CHAPTER 1
OVERVIEW OF THE CONGESTION MANAGEMENT PROCESS

Traffic Congestion In The Dallas-Fort Worth Region

With the Dallas-Fort Worth (DFW) urban area as its center, the North Central Texas region plays an important role in the State of Texas, as well as the entire southwestern United States. The region provides critical air and ground transportation hubs for the movement of people and goods throughout the United States and internationally. Locally, these transportation systems support many high technology manufacturers and telecommunications firms, large retail and wholesale distribution centers, and a growing convention and tourism industry.

In 2018, the 12-county DFW Metropolitan Planning Area (MPA) had a population of approximately 7.4 million.[1] By the year 2045, these same 12 counties are forecasted to grow to approximately 11.2 million residents. This growth represents a 50 percent increase in the population of North Central Texas over 27 years.

Urban activity in this area is supported by various ground transportation systems, including:

- 5,599 freeway and tollway lane miles
- 280 express/high-occupancy vehicle (HOV)/tolled managed lane miles
- 93 miles of light rail transit
- 82 miles of commuter rail transit
- 2,395 miles of regional arterials
- Over 7,000 miles of regional veloweb, community shared-use paths, and on-street bikeways

These systems will help alleviate a growing traffic congestion problem in the region. The rapid growth of the DFW region in the past decade has led to increasing transportation problems. A favorable business environment, tax advantages, and the availability of developable land continue to attract many businesses. While growth has many benefits, the recent rate of growth has so overloaded the transportation system that available financial resources to improve transportation have not kept pace. The effects are now evident in increased traffic congestion and delay and substandard air quality.

Congestion Management Process: A Management Solution

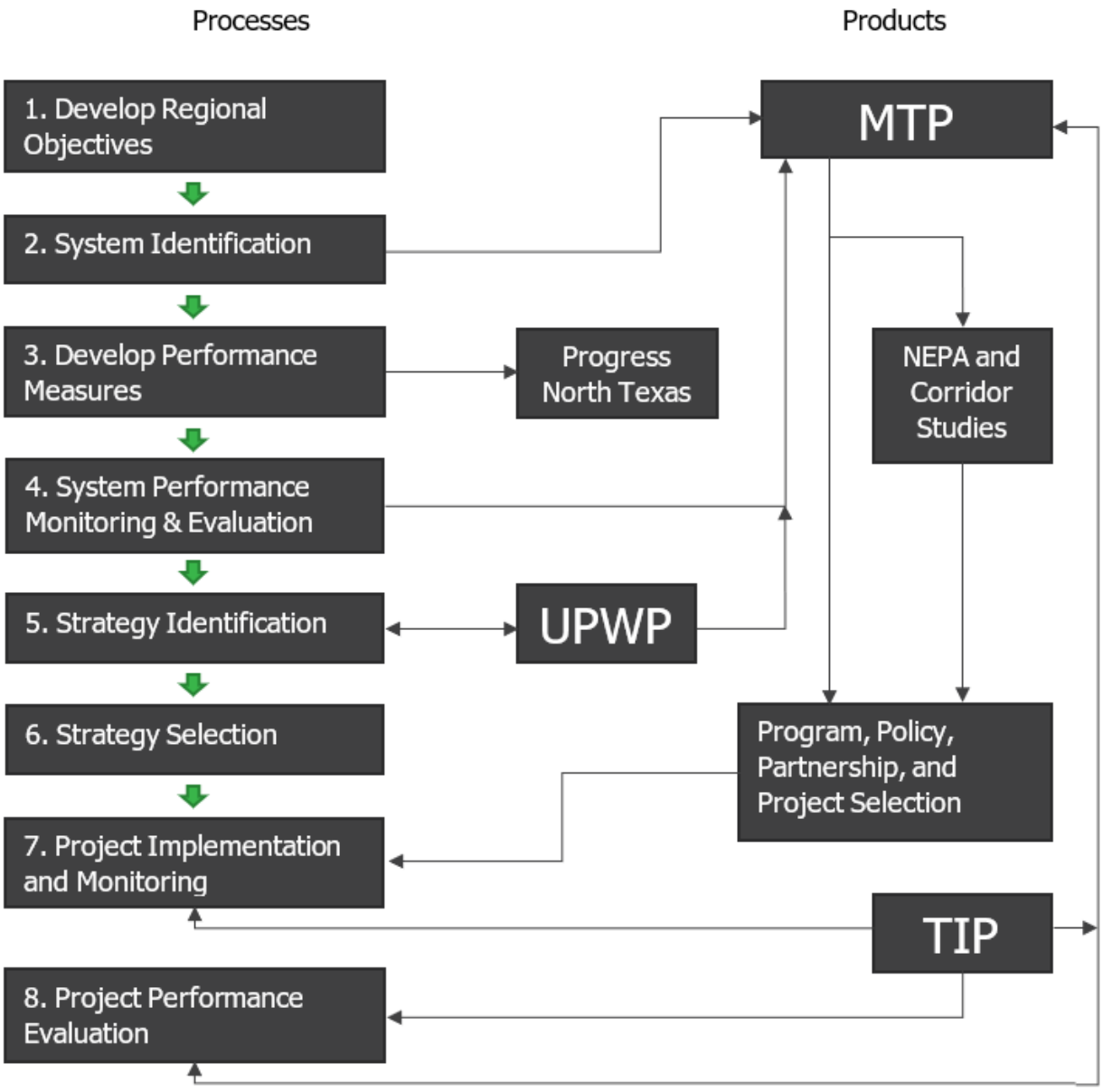
The Congestion Management Process (CMP) seeks a “management” solution to a growing traffic problem by targeting resources to operational management and travel demand reduction strategies. Although major capital investments are needed to meet the growing travel demand, the CMP also develops lower cost strategies that complement major capital recommendations. The result is a more efficient and effective transportation system, increased mobility, and safer travel.

Integrating a management approach into the provision of transportation services and infrastructure is a challenge. Traditional modeling and decision-making systems are biased to the evaluation and implementation of capacity improvements. Tempering these systems with a congestion management approach offers opportunities for stretching transportation resources and is a component of Fixing America’s Surface Transportation Act (FAST) metropolitan planning legislation.

[1] 2010 Census, www.census.gov

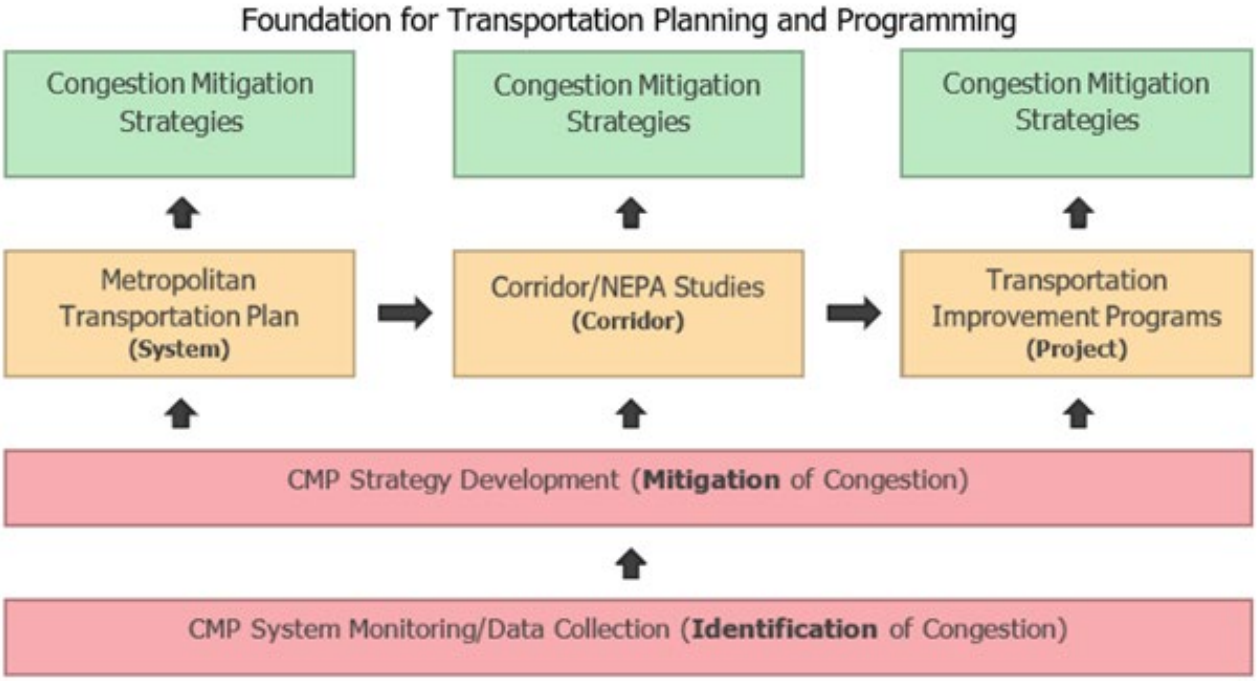
As shown in Exhibit 1-1, the CMP is fully integrated into the region's transportation planning and programming processes. The diagram below illustrates the eight components of the CMP and the role of the conforming Metropolitan Transportation Plan (MTP) and Transportation Improvement Program (TIP), the Unified Planning Work Program (UPWP), and Progress North Texas in this process.

Exhibit 1-1: CMP Processes and Planning Products



To complement Exhibit 1-1, Exhibit 1-2 identifies how the CMP is integrated into various planning functions. With the identification and mitigation of current and future traffic congestion as the foundation of planning and programming decision making, strategies for congestion mitigation are developed on the system level (in the MTP), on the corridor level (in corridor/National Environmental Policy Act [NEPA] studies), and on the project level (in the TIP).

Exhibit 1-2: Congestion Management Process



The need to operate the current transportation system as efficiently as possible is a top priority, because of the air quality and financial challenges faced by the DFW Metropolitan Area. The CMP comprises two types of management approaches proven to be cost-effective tools in addressing these challenges. Transportation System Management and Operations (TSM&O) and Travel Demand Management (TDM) are cost-effective, quick-implementation projects, policies, and programs that encourage the use of alternate travel modes and improve the efficiency of the existing transportation system.

TSM&O seeks to identify and implement cost-effective congestion mitigation strategies to improve traffic flow, safety, system reliability and capacity. Compared to major capacity and infrastructure improvements, management and operations projects are usually low-cost improvements that can be implemented or constructed quickly and with minimal impacts to the transportation network. TSM&O strategies include intersection improvements, traffic signal improvements, bottleneck removals, and Intelligent Transportation System (ITS).

TDM strategies address the demand side of travel behavior, by reducing the number of vehicles that travel on roadways, through the promotion of alternatives to driving alone. TDM strategies include employer trip reduction programs, rideshare programs (vanpool and carpool), park-and-ride facilities, and the operation of transportation management associations. Appendix C highlights the DFW TDM and TSM&O strategies.

CMP Goals and Objectives

The CMP goals and objectives are aligned with the overall Mobility 2045: The Metropolitan Transportation Plan for North Central Texas goal themes. Mobility 2045 goals support and advance the development of a transportation system that contributes to the region's mobility,

quality of life, system sustainability, and continued project implementation. The three CMP goals are:

- **Goal One:** Identify quick-to-implement low-cost strategies and solutions to better operate the transportation system.
- **Goal Two:** More evenly distribute congestion across the entire transportation corridor.
- **Goal Three:** Ensure corridors have options and available alternate routes/modes to relieve daily congestion and congestion during incidents and accidents.

Exhibit 1-3 illustrates the integration of Mobility 2045 goals with CMP Goals, Objectives, and Performance.

Exhibit 1-3: CMP Integration

INTEGRATION OF MOBILITY 2045 GOALS WITH CMP GOALS, OBJECTIVES AND PERFORMANCE

Mobility 2045 Goals	CMP Goals and Action	Objectives	Performance Measures
Mobility: Support travel efficiency measures and system enhancements targeted at congestion reduction and management. **Implementation:** Develop cost-effective projects and programs aimed at reducing the costs associated with constructing, operating, and maintaining the regional transportation system.	**Goal:** Identify quick-to-implement low cost strategies and solutions to better operate the transportation system. **Action:** Implement quick-to-implement low cost strategies and solutions to better operate the transportation system.	• Reduce SOV trips through travel demand management strategies. • Increase usage of park-and-ride lots. • Provide all users with travel alerts and alternate routes in the case of incidents, special events, weather, construction, and severe congestion at choke points. • Increase the number of intersections that are equipped and operating with traffic signals that enable real-time monitoring and management of traffic flows. • Reduce mean roadway clearance time per incident (the time between awareness of an incident and restoration of lanes to full operational status).	• Number of users in the region participating in Try Parking It • Utilization rate of regional park-and-ride lots • Percent of routes where traveler alerts and alternate route information is provided in the case of incidents, special events, weather, construction, and severe congestion choking points • Percent of intersections in the region equipped and operating with traffic signals that enable real-time monitoring and management of traffic flows. • Average roadway clearance times
Mobility: Improve the availability of transportation options for people and goods. **Mobility:** Assure all communities are provided access to the regional transportation system and planning process. **Quality of Life:** Preserve and enhance the natural environment, improve air quality, and promote active lifestyles.	**Goal:** More evenly distribute congestion across the entire transportation corridor. **Action:** Conduct inventory of corridor system to identify availability of existing options.	• Reduce the percentage of facility miles (highway, arterial, rail, etc.) experiencing recurring congestion during the peak period. • Maintain the rate of growth in facility miles experiencing recurring congestion as less than the population growth rate (or employment growth rate. • Increase the number of HOV/Managed lanes in the region. • Increase alternative (non-SOV) mode share for all trips. • Increase active (bike/ped) mode share. • Increase mode share in transit. • Increase access to transit (within two miles) to specified percentage of the population.	• Percent of lane-miles operating at LOS F or V/C > 1.0 • Population growth rate • Total number of HOV/Managed lanes in the region • Share of employees walking, biking, telecommuting, carpooling/vanpooling, riding transit, driving tracked through Try Parking It website • Share of trips by each mode of travel • Percent of trips that take transit as a mode of travel • Percent of population within two miles of a transit station
System Sustainability: Ensure adequate maintenance and enhance the safety and reliability of the existing transportation system.	**Goal:** Ensure corridors have options and available alternate routes/modes to relieve daily congestion and during incidents and accidents. **Action:** Prioritize corridors based on available options and alternate/modes routes.	• Reduce buffer index on freeway system during peak and off-peak periods. • Reduce delay associated with incidents on arterials. • Conduct joint training exercises among operators and emergency responders in the region. • Increase the percentage of regional staff with incident management responsibilities that have completed and participated in the regional Freeway Incident Management Training.	• The buffer index (represents the extra time “buffer” travelers add to their average travel time when planning trips in order to arrive on-time 95 percent of the time) • Incident response and clearance times • Number of participants and joint training exercises conducted among operators and emergency responders • Percent of staff in a corridor that have completed regional Freeway Incident Management Training

As indicated in Exhibit 1-3, each CMP goal has an associated action, objectives, and performance measures. The section below discusses each CMP goal and the specified action.

Goal One: Identify quick-to-implement low-cost strategies and solutions to better operate the transportation system.

To achieve CMP Goal One, the CMP offers an action of applying quick-to-implement low cost strategies and solutions to better operate the transportation system. These quick-to-implement strategies are incorporated into two types of management approaches; Travel Demand Management and Transportation System Management and Operations. Examples of quick-to-implement strategies and projects are included in Appendix C.

Goal Two: More evenly distribute congestion across the entire transportation corridor.

To achieve CMP Goal Two, the CMP recommends an action of conducting an inventory of the corridor characteristics to identify availability of existing options. To achieve this action, a corridor inventory of regional controlled access facilities was conducted. As part of this evaluation, each corridor was inventoried to determine the various options that exist along that corridor to help alleviate congestion from the main roadway facility. The inventory looked at four categories of options that may influence congestion levels: assets roadway infrastructure, alternative modes, and operational assets. More information on this inventory and analysis is included in the Chapter 3 Transportation System Performance Criteria and Asset Inventory Section of this document.

Goal Three: Ensure corridors have options and available alternate routes/modes to relieve daily congestion and congestion during incidents and accidents.

To satisfy Goal Three, the CMP recommends an action of prioritizing corridors based on available options and alternate routes and modes. To satisfy this action, the information collected through the corridor inventory was used in the CMP Corridor Scoring Criteria. This allowed the controlled access facilities to be scored and ranked to determine the current corridor system deficiencies. More information on this CMP Corridor performance criteria and identification of corridor areas of deficiency are included in the Chapter 3 Transportation System Performance Criteria and Asset Inventory Section.

Integrating the CMP into the Metropolitan Transportation Plan

Mobility 2045 was developed amidst growing concern for increased congestion, poor air quality, and the lack of financial resources to fund many desired transportation projects and programs. To maximize available funds, a prioritization process was followed to maximize the existing transportation system, then invest strategically in infrastructure improvements. The principles used to allocate financial resources include:

- Maintain and operate existing facilities;
- Improve efficiency of existing facilities and reduce single-occupancy trips;
- Improve land-use/transportation connections;
- Increase transit trips;
- Increase auto occupancy; and
- Add roadway capacity.

The process began by assuming that the current infrastructure and other transportation strategies were in place. Funding necessary to maintain and operate the current transportation system was then allocated. Next, an assessment of MTP 2045 travel demand was done to identify future congested locations and to identify transportation system deficiencies. The first priority was to squeeze as much efficiency out of the current transportation system as possible and to eliminate as many trips as possible from peak travel times. Congestion mitigation strategies were developed to increase transportation system efficiency through transportation systems management and to reduce drive-alone travel through travel demand management, including bicycle and pedestrian strategies.

With these strategies assumed, alternative rail systems were developed in an effort to reduce automobile travel. If trips could not be eliminated altogether, a mode change to transit was modeled. Following the identification of a recommended rail system, HOV and managed lane facilities were evaluated as a strategy to increase auto occupancy of the remaining trips. Finally, to accommodate the remaining demand, single-occupant vehicle capacity was evaluated in congested corridors. Throughout the development of each of these components, air quality and financial impacts were evaluated to ensure that financial feasibility and air quality conformity requirements could be met. In addition, each component was also reviewed for sustainable development and intermodal opportunities so that the recommendations minimized community impacts and accommodated freight movement.

Surface transportation projects, programs, and policies were developed that aggressively target traffic congestion and improve air quality for the DFW Metropolitan Area in a cost-effective manner. The recommendations reflect a balanced transportation system, both in terms of providing multimodal options and financial constraint. Exhibit 1-4 indicates the cost of each plan component, demonstrating a continued investment in traditional capital improvements, while prioritizing funds in more non-traditional modes, as well as a system-oriented approach to management and operations.

Exhibit 1-4: Mobility 2045 Update Expenditure Summary

Mobility 2045 Expenditures	
Infrastructure Maintenance	$36.8
Management and Operations Strategies	$9.5
Growth, Development, and Land-Use Strategies	$3.2
Public Transportation	$33.3
Roadway System	$53.6
Total (Actual $, Billions)	**$136.4**
Values may not sum due to independent rounding	

Congestion mitigation is an integral element of the MTP. It serves as a guide for implementing both near-term and long-range regional transportation improvements. The Congestion Management Process (CMP) identifies where congestion occurs or is expected, evaluates strategies to mitigate congestion, and develops plans for implementation of the most cost-effective strategies. While CMP strategies will be implemented across the entire area, the congested area has been targeted for more intensive data collection and monitoring efforts as part of the ongoing congestion management process.

The performance of the current and future transportation system was measured in conjunction with the plan development process. A variety of quantifiable system performance measures were used to identify the extent and duration of traffic congestion. Candidate strategies were assessed for their effectiveness and feasibility of implementation in the region. A number of regional congestion mitigation strategies were recommended for implementation. These were relatively low-cost measures designed to manage the transportation system and reduce travel demand.

This program includes operational management and travel demand reduction strategies anticipated to be the most cost-effective for this region. Total program cost for the congestion mitigation element of the plan is approximately $9.5 billion. This is in addition to the freeway, tollway, express/HOV, and tolled managed lane system; public transportation; infrastructure maintenance; and sustainable development strategies that together total $136.4 billion.

The adopted congestion mitigation strategies include traffic signal and intersection improvements aimed at reducing delay on arterial streets. Freeway bottleneck removals combined with deployment of incident detection and response systems, including motorist assistance and accident clearance, are proposed to maintain traffic flow on the limited access highway system. TDM strategies such as employer trip reduction programs, park-and-ride facilities, and rideshare programs are also included.

Integrating the CMP into the Corridor Study and NEPA Process

Federal law prohibits single-occupant vehicle (SOV) capacity from being added in transportation management areas (urbanized areas with a population greater than 200,000) which are also nonattainment areas for ozone unless the recommendation is part of the regional CMP. The CMP focuses on balancing additional capacity with congestion mitigation strategies to complement each other in a corridor analysis. The result may be that a given corridor may not include all of the capacity that would be required to eliminate all congestion at all times of day but may provide enough physical capacity to eliminate much of the congestion in the off-peak periods and shoulders of the peak period but will rely on identified congestion mitigation strategies to improve traffic flow in the peak periods. This approach allows for a series of scaled-back projects that may be proposed across the region rather than concentrating resources in a few heavily congested areas and providing no improvements in other areas.

Since these recommendations are the result of the system planning process, which is aimed at maximizing system-level performance and financial issues, the result in each corridor must be refined to reflect the specific issues associated with the corridor. This refinement of the MTP and CMP is the result of corridor studies and National Environmental Policy Act (NEPA). The corridor study refines the recommendations identified in the MTP while the NEPA process evaluates the environmental and social impacts of the proposed corridor recommendations. Often, the corridor study and NEPA evaluation are performed concurrently. If the recommendations of the corridor/NEPA studies are different than those of the MTP or CMP, including the financial placeholder assumption, the MTP and CMP must be updated to reflect the recommendations. As the MTP, including the TDM and TSM&O strategies, is financially constrained, any change in the financial assumption for the corridor will have impacts for the entire MTP and should be thoroughly evaluated.

<u>Relationship of the CMP with Corridor/NEPA Studies</u>

As the Dallas-Fort Worth region seeks to integrate a management philosophy into all aspects of transportation planning and programming, it is intended that congestion mitigation strategies be developed as part of all corridor studies and subsequently included as part of the NEPA

evaluation. NCTCOG staff provides guidance and support to all corridor study lead agencies, as they seek to incorporate TSM&O and TDM reduction strategies on proposed facilities. The evaluation of all reasonable congestion mitigation strategies is viewed as essential to progressive transportation planning in this region.

The CMP will have a role in all corridor studies conducted in the region. The CMP will conduct an analysis of expected benefits and costs for all TDM and TSM&O strategies to be considered in these corridors. This analysis will be done on an as-needed basis and will become part of the corridor study and subsequent NEPA documentation. In this way, the regional strategies identified in the MTP will be applied on a corridor level. Any additional congestion mitigation strategies identified will then be evaluated for their application on the corridor or sub-area level and, pending results of the corridor analyses, will be considered for inclusion in the regional MTP.

As portrayed in Exhibit 1-5, the development of CMP strategies in corridor studies is conducted by first evaluating the effects of the adopted regional congestion mitigation strategies in the corridor. This is done by:

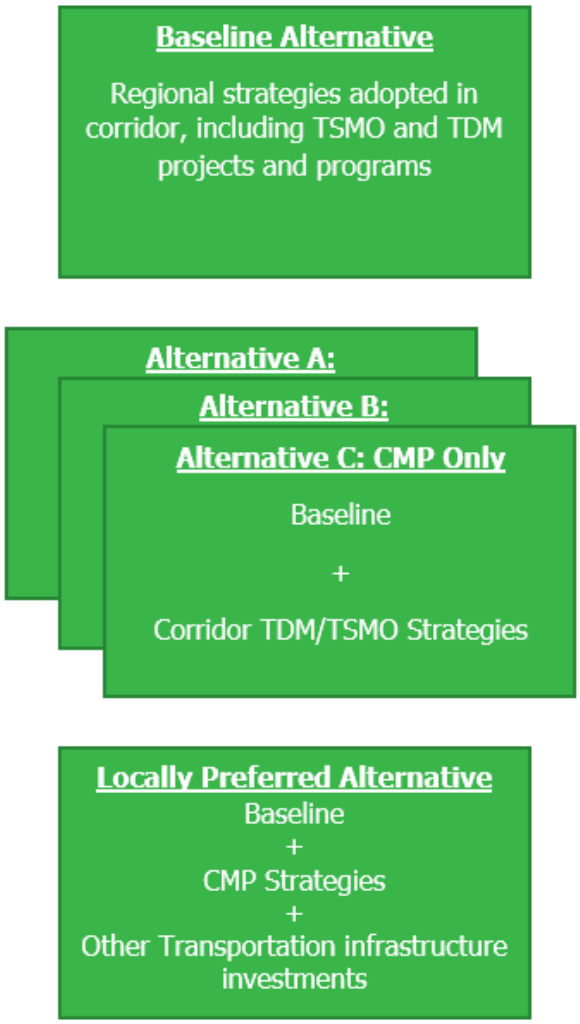
1. Identifying the committed TDM and TSM&O strategies from the TIP, the CMP, and local government bond programs;
2. Quantifying the effects of the committed TDM strategies with regional travel model trip table adjustments; and
3. Quantifying the effects of the committed TSM&O strategies with regional travel model network speed and capacity adjustments.

This CMP scenario becomes the baseline for all the corridor alternatives.

Next, using this CMP baseline, a TSM&O/TDM-only alternative is developed which attempts to accommodate travel demand in the corridor without the major transportation investment. This is done using the following steps:

1. Conduct an inventory of the corridor's transportation systems and facilities;
2. Assess current and future corridor conditions;
3. Identify transportation deficiencies and problems in the corridor;
4. Identify strategies which can be implemented directly by individual agencies without needing evaluation;
5. Identify corridor-level TDM and TSM&O strategies which address the problems and deficiencies in the sub-area, and the specific actions which support those strategies; and
6. Conduct an evaluation of the actions to assess their impacts in the corridor, documenting the extent to which these actions can alleviate travel demand in the corridor.

Exhibit 1-5: CMP Strategy Development In Corridor Studies



Evaluate the effects of the adopted regional Congestion Management Process strategies in the corridor. This scenario becomes the Baseline for the corridor alternative.

Using the Baseline, develop a TDM and TSM&O only alternative to accommodate travel demand in the corridor without the major transportation investment.

If the CMP-only alternative cannot meet all travel demand needs, develop congestion mitigation (TDM and TSM&O) strategies to complement the locally preferred transportation alternative. These are inventoried in the regional CMP and monitored for staged implementation through the TIP.

If the CMP-only alternative cannot satisfactorily address the congestion issues, additional capacity alternatives are evaluated along with appropriate CMP strategies which complement the capital investment. This is done through the following tasks:

1. Identify problems and deficiencies in the corridor that are unique to the locally preferred alternative;
2. Review strategies for their compatibility with the locally preferred alternative and identify opportunities for staged implementation;
3. Identify TDM and TSM&O actions which address the problems and deficiencies in the corridor and enhance the operation of the facility
4. Conduct an evaluation of the locally preferred alternative (which includes the CMP complement);
5. Recommend a program of TDM and TSM&O strategies that can be incorporated into the facility and in the corridor. Identify implementation responsibilities and outline an implementation schedule; and
6. Incorporate recommended CMP strategies into the NEPA evaluation and commit to them as part of the corridor development planning.

Using the strategies described above, the following questions are addressed:

- What are the effects of TDM and TSM&O strategies in the corridor?
- How much travel demand can be accommodated by TDM and TSM&O strategies?
- Is the major transportation investment really needed? Can it be scaled down?
- What is the most appropriate mix of transportation infrastructure and management strategies for this corridor?

Corridor/NEPA Study Recommendations

As the Metropolitan Planning Organization (MPO) for the DFW region, NCTCOG is involved in several ongoing corridor/NEPA studies. These studies represent very different transportation challenges in the region and are varying in scope. Once the lead agency has completed a draft corridor/NEPA study, the recommendations must be endorsed by the lead agency. The recommendations of the corridor/NEPA study must be the same as the recommendations in the MTP and CMP for the subject corridor.

The operational management and travel demand reduction strategies identified in a corridor/NEPA study are seen as commitments being made by the DFW region at two levels; project-level and program-level implementation. In February 1998, the RTC passed Resolution Number R98-01 (Appendix B), which requires that all major investment studies (MIS) (now referred to as corridor/NEPA studies) include an evaluation of operational management and travel demand reduction solutions to congestion and air quality concerns. The resolution also required that an inventory of all commitments made in environmental documents be created and used to monitor the timely implementation of these commitments. In July 2013, the RTC adopted a policy directive that requires the review and application of congestion mitigation strategies to correct corridor deficiencies identified in the CMP, when performing corridor and environmental studies and report findings back to NCTCOG. Program-level commitments are inventoried in the financially constrained MTP, and future resources are earmarked for their implementation. At the project implementation level, these projects are monitored so they can be added to the regional TIP at the appropriate time with respect to the single-occupancy vehicle facility implementation.

CMP strategy development is critical to the successful integration of congestion mitigation into the Corridor Study process. However, traditional evaluation tools and decision-making systems, geared to supporting major capital investment decisions, are perhaps relied upon too heavily to make decisions on the appropriate level of TMS&O and travel demand reduction strategies. Additionally, the need for developing management strategies as part of a corridor/NEPA study is not clearly understood by some individuals who may serve on technical and policy groups. For these reasons, it is imperative that the MPO play an active role in educating strategy development committees on the need for an open debate of all reasonable congestion mitigation strategies.

Integrating the CMP into the Transportation Improvement Program Process

The MTP is both a strategic planning document and a detailed, long-range plan for future investment in the DFW region. It identifies and prioritizes projects and programs designed to enhance the roadway network, transit services, and goods movement through the year 2045. The long-range plan is constrained by available revenues to fund the maintenance, operation, and construction of the transportation system and by vehicle emissions budgets established to attain clean air standards. Candidate MTP projects have been identified from city, county, state, and transit agency submittals. Additional projects have been added to the list based upon needs identified by the MPO.

To make sound programming decisions, and to ensure that selected projects conform to air quality and financial planning mandates, it is necessary to evaluate programs and projects proposed for inclusion in the TIP. This evaluation process is described in the following paragraphs.

CMP Compliance Process

Compliance with the CMP is the implementation of CMP principles into programmed projects. Since the CMP focuses, by definition, on short-term, simple solutions to solving deficiencies, the majority of compliance is done through implementing projects in the Transportation Improvement Program, or TIP, a federally-required plan covering at least four years. Each edition of the TIP is developed much like a metropolitan or comprehensive plan but is typically modified four or more times per year in what NCTCOG calls a “TIP modification cycle.” The CMP is integrated into these TIP processes through two different policies; SOV Analysis and Project Implementation and Monitoring.

Single Occupant Vehicle Analysis

Single-Occupant Vehicle (SOV) analysis determines if additional capacity is needed in a roadway. Since DFW is an air quality non-attainment area, any project which adds significant capacity to general purpose lanes must first go through SOV analysis. For additional capacity to be justified, it must be shown through modeled or observed traffic counts that the roadway will be severely congested without the proposed addition of lanes. There are also certain additions of lanes that can be considered exempt from SOV analysis and are therefore justified. This calculation is done by determining the ratio of the roadways volume over capacity ratio. The capacity is determined by the type of roadway (e.g., freeway, minor arterial, principal arterial) and the type of land use surrounding the project (e.g., urban, suburban, rural). Volume is estimated based on NCTCOG’s travel demand model, or by various traffic count collection programs. If a roadway would still be over 80% at capacity during the peak hour, it is considered justified for additional capacity and can be codified in the TIP after meeting additional CMP requirements.

Certain projects add capacity in such a way that the additional capacity itself is an implementation of congestion management strategies. Solving safety problems, bottleneck improvements, congestion pricing, and access management are all strategies that reduce overall congestion in the system and contribute additional benefits of health, safety, and welfare to the region's residents. Safety problems are a major source of non-recurring congestion, that is, congestion not experienced during peak traffic times, that reduces the reliability of the transportation system. Bottleneck improvements target specific roadway design or operational problems in order to reduce traffic conflicts such as dropped lanes, weaving areas, and work zones.

Congestion pricing is implemented through Express and Tolled Management and helps reduce the number of vehicles in free general purpose lanes and increases HOV travel by offering free or discounted express facilities. (A portion of toll revenue is collected for financial assistance of locally funded projects.) Access management provides a safer, more efficient means of accessing the transportation system through decreasing travel times, intersection design, signal timing, and driveway management and spacing, among other strategies. These capacity-related projects complement TDM, and TSM&O strategies to decrease the overall congestion of corridors and systems.

CMP Implementation and Monitoring

The second part of CMP compliance is Implementation and Monitoring. As SOV-justified capacity projects are added to the TIP, NCTCOG staff correspond with TxDOT and other implementing agencies to communicate the deficiencies in the project corridor, as well as suggested CMP strategies to correct the deficiencies. This is done through an email directed to the project manager of the project's, or to the submitter of the modification if sent from another implementing agency. The email acts as official transmittal and correspondence between NCTCOG and government agencies and allows both sides to proactively assess local and regional needs to successfully implement the goals and objectives of the CMP.

NCTCOG staff use data collected by various transportation department program areas to continually evaluate regional performance, as well as congestion-related deficiencies found throughout major corridors of the transportation system. These evaluations are summarized, and any new capacity project added to the TIP is reviewed to determine if its limits fall within a CMP corridor. If it does, the corridor is reviewed for consistency and currency, then the deficiencies of the project's corridor are compiled in an email, along with alleviating strategies, for review by the project manager. A reply of intended commitments to program CMP strategies in the corridor is required before CMP compliance is complete. Once commitments have been sent to NCTCOG and reviewed for accuracy, CMP staff "sign-off" on the project in the TIP project database.

Once commitments are received and approved, they are recorded by CMP staff for monitoring and tracking in future revisions of the TIP using the TIP database. Modifications to the TIP are numbered by project and by modification, so CMP staff use the project number to ensure future modifications are made in the projects limits that are consistent with the agreed upon commitment. CMP staff monitors overall development of the initial TIP and modifications in order to generate commitments and implement CMP strategies as early in the project planning and delivery process as possible. Exhibit 1-6 illustrates the compliance process through the TIP/STIP implementation and monitoring phases.

Exhibit 1-6: CMP Compliance Process

Summary

The CMP is a systematic process for determining acceptable congestion levels in a region, measuring the congestion performance of the transportation system, and prioritizing strategies for managing that congestion. Federal requirements define the required elements of a CMP and specify that areas with populations over 200,000 must implement and maintain a CMP.

The CMP for the DFW region is fully implemented into the planning and programming process performed as an MPO. The process is integrated in the development of the MTP, the TIP, the UPWP, and Progress North Texas, as well as corridor studies. Three goals have been established for the CMP that align with the overall Mobility 2045. These goals include the

identification of quick-to-implement low cost strategies and solutions to better operate the transportation system; more evenly distribute congestion across the entire transportation corridor, and; ensure corridors have options and available alternate routes/modes to relieve congestion daily and during incident and accidents.

Based on the demographics highlighted at the beginning of this section, the DFW region is expected to continue to grow at a magnitude never before experienced. As the region continues to grow, traffic congestion is expected to increase. The CMP will continue to be a critical component of the planning process, and operational management and travel demand reduction strategies will be necessary to keep the region desirable for future residents and employers.