



REGIONAL TRANSPORTATION DEMAND MANAGEMENT PLAN

August 2019



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Introduction

The Capital Area Metropolitan Planning Organization (CAMPO) is the metropolitan planning organization (MPO) for Bastrop, Burnet, Caldwell, Hays, Travis, and Williamson Counties (“the region”). CAMPO is responsible for transportation planning efforts that improve the mobility of the region.

Over the past decade, the six county CAMPO region has experienced significant growth and prosperity, with thriving businesses, economic growth, and a growing population to match. This rapid growth has caused further traffic congestion on the region’s roadway system, compounding the impacts of roadway construction and diminishing the mobility, safety, and reliability for travelers in the region.

Specifically, the TDM plan aims to:

- Foster the implementation of TDM concepts within the CAMPO planning process by incorporating revised TDM project scoring criteria to select and fund TDM projects in the call for projects process;
- Promote a regional view that advances TDM practices throughout the CAMPO region for safer mobility, increased choice, and improved system reliability by defining and implementing a vision and goals for the region;
- Recommend the establishment of a TDM Subcommittee within CAMPO’s Technical Advisory Committee to advance TDM in the region across the full spectrum of applications and processes; and
- Support the CAMPO 2045 planning effort with actionable steps to advance TDM in the region.

CAMPO TDM Steering Committee

Movability (TMA)

City of Austin (also represents program Smart Trips Austin)

Capital Area Council of Governments (also represents Commute Solutions program)

Travis County

Texas Department of Transportation

Bastrop County

Capital Metropolitan Transportation Authority
(Office of Mobility Management)

City of San Marcos

Central Texas Regional Mobility Authority

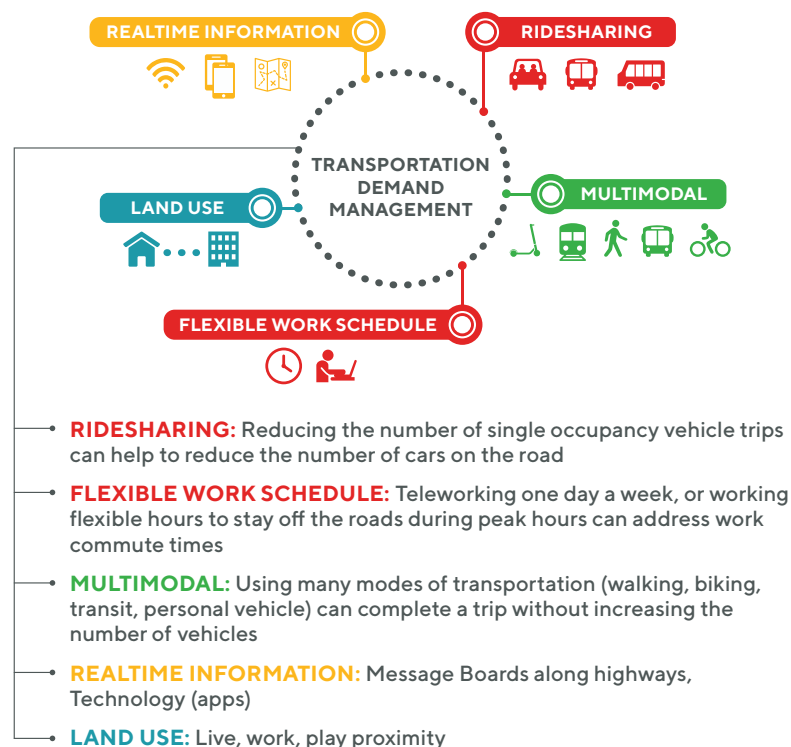


TDM Basics

Transportation Demand Management (TDM) is a collection of strategies designed to reduce automobile trips, roadway congestion, and parking demand by redirecting travel towards other modes, times, and routes. TDM programs, plans, and policies address traffic congestion, safety, mobility, and travel time reliability issues by considering operational strategies, implementing mobility solutions, air quality maintenance, and providing choices for travelers.

TDM programs often focus on strategies to reduce vehicle demand on roadways by increasing the use of modes other than driving alone. However, TDM programs can also involve changing commuters traveling behavior by providing information on transit, carpooling, vanpooling, biking, walking, and changes to work routine schedules (e.g., telecommuting and flex scheduling). TDM programs range in size, location, mode emphasis, and other variables based on the needs, transportation options available, and infrastructure of a region. TDM strategies for operational improvements, such as managed lanes and transit vehicles running on shoulders, are important concepts when developing a regional TDM plan. Outreach is integral to successful TDM programs, where public relations and educational campaigns can have an influential impact on how travelers approach their trips. A glossary of basic TDM strategies and their uses is included in the Appendix.

Figure 1.1



Regional TDM Plan Process

In creating this plan, CAMPO convened a TDM Steering Committee, consisting of regional transportation stakeholders, to define a unified vision, objectives, and priorities for advancing TDM policies, projects, and initiatives. The committee provided significant input and guidance in the creation of this plan to increase TDM policies and programs in the near term for the region.

This TDM plan will guide the region in its TDM work over the coming years. Key to the success of this plan will be the appointment of a subcommittee within CAMPO's Technical Advisory Committee dedicated and focused on implementing actions addressing congestion, mobility, safety, and reliability. This subcommittee will help implement TDM practices within the region, support outreach to the region's employers to encourage and partner on commuter-based programs, and work together on TDM solutions that will directly impact peak hour travel, mode choice, and enhanced mobility.

The Federal Highway Administration (FHWA) provided a workshop in August 2018, which was hosted by CAMPO and attended by regional planning partners, transportation professionals, and TDM stakeholders. The workshop provided an overview of contemporary approaches for influencing travel behavior and planning for demand management. Attendees participated in a self-assessment exercise to review existing TDM strategies and capabilities in the region and identify steps and actions to elevate the TDM capabilities in the region. Overall, participants noted a lack of consistency between TDM strategies, goals, and metrics throughout the region. Breakout groups participated in exercises to identify actions that will advance TDM applications from ad-hoc activities to well-defined approaches and formalize a regional vision, goals, and objectives. Breakout groups then discussed the current status and advancement strategies for measuring the performance of the current TDM program in the region and ways to incorporate TDM into planning efforts and funding programs. This TDM plan addresses two of the actions identified in the workshop, which were to develop an overarching vision for TDM in the region with specific goals for the region and to assess and update the project selection criteria for TDM. A summary of Workshop materials and input is in the Appendix.

In January 2019, the TDM Steering Committee received a presentation on TDM best practices from agencies around the country. Each presentation incorporated a discussion of how the CAMPO region might adapt approaches or elements from the various peer locations. The Steering Committee learned the lessons gained from previous TDM activities at peer locations and discovered the emerging tools, resources, and technology helping travelers with their transportation choices. Subsequent discussion by the Committee focused on the strengths and challenges in the region and clarified targeted priorities for advancing TDM in the region.

Figure 1.2



January 29, 2019 TDM Steering Committee Meeting

Stakeholder interviews were also conducted to further explore what TDM means to the CAMPO region. In-depth interviews were conducted to gather input on perspectives, resources, and priorities as they relate to TDM projects and strategies. The team coordinated with steering committee members, major employers in the region, and representatives from planning agencies to schedule and conduct 14 individual interviews between February 6 and February 19, 2019. Interviews took place in-person or via conference call and lasted approximately one hour.

Organizations from both the public and private sectors were represented in interviews and had varying levels of experience, resources, and involvement related to the implementation of TDM applications. Representatives from CAPCOG, TxDOT, Travis and Bastrop Counties, the Cities of San Marcos and Austin, CTRMA, Capital Metro, Movability Transportation Management Association (TMA), the Greater Austin Chamber of Commerce, Samsung Semiconductor, Google, and Whole Foods participated in the interview process.

While the interview process was tailored to the organization's level of expertise and involvement in implementing TDM practices, the interviews generally began with a brief introduction to TDM concepts, the planning process, and desired outcomes of the plan. Interviewees were asked to describe their organization's impact on mobility in the region and their role in implementing existing TDM strategies, as well as their priorities and desired outcomes for potential TDM strategies that could be deployed in the region.

High-level themes emerged throughout the interview process as organizations identified TDM needs and priorities in the context of the region, including:

- Incorporation of transit features into future roadway projects;

- Expanded transit service;
- Addition of managed lanes;
- Increased availability of micromobility options.

Other identified themes included:

- Improved data collection and sharing;
- Strategies to mitigate transportation demand during construction;
- Outreach and education initiatives to motivate a mode shift; and,
- Potential dedicated funding to support TDM strategies.

Themes were carried forward and incorporated into defined priorities of the plan.

Regional TDM Priorities

Through collaborative efforts with the TDM Steering Committee, CAMPO and its partners identified the following priorities as needs and focus areas in advancing a TDM agenda for the region:

- Support transit projects and programs that address service gaps, such as increasing the number of and access to park-and-ride facilities, guaranteed ride home programs, and ensuring connections to the “last mile” portion of a trip;
- Support TxDOT, CTRMA, and other regional transportation providers in the implementation of managed lanes along key corridors inundated with traffic congestion and travel time reliability challenges;
- Increase outreach and public education programs that promote the value and opportunities available in TDM programs, awareness of travel and transit options;
- Fund projects and programs that address and reduce peak-time traffic congestion on priority corridors to provide for peak spreading
- Fund projects and programs that support implementation of work zone queue mitigation during roadway construction;



- Develop employer-based programs for raising employees' awareness about travel options and the commute cost, for example distributing commuter bonus vouchers, spreading work hours, telecommuting, and flex time programs to address peak hour travel on key corridors; and
- Develop data collection and sharing programs and procedures to advance the planning and implementation efforts of member agencies to address TDM priorities.

Central to conducting an effective TDM program is having a plan to guide it. This plan documents the region's vision, goals, and key objectives for the advancement of TDM in the CAMPO region. The defined goals support an implementation approach for TDM in the region.

TDM strategies can be applied to address the growing traffic congestion the region faces in the future with programs that are measured and evaluated, so that TDM activities can be effectively adjusted as needed. Finally, the plan helps to foster partnerships and collaborations with transit agencies, regional planning agencies, TxDOT, and the business community, and others to advance transportation demand management principles in the region.

PART I

TRANSPORTATION DEMAND MANAGEMENT VISION AND GOALS

The Regional TDM Plan provides a regional framework with supporting priorities that will guide the identification and development of projects and strategies to manage traffic congestion. The framework details demand management practices to accommodate the population and employment growth that strains the transportation system in the region. The TDM framework will focus on addressing traveler behavior and mobility choice, with a secondary focus on coordinating and incorporating TDM applications when infrastructure investments and development occurs.

A vision statement should fully capture the aspirational goals that the CAMPO TDM Steering Committee and TDM Program would like to accomplish. The vision, goals, and objectives for the TDM plan were developed with input from the Steering Committee. Through the committee's input, stakeholder interviews, and early workshop findings, CAMPO and its partners defined the below vision statement and supporting goals.

Vision

The Regional Transportation Demand Management Plan provides a regional framework of priorities that identify projects, programs, policies, and strategies to manage congestion as population and employment growth put additional pressure on the regional transportation network. These projects, programs, policies, and strategies focus on travel behavior, along with strategic investments in transportation programs and infrastructure, where appropriate. Additionally, these efforts provide travelers with more information and options for deciding how, where, and when to travel within the CAMPO region.

Goals

CAMPO, in coordination with the TDM Steering Committee, developed five primary goals to support the vision for the region. These goals capture the priorities expressed by the committee and provide the foundation for the project selection criteria. The goals are shown in order of importance.

1. **Regional Coordination:** Document a collaborative plan where all TDM stakeholders have ownership and contribute to developing and maintaining a regional TDM system that benefits the entire CAMPO region;
2. **Incorporate TDM into the transportation planning process:** Develop CAMPO policies with its partner agencies that promote and prioritize both programmatic and infrastructure investments in TDM projects and strategies;

3. **Provide Education and Outreach:** Expand outreach and education to travelers, providing the transportation options available to them for getting from point A to point B;
4. **Improve the Transportation System:** Enhance the performance of the region's multimodal transportation system, especially during peak periods; and
5. **Increase Mobility Choices for Travelers:** Provide a range of transportation options throughout the region.

PART II

MOVING GOALS FORWARD

For each of the five goals defined in Part 1, CAMPO and its partners developed associated objectives to further guide each goal in its implementation. Often the objectives underpinning each goal need to be embraced and enacted by specific (or multiple) stakeholder agencies. CAMPO provides stewardship by working with the regional stakeholders to move the regional TDM goals forward and aligning TDM applications to meet the objectives.

Regional Coordination

Document a collaborative plan where all TDM stakeholders have ownership and contribute to developing and maintaining a regional TDM system that benefits the entire CAMPO region.

To date, TDM measures and efforts for several stakeholder agencies have advanced at disparate paces. This goal proposes that CAMPO organize and facilitate TDM efforts, so that each agency has ownership of various TDM programs and efforts, but the TDM vision for the whole region vision can be measured and advanced.

Specific objectives to advance regional coordination are outlined below.

- Develop and implement regional solutions to transportation system congestion that cross jurisdictional lines;
- Establish protocols for sharing transportation data and TDM options between agencies;
- Develop and maintain a unified information source where travelers can access all elements of TDM in the region;
- Promote greater regionalism and cooperation in the CAMPO region by working toward shared TDM goals;
- Promote a quality of life that will attract new businesses and residents to the region; and
- Establish a TDM Subcommittee of CAMPO's Technical Advisory Committee, with regular meetings to monitor and ensure the implementation of regional TDM programs.



Incorporate TDM into the Transportation Planning Process

Develop CAMPO policies with its partner agencies that promote and prioritize both programmatic and infrastructure investments in TDM projects and strategies.

Successfully integrating TDM into agency programs across the region requires a greater emphasis on TDM in programmatic and infrastructure planning and investment. Objectives that advance this goal focus on ensuring that TDM is considered in the planning, policy, and programming stages of all agency programs. Advancing this goal will include preparing policy and planning recommendations for the CAMPO 2045 Regional Transportation Plan (RTP). These objectives position CAMPO and its stakeholders to have a strong TDM agenda that can be included in the upcoming cycle for 2045.

Specific objectives to better incorporate TDM into transportation decision-making are outlined below.

- Identify and support TDM projects and strategies before capacity projects when developing corridor studies, long range plans, and other planning documents;
- Incorporate TDM measures into capacity expansion projects; examples may include transit use on managed lanes, high-occupant vehicle lanes, and expanded intelligent transportation systems (ITS);
- Incentivize cities and counties to update development codes that better incorporate TDM elements;
- Establish a targeted amount or percentage of specific funding categories of the Transportation Improvement Program and Regional Transportation Plan to TDM measures.

Provide Education and Outreach

Expand outreach and education to travelers, providing the transportation options available to them for getting from point A to point B.

A central theme for advancing TDM in the region is the need to engage, inform, educate, and reach out to travelers', commuters, tourists, and employers in the region; many TDM measures are rooted in changing travel behaviors. The first step in changing behavior is travelers education; this encompasses not only educating travelers about available options (transit, carpooling, altering travel times, changing a route or mode, or forgoing the trip) but also promoting the principles of TDM and the transportation community's efforts to help preserve the safety, maintain air quality, mobility, and travel time reliability in the region.

One strategy to advance this goal is engaging employers directly. Steering Committee member Movability (TMA) works with major employers in the region to help them make mobility connections and provide educational materials on best practices for developing and implementing custom mobility plans for commuter challenges that employers and other trip generators can impact. Other TDM Steering Committee members see great value in engaging the region's major employers as a great first step towards enacting TDM practices that influence traveler behavior and choice.

Specific objectives to provide the necessary education and outreach to advance TDM by influencing traveler behavior are outlined below.

- Communicate directly to travelers about regional programs and options that already exist;
- Promote the development of tailored TDM programs across the region;
- Educate interested employers and trip generators on options, including flex schedules and teleworking;
- Market TDM programs through mechanisms such as advertising and dynamic message signs; and
- Have regional agencies be more proactively involved in generating more participation in promoting multimodal transportation options and encourage employers to provide incentives to their employees who practice TDM strategies.

Improve the Transportation System

Enhance the performance of the region's multimodal transportation system, especially during peak periods.

As regional TDM stakeholders address the demands on the system, it must be acknowledged that the region is still building out infrastructure to address safety, mobility, and reliability. This goal area recognizes this reality while incorporating TDM practices in new capacity and infrastructure projects. When traditional roadway projects occur, this goal encourages a coordinated effort to include TDM strategies in the design and operation of the network.

The region also recognizes that the continued construction on the transportation system often disrupts travel times and mobility because of traffic management (detours, work zone queues, etc.) approaches. This goal encourages a greater focus on traffic management during construction.

Specific objectives to improve the transportation system are outlined below.



- Reduce the number of single-occupant vehicles to ensure efficient use of the roadway network;
- Support greater use of transit, shared rides, and active transportation modes;
- Incentivize all traditional roadway projects to have coordinated TDM education and outreach plans during construction phases;
- Improve the reliability of the transportation network through improved incident management;
- Enhance the reliability of travel times by shifting trips to off-peak periods;
- Provide travelers with incident information and alternate route options through ITS and other outreach;
- Work with agencies, private companies, and employers to improve connectivity and first/last mile trip segments;
- Target congested corridors of regional importance for strategic infrastructure investment, such as managed lanes; and
- Document and evaluate performance measures over time to identify effective strategies.

Increase Mobility Choices for Travelers

Provide a range of transportation options throughout the region.

This goal and its associated objectives enhance and inform travelers about mobility choice. Initiatives that advance TDM in the region should focus on understanding how people make their transportation decisions and champion projects that will improve and support those decisions. Information on mobility choices also help travelers understand and use the existing systems and infrastructure, such as transit, ride hailing, walking and biking routes, and others.

Specific objectives to provide for greater mobility choices for travelers in the region are outlined below.

- Optimize transit services throughout the region that provide alternatives to driving alone;
- Implement projects that encourage everyday use of active transportation for commuting or other trips;

- Provide information to travelers about joining carpools or vanpools;
- Partner with transportation providers to expand first/last mile connections to reduce the need for driving; and
- Improve safety by providing transportation options to travelers with mobility challenges.



PART III

MEASURING PERFORMANCE

Performance measures provide documentation of results and progress relative to an agency, program, project goal or objective. The Federal Highway Administration (FHWA) defines performance measures as “the use of statistical evidence to determine progress toward specific defined organizational objectives. This includes both evidence of actual fact, such as measurement of pavement surface smoothness, and measurement of customer perception such as would be accomplished through a customer satisfaction survey.”¹ Good measures should be meaningful to the customer, tell the story on how well goals and objectives are met, and provide simple, logical, and easily understandable information that captures a trend of performance.

In general, agencies’ ability to measure congestion and reliability directly lag other planning goal areas due to lack of data. Pavement and bridge performance have been linked to direct field measurements and have been widely used to help prioritize investments. Safety has a long history of performance measurement based on actual crash experience and corresponding evaluation of safety countermeasures. In contrast, TDM and mobility performance measurement has had to rely on surrogate measures, such as demand levels and estimates of available capacity to infer actual performance.

Measuring and reporting program effectiveness of TDM for the CAMPO region will have two distinct categories for measuring performance: how the region is doing as a whole as it tracks to, and makes progress with, the five goals established in this TDM plan, and how specific projects measure up to project specific goals. For instance, a specific project along a congested corridor may measure success in terms of a reduced travel time on the corridor, improved travel time reliability, or an increase in transit ridership on the corridor. Success in achieving CAMPO’s goals for TDM might be in TDM projects being planned, funded, and managed by several member agencies showing greater collaboration to accomplish TDM in the region.

TDM Strategy Success

An example of an Austin area TDM success where before and after measures were in place has been documented with the CTRMA MoPac express lanes. Express and variable priced lanes are both TDM operational strategies. CTRMA reports that the express lanes have had average speeds of 50 miles per hour and have allowed travelers commutes that are 50% faster. Also, the toll-free access for Capital Metro transit vehicles have pointed to a 73% increase of Express Bus ridership on the MoPac route.¹

MoPac Express Lane Fact Sheet.
www.mobilityauthority.com/upload/files/resources/Roads/MIP_Fact_Sheet_01_04_19.pdf, accessed 4/2/2019.

¹ *Performance Measurement Fundamentals.* https://ops.fhwa.dot.gov/perf_measurement/fundamentals/index.htm accessed 4/2/2019.

Measuring Progress on TDM Plan Goals

In addition to reporting performance on specific projects, as noted above, there exists an opportunity to measure and report on the progress on achieving the TDM goals established by the TDM Steering Committee. These goals and potential measures of success are shown in Table 3.1.

Table 3.1

GOAL	MEASURING PROGRESS
Regional Coordination: Document a collaborative plan where all TDM stakeholders have ownership and contribute to developing and maintaining a regional TDM system that benefits the entire CAMPO region.	<ul style="list-style-type: none"> Partner agencies document TDM projects and strategies into planning processes. <ul style="list-style-type: none"> Number of planning documents including TDM strategies. Number of agencies including TDM strategies in mission, planning documents, or construction activities. Number of FTE equivalents at agencies within the region that lead TDM efforts
Incorporate TDM into the transportation planning process: Develop CAMPO policies with its partner agencies that promote and prioritize both programmatic and infrastructure investments in TDM projects and strategies.	<ul style="list-style-type: none"> CAMPO 2045 Plan includes a TDM policy position Number of agencies incorporating CAMPO's TDM goals into their individual processes. Number of cities and counties that update development codes to better incorporate TDM Number of applications per TIP cycle that incorporates TDM measures into their project applications and the types of measures incorporated Percentage amount of Transportation Improvement Program that is dedicated to TDM measures



GOAL	MEASURING PROGRESS
Provide Education and Outreach: Expand outreach and education to travelers, providing the transportation options available to them for getting from point A to point B.	<ul style="list-style-type: none">• Develop a toolbox of outreach and education materials for major employers, trip generators and the general public.<ul style="list-style-type: none">• Number and types of outreach materials developed (hard materials, videos, engagements).• Amount of materials distributed to general public and trip generators. Work with employers to implement TDM programs.<ul style="list-style-type: none">• Number of employers (or trip generators) demonstrating official commitments to TDM• Geographic range of employers (or trip generators) demonstrating official commitments to TDM• Number of outreach and education campaigns that engage underserved populations• Number of jurisdictions and public agencies that conduct outreach and disseminate TDM materials
Increase Mobility Choices for Travelers: Provide a range of transportation options throughout the region.	<ul style="list-style-type: none">• Increase the range of transportation options throughout the region<ul style="list-style-type: none">• Number of vanpool/carpool participants• Percentage of residents within 3, 5, and 7 miles of a park and ride facility• Percentage of residents within a quarter mile of a transit stop• Percentage of residents who can reach their place of employment by transit within 30 and 45 minutes• Number of centerline miles for active transportation facilities• Number of dedicated guideway miles• Improve last mile connections• Percentage of micro-mobility rides that originate or end within 200 feet of a transit stop or park and ride facility

GOAL	MEASURING PROGRESS
<p>Improve the Transportation System: Enhance the performance of the region’s multimodal transportation system, especially during peak periods.</p>	<ul style="list-style-type: none"> • Collaborate with agencies for greater real time traveler information <ul style="list-style-type: none"> • Number of agencies providing real time traveler information • Number of agencies sharing travel time data • Decrease reliance on commuting via single-occupied vehicles <ul style="list-style-type: none"> • Percentage of commute trips taken at least one day a week by a non single-occupancy vehicle (SOV) mode



PART IV

CAMPO TDM PROJECT SELECTION CRITERIA

CAMPO Project Selection

CAMPO is responsible for allocating certain federal and state funds for transportation projects in the six-county region. In order to administer these funding programs and ensure an effective and equitable distribution to project sponsors, CAMPO has developed a project evaluation and selection process with an emphasis on several key factors: regional perspective; transparent decision-making in allocating funding for regional projects; objective evaluations that emphasize performance-based, results-driven outcomes; data supported project applications and evaluation processes; and accountability. CAMPO follows a cycle of steps in soliciting agencies for projects, referred to as the call for projects, by conducting a review, scoring, and selection process.

The first part of the selection process evaluates project readiness. Projects are then scored with a combination of planning factors and consideration of cost-effectiveness. TDM is one of the six distinct project category types. However, the other category types such as, Roadway, ITS and Transit all contain a TDM nexus in some way. For example, the Roadway category provides extra points for projects that include a multimodal aspect such as sidewalks or transit connectivity.

Previous cycles of project selection have had minimal evaluation of benefit cost information of the TDM projects due to the difficulty of tracked, measured outcomes for the different programs in operation. This led to concerns at the decision maker level about wanting to ensure scarce resources are being used effectively compared to alternatives seeking funding from the CAMPO Policy Board. Revisions to the scoring incorporate a greater accountability for TDM performance reporting as shown in Table 4.1. In development of the plan, stakeholders determined that performance measures to inform a cost-benefit analysis for project selection purposes would be deferred by 2 years to allow for data collection by project sponsors.

Currently, evaluation of TDM services is done primarily on an annual basis by local governments in the region and agencies through their annual budget process, and by the MPO through periodic grant funding calls with performance-based project selection criteria. Discussion at the MPO level has gathered around cost-effective TDM implementation strategies and measures of effectiveness.

Table 4.1

CRITERIA	VALUE	PERFORMANCE MEASURE
Planning	10	The project or activity has undergone a comprehensive planning process or is identified as a priority in a local or regional transportation plan.
	10	The planning process or document identifies an outreach component addressing commuting patterns and traveler engagement.
Regional Impact	10	The project or activity is located on or directly affects an existing or proposed regionally significant corridor.
Safety	10	The project or activity addresses transportation safety.
Congestion and Mobility	10	The project or activity reduces vehicle miles traveled (VMT) or vehicle hours traveled (VHT).
	5	The project or activity addresses periods of peak travel.
	5	The project or activity reduces vehicle trips or manages demand through strategies such as carpools, vanpools, managed lanes, corridor improvements, ITS installation, signal optimization or park and rides.
Social and Environmental Impacts	5	The project or activity has a positive impact (e.g. reduction in transportation costs and emissions, improvements on public health) on underserved populations including low-income, minority, elderly, persons with disabilities, and limited English proficiency households.



CRITERIA	VALUE	PERFORMANCE MEASURE
Multimodal Elements	10	The project or activity decreases single occupancy vehicles usage or increases transit access.
Interagency Coordination	10	The project or activity includes the direct participation of other federal, state, or local jurisdictions.
	10	The project or activity includes participation from regional employers and other trip generators impacting travel patterns.
Funding	5	The project or activity's local cost share is overmatched. (5% = 1 point)
Total Points	100	

TDM Planning Factors and Scoring Elements (as revised April 2019)

Additional Planning Factor Information – TDM Projects

The point values available for each criteria are noted in parenthesis.

- **Planning (10)** – The project or activity type should be identified in locally or regionally adopted transportation plans, including state, city, or county thoroughfare plans, city comprehensive plans; or CAMPO documents including the long-range Regional Transportation Plan (RTP). Provide the name of the plan(s) in which the project is included, and its date of adoption or approval.
- **Planning (10)** – Planning efforts should also include and identify specific outreach goals and coordination activities conducted with employers (and other agencies and institutions) in the region to promote TDM principles. The projects or activity should also include the identification of entities approached, the types of efforts used to engage and coordinate with them, and the measure to determine program effectiveness.
- **Regional Impact (10)** – Note if the project or activity is located on or directly affects a facility designated on the National Highway System or is a Principal Arterial in CAMPO's current RTP.

- **Safety (10)** – Describe safety enhancements that the project or activity will include to reduce the potential for crashes and create a safer, more secure experience for travelers.
- **Congestion and Mobility (10)** – Provide detail and documentation on how the project or activity reduces vehicle miles traveled (VMT). For example, documentation detailing (actual or estimated) number of participants in the project or activity and/or anonymized origin-destination data to calculate the amount of VMT reduction.
- **Congestion and Mobility (5)** – Provide detail and documentation on how the project or activity reduces congested peak period travel. For example, provide documentation detailing (actual or estimated) employers or travelers participating in the project or activity that altered departure times based on the project.
- **Congestion and Mobility (5)** – Provide detail and documentation on how the project or activity includes operational improvements that improve traffic flow such as ITS implementation, signal optimization, real-time incident notifications, corridor improvements, managed lanes, or park and rides.
- **Social and Environmental Impacts (5)** – Provide documentation and analysis that demonstrates that the project or activity will directly benefit underserved populations. Refer to Environmental Justice analysis tools provided by the Environmental Protection Agency, Federal Highway Agency, and the Texas Department of Transportation Environmental Division.
- **Multimodal Elements (10)** – Refer to CAMPO’s Regional Active Transportation Plan and note how the project or activity advances its goals. Alternatively, if a project or activity is not in regional plans (including transit, active transportation, and others) but is included in a locally-adopted transportation plan, provide the plan name and date of adoption or approval. Describe the ways the project or activity uses alternative modes, increases transit access, or includes active transportation modes.
- **Interagency Coordination (10)** – Provide documentation, in the form of resolutions, inter-local agreements, or memoranda of understanding among local agencies that demonstrates a combined effort in the project or activity such as pooling resources and data sharing programs.
- **Interagency Coordination (10)** – Provide documentation, in the form of a signed agreement or other official documentation, demonstrating employer (or other traffic generators) commitment to the project or activity such as the provision of transit incentives, telework or flexible work schedule policies, carpool incentives, or other TDM strategies of project activities that will engage regional employers (or agencies) to impact commuting patterns.



- **Funding (5)** – Describe how the project or activity’s local cost share goes beyond the funding match requirements. Provide documentation that identifies committed funding for the project.

Measuring Performance for Selected Projects

Projects selected for funding using the CAMPO criteria should have a level of accountability for reporting project results. Since projects will take many forms, there will be many forms of reporting qualitative and anecdotal results as well as technical analysis to report on a project’s return on investment. Mobility Lab is a resource for the TDM community to assist in assessing return on investment for TDM strategies, policies, and programs. Mobility Lab is a consortium of public agencies and a growing resource of contributors that help tell the story of TDM success. This resource provides a “cost savings calculator” to estimate TDM benefits and can be found at <https://mobilitylab.org/calculators/>.

Research indicates there are two general approaches to estimating the impacts of TDM strategies – sketch planning and modeling. Currently, there are four TDM-specific models that have been developed in the United States:

- EPA COMMUTER Model
- TDM Effectiveness Evaluation Model (TEEM)
- Worksite Trip Reduction Model (WTRM)
- Trip Reduction Impacts of Mobility Management Strategies (TRIMMS)

As CAMPO enacts this TDM plan, additional criteria may be included in project selection and reporting. Understanding the return on investment from this project selection process will be important in advancing the TDM program.

PART V

EXISTING CONDITIONS REPORT

TDM is not a new practice to the CAMPO region. This section describes the existing conditions, the current organization of TDM efforts, and the work already being done to implement TDM throughout the region.

The CAMPO Region

Agency Roles and Responsibilities

Within the region, there are a variety of agencies and private sector service providers that perform a range of TDM activities. The majority of TDM activities are implemented at the local level and in partnership with the private sector. Multiple organizations, including employers, private service providers, and local agencies currently provide TDM services. Figure 5.1 on the next page illustrates “who is doing what” from a policy, service provision, programming, evaluation, and funding perspective within the region. As shown in the figure, the multiple agencies that do many of the same functions, like operate a park and ride, show the need for coordination to ensure an efficient use of resources.

Planning and Policies – Traditionally, public agencies at the Local, State, and MPO level participate in the planning efforts and policy setting, as well as provide leadership within the existing regulatory framework of the region.

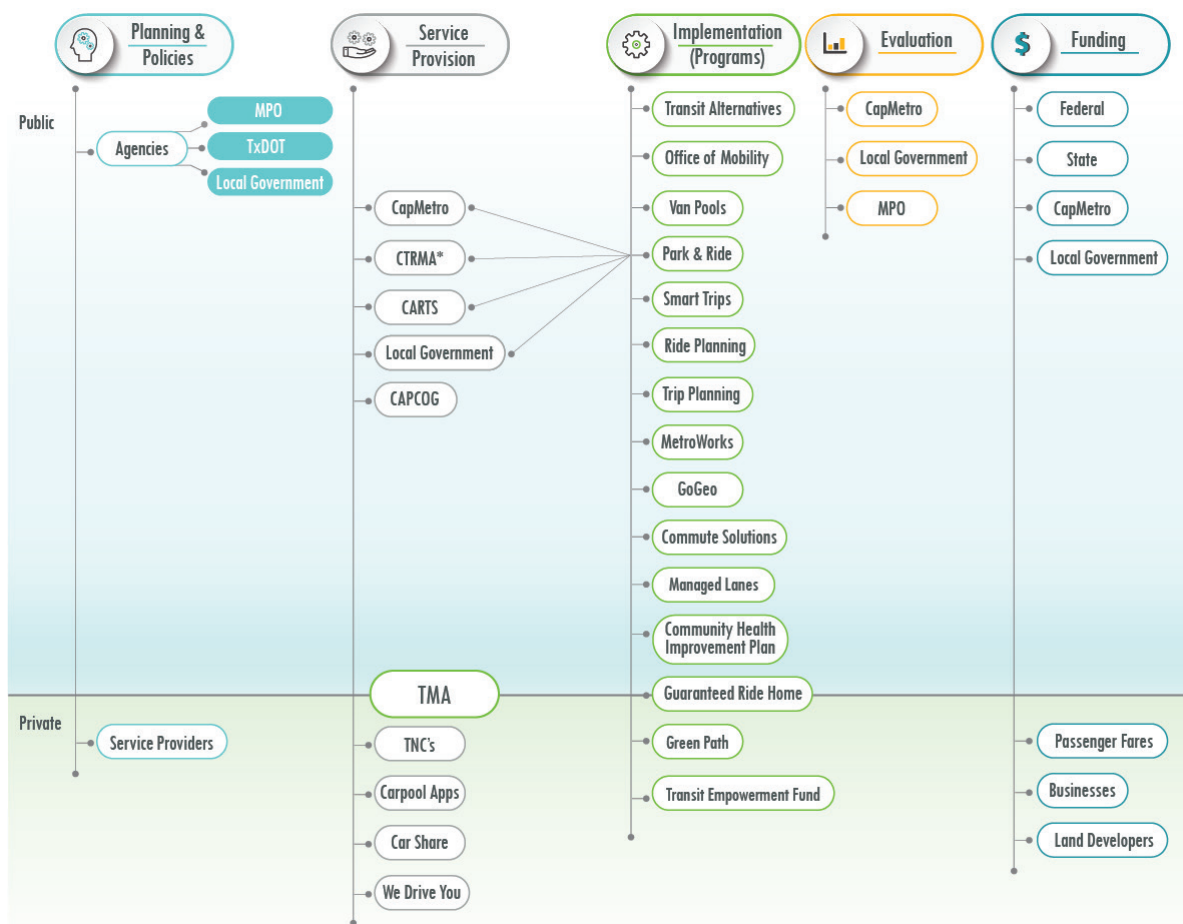
Service Provision – A host of programs are sponsored or provided by State, Local, and regional agencies, non-profit organizations, as well as the private sector. Movability, the region's Transportation Management Agency (TMA), is unique in that it has both public and private components.

Programs – Implementation of programs occurs primarily at the local level. Local ownership provides stakeholder accountability, matches funding to services, and allows implementation to better adapt services to specific markets they serve. In many cases, multiple agencies and organizations collaborate to provide a service provision such as park and ride service, but in other examples they may provide similar services to different or the same segments of the community such as trip planning.

Evaluation – Currently, evaluation of TDM services is done on an annual basis by local governments and agencies through their annual budget process, and by the MPO through periodic grant funding calls with performance-based project selection criteria. Discussion at the MPO level has gathered around cost-effective TDM implementation strategies and measures of effectiveness.



Figure 5.1



*CTRMA is conducting a park and ride study, but at the moment does not actually operate any such facilities.

Funding – Partnerships between the public and private sectors have been critical for funding TDM activities in the region and have evolved between sources and levels of funds. Discussion at the MPO level leading into the development of this plan has centered on cost-effective TDM implementation strategies and appropriate funding responsibility sharing between Federal, State, and local governments, and the private sector.

Public and Private sectors – partnerships and collaboration are universal components of transportation services and TDM activities, whether their bottom line is in the public or private realm. This plan recognizes the efforts and services that the private sector provides distinctly from the public agencies in the role of service provision, program implementation, and funding activities.

Agencies and organizations that provide services and programs in the region include:

Capital Metropolitan Transportation Authority (Capital Metro) – Austin’s regional public transportation provider.

Capital Area Rural Transit System (CARTS) – the rural/urban transit provider that services the non-urbanized areas of Bastrop, Blanco, Caldwell, Fayette, Hays, Lee, Travis and Williamson counties, and the San Marcos urbanized area.

Capital Area Council of Governments (CAPCOG) – government entity made up of over 90 members of governments and organizations, CAPCOG helps recognize opportunities for collaboration across Bastrop, Blanco, Burnet, Caldwell, Fayette, Hays, Lee, Llano, Travis, and Williamson Counties.

Central Texas Regional Mobility Authority (CTRMA) – an independent government agency dedicated to improving the transportation system in Williamson and Travis Counties using multimodal transportation solutions.

Local Governments – local governments develop transportation and mobility plans impacting transportation demand in the region.

Texas Department of Transportation (TxDOT) – government agency responsible for the construction and maintenance of the state highway system and mobility in the state.

Transportation Network Companies – matching passengers with vehicles via websites and mobile applications, for example, Uber and Lyft.

Carshare companies – renting automobiles on-demand, typically for short one-way trips; for example, Car2Go.

Carpool applications – rideshare service that arranges on-demand rides through a mobile application.

Linkages to Other Plans

Long-Range Transportation Plan

CAMPO’s 2040 Regional Transportation Plan is the currently adopted long-range regional transportation plan which identifies needs, programs, and projects for regional transportation planning over a 20-year planning horizon². The 2040 Plan addresses needs for transit planning and

² This Transportation Demand Management Plan will be incorporated into CAMPO’s 2045 Long-Range Transportation Plan.



service expansion, incident management strategies, and integrated technology systems as methods for improving efficiency of the regional transportation system, as well as describing specific TDM measures and potential benefits of implementation.

The 2040 Plan outlines several TDM strategies that will be further explored in this TDM Plan, including teleworking and flexible work hours; alternate transportation modes such as bike sharing, carsharing, ridesharing, transportation network companies; and parking management strategies to disincentivize use of single occupancy vehicles. The 2040 Plan also includes recommendations for land use strategies to manage demand, such as encouraging development in clusters and promoting mixed-use areas that create housing, employment, and retail centers in close proximity and are accessible by a range of transportation options.

Local Plans

TDM is an included element in several of the region's adopted transportation plans including; Austin's Imagine Austin comprehensive plan, Climate Action Plan, and demand management elements of the Austin Strategic Mobility Plan, the City of San Marcos' Transportation Master Plan, and the TxDOT Austin District Transportation System Management Plan. The Imagine Austin Plan's priorities program calls for "investing in a compact and connected Austin." TDM is listed as a strategy through increasing transportation options, managed lanes, and compact centers and corridors. The associated plan action (Land Use-Transportation (LUT), pg.19) states:

"Reduce traffic congestion, increase transit use, and encourage alternative transportation modes through such practices as Transportation Demand Management which includes carpooling, flex time work schedules, and subsidizing transit costs for employees."

The 2015 Austin Climate Action Plan includes recommendations to support action on TDM for large employers and academic institutions to implement trip reduction programs, monitored by surveys, and provision of information about travel choices to encourage residents to limit single occupant trips. Austin Climate Action plan promotes commuter first and last mile solutions, circulator buses, collective zoned vanpool service, flex route systems, and bikeshare type strategies. Key actions highlighted includes seeking opportunities to prioritize public transit and increasing bike and pedestrian mode share for workers who live near work and school.

The Austin Strategic Mobility Plan (ASMP 2019) includes TDM among its top ten strategies to reach a 50/50 Mode share goal by 2039.

"Manage congestion by managing demand:

Transportation demand management (TDM) is an approach to tackling congestion through strategies that more quickly reduce our impact on the transportation network rather than adding costly capacity."

The ASMP also includes other non-SOV supportive multimodal and operational strategies that reinforce TDM, including: public transit, building active transportation access, right-sizing and managing parking supply as a strategy to manage demand, and developing shared mobility options. The ASMP includes 25 action items specific to TDM implementation ranging from creating a city-wide TDM specific plan and providing incentives to require trip-end facilities through the development process, to relocating City facilities to transit-rich environments.

In 2018 the City of San Marcos adopted a transportation master plan which includes “Consider travel demand management strategies prior to implementation of thoroughfare projects to reduce vehicular demand.” A parking implementation plan conducted simultaneously includes a demand management element.

Other plans within the region cover aspects of TDM but do not specifically note it; Capital Metro’s Connections 2025, and Project Connect, and CTRMA’s managed lane program.

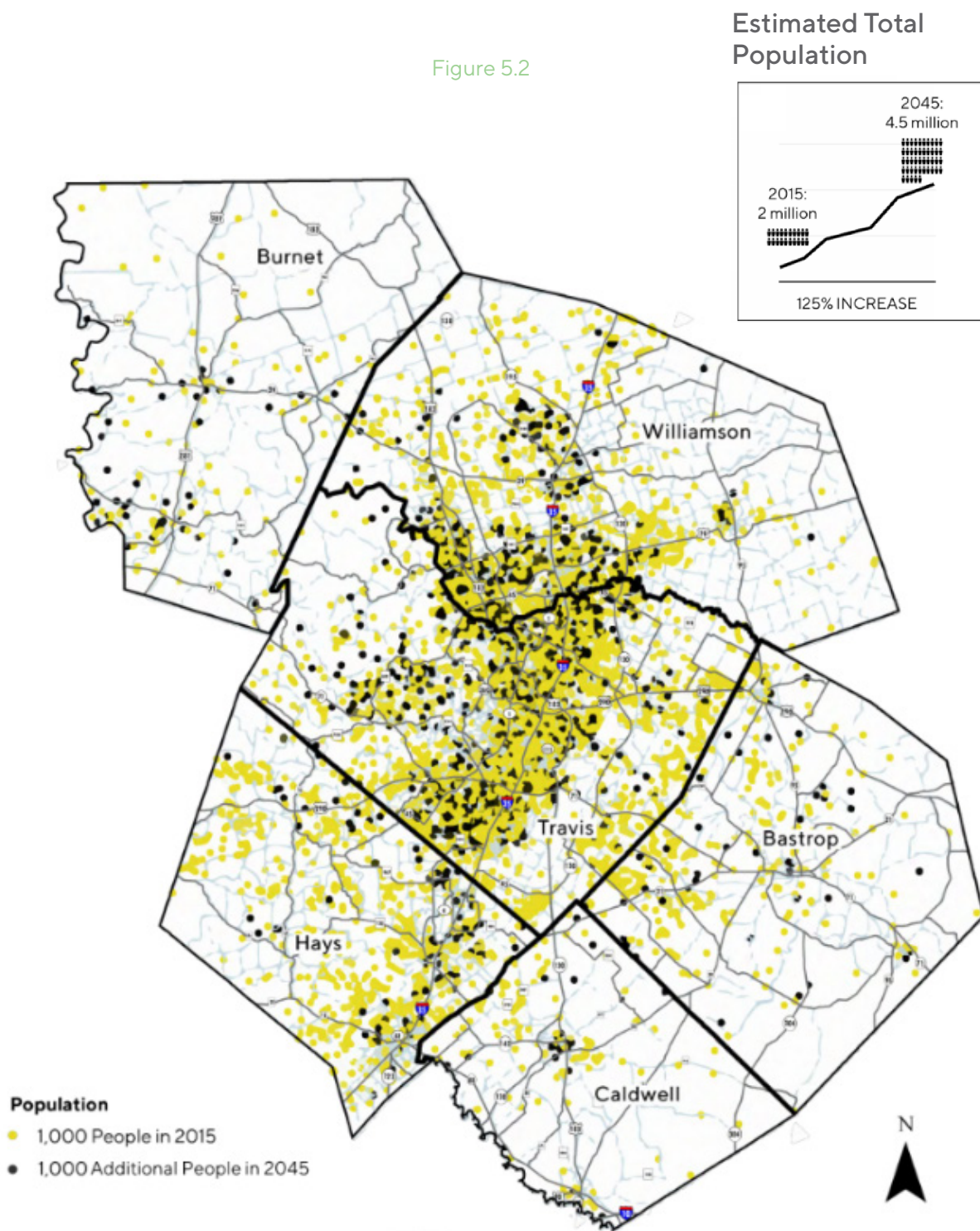
The limited number of existing plans formally dedicated to TDM strategies and indicates that there is a need for additional regional coordination.

Population

The region is home to an estimated population of 2,216,000 (2018). As of the 2018 Census update, it was the 30th largest metropolitan area in the US and growing by an average of more than 55,000 people every year. Average travel time to work by all modes is just under 25 minutes. The region is popular and growing, with the population currently projected to more than double over the next 25 years. The region continues to grow annually at 3% with this trend forecasted to continue through 2045. By 2045, forecasted population (Figure 5.2) and employment (Figure 5.4) are 4.5 million and 2.25 million jobs, respectively. This growth trend will continue to pose challenges to accommodate commuters both within the current urbanized area and in future emerging areas.



Figure 5.2



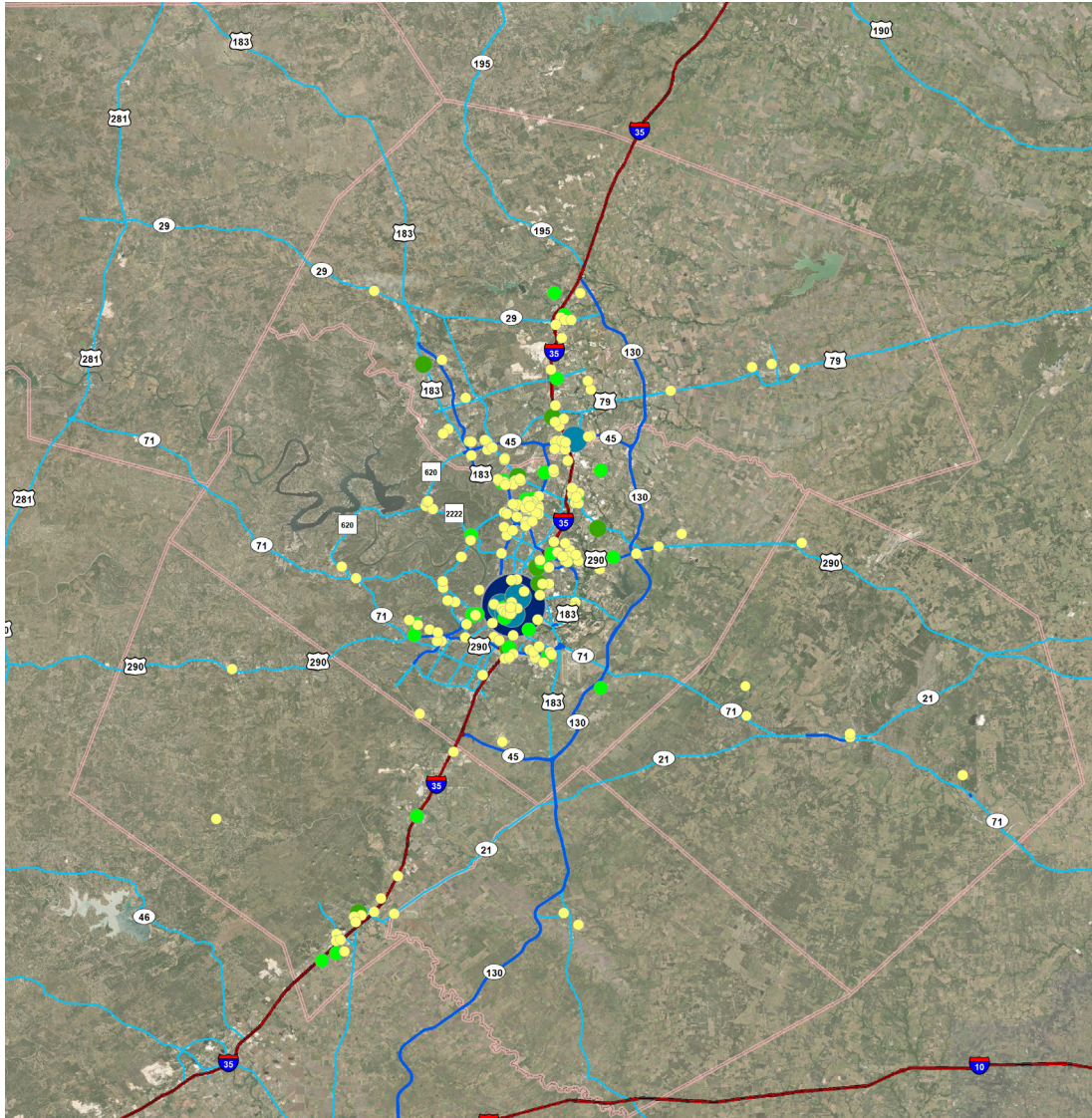
Source: 2045 Baseline demographics estimates, CAMPO

Figure 5.2 illustrates both the existing population density of the region in 2015 as well as the baseline population density growth projected by 2045. As has historically been the case for the region, population is loosely situated predominantly north-south along the IH-35 corridor, but also along the east-west corridors of SH 71 and US 290. Recent trends have shown expansion of residential development along SH 29 in Williamson County, SH 21 in Bastrop County, US 79 in Williamson County, and west of Ranch Road 12 in western Hays county. Over the plan horizon, this outward expanding development pattern will continue. Redevelopment and in-fill development is anticipated to continue in Austin and Travis County.

Employment

Similar to population, employment in the region is also generally situated along the IH-35 corridor both in quantity and density. Data from the 2018 Austin Chamber of Commerce reveal the largest major employers in the region are also geographically situated along the IH-35 corridor. Based on a 2019 Austin Chamber of Commerce database, Figure 5.3 illustrates the largest major employers with greater than 300 employees in the region. Figure 5.4 shows the projected employment for the region represented as blue clusters. Both figures show that employment growth will continue along the IH-35 corridor despite, as noted in the previous section, the continued population growth in other areas of the region.

Figure 5.3

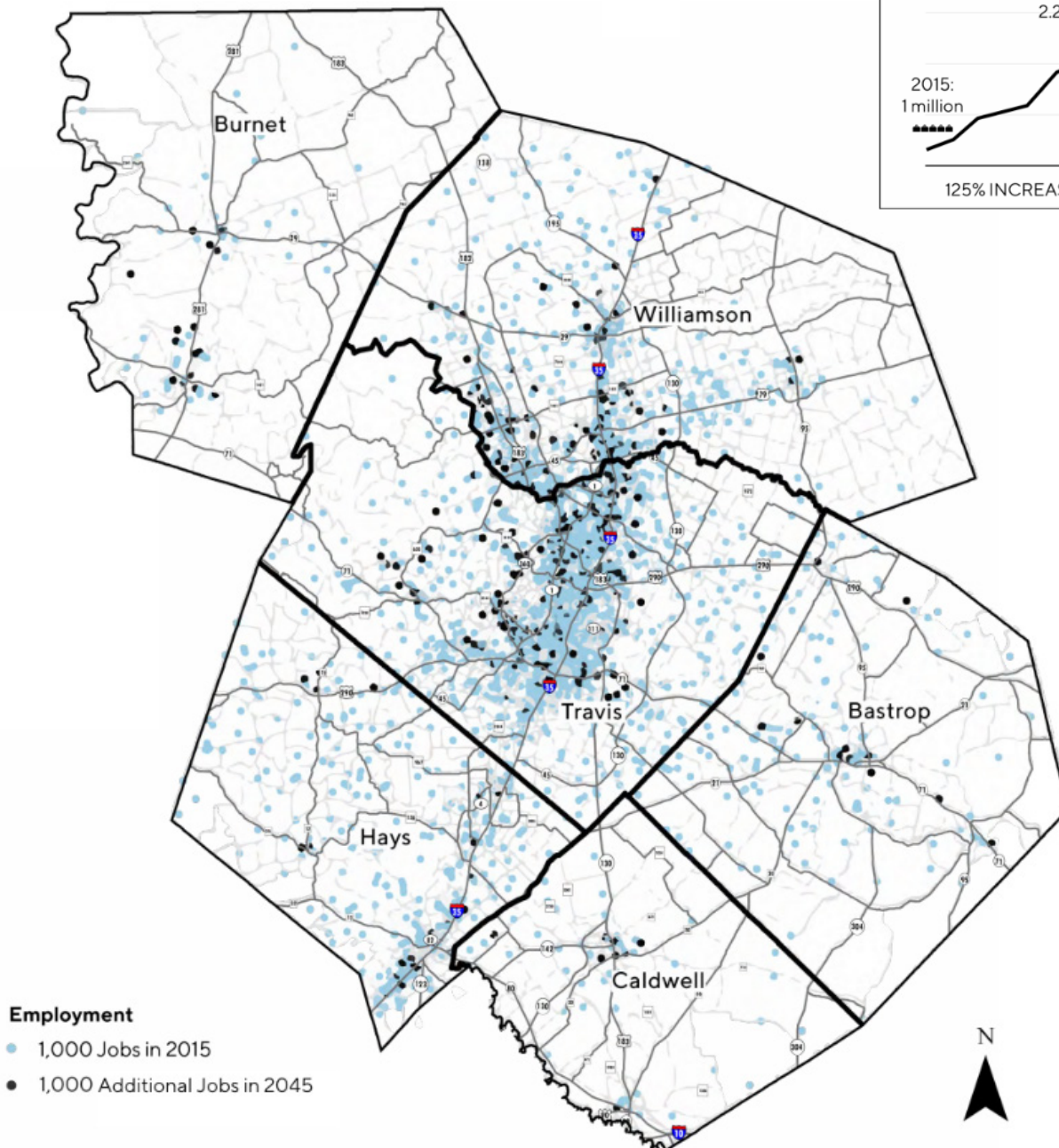
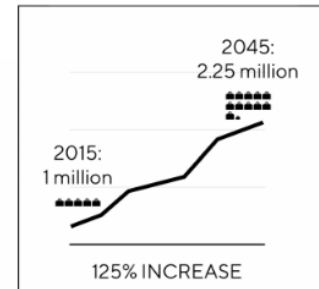


Major Employers with more than 300 employees

Source: Austin Chamber of Commerce, Bastrop EDC

Figure 5.4

Estimated Total Jobs



CAMPO Region Employment Distribution

Source: 2045 Baseline demographics estimates, CAMPO



Network Usage

Roadways

Vehicle Miles Traveled

Vehicle miles traveled (VMT) is a long-standing metric for measuring the use of personal vehicles. It can also be a proxy measure for the overall intensity of usage of the transportation system. Over time, as shown in Figure 5.5, the CAMPO region has experienced growth in VMT as the region has experienced population and employment growth. VMT trends broken down by county are shown in Figure 5.6. Daily VMT (DVMT) has increased from 38.6 million in 2005 when the population of the region was approximately 1.5 million persons, to a current estimate of approximately 53.5 million DVMT with 2.2 million residents.

Annual VMT can vary year by year, but generally, as referenced in Figure 5.7, the region has a current trend of reduction in per-capita vehicle miles traveled, echoing the trend across Texas. Overall, despite the decline in per capita DVMT, the strong population growth in the region will result in an overall increase in VMT in the system. This trend emphasizes the importance of fostering TDM practice, informing travelers of options, offering alternatives for users, and better managing the system across the various responsible agencies.

Figure 5.5

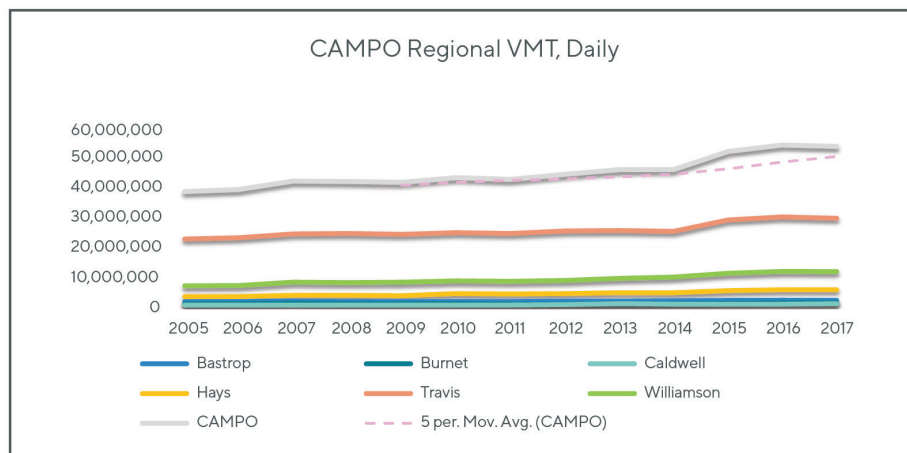


Figure 5.6

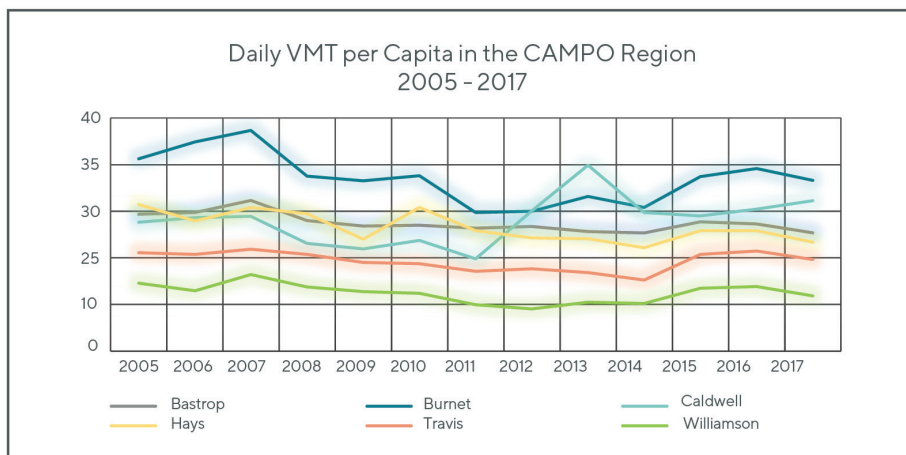
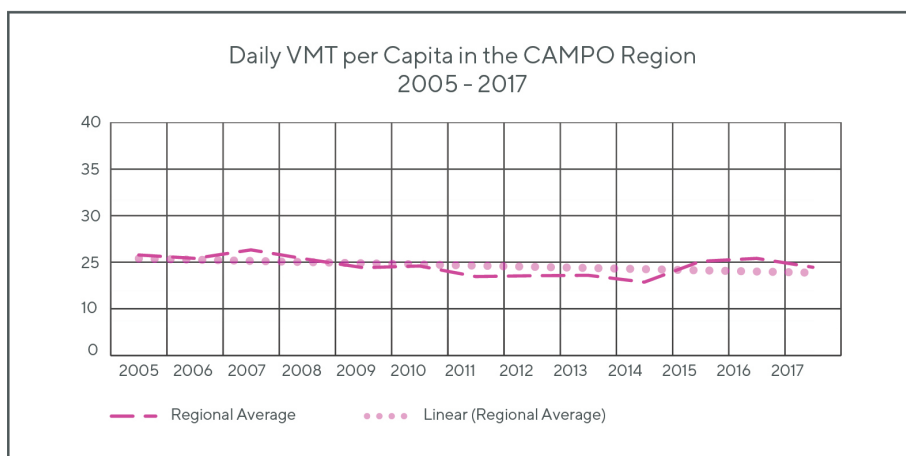


Figure 5.7



Congestion

The CAMPO region currently contains 14 of the state's most congested locations according to the Texas A&M Transportation Institute in their annual congestion report using Highway Performance Monitoring System and INRIX data. Long at the top within the region, and third in the state, the IH-35 corridor between US 290 and Ben White Boulevard/SH71 alone results in more than 1.3 million hours of delay per mile, annually.



The corridor serves more than 175,000 vehicles on an average day and its segments represent three of the top four most congested links in this region. Figure 5.8 illustrates the most congested segments of national highway system in Texas as measured by TTI annually.

Figure 5.8

The Most Congested Roadways in Texas: Austin – Round Rock

Rank	Road Name	From	To	Truck Rank	Delay/Mile	Truck Delay/Mile	CSI	PTI (95th %)	Annual Congestion Cost	Annual Truck Congestion Cost
3	IH 35	US 290 N / SS69	Ben White Blvd / SH..	1	1,363,393	92,571	3.59	4.36	\$226,765,796	38,184,799
19	IH 35	Ben White Blvd / SH71	Slaughter Ln	8	499,952	38,841	2.14	2.65	\$42,038,542	8,003,343
21	MoPac Expy / SL1	US 183	S Capital of Texas ..	229	489,015	3,942	2.53	3.34	\$96,187,406	2,120,401
36	IH 35	Parmer Ln / FM 734	US 290 N / SS 69	26	325,449	25,143	2.11	2.86	\$44,126,213	8,273,081
53	US 290 / SH71	RM 1826	S MoPac Expy / SL 1	134	271,554	5,573	1.84	2.06	\$20,843,904	1,137,482
62	S Lamar Blvd / SL 343	W Cesar Chavez St	US 290 / SH 71	430	232,741	2,401	1.67	1.99	\$15,868,424	438,250
73	N Capital of Texas Hwy ..	US 183	RM 2222	118	211,727	6,259	1.92	2.55	\$15,916,579	1,248,263
74	US 183	RM 620 N / SH 45	N MoPac Expy / SL1	383	209,872	2,658	1.86	2.27	\$30,607,524	1,048,746
78	IH 35	Slaughter Ln	SH 45	39	208,786	17,281	1.95	2.72	\$18,391,040	3,665,653
82	N Lamar Blvd	W 45th St	W Cesar Chavez St ..	230	200,096	3,934	1.96	2.28	\$14,830,238	769,905
85	Cesar Chaves St / SL 3..	S MoPac Expy / SL 1	IH 35	366	198,121	2,757	1.66	1.92	\$8,992,793	331,403
87	IH 35	RM 1431	SH 45 / Louis Henn..	40	196,374	16,839	1.47	1.60	\$22,911,704	4,708,818
89	US 183	IH35	E Ben White Blvd / ..	98	191,873	7,452	1.65	1.95	\$38,432,170	3,928,413
94	US 183	N MoPac Expy / SL1	IH35	195	184,850	4,332	1.45	1.76	\$13,572,954	854,799

Pedestrian and Bicycle Networks

As of 2017, the region contains more than 16,000 miles of road. Yet, there are approximately 2,000 miles of sidewalks and 1,300 miles of bicycle lanes. Additionally, the region has approximately 64 miles of guideways, such as a rail line or bus lane, dedicated to transit.

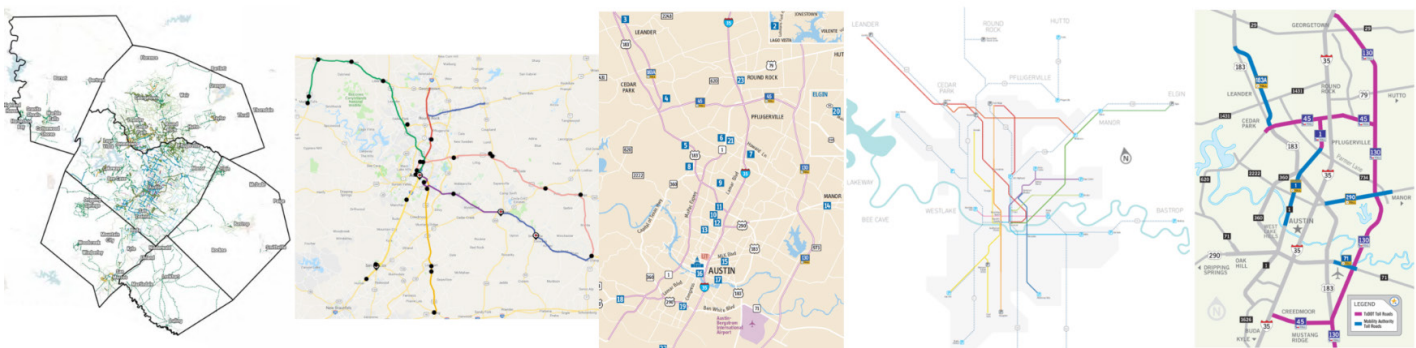
Table 5.9 compares the CAMPO region with other Texas regions in terms of availability of non-managed personal vehicle networks. While not all regions maintain an active inventory of sidewalks, the comparison illustrates that the CAMPO region significantly lags behind the Houston-Galveston (H-GAC) region when comparing active transportation and transit dedicated facilities as a percentage of road miles.

Table 5.9

REGION	SIDEWALKS	BICYCLE	DEDICATED GUIDEWAY	TOTAL	CENTERLINE MILES	PERCENTAGE
H-GAC	19300	1478	44	20822	29639	70.25%
CAMPO	2000	1300	64	3364	16375	20.54%
AAMPO	Unknown	308	0	308	10472	2.94%
NCTCOG	Unknown	671	306	977	38008	2.57%

Existing non-managed personal vehicle networks in the CAMPO region are largely separated by the implementing and operating agencies but include the transit networks of Capital Metro service area and CARTS service areas, the regional bicycle network, and regional managed lanes network maintained by TxDOT and CTRMA separately. Sidewalk networks are maintained by local governments and/or TxDOT. Larger versions of summary maps shown in Figure 5.10 are included in the appendix.

Figure 5.10



Existing Regional Bicycle, Rural Transit,
Park and Ride, Urban Transit, and Toll Facilities

Travel Mode Split

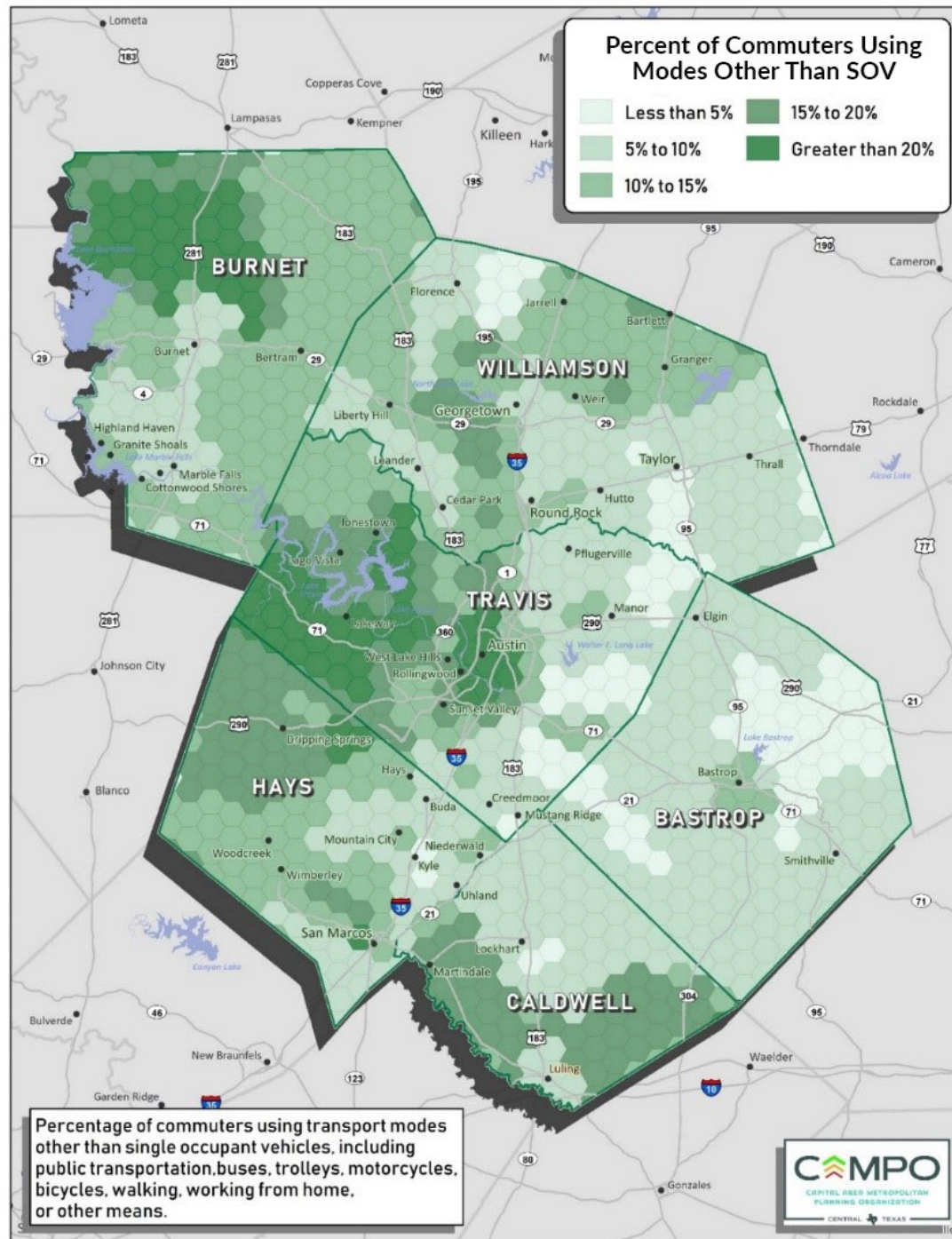
How people move about, described as their mode of travel, is important when considering the options and efficiencies of the transportation network. The primary mode of travel for journey to work is measured periodically by the US Census as part of their American Community Survey.



As a measure of travel demand, any mode other than travel by a single occupant vehicle can be considered a non-SOV trip, including those who telecommute to work or work from home.³ Travel modes are considered by personal car or truck, carpooling, transit, bicycle, walk, work at home. The CAMPO region is aggregated into patterns or clusters of combined ways to work other than travel alone by car, and Figure 5.11 shows these combined non-drive alone modes by area. The graphic illustrates how combinations of multiple non-SOV modes can result in higher percentages of usage, even in areas where there are fewer transportation alternatives overall. The tracts in the figure have been aggregated into hexagons for ease of presentation.

³ *The American Community Survey simply asks for a respondent to provide their main mode of travel. Therefore, it does not capture residents who practice multiple modes of commuting such as taking transit or working from home once or twice a week.*

Figure 5.11

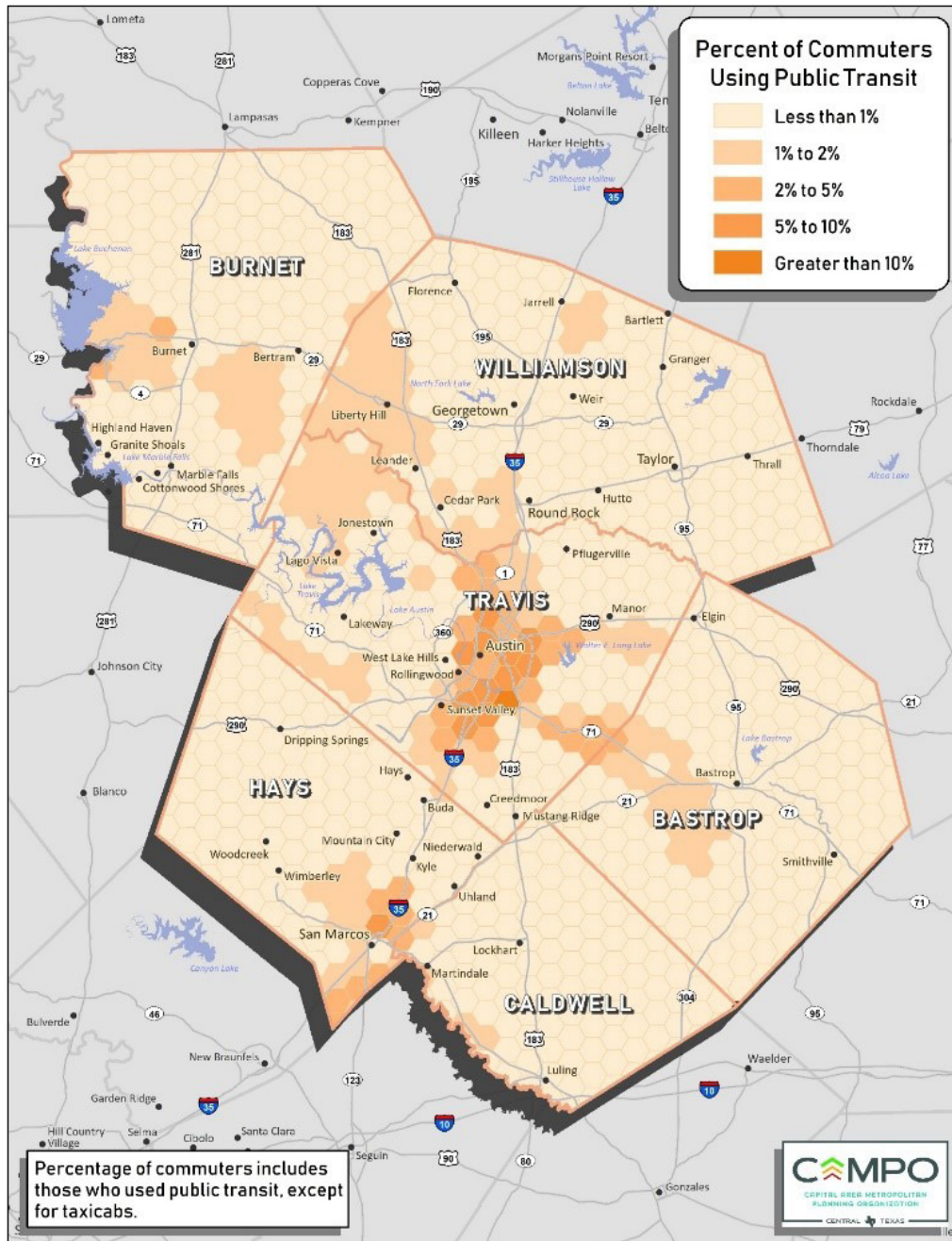




Transit Mode Split

Transit is typically offered in urbanized areas along fixed routes of travel but also can be demand-responsive for routine, scheduled trips in areas of the region not supported by fixed route transit. As a result, transit as a share of work commutes can be a smaller share across a broad region but is critical for providing services to populations that otherwise do not have access to needed services. Capital Metro and CARTS currently serve as the main line-haul transit service providers for the region and serve over 30 million passenger trips per year, and approximately 100,000 average weekday trips. In 2017, Capital Metro operated 751 transit vehicles and CARTS operated 91 transit vehicles.

Figure 5.12





Within the CAMPO region, the transit mode split illustrates the elevated use where clusters of development make transit as a travel mode more efficient and effective – in the core of the region in Austin and in San Marcos. Figure 5.12 illustrates the transit mode as a share of commute.

Existing Programs and Strategies

Several existing programs were identified through stakeholder interviews, including:

Fixed-Route and On-Demand Transit Services

The majority of the fixed-route and on-demand transit services are provided by Capital Metro and CARTS. GoGeo, a more recent fixed route and on-demand transit service, serves the City of Georgetown with four fixed-routes and paratransit services. Multiple employers in the region such as the City of Austin, Cirrus Logic, and Google provide shuttle services for their employees. School transportation is a critical component of the TDM system. School buses are generally managed by the School Districts of which there are approximately 39 within the CAMPO region.

Park-and-Ride Service

Another aspect of fixed-route transit service includes park-and-ride services, which are currently provided by Capital Metro and CARTS in conjunction with their Express, MetroRail, and regular route services. A current success case in TDM combines the express lane services from CTRMA and MetroExpress route services, which have seen significant increases in ridership and reductions in route travel time since completion of the MoPac express lanes. Park and ride facilities in the region are places dedicated to transit stations or other lots that are not normally used during work hours such as those of churches, theaters, or shopping malls. For example, Austin's New Life Church parking lot is used as a Park-and-Ride facility for Capital Metro's Express Bus Service.

Guaranteed Ride Home

Guaranteed Ride Home programs provide free emergency trip options for commuters using alternative transportation methods, reducing barriers for those who rely on single-occupancy vehicles for emergency trips. Capital Metro currently provides Guaranteed Ride Home services, and CAPCOG kicked off a Guaranteed Ride Home program in September 2018 through commutesolutions.com

Commute Planning and Incentives

Smart Trips Austin is a partnership between the City of Austin and Capital Metro, offering personalized transportation solutions for an everyday commute. Smart Trips Austin hosts events throughout the year providing information on mobility options including riding the bus, carpooling, biking, and walking. Another regional program is Commute Solutions, which offers a “one stop” trip planning tool to support Central Texans in planning their commute. Commute Solutions works to encourage alternative travel options like carpool, vanpool, transit, bicycling, teleworking, and walking and to educate individuals throughout the region on their mobility choices. Capital Metro’s Trip Planner provides a tool for riders to plan a desired route from start to finish accounting for detours or stop closures.

Commercial programs such as Google Waze, Apple Maps, and Ride Amigos also provide commute planning information such as the location of accidents, construction areas, and the different commute modes available to a traveler. Currently, CAPCOG and Travis County contract with service providers such as RideAmigos to provide online commute tracking and planning resources for employers. Private service providers such as RideAmigos allow organizations to create custom sub-networks on online platforms such as the CAPCOG MyCommuteSolutions.com platform tailored to serve specific needs of their employees. As of July 2019, Austin Commuters will be able to incorporate scooter trips into their commutes if they use public transportation and the Transit app. The Transit app will enable users to enter starting locations and destinations and get suggested routes that combine the use of a scooter operated by Spin and public transit.

Subsidized or Reduced Transit Fares and Shared Mobility Costs

MetroWorks is a program offered by Capital Metro providing organizations a purchasing plan to offer employees and students transit passes at a discounted price. Key stakeholders including Google, Whole Foods Market, and Samsung offer employees free or discounted transit passes and reduced or reimbursed costs for shared mobility programs such as carpools or vanpools. In addition to MetroWorks, Capital Metro, in partnership with the Austin Community Foundation, has continued to invest in the Transit Empowerment Fund. Empowering people by increasing access to transit options, the Transit Empowerment Fund distributes transit passes to low-income individuals, funds demonstrative projects that expand service in underserved neighborhoods, and works to identify transportation challenges and opportunities in the region.

Shared Mobility and Dockless Vehicle Options

Transit services provided through Capital Metro and CARTS make up the bulk of shared mobility programs in the region. Additional shared mobility programs, such as Capital Metro MetroRideShare,



myCommuteSolutions, Metropia, Waze Carpool, WeDriveU, RideScout, and community-based carpooling solutions exist in several areas of the region and are promoted by various employers, such as Google, Samsung, and Whole Foods. Dockless vehicle options are becoming increasingly popular, especially within employment centers such as downtown and the Domain. Shared bicycle programs have already seen tremendous growth in popularity, and B-cycle experienced the highest usage of any shared bicycle program in the country during Austin's South by Southwest Festival in 2014. B-cycle has continued to set new records for bike usage each year. Electric scooter companies, such as Lime and Bird, and car sharing programs, such as Car2Go and ZipCar, provide first/last mile commuting options and emergency trip vehicles within limited but expanding service areas.

Parking Policies and Availability

Parking availability at the destination is one of the key determinants for a traveler choosing to travel alone by vehicle. Managing parking supply, either through cost, time or availability is a powerful, market-based incentive to influence traveler behavior. In the CAMPO region, there are two focused areas of managed parking, currently the central business district of Austin, and increasingly in San Marcos. Due to the limited availability of data related to parking policies throughout the region, it is recommended that a region-wide parking study be conducted to gather more data on other regional nodes.

Parking Supply - Austin

There are currently 62,805 parking spaces in the downtown Austin vicinity. Approximately 43 percent are open to the public, 25 percent are restricted to residents, employees, and customers, and 33 percent are either public parking, restricted parking, or dependent upon time of day as to their availability for public use.⁴

Parking Demand

Demand for parking in many off-street facilities is uneven throughout the weekdays, showing significant underutilization in the evenings on weekdays and weekends. Demand can vary by location and in at least one instance (Palmer Event Center), weekend parking demand exceeds weekday demand.

Since on-street parking is usually significantly less expensive than off-street parking, demand for on-street parking is consistently higher. Parking demand is unevenly distributed throughout the downtown core and existing parking facilities are not being used efficiently.

⁴ Percentages do not equal 100 due to rounding.

A 2016 Downtown Austin Parking Strategy Study conducted by the Downtown Austin Alliance categorizes the public into two general groups of opinion regarding downtown parking: One group wishes to prioritize access by building more parking and making it “free” or otherwise subsidized by business developments; the second school of thought supports better management and coordination of parking supply and increased multimodal investment to serve the need that otherwise would go to increases in parking. The study concludes that in order to accommodate future, projected growth in the central business district, the City of Austin will need to balance increasing the parking supply with enhancements to current parking management.⁵ One strategy used sporadically in the region is the deployment of a parking guidance system, which is a series of red and green lights that quickly alert drivers if a parking spot is available. These lights also feed information boards that notify drivers to the availability of parking within the garage or lot. This system can reduce the time spent on searching for parking, resulting in a more efficient movement of vehicles and fewer vehicle emissions.

Highway Emergency Response Operator (HERO) Patrol Service Program

TxDOT operates a free to the user roadside assistance program for stranded motorists in their service area, as well as a first responder support for local emergency response agencies to assist in crashes and reduce the clearance times for severe crashes that reduce travel time delay from incidents both large and small. Their service area currently covers US 183, IH-35, US 290, SH 71, and MoPac in Travis County, Williamson County, and Hays County.

Stakeholders and Partners

This section details the TDM steering committee and additional stakeholders and partners identified by the committee for involvement, and how each entity might better integrate, lead, and coordinate TDM program efforts.

Stakeholder Interviews

In-depth interviews were conducted with key stakeholders in the region to gather input on perspectives, resources, and priorities as they relate to TDM projects and strategies. The team coordinated with steering committee members, major employers in the region, and representatives from planning agencies to schedule and conduct 14 individual interviews between February 6 and February 19, 2019. Interviews took place in-person or via conference call and lasted approximately one hour.

Organizations from both the public and private sectors were represented in interviews and had

⁵ Sources: 2016 Downtown Austin Parking Strategy, City of Austin, 2014 Parking Management Study.



varying levels of experience, resources, and involvement related to the implementation of TDM applications. Representatives from CAPCOG, TxDOT, Travis and Bastrop Counties, the Cities of San Marcos and Austin, CTRMA, Capital Metro, Movability, the Greater Austin Chamber of Commerce, Samsung Semiconductor, Google, and Whole Foods participated in the interview process.

While the interview process was tailored to the organization's level of expertise and involvement in implementing TDM practices, the interviews generally began with a brief introduction to TDM concepts, the planning process, and desired outcomes of the plan. Interviewees were asked to describe their organization's impact on mobility in the region and their role in implementing existing TDM strategies, as well as their priorities and desired outcomes for potential TDM strategies that could be deployed in the region.

High-level themes emerged throughout the interview process as organizations identified TDM needs and priorities in the context of the region, including:

- Incorporation of transit features into future roadway projects
- Expanded transit service
- Addition of managed lanes
- Increased availability of micro mobility options
- Improved data collection and sharing
- Strategies to mitigate transportation demand during construction
- Outreach and education initiatives to motivate a mode shift
- Dedicated funding to support TDM strategies

Movability

Movability is a Transportation Management Association that coordinates mobility programs and services for public and private entities in Central Texas. The organization works with a variety of employers around Central Texas to help them develop customized mobility policies and programs, learn more about mobility options, network with service providers and other employers to learn best commuting practices, and implement existing mobility policies and plans. Currently, Movability's focus is on the Austin central business district and large tech employers, with plans to expand to other partners.

CAPCOG

One of the 24 councils of governments in Texas, the Capital Area Council of Governments (CAPCOG), serves as voluntary organization of local governments. The organization serves as an advocate, planner, and coordinator on regional issues in the greater 10-county Austin Metropolitan Area, including Bastrop, Blanco, Burnet, Caldwell, Fayette, Hays, Lee, Llano, Travis, and Williamson counties. Their broad services include emergency communications, elderly assistance programs, law enforcement training, criminal justice planning, and air quality monitoring. CAPCOG currently houses the Commute Solutions program which promotes TDM activities through social media marketing, advertising and outreach, and the provision of services including the MyCommuteSolutions.com platform and an emergency ride-home program.

Capital Metropolitan Transportation Authority (CMTA) Office of Mobility Management

Capital Metro is the primary fixed route public transit service provider for the CAMPO region. Their service area covers approximately 520 square miles of the 5,307 square mile CAMPO region. Capital Metro provides approximately 30 million trips by bus, rail, and vanpool and demand response services per year. The Office of Mobility Management (OMM) is a collaboration between Capital Metro and Capital Area Rural Transportation Systems (CARTS). The office has access to 26 community partners that are dedicated to meeting the transportation needs of senior adults, people with disabilities, and veterans. They offer services for coordinating accessible ride services for disadvantaged populations branded as mytxride.com. OMM also collaboratively develops transit service plans with suburban communities that are outside the Capital Metro service area.

Capital Area Rural Transportation Systems (CARTS)

Capital Area Rural Transportation Systems (CARTS) is responsible for transit services in the non-urbanized areas of Bastrop, Blanco, Burnet, Caldwell, Fayette, Hays, Lee, Travis, and Williamson counties. CARTS also serves the San Marcos urbanized area. CARTS buses operate from eight transit stations located strategically throughout the CARTS District, which also house Greyhound stations. CARTS provides predictable connections between these communities to the national intercity bus network, to Capital Metro services, and to the metropolitan center of the region. CARTS primarily operates along three fixed routes but also provides a demand response service. These rural service lines operate on a pulse schedule, where fixed routes meet at a common location for riders to transfer between vehicles. In addition to its fixed route system, CARTS also operates the Country Bus service which provides door to door service for riders, who must schedule rides 24 hours in advance, within the rural service area. CARTS serves approximately 240,000 trips per year.



City of Austin

The City of Austin provides many transportation planning and implementation functions, along with land-use authority, infrastructure development, and operations. The city's Transportation Demand Management Program promotes alternative modes of travel through several initiatives and helps incorporate TDM strategies into the city's development projects. Key initiatives of the TDM program include marketing and education, parking management, improved transportation options, land use, and incorporating TDM strategies into city plans. The program is expanding to core neighborhoods that have access to multiple travel modes to educate residents to their benefits. The city also manages a pilot TDM incentives program for its own employees to offer incentives for their travel alternatives.

Travis County

Travis County, which includes most of the City of Austin and surrounding areas, has the highest population in the CAMPO area and includes the region's largest employment centers such as downtown Austin and the Domain. Travis County is responsible for transportation planning and implementation in unincorporated areas, as well as provision of emergency services. The county is developing a long-range Transportation Blueprint, which will enhance multimodal transportation options to manage current and future travel demand. The county partnered with Capital Metro and CARTS to create a Transit Development Plan that will improve TDM options in gap areas through mobility on demand pilot projects, community-based solutions that include free transit passes, telework programs, flexible work hours, bicycle facilities at County buildings, carpooling and vanpooling, and a Commuter Leave Incentive Program offering additional leave for using and recording sustainable commutes. As an employer, Travis County promotes TDM through an in-house employee commute program and provides in kind support for CAPCOG's Commute Solutions Program.

Bastrop County

Located in the rapidly growing area east of Austin, Bastrop County is responsible for transportation planning and development services in the historically non-urbanized jurisdiction. As population and transportation demand increases in the County, TDM strategies are emerging as a method of promoting sustainable growth. Over half of the population within Bastrop County commutes daily to Travis County, and opportunities for shared mobility programs and potential transit options are becoming more realistic with newly forming pockets of dense development. The local government is currently promoting outreach and education opportunities to encourage mode shifts for residents where feasible.

Central Texas Regional Mobility Authority (CTRMA)

The Central Texas Regional Mobility Authority (CTRMA) is one of the entities responsible for planning, funding mobility and safety improvements in Williamson and Travis Counties, partnering with various agencies to expand or establish programs that improve system efficiency. While CTRMA has funded and managed several toll road projects in the area, and the MoPac Managed Lanes, they are also increasing their focus on TDM practices to address congestion and considering the feasibility of demand-based pricing on existing toll roads, implementing managed express lanes on non-tolled facilities, and incorporating active transportation facilities on roadway projects where possible. CTRMA promotes TDM strategies for employees by encouraging teleworking and carpooling and has implemented a Green Roads Program to mitigate demand increases during construction projects. CTRMA, as a regional mobility authority, also designs, constructs, and implements multi-modal, pedestrian and cyclist friendly facilities like Shared Use Paths, sidewalks, and cross-street connections as part of every project whenever feasible. More than 70 lane miles of sidewalks and shared use paths are planned or in place for their sponsored facilities.

Texas Department of Transportation

The Texas Department of Transportation (TxDOT) is the agency responsible for transportation planning, implementation, and facilities maintenance at the state level. TxDOT's facilities span across every jurisdiction in the region, and the agency works with planning partners and organizations on projects to improve system capacity, reliability, and resiliency. TxDOT partnered with CAMPO and the City of Austin on the Mobility35 program, which includes a series of projects to improve mobility on the Interstate 35 corridor that serves as the principal highway in the CAMPO region, including for commuters traveling to and from the downtown core. TxDOT proposes TDM strategies as a primary tool for improving mobility by decreasing single occupancy vehicle commuting during peak hours.

City of San Marcos

San Marcos, located in Hays County, is the second significant urbanized area in the CAMPO region. As host to Texas State University and with increasing levels of infill development, it is one of the fastest growing activity clusters in the region. The 2013 Hays County Transportation Plan, of which the city is a participating local government, recommends that congestion management strategies from CAMPO's Congestion Management Process document be implemented as part of their project recommendation and selection process to improve the likelihood of project inclusion into the Transportation Improvement Program.



Greater Austin Chamber of Commerce

The Greater Austin Chamber of Commerce is a membership-based organization comprised of 2,800 businesses in and around the Austin area. The Chamber provides resources to businesses, employers, consumers, and the community at-large, advocating for various initiatives that support economic development and viability. The Chamber supports local TDM efforts by working with Movability, Capital Metro, CAPCOG, CTRMA, and various county governments during the development of transportation projects to advocate for multimodal facilities that promote efficient movement of people and goods. Internally, the Chamber encourages flex working schedules and continues to stay engaged in transportation and TDM planning.

Samsung Austin Semiconductor

Samsung Austin Semiconductor (SAS), located in Northeast Travis County on a 300-acre facility, continues to lead as one of the largest tech employers in the Central Texas region with more than 8,700 direct and indirect employees. SAS, a member of Movability, has engaged employees in Commute Solutions and promoted TDM strategies through an internal survey and participation in the Mayor's Mobility Challenge. The company's mobility goals include providing shared mobility alternatives and incentives to use rideshare applications.

Google

Recently relocated from a campus in northern Travis County, Google has approximately 1,000 employees working in their Downtown Austin office. As a member of Movability and a participant in the Mayor's Mobility Challenge, Google has developed a robust TDM program for employees. They offer an employee shuttle program, free Capital Metro transit passes, reimbursed or cost-free carpooling and vanpooling, discounts on electric scooters, and active transportation amenities such as bike storage and showers onsite at their office. Google collects data on employee commute choices through a yearly survey, using data collected to improve internal TDM strategies, and recently began developing an app to offer employees incentives and resources for utilizing alternate transportation modes.

Whole Foods Market

Whole Foods Market employs over 2,500 people in the Central Texas region with corporate headquarters located Downtown Austin. Committed to sustainability and a member of Movability, Whole Foods released a survey to team members to understand commute choices. Focusing on TDM strategy, Whole Foods Market distributes discounted transit passes, incentivizes carpooling/ridesharing, and is working to update facilities with bike lockers and showers for team members. The described in the previous discussion on Parking Demand.

TDM Opportunities

As the previous section outlined, an array of TDM strategies are conducted in the region. However, there are multiple examples from peer agencies in other parts of the nation that offer potential strategies for this region to pursue. Additional opportunities not conducted by other MPOs are also identified as available strategies. This section identifies those strategies as they relate to the goals detailed in Part I.

Regional Coordination

Coordination has many benefits, including promoting issue visibility, the potential for consistency in messaging, and promoting efficiency by reducing duplication of efforts. It also has the potential to provide accountability and performance monitoring. Highlighted opportunities include a regional coordinating committee within the MPO, corridor coordination, amending level of service standards, and guidance on traffic impact assessments and impact fees.

Regional Coordination

At the regional level, transportation coordination takes the primary form of the MPO dialogue platform, regional plans, and monthly coordination meetings. Examples of TDM coordination at the regional level include the Atlanta Regional Council (ARC) and Metropolitan Washington Council of Governments (MWCOC).

- ARC conducts coordination of seven different TMAs in the region, through a regularly meeting working group to coordinate actions and messaging. The MPO oversees the activity that was previously provided by the State of Georgia.
- MWCOC houses the region's TMA and Commuter Connections program. The working group reports directly to the Policy Board, and is made up of the local representatives of the cities and counties that fund the region's TDM program.

Corridor Construction Coordination

TDM and ITS solutions applied at the time of construction for a corridor can help mitigate effects of construction. Providing traveler information regarding construction activities, coordinating with businesses and employees in the corridor to develop travel or work alternatives, and working with transit service providers to adjust facilities and services – or provide additional temporary services – during the construction can provide some measure of relief.

- WSDOT provides an employer-based program on the I-405 corridor in the Puget Sound

area, including services and information on teleworking, alternative work arrangements, available tax credits and parking cash-out incentives associated with their commute trip reduction program.

Regional Guidance for Traffic Impact Assessment

A traffic impact assessment is a study which assesses the traffic and safety implications relating to a specific development. The TIA study for a new development is undertaken to assess whether the road network surrounding the proposed development will be able to handle the additional traffic while maintaining an acceptable level of service. In the event that a new development triggers an unacceptable level of service, then a municipality can charge a fee to the developer to pay for needed improvements, such as modifying signal times, adding turn lanes, or other improvements. Cities adopt their own ordinances relating to TIAs and there is no regional coordination to determine its impact on the transportation network. Providing regional guidance on TIAs could result in a standardized approach towards the nexus between land use and transportation.

Incorporate TDM into the Transportation Planning Process

Within the long-range, regional transportation planning process, TDM can be incorporated to make the transportation system operate more efficiently. In addition to the personal mobility and access to opportunities to work, live and play nearby, benefits can compound for communities from better use of the existing public services and infrastructure. This stems from appropriate land use planning, urban planning, and parking management discussed in this section and multimodal transportation planning to improve the transportation system covered in a later section. Also address the addition of the level of service discussion in this paragraph

Land Use Planning

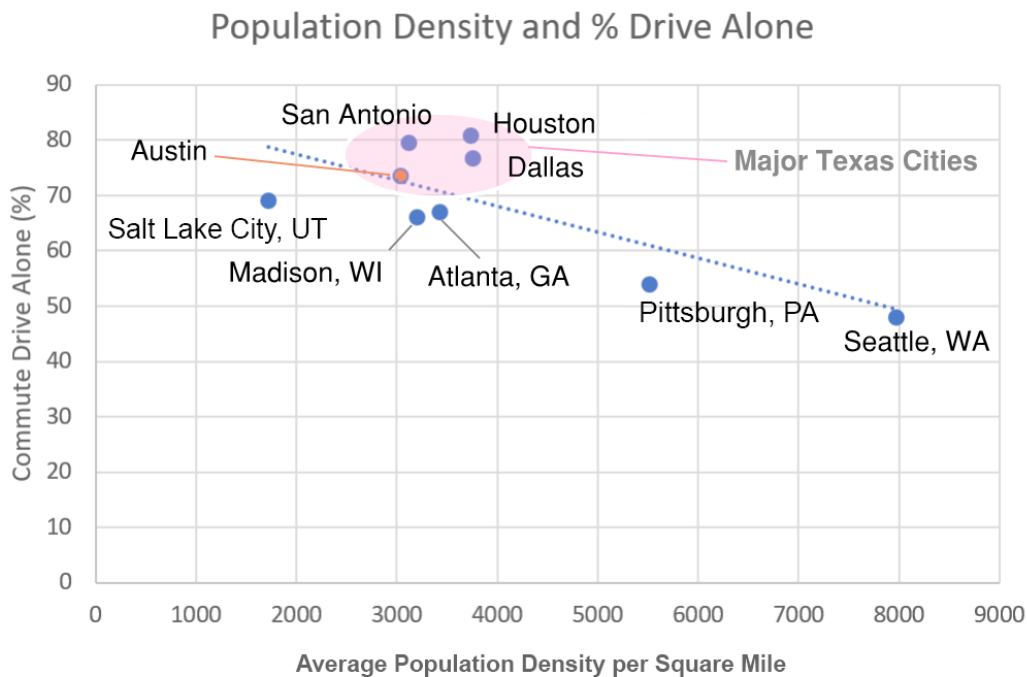
TDM strategies and land use planning most effectively intersect through the effects of destination proximities or the mixing of land use types and increasing intensity of development at trip-ends. Through density and a mix of uses in proximity to each other in a connected environment, the need to travel alone by automobile is reduced and trip lengths by all modes are reduced. As noted in this plan, operations program planning for services make networks operate more efficiently.

Mobility options that combine multiple users on a route in a managed way – such as fixed route buses, or longer distances as managed lanes served by bus, or the highest transportation investment of rail, can be effective transportation investments – but only when land use intensity is enough to support the transportation investment. At the regional scale, efficiencies for travel by modes other than SOV

increase as densities do, but densities also typically correlate with increased transportation service options.

A useful example of the land-use component of the planning process – efficiency at large – compares average commute rates from driving alone to average densities in select major US and Texas cities, as shown in Figure 5.13. The emerging pattern illustrates the regional effect of densities overall, though rates in neighborhoods and commercial areas at the ground level will vary depending on options available for driving, parking, busing, riding, biking, walking, or scooting.

Figure 5.13



Among similar major metropolitan areas in Texas, the CAMPO region has a comparatively lower commute by driving alone rate. As the opportunities nearby of where people live, work and play combine with transportation investments, TDM-minded programs, services and multimodal network improvement contribute positively to the overall efficiency of the transportation system.

Increased densities, mix of uses, and walkable areas mean greater proximity to one's destination which, in turn, result in shorter trips, less reliance on SOV, and consistently results in reduced SOV usage. Local governments can amend their land development code to incentivize density, mix of uses and shorter blocks through:



- **Density bonus programs** – density bonus programs allow developments to achieve greater height and density in exchange for providing a higher quality building, streetscape and community benefits.
- **Street network grid requirements** – a street network grid with shorter blocks in an urban area, measured in hundreds of feet rather than 1/4 mile or half-mile increments, help shorten connections between destinations and make walking, biking or scooting a safer and more comfortable alternative to driving a car. For suburban areas, requiring that developments have more than one vehicular outlet allows for a more connected street grid and reduces bottlenecks for entering and exiting neighborhoods.
- **Eliminating minimum parking requirements** – reducing or eliminating minimum parking requirements for developments results in discouraging SOV usage and reduces the amount a developer spends on parking facilities which, depending on the development, generates little to no revenue for the developer. The additional cost of parking results in higher costs to the developer who then passes it on to its customers through the form of higher rents or sale prices.

Amending “Level of Service” Standards

Another option increasing the effectiveness of TDM strategies is to amend the definition of level of service (LOS) in traffic impact assessment and development review processes at the local level, to emphasis people movement, measurable internal trip capture, and site access instead of vehicular movement at major intersections. This can result in improvements such as more sidewalks and bike lanes which are traditionally less costly than adding lanes or more vehicular capacity to a roadway.

In January 2019, the Seattle City Council passed an LOS reform bill which changed its approach to LOS; for example, developments built within a half mile walking distance of a light rail station were not required to conduct transportation mitigation measures. Additionally, new developments are now required to reduce drive alone rates to a target set for the area in which they are built.

Providing Education and Outreach

Highlighted practices to meet the goal of providing education and outreach include – effective outreach and education, expanding employer based TDM programs, efforts that benefit air quality.

Outreach & Education

Outreach and education are important components of a well-rounded TDM strategy. Concentrating on specific alternatives targeted to a local audience is more effective at changing travel behavior but relies on the specialized understanding of partnerships, information and monitoring, and available resources and incentives.

In addition to targeted education and marketing, comprehensive outreach and education programs should consider the whole travel pattern of the household, which have become increasingly complex. This can raise awareness of alternative transportation options and TDM programs for all types of users.

Examples of outreach and education programs on the importance of TDM include:

- North Central Texas Council of Governments (NCTCOG) offers a free educational program on employer trip reduction (ETR) to reduce single-occupant vehicle commute trips. They offer this program to public and private employers with more than 100 employees, and it can be tailored to a specific company. They also developed TryParkingit.com, a website to assist commuters with ride-matching for carpool, vanpool, biking, walking, and transit. This allows users to log their commute for reporting purposes and rewards.
- Sacramento Area Council of Governments (SACOG) has two major annual promotional campaigns for alternative transportation. For messaging, SACOG found that consistency among outreach partners and having a unified message are key. The “May is Bike Month” campaign encourages bicycling for all types of trips. Resident riders log their bicycle miles on mayisbikemonth.com for a chance to win prizes. Similarly, “October is Smart Commute Month” promotes all alternative modes of transportation. Like the May event, residents are encouraged to log their trips in the online Commuter Club Trip Diary for a chance to win prizes. This gamification adds an element of challenge and fun to incentivize a shift in personal and community behavior.
- The Arlington County TDM plan Outreach and education efforts include focus groups and public workshops, a “Car-free Diet” plan. Similar to the SACOG efforts, the Arlington “Champions” Program appeals to employers’ public-recognition interests through its medal-based classification of participants (bronze, silver, gold, platinum) and uses recognition events and marketing as rewards for program participation, and separate



efforts to have employers incentivize TDM for employees. Arlington also has an app for ongoing TDM programs where users can get tips, updates, and a travel “score.” Supportive Marketing efforts include maintaining a presence on social media in addition to print or electronic media (e.g., paid advertisements, free articles, radio), branding for specific programs, and representation at festivals/events.

- Atlanta Regional Council (ARC) TDM Stakeholder Engagement Plan includes Incentive programs for residential property managers (e.g., bike parking, keep transit pamphlets, shuttles to transit connections), and also has an element that targets universities, including distributing educational materials and providing commuter alternatives incentives.

Employer-Based TDM Strategies

Employer-based TDM strategies are still growing in the CAMPO region, with TMA efforts expanding beyond the Austin Central Business District, and cities and counties primarily focusing on their own employees. Expanding employer-based strategies should continue to be a priority both for its localized emphasis at the point of use – clusters of employees, and cost effectiveness. In addition to the cost-sharing structure noted in the funding section of this plan, other best practices and lessons learned from summaries in this plan include:

- The San Antonio District Office of the Texas Department of Transportation (TxDOT) conducted an effort to educate major employers in the district about travel options and commute costs and encourage employees to consider travel options which decrease congestion throughout the region. For this effort all major San Antonio employers larger than 500 and 1,000 employees were requested to participate in a customized employee commuter survey. TxDOT found it difficult to interest commuters in alternative travel methods when the experience resulted in the same congestion times as single-occupant-vehicle drivers, and when low gas prices provide little incentive to using transit options.
- Chicago Metropolitan Planning Council conducted a two-year pilot that engaged more than 6,200 employees at 16 companies in the region. The pilot program confirmed that commuters often are unaware of all transit options and identified barriers to employees using transit options. As part of MPC pilot program, a large suburban employer provided a dedicated shuttle to the nearest transit station and promoted pre-tax benefits and ridesharing. The results showed a 20% drop in drive-alone employees as transit use and ridesharing rates doubled for the employee base. On average, 68% of new transit users reported saving \$151 on gas, tolls, and car maintenance every month.
- Flexible work hours is another employer based strategy which can reduce the number

of peak hour travels by encouraging employees to commute to work when the roads are less congested while still allowing typical office hours. Texas Instruments (TI) in Houston initiated their workplace flexibility program in 1993 as a result of an employee needs assessment survey. Houston's mayor initiated the pilot project called Flex in the City in 2006. Before and after travel time data indicated a travel time reduction as a result of the pilot program.

Improving the Transportation System

Transportation Systems Management and Operations

In the same manner of TDM, Transportation Systems Management and Operations (TSMO) describes a set of strategies developed around operational improvements that can maintain performance of the existing transportation system before added capacity is needed. This is done through the application of knowledge, skills, and techniques to implement solutions, typically at a low cost and with an emphasis on quick delivery. The intent of these strategies is to enable transportation agencies to achieve more using existing funding and serve more customers. TSMO also helps operational agencies balance supply and demand and develop flexible solutions that can more closely match changing conditions. Examples of TSMO include work zone management, traffic incident management, traffic signal coordination, and special event management.

Transit Centers

Transit centers are another strategy to provide connection for the suburban area, for instance connecting CARTS services to Capital Metro in Austin. Transit centers serve as efficient hubs that gather transit riders from various locations at a central point to take advantage of express trips or other route-to-route transfers. In Dallas, DART's downtown East and West Transfer Centers provide convenient locations to transfer between bus routes and rail stations. Capital Metro is also currently investigating the concept of Transit Hubs, where travelers can easily transfer between modes.

Parking Guidance Systems

In addition to site- or garage-specific applications, Parking Guidance and Information (PGI) Systems can be used at fixed points in a road network to provide dynamic, real-time information about location and/or availability of parking. Their main objective is to reduce the amount of time drivers spend searching for a parking space. This type of technology, one of the most long-established forms of driver information systems, was first utilized in Germany in the early 1970s and has become popular across Europe. The information provided by PGI can range from "empty" or "full" in the context of a single lot or facility, to precise location of individual spaces using sensors. When used effectively, PGI can result in more efficient movement of vehicles and fewer vehicle emissions.



Diamond Priority and Managed Lanes

Diamond priority is a type of managed lane, also known as high occupancy vehicle (HOV), and refers to strategies that give priority to HOVs. Diamond priority is a major component of many regional TDM programs, helping to reduce the number of vehicles on the network. These lanes are physically separated from main lanes by a structural separation or barriers. The efficiency of these types of strategies depend on maintaining an uncongested Level of Service (LOS) within the lane. The MoPac Express Lanes are an example of managed lanes within the CAMPO region.

Prior to the 1990s, the CAMPO region has been interested in congestion IH-35 as a central need, as the predominant movement of people, goods and services is north-south, and the situating of the majority of homes and businesses is also along a north south axis. A near consensus of steering committee members also cited addressing congestion in the IH-35 as a need that TDM could help to address.

Congestion Pricing

Congestion pricing, or a congestion charge zone, is a TSMO strategy for charging a fee for entering a supply constrained zone, lane, or facility such as a bridge to add a strong incentive to use other methods for travel within the zone. Successful local examples include the MoPac lanes noted above. Other Texas examples include Houston, Dallas and Fort Worth, and El Paso. The Puget Sound HOT lane and tolling network has provided successful management on 4 regional facilities for over 10 years. One example measurement included 38 percent ridership increases in transit ridership along the SR 520 corridor and 99-100 percent occupancy of park and ride facilities within the period. Key to the success of the Puget Sound examples were the conditions of the network at the time the charge was implemented, limits to the ability to expand supply in a developed corridor, and an increased support after concerns with equity impacts were informed of the 50-75 percent project support across all income groups by survey.

Comparable to the individual facilities or corridors, successful congestion charge zones for activity areas, such as a central business district, are currently controversial in the US. New York is the first major city in the US to begin considering a zone charge for lower Manhattan. Successful, established congestion zones for personal automobiles have long existed in London, Singapore, Stockholm, Milan, Gothenburg, Rome, Milan, Durham, Oslo, Trondheim, Bergen, and others.

Increasing Mobility Choices for Travelers

First and Last Mile Partnerships with Transit Agencies

People traveling to and from low density urban areas often face first mile-last mile challenges when

taking transit. Strategies that link express bus service, local transit, vanpools, managed lanes, bike path, and park and ride lots can enhance network connectivity and increase transit utilization to cover these service gaps through added, managed service expansion. Steering committee members expressed a need to address transit resources and accessibility and additional managed capacity to the roadway network.

Public transit would be included in people's travel choice more often if their first and last mile service gap is addressed. As a result, transit agencies started partnership with Transportation Network Companies (TNCs) such as Lyft, Uber, and RideCO to deal with "first mile/last mile" connections to transit in a low density. In 2018, the City of Monrovia, CA, partnered with Lyft and Lime to launch a new multi-modal transportation program, called GoMonrovia, for suburban mobility to provide fast and affordable transportation (\$0.50 Shared Rides to Old Town and the LA Metro Gold Line Station). Dallas Area Rapid Transit (DART) and the Metropolitan Atlanta Rapid Transit Authority (MARTA) entered into a partnership with Uber known as the "Last Mile Campaign," which allows their passengers to link directly to Uber using the DART GoPass app or MARTA On The Go app. King County Metro conducted a pilot project in Bellevue that offers on-demand shuttle service to and from transit hubs throughout the region using mobile apps called Ride2. The service was offered free for the first few months and later cost the same as a standard Metro bus ride.

Bike and Transit Integration

Bike access to transit stations and terminals is another strategy that provides a high level of mobility and fill the first and last mile gap which can be improved by providing paths and road improvements. Mobile apps that recommend the best cycling routes between terminals and common destinations can be helpful. A combination of paid lockers and free racks for all day storage can offer commuters options with different levels of security.

Carpool and Vanpool Programs

Vanpools, either formal or informal, can be used by smaller groups of people (5-15) who need to travel to a common destination. Transit agencies, regional/community organizations, or employers may organize or subsidize vanpools, or employers may choose to offer discounts to employees who use them. Other forms of ridesharing/vehicle-sharing or more informal carpooling can be coordinated between individuals. Vanpools can save an individual rider thousands of dollars per year, when considering tolls, gas, vehicle maintenance costs and depreciation.

Vanpools and carpooling are a particularly effective TDM strategy for rural areas, but care needs to be taken to provide safe parking locations for gathering of those sharing rides. Vanpools, ridesharing, connector services, and shuttles are all the more useful when all passengers can meet the ride at one designated location. These can be formal or informal, organized by the community or another responsible agency. These may include: church lots, community centers, etc., and can be paid or cost-free depending upon the service and location.



- The North Central Texas Council of Governments (NCTCOG) vanpool program is operated by three transit agencies and offer lower monthly cost to the users. Vanpools operated by these transit agencies are eligible to receive 50% discount on tolled managed lane facilities. This delivers shorter travel time at lower cost to users.
- The State of Wisconsin and City of Bellevue, WA have examples of successful carpool programs. The State of Wisconsin provides a carpool match program through a mobile application called Rideshare. This program finds matches based on similar origin and destination. It allows the users to meet and decide who they want to carpool with. It brings commuters together and leaves it up to them to form their own commutes. Bellevue City Hall in Washington State offers a ridesharing program supported by discounted carpool parking and subsidized vanpooling to its employees. Through this program, they decreased their vehicle trip rate by 30% across 650 employees.
- King County Metro in Washington provides a best-practice example of vanpools, hosting the largest publicly-owned vanpool network in the nation as of 2017, with approximately 1,600 vehicles. Their efforts include branding and marketing materials promoting transit, posters, events, incentives, focus groups, direct mail. Through their programs they achieved a reduction of 31,522 VMT in the first year. Through vanpooling alone, King County Metro served 66 million passenger miles in 2017. By comparison, Capital Metro served 16.7 million passenger miles in 2017 with 217 vehicles. The population of each region is similar.

Funding Partnerships

In all regional programs, successful TDM requires partnerships for both funding leveraging and knowledge share. In most referenced cases, multiple agencies and organizations collaborate to provide service provision, or provide services to different segments of the community. Currently, partnerships between the public and private sectors have been critical for funding TDM activities in the region and have evolved over time in sources and levels of funds, though when compared to other regions such as Puget Sound and Metropolitan Washington, DC, the resource contributions in the CAMPO area rely more heavily on public-sector resources. Regardless of funding source, discussion at the MPO level leading into the development of this plan included significant focus on the desire for cost-effective TDM implementation strategies and appropriate funding responsibility sharing between Federal, State, and local governments, and private funding.

Major MPOs typically fund TDM programs with Congestion Mitigation and Air Quality (CMAQ) funds, City and County Government funds, and private foundation funding; Referenced Major MPOs have been known to use between 3% and 25% of their allocated CMAQ funds for TDM-style programs focused on information, marketing, coordination, and last mile programs. The rate of funding increases sharply when adding consideration for TDM and TSMO functioning projects that

include all of the programs, services, and managed infrastructure strategies described in this plan.

The CAMPO region is unique in that it represents one of the largest metropolitan areas in the nation that is within attainment of the National Ambient Air Quality Standards (NAAQS). Therefore, the CAMPO region does not have access to CMAQ funds and instead relies on Surface Transportation Block Grant (STBG, also known as Category 7 funds within TxDOT) funds in order to fund most TDM activities in the region. STBG funds are the most flexible of transportation funds but the total amount is small compared to the funds available for solely for roadway projects.

Guidelines for TDM and TMA-type programs typically advise having a diversified revenue base, with healthy and mature organizations having a share of the following four: membership dues, public grants or ongoing public funding of some sort, fees-for-service, and assessments such as a business improvement district or common area agreement. Overreliance on one-off revenue sources such as grants can increase risk for the implementing organization for service disruption. For example, Movability currently successfully utilizes four of the revenue sources, and has a diverse and more resilient funding structure from which to base existing programs on, and therefore expand or enhance services if more resources are available.



PART VI

NEXT STEPS AND RECOMMENDATIONS

Recommendations

The creation of this plan is a first regionally coordinated step in institutionalizing TDM principles in the CAMPO region. This plan details the high-level vision, goals, objectives, and project selection process in advancing TDM strategies.

Primary recommendations resulting from this plan include:

- Establish a TDM Subcommittee within CAMPO's Technical Advisory Committee to advance TDM in the region across the full spectrum of applications and processes.
- Continue the development and monitoring the advancement of TDM in the region, led by CAMPO.
- Develop a listing of TDM projects and needs the region should address and include in the CAMPO 2045 Plan update.
- Update the revised project selection criteria contained in this report, as needed, to accurately reflect the region's advancing TDM programs.
- Investigate additional TDM concepts to include in the project scoring criteria in CAMPO's call for projects as the region advances TDM.
- Continue exploring advances in TDM strategies for the region and update the TDM plan to document progress of TDM principles in the region.
- Establish a cost-benefit analysis based on data collected and provided by TDM implementing agencies.
- Continue and strengthen the regional platform that conducts targeted outreach and education to individuals, employers and other trip generators, gathers and measures data from all agencies in the region, provides ride-matching services for formal and informal carpools and vanpools, and serves as the place where all progress on TDM solutions are monitored and displayed.
- Update the project scoring criteria for non-TDM categories before the next call for

projects to award additional points to projects that incorporate TDM measures either during construction or after completion.

- Establish a targeted amount or percentage of funding for the Transportation Improvement Program and Regional Transportation Plan to TDM measures.



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Basics of TDM

Transportation Demand Management is a combination of strategies and tools to reduce single-occupant vehicles on the road, primarily during peak travel hours. These strategies are made up of commuter choices and technology, which are shaped by individual behavior choices, employer options, and government entities.

Example TDM strategies can include:

- Shared Mobility and Employer Programs
 - Transit Incentives
 - Bus Rapid Transit
 - Carpooling
 - Expanded Transit Service
 - Shared Mobility and Transportation Network Companies (Uber, Lyft, Waze Carpool App)
 - Teleworking
 - Flexible work hours, travel peak spreading
- Multimodal Last Mile Solutions, and Active Transportation Networks
 - Bicycle and Ped infrastructure, networks
 - Bike to Work – Showers, lockers, etc.
 - Bike Share/E-scooters
 - Pedestrian Programs
- Traveler Information
 - Dynamic Travel and Trip Planning Tools
 - Flexible Emergency/guaranteed ride home programs
 - Outreach and education
- Land Use Management
 - Parking Management
 - Zoning, mixes of uses, and transit supportive densities for live work and play nearby
- Transportation Systems Management and Operations
 - Managed lanes, including Diamond Lanes
 - Hard Shoulder Running
 - Transit on Shoulder
 - Intelligent Transportation Systems
 - Autonomous and connected vehicles, and electric vehicles

These strategies are referenced throughout this plan as both existing programs, recommendations, and referenced in the plan appendix.

Shared Mobility and Employer Programs

Employer-sponsored programs are designed to incentivize employees to practice transportation demand management and reduce single-occupancy vehicle trips to and from the workplace. Strategies including transit pass subsidies, rideshare matching services, preferential parking for carpools or vanpools, parking cash-out programs, bike lockers and showers, flexible work schedules, and telecommuting are developed to support a travel mode shift. Sometimes employers are supported through membership in a local transportation management association (TMA) like Movability, to help meet local goals to reduce environmental impacts of single occupancy vehicle trips and traffic congestion and to improve employee retention and quality of life.¹

Transit Incentives

Transit is a common low-cost form of shared mobility, usually provided by a government agency within defined service areas. Transit is often provided through a system of publicly owned and maintained bus and train fleets that can operate along fixed routes or on-demand in areas with lower density and usage. In the CAMPO region, Capital Metro is the main provider of fixed-route transit service within urbanized areas in and around Austin, while some services such as GoGeo in Georgetown provide local transit outside of the Capital Metro service area. The Capital Area Rural Transit System (CARTS) is a major provider of transit service between non-urbanized communities in the region and urbanized areas serviced by Capital Metro or other transit providers.

Bus Rapid Transit (BRT)

Bus Rapid Transit (BRT) is a transit system that utilizes specific operational procedures to ensure high-quality, reliable bus service that is faster than traditional bus service. Some common features of BRT include dedicated transit lanes that reduce reliance on congested general purpose lanes; bus stations located in the center of the road to avoid conflicts with parking and turning vehicles; off-board fare collection to reduce wait times and boarding delays; platform boarding that is level with bus entrances to improve ease of boarding and accessibility for passengers with disabilities; and intersection treatments that prohibit vehicles from turning across dedicated transit lanes. Through a combination of these measures, BRT systems offer faster, more frequent, and more reliable transit service.²

¹ Oregon DOT - 2012

² Institute for Transportation Policy Development - 2019

Vanpooling

Vanpooling, a type of rideshare program, is generally coordinated by a governmental authority and consists of 5-15 individuals with a similar commute trip where the participants share their own driving responsibilities, thereby covering the primary “cost” of operation. Some vanpool programs receive subsidies and others pay for themselves. The Capital Metro MetroRideShare program provides people with a month-to-month lease including insurance, maintenance, 24-hour roadside assistance, and an optional fuel purchasing program. Vanpool fares are shared by riders and vary depending on vehicle size, commute distance, fuel and tolls.³ Vanpools provide the opportunity to use a pre-tax employee benefit, high-occupancy vehicle lanes, and reduce driving and parking costs.⁴

Expanded Transit Service

As populations grow outside of urban areas with existing transit service, expanded transit service is often needed to support travel demand. Areas in transition from rural to more urbanized contexts are often considered in service expansion efforts, as the population density and travel demand become significant enough to warrant shared mobility services. Expanded service can be provided through additional public transportation routes, park-and-ride facilities in developing areas, and through additional connections to existing service routes and facilities.

Shared Mobility and TNCs (Uber, Lyft, taxis)

Shared mobility options are services that allow multiple travelers to share the same vehicle and include carpools, vanpools, transit services, taxis, and transportation network companies (TNCs) such as Uber and Lyft. Shared mobility options improve efficiency of the transportation network by reducing single occupancy vehicle trips and can reduce transportation costs through low fares or cost-splitting. Shared mobility services can also provide safety benefits by reducing potential for traffic incidents and offering alternatives to driving while impaired.⁵ In the CAMPO region, shared mobility services are provided by transit agencies such as Capital Metro and CARTS, on-demand ride hailing TNCs, various taxi services, and several vehicle and bicycle sharing services such as ZipCar, Car2Go, and B-cycle. One challenge of implementing shared mobility services is providing access in rural and suburban areas with lower density and demand than urban settings, but whose development patterns have given rise to a need for alternatives to single occupancy vehicle commuting.

³ CAMPO 2040 Regional Transportation Plan – 2015

⁴ TTI Transportation Policy Center – 2014

⁵ Victoria Transport Policy Institute - 2019

Carpools

Carpooling is a shared mobility option in which travelers share a vehicle with at least one additional person. Carpooling reduces individual travel and fuel costs, reduces congestion by reducing vehicles on the road, reduces emissions and improves air quality, and provides faster travel with access to managed lanes that track vehicle occupancy. Many carpooling programs operate through ride matching, which uses technology to connect commuters to nearby carpool routes based on common origins and destinations. In the CAMPO region, several employers offer carpool matching services and incentives for carpooling employees, and companies like Uber and Lyft also offer shared-ride options for a reduced fare. Waze Carpool and RideAmigos are other popular options for carpool matching technology in the CAMPO region. In some instances, carpoolers can go to specified locations without prior arrangement and meet other riders with a common destination. This type of casual carpooling allows travelers to choose their mode of travel in real-time. ⁶

Teleworking

Telecommuting or teleworking allows employees to regularly work from home or some alternate location. ⁷ Telework is now employed as a recruitment and retention strategy by employers and has developed with technological advances such as high-speed internet and teleconferencing capabilities. ⁸ Committed to reducing environmental impacts and traffic congestion generated by single occupancy vehicles, the City of Austin, has implemented a telework policy allowing employees to work remotely if their department manager and department director conclude the employee's job content is appropriate for a telework schedule. The city has employed outreach programs such as Work from Home Day to assure that employees are aware of the telework policy and the benefits of telecommuting. ⁹

Bicycle Facilities

Bike to Work

Bike to Work programs are amenities provided by employers or transit services to encourage active transportation usage for commuters by reducing barriers to using bike travel. Common bike to work amenities include options for transporting bicycles on buses and trains and employer-based amenities for cyclists, including onsite bike storage, showers and lockers to help accommodate cyclists. Capital Metro

⁶ RideAmigos - 2018

⁷ TTI Transportation Policy Center – 2014

⁸ CAMPO 2040 Regional Transportation Plan – 2015

⁹ Austin City Council Resolution No. 20121206-072 CIUR 910 – 2013

buses offer bike racks on the front of buses to allow long-distance riders to switch from bike to transit easily, and many employers (especially those in the tech industry) offer the described amenities on their campuses.

Bike Share

Bike share programs provide rental of a shared bike for a nominal fee and are typically located in dense or urban areas. Many bike share programs include several automated docking locations for rental and return of bicycles, allowing users to choose docking locations most convenient to their origin and destination. Other programs utilize app technology to unlock shared bicycles or provide a bank of bicycles to be used without charges or unlocking within a specified service area. Bike share programs provide access to travelers who would like to utilize active transportation but do not want to pay to own, store, and maintain a personal bike. Several bikeshare programs exist in the CAMPO region, including B-cycle in Austin and a new bicycle sharing program in Georgetown.

Traveler Information

Dynamic travel and trip planning tools provide real-time information to travelers to help find and select convenient routes and travel times. These tools are often provided through websites and smart phone apps, and offer up-to-date information about customized routes, wait times for various modes, and potential route variations and barriers. While some tools such as Capital Metro's Trip Planner specifically provide information about transit service, some tools combine information about transit, last mile options, and other shared mobility services in one spot. CAPCOG's myCommuteSolutions.com provides a range of resources for trip planning, including trip matching options for regular or one-time commutes, trip logging, and incentives for members who utilize alternative modes.¹⁰

Pedestrian Programs

Pedestrian programs refer to strategies that improve walkability and encourage use of active transportation. Safe and convenient sidewalks, paths, and crosswalks with connectivity to a developed network of pedestrian facilities are the basis for many pedestrian programs, and various land use and traffic calming strategies can be implemented to complement and encourage use of pedestrian accommodations. Concentrating activity into dense mixed-use centers is a strategy of some pedestrian programs, and various education and incentive initiatives can be implemented to encourage travelers to choose active transportation over single occupancy vehicle use.

¹⁰ myCommuteSolutions.com - 2019

Electric Vehicles

Electric vehicles are low-carbon, sometimes low-speed, vehicles that can be used to support short-distance trips and last-mile connections. These can include electric cars, buses, shuttles, and other small vehicles. Many carsharing companies such as Car2Go utilize a fleet of electric vehicles to offer emergency and short-distance trip options at a low cost to the individual. Electric shuttles are small vehicles or carts that can transport travelers to and from transit stations or other shared mobility hubs and are often offered by employers or organizers of major traffic generating events. In the CAMPO region, electric vehicles are available through several carsharing companies, and through a partnership between Capital Metro and the Department of Energy, a year-long pilot took place from late 2017 to 2018 to explore on-demand, low-cost electric shuttles between select Capital Metro stops and surrounding neighborhoods.¹¹

Flexible Emergency/Guaranteed Ride Home Programs

Guaranteed Ride Home (GRH) programs provide free rides home in case of emergency, illness, or unexpected circumstances, including unplanned overtime, for regular users of alternative modes of transportation. Providing access to emergency transportation reduces barriers for those interested in switching transportation modes or utilizing shared mobility services but choose to use personal vehicles in case of emergency. In the CAMPO region, Capital Metro operates a GRH program for regular users of carpool, vanpool, or transit service, and CAPCOG offers emergency ride services for registered users of their Commute Solutions program.¹²

Parking Management

Ownership of parking supply in parking managed areas is typically highly fragmented amongst numerous owners, for example, with the City of Austin only controlling about 14 percent of the overall parking supply for its downtown. Parking enforcement can also be an issue as an analysis of parking sessions showed several exceeding posted time limits and parking not being enforced on Sundays by policy. There is also some concern that facilities at some referenced parking facilities needing improvement or better management presence and maintenance.

The DAA analysis also found that parking payment systems are not consistent between public and private lots and there is no comprehensive online parking information system, wayfinding, or real time signage available. Austin does have a mobile parking app beginning to be used, called Park ATX, which allows customers to pay for parking on their mobile phone wherever Park ATX is accepted, including public maintained spots and some private-managed facilities.

¹¹ Capital Metro, Pecan Street - 2018

¹² Victoria Transport Policy Institute - 2018

Current Parking Ordinances

Parking ordinances for the City of Austin are based upon specific land uses and parking ratios. This type of ordinance does not provide lower-end flexibility in accommodating shared parking or fluctuations in parking demand amongst users, nor does it lend itself to innovations in parking management. Current discussions at the City of Austin regarding changes to parking supply minimums are split between a policy revision required from Land Development Code revisions in development, and a policy direction to support transit-corridors by reducing or eliminating parking minimums. Policies to restrict parking, or better manage through properly pricing parking in areas where transit is encouraged, are mutually beneficial – dedicating more active space to activities and less to storage. The City of San Marcos is currently developing a parking management program and has begun with a plan completed in 2018. The plan consists of managed lots at the periphery of activity centers and the Texas State University campus, with shuttles providing service between lots and activity points.

Parking Subsidies

Employers in Austin play an integral role in sustaining the high demand for downtown parking. The DAA study found that approximately 75 percent of downtown employees are provided free or subsidized parking for employees and businesses. As of the study's completion in 2016, few employers offered mobility programs or other incentives to encourage travel to downtown by other modes. By contrast, the region's TMA is increasingly focused on working with companies leading travel demand management practices to incorporate conscious parking payment, or 'parking payout' programs to make employees aware of the subsidy.

As of 2019, the City of Austin also operates an affordable parking program through its partnerships that offers reduced monthly rates for selected service and entertainment industry employees at over 20 garages in downtown Austin, in some cases to support service industry employees that typically travel in non-peak travel times or when transit and other modes are not in operation or generally available. While this does not promote use of alternative modes of transport, it does promote equity in transportation and supports environment justice initiatives.

Autonomous/Self-Driving Vehicles

The National Highway Traffic Safety Administration defines autonomous vehicles as, "those in which operation of the vehicle occurs without direct driver input to control the steering. Acceleration, and braking and are designed so that the driver is not expected to constantly monitor the roadway while operating in self-driving mode."

Autonomous vehicles can be classified into six different levels of automation from zero to six where zero represented the driver being responsible for all aspects of driving the vehicle, to level six represents full

automation and no steering controls are in the vehicle. Most current vehicle models fall under the zero category, with some vehicles exhibiting Level 2, or partial automation characteristics. Under level 2, the driver must always monitor the driving environment. For travel demand management, autonomous vehicles represent a distant practice due to the pace of technology adoption and relative cost and generally long timeframes of vehicle turnover. At the time of this plan, the TDM view of autonomous vehicles is that they could provide much promise to reducing the need for parking at the destination as well as increased shared-vehicle ownership which could reduce VMT. However, at this time, studies are somewhat mixed in outlook, with some also projecting slight increases in VMT as then-driverless vehicles pace blocks in waiting for riders or travel from one user to another on potentially limited roadway space. Safety also continues to be a question for autonomous vehicles, based on hard to control variables such as weather and others traveling on the roadway.¹³

Flex Work Hours (peak spreading, 4/10 or 9/9s)

Flexible work schedules vary across employers and help to reduce commute time and cost as well as traffic congestion by avoiding peak hours of traffic. Some employers shift the start and end time of the traditional workday to earlier or later times and some offer compressed work schedules. Compressed work schedule programs typically alternate between groups of employees. The consecutive four-day work weeks allow employees to work four days-per-week, ten hour-per-day, Monday through Thursday or Tuesday through Friday and nonconsecutive four-day work weeks allow for days off other than Friday or Monday. The biweekly 9/80 work schedule allows employees to work eight 9-hour days, one 8-hour day, and one day off in a 2-week work period, totaling 80 hours.¹⁴ As a method of recruitment and retention and to maintain productivity, it is popular among Austin tech start-ups to deploy flexible work schedules.

Managed Lanes

The Texas Department of Transportation defines managed lanes as highway lanes whose operation is proactively designed in response to changing conditions within the facility by time of day. Managed lanes are usually physically separated from the main lanes by a structural separation or barriers. The main goal of managed lanes is to continuously achieve an optimal condition (such as speed or reliability) to improve mobility.

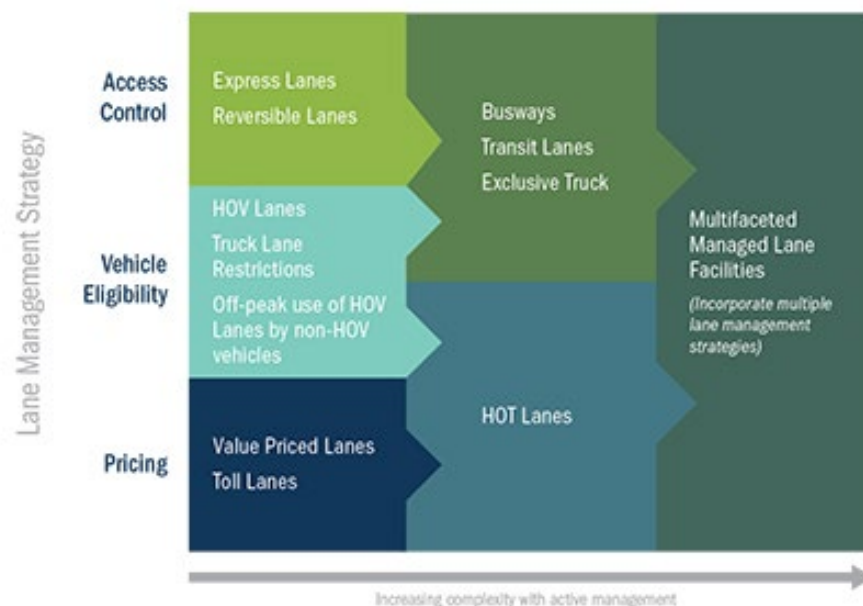
¹³ SAE, APA, US News and World Report, and California PATH.

¹⁴ CAMPO 2040 Regional Transportation Plan - 2015

Managed lanes have three central components:

Component	Examples
Access Control	<ul style="list-style-type: none"> Express Lanes (through traffic lanes with limited access) Reversible Lanes
Vehicle Eligibility	<ul style="list-style-type: none"> High Occupancy Vehicle (HOV) lanes Lanes with restrictions for trucks Bus only lanes HOV lanes whose use by non-HOV users is permitted during off-peak hours
Pricing	<ul style="list-style-type: none"> Value-priced lanes Toll lanes

Non-tolled managed lanes are those types of managed lanes which do not have a pricing component. Examples of such lanes are HOV lanes, lanes restricted to specific vehicles (e.g. bus lanes and lanes with truck restrictions), and express lanes.



The benefits of managed lanes are that they increase travel options and choice for travelers, improve travel time reliability, create safer roadways, make more efficient use of existing system capacity, provide more flexibility in emergency situations, and improve overall traffic flow throughout the entire facility.

Toll-Managed, or Express Lanes

In addition, express lanes or toll managed lanes are special, managed lanes that can be separated from existing non-tolled lanes by special striping and/or physical barriers. They utilize variable tolls to manage the amount of traffic in the lane. This is accomplished by increasing the toll when traffic is heavy and lowering it when traffic is light. Express lanes can provide public transit buses, registered van pools, and emergency vehicles with a reliable toll-free route to their destination, while SOVs can elect to use the lane by paying a toll. Express lanes are designed to remain congestion free. The MoPac Express Lanes encourage people to carpool because they have the option to split the cost of the trip among each occupant in the vehicle. Historically, express buses and vanpools sat in traffic with all other vehicles on MoPac, but now with the express lanes, these transit vehicles are able to bypass congestion and get to their destination faster, making public transit more appealing.

Hard Shoulder Running

Hard shoulder running is the temporary conversion of a paved shoulder into a travel lane during peak travel periods. Utilizing roadside shoulders on a part-time basis improves efficiency and operations during periods of high-demand and increased congestion, while still providing the safety benefits of a roadside shoulder outside of peak hours. This strategy is often used on limited access roadways that support high volumes of commuting traffic during AM and PM peak periods. Hard shoulder running allows transportation agencies to address increased travel demand by providing additional capacity during specific timeframes, without requiring an expensive and lengthy roadway expansion project.¹⁵ Applications of hard shoulder running are limited in Texas, as policies and guidelines for appropriate usage are still being researched and developed.

Transit on Shoulder

Transit on Shoulder is a common form of hard shoulder running, during which the paved roadside shoulder is converted into a dedicated transit lane rather than a general-purpose lane. This type of temporary shoulder usage provides reliability for transit systems during periods of high demand, providing an incentive for commuters to switch from single-occupancy vehicles to transit during their daily commutes. In some cases, narrow shoulders that do not have sufficient width to provide safe travel for personal vehicles are suitable for transit only use, due to the limited number of vehicles using the lane, professional drivers, and high visibility for transit vehicles.^{16, 17}

¹⁵ [FHWA - 2016](#)

¹⁶ Minnesota DOT

¹⁷ FHWA 2016

Stakeholder Interviews

Interview Questions

The Capital Area Metropolitan Planning Organization (CAMPO) is developing a Transportation Demand Management (TDM) plan for the 6-county region. The purpose of the plan is to provide a framework for developing and integrating regional TDM strategies into the planning, project development, investment, and regional decision-making processes. The plan will allow CAMPO to better incorporate TDM into project prioritization processes and explore potential TDM projects for future calls-for-projects.

TDM often involves changing commuters' traveling behavior. Providing programs and information that encourage ridesharing, telecommuting, walking and biking, off-peak travel, and flexible work hours are key factors in offering a range of options for commuters. Regional TDM programs are already well established through the City of Austin, Movability, Capital Metro, and others, and this plan will seek to build on what's been working here and how these programs can be enhanced and expanded with greater collaboration throughout the region.

The TDM plan team would like to gather input from key stakeholders to determine their perspectives, resources, and priorities as they relate to TDM projects and strategies that are or could be deployed in the region.

- What mobility area (transportation mode, safety, corridor planning, etc.) does your agency most impact?
- Were you able to attend the August 2018 workshop on TDM?
- What TDM programs does your agency currently support?
- From 1 to ten (where ten is the best/ most important) rank the importance to your agency of the below TDM functions:
 - Improving mobility and accessibility
 - Reducing congestion/improving travel reliability
 - Improving air quality
 - Impacting economic development
 - Integrating land use with transportation
 - Freight and goods movement
 - Improving quality of life/ livability
- What TDM approaches do you believe would be most impactful in the region?
 - For roadway projects including elements such as diamond or non-tolled managed lanes, transit enhancements, and active demand management?
 - For shared mobility programs?
 - For operational strategies to be applied?
- What regions or corridors do you believe will most benefit from TDM approaches?

- For roadway projects including elements such as diamond or non-tolled managed lanes, transit enhancements, and active demand management?
 - For shared mobility programs?
 - For operational strategies to be applied?
- What resources can your agency provide in solving the TDM puzzle?
- What resources does your agency need to practice TDM strategies?
- What other stakeholders does your agency most closely work with? Have you ever collaborated on a project together?
- Based on your understanding of TDM and flexible work schedules, what are the top 5 employers that would benefit from TDM programs?
- What are your agency's top priorities in supporting or leading TDM projects or strategies?

Interview Minutes

Planner at Bastrop County

February 6, 2019 – 9:00 a.m.

What mobility area (transportation mode, safety, corridor planning, etc.) does your agency most impact?

- Bastrop County affects 2 aspects:
 - Transportation planning as a whole for the county
 - Experiencing rapid growth, making sure that we grow in the most optimal way
 - Providing cost effective and efficient infrastructure improvements
 - Development services
 - Permitting and regulatory agency for developers in the unincorporated areas
- Working within a framework that is defined by the state, have some limitations

Were you able to attend the August 2018 workshop on TDM?

- Yes

What TDM programs does your agency currently support?

- Working with CapCOG and city council to identify outreach and education opportunities
 - Example – Mobility Council came to town on a Saturday to promote TDM strategies
 - 3-4 similar events have taken place in the last few months
- Emphasizing importance of representation and access for outer areas of the region
 - Potential for Capital Metro representative to give presentation on Vanpool program to local HOAs
 - High percentage of residential neighborhoods along US 71 and US 290 with the density to make up carpool groups
- Have not implemented rideshare programs for county employees yet
- Member of Regional Air Quality program, but local distribution of population and employment isn't the most conducive to shared mobility options
 - Fewer options for trips within Bastrop than centers like downtown
- Over half of the population commutes from Bastrop to Travis – key cause of local congestion
 - Team will follow up for supporting data

From 1 to ten (where ten is the best/ most important) rank the importance to your agency of the below TDM functions:

- Improving mobility and accessibility: 9
- Reducing congestion/improving travel reliability: 10
- Improving air quality: 7
- Impacting economic development: 6
- Integrating land use with transportation – n/a
 - Realistically ranks low, but aspirationally it would be at the top (9-10)
 - County doesn't have authority to regulate land use, would help with a lot of transportation problems in unincorporated areas
- Freight and goods movement: 7
 - Not as important for this agency, but impacts the transportation system as a whole
 - Probably applies more to TxDOT

- Adjacent county rounds are generally not constructed to withstand large amounts of freight traffic
- Improving quality of life/ livability: 8

What TDM approaches do you believe would be most impactful in the region?

- For roadway projects including elements such as flex lanes or non-tolled managed lane, transit enhancements, and active demand management?
 - Flex lanes would be a huge benefit on key corridors, complements vanpool programs
 - Pedestrian infrastructure
 - Adding sidewalks in design can be easy, but need to consider actual walkability
 - Lack of regional standards for incorporating pedestrian infrastructure along roads that do not include curb and gutter
 - Example: peds won't use sidewalk next to a 4-lane highway unless they have to
 - Hwy 71 for example, we've dealt with pedestrians walking along that corridor
- For shared mobility programs?
 - Target advertising and education to promote awareness
- For operational strategies to be applied?
 - Non-tolled managed lanes
 - Education and outreach component
 - Park and Rides that connect into the eastern part of the Capital Metro system

What regions or corridors do you believe will most benefit from TDM approaches?

- For roadway projects including elements such as HOV lanes, transit enhancements, and active demand management?
 - Regional perspective - IH 35
 - Bastrop County - US 290 (from Elgin to 35) and SH 71 (from Bastrop to Austin)
 - Congested corridors, also evacuation routes
- For shared mobility programs?
 - SH 21
 - SH 71
 - East and west, particularly southwest
 - Lots of development planned
 - 812 to 535 - TxDOT road in Travis/Bastrop
 - Potential to add bus route
 - SH 95 between Bastrop and Elgin
 - Key corridor, no connectivity between Bastrop and Elgin
- For operational strategies to be applied?
 - SH 71 and US 290 - flex shoulder use
 - TxDOT plans to expand roadway and construct in several overpasses to bypass lights

What resources can your agency provide in solving the TDM puzzle?

- Facilitating connections between regional organizations and smaller communities, involving rural areas in decision making
- Mental health resiliency study with non-profit
 - Looking at community indicators of health, bringing together different interest groups (many of them NPOs) to share information
 - Could help with to get people involved in the planning process and explain local impacts of planning efforts

What resources does your agency need to practice TDM strategies?

- Funding – Bastrop County can't afford dedicated TDM staff-person to implement/manage employee commute program.
 - Compare to Travis County, who has dedicated TDM and Air Quality personnel
- Much lower tax base than adjacent urban counties so it is difficult to find capital funding (match) for bike/pedestrian infrastructure.
- Community outreach – CapCOG has been doing some of that, but always want more

What other stakeholders does your agency most closely work with? Have you ever collaborated on a project together?

- CARTS – Commissioner on the Board of Directors
 - Main transit provider in the area, but less access to funds than Capital Metro
 - CARTS generally focuses on social equity, providing transit to people who have mobility issues or limited access
 - Separate issue of motivating people who can drive to choose alternate mode
 - Air quality is another issue to be undertaken separately from social equity piece
 - County hasn't worked on project for this one

Based on your understanding of TDM and flexible work schedules, what are the top 5 employers that would benefit from TDM programs?

- Counties and cities
 - Identified as targets during Regional Air Quality Plan
 - County hesitant to implement flex working programs as some positions require employees to be onsite
- ISDs
 - Might not be viable with school schedules, but schools are a major traffic generator
 - Julia can connect team with Dr. Kristi Lee (Bastrop ISD)
 - Suggest reaching out to Elgin ISD
 - ISDs could also benefit from "School Pools"

What are your agency's top priorities in supporting or leading TDM projects or strategies?

- Increasing options for those commuting into Travis County
- Internal transportation within the county is not as high of a priority,
- Considering shared mobility options for key corridors (SH 71, US 290) in long-range planning

Do you know of any areas where TDM strategies could be integrated into the development review process, or would your role as the county be too restrictive?

- Experience elsewhere – developers are required to provide transportation management measures when proposing development
 - Doesn't have to be new roads, could be working with local transit providers to get additional stop; For commercial properties it could be more of an internal carpooling program
- County doesn't necessarily have authority to require TIA and system improvements if developers meet minimum standards to internal roadways
 - Usually a lot of resistance from developers when they have to build costly turn lanes, etc.
 - Travis, Hays, and Caldwell have TIA requirements for development, gray area as to whether this is an option

What was the response like at the events hosted with CapCOG?

- Mostly positive, general sense that people would like to see more options like transit

- Some apprehension about government involvement in transportation choices

Anything else we didn't cover?

- Expanding ride share services to combat drunk driving
- Promoting ride share programs can be helpful - people in numbers is the key
 - More popular in denser areas but have opportunity to promote in growing rural areas

Mobility Innovation Manager at Central Texas Regional Mobility Authority

February 6, 2019 – 11:00 a.m.

What mobility area (transportation mode, safety, corridor planning, etc.) does your agency most impact?

- Current focus on corridor planning; Not much emphasis on mode, more on capacity
- Primarily works on building new capacity and enhancing existing capacity and tolled projects, but have authority to cover much more expansive efforts
 - Incorporating congestion management – managed lanes, express lanes
 - Example of Hwy 183 North express lanes with dynamic pricing
 - Trying to incorporate shared-use paths in designs where feasible
- Policy that transit rides free, complementing Capital Metro efforts and other modes
- Exploring park & ride feasibility through Project Connect, moving forward with at least one
- Sometimes moves faster than other entities due to funding availability

Were you able to attend the August 2018 workshop on TDM?

- Not at FHWA workshop; team will provide notes

What TDM programs does your agency currently support?

- Discontinued pilot program offering discounts for carpooling on US 183 and US 290
 - Example – Atlanta carpool pilot showed improvements waned after incentives were removed
- Promoting managed lanes/toll usage during off-peak shows more sustained change when incentives are removed
 - Challenge of difficult and complicated verification process
- Free tolls for transit have increased ridership on toll routes by about 64%
 - Working with CAPCOG to monitor and report benefits, looking at impacts to air quality and travel times
- Sponsored Metropia app, which targets drivers and promotes mode shift, provides real-time updates
 - Carpool rate among Metropia users increased dramatically
 - Collects data and offers personalized incentives– incorporates TSMO
 - Mobility-on-Demand – Fully integrated, high priority information-sharing with users
 - Example – Mopac toll widget showing demand pricing schedule
- TDM Plan could lay groundwork for developing Mobility as a Service app
- Internal TDM program includes telework policies, encourage carpools, green roads program for construction sites

From 1 to ten (where ten is the best/ most important) rank the importance to your agency of the below TDM functions:

- Note that several of these are in CTRMA's strategic plan and mission statements
- Improving mobility and accessibility: 9-10
- Reducing congestion/improving travel reliability: 9-10
- Improving air quality: 6-7
 - Important, in strategic plan but not as much of a focus
- Impacting economic development: 9-10
- Integrating land use with transportation: 7
 - Ties in with economic development,
- Freight and goods movement: 5
- Improving quality of life/ livability: 9-10

What TDM approaches do you believe would be most impactful in the region?

- For roadway projects including elements such as diamond or non-enhancements, and active demand management? -tolled managed lanes, transit
 - Roadway projects (flex lanes), managed lanes, active transportation facilities

- TSMO – operational, but goes hand-in-hand
 - Shifting travel times
- For shared mobility programs?
 - Mobility as service, micro-mobility, dockless vehicles, especially for last mile/short trips
 - Need infrastructure for dockless vehicles
 - Regional connectivity for bike accommodations
 - Struggle to provide connectivity in areas without existing paths/trails/lanes suitable for non-recreational trips
 - Example – Violet Crown can't be paved due to environmental concerns, doesn't serve all cyclists
- For operational strategies to be applied?
 - Education Incentive Programs
 - TSMO, shoulder use during peak
 - ITS – bigger umbrella of influence, includes PCMS, signals, apps; Want to proactively anticipate impacts of autonomous vehicles and connect with ITS
 - Scenario planning – agency stakeholders create policies
 - Want to work collectively with other entities, minimize redundant efforts
 - Pooling resources and data for app planning, consolidating incentives from various TDM apps

What regions or corridors do you believe will most benefit from TDM approaches?

- For roadway projects including elements such as diamond or non-tolled managed lanes, transit enhancements, and active demand management?
 - Mokan, IH 35
- For shared mobility programs?
 - Works well in the city, where there are dense pockets, or as last mile options
 - Parmer lane, Apple campus and other employment centers.
 - Eventually connected autonomous vehicles can provide additional opportunities
 - Plans to develop mobility hubs with access to several shared mobility options
- For operational strategies to be applied?
 - TSMO integrated on all roads throughout the region
 - Data sharing – need to see bigger picture to get a handle on needs

What resources can your agency provide in solving the TDM puzzle?

- Provide more pilot programs
- Funding and building managed lanes
- Feasibility of developing mobility hubs
- Complement and extend the reach of current programs
 - Partner with Movability to promote employer-based programs and share benefits and travel time savings (riding transit, shifting travel time, and using toll roads to save time if driving)

What resources does your agency need to practice TDM strategies?

- Shared data sources between agencies – collaborating raises the potential to negotiate deals with data hubs to allow shared licenses of third party data (e.g., Inrix), create standards to facilitate sharing, assess external user needs, etc.

What other stakeholders does your agency most closely work with? Have you ever collaborated on a project together?

- TxDOT, CoA, CapCOG (through Commute Solutions)
- Movability – want to act as a coordinator within the organization, connect collaborative planning efforts
- Combined survey/data collection – shared data is priority; starting on projects with ITS incorporated and need to think through data needs

Based on your understanding of TDM and flexible work schedules, what are the top 5 employers that would benefit from TDM programs?

- Movability member list is a good place to start
- Dell, hospital systems, Apple
 - Also looking at nearby small businesses that are impact by big campuses
- WeWork and co-working spaces
 - Potential shared bikes to be used by employees working in the building

What are your agency's top priorities in supporting or leading TDM projects or strategies?

- Park and Ride feasibility
 - Is there an opportunity to make these "mobility hubs" or "centers"
 - Difficulty defining "centers" - hubs might be more inclusive
 - Could we somehow encourage slugging practices at Park-and-Rides like those observed in D.C. and Houston?
- Congestion pricing and potential to implement occupancy charges, especially with connected autonomous vehicles
 - Not sure if CTRMA would support something like this
- Unified transportation pass (or Mobility as a Service app)
 - Paying for toll, transit, shared mobility programs, etc. on one card

Director of Engineering & CIP and Senior Engineer at City of San Marcos

February 11, 2019 – 10 a.m.

What mobility area (transportation mode, safety, corridor planning, etc.) does your agency most impact?

- City of San Marcos impacts all of the above areas
 - Defining safety – intended to capture agency perspective on what they affect in terms of safety (engineering, design, enforcement, behavioral issues)

Were you able to attend the August 2018 workshop on TDM?

- Yes, Rohit attended

What TDM programs does your agency currently support?

- TDM is more of an infrastructure focus rather than behavioral focus
- City of San Marcos has yet to have a formal discussion on TDM, but there are two programs in particular that relate
 - The incorporation of alternative modes in infrastructure design, influence of the Complete Streets Ordinance
 - Improving transit and combining transit with Texas State University to expand service
 - Transportation Master Plan has specific goals in alternative modes (bike and pedestrian)
 - Multimodal transportation is one of the Council's strategic initiatives this year

From 1 to ten (where ten is the best/ most important) rank the importance to your agency of the below

TDM functions:

- Improving mobility and accessibility: 9
- Reducing congestion/improving travel reliability: 7
- Improving air quality: 4/5
 - City of San Marcos participates in CAPCOG CLEAN AIR Force, but not a focus right now
- Impacting economic development: 5/6
- Integrating land use with transportation: 7
- Freight and goods movement: 4/5
- Improving quality of life/ livability: 9

What TDM approaches do you believe would be most impactful in the region?

- For roadway projects including elements such as diamond or non-tolled managed lanes, transit enhancements, and active demand management?
 - Alternative routes to I-35, alternative intersection design, managed lanes, and transit would be most impactful to the region
- For shared mobility programs?
 - Improved inter-city programs and encouraging people who work outside of San Marcos to make convenient transportation choices
 - Currently don't have anything to promote alternative modes of transportation
 - City Council has brought up commuter rail discussion
- For operation strategies to be applied?
 - ITS could be expanded
 - With ITS alternate routes are needed (I-35/ arterials)
 - Need a more cohesive system so people know what alternate mode they can take
 - Dynamic information
 - City of San Marcos has heard from the community that people utilize multiple apps (Google Maps, Waze, etc.)
 - People utilize TxDOT message board with routes/timing
 - HERO roadside assistance program

What regions or corridors do you believe will most benefit from TDM approaches?

- For roadway projects including elements such as diamond or non-tolled managed lanes, transit enhancements, and active demand management?
 - I-35 and alternate arterials
- For shared mobility programs?
 - Recognizing CAMPO's Regional Arterials Plan, inner-city travel in a megaregion, and the limited alternatives to vehicular strategies
- For operational strategies to be applied?
 - I-35 and key arterials
 - Key arterials that would benefit from TDM strategies
 - Guadalupe Street and other key corridors

What resources can your agency provide in solving the TDM puzzle?

- Limited resources in terms of education in San Marcos
 - Need help with preparation of materials, marketing, etc.
- Participate and work on transit system
 - CARTS, inter-urban bus, city/university transit system

What resources does your agency need to practice TDM strategies?

- In terms of educational/ behavioral strategy – the City of San Marcos needs support of materials/ app development
 - Successful example of paid parking app to avoid people driving around unnecessarily
 - Cost effective TDM strategy to manage available parking

What other stakeholders does your agency most closely work with? Have you ever collaborated on a project together?

- CARTS – manage transit funds
- CAMPO – pedestrian improvements
- Projects with Texas State – transit and bike/pedestrian improvements
 - Major stakeholder in the area
- TxDOT – improvements to sidewalks, bike lanes, and bike signals
 - Guadalupe St
 - 10 ft shared use path on SH 123 and I-35
 - Hunter Road and Wonder World
- County – alternative modes, bike facilities
 - Posey Road

Based on your understanding of TDM and flexible work schedules, what are the top 5 employers that would benefit from TDM programs?

- Texas State
- Amazon
- City of San Marcos
 - Not a top 5 employer but there has been discussion with CAPCOG about the City as an example for the region
 - There are no strategies in place for city employees now
 - The City is fairly centralized

What are your agency's top priorities in supporting or leading TDM projects or strategies?

- Transit and infrastructure to promote alternate modes of transportation – bike and pedestrian
- City Council's initiative of improving parking for visitors downtown

Discussion:

- Laurie Moyer to add to presentation and meeting notes
 - Discussed the TDM plan as part of a process to identify metrics – building on already existing metrics, local plans, ordinances, and policies
 - Discussed the TDM Plan to serve as a regional plan considering political realities and to set up the scoring criteria of proposed projects for the next project call
 - Goal of creating a methodical and collaborative system considering some sub-regions have been working on their own plans
- Texas State University
 - Discussions between the City and University take place when projects are in close proximity to the University
 - The University is focused on safety and ability of students and faculty to get to and from campus
 - Bike and pedestrian improvements (shared-use path), intersection projects, joining transit systems
 - Working on formal inter-local agreements like remote University parking to facilitate faculty and staff to be closer in and students farther out
 - Getting students to think differently about how they come into campus – starting TDM discussion in San Marcos
- San Marcos is not formally talking about TDM strategy but is focused on safety and mobility improvement
 - Discussed CAMPO's Regional Arterials Plan – looking at key corridors in San Marcos and integrating transit services in those corridors is a priority
 - Planning for a multi-modal hub/ where a joint transit system would be located similar to CARTS transit facility

Assistant Director of Transportation Operations at TxDOT Austin District

February 12, 2019 – 9:30 a.m.

Focus: TSMO; Where do they see their agency stepping in and helping? What are the priority areas/strategies? Where does demand management come into their planning and their funding?

What's the TxDOT Perspective? Where can you assist CAMPO moving forward? What would be priority areas?

- Focusing on ITS infrastructure – urban, rural, and suburban
- Managing the systems in our region
 - IH-35 and other major roadways
 - Urban, rural, and freeway master plans
- Looking at the whole district, measuring travel times and tracking origin/destination flows
 - Where the growth is happening and where centers are located
- Currently utilizing ITS system and DMS messaging (Dynamic Message Signs)
- Integrated corridor management (ICM)
 - Project in Downtown Austin, primarily along I-35 corridor
 - Working on this for 2-3 years, getting close to deploying “ICM lite”
 - Multimodal approach to managing travel time
 - First step would be to utilize the frontage road, other partners would eventually assist
- Information systems influence transportation decision making
 - Information comparing travel times between IH 35 and SH 130, giving people the option to take different routes for North/South travel
 - Example: Oct. 18 presentation; travel times to San Marcos showed huge difference
- HERO Roadside Assistance Program – incident management/operational strategy
 - Patrolling I-35 to perform various incident management tasks
- HOV/Carpooling – Mobility35 program is looking at this, as well as park and rides
- Emerging technologies like connected vehicles
 - Looking at a greater context, more vehicles in one lane
 - Counterintuitive for TDM, but could show improvements to travel times, efficiency, and safety
- Flexible work schedules for Downtown Austin and Domain employees
 - TxDOT has the technology and capability to give employees flex work hours, satellite office, and opportunities to work from home

Movability is a big player in this planning effort, and they might take the lead in reaching out to employers.

What is TxDOT's role in reaching out to employers?

- TxDOT to set an example with Austin District employees; Employees work from home a few days a week, 4-10-hour days
- Don't see themselves reaching out to mobilize other employers
- Texas Connected Freight Corridor Project
- Austin District has a large part in considering trucks and freight, which have huge impact on mobility, especially along I-35 corridor

Priority Areas throughout Six-County Region

- I-35 and MoPac

Austin is in attainment, but close to the line of being in non-attainment; reducing gridlock during peak periods improves air quality. Air quality is an important issue, and want to make sure that we are capturing this

- Pilot programs and discussion of having air quality sensors near schools, hospitals, etc. that would coordinate with connected vehicles to reroute with the interest of maintaining air quality

Economic development considerations?

- Looking at economic development when approving driveway locations, try to do everything we can to allow for development
- Considering economic development when coordinating with businesses to minimize impacts during construction

What about overall access management?

- Standard to evaluate roadway adjacent to developments and do a TIA
- Look at traffic generation, turning options, etc.; Falls under the umbrella of safety and operations

Falls into land use category too; developments can add trips to an area that the existing network cannot handle

- Real time data collection is important to monitor travel times, demonstrate how development impacts the system
- Need to preemptively place data collection devices in areas where we expect development to monitor changes over time
- Mentioned TIA, which only affects one development, but if you have sensors out there you can apply information from multiple TIAs to get a regional assessment

Where do Park-and-Rides fall within TxDOT's jurisdiction? Does TxDOT design or fund these improvements?

- Capital Metro reaches out to TxDOT to coordinate on Park-and-Rides

One of the drivers of our schedule is call for projects. Does TxDOT interface with CAMPO during that process?

- Last year TxDOT was awarded almost 70 million towards projects
 - A lot of budget allocated to HERO, some standalone ITS projects
- Plan on submitting additional projects this go around, has had success hiring consultant for applications

Mixed reaction about Austin's ability to add capacity. What type of linkages exist or might need to be introduced so that TDM principles can be considered during design? Example: including bus on shoulder use in the future; if you don't incorporate into design, you're setting up for construction later

- Riding the shoulder is a great example and a good strategy, but not in place
- Once TSMO kicks off (have a plan for the district, want to take it to the region), look at some TDM elements from a regional standpoint during design to promote preclude those strategies
- ITS, HERO, and similar programs focus on operations - Need to be able to monitor the roadway, clear incidents quickly and have other strategies to keep traffic moving
- Should consider operations in any infrastructure project - can add lanes but they fill up again

If Austin District started to include checks for TDM strategies on construction projects, would that be going outside of the statewide TxDOT procedure? Are they free to change those processes as a standalone district?

- Districts can look at anything during design; Show the benefits through data to provide best facility
- SH 161 in Dallas District is a good example where they have shoulder running, but only during AM/PM peak periods. They have a lot of before and after data on how that works

- Looking at 290 West toward Manor where there's a bridge, only chokes up during rush hour
 - 290 it was a full buildout of shoulders, sticking point was the daily maintenance of the shoulder
 - Looking at having DMS to direct when open

FM 620 ITS project received funding in last project call – they are in design right now, and how will that dovetail with potential widening that could be submitting in the next project call?

- FM 620 has multiple interchanges, working very closely with planners as projects are proposed to reduce conflicts
- There's going to be a lot of fiber in the ground, coordinating with CoA to share fiber; Full cameras, DMS on 620; during the design process looking at how we can get full coverage
- Making combinations as much as we can with our design process, identifying all conflicts ahead of time, minimize downtime when projects get moving on 620

Overall this will be a combination of adding capacity as well as improving operations; to the point where we are fully built out on major roadways like IH 35 and MoPac, going to have to come down to TDM to move traffic.

Planner Senior, Planner, and Environmental Project Manager at Travis County

February 12, 2019

What mobility area (transportation mode, safety, corridor planning, etc.) does your agency most impact?

- Travis County TNR – corridor planning with a multimodal focus, especially in unincorporated areas; dabbling in transit planning
 - Including bike and ped facilities on every new facility, retrofitted a few
- Travis County as a whole – impacts safety through emergency services

Were you able to attend the August 2018 workshop on TDM?

- Cathy attended, Shannon/Adele did not; Cathy will share materials

What TDM programs does your agency currently support?

- In-house employee commute program, encourage employees to use alternate commute modes, telework; Proposing incentive options for employees who use eco friendly transportation, gain points to redeem toward
 - Recently won designation as top 300 place to work for commuters
 - Lockers and showers are a part of every new-build facilities for employees who bike, etc.
- Provide in kind support to Commute Solutions, joined the 2020 challenge
- Working on Mobility on Demand in Austin's Colony/Hornsby Bend, Manor; Bringing transit to urbanized but unincorporated areas eligible for 5307 funding, but not in Capital Metro service area
- County is redeveloping property on Airport Blvd. to include affordable housing near transit
- County is negotiating several public improvement districts (PIDs) that incorporate TDM strategies – a tool that provides for the financing of public improvements or services that benefit a definable part of Travis County

From 1 to ten (where ten is the best/ most important) rank the importance to your agency of the below

TDM functions:

- a. Improving mobility and accessibility: 9-10
- b. Reducing congestion/improving travel reliability: 9-10
- c. Improving air quality: 9-10
- d. Impacting economic development: 8-9
- e. Integrating land use with transportation: 8
- f. Freight and goods movement: 5
- g. Improving quality of life/ livability: 9-10
 - i. Included in Travis County mission statement

What TDM approaches do you believe would be most impactful in the region?

- For roadway expansion (managed elements like diamond/flex lanes, transit enhancements)?
 - Diamond lanes – Express lanes and HOV lanes, transit priority lanes, transit improvements
 - Better bike facilities – not necessarily bike lanes but can be SUP; seeing scooters and need to have requirements for where they should run
 - Hub and Spoke plan – including this in our transportation plan
 - Scooters are an urban thing, but they've had some issues around Georgetown, etc.; creating a huge problem with parking, etc.
 - Low speed network – scooters, low speed electric vehicles
- For shared mobility programs?
 - Hub and Spoke Plan taken on by bike safety task force
 - Fixed route transit service is helpful, but mobility on demand programs would also be useful as a transit service.

- Partnering with CARTS and Capital Metro on geofenced mobility on demand program that picks up on important locations such as grocery stores, nearby transit stops
 - First couple of vehicles will be CARTS branded, smaller than buses, and hailed using app technology and call center
- Capital Metro van pools
- Limited availability of uber/lyft drivers in rural areas – Julia Cleary gave example of people who go to bars in rural areas and don’t have access to TNCs or transit services
- For operational strategies to be applied?
 - Flex uses – would love to convert shoulder during peak times, but have had difficulty pushing that through legislature in the past
 - Turn lanes, flex lanes, and HOV/diamond lanes
 - Incorporating TDM planning into construction process – want to see that we’re thinking through impacts
 - Example used in FHWA workshop: Colorado DOT requires a TDM piece for construction plans, and have reduced VMT in construction zones for one express lane project by 12,500

What regions or corridors do you believe will most benefit from TDM approaches?

- Answers are the same for all three categories, generally: IH 35, RM 620, SH 71W, FM 685/Dessau/Cameron, FM 812, FM 973, FM 969/MLK

What resources can your agency provide in solving the TDM puzzle?

- In-house commuter program
- Providing bike/ped infrastructure and being sensitive to vehicle movements
- Interlocal Transit Demand Plan (TDP)
 - Not enough demand for transit-only lanes
 - Working with CARTs, Capital Metro, and NPOs to get transit service in approx. 10 urbanized but unincorporated gap areas
 - TNR is considering funding a portion of bus stop and service to mobile home development of approx. 500 homes that was not annexed with surrounding areas; Capital Metro route passes by, but did not stop due to jurisdictional boundary
 - TNR funds route to Community First and surrounding area as service to homeless/previously homeless community
- Will provide team with copy of the full TDP, which also includes component about medical routes

What resources does your agency need to practice TDM strategies?

- Funding and public support
 - Commissioners Court less likely to fund programs without public support
- Example – won’t fund TDM programs for county employees, could be remedied with outreach program to describe benefits to overall efficiency of system
- Need education about gap areas, which are expected to grow in the next census, and needs for TDM strategies in those areas

What other stakeholders does your agency most closely work with? Have you ever collaborated on a project together?

- TxDOT, City of Austin, and other jurisdictions – consistently work together on roadway projects
- Works with several entities through funding and planning partnerships

Based on your understanding of TDM and flexible work schedules, what are the top 5 employers that would benefit from TDM programs?

- State of Texas employees, IRS

- Seton/St. David's
- Keller Williams – realtors cover a lot of miles
- Federal Government

What are your agency's top priorities in supporting or leading TDM projects or strategies?

- TDM policies and incentives determined through CAMPO planning
- Funding streams for TDM programs
- Infrastructure improvements
- Outreach campaigns to engage and educate public

Regional Coordination Manager, Regional Coordination Planner, and Sustainability Officer at Capital Metro

February 12, 2019 – 1 p.m.

What mobility area (transportation mode, safety, corridor planning, etc.) does your agency most impact?

- Partnership between CARTS and Capital Metro
- Mission to help people navigate the transit system
- Implementing new transit solutions
 - Vehicle giveaway program – retired vans
 - Non-profits providing service where Capital Metro does not
- Submitting application to CAMPO for subsidy to fund out pilot outside of service area

Were you able to attend the August 2018 workshop on TDM?

- Yes – all conference call attendees attended workshop
- Team to send summary materials

What TDM programs does your agency currently support?

- Commuter rail, red line, metro rideshare, transit, van pool, rail
- Partnership with Mobility on Demand
 - Pecan Street project
- Support B cycle
- Strong partnership with Commute Solutions
 - Funding support with Movability Austin
 - Board and committee support
 - Role in Regional Commute Solutions Program
- Vehicle partnership with COA

From 1 to ten (where ten is the best/ most important) rank the importance to your agency of the below TDM functions:

- Improving mobility and accessibility: 10
- Reducing congestion/improving travel reliability: 10
- Improving air quality: 10
- Impacting economic development: 9
- Integrating land use with transportation: 10
 - Key land use promotion is dedicated right of way and TOD development
 - Importance of development along corridors where there are transportation services
- Freight and goods movement: 5
 - 10% of business model includes freight and goods movement by rail
- Improving quality of life/ livability: 9
 - More qualitative, but don't manage as a separate entity

What TDM approaches do you believe would be most impactful in the region?

- For roadway projects including elements such as diamond or non-tolled managed lanes, transit enhancements, and active demand management?
 - Continued use of new or existing managed lanes
 - Success of MoPac managed lanes
 - Dedicated lanes for transit
 - Project Connect and implementation of dedicated lanes is an important factor, so transit is more accessible and convenient
 - Cut-in features (pull in pull out for bus)
 - Example of CARTS services for Capital Metro in Georgetown

- During improvements looking at transit access while improving corridors (cut-in, etc. in design)
 - Along SH 29
 - Enhanced transit amenities – sidewalks, parking lots, transit stations, integrated way of enhancing transit system
 - Park and Ride Study
 - Michelle Meaux to send park and ride study to Chad, Nirav, or David
 - Mobility hubs/ transit stations – Starbucks, Whole Foods, etc.
- For shared mobility programs?
 - Coordination of agencies, providers, technology, and services (Uber, etc.) in the region
- For operational strategies to be applied?
 - Improve existing facilities to increase transit and coordinate with other entities
 - COA bus only lanes
 - Bus only lane from Lavaca onto MLK
 - Timing of lights
 - Innovative improvements like island stations and flex lanes – good for corridors with strong inbound/ out bound
 - 801 and 803
 - Universal fare system and integrative app for all multimodal forms
 - For example – coordinating with CARTS (two fare systems)
 - Education awareness, trip planning, business participation, school participation
 - Parking adjustments that encourage transit ridership

What regions or corridors do you believe will most benefit from TDM approaches?

- For roadway projects including elements such as diamond or non-tolled managed lanes, transit enhancements, and active demand management?
 - Project Connect
 - I-35 expansion
 - CTRMA is working on expansion of 183-S and use of those managed lanes would be very helpful
- For shared mobility programs?
 - Programs into/out of Downtown Austin
 - Lamar Blvd
 - Areas with high vehicle/pedestrian interaction
 - Lower Guadalupe (“The Drag”)
 - Areas without Project Connect – high priority for alternative rideshare
 - Westgate and Oakhill
- For operational strategies to be applied?

What resources can your agency provide in solving the TDM puzzle?

- Vanpool
- Office of Mobility Management as a resource for Capital Metro and CARTS in the region
- Staff contributes to Commute Solutions
- Ride planning, Trip Planning, Smart Trips with COA, Transit Adventures, Metro works, Service expansion program (required to do a TDP)

What resources does your agency need to practice TDM strategies?

- Currently working with Commute Solutions and Movability Austin to enhance TDM practices amongst own employees
 - First phase – working with staff to use TDM strategies
 - Second phase – service providers (primarily contractors) using TDM strategy
 - Third phase – staff as ambassadors to the community
- Training, awareness, incentives
 - Example: We’re On It Program

What other stakeholders does your agency most closely work with? Have you ever collaborated on a project together?

- City of Austin, CAPCOG, CARTS, Movability, Counties within CAPCOG region
- Bastrop, Williamson, Hays, Travis
 - Williamson – increasing vanpool participation in Round Rock and Georgetown
- Health providers through Community Health Assessment/ Community Health Improvement Plan
- Faith community
- Transit Empowerment Fund – distributing bus passes to non-profits
- Demonstration grants to non-profits
- AISD and Universities – Free ridership for students under 18
- Partnerships with the CLEAN AIR Coalition with CAPCOG

Based on your understanding of TDM and flexible work schedules, what are the top 5 employers that would benefit from TDM programs?

- Dell, Samsung, State of Texas – capitol complex development

What are your agency's top priorities in supporting or leading TDM projects or strategies?

- Implement Connections 2025 Plan
- Project Connect Plan
- Internal park-and-ride working group to develop short term vision
 - Part of park-and-ride annual report
 - Staff works with CTRMA to make sure goals align
- Regional service through service expansion program
- Increasing use of metro rideshare program
- Integrating efforts with other multimodal providers

Regional Planning and Services Assistant Director at CapCOG

February 12, 2019 – 3:30 p.m.

What mobility area (transportation mode, safety, corridor planning, etc.) does your agency most impact?

- Commute Solutions program which addresses regional demand management focused on transportation mode and congestion mitigation
- Impact program areas from air quality to rural transportation planning
 - Linkages in terms of general planning

Were you able to attend the August 2018 workshop on TDM?

- Yes

What TDM programs does your agency currently support?

- Commute Solutions Program – direct operational control
 - Established 20 years ago, the regional umbrella TDM program that provides one stop-shop information resource for available transportation options
 - Incentive programs
 - Mycommutesolutions.com platform – helps find carpool/vanpool matches and manage incentive platforms
 - Local employers can update their own platform within
 - Established a Regional TDM Coordinating Committee with intent to coordinate information related to TDM in the region
 - Conduct outreach to employers, school districts, presentations to community groups, attend events, monthly newsletters, social media posts, and paid advertising
 - Regional scientific survey among the public to understand impact of the effort
 - Two CAPCOG staff members working on the program
 - Andrew Hoekzema and Anton Cox
 - Geographic representation from Travis County, COA, Pflugerville, Round Rock, Marbles, Hays County, Bastrop, CTRMA, CAMPO, TxDOT, Capital Metro, and CARTS

From 1 to ten (where ten is the best/ most important) rank the importance to your agency of the below TDM functions:

- Improving mobility and accessibility
- Reducing congestion/improving travel reliability
- Improving quality of life/livability
 - Primary importance
- Improving air quality
- Impacting economic development
- Integrating land use with transportation
- Freight and goods movement
 - Secondary importance

What TDM approaches do you believe would be most impactful in the region?

- For roadway projects including elements such as diamond or non-tolled managed lanes, transit enhancements, and active demand management?
 - Incorporating transit features into roadway projects
 - CAPCOG project analyzing impact on fuel consumption and emissions on the MoPac managed lanes – clear impact to improvement in Capital Metro ridership
 - Improving efficiency in assets we already have
 - Report should be available in the next month
 - Better reliability with dedicated ROW

- For shared mobility programs?
 - Limiting factor of available transit services/ TDM strategies people are unaware of
 - Increased outreach is key to TDM effort
 - Marketing as a TDM measure
 - Incentivizing people to use TDM
 - TDM as an important growth management strategy
 - CAMPO is not a regulatory agency but can be supportive of these broad goals
 - Making sure everybody's interests are aligned

What regions or corridors do you believe will most benefit from TDM approaches?

- For roadway projects including elements such as diamond or non-tolled managed lanes, transit enhancements, and active demand management?
 - Urbanized Austin area not in the Capital Metro service area
 - New census next year will change the boundary of the Austin urbanized areas
 - Areas with the fewest alternatives but have the most to gain in these services
- For shared mobility programs?
 - Carpooling, vanpooling, telecommuting and flex scheduling
 - Telecommuting has large potential in the Austin area because of the workforce profile – Low cost, high impact
 - Currently no agency within the region who has telecommuting as their mission
 - Being aware of agency diversity and resources with TDM interest

What resources can your agency provide in solving the TDM puzzle?

- Commute Solutions program
- Relationships with local governments, communities in the CAMPO Plan
- Funding from the air quality program to help support programs
 - Expertise, relationships, program, brand

What resources does your agency need to practice TDM strategies?

- Funding support for ongoing programs
- Hope that the policy board awards funding so these programs don't lose momentum
- Adequate staff resources and advertising to gain input from the region
- Funding application as indication on what growth and financial resources will be needed for a regional TDM program

What other stakeholders does your agency most closely work with? Have you ever collaborated on a project together?

- Capital Metro, CTRMA, CoA, Travis County
- Coordinating Committee – bringing in new actors like Waze carpool, etc.

Based on your understanding of TDM and flexible work schedules, what are the top 5 employers that would benefit from TDM programs?

- Local governments – employees have the highest single occupancy vehicle rate; helps agencies set an example for other employers and improves credibility when encouraging private companies to implement TDM efforts

What are your agency's top priorities in supporting or leading TDM projects or strategies?

- Top priorities should be increasing awareness of alternatives to single-occupancy vehicles, then persuading people to utilize those alternatives
- Short term impact/improvements with the money we already have
- Long term priority to make sure work is well coordinated and regional in scope
- Communicate idea that TDM projects aren't a threat in funding to other projects

General Discussion:

- Discussed timing of the TIP amendment process this Spring
 - Possible interim set of recommendations to allocate funding while not foreclosing any possibilities of the plan
- Important to distinguish between programs that encourage behavior change for using existing system and efforts that modify the system itself
 - Different evaluation measures for programs and capital improvements

TDM Program Manager at the City of Austin

February 12, 2019 – 4:45 p.m.

What mobility area (transportation mode, safety, corridor planning, etc.) does your agency most impact?

- Tien-Tien's role specifically is to manage the City's TDM program, which includes three broad topics (policy, planning, and programming):
- Policy – looking at City and regional policies; coordinating with other entities that aren't strictly transportation related, such as economic development and land use
 - Land use and development – looking at updating land development code, including TDM/TIA requirements

Anything we could use from CodeNEXT to share as best practices or as an example for other entities doing reform to their land use code?

- Could look CodeNEXT materials; controversial, might not be the best example
- Helpful to look at early work on high-level vision summaries (20-30 pages); give broad overview of direction we're moving in terms of parking (inefficient land use), etc.

Negotiation with developers – Example: if they want two extra floors, they will be permitted only if they implement TDM; Any plans in the city to develop scheme for this? Who initiates these conversations?

- City is developing updated TIA guidelines, which will have more transparency on recommended TDM strategies and estimated trip reductions
- Every PUD is a broad conversation, doesn't have specific guidelines
 - Example: San Francisco TDM ordinance passed 3 years ago – guiding document is clear and developer friendly, walks through steps; Eventually had to pass ordinance that said they were generally TDM friendly, vs relying on tying TDM strategies to trip reduction.

Is the City of Austin looking at a new definition of Level of Service?

- Discussed it during CodeNEXT; General direction we're moving is to incorporate multimodal impacts, rather than doing away with LOS entirely
- Incentive policies – working to see how this is framed for companies that are looking to branch into Austin area or expand existing
- Special events – worked with special events office to create ordinance
 - Sustainability – must adhere to composting, recycling, energy regulations
- Education, outreach, and programming
 - Smart Trips program focusing on residents in specific neighborhoods
- Internal strategies for employers
 - Commuter programs with incentives/disincentives, as well as programs such as flex working

Were you able to attend the August 2018 workshop on TDM?

- Yes

What TDM programs does your agency currently support?

- Support programs that they don't lead – Movability
- Mayor's Mobility Challenge
- Commute Solutions through CapCOG, try to provide funding when possible

From 1 to ten (where ten is the best/ most important) rank the importance to your agency of the below TDM functions:

- Improving mobility and accessibility

- Reducing congestion/improving travel reliability – reduction is not a goal, managing congestion/improving travel reliability is a goal
- Improving air quality: 8
 - One year ago, would have been 10, but now AQ function is included in sustainability department
- Impacting economic development: 9
- Integrating land use with transportation: 10
- Freight and goods movement: 5
 - Not a focus, although our department is studying non-radioactive HazMat
- Improving quality of life/ livability: 10

What is the driver, helping to attract employers or maintain overall attractiveness as region?

- Economic development and livability go hand in hand
- Looking at where TDM is already happening that we can improve and focus on
- Trying to incentivize large companies, acknowledging that there will always be impacts; ensuring net positive impact
- Parking and Transportation Management District – looking at areas like the east side or Mueller to manage congestion by using metered parking and putting money back into the community

What TDM approaches do you believe would be most impactful in the region?

- For roadway projects including elements such as flex lanes/diamond lanes, transit enhancements, and active demand management?
 - HOV lanes on major highways – specifically the benefit it provides to public transit, BRT, show time-savings
- For shared mobility programs?
 - Carpooling and vanpooling, comes down to ability to show time-savings
 - Last mile options and midday trip solutions
 - Car2Go, scooters, etc. break down barriers for people committing to transit or shared mobility (need to run errands, etc.)
- For operational strategies to be applied?
 - Signal timing and preemption – Allow transit to queue jump or pre-empt a signal
 - Not sure if using shoulder for transit is permitted in Texas
 - Technology, mobility as a service – customer facing and accessible for the layman to understand how to use different options

What regions or corridors do you believe will most benefit from TDM approaches?

- Need to look at O/D, employment hubs that serve on a regional level

What resources can your agency provide in solving the TDM puzzle?

- Allocating funding to TDM through mobility bond, aspirational
- Dedicated TDM department; working with CAMPO, CapCOG, and Capital Metro
- Provide public-facing education and outreach to the layperson who doesn't understand options

What resources does your agency need to practice TDM strategies? CM: What are the things you would like to do more of?

- Need additional funding and staff; policy guidance and directives that would help gain funding
 - Example: took three years to develop public facing website, now they are looking into ways to keep this useful – need staff, marketing etc.
 - Example: policy guidance on parking; encourage employers to act on TDM strategies; looking to commuter benefit ordinances in other areas
 - 90% is incentive based
- Directed funding – Judge Eckhart's 5% funding allocation, helpful for CoA to implement TDM

What other stakeholders does your agency most closely work with? Have you ever collaborated on a project together?

- CAMPO, Movability, and CapCOG
- Haven't worked much with TxDOT in the past, currently partnered with TxDOT and Travis County to share best practices and develop internal commute programs
- Regional TDM Coordination Committee – meeting to discuss broad topics and share ideas; at the point of collaborating on big items, related to lack of policy/mandates/directive

Based on your understanding of TDM and flexible work schedules, what are the top 5 employers that would benefit from TDM programs?

- State, UT, AISD, City of Austin
- Look to chamber for largest employers

What are your agency's top priorities in supporting or leading TDM projects or strategies?

- Policy – updates to land development code, or update parking policy within existing structure
- Parking – one of the biggest issues Austin needs to tackle
 - Managing parking downtown and working on new developments
 - Getting rid of parking requirements at low-income housing developments
- Education and information for residents
 - Supporting web usage (GetThereATX.com); focusing on segments due to limited funding
- Looking at ways to influence new movers – targeting those more likely to shift
- Interested in learning about and supporting programs that aren't within the City's purview
 - Example of construction mitigation – looking at ways that TxDOT, and other entities, can implement strategies to make sure that TDM practices continue to be used beyond the construction project
 - Considering how we can be more thoughtful about investing in projects that reduce vehicle trips

City Council adopted incentives program in December

- Resolution led by Mayor Pro Tem Garza to increase transit usage through incentives
 - ATD put together group of internal stakeholders and solutions to increase use of public transit
 - Asking City Manager to direct and report back to City Council on recommendations and budgetary priorities
 - Bloomberg can provide support, not giving money but connecting with experts
 - Commuter incentives
 - Promoting shared mobility
 - Parking policies
 - Bloomberg can take a look at Movability, Smart Trips, etc. and provide guidance and expertise on enhancing efforts or starting pilots
 - City Lab – Bloomberg funded the City of Durham program to reduce parking demand; behavior experts developed series of pilot programs to see if behavior science application to transportation issue would yield different results
- 4 staff members on TDM program

Executive Director at Movability

February 13, 2019 – 9:00 a.m.

Can you provide an overview of Movability and your role in implementing TDM programs and strategies?

- Only TMA in the region; Member-based organization (about 60 members)
- Working directly with employers, connecting them and their employees with mobility options
 - Employers ranging from University Federal Credit Union to Google, Samsung, state agencies and City of Austin
 - Partner members – service providers including Car2Go, scooters, R&R Limos
- Provide members with education opportunities, through writing and facilitating strategic mobility plans, developing lunch and learns, and connecting employers with service providers
- No federal assistance, because Austin is in attainment

How many employees does Movability have?

- 3 full time employees and one communications contractor
- Managing contract with Downtown Austin Alliance – access to their research, good partner for connections with employers and potential members

How many members are required due to TDM policies written into development agreements and how many are voluntary?

- All membership is voluntary

What is your method of outreach to employers?

- Connecting with employers through gateway programs such as the Mayor’s Mobility Challenge
- 4th year of the Mayor’s Mobility Challenge – Challenge to reach out to employers to develop TDM strategies and plans
 - 1.0 (1st three years) – \$5k each for up to 20 companies to help write TDM plan
 - Few Central Texas companies have anyone dedicated to TDM; worked with HR, facilities, etc. to help with strategic mobility plan
 - 2.0 (2019)
 - Reengage with previous Mobility Challenge employers to evaluate progress and help them move forward with implementing TDM plans
- Movability gets referrals through companies who have worked with them
- Board of directors actively engage employers/companies and connect them with Movability

How many of your member organizations are in Downtown Austin vs other centers?

- About half of Movability members are located in Downtown Austin

CapCOG conducts outreach to employers about alternative transportation services, but they aren’t a membership organization and might not work as hands on with these companies as Movability. Can you compare your role with the CapCOG’s role?

- CapCOG connects individuals directly through Commute Solutions
- Commute Solutions is funded through government agencies.

- Movability's model reaches more individuals through the support of their employers
- Movability works with organizations to help them develop programs and benefits that support TDM options for employees/members
 - With buy in from employers, more likely to get participation from employees

Can you describe some of the strategies/outcomes of your work with employers?

- Mayor's Mobility Challenge 1.0 focused on developing a strategic mobility plan
- Most groups working with Movability look at desired outcomes and create customized approach
 - Example: Merck wasn't prepared for limited parking in downtown – consider implementing teleworking policies to reduce those needs
- Focus on employee retention – getting and keeping good employees, especially with employees that value work-life balance
 - Help develop benefit packages for employees that want to reduce time spent in vehicles
 - Cash out parking for transit passes, bike passes, flex time, and teleworking programs

Something we've heard from other stakeholders – construction can bring about lasting change that goes beyond the timeline of construction.

- Example: construction around capitol complex, working with Senator Watson and Representative Israel's offices to develop a flex time pilot program for state employees
- Construction has historically resulted in lasting behavior change – Employment profile of Austin is helpful in terms of teleworking and other similar programs
- We are currently working with a couple of State agencies. One of our efforts is to work with Capital Metro to implement a pilot program for them to take advantage of Metrowork passes

What type of linkages might be introduced so that TDM principles can be considered during design?

- Dedicated transit lanes downtown (rail or bus), protected bike and scooter lanes
- Emerging technology that would be helpful outside of the downtown core for making connections in more rural areas
- Park-and-rides associated with major developments
 - Requires coordination with Capital Metro and other service providers, opportunity for people to come together for collaborative planning efforts
 - Need to have enough remote parking (park & rides) to make convenient and easy for riders

Shared Mobility options?

- Expanded transit service – Cap Remap was a good improvement, want to see network extended
 - Need dedicated transit lanes to keep comparable travel times so people will take transit
- Building facilities that support buses and other modes – electric vehicles, etc.
- One-stop shop for information about shared mobility programs, help plan trips end-to-end
 - Could be implemented at the CAMPO level or by service providers
- Regional, inward and outward facing communication with shared mobility programs

- Example: Downtown Station Redevelopment began in April – Movability to help share information about construction delays and closures

What would be the advantages/disadvantages of different agencies taking the lead?

- Something to be determined by the TDM Plan
- Keep regional focus in mind, helpful for CAMPO or RMA as regional organizations to sponsor or take some ownership of these programs
- Movability would be a candidate because of strong partnerships with agencies and implementers, board members who are working to help get us connected
- CapCOG and Commute Solutions have federal money, where it would be more difficult for Movability to tap into those funds

Different agencies are working in silos, but there's also the coordinating committee trying to pull things together. Do you think there has been a turning point in getting people on board with coordinating?

- Working to facilitate cross planning, regional TDM coordination committee spun off from Commute Solutions committee
 - Communication has improved, still building trust

Operational Improvements?

- Robust Commute Solutions program or equivalent
 - Redesigning website, hope they gain traction in rural areas that feed into downtown

Are there particular areas that Movability focuses on or should?

- Started out as Movability Austin, dropped the "Austin" to focus on the region as a whole
 - Office with Downtown Austin Alliance, naturally they are plugged in
- Parmer Lane - location of Samsung, Apple, and other large tech employers who generate traffic
- Cedar Park - large number commute from this area to employment centers
- Universities, University of Texas at Austin, Texas State University, and St. Edwards University should be more engaged in how they handle the traffic they generate

Anything else we should know about Movability?

- We have diversified funding sources and are working hard to increase our budget and our reach. Because the area is in attainment our members are all voluntary. They participate because they want to participate.
- We produce a lot work given our small budget.
- Currently focusing on the needs of Parmer Lane and options beyond personal vehicles
 - Continuous bike lanes, sidewalks, and bus line to Samsung campus
 - Coordinating solutions with TxDOT and other agencies, waiting for estimated cost
 - If this project is successful it could hit all three of the categories listed (roadway projects, shared mobility, operations improvements)

What are your agency's top priorities in supporting or leading TDM projects or strategies?

- Data collection

- Mode split is very important to Movability
- Hoping to develop an employment center survey to get information about mode splits for commuters, considering door-to-door travel
- Develop a data gathering method that can be expanded to other areas in the region
 - Testing out methodology and metrics in Central Business District
- Funding – currently funded by CoA, Capital Metro, DAA and membership

Where is the region in terms of scaling these employer-based efforts? At what point do you reach saturation?

- Being the only TMA in the region, Movability has to decide how to approach regional needs
 - Focus on downtown and how commuters reach this area from different population centers in the region
 - Focus on the large employment centers (downtown, domain, etc.) and work within the region from the perspective of the individual commuters

Worked in areas where there are seven regional TMAs. Is there anything that prevents another TMA from coming into the region?

- Nothing is keeping another TMA from coming into the region, just have to get 501(c) designation
- Would see them as colleagues and peers, and another extension of who could help solve this problem

Vice President of Regional Infrastructure and Mobility at the Greater Austin Chamber of Commerce

February 13, 2019, 11 a.m.

What mobility area (transportation mode, safety, corridor planning, etc.) does your agency most impact?

- Corridor and long-range planning- advocating for creating multimodal corridors
- Advocacy - Members help define areas of interest
- Collaboration - Making sure members, organizations, and agencies are working together

Were you able to attend the August 2018 workshop on TDM?

- No; Team will share summary for Matt to share with members

What TDM programs does your agency currently support?

- Don't currently have developed policies, but encourage flex schedules
- Support local efforts to manage demand - Emphasis on priority bus lanes, light synchronization, anything that helps people get around more efficiently

From 1 to ten (where ten is the best/ most important) rank the importance to your agency of the below TDM functions:

- Sees these functions as interconnected, impact one another
- Improving mobility and accessibility: 10
 - Top priority/overarching theme for the chamber
- Reducing congestion/improving travel reliability: 9
 - Improving reliability for individuals, as well as freight and companies moving to the area
- Improving air quality:
- Impacting economic development: 9
 - Balancing this consideration and congestion/reliability improvements with quality of life
 - Considering access to and from new businesses that employ residents of the region
- Integrating land use with transportation:
- Freight and goods movement:
 - Large freight volumes impact air quality, need to consider in order to stay in attainment
- Improving quality of life/ livability:
 - Major theme at the Chamber

What TDM approaches do you believe would be most impactful in the region?

- For roadway projects including elements such as flex lanes or non-tolled managed lane, transit enhancements, and active demand management?
 - Adding multimodal options, especially when expanding/repairing existing roadways; think about connections to trails and public transit
 - Thinking beyond added capacity, more emphasis on HOV/transit lanes
 - Think about these features during new construction projects - don't want to cause impacts twice by adding in later
- For shared mobility programs?
 - Scooters and TNCs as first/last mile options, especially important for those without vehicle access
 - Not just thinking about Point A (home) to Point B (work), but Point A1 (home) to A2 (transit) and so on

- For operational strategies to be applied?
 - Signal timing improvements
 - Example: Arlington, TX uses modified signal timing after games/special events
 - Flex shoulders for transit use, especially where there are not dedicated transit lanes
 - Queue jumping for buses maintains route reliability
 - Consider for buses that need to merge across lanes for turning movements (6th street)

What regions or corridors do you believe will most benefit from TDM approaches?

- For roadway projects including elements such as diamond lanes, transit enhancements, and active demand management?
 - IH 35 needs diamond or express lane, especially through downtown core
 - Could be difficult from a technical and political standpoint
 - Construction companies could use these managed lanes
 - Example: MoPac express lane for buses – added Lakeline route due to popularity and reliability of routes using express lane
- For shared mobility programs?
 - Domain – needs last mile options, connections to MoPac routes or to Kramer Station
 - Identify arterial needs for ingress and egress to major employers
 - East Side – well connected with bike lanes, scooter availability
 - Needs protected bike and pedestrian paths
- For operational strategies to be applied?
 - Queue jumper needed in and out of downtown Austin (between 5th and MLK) during peak to access MoPac or IH 35
 - Consider ways to improve flow where ROW constrains expansion

What resources can your agency provide in solving the TDM puzzle?

- Advocacy and collaboration
 - Act as a sounding board for agencies, engineers, and planners on several areas of policy
 - Provide information and collect feedback from member businesses that aren't involved in transportation but who rely upon ingress/egress
 - Membership will advocate for Chamber's official position through oral and written testimonies
- Transportation committee meets 1st Wednesday of every month
 - Can have TDM-focused meeting to look at commute patterns, identify routes to work and potential transit passes, etc.

What resources does your agency need to practice TDM strategies?

- Facilitating connections between members and agencies to discuss initiatives
- Mobility audit to look at business clusters that want more options
- Want to partner with Movability on several initiatives

What other stakeholders does your agency most closely work with? Have you ever collaborated on a project together?

- CTRMA
 - Collaborated on planning for 183A and MoPac
- Counties (esp. Travis, WilCo, and Hays), CapCOG (CARTPO)
- Capital Metro (Impact Advisory Board)
 - Planning Mobility Summit, staying engaged with Project Connect

Based on your understanding of TDM and flexible work schedules, what are the top 5 employers that would benefit from TDM programs?

- State of Texas – especially offices in the capitol area, but others as well
- Tech industry – Samsung, Apple, Dell, Oracle, IDM
- HomeAway at the Domain

What are your agency's top priorities in supporting or leading TDM projects or strategies?

- Advocating for flex time, shoulder riding
- ProjectConnect
- Getting information to the business sector
 - Example: ASMP team will be giving presentations to Chamber in April
- Connecting downtown, Domain, Williamson County – need to work together to create solutions

General Discussion

- Looking at the impacts of TDM programs as a whole – one strategy might not make a big change, but all of these collectively have an impact

Facilities Manager at Google

February 13, 2019 – 1 p.m.

What mobility area (transportation mode, safety, corridor planning, etc.) does your agency most impact?

- Answering from a current perspective as well as what we are hoping to accomplish
- Austin office opened around 2007, moved to downtown from north campus in 2017
 - Transitioning to downtown affected commute for several hundred employees
- Thinking about what modes employees are using and impacting, providing as many options as possible
 - Experience in Bay Area office – similarly auto-focused; employees choose to drive personal vehicles to work
 - Not sustainable from an employer/facilities perspective
- Impacting community through transportation – going to keep investing in alternative forms of transportation and disincentivizing single occupancy vehicle trips
- Want to contribute to traffic solution, not just traffic problem

Were you able to attend the August 2018 workshop on TDM?

- No – previous experience in service and real estate departments, never had primary focus on transportation until recently
- Inherited most existing employee TDM programs, getting involved in transportation to acknowledge bigger picture during continued implementation
 - Went to several transportation workshops and joined Movability, but wants to get more involved in future workshops
- Team will share summary information

What TDM programs does your agency currently support?

- Employee incentives and subsidies
 - Free shuttle program for employees; not intended to compete with public transportation options, but to provide alternative
 - Monthly Capital Metro passes – popular option for employees
 - Capital Metro Vanpool – Employees organize and google will reimburse
 - Have about 7 vanpools now, grew from about 4 a year ago
 - Waze Carpool- Google-owned company, free for employees
 - Lime scooters – discounts and passes
 - Private bike storage, showers, and other amenities onsite at Google office

What other stakeholders does your agency most closely work with? Have you ever collaborated on a project together?

- Movability – seen significant impact since joining last Fall
 - Seeing work Movability has done with other organizations provides a good “blueprint” for TDM programs
 - Communication is critical – developing key messaging helps get more buy in
 - Leaning on Movability as much as possible and hoping they lean back on us as leaders in the community
- Mayor’s Mobility Challenge
 - Won the 2018 participant award for the mobility challenge; Joined the 2019 challenge, entered “300 Best Workplaces for Commuters”

- Opportunity to work with other companies, routinely work with Facebook in downtown and domain
- Balancing internal demands of the company with external transportation needs
- Public policy team worked with City in the past, Chris would like to get more involved and gain experience with the City

How many employees do you have in Austin?

2. Currently about 1000 working in downtown

Do you do your own internal surveying of how people are getting to work?

3. Yes, commute survey sent to 10-20 random employees every month; each employee fills out once per year
 - How did you get to work this week? Is this an average week or is there something special that changed your commute patterns this week? What is a normal week?
- Shows results over time, used in Bay area office for years and has proven to be a great data source
4. Part of Mobility Challenge is to take baseline survey, haven't gone back to do second round yet
5. Strong analytics team, data driven in all programs – using anonymized home location data to identify hot spots for commuters, focusing efforts there
 - a. Shuttles in northwest, northeast (near previous campus) and south where many employees live
6. Tabling events – Shuttle provider sets up in cafeteria to gather input
 - a. Conversational interactions – can collect more nuanced, qualitative input

Downtown is one of the only areas that doesn't have a minimum parking requirement for buildings – how do you view this policy? Positive, negative, influential when choosing space?

7. Parking is always going to be a challenge; we will never have 1:1 parking
8. Northern California office used remote parking with shuttles until recently
9. As a facilities manager, would prefer useful amenities in the space taken up by parking spots
10. Want to move away from providing free employee parking, incentivizes driving personal vehicles
 - a. Another organization downtown started charging for parking, made a big impact but required a lot of buy-in ahead of time
 - b. Already a wait list for parking garages, brings scarcity problem into view

What do you see as the next step to try to make TDM more of a reality for your company? More services?

11. Eager to explore different opportunities through collaboration with Movability
12. Waze team based out of Austin is part of Movability, would like to be involved in this plan
13. Launched community shuttle years ago, but it was more from marketing perspective of employee morale than TDM perspective

When surveying employees, do you end up with specific figures or performance measures such as percentage who drive personal vehicles to work?

14. No central repository for this information, various data sources from employee commute program can be used to estimate
15. Roughly half of the office drives themselves, want to reduce to 30-40% in the next few years
 - a. Expect this to be a challenge, want to set an ambitious goal

General Discussion

16. Focus has been incentivizing other modes rather than disincentivizing driving
17. Potential to provide daily payout for people who don't drive and park
 - a. Successfully implemented in CO office
 - b. Company saves money in parking rent

18. Direct payout could be a good case study for Movability; usually done through net cost/payout
 - a. Easier from change management perspective to pay instead of charging, maintain employee morale
19. Recent partnership with Luum to provide software for employees to manage commutes, provide central location for information about commute options
 - a. Gamifies commuting - awards points for alternative transportation to compare with co-workers or redeem for prizes
 - b. Already successful implemented in Boulder and Seattle offices

EHS and Sustainability Professional at Samsung

February 15, 2019 – 2:00 p.m.

What mobility area (transportation mode, safety, corridor planning, etc.) does your organization most impact?

- Currently working with Capital Metro to coordinate bus stop on site at Samsung facility near Parmer Lane
 - Have provided Capital Metro with data including an employee survey
 - Capital Metro currently reviewing viability of an additional bus stop, might not have enough ridership to warrant new stop
- Priority to increase access to public transportation and to provide a platform for employees to connect with rideshare/carpooling partners
 - Looking at external providers like Scoop
 - Platform to location rideshare partners among coworkers
 - Samsung currently reviewing feasibility

Were you able to attend the August 2018 workshop on TDM?

- No, not familiar; Team to share summary information

What TDM programs does your agency currently support?

- Capital Metro, bus stop
- Scoop – rideshare app
- Currently working with TxDOT and CAMPO on Parmer Lane Expansion Study
 - Potential bike lane/sidewalks around facility
 - Began when Samsung entered in Mayor's Mobility Challenge, Movability helped facilitate conversation

From 1 to ten (where ten is the best/ most important) rank the importance to your agency of the below TDM functions:

- Improving mobility and accessibility: 9
- Reducing congestion/improving travel reliability: 9
 - Federal/ State/ MPO goal to manage traffic so commuters have a more consistent experience
- Improving air quality: 8
- Impacting economic development: 8
- Integrating land use with transportation: 7
 - Idea that transportation serves land-use and vice versa
- Freight and goods movement: 8
- Improving quality of life/ livability: 9

What TDM approaches do you believe would be most impactful in the region?

- Part of the plan is to develop a TDM framework to share with large employers
 - For roadway projects including elements such as diamond or non-tolled managed lanes, transit enhancements, and active demand management?
 - Additional bus stops, bike lane, and/or shuttle bus from transportation hub 1-mile away from site
 - Basic infrastructure promoting alternative transportation, moving away from single occupancy vehicles
 - For shared mobility programs?
 - Scoop service

- Between 5-12% employee participation rate at other Samsung sites
- 3,000 employees on site in Austin
- Plan to indirectly subsidize, discount for employees if Samsung subscribes
- Currently in funding justification process at Austin site

What resources can your agency provide in solving the TDM puzzle?

- Provide closer parking lots to employees who use rideshare
 - Currently one carpooling group on site
- Electric charging station on site

What resources does your agency need to practice TDM strategies?

- Continue working with Capital Metro to better chance of additional service
 - Issue of sufficient ridership
 - Working with companies on Parmer Lane to gather more data
- Waiting on TxDOT for their scope and feedback on Parmer Lane Expansion Study

What other stakeholders does your agency most closely work with? Have you ever collaborated on a project together?

- Capital Metro, Movability, TxDOT, CAMPO, Scoop
- COA Transportation Management Program, focus on commuting to and from downtown
- Movability, regional transportation management
 - Broadening interaction with large companies like Samsung

What are your agency's top priorities in supporting or leading TDM projects or strategies?

- Bike lanes/ sidewalks
 - Shuttle bus is most cost-effective
- Capital Metro service
 - Note that millennial generation employees are more inclined to use public transit
 - Opportunity to be proactive
 - East Village across from Samsung site and Pecan development in Pflugerville, both growing

Program Manager at Whole Foods Market

February 15, 2019 – 3:00 p.m.

Purpose/background of the TDM Plan:

- Plan led by Cambridge Systematics, currently leading TDM effort for FHWA
- Purpose is a unified TDM structure across the CAMPO region
- Coordinating with agencies and organizations to come up with a project wish list
- CAMPO to consider framework for projects in an upcoming project call

What mobility area (transportation mode, safety, corridor planning, etc.) does your organization most impact?

- Elizabeth Wiggins, Program Manager of Global Headquarters Whole Foods Market
 - Position developed from Green Mission, grass roots organization led by Whole Foods team members interested in the environment and sustainability
 - Started as discounted transit passes, rideshare buddies, etc.
- Whole Foods committed to sustainability and commute of employees
 - Worked with Movability to put out a survey to employees about what they want and how they feel about their commute
 - 40% of team members don't use alternative transit because it takes longer than driving
 - 30% of team members said transit options are too hard to figure out
 - Team members expressed there are limited options to those living in suburbs of Austin

Were you able to attend the August 2018 workshop on TDM?

- No, not familiar
- Team to share copy of meeting summary

From 1 to ten (where ten is the best/ most important) rank the importance to your agency of the below TDM functions:

- Improving mobility and accessibility: 9/10
 - Common feedback from Survey among Whole Foods team members
 - 20% of team is using alternative transportation unincentivized
 - Survey showed frustration over access to transit
- Reducing congestion/improving travel reliability: 8/9
 - Whole Foods footprint (2,000 employees at Downtown location), strive to be a good community member
- Improving air quality: 7/8
 - Core company value of sustainability
- Impacting economic development: lower priority
- Integrating land use with transportation: lower priority
 - Limitations of lower regulatory state
 - Transportation is linked to land-use, people move about where they live, work, and play
 - Example of Whole Foods campus, Downtown Austin
- Freight and goods movement: 1
 - Been in contact with Amazon TDM contact
 - Corporate perspective
- Improving quality of life/ livability: high priority

What TDM approaches do you believe would be most impactful in the region?

- For roadway projects including elements such as diamond or non-tolled managed lanes, transit enhancements, and active demand management?
 - Managed supply solutions
- For shared mobility programs?
 - Apps like Scoop, Waze carpool, Car to Go, Uber, Lyft, etc.
 - Using information and technology to affect how people make transportation decisions
- For operational strategies to be applied?
 - Example of buses riding the shoulder when speeds are lower
 - Example of a parking pay out program
 - Option to use after/before peak period
 - Interest in Amazon model of TDM – 50% covered by company, 50% by employee
 - Idea of limited parking spaces
 - 4 offices Downtown Austin, 1 in Westlake
 - Interested in how managed parking can be used as an incentive
 - Information technology of red light/green light in flagship store parking lot
 - An effective policy decision
 - Current movement of Austin City Council

What resources can your agency provide in solving the TDM puzzle?

- 2019 priorities
 - Offer half price Capital Metro transit passes
 - Coordinate events/ programs for Capital Metro to help with commute planning
 - Continue designating prime carpool spots in parking garage
 - Implementing Waze Carpool promotion
 - Not a subsidy
 - Discount programs with car to go, Zip Car, Guaranteed Ride Home
 - Bike Locker and construction of additional showers
 - Majority of Whole Foods team members live within 1-5 miles
- Continue with help of Movability through survey analysis to develop cohesive TDM strategy
- Offered shuttle services through Chariot
 - Free for team members with guaranteed spot
 - Lamar Bullet – the most utilized corridor
 - Market District Corridor was flagship route
 - No longer available
 - Looking into another shuttle service option

What other stakeholders does your agency most closely work with? Have you ever collaborated on a project together?

- Capital Metro
- Movability
 - Participated in Mobility Challenge
 - Looking forward to consulting from Movability
- Hired private TDM consultant to administer survey

What are your agency's top priorities in supporting or leading TDM projects or strategies?

- Marking/communication of TDM strategies
- Centralized hub of transportation information
 - Help influence behavior and change
 - Identified as a need through survey administered

Project Delivery Supervisor at TxDOT Austin District

February 19, 2019 – 3:00 p.m.

What mobility area (transportation mode, safety, corridor planning, etc.) does your agency most impact?

- Mobility35
- Infrastructure – increasing capacity and operational improvements

Were you able to attend the August 2018 workshop on TDM?

- No, but member from Mobility35 team was present
- Team to share summary materials

What TDM programs does your agency currently support?

- Teleworking, carpooling, flex scheduling
 - Varies across district
- Advanced notifications for road closures, detours, etc.
- Real time traffic alerts
 - Changeable message boards and social media

DP: Are you familiar with the RM 620 projects?

- Brandon not familiar with details, will gather additional details
- Ongoing discussion about start of schematic and environmental process
- Policy board member interest in RM 620 projects

From 1 to ten (where ten is the best/ most important) rank the importance to your agency of the below

TDM functions:

- Taking approach of mobility35 team
- Improving mobility and accessibility: 10
- Reducing congestion/improving travel reliability: 10
- Improving air quality: 7
 - Part of ongoing NEPA process
- Impacting economic development: 7
- Integrating land use with transportation: 5
- Freight and goods movement: 9
- Improving quality of life/ livability: 10
 - A key goal of the department

What TDM approaches do you believe would be most impactful in the region?

- For roadway projects including elements such as diamond or non-tolled managed lanes, transit enhancements, and active demand management?
 - Additional capacity when possible and applicable
 - Non-tolled managed lanes, HOV lanes
 - Priority of reliable route for transit and emergency vehicles
- For shared mobility programs?
 - Working with transit partners on park and ride facilities
 - Working with local partners on public involvement push – messaging a switch from single occupancy to multiple occupancy vehicles
- For operational strategies to be applied?
 - Structural operation improvements implemented across corridors – ramp reversals, etc.

What regions or corridors do you believe will most benefit from TDM approaches?

- For roadway projects including elements such as diamond or non-tolled managed lanes, transit enhancements, and active demand management?
 - I-35, US 183, US 290, US 281, SH 71, MoPac, Loop 360
 - All priority corridors on the district
 - Looking where to provide operational improvements along these corridors
 - I-35 as a major priority in urban core, US 281 and SH 71 a suburban/rural priority
- For shared mobility programs?
 - Downtown Austin
- For operational strategies to be applied?
 - Highly constrained corridors where expansion is not an option because of development, etc.

What resources can your agency provide in solving the TDM puzzle?

- Continue efforts in planning and implementing TDM in new projects
- Continue and improve upon TDM strategies like teleworking and flex scheduling

What resources does your agency need to practice TDM strategies?

- Funding
- Assistance, coordination, and support of local planning partners

What other stakeholders does your agency most closely work with? Have you ever collaborated on a project together?

- CAMPO, RMA, CapCOG, 11 counties in the region, Capital Metro, COA

Based on your understanding of TDM and flexible work schedules, what are the top 5 employers that would benefit from TDM programs?

- State of Texas and University of Texas
- Seton and St. David's, major hospitals
- Dell and major tech companies
- Federal Government

What are your agency's top priorities in supporting or leading TDM projects or strategies?

- Projects
 - Mobility35 (Travis, Williamson, Hays County)
 - Other priority corridors
- Implementation on the road
 - Reducing construction delay
 - Improving safety, in particular during construction
 - TDM critical to long-term goal given the protracted and prolonged goal of the region
- TxDOT Staff
 - Teleworking, flex scheduling, carpooling
 - Looking to expand district level

FHWA TDM Workshop – August 2018

Executive Summary

Participants discussed existing TDM efforts and future considerations for the region. Some existing efforts including parking mitigation strategies, TDM strategies for special events, shared mobility programs and incentives, information and data sharing, and various planning initiatives related to transit and on-call mobility services, active transportation facilities, air quality assurance, and incident management. Future considerations include planning for autonomous vehicles, improving multimodal connectivity and arterial network (to reduce freeway trips for short distances), and setting goals for funding and promoting shared mobility options throughout the entire region.

Overall, participants noted a lack of consistency across the region in TDM planning and implementation capabilities in several categories. Shared mobility planning in the region was described as generally reactive rather than proactive and focused within the downtown core. Data availability and privacy concerns related to commute tracking, as well as varying transportation needs, levels of community interest in shared mobility, and access to technology, are some challenges for implementing unified TDM strategies across the region.

Collaborative TDM efforts in the CAMPO region include developing a TSMO plan, the Highway Emergency Response Operator (HERO) program, City of Austin's bond program, and CAPCOG's region-wide Guaranteed Ride Program.

Self-Assessment Findings

Participants were placed in three evenly sized groups based on planning area (City, County 1, County 2). Each group included representatives from each regional agency (CAMPO, Movability, CAPCOG). Groups were asked to provide a self-assessment of demand management capabilities and rate various aspects of their TDM strategies as **Ad-Hoc (Level 1)**, **Defined (Level 2)**, or **Optimized (Level 3)**, on a + / - system with unique described criteria for each category. The most common rating for all categories was Defined (Level 2), and none of the agencies rated TDM strategies as Optimized (Level 3).

Regional Vision and Goals

A lack of consistency was noted between TDM vision and goals as defined by different entities throughout the region. Groups rated their Vision and Goals as Defined (2 or 2-), meaning that TDM is acknowledged as part of the regional vision and treated as a substantial goal, with growing political support and potential for policy implementation by CAMPO. One group rated themselves as Ad-Hoc (1+), meaning TDM is acknowledged as part of the vision, but with limited understanding, political support, and funding for implementation of TDM strategies and steps.

Setting Objectives for TDM

Ratings ranged from Ad-Hoc (1+) to Defined (2- and 2). Objectives were generally not developed with a “SMART” approach, and a disconnect between objectives and strategy identification exists. Participants noted a dichotomy in TDM objectives at the regional level, with significant variances in TDM objectives between rural and more urbanized counties.

Definition of Performance Measures

Participants rated their capabilities as Ad-Hoc (1+) and Defined (2- and 2). Participants noted that performance measures are more developed in some parts of the region than others, and potential performance measures are just becoming a topic of discussion in the region.

Assessment and Selection of Strategies and Programs to Support Objectives

County groups gave a rating of Ad-Hoc (1+). Compared to other alternatives, TDM assessment is not based on rigorous modeling, does not drive alternatives analysis, and is inhibited by lack of data. Strategies do not address all broader objectives and are limited to existing approaches. City rated this category as Defined (2-), indicating that TDM strategies are integral to many alternatives but are not fully integrated with other projects.

Integration of Strategies into Plans and Funding Programs

Participants rated their capabilities as Defined (2- or 2+), meaning TDM is integrated into larger and capital projects, with detailed TDM projects, pilot programs, and dedicated funding identified. In terms of transit priorities, it was noted that TDM capabilities in this area could be considered Optimized (3).

Monitoring Evaluation of Progress toward objectives

County groups rated their evaluation methods as Ad-Hoc (1), having minimal TDM evaluation methods that do not follow other operational standards, and planners are monitoring awareness. City rated as Defined (2), having formal methodology to evaluate and TDM performance at regional, city, and local levels.



Planning for Transportation Demand Management: A Contemporary Approach – MPO Workshop

Full Workshop Report – Published by FHWA

Planning for Transportation Demand Management: A Contemporary Approach –Capital Area Metropolitan Planning Organization

WORKSHOP SUMMARY AND LIST OF ACTIONS

AUGUST 16, 2018

Prepared by Haley Partin for ICF
Under contract to Leidos for FHWA Office of Operations



Planning for Transportation Demand Management: A Contemporary Approach – MPO Workshop

In 2013, the Federal Highway Administration (FHWA) Office of Operations and the FHWA Office of Planning produced a document titled “Integrating Demand Management into the Transportation Planning Process: A Desk Reference.” The purpose of the desk reference is to provide a better understanding of where, how and when to integrate Travel Demand Management (TDM) into transportation planning. The desk reference complements and supports other FHWA guidance documents on the transportation planning process, including guidance that includes discussion on the role of TDM in:

- Objectives-Driven, Performance-Based Approach to Integrating Operations into Transportation Planning,
- Congestion Management Process (CMP), and
- Opportunities for including operations in Statewide and Nonmetropolitan Transportation Planning.

The document includes resources for evaluating TDM measures and information on known effectiveness of implemented strategies. The reference can help users better define the role of TDM in meeting specific needs they face in their planning efforts.

As a follow-up to this document, FHWA is conducting a series of workshops, aimed at bringing together transportation planners, traffic management professionals, transit operations staff, and TDM professionals and helping them gain an understanding of contemporary approaches for influencing travel behavior and planning for demand management. Today, transportation agencies are faced with a rapidly evolving landscape of technological innovation, public-private partnerships, and new business models for providing mobility choices to transportation system users. In these workshops, participants will discuss:

- The role of demand management in this rapidly changing urban transportation landscape, including ways to support a full array of choices – location, time of travel, mode, and route – and new shared mobility options.
- The relationship of demand management to traffic management – including concepts such as integrated corridor management (ICM) and active transportation and demand management (ATDM).
- The role of TDM in supporting regional goals for mobility, reliability, and enhanced transportation system performance.
- Actions and institutional structures for integrating demand management into regional planning.

As the workshop host representative, Ashby Johnson (Capital Area Metropolitan Planning Organization (CAMPO)) welcomed the group. He said this workshop is important because the Austin region needs to get people out of their cars, not just from a mobility standpoint, but from an equity and accessibility standpoint. Austin is growing by leaps and bounds, so now is the time to figure out how to handle the transportation impacts, alongside the housing and economic impacts from the growth.

Workshop Overview

The purpose of the workshop was to:

- Identify opportunities to broaden the scope of demand management beyond traditional alternative commute mode programs and to address emerging issues such as shared mobility.
- Identify how to build institutional capability to support effective demand management.
- Develop an action plan for improving integration of demand management into existing and future planning activities.

The workshop agenda was as follows:

Time	Session
8:30 AM	Introduction
9:00 AM	Demand Management Overview
9:40 AM	A Contemporary Approach for TDM in the Region: Strengths, Weaknesses, and Opportunities
10:05 AM	Break
10:15 AM	Emerging Approaches, Strategies and New Directions for Demand Management: Integrating Shared Mobility into Planning, Integrating TDM and Traffic Operations
11:40 AM	Presentation from DRCOG on their TDM efforts
12:00 PM	Lunch (on your own)
1:00 PM	TDM and Planning Integration – Self Assessment Exercise
2:15 PM	Break
2:45 PM	Discussion: Opportunities to Integrate Demand Management into Regional Planning
4:00 PM	Moving Towards Integration – Action Plan Development
4:30 PM	Wrap-Up

The facilitators provided an overview of Transportation Systems Management and Operations (TSMO) and Contemporary TDM. At the end of the discussion, the workshop participants shared TDM efforts going on in the region and asked questions they had.

- City of Austin is trying parking pricing
- How do you deal with connected vehicles and automated vehicles and integrating the technology?
- Ralph mentioned the Smart Cities grant and Advanced Transportation and Congestion Management Technologies Deployment Program (ATCMTD) grant as opportunities to pursue TDM activities. Ralph also mentioned the FHWA Mobility on Demand (MOD) Sandbox program
- Texas Department of Transportation (TxDOT) has a Connected Freight Project to help shippers navigate through Austin in anticipation of the construction related to I-35
- Texas has Texas-wide autonomous proving grounds.
- Austin's Smart City Challenge proposal included 7 projects.
 - There is an autonomous demonstration along Riverside.
 - High capacity transit along some corridors.
 - Focused on Austin Central Texas Corridor project and enhancing multimodal options along major corridors.

- Some was data rodeo (aka data warehouse) that brought into the project Texas A&M Transportation Institute (TTI).
 - There was an equity piece.
 - Maybe 200 people involved in the development.
 - Actively working on it with funding through city and state – morphed into Texas Innovation Alliance.
- Austin Region's current long-range plan (LRP) addresses bike/pedestrian and TDM, but more in the traditional sense (e.g., employer outreach, carpooling). Goals of current plan address reduction of SOV over time. In the process of developing the 2045 LRP. The goal is to have a draft document ready for technical advisor committee no later than January of 2020, after an extensive outreach campaign. In preparation, CAMPO has been conducting corridor and sub-area studies and completed a regional active transportation plan on the 6 counties and with San Antonio MPO and other MPOs that talks about connecting bike paths between those regions. Austin has to find the best options to create mobility and accessible throughout the region without having to go on the freeway – there are a lot of short, local trips that shouldn't need to go on the freeway. Strategies they could look into are dedicated guideway for transit, wide sidewalks, helping local governments of doing development.
- CAMPO is doing a regional transit study and incorporating Capital Metro's (Capital Metro) study.
- CAMPO is finishing up a regional incident management plan where they are trying to improve responses to incidents and how to improve reliability and safety with incident management.
- The regional TDM program is also in air quality program. Austin is currently largest metro region that is in attainment of air quality, but that may change next year. TDM has a benefit of not just addressing congestion in one point, but for the system overall. The way TDM is situated in the Austin region's long-range plan, there are measures associated with expanding capacity (road building and bike/ped) but transportation management is another category. The challenge is anything that isn't about building roads, people think about it differently.
- Travis County and Capital Metro have partnered to develop a transit plan for transit gap areas – the areas outside of Capital Metro's regular service area but that do not have coverage from rural providers. It's a MOD pilot project where people within a specified zone can use an app or call to get a ride. The ride can be taken anywhere within the zone and the zones include links to the transit system. Another program includes partnering faith-based and social service vehicles for vanpool program. An agreement will allow Capital Metro to run service outside their service area.
- City of Austin's SmartCommute Rewards program – the group of employers in Austin that have the highest single occupancy vehicle (SOV) commute is local government. The city got a grant to run pilot project to purchase a platform that has website and app and asked employees to log trips to- from work and incentivized non-SOV trips with vacation hours, incentives given of four to 16 vacation hours, depending on number of days carpool. From the implementation of this program, over 50% of people reduced their drive alone trips from before. Since City of Austin does not manage their parking, they cannot charge their employees for parking.
- TDM is built into the Connected 2025 bus plan, where there are seven innovation corridors where there's not enough transit density to provide full-range services. They will be contracting directing with a transportation network company (TNC) to provide service.
- Austin City Council passed a TDM ordinance whereby Tier 4 events must implement TDM strategies, including bike, multimodal access. In order to make sure this is successful, the city needs to grapple with how to set reasonable goals, getting data, etc.
- During South by Southwest, BCycle (bikeshare) sees the highest daily usage of any bikeshare program. South by Southwest annual event in March brings in an additional 250 – 400k people for 10 days
- How do special events affect funding sources (aka, is special funding received to help the transit agency deal with needs for increased capacity during special events)? Capital Metro does not get

special funding for events, beyond charging extra fares. Ashby suggested maybe looking into getting a cut of the revenue from hotels.

- Movability is looking into parking mitigation for construction workers in downtown.
- City of Austin contracts with Waze where Waze is getting road closure and event information.
- A broad challenge in the region is that there's an increase in SOV rate. The peak period is increasing but congestion is not abating at any time.
- Is there guidance on if public agencies can promote private transit services? It would be a benefit for Bastrop County to be able to promote a private service. In Austin, Waze Carpool made a pitch and asked Austin to promote them and their \$2 campaign. The city's legal team said it was ok to promote as long as the city promoted all options.
- There is a perception that it's only City of Austin and Travis County when it comes to TDM. Need to make sure that the reality is at a regional scale. The people most constrained by options are not within the core.

The facilitators asked the participants if Shared Mobility is something the region plans for. The following are responses to the question.

- It's not planned for, it's a reaction
- Mostly a central city phenomenon
- Round Rock is doing a pilot with TNCs
- In Bastrop, there isn't enough interest to gain momentum
- Being able to have cellular service is a limiting factor
- There are some studies that show that vehicle miles traveled (VMT) for certain demographics have dropped
- Some demographics want to call in vs using an app
- Capital Metro has a call center and acts sort of like a TNC

A participant asked how the San Francisco example of giving a permit for taxis/vans to pull over into the bike lane is beneficial and asked where the revenues went. The contractor will find out.

The workshop facilitator asked where the region is regarding planning for shared mobility.

- CommuteSolutions is going through issues of self-reporting data. They are wondering how to get better data.
 - DRCOG said they have connected with Strava
 - People can express data privacy and tracking concerns
 - Maybe NCHRP can look at how streetlight funding can be utilized
- It is important to consider the downstream effects of TDM strategies
- Some strategies may not work in certain regions

The workshop facilitator asked if the region has combined any efforts.

- TxDOT Austin is creating a TSMO plan for Austin.
- During the TDM Coordination meeting, they talked about reaching out to employers
- Austin District is gearing up in operations. The Highway Emergency Response Operator (HERO) program is being ramped up with the MPO's assistance. In initial stages, most closures are localized. It's hard to ramp up for short-term event. But when we get into the heavy-duty construction, there was a coordinated effort between the public information office (PIO) and local municipalities.
- City of Austin has a bond program for major arterial roadways
- The Capital Area Council of Governments (CapCOG) is about to launch a region-wide Guaranteed Ride Program.

DRCOG Presentation

DRCOG presented an overview of several of their TDM programs.

2.1 Self-Assessment Findings

The participants split into three groups. The representatives from each of the regional agencies, CAMPO, CapCOG, and Movability split up between the three groups. One group consisted of the cities and the other two groups consisted of the counties. The counties were split into two groups so that each group would have no more than 6 participants. The participants conducted a self-assessment on the region's overall capability to integrate TDM into planning processes using the Self-Assessment Matrix provided in the desk reference (and provided in Appendix B). The following table presents their self-assessment results. Self-assessments with a "+" indicate capabilities were assessed at slightly higher than the level, but not quite meeting the next level. Self-assessments with a "-" indicates the assessment found the capability mostly met the level.

Sometimes, a group could not decide on one assessment level, so they provided two assessment levels. This happened when members of a group were strongly divided on the assessment because different members were at different capabilities and did not want to necessarily downplay their own capability.

Process Area	Ad-Hoc (Level 1)	Defined (Level 2)	Optimized (Level 3)
Regional Vision and Goals	County 2 (1+)	County 1 (2) City (2-) County 2 (2-)	
Setting Objectives for TDM	County 1 (1+) County 2 (1+)	City (2) County 2 (2-)	
Definition of Performance Measures	County 2 (1+)	County 1 (2-) City (2) County 2 (2-)	
Assessment and Selection of Programs to Support Objectives	County 1 (1+) County 2 (1+)	City (2-)	
Integration of Strategies into Plans and Funding Programs		County 1 (2-) City (2+) County 2 (2-)	
Monitoring and Evaluation of Progress toward Objectives	County 1 (1) County 2 (1)	City (2)	

Regional Vision and Goals

The groups rated themselves **Level 1+**, **Level 2-**, and **Level 2**, so the capability varied at the different levels. The following are general characteristics of regions at Level 1 and Level 2.

Level 1 Ad-Hoc	Level 2 Defined
TDM is acknowledged as part of the vision in the state but no true commitment in terms of remaining steps	TDM is a part of the vision statement for the metropolitan region Enhanced understanding of TDM concepts and strategies at staff levels

Level 1 Ad-Hoc	Level 2 Defined
<p>Varied understanding of the concept of demand management as a policy option</p> <p>Limited high-level political or decision-maker support for the idea</p> <p>Primary role of MPOs is to fund limited TDM activities</p>	<p>Treated as a substantial goal of the planning efforts</p> <p>Political support emerging on this topic</p> <p>Many roles (funding, coalition building, operations) becoming realistic for MPOs in the area of demand management</p>

The following comment was identified during the discussion:

- Participants noted that, the vision and goals currently seem to range depending on the agency or municipality, so there is no consistent regional vision or goals.

Setting Objectives for TDM

The groups rated themselves **Level 1+**, **Level 2-**, and **Level 2**, so the capability varied at the different levels. The following are the general characteristics of regions at Level 1 and Level 2.

Level 1 Ad-Hoc	Level 2 Defined
<p>Minimal role for TDM in planning objectives or in the CMP</p> <p>Primarily linked to one or two objectives such as conformity</p> <p>Not developed using a "SMART" approach</p> <p>No linkage to strategies identification and selection</p>	<p>Multiple objectives for TDM identified for a diverse set of needs including congestion, air quality, and land-use strategy</p> <p>Some objectives are "SMART"</p> <p>Still a strong disconnect between objectives and strategies identification</p> <p>CMP includes specific TDM objectives</p>

The following comments were identified during the discussion:

- In rural counties, there are no TDM objectives. Some counties may have TDM efforts in place but may not label them TDM.
- The objectives are fairly well set at the county level, but there is dichotomy set at the region level.
- Capital Metro internally highly supports TDM but does not necessarily outwardly communicate these objectives extensively.

Definition of Performance Measures

The groups rated themselves **Level 1+**, **Level 2-**, and **Level 2**, so the capability assessments varied at the different levels. The following are the general characteristics of regions at Level 1 and Level 2.

Level 1 Ad-Hoc	Level 2 Defined
<p>TDM not linked to MPO efforts at performance-based planning and management</p> <p>Outcome measures for TDM limited to Trip and VMT reductions</p>	<p>TDM is linked to performance-based planning and management</p> <p>Performance measures begin to define TDM "outcomes," at a metro level including: mode splits, vehicle throughput, rideshare rates</p>

The following comments were identified during the discussion:

- Capital Metro is working on TDM as a concept but does not know how to measure a concept.
- Places that are up to speed on TDM have the full gamut of measures, but other parts of the region are not doing anything.
- Defining potential performance measures to use are starting to become part of the discussion.

Assessment and Selection of Programs to Support Objectives

The groups rated themselves **Level 1+** and **Level 2-**. The following are the general characteristics of regions at Level 1 and Level 2.

Level 1 Ad-Hoc	Level 2 Defined
<p>TDM Assessment not based on rigorous modeling/evaluation especially when compared to other alternatives</p> <p>TDM does not drive any of the alternative analysis scenarios</p> <p>Specific strategies for TDM do not completely address broader TDM objectives and goals</p> <p>Selection of any TDM strategy is ad-hoc and limited to existing approaches or constituencies. Public transit or traditional ridesharing is seen as the primary alternative</p>	<p>TDM is an integral part of many alternatives</p> <p>Assess some TDM strategies by incorporating cost and time impacts into traditional travel demand models</p> <p>Also perform off-model analysis/modeling of TDM strategies as necessary</p> <p>All travel choices are assessed including active transportation, ridesharing etc.</p> <p>TDM strategies typically still are stand-alone and not fully integrated with other programs/projects/strategies</p>

The following comments were identified during the discussion:

- It is hard to assess TDM if the data for it is not collected.
- The HERO program has extensive data, but other programs are hard to assess from a TDM standpoint.
- Some TDM projects did just get selected for funding in the upcoming TIP; at the beginning of the selection process, TDM was not even a category to guide the selection process, so that is progress.

Integration of Strategies into Plans and Funding Programs

The three groups assessed their capability at **Level 2-** or **Level 2+**. The following are the general characteristics of regions at Level 2.

Level 2 Defined
<p>TDM is better integrated into larger and capital projects</p> <p>Greater level of detail for TDM projects</p> <p>Pilot programs or experimental approaches included for TDM</p>

Level 2 Defined
Dedicated program/funding identified

The following comments were identified during the discussion:

- If the discussion was only about transit priorities, the region would be a 3, but if it's everything else, it's not a 3.

Monitoring and Evaluation of Progress toward Objectives

The three groups assessed their capability at **Level 1** or **Level 2**. The following are the general characteristics of regions at Level 1 and Level 2.

Level 1 Ad-Hoc	Level 2 Defined
<p>Evaluation methods for TDM are minimal and significantly different from other operational strategies</p> <p>Planners are monitoring awareness levels through surveys, focus groups, and workshops, among relevant stakeholders and the public</p>	<p>Formal methodology is in place to evaluate performance metrics</p> <p>TDM and system performance are reported in a similar way (e.g., delay)</p> <p>MPOs start to perform evaluation of TDM effectiveness at regional, city and local levels.</p>

The following comment was identified during the discussion:

- Participants are trying to define how other TDM methods can be incorporated into what they are doing.

Based on the results of the capability self-assessment, the workshop participants identified actions that the region could undertake at one of the three lowest-scored process area to move the planning process from the current level to the next level. The participants used the actions listed in the desk reference (and provided in Appendix C) as a resource but largely identified their own specific actions. The three areas that were assessed at the lowest level (on average) were: 1) Objectives for TDM, 2) Assessment and Selection of Programs, and 3) Monitoring and Evaluation. The groups were asked to develop some actions for their category.

Action Steps – Setting Objectives for TDM
When funding projects, commit some kind of TDM strategy to the process. Understand how TDM can mitigate impacts
Ask localities to commit to a menu of TDM strategies to set their own objectives
<ul style="list-style-type: none"> • The workshop participants discussed that it would be important to identify consistent vision and goals. It was unclear if it would be a tough process to get everyone on the same page and get political leadership to understand what TDM means, much less getting buy-in to implement TDM strategies.

Action Steps – Assessment and Selection of Strategies and Programs to Support Objectives

Based on established vision, goals, objectives, and PMs, build a clear and standard evaluation method to assess TDM strategies and programs using best practices. Consider, if CAMPO did the Surface Transportation Block Grant (STBG) process again, how would it incorporate TDM?

- The participants discussed the recent CAMPO STBG process, which was a pretty ad-hoc process where the assessment methodology asked more generic questions related to TDM. When CAMPO is developing the next STBG process, there should be discussion about integrating more specific TDM questions.
- The Regional TDM Coordinating Committee may be leading the development of a regional TDM plan. At the policy board meeting, the outcome could be a fleshed out TDM policy.
- If the TDM plan is not already in the Unified Planning Work Program (UPWP), perhaps the TDM plan could come first.

Action Steps – Monitoring and Evaluation of Progress toward Objectives

Conduct regional surveys

Conduct modeling scenarios

Create universal reporting tools

Collect stories and case studies (qualitative information)

Resiliency modeling

Ensure self-reporting that is existing is consistent across programs

Ensure there is a consistent definition of what's in and what's out of TDM and be able to define what actions are considered TDM (e.g. is the marketing budget for Capital Metro considered a TDM strategy? Is building a recreation trail considered a TDM strategy?)

The participants identified that immediate next step would be to make a concerted effort to focus on developing a TDM policy or vision and goals at the upcoming TDM Coordinating Committee meeting. It would also be important to identify additional stakeholders to the next meeting who had not been invited or present at the first meeting. The Coordinating Committee was seen as an important element in moving TDM policy forward in the Austin region, as it could and should bring together all the stakeholders.

Some other next steps identified in the workshop evaluation feedback included the following:

- requirements of all future construction projects to incorporate TDM,
- Mobility35 as a key project to include TDM,
- the need for CAMPO to hire a staff member fully or partially dedicated to TDM,
- require all STPMM/STBG project applications to include TDM if applicable,
- the need for the region to better identify vision/goals/objectives/performance measures, and
- the need to create a TDM evaluation framework for CAMPO's next STBG call for projects.

Appendix A. List of Attendees

Name	Organization	Email
Julia Cleary	Bastrop County	Julia.cleary@co.bastrop.tx.us
Dan Hennessey	Big Red Dog & University Leadership Initiative Transportation Council	Dan.hennessey@bigreddog.com
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Frank Mongioi	ICF	Frank.mongioi@icf.com

Appendix B. Handout #1 – (Regional) Self-Assessment Exercise

Directions: Rate where you think the region is with respect to the process activities by checking the appropriate box.

Planning Process Activities	Level 1 Ad-Hoc	Level 2 Defined	Level 3 Optimized
Establishing Vision and Goals	<p>TDM is acknowledged as part of the vision in the state but no true commitment in terms of remaining steps</p> <p>Varied understanding of the concept of demand management as a policy option</p> <p>Limited high-level political or decision-maker support for the idea</p> <p>Primary role of MPOs is to fund limited TDM activities</p> <p><input type="checkbox"/> Region Level: Ad-Hoc</p>	<p>TDM is a part of the vision statement for the metropolitan region</p> <p>Enhanced understanding of TDM concepts and strategies at staff levels</p> <p>Treated as a substantial goal of the planning efforts</p> <p>Political support emerging on this topic</p> <p>Many roles (funding, coalition building, operations) becoming realistic for MPOs in the area of demand management</p> <p><input type="checkbox"/> Region Level: Defined</p>	<p>TDM is an equal and long-term strategy in the metropolitan vision with capacity expansion and operations</p> <p>TDM permeates through the entire strategic planning and decision-making process</p> <p>Existence of strong political champions and decision-makers for TDM</p> <p>MPO becomes a hub for various TDM roles (funding, operations, coalitions)</p> <p><input type="checkbox"/> Region Level: Optimized</p>
Setting Objectives for TDM	<p>Minimal role for TDM in planning objectives or in the CMP</p> <p>Primarily linked to one or two objectives such as conformity</p> <p>Not developed using a "SMART" approach</p> <p>No linkage to strategies identification and selection</p>	<p>Multiple objectives for TDM identified for a diverse set of needs including congestion, air quality, and land-use strategy</p> <p>Some objectives are "SMART"</p> <p>Still a strong disconnect between objectives and strategies identification</p> <p>CMP includes specific TDM objectives</p>	<p>TDM objectives additionally include broader considerations of regional mobility, accessibility, economic development</p> <p>All objectives are SMART and drive strategy identification and selection</p> <p>Specific long-term objectives set for TDM</p>



Planning for Transportation Demand Management: A Contemporary Approach – MPO Workshop

	<input type="checkbox"/> Region Level: Ad-Hoc	<input type="checkbox"/> Region Level: Defined	<input type="checkbox"/> Region Level: Optimized
Planning Process Activities	Level 1 Ad-Hoc	Level 2 Defined	Level 3 Optimized
Definition of Performance Measures	<p>TDM not linked to MPO efforts at performance-based planning and management</p> <p>Outcome measures for TDM limited to Trip and VMT reductions</p>	<p>TMD is linked to performance-based planning and management</p> <p>Performance measures begin to define TDM "outcomes," at a metro level including: mode splits, vehicle throughput, rideshare rates</p>	<p>Performance measures developed for most objectives</p> <p>Performance measures include fully developed TDM "outcomes" including linkages to congestion, person throughput</p>
	<input type="checkbox"/> Region Level: Ad-Hoc	<input type="checkbox"/> Region Level: Defined	<input type="checkbox"/> Region Level: Optimized
Assessment and Selection of Strategies and Programs to Support Objectives	<p>TDM Assessment not based on rigorous modeling/evaluation especially when compared to other alternatives</p> <p>TDM does not drive any of the alternative analysis scenarios</p> <p>Specific strategies for TDM do not completely address broader TDM objectives and goals</p> <p>Selection of any TDM strategy is ad-hoc and limited to existing approaches or constituencies. Public transit or traditional ridesharing is seen as the primary alternative</p>	<p>TDM is an integral part of many alternatives</p> <p>Assess some TDM strategies by incorporating cost and time impacts into traditional travel demand models</p> <p>Also perform off-model analysis/modeling of TDM strategies as necessary</p> <p>All travel choices are assessed including active transportation, ridesharing etc.</p> <p>TDM strategies typically still are stand-alone and not fully integrated with other programs/projects/strategies</p>	<p>Demand management considered before supply side alternatives. A demand-management scenario identified</p> <p>Developed a rationalized means of assessing TDM strategies</p> <p>TDM strategy decisions are based on benefit-cost analysis</p> <p>Strategies and programs reflect the broad vision for TDM</p> <p>TDM is not only a separate project/program but also is integral to most of the projects developed by the MPOs</p>
	<input type="checkbox"/> Region Level: Ad-Hoc	<input type="checkbox"/> Region Level: Defined	<input type="checkbox"/> Region Level: Optimized



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Planning Process Activities	Level 1 Ad-Hoc	Level 2 Defined	Level 3 Optimized
Integration of Strategies into Plans and Funding Programs	<p>Resulting projects/programs do not link back to objectives</p> <p>Level of detail for TDM projects is significantly lesser than that for other projects</p> <p>Tend to support traditional TDM efforts such as ridesharing etc.</p>	<p>TDM is better integrated into larger and capital projects</p> <p>Greater level of detail for TDM projects</p> <p>Pilot programs or experimental approaches included for TDM</p> <p>Dedicated program/funding identified</p>	<p>TDM projects as fleshed out as other projects in the plan</p> <p>Dedicated and sustained program and funding</p> <p>Fewer pilots and more mainstreaming of TDM</p>
	<input type="checkbox"/> Region Level: Ad-Hoc	<input type="checkbox"/> Region Level: Defined	<input type="checkbox"/> Region Level: Optimized
Monitoring and Evaluation of Progress Toward Objectives	<p>Evaluation methods for TDM are minimal and significantly different from other operational strategies</p> <p>Planners are monitoring awareness levels through surveys, focus groups, and workshops, among relevant stakeholders and the public</p>	<p>Formal methodology is in place to evaluate performance metrics</p> <p>TDM and system performance are reported in a similar way (e.g., delay)</p> <p>MPOs start to perform evaluation of TDM effectiveness at regional, city and local levels.</p>	<p>Performance measurement includes quantitative and qualitative methods</p> <p>Conduct evaluation of comparative cost effectiveness of TDM to other capital and operating strategies</p>
	<input type="checkbox"/> Region Level: Ad-Hoc	<input type="checkbox"/> Region Level: Defined	<input type="checkbox"/> Region Level: Optimized



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Appendix C. Handout #2 – List of Potential Actions

Level 1 → Level 2 Actions

No.	Integration Actions (Level 1 to Level 2)	Policy Support	Ease of Implementation	Cost	Time Requirement	Overall
Establishing Vision and Goals						
1	Develop TDM long-range strategic plan	Low	Moderate	Low	Moderate	Low
2	Establish a regional TDM Committee	Moderate	Moderate	Low	Low	Low
3	Create/support local ordinances & policy development for TDM	Moderate	Difficult	Moderate	Moderate	Moderate
Setting Objectives for TDM						
4	Adopt an objectives-driven, performance-based planning process to include TDM	Moderate	Moderate	Low	Low	Moderate
5	Review the role of TDM in the CMP process	Low	Moderate	Moderate	Moderate	Moderate
Definition of Performance Measures						
6	Identify concrete performance measures for TDM beyond air quality and conformity	Moderate	Moderate	Low	Moderate	Moderate
7	Establish the link between TDM and quality of life	Moderate	Moderate	Low	Moderate	Moderate
8	Create a report card or dashboard for TDM performance	Low	Low	Low	Low	Low
Assessment and Selection of Strategies and Programs to Support Objectives						
9	Assess the current capabilities of the travel demand modeling process to evaluate TDM	Low	Moderate	Moderate	Moderate	Moderate
10	Incorporate TDM and travel choices into existing visualization tools and processes	Low	Moderate	Moderate	Moderate	Moderate
Integration of Strategies into Plans and Funding Programs						
11	Broaden the availability of eligible funding beyond CMAQ	Moderate	Moderate	Low	Low	Moderate
Monitoring and Evaluation of Progress Toward Objectives						



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12	Strengthen TDM performance evaluation and monitoring methods and tools	Low	Moderate	Moderate	Moderate	Moderate
Level 2 → Level 3 Actions						
No.	Integration Actions (Level 2 to Level 3)	Policy Support	Ease of Implementation	Cost	Time Requirement	Overall
Establishing Vision and Goals						
1	Perform a TDM visioning exercise with a broad set of travel choices	Moderate	Moderate	Moderate	Moderate	Moderate
2	Create incentive-based approaches for TDM and obtain buy-in for funding	Difficult	Moderate	Moderate	Moderate	Moderate
Definition of Performance Measures						
3	Develop performance measures that express TDM effectiveness in operational terms	Low	Moderate	Low	Moderate	Moderate
4	Explore role of TDM in improving health and safety and develop objectives accordingly	Moderate	Moderate	Low	Moderate	Moderate
Assessment and Selection of Strategies and Programs to Support Objectives						
5	Develop procedures for considering demand management strategies prior to other, more capital-intensive alternatives	Difficult	Moderate	Low	Moderate	Moderate
6	Develop new tools/approaches to incorporate all travel choices into the analysis process	Low	Low	Moderate	Moderate	Low
Integration of Strategies into Plans and Funding Programs						
7	Develop capability to include TDM in all projects in an appropriate manner	Moderate	Moderate	Low	Moderate	Moderate
Monitoring and Evaluation of Progress Toward Objectives						
8	Adopt or develop a standardized approach to reporting TDM performance	Low	Low	Moderate	Moderate	Low

National Best Practices

Atlanta Regional Commission 2013

The Atlanta Regional TDM Plan addresses problems of existing conditions including a lack of infrastructure and connectivity for alternatives to single occupancy vehicle travel, unreliable long-term funding, fragmented program management that is not adequately linked to the Regional Planning Process, and a lack of cohesive branding and messaging within Georgia Commute Options (the statewide TDM brand) which lead to traveler confusion. Based on this analysis, a series of TDM goals were identified. Goals included improving customer convenience and user experience; increasing transportation connectivity, mode choice, and access; streamlining regional coordination of policies, programs, services, and investments; leveraging and diversifying funding sources for program sustainability; and pursuing continuous performance and operations improvements. Stemming from these goals, comprehensive strategies were developed and seven of core strategies were prioritized:

- 1. Build on Georgia Commute Options rebranding to promote seamless customer experience.** This includes plans to develop and implement standard operating procedures (SOPs) for core marketing and outreach, coordinate Georgia Commute Options brand marketing with individual TMA brands, and link regional travel options messaging with TDM brands and integrated traveler information resources.
- 2. Improve connection of TDM to regional information systems.** Expedite adoption of an integrated ride matching and incentives database, provide open data to partners to encourage development of mobile applications for traveler information, leverage available information to promote TDM options, and link Georgia Commute Options and the 511 system.
- 3. Improve regional coordination of transportation planning, land use, and travel choice.** Identify connectivity improvements through a region-wide land use evaluation, incorporate TDM+ strategies into station-area planning, integrate TDM strategies into local zoning and policies through region-wide coordination, and promote TDM programs and services as part of a broader Active Transportation and Demand Management (ATDM) approach.



- 4. Strategically link express bus service, local transit, vanpools, managed lanes and park and ride lots.** Ensure that managed lane systems continue to benefit high-occupancy modes in order to give carpoolers, vanpoolers, and express bus riders both time and monetary incentives; coordinate TDM messaging between SRTA and GDOT to promote managed lanes for non-SOV travel modes; coordinate TDM programs and transit system operations in order to maximize mutual benefits.

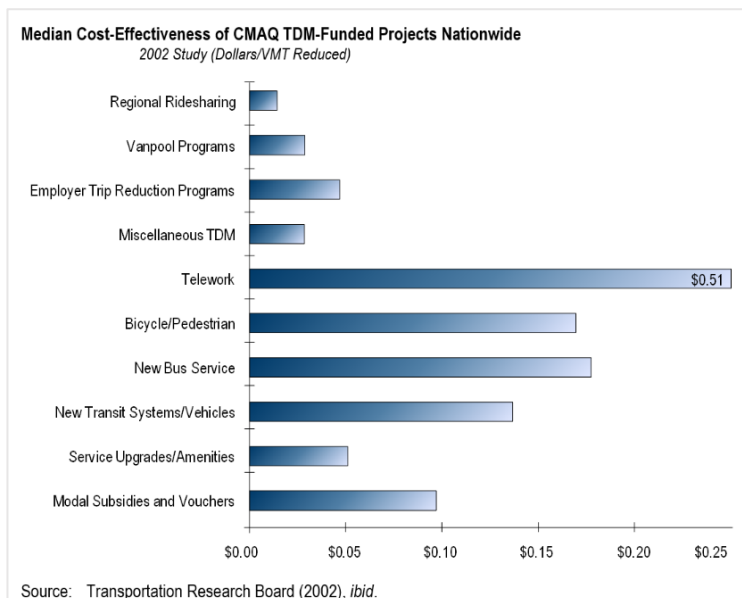
Houston METRO Vanpools



- 5. Enhance integrated operations, branding and marketing of the regional van pool program.** Continue the regional vanpool, operations, management, and vendor oversight role within GRTA, update vanpool contracts to include requirements that align with regional goals and integrate vanpool marketing with other regional marketing.
- 6. Leverage and diversify existing and potential funding sources to support creative, long-term and innovative strategies.** Explore partnerships to advance transportation choice and accessibility, allocate a portion of construction project budgets to TDM marketing and messaging, consider various tax and fee-for-service options, increase funding flexibility and equity for programs and services.
- 7. Develop metrics for all programs and services and use the data to make strategic improvements.** Incorporate and track goals and performance measures for the region and for specific programs, develop a regional dashboard to share information with stakeholders and partners, review data to inform program decisions and investments.

DRCOG/ Colorado DOT

The Denver TDM Plan based best practices on cost-effectiveness estimates on comparisons with other literature, such as the Federal Congestion Mitigation and Air Quality Improvement Program (CMAQ) and the Metro Washington Council of Governments (MWCOC) Commuter Connections Program. Although certain factors prevented a direct comparison of costs – programs consisted of different elements and methods of evaluation, for example – it was found that the Denver region fell within the range found in other studies and tended toward the more cost-effective side of estimates.



Projects were evaluated by their target population and primary elements, including marketing (direct contact promotion with the target population), financial incentives, services (transit and vanpool, for example), and infrastructure, which includes pedestrian and bicycle improvements. Most projects were estimated at approximately \$0.01-0.03 per VMT (Vehicle Miles Traveled) reduced. The projects estimated to be the most cost-effective, falling under \$0.01 per VMT, were the most likely to be funded by the DRCOG – namely, marketing and incentives, transit services, and vanpool programs. Other programs under \$0.03 per VMT reduced were land use, nonmotorized, transit infrastructure, and non-English marketing.

It was noted that generally pre-project cost-effectiveness estimates are optimistic, assuming potential impacts in favorable conditions and that a particular program will be carried out effectively. However, it was found that the actual cost-effectiveness of programs is often much lower than anticipated. The characteristics of specific projects tend to greatly impact cost-effectiveness and result in a wide range of post-project cost, so it is important to monitor the effectiveness of projects so that future projects can rely on more accurate cost-effectiveness estimates.

In the Denver region CMAQ TDM-Funded post-project evaluation, the projects were on average one-fifth as cost effective than predicted. Only employer-focused marketing and incentives met the prediction of around \$0.01 per reduced VMT. Ridematching was the second most cost-effective program, at roughly \$0.06 per VMT, and regional telework assistance and vanpool programs were the next most cost-effective but were much higher than predicted. The seven projects assessed averaged \$0.12 per VMT.

San Antonio

This study showed that a one-on-one approach with stakeholders was more effective than a Traditional TxDOT public meeting format due to the planning-oriented subject and benefits being hard to document.

The five goals of this study are:

1. Increase voluntary TDM participation
2. Identify employer and employee benefits of TDM strategies
3. Increase transportation connectivity, mode choice and access
4. Streamline regional coordination of policies, programs, services and investments
5. Pursue continuous performance and operations improvements

Employers were identified by contacting companies with less than 500 employees, between 500-1k and more than 1k. Of the 142 employers contacted, 67 showed interest.

SWOT analysis revealed many strengths, weaknesses, opportunities, and threats in the City. Many strengths were identified including transit, pedestrian/bicycle, existing programs/policies, potential programs for San Antonio, Advanced Transportation District, TIRZ (Tax Increment Reinvestment Zones),



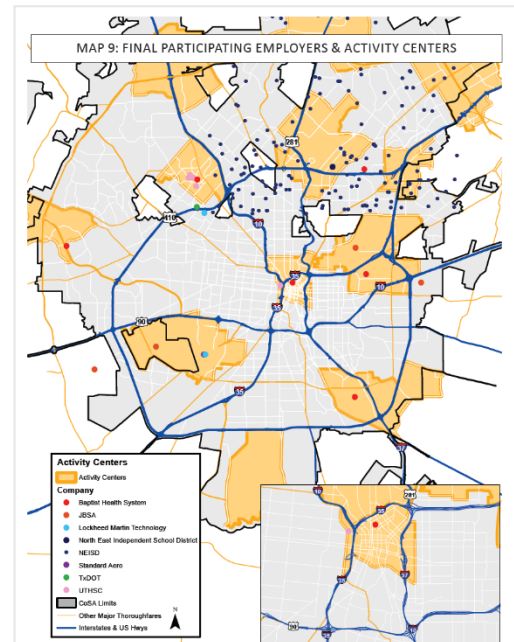
real-time traffic-based trip routing, and activity center growth strategy.

Some weaknesses included lack of urgency, multiple campuses, perception/commuter preference challenges, and inexpensive and abundant parking. Additionally, many opportunities that can positively affect the region were revealed such as new campuses, young work forces, large retiree population, technology and trends, and alternate work schedules. Threats identified included a rising economy, low gas prices, limited congestions, and culture.

The purpose of the San Antonio TDM study was to identify policies, programs, and other services that may alleviate traffic congestion. The initial study scope was adjusted from the five most congested corridors to the entire City (p44). The most common industries involved in the final case study were healthcare, city government and school districts, respectively (p47-50). An Employer/Employee Survey was conducted to

determine how the workforce travels to work which was based on the following factors: travel distances and trip times, types of modes used to travel, current use and interest in alternate travel methods, and ability to walk or bicycle to work.

The survey was also distributed to the University of Texas Health Science Center (UTHSC). Based on the survey results several recommendations were made to reduce the use of single-occupancy vehicles. These recommendations were to consider subsidized transit pass to encourage transit use, coordinate with the San Antonio Medical Foundation to explore strategies to expedite the implementation of bike lanes in the medical center area, review additional positions for potential application of alternative work schedules, and promote ACOG NuRIDE program for carpool/vanpool matching assistance as well as guaranteed ride home program and incentive programs.



San Francisco

The San Francisco TDM Plan focused on three main areas including: Land-use development program and policies, street management programs and policies, and customer-focused campaigns and programs.

Land-use development policies will shape trips associated with new development and evaluate



compliance with approved TDM strategies. Street management programs and policies will focus on maximizing the use of street space and minimize the effects of high occupancy vehicles.

Customer-focused campaigns provide information and encourage visitors, residents, and employees/employers to use other modes of transportation such as walking, biking, or shared vehicles.

There are four major organizations that are responsible for different aspects of transportation planning:

1. San Francisco Municipal Transportation Agency (SFMTA), which is responsible for overall management of San Francisco's transportation systems, such as ensuring streets work for everyone, managing access to curb space and managing parking for bicycles or public vehicles, and overseeing Muni and taxi services.
2. San Francisco County Transportation Authority (SFCTA). SFCTA, the county's congestion management agency. This role includes bi-annual performance monitoring to ensure that planning and policy development are consistent with the long-range transportation plan.
3. SF Environment is the county coordinator of 511 Rideshare and provides oversight of the San Francisco Commuter Benefits Ordinance, Tenant Bicycle Access in Existing Commercial Building Ordinance and the Emergency Ride Home program.
4. SF Planning supports San Francisco and the region by generating ideas for the General Plan and neighborhood plans, designing planning controls, conducting environmental analysis, preserving heritage, encouraging housing and job diversity, and enforcing the Planning Code.



Effectiveness of the TDM Plan will be evaluated by monitoring changes in solo driving, measured by the number of single occupancy vehicle (SOV) trips. Additionally, program evaluation will include reports on transportation behavior such as Vehicle Miles Traveled (VMT) and greenhouse gas emissions (GHGs) and will be calculated using trip reduction calculations. In order for the San Francisco TDM program to be successful, there are numerous implementation strategies. The following are 12 integral strategies and key actions that will help create the infrastructure for long-term success:

1. Develop program infrastructure for public engagement by establishing an identifiable brand for the TDM Program, establishing funding, and program coordination,
2. Propose and advocate for policies that reduce SOV trips through improving parking management, a comprehensive mobility management plan, investigating voluntary/mandatory trip-caps, limiting impact of new developments, and refining car-share policies,
3. Support programs, tools, or services that enhance regional transportations,
4. Monitor, evaluate and enforce conditions of development approval,
5. Develop materials that provide Information about service and programs,
6. Develop visitor-oriented and event-related TDM services,
7. Develop programs for employers and communities to ensure everyone is aware of transportation options,
8. Strengthen partnerships with schools,

9. Explore ways to further TDM goals,
10. Facilitate transportation equity,
11. Create/ formalize active transportation, and
12. Research and evaluate TDM strategies to make program more successful.

Puget Sound

The Puget Sound Regional TDM Action Plan, created by the Puget Sound Regional Council in 2013 includes Action plan goals, and time frame for execution of regional TDM.

The Goals of the plan are to:

1. Provide a better understanding of TDM and its value by highlighting key activities in the region.
2. Describe the strategic priorities that TDM implementers across the region continue to pursue.
3. Recommend implementation actions for the Puget Sound Regional Council (PSRC) and the region's TDM Steering Committee to support and augment the work happening at the local level

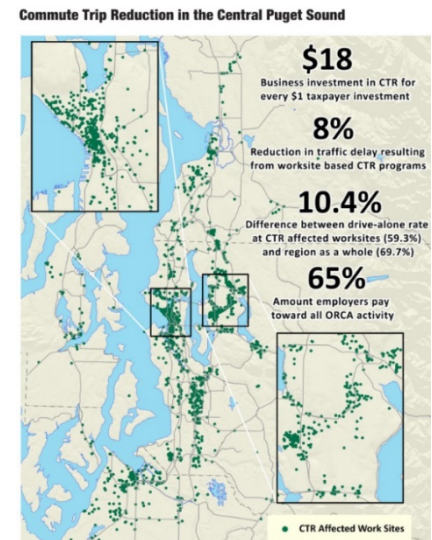
The PSRC plan focuses on People, Partnerships and Conservation, where TDM implementers in the region share key principles to provide consistency and amplify the effectiveness of their individual programs:

- **People.** TDM activities are focused on people and how they use transportation facilities and services. Implementers offer transportation options designed to appeal to both individuals and groups of people with common transportation needs while benefiting the entire transportation system. The success of TDM activities ultimately depends on how effectively they meet the needs of the markets they serve.
- **Partnerships.** Collaboration, partnerships, and engagement are universal components of TDM activities. It is in the best interest of a variety of people and organizations – from transportation operators to cities, counties, private businesses, building managers, and community groups – to improve transportation efficiency. As a result, they invest time and money to advance TDM activities. Thus, partners are instrumental in implementing, promoting, and funding TDM activities.
- **Conservation.** TDM activities maximize the capacity of the existing transportation system. They leverage foundational transportation infrastructure and services to increase their efficiency and effectiveness. They offer options that meet transportation needs while minimizing costs and impacts at the individual, community, and regional levels.

These PSRC does so through 5 strategic priorities:

1. **Maintain and grow successful, foundational TDM activities across the region.**
 - PSRC highlights both the employers engaged in transportation, and the Commute Trip Reduction regulatory framework enabled by Washington State legislation in 1991.

- o The Plan highlights activity centers-based projects and programs intended to reduce congestion, parking demand and greenhouse gasses through alternatives to driving alone. Other funded projects include Business Access and Transit (BAT) Lanes similar to a diamond lane, employer-based trip reduction programs, local transportation management associations, transit route promotions, construction related investments, and tolling.

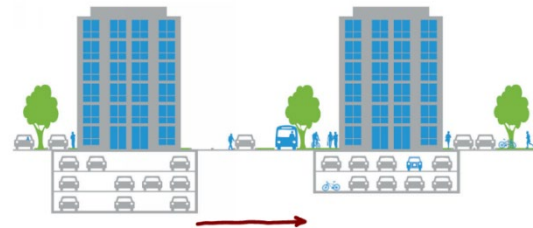


3. Expand local and regional residential and neighborhood programs.

- o The plan highlights non work based trip reduction efforts, including county-based programs, residential and neighborhood activities, growing transit-oriented development (TOD) and incentive programs for people to live closer to work centers.

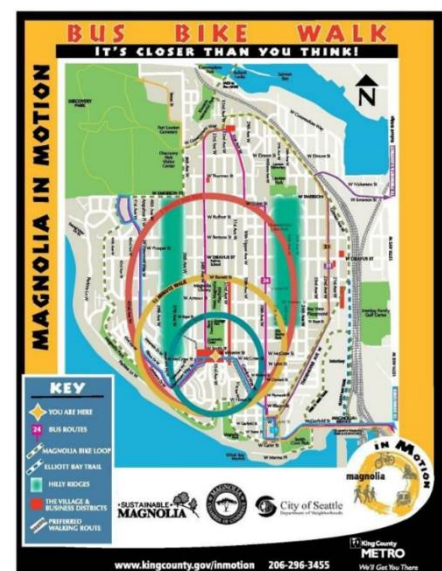
4. Explore regional and locally appropriate parking management tools.

- The plan highlights a county-based parking calculator for local urban and suburban parking use to right-size parking facilities, and models to ‘unbundle’ market costs of rent and parking and share parking management practice allowing communities to use excess parking more efficiently.

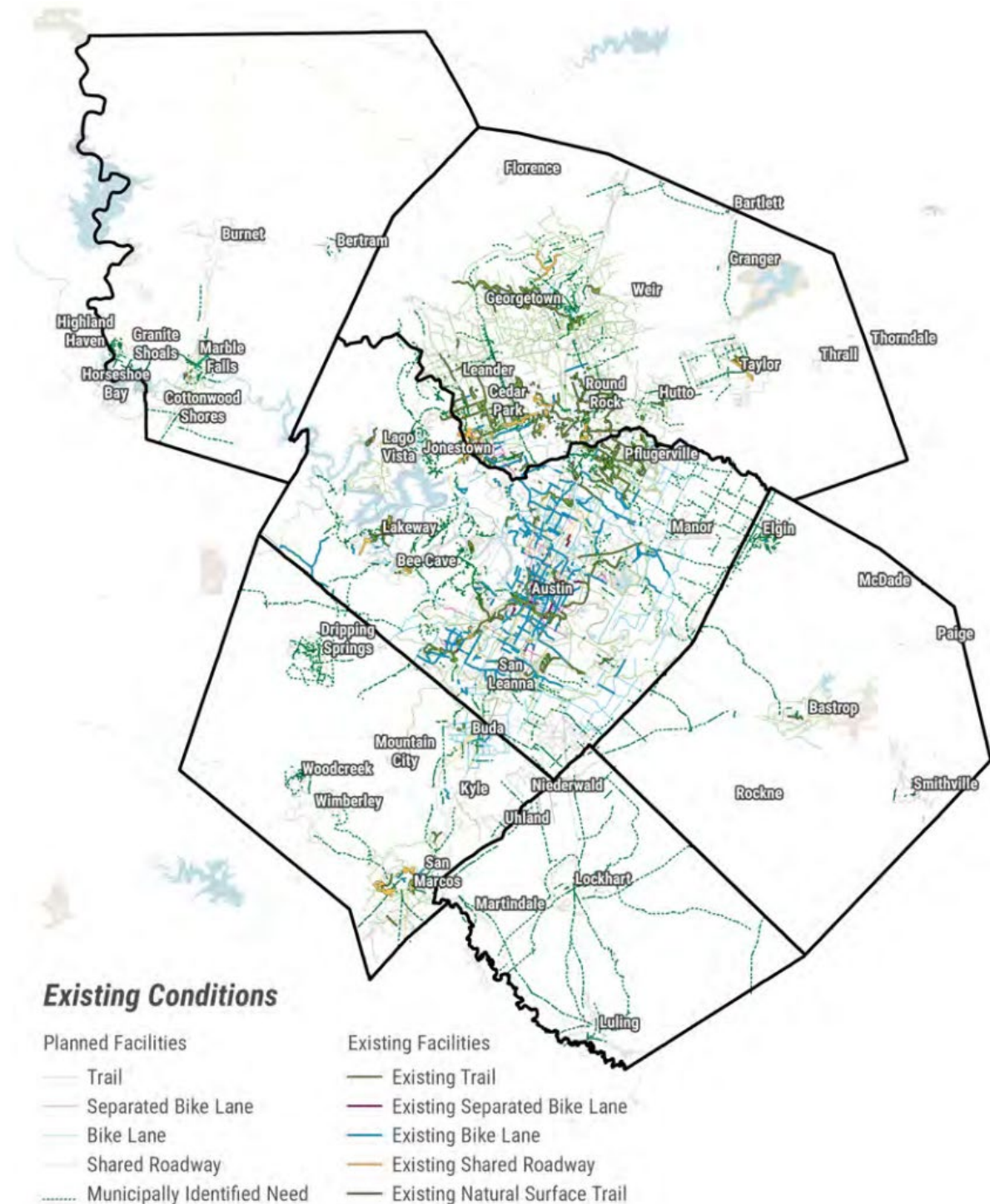


5. Improve multimodal connections and access to efficient transportation options.

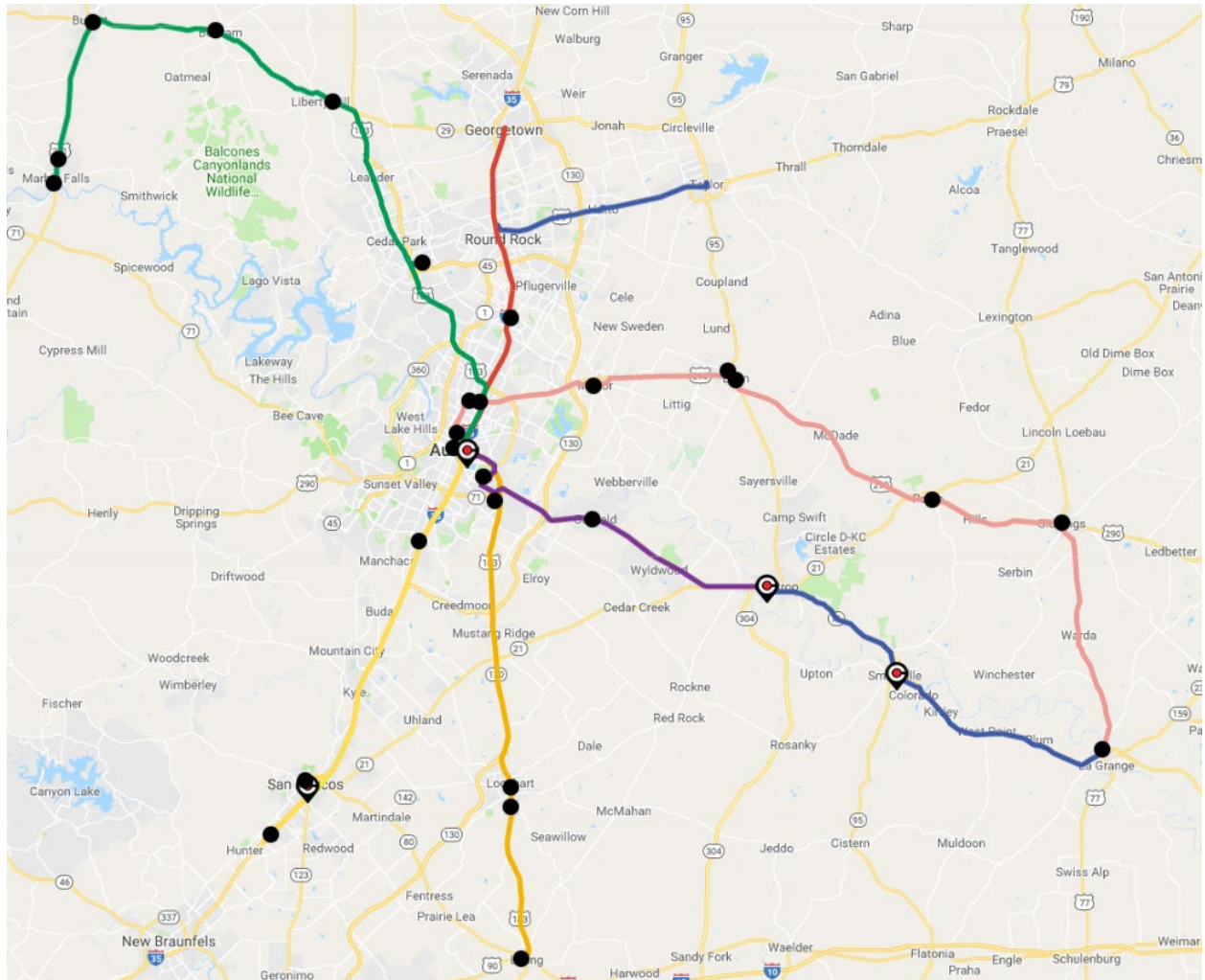
- The plan highlights last-mile projects and land uses that increase opportunities for access and activities in proximity. Examples include small area plans for redevelopment, vanshare programs, bike share, ferries, a water taxi, bicycle and pedestrian infrastructure investments, “transit emphasis corridors”, and commuter shuttles.

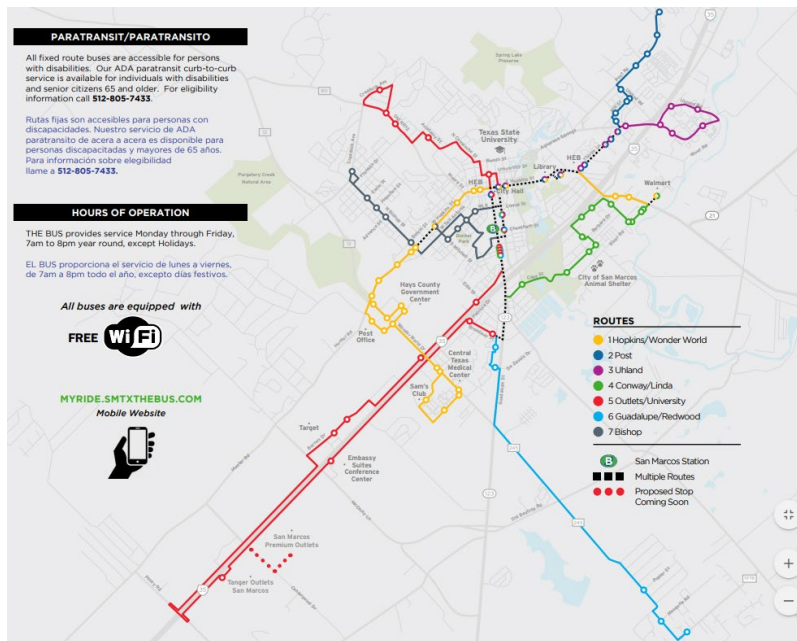


Non-Arterial networks



Regional Bicycle Network (2018)

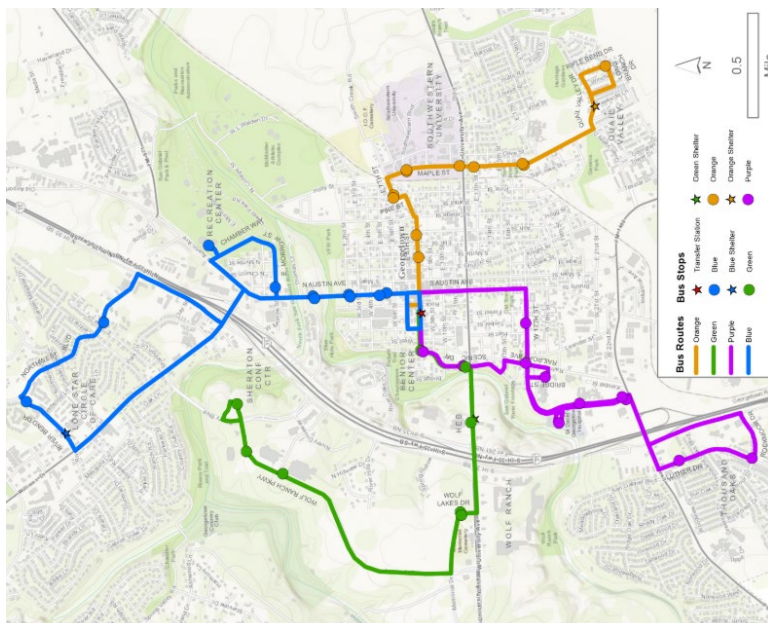




CARTS San Marcos (2019)

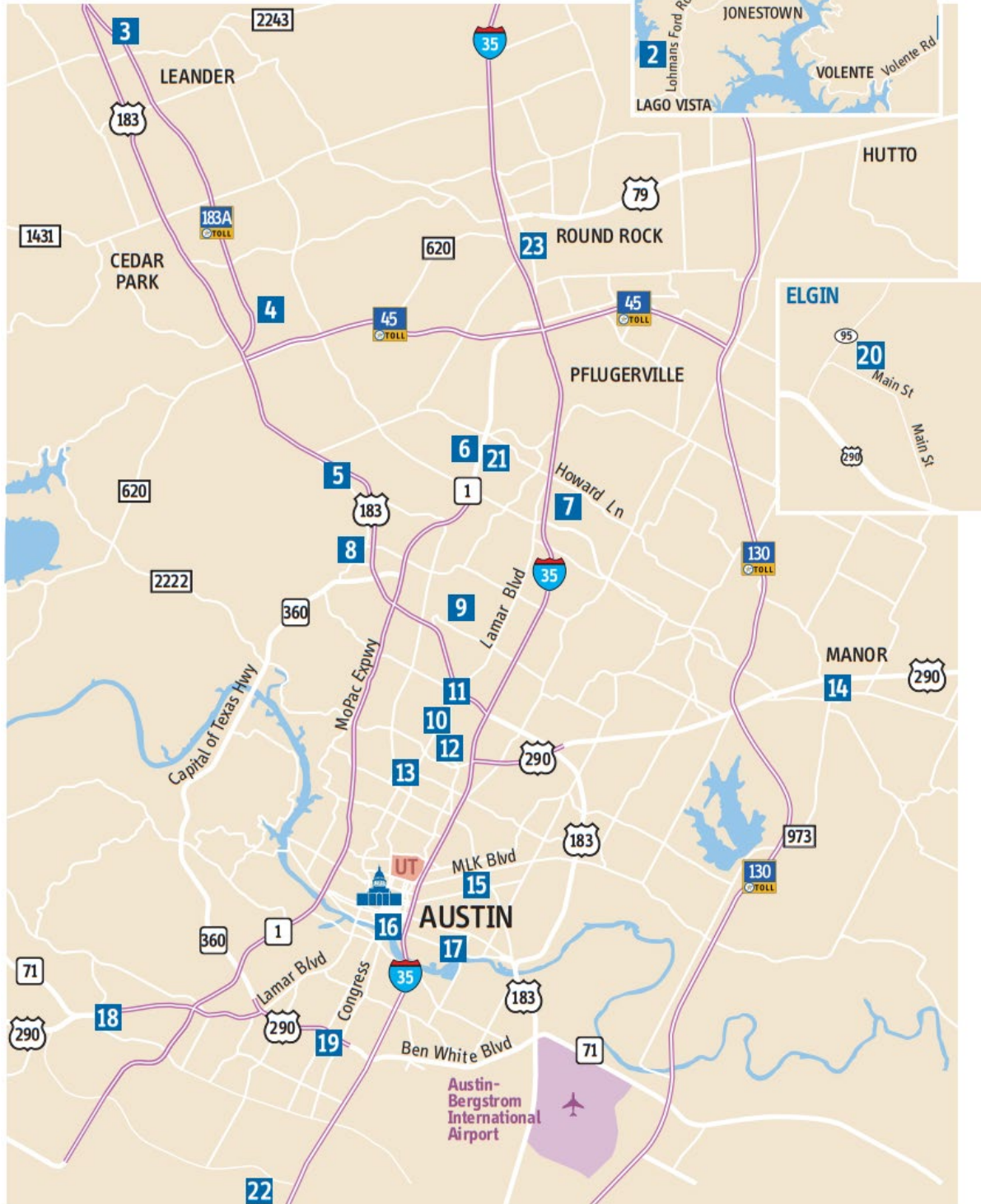


CARTS Bastrop (2019)



GoGeo Georgetown, (CARTS 2019)

Park & Ride/ Stations Map



Capital Metro Park and Ride Facilities (CMTA, 2018)

Park & Ride/Station Locations

P Parking Available At Location

1 JONESTOWN **P**

Park Dr./Crestview
214 Northwest Flex

2 LAGO VISTA **P**

Dawn Dr./Thunderbird
214 Northwest Flex

3 LEANDER STATION PARK & RIDE **P**

U.S. 183/FM 2243
800 U.S. 183 N
550 MetroRail Red Line
985 Leander/Lakeline Direct
987 Leander/Lakeline Express

4 LAKELINE STATION PARK & RIDE **P**

Lakeline Blvd./Lyndhurst St.
13701 Lyndhurst St.
214 Northwest Feeder
383 Research
550 MetroRail Red Line
985 Leander/Lakeline Direct
987 Leander/Lakeline Express
CARTS Marble Falls

5 PAVILION PARK & RIDE **P**

U.S. 183/Oak Knoll
12400 U.S. 183
383 Research
981 Oak Knoll Express
982 Pavilion Express

6 HOWARD STATION PARK & RIDE **P**

3710 Howard Lane
50 Round Rock/Howard Station
243 Wells Branch
550 MetroRail Red Line

7 TECH RIDGE PARK & RIDE **P**

900 Center Ridge Dr.
1 N. Lamar/S. Congress
52 Round Rock/Tech Ridge
135 Dell Limited
243 Wells Branch
325 Metric/Rundberg
392 Braker
801 N. Lamar/S. Congress
935 Tech Ridge Express
CARTS Round Rock/Georgetown

8 GREAT HILLS PARK & RIDE **P**

10500 Jollyville Rd.
3 Burnet/Manchaca
383 Research
981 Oak Knoll Express
982 Pavilion Express

9 KRAMER STATION **P**

2427½ Kramer Lane
3 Burnet/Manchaca
392 Braker
466 Kramer/Domain
550 MetroRail Red Line

10 CRESTVIEW STATION **P**

6920 North Lamar Blvd.
1 N. Lamar/S. Congress
7 Duval/Dove Springs
300 Springdale/Oltorf
350 Airport Blvd.
481 Night Owl North Lamar
550 MetroRail Red Line
801 N. Lamar/S. Congress

11 NORTH LAMAR TRANSIT CENTER **P**

7911 Research Boulevard,
Austin, TX
1 N. Lamar/S. Congress
323 Anderson
383 Research
481 Night Owl North Lamar
801 N. Lamar/S. Congress

12 HIGHLAND STATION **P**

6420½ Airport Blvd.
7 Duval/Dove Springs
324 Georgian/Ohlen
337 Koenig/Colony Park
350 Airport Boulevard
550 MetroRail Red Line

13 TRIANGLE **P**

4600 Guadalupe St.
1 N. Lamar/S. Congress
481 Night Owl North Lamar
656 Intramural Fields
681 Intramural Fields/Far West
801 N. Lamar/S. Congress
990 Manor/Elgin Express

14 MANOR PARK & RIDE **P**

Carrie Manor & Lexington, Manor, TX
470 Manor Circulator
990 Manor/Elgin Express
CARTS Elgin

15 MLK STATION **P**

1719 Alexander Ave.
18 Martin Luther King
465 MLK/UT
550 MetroRail Red Line

16 DOWNTOWN STATION **P**

401 E. 4th St.
550 MetroRail Red Line

17 PLAZA SALTILLO STATION **P**

412 Comal Street
4 7th Street
17 Cesar Chavez
322 Chicon/Cherrywood
550 MetroRail Red Line

18 OAK HILL PARK & RIDE **P**

U.S. 290 at William Cannon
171 Oak Hill Flyer
315 Ben White

19 SOUTH CONGRESS TRANSIT CENTER **P**

301 W. Ben White
1 N. Lamar/S. Congress
310 Parker/Wickersham
315 Ben White
801 N. Lamar/S. Congress

20 ELGIN PARK & RIDE **P**

Hwy 95/Main St.
990 Manor/Elgin Express
CARTS

21 NEW LIFE PARK & RIDE **P**

3200 Century Park Blvd
980 North MoPac Express

22 SOUTHPARK MEADOWS PARK & RIDE **P**

9300 S IH 35 Frontage Rd
3 Burnet/Manchaca
10 South 1st/Red River
201 Southpark Meadows
801 N Lamar/S Congress

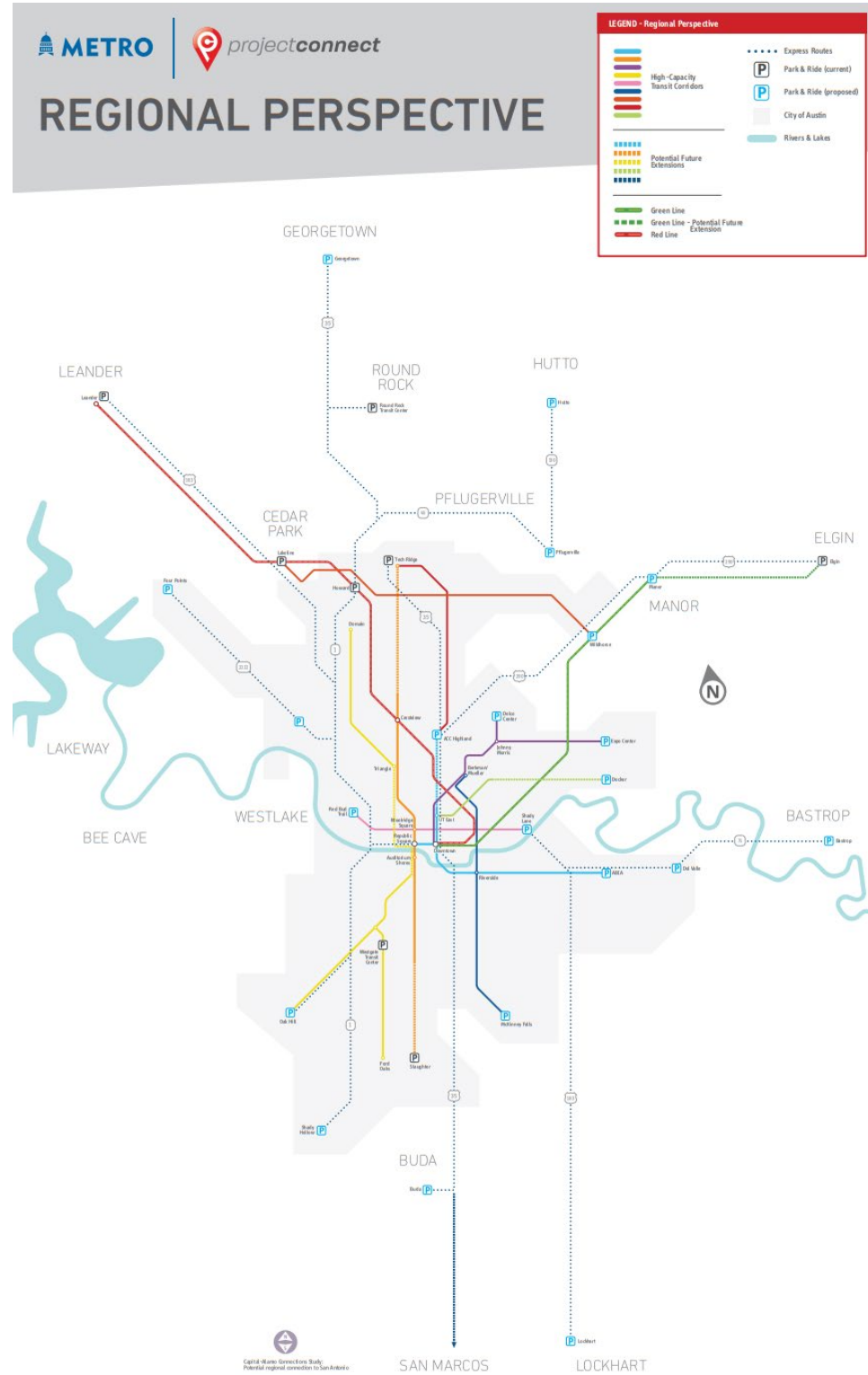
23 ROUND ROCK TRANSIT CENTER **P**

300 W. Bagdad Ave.
50 Round Rock/Howard Station
51 Round Rock Circulator
52 Round Rock/Tech Ridge
980 North MoPac Express

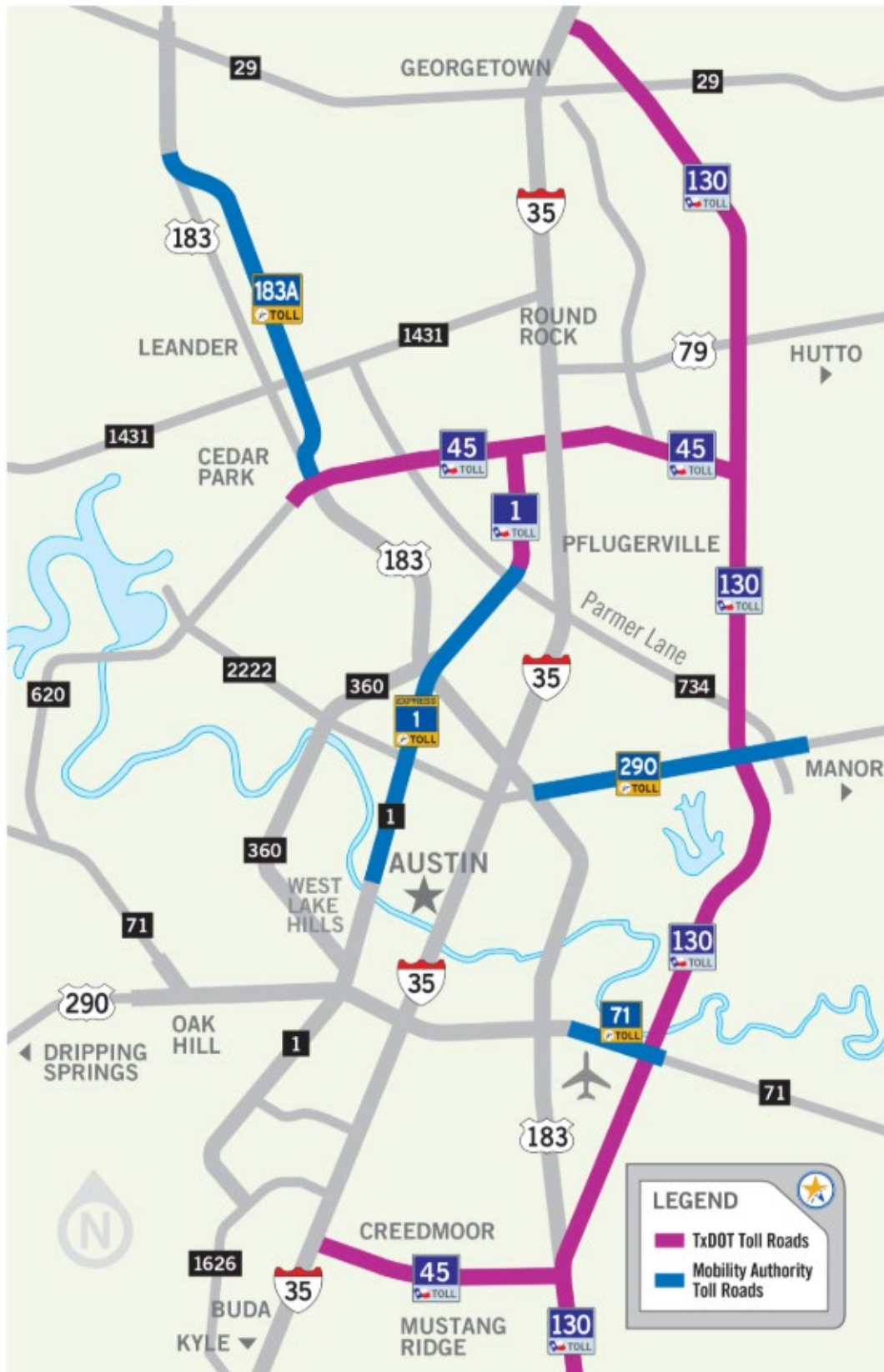
Capital Metro Park and Ride Facilities Location Key (CMTA, 2018)



REGIONAL PERSPECTIVE



Capital Metro Regional Service Map (CMTA 2019, Planned)



Open, Toll-managed lanes map (TxDOT and CTRMA 2019)



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