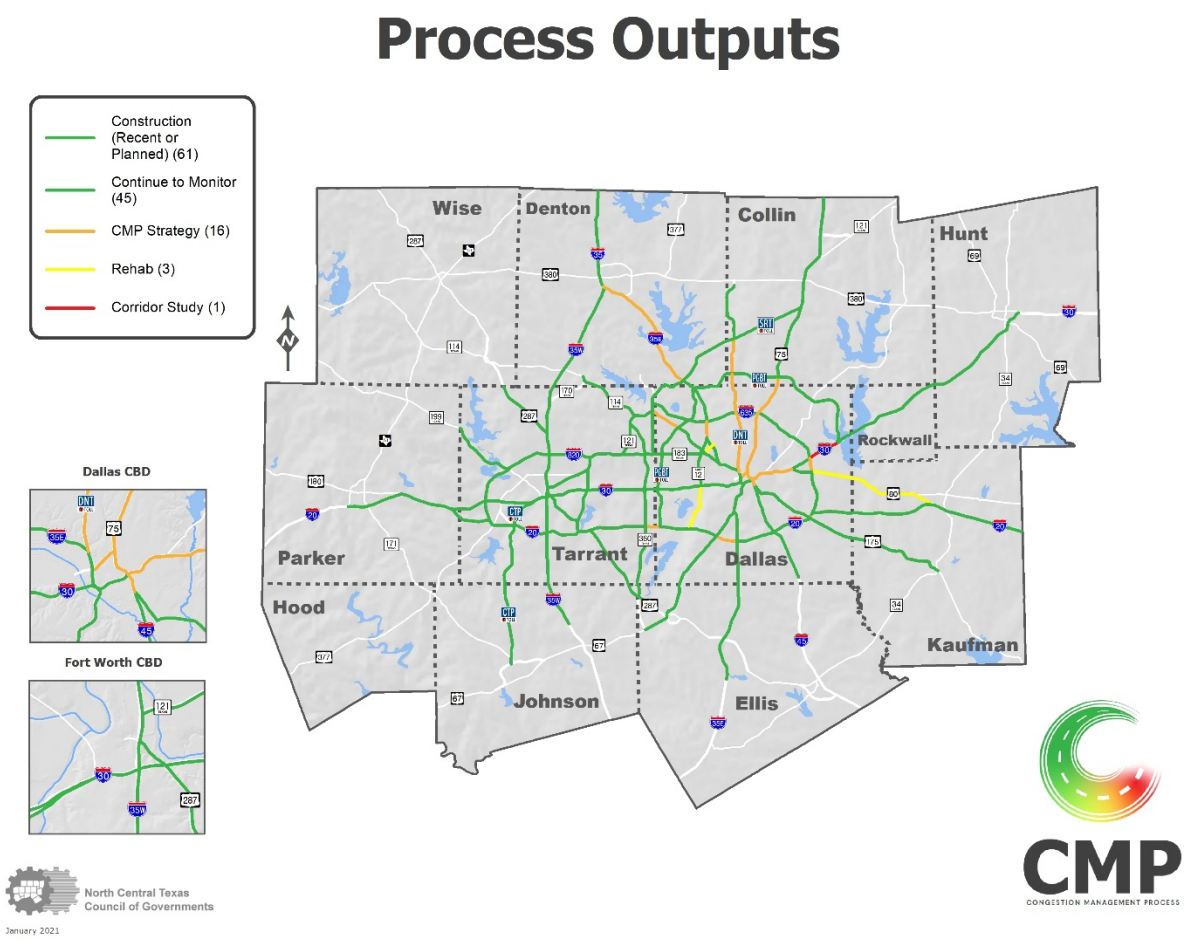
CHAPTER 4
Corridor Analysis and Strategy Identification

The final step in the Congestion Management Process (CMP) is to identify within which category, or bucket, the corridor falls based on the performance criteria and assets available within the corridor. Using the performance criteria and asset information outlined in Chapter 3, several corridor categories/buckets have been identified; **Continue to Monitor**, **Under Construction**, **Rehabilitation**, **CMP Strategy** or **Corridor Study**.

Exhibit 4-1 identifies the CMP corridors by category. As part of this evaluation, there are 45 corridors that met sufficient ratings and will continue to be monitored; 61 corridors are under construction and will also continue to be monitored; 3 corridors are recommended for rehabilitation; 16 corridors will continue in the process to identify CMP strategies and 1 corridor will be recommended to be considered for a detailed corridor study. A fact sheet for each CMP corridor segment, outlining the output from the corridor performance criteria as well as available assets along the corridor, is provided in Appendix A. A list detailing the evaluation of each corridor by CMP corridor segment is available in Appendix B.

Exhibit 4-1: CMP Corridors by Category



In the following pages, an example of each of the CMP corridor categories will be provided.

The **IH 20 corridor from IH 35W to IH 820 (East)** falls into the category of **Continue to Monitor**. See Exhibit 4-2. To be part of this category or bucket a corridor needs to rank sufficient for all performance criteria (crash rate, travel time index, level of travel time reliability, pavement conditions and bridge conditions). This corridor will continue to be monitored for performance as part of the CMP and a collection of available assets will continue to be collected.

Exhibit 4-2: IH 20 corridor from IH 35W to IH 820 (East)

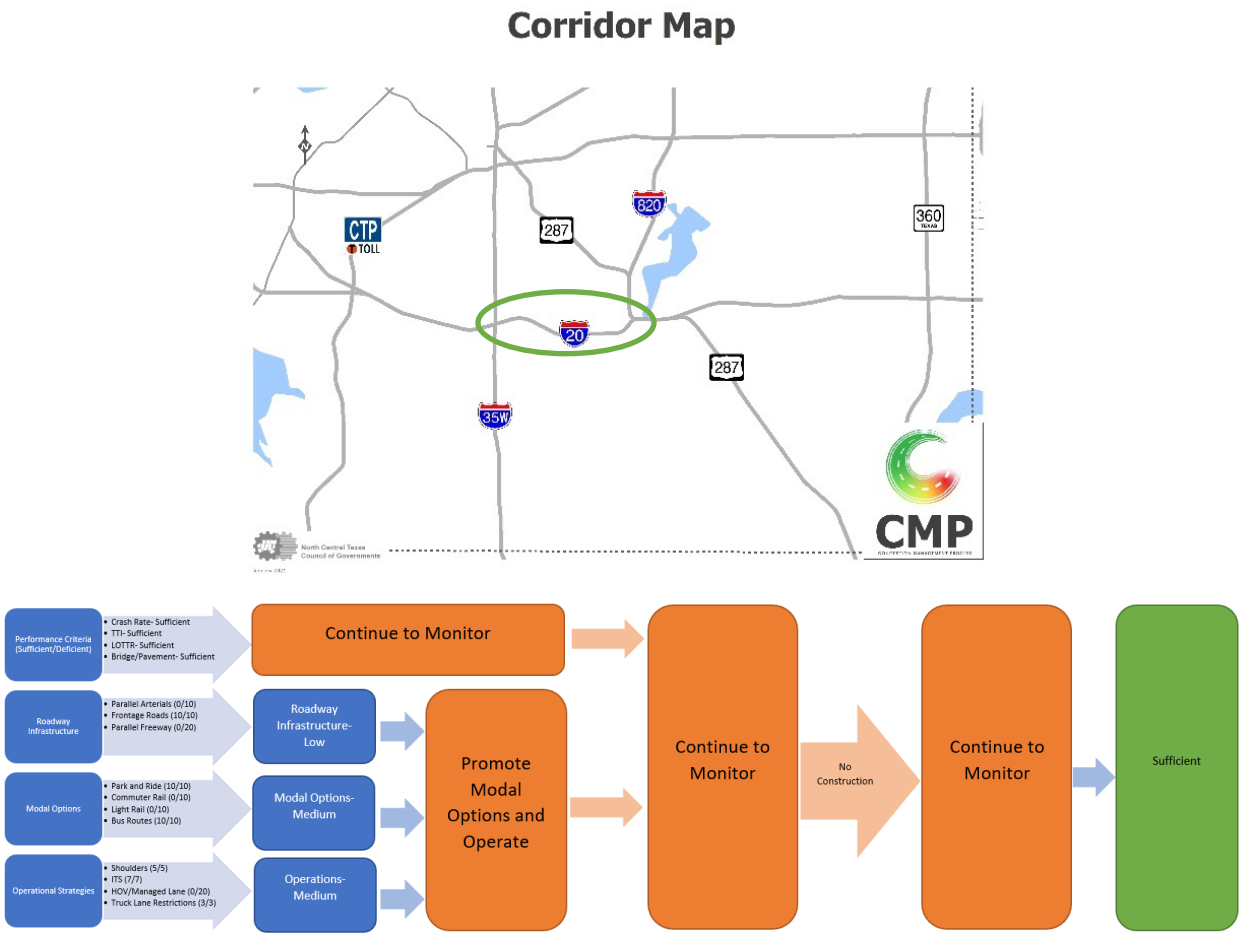
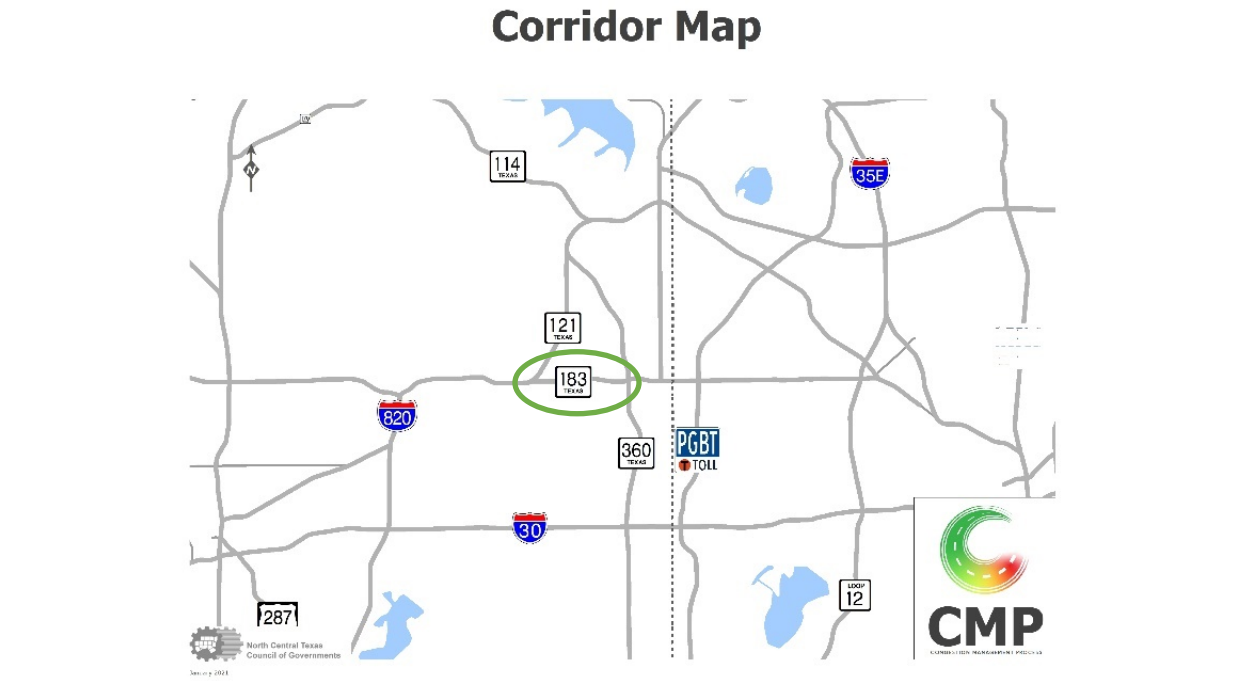
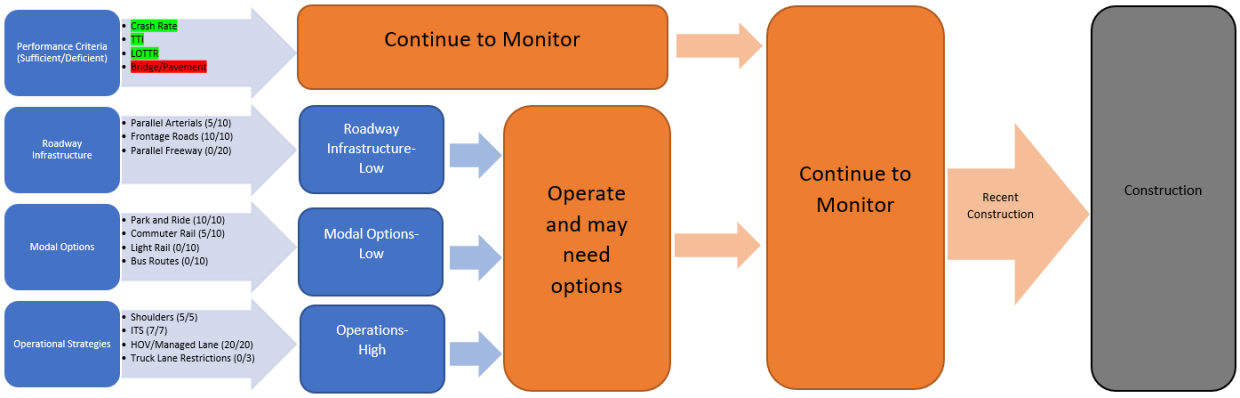


Exhibit 4-3 represents the **IH 183 corridor from SH 121 to SH 360** and falls into the category of **Construction**. To be part of this category or bucket a corridor needs have recently completed construction (2018 to present), currently under construction or is programmed for construction within the next 5 years. Please note for construction corridors, this includes full construction of the corridor limits or partial construction within the corridor limits. This corridor will continue to be monitored for performance as part of the CMP as the improvement being implemented should help to improve the overall operations corridor.

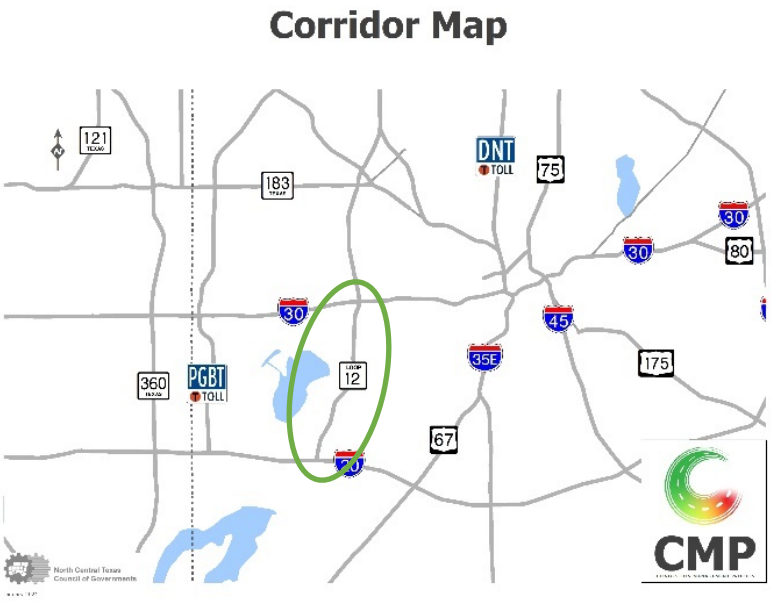
Exhibit 4-3: IH 183 corridor from SH 121 to SH 360

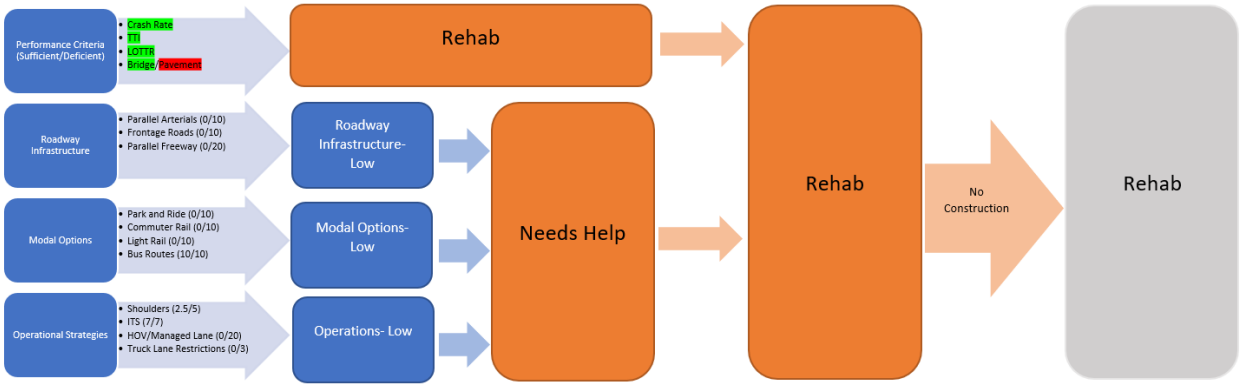




The **Loop 12 corridor from IH 20 to IH 30**, Exhibit 4-4, falls into the category of **Rehabilitation**. To be part of this category or bucket a corridor needs to rank sufficient for all performance criteria except pavement or bridge conditions. This corridor will continue to be monitored for performance outline as part of the CMP and a collection of available assets will continue to be collected. In addition, this corridor will be recommended to the operating agency to consider improving through roadway maintenance funding.

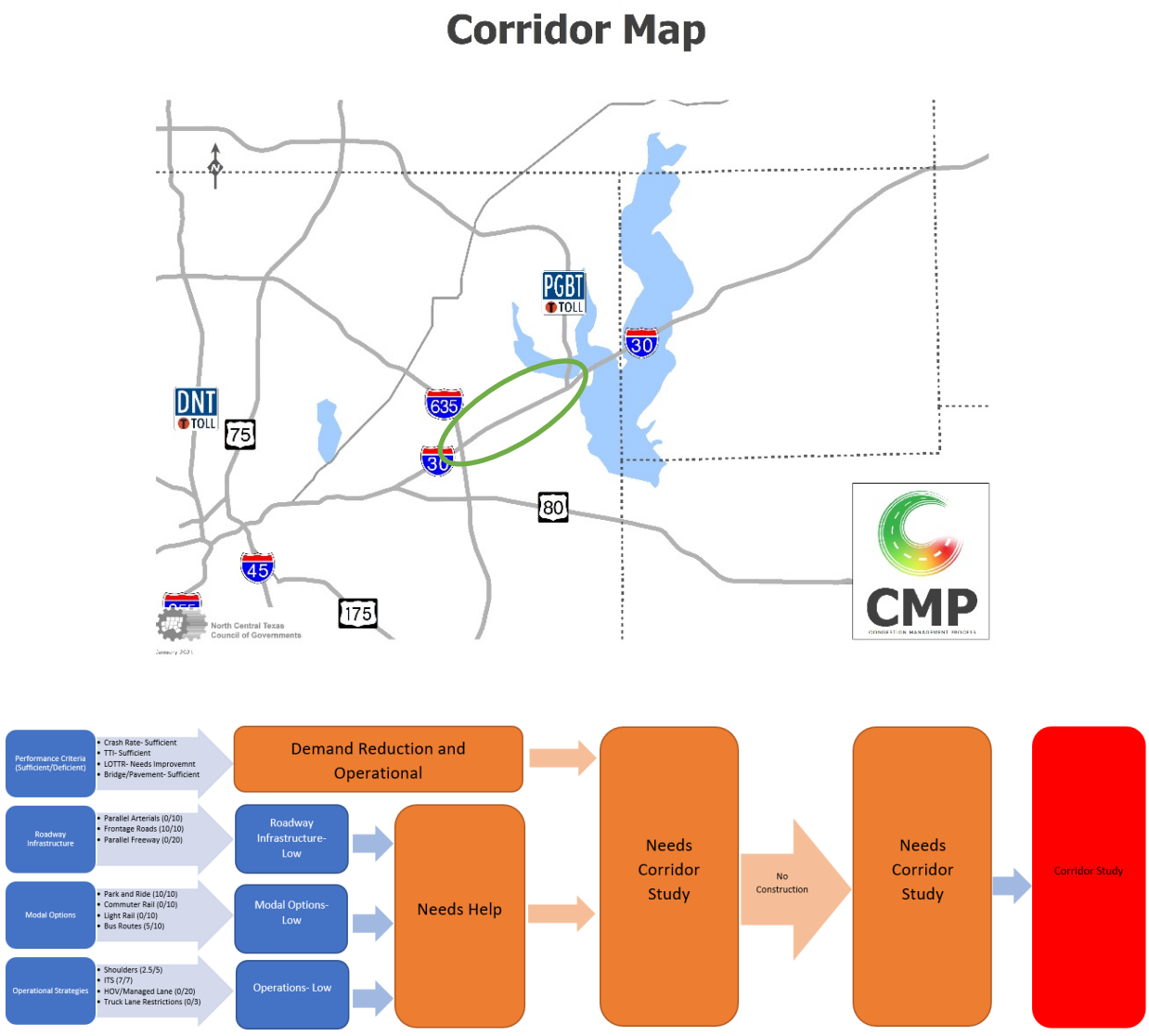
Exhibit 4-4: Loop 12 corridor from IH 20 to IH 30





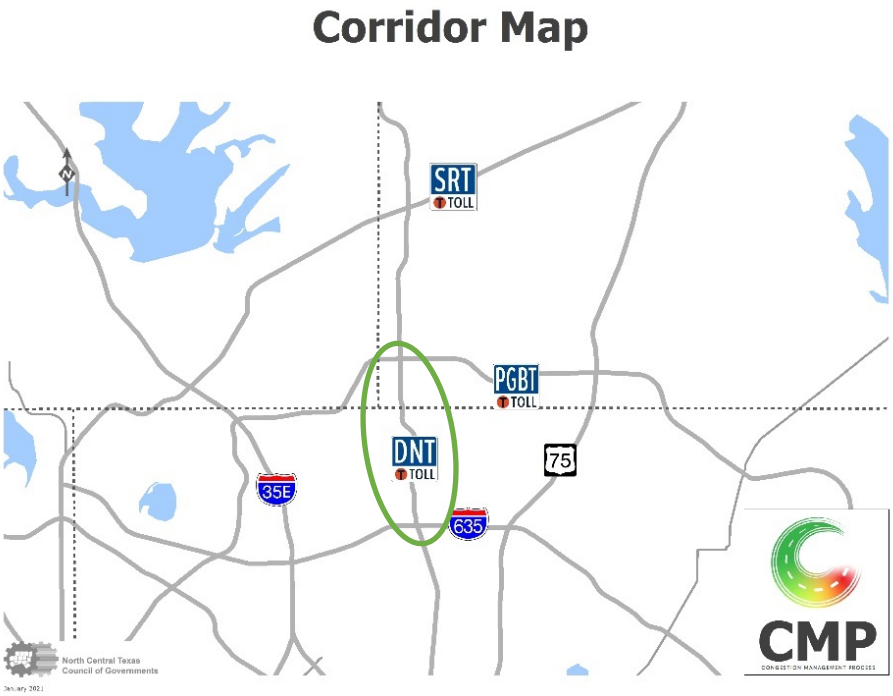
The **IH 30 corridor from IH 635 to PGBT** falls into the category of **Corridor Study**. See Exhibit 4-5. To be part of this category or bucket a corridor needs improvement in one or all the performance criteria (crash rate, travel time index, level of travel time reliability, pavement conditions and bridge conditions) and the corridor does not have available assets to solve for the areas where improvements are needed in performance. This corridor is beyond on the scope of the CMP. This category needs more than CMP strategies to resolve the performance deficiencies and has limited available assets that could be utilized. Corridors within this group will be recommended to be reviewed in-depth through a corridor study.

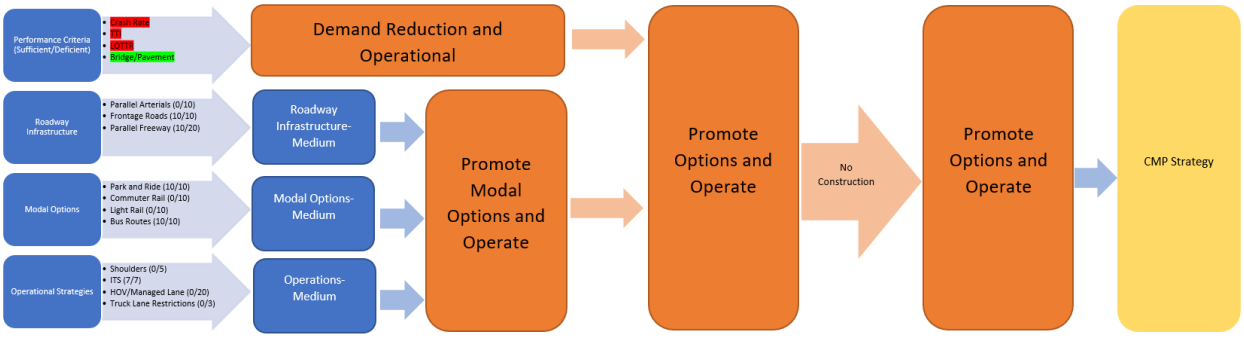
Exhibit 4-5: IH 30 corridor from IH 635 to PGBT



The **Dallas North Tollway (DNT) corridor from PGBT to IH 635** falls into the category of **CMP Strategy**. To be part of this category or bucket a corridor needs improvement in one or all of the performance criteria (crash rate, travel time index, level of travel time reliability, pavement conditions and bridge conditions) and the corridor needs to have available assets to solve for the areas where improvements are needed in performance. This corridor will continue within the CMP to identify specific strategies that can be implemented along the corridor to improve performance and utilize all available assets. See Exhibit 4-6.

Exhibit 4-6: Dallas North Tollway (DNT) corridor from PGBT to IH 635



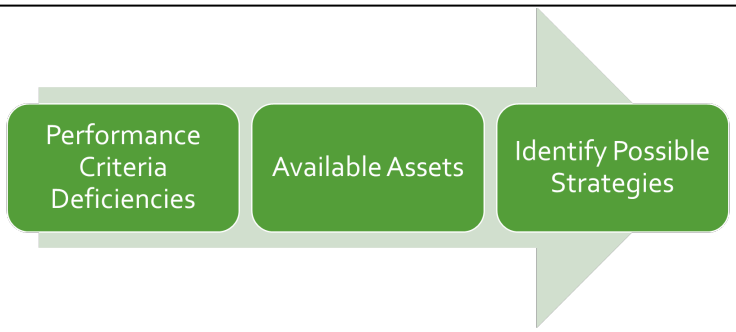


The CMP is a continuous process and will examine the performance criteria and available assets on a regular basis to identify corridors that need transportation improvements as well as assessing the impact of previous corridor improvements implemented. This provides indicators of where specific strategies were most effective to be considered in future strategy selection.

CMP Strategy Identification

Congestion management strategies on the transportation system include the implementation of Travel Demand Management (TDM) and Transportation Systems Management and Operations (TSM&O) improvements. All TDM and TSM&O strategies are outlined in Appendix C. A variety of strategies can be deployed to alleviate congestion on the transportation system.

The type of strategy implemented depends on the type of congestion experienced. TDM strategies attempt to reduce the demand for single-occupant vehicle (SOV) travel on roadways by offering alternatives to driving alone. Some TDM strategies include employer trip reduction programs, vanpool programs, and rideshare programs.

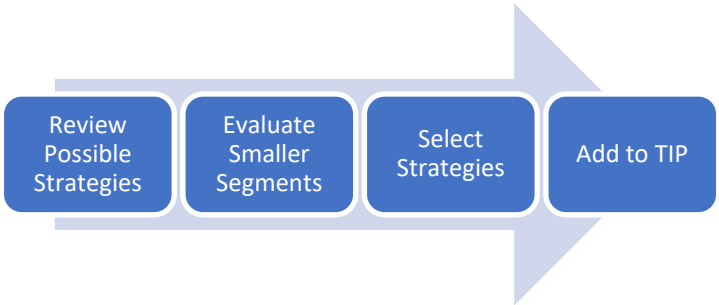


Operational strategies offer low-cost improvements to get more capacity out of the existing transportation network. Some recommended TSM&O strategies include operation of traveler information systems to divert traffic around crashes and special events, closed-circuit television for traffic monitoring, incident verification and clearance to allow crashes to be removed from the roadway quickly and safely and bottleneck remove projects to better balance ramps and lane drops.

Of the 16 corridors that fall within the CMP Strategy category, strategies will be identified based on performance criteria deficiencies and available asset along the corridor. The combination of these two areas identifies possible strategies for each corridor. The possible strategies will be evaluated further to determine which strategies have the most potential to improve the corridor operations. These strategies will be identified and scoped to be put into the Transportation Improvement Program (TIP) for funding.

Strategies are tied to performance deficiencies and available assets. To identify which strategies are the best fit for a given corridor, the strategies for each corridor will be ranked based upon the percentage of associated performance deficiencies and assets matching those on the corridor. Strategies identified to be the best fit for the corridor will be presented to a working group for the corridor. The flow chart below illustrates the first phase in the strategy identification process.

The working group for the corridor will consider available congestion management strategies. Group members will include staff from relevant NCTCOG program areas, local governments, NTTA/TxDOT, transit agencies, roadway operators and other relevant stakeholders as identified. Corridor performance information, available assets, and potential strategies will be discussed. Strategy selection and project implementation are initiated through the TIP. The selection of operational and travel demand reduction strategies are based on the type of strategies that yield the largest benefit cost ratio. Transportation funds will be allocated to a variety of strategies and recommended for approval in the TIP as a CMP Program of Projects. The flow chart below illustrates the second phase in the strategy identification process.



These strategies could include, but not limited to, freeway bottleneck removal, ITS deployment, and bicycle and pedestrian trails. In addition to these operational strategies, travel demand reductions strategies are implemented along the corridor in cooperation with transit agencies and major employers. Some of these strategies include vanpools, ride-matching, and discounted transit passes.

As a strategy is identified, NCTCOG works with local partners to identify the cost, scope, schedule and implementing agency for the project to be included in the TIP. Some CMP strategies will be implemented by NCTCOG while others implemented by regional partners. For example, a traffic signal upgrade would be implemented by a local jurisdiction since they are responsible to operate and maintain a traffic signal. NCTCOG would be more appropriate to implement a regional single-occupant vehicle trip reduction program. As NCTCOG as the implementing agency, this type of program can be implemented region-wide for an economy of scale. Implementing agency is an important component to this process since this agency will be responsible for the project and needs to be committed to complete the project.

Project Performance Evaluation

The goal of the project performance evaluation is to have an on-going program to evaluate the benefits of congestion management strategies implemented to improve the efficiency of our existing transportation system through demand reduction and operational improvements. Examples of performance evaluation could include any of the following items:

- Before/After Speeds
- Before/After Volumes
- Before/After Crash Rate
- Transit Ridership/Mode Split
- Changes in Asset Condition
- Changes in Criteria Performance Measures, Peak Hour LOS, Crash Rate, Travel Time Reliability

Summary

The goal of the CMP is to balance the travel demand across all available assets and maximize the operations of available infrastructure within a corridor. This is accomplished by evaluating corridor performance criteria to identify deficiencies and inventorying available asset. Based on this analysis, stakeholders are able to determine appropriate strategies to apply allowing the region to better utilize the transportation system in North Texas. In addition, this process allows coordination with partner agencies to evaluate and identify strategies and determine appropriate implementation agencies. As the strategies are identified, project implementation timelines can be developed to allow regional transportation resources to be staged and infrastructure to operate as a cohesive system. Although major capital investments are needed to meet the growing travel demand, the CMP identifies major capital investments as a last option. To complement major capital investments, when needed, the CMP also develops lower cost strategies to sustain the life and operation of the capacity that is added. This process allows the region to maximize the use of available funding, balance available resources, reduce congestion, enhance safety, and improve air quality. Leading to a more sustainable, livable, accessible, balanced and healthy transportation system.