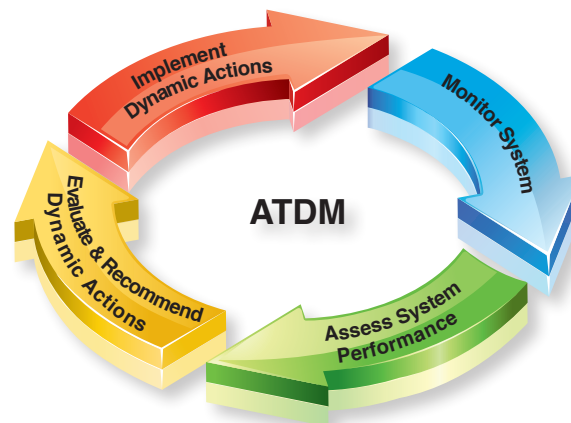


Figure 1: Illustration of ATDM concept (FHWA).

The concept of active transportation and demand management (ATDM) provides a framework to understand TDM and traffic management strategies as a holistic approach to expand traveler choices. By linking the two often-separate programs together, there is a greater opportunity to improve traveler information and travel options, as seen in Table 1. Ultimately, this leads to more reliable travel for all users.

Table 1: Typical, Often-Separate, TDM and Traffic Management Activities and Possibilities for Integration.

AREA	TYPICAL ACTIVITIES	NEW POSSIBILITIES
Construction	<ul style="list-style-type: none"> Maintenance of traffic plans developed by the implementing agency, including local mitigation and traffic management practices 	<ul style="list-style-type: none"> Temporary priority treatments for HOVs Targeted employer-based outreach Integration of shared mobility services for first-last mile services during construction Park-and-ride lot monitoring/information sharing
Weather	<ul style="list-style-type: none"> Road Weather Management Communication of travel conditions through 511 and social media 	<ul style="list-style-type: none"> Advance notification to travelers and employers Providing options for transit use or telecommuting during weather events
Incidents	<ul style="list-style-type: none"> Communication of incident location and status through travel information channels like 511 and social media Local management of incidents 	<ul style="list-style-type: none"> Local employer outreach about incident conditions Transit impact assessment and coordination Transit signal priority
Special events	<ul style="list-style-type: none"> Parking and wayfinding information Local traffic management including use of portable signs and temporary active traffic management 	<ul style="list-style-type: none"> Combining transit access with event tickets to facilitate riding transit to events Parking information and reservations
Congestion mitigation	<ul style="list-style-type: none"> Use of HOV/HOT lanes, ramp metering, and adaptive signal control. 	<ul style="list-style-type: none"> Provide opportunities for off-peak-period use and carpooling Bus on shoulder operations.

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Linking TDM And Traffic Management Improves Traveler Choices

FHWA recently published a compendium on [Strengthening Linkages between Transportation Demand Management and Traffic Management](#). The compendium illustrates the benefit of linking transportation demand management (TDM) and traffic management to achieve improved outcomes of travel reliability and access by highlighting real-world examples of how State and local traffic managers and demand management professionals can work together to create a more comprehensive approach to proactively manage mobility and reliability concerns under different contexts. Each case study, summarized in Table 2,

addresses the strategies that promote traveler choices for different choice types, including:

- **Destination choice:** Where would the user like to go?
- **Mode choice:** What type of transportation mode will the user take?
- **Route choice:** Which roads will the user take?
- **Time-of-day choice:** When will the user take the trip (off-peak or peak period travel)?
- **Facility or lane choice:** What specific facility options are available, and which will the user choose?

Table 2: Contexts and Case Studies Included in the Compendium.

CONTEXT AND CASE STUDY	NOTABLE PRACTICE
Managing demand and traffic during weather events and natural disasters. <ul style="list-style-type: none"> • Houston TranStar • Utah DOT Traffic Operations Center 	<ul style="list-style-type: none"> • Leveraged existing relationships to quickly share coordinated information about 500+ road closures (<i>Houston</i>) • Provided streamlined, proactive messaging and signal adjustments through centralized Traffic Operations Center (<i>Utah DOT</i>)
Transit Disruption <ul style="list-style-type: none"> • SafeTrack— Washington, D.C. • Amtrak New York Penn Station Emergency Repair Work 	<ul style="list-style-type: none"> • Coordinated among agencies to encourage telework options, and promote shared mobility, transit options (<i>SafeTrack</i>) • Developed mitigation plan to increase capacity on unaffected transit lines and inform travelers about alternative route and mode options to reduce congestion (<i>Amtrak New York Penn Station</i>)
Major Construction <ul style="list-style-type: none"> • New Jersey Pulaski Skyway Reconstruction • Texas I-35 Freight Trip Optimization • Atlanta’s I-85 Bridge Collapse 	<ul style="list-style-type: none"> • Began proactive outreach and transportation agency coordination two years before construction to provide continuous information to travelers about alternate route options (<i>New Jersey Pulaski</i>) • Integrated data-sharing system for improved travel information (<i>Texas</i>) • Communicated with agencies to disperse traffic among modes (<i>Atlanta</i>)
Managing System Efficiency <ul style="list-style-type: none"> • New York State Department of Transportation’s ATDM Program • Houston’s ConnectSmart Program 	<ul style="list-style-type: none"> • Created single ATDM program to ensure project funding decision-making would incorporate TDM and traffic management strategies (<i>NY</i>) • Developed single app to integrate payment, route planning (<i>Houston</i>) • Collaborated to provide baseline data, collect and analyze future data, and react with management strategies (<i>Houston</i>)
HOT and Transit Priority Treatments <ul style="list-style-type: none"> • Mopac Improvement Project (Austin, TX) • I-110/I-10 Express Lanes Loyalty Program (Los Angeles County) • I-55 Buses on Shoulder (Chicago) 	<ul style="list-style-type: none"> • Converted HOV to HOT lanes (with toll exemptions for buses/vanpools) to provide free-flow traffic lane option (<i>Mopac</i>) • Loyalty programs for vanpools and transit riders (<i>Los Angeles County</i>) • Allowed commuter bus travel on shoulder to provide reliable transit times, when general purpose speed was reduced (<i>Chicago</i>)
Special Events <ul style="list-style-type: none"> • Road World (cycling) Championships (Richmond, VA) • Mass Transit Super Bowl (New Jersey and New York) • Wyoming DOT 2017 Solar Eclipse 	<ul style="list-style-type: none"> • Began pre-event planning across multiple agencies over two years before event including dry run of event for a smaller race (<i>Richmond</i>) • Wrote “Playbook” transportation plan for new transit riders (<i>NY/NJ</i>) • Enhanced capacity and efficiency of rail, added bus capacity (<i>NY/NJ</i>) • Communicated clearly and early about parking/viewing locations on website and on variable message signs before event (<i>Wyoming DOT</i>)
Parking <ul style="list-style-type: none"> • SFpark: Managing Parking Demand via Pricing (San Francisco, CA) 	<ul style="list-style-type: none"> • Integration of technology, data to provide demand responsive parking program to maintain parking availability on every block (<i>SFpark</i>)

Enabling Stronger Linkages between TDM and Traffic Management Leads to Improved Regional Outcomes for Transportation

Users of our transportation system expect their travel to be safe, reliable, and seamless. From a traveler's perspective, the focus on the entire trip, rather than just one segment of it, is obvious and necessary. Travelers today want on-the-go travel choices throughout the trip, including the choice of destination (e.g., a park-and-ride lot or work location), mode (e.g., a single-occupancy vehicle [SOV], rideshare, a transportation network company [TNC], or mass transit), route, time of day, and facility or lane type.

Agencies and regions which leverage their TDM and traffic management synergistically will be able to more quickly respond to the conditions of the transportation system in order to provide a more reliable system for travelers. When traffic management and TDM efforts are linked, the transportation specialists can influence travel demand, effectively manage traffic that results from travel demand, anticipate and respond to planned and unplanned events, provide travelers with high quality traffic and weather information.

For example, the following instances show the value of collaboration between TDM and traffic management to improve transportation outcomes in a region:

Key tactics to integrate TDM with traffic management efforts:

- Establishing supportive policies.
- Making temporary changes to existing programs and systems.
- Find new communications and partnership strategies.

- Working together to prioritize bus movement through a corridor during periods of highway construction. This allows for greater person throughput and may include strategies such as temporary dynamic shoulder use for specific periods for HOVs and transit.
- Enabling proactive messaging of weather forecasts on dynamic message signs to support time shifts in anticipation of bad weather.
- Temporarily monitoring park-and-ride lot availability and disseminating information during construction to increase transit use.
- Messaging employers in an area affected by a major incident (e.g., a bridge collapse).
- Targeting traveler information messaging around specific special events.
- Providing options for shared use and alternate modes during periods of transit outages.

None of these examples are radical, and in fact agencies around the country routinely consider many of these techniques as they respond to pressing needs such as a winter storm, a transit strike, or a major reconstruction effort. As shown in Table 2, whether for transit service disruptions, highway reconstruction, or the solar eclipse, agencies are realizing the value of a playbook that links both TDM and traffic management.

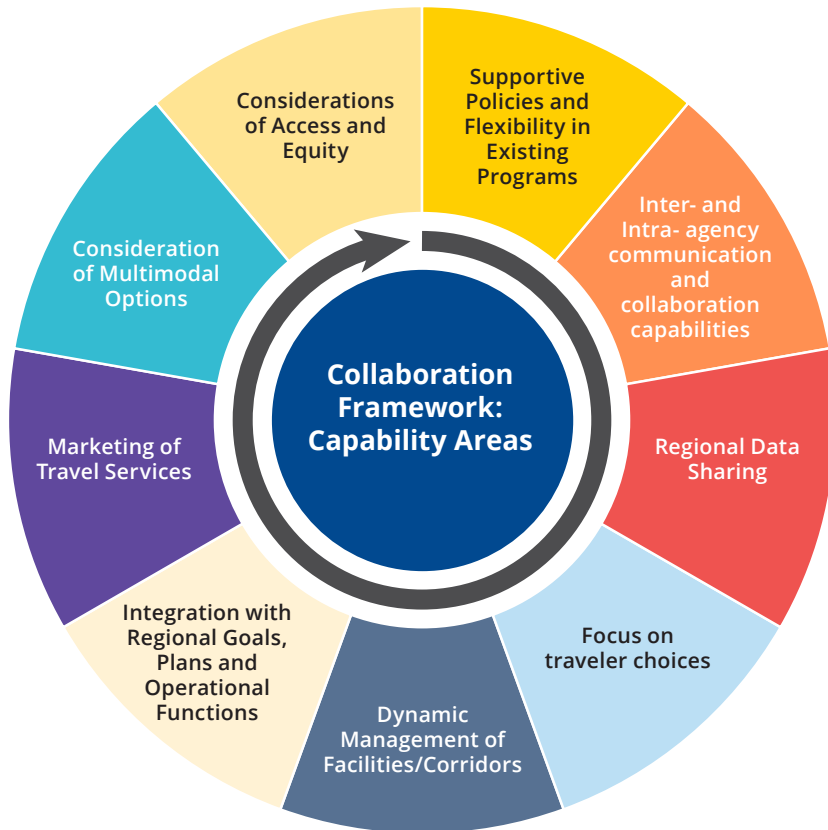
A Framework for Collaboration

Historically, both TDM and traffic management have focused on recurrent congestion. Non-recurrent aspects of congestion, such as weather, incidents, special events, and construction work zones, though, provide the greatest and most immediate opportunity to demonstrate the possibilities for linking TDM and traffic management.

As TDM and traffic management professionals understand and recognize the potential for collaboration with each other to improve transportation system reliability, one of the challenges is to figure out a roadmap for collaboration. Understanding the existing conditions of a region or agency and identifying possible next steps

will be important for TDM and traffic management professionals. The [Framework](#) provides a starting point for regions and agencies to identify gaps and opportunities of existing and possible linkages between TDM and traffic management. The Framework identifies opportunities to work together to address both recurrent and non-recurrent congestion. The framework describes capability areas that enable a region to work together to increase the level of coordination between TDM and traffic management programs. Figure 2 provides a high-level overview of the capability areas in the framework.

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Benefits of Framework

- Ability to self-assess region/agency's current degree of TDM and traffic management integration
- Clear planning actions to improve capability level and strengthen linkages
- Suggested implementation strategies include policy, communications, data and performance measurement, traveler behavior and marketing actions
- Outcomes signaling strong linkages between TDM and traffic management

Figure 2: Linking TDM and Traffic Management Framework Capability Areas.

For More Information:

The FHWA ATDM Program website contains more information about ATDM approaches and strategies, all the ATDM briefs, guidance documents, and resources and links to external stakeholder resources: <https://ops.fhwa.dot.gov/atdm/index.htm>.

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FHWA-HOP-19-079