



CHAPTER 3

PLANNING FRAMEWORK

The Corpus Christi Metropolitan Planning Organization (Corpus Christi MPO), transit agencies, and the Texas Department of Transportation (TxDOT) are required to develop performance-based plans and processes which align with federal goals. Monitoring the performance of the transportation system – including the condition of physical assets and travel times on the network – is critical for transparency and accountability as required by federal regulations.

CHAPTER 3

planning framework

The planning framework guides the development of the regional transportation plan, articulating what the Corpus Christi MPO is trying to achieve through the regional transportation planning effort. It establishes the foundation for Transportation Decision-making, focuses data-gathering efforts, shapes project alternatives, and outlines how decision-makers select and implement policies and projects. The following components comprise the planning framework:

- Regional Vision
- Goals and Objectives
- Performance measures and targets
- Project evaluation criteria
- Weighting (Relative importance) of evaluation criteria

PLANNING METHODOLOGY CONSIDERATIONS

The Corpus Christi MPO continuously examines the transportation planning framework to increase citizen orientation and transparency. Procedures are undertaken to verify the transportation planning framework are:

- **Legitimate:** The process must actively reach out and be accessible to all potentially-affected interests.
- **Rigorous:** The process should not allow those who voice their concerns most loudly, most often, or most articulately to wield disproportionate influence. Instead, the impacts and alternatives must be evaluated using scientific standards for data and analysis so that competing claims are assessed fairly. This approach was blended with a modified version of the TxDOTs Decision Lens tool to yield a rigorous, defensible and analytical approach to decisions.
- **Timely:** The complexity of decision-making can lead to lengthy deliberative processes. There is a need to expedite decision making, though not at the expense of public process.

GOALS AND PERFORMANCE MEASURES

The Corpus Christi Metropolitan Planning Organization (Corpus Christi MPO), transit agencies, and the Texas Department of Transportation (TxDOT) are required to develop performance-based plans and processes which align with federal goals. Monitoring the performance of the transportation system – including the condition of physical assets and travel times on the network – is critical for transparency and accountability as required by federal regulations.

While the concepts of performance management and performance measures are generally understood, deciding how to best allocate limited resources across various types of investments to provide

acceptable transportation system performance poses a persistent and difficult challenge for most transportation agencies in the nation. In general, agencies struggle with technical challenges and data analytics, while elected leaders fear a “black box” approach to project prioritization, while other institutional and historic factors may create some barriers to purely technical approaches to choosing which projects to fund.

A key takeaway is remembering that goals do not identify specific policies or projects, rather they frame the outcome that is desired and identify the performance measures used to evaluate potential policies and projects. For this 2020-2045 MTP, the Corpus Christi MPO used TxDOT's and federally established goals as the basis for the regional goals.

Another key factor to consider is new technologies enable a wider array of choices for locating the production, distribution, and consumption of goods and services. Ongoing shifts in regional, national, and global economies are also reconfiguring travel demands for workers and freight at an accelerating pace. The scale of these changes vary, but all point to a need to invest in new technologies and services to build a dynamic and diverse transportation system that is responsive to the needs of an increasingly global and high-tech economy.

The federal transportation goals are:

1. To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
2. To maintain the highway infrastructure asset system in a state of good repair.
3. To achieve a significant reduction in congestion on the National Highway System.
4. To improve the efficiency of the surface transportation system.
5. To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
6. To enhance the performance of the transportation system while protecting and enhancing the natural environment.

The USDOT has adopted three core Environmental Justice (EJ) and Title VI policies stating that projects receiving federal transportation funds must:

1. Avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority and low-income populations.
2. Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
3. Prevent the denial of reduction in or significant delay in the receipt of benefits by minority and low-income populations.

The TxDOT's transportation goals and objectives from the adopted 2019-2023 Strategic Plan are:

1. Champion a culture of safety.
 - Implement a performance driven effort to strategically focus safety efforts to mitigate negative safety trends, with initial focus on reducing pedestrian fatalities.
 - Systematically include more safety features on projects by drawing on those actions demonstrated to have the highest rate of return through our Highway Safety Improvement Plan (HSIP).
 - Continue proactive educational, training and technological measure to further reduce incident rates for driver safety.
2. Implement effective planning and forecasting processes that deliver the right projects on time and on budget.
 - Expand the use of data-driven project prioritization (Scoring of projects).
 - Manage contracts for on-time and on-budget delivery.
 - Ensure project development readiness exceeds project delivery capacity.
3. Focus on the customer.
 - Improve traffic management plans during construction to reflect the customer perspective.
 - Provide mechanisms for public feedback.
 - Provide staff training on effective customer service.
4. Ensure efficient use of state resources.
 - Implement a central mechanism for identifying and implementing the use of cost saving ideas to support increased project delivery.
 - Finalize and implement asset management and resiliency planning activities.
 - Include life-cycle costs in project development.
5. Develop and operate an integrated transportation system that provides reliable and accessible mobility enabling economic growth.
 - Establish a statewide integrated traffic management system.
 - Improve traffic information for more efficient freight movement by developing connected freight corridors.
 - Coordinate with local transportation entities to ensure the efficiency of the overall transportation system to facilitate movement of people and goods.
6. Deliver preventative maintenance for TxDOT's system and capital assets to protect our investments.
 - Educate leaders, the public, and partners on the tradeoffs of designing for the optimal life-cycle of transportation infrastructure.
 - Finalize and implement asset management and resiliency planning activities.
 - Request funding for and implement the deferred maintenance plan for TxDOT facilities.

CORPUS CHRISTI MPO GOALS, OBJECTIVES, PERFORMANCE MEASURES, AND TARGETS

In adopting the goals, objectives, and performance measures for the 2020-2045 MTP, the Corpus Christi MPO, its member communities, and transit agencies reaffirm the need to invest in infrastructure, reduce delays, improve access to transportation modes other than Single Occupancy Vehicles (Non-SOV) transportation, and ensure projects are delivered in a timely manner. The Corpus Christi MPO uses a continuous cycle of target setting, project programming, and performance monitoring to link goals and measures from the 2020-2045 MTP with specific investment decisions in the Transportation Improvement Program (TIP). This process includes evaluating alternative investment programs and projects to assess the likely performance impacts of different strategies and funding scenarios.

CORPUS CHRISTI MPO REGIONAL GOALS

Goals are the first step to supporting a transportation vision statement. They address the key desired outcomes for the region. The Corpus Christi MPO Goals for the 2020-2045 MTP are based on the TxDOT and Federal Highway Administration/USDOT goals.

The goals are to:

1. Significantly reduce traffic fatalities and serious injuries on all public roads.
2. Manage regional transportation assets into a state of good repair.
3. Reduce congestion on the regional significant corridors.
4. Efficiently operate, and invest in, the surface transportation system.
5. Improve regional freight transportation facility performance.
6. Use transportation investments to improve the regional economy.
7. Protect and enhance communities, the natural environment, and historic and cultural resources.
8. Provide an equitable transportation system for all, regardless of age, ability, race, ethnicity, or income.

PERFORMANCE MEASURES AND TARGETS

The Corpus Christi MPO TPC endorsed supporting TxDOT's performance measure targets. The following performance measures were distilled from required state and federal measures. TxDOT's 2019 adopted goal is to work towards reducing the number of deaths on Texas roadways by half by the year 2035 and to zero by the year 2050.

1. Significantly Reduce Traffic Fatalities and Serious Injuries. The annual performance measures and targets are:

- **Number of fatal crashes** are the total number of crashes that resulted in persons suffering fatal injuries in a crash during a calendar year.
- **Rate of fatal crashes** is the ratio of the total number of fatal crashes per 100 million vehicle miles traveled (HMVMT) in a calendar year.
- **Number of serious injuries** are the total number of crashes that resulted in persons suffering at least one serious injury in a crash during a calendar year.
- **Rate of serious injuries** is the ratio of the total number of serious injury crashes per HMVMT in a calendar year.
- **Number of non-motorized fatal and serious injury crashes** is the combined total number of non-motorized fatal and serious injury crashes involving pedestrians and bicyclists during a calendar year.

Annual Performance Measures							Targets	
Crash Type	2013	2014	2015	2016	2017	2018	2035	2045
Number of Fatal Crashes	25	33	35	33	37	35	18	6
Rate of Fatal Crashes	1.22	1.57	1.18	1.05	1.18	1.11	0.55	0.13
Number of Serious Injury Crashes	167	126	112	132	111	124	62	13
Rate of Serious Injury Crashes	8.14	5.98	3.77	4.20	3.53	3.92	1.96	0.28
Number of Non-motorized Fatal and Serious Injury Crashes	22	29	32	30	30	39	20	5
Fatal	0	10	12	12	11	15	8	0
Serious Injury	20	19	20	18	19	24	12	5

Source: Texas Department of Transportation (TxDOT) Crash Reporting Information System (CRIS), TxDOT Multi-Year Roadway Data Tables

2. Manage regional transportation assets into a state of good repair.

TxDOT Summary of Performance Measures and Targets			
Pavement	Baseline	2020 Target	2022 Target
Percentage of Pavements of the Interstate System in Good Condition	-	-	66.40%
Percentage of Pavements of the Interstate System in Poor Condition	-	-	0.3%
Percentage of Pavements of the Non-Interstate System in Good Condition	54.5%	52.0%	52.3%
Percentage of Pavements of the Non-Interstate System in Poor Condition	14.0%	14.3%	14.3%
Bridges	Baseline	2020 Target	2022 Target
Percentage of NHS Bridges Classified as in Good Condition	50.7%	50.6%	50.4%
Percentage of NHS Bridges Classified as in Poor Condition	0.88%	0.80%	0.88%

As part of the FAST act, performance measures were incorporated for transit agencies, primarily through the Transit Asset Management (TAM) assessment and planning requirements. The most recent TAM assessment is included in Appendix D. Achieve an average State of Good Repair (SGR) of 85% for all rolling stock assets across the 4-year planning horizon by ensuring they are operating within their Useful Life Benchmark (ULB); Maintain a facility condition of adequate (3.0+ on the TERM scale).

Useful Life Benchmark	Baseline	2020 Target	2022 Target
Percentage of Revenue Vehicles at or Exceeding Useful Life Benchmark	-	0%	<15%
Percentage of Service Vehicles at or Exceeding Useful Life Benchmark	-	0%	<15%
Percentage of Facilities Rated Below 3 on Condition Scale (TERM)	-	0%	<15%

3. Reduce congestion on the regional significant corridors.

The urban reliability index is the ratio of the 95th percent peak-period travel time ("rush hour") to free-flow travel time (when traffic flows at the speed limit) in areas with populations over 50,000. The 95th percent is an indicator of the heaviest traffic time period. This index is useful as a trip-planning tool for drivers for understanding the longest amount of time it could take to drive to their destinations. Example: A person in Ingleside leaves home to travel downtown Corpus Christi on a Monday morning at 8:00 a.m. through heavy traffic, and the travel time is 30 minutes. On Saturday at 8:00 a.m., the same person can make the same trip from home to downtown, able to drive the speed limit, and complete the trip in 20 minutes. The resulting urban reliability index is 1.5 (30 minutes divided by 20 minutes). Numbers closer to 1.0 are better.

Travel Time Reliability (TTR)	2015	2016	2017	2020	2022
Corpus Christi MPO Interstate TTR	100%	100%	98%	97%	95%
Statewide Interstate TTR	79%	78%	79%	80%	67%
Corpus Christi MPO Non-Interstate TTR	95%	94%	97%	87%	85%
Statewide Non-Interstate TTR	60%	59%	80%	71%	62%

Source: Texas Department of Transportation (TxDOT) Crash Reporting Information System (CRIS), TxDOT Multi-Year Roadway Data Tables



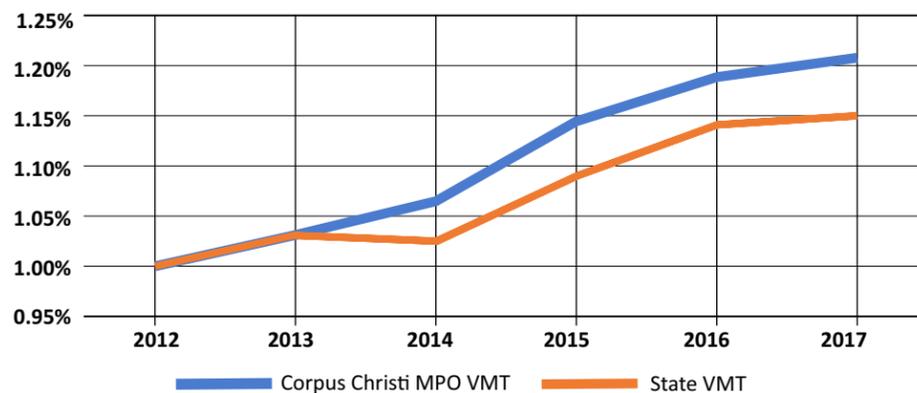
TxDOT's campaign to urges drivers to 'end the streak' daily deaths on roadways.

4. Efficiently operate, and invest in, the surface transportation system.

Total Vehicle Miles Traveled (VMT): Number of miles traveled by vehicles (passenger and commercial truck) in the Corpus Christi MPO region in a calendar year. Why this matters: The total mileage on our highway system is a reflection of population growth and driver behavior in our state. It is included in TxDOT performance measures as its result directly influences the congestion and reliability indexes. Vehicle Miles Traveled per Commuter: Number of miles divided by population. An efficient transportation system will grow per capita VMT at a rate less than 1.0. Growing per capita VMT at a rate higher than 1.1 is highly inefficient.

Vehicle Miles Traveled (VMT)	2012	2013	2014	2015	2016	2017
Corpus Christi MPO VMT Growth	100%	103%	107%	114%	119%	120%
Statewide VMT Growth	100%	103%	102%	109%	114%	115%
MPO per capita VMT	25.53	26.08	26.69	28.37	29.15	29.41
Texas per capita VMT	25.78	26.13	25.51	26.65	27.49	27.28
MPO per capita VMT Growth Rate	1.00	1.02	1.05	1.11	1.14	1.15
State per capita VMT Growth Rate	1.00	1.01	0.99	1.03	1.07	1.06
Corpus Christi MPO Total Delay (in 1,000 of hours)	8,115	8,694	8,851	9,001	9,279	9,458
Corpus Christi MPO Hours of Delay per Commuter	32	35	35	36	37	38

Source: Texas Department of Transportation (TxDOT) Crash Reporting Information System (CRIS), TxDOT Multi-Year Roadway Data Tables



Percent Growth in Vehicle Miles Travel

Annual Delay Per Person: Measurement of the hours of delay for a driver on Texas roadways. How it is measured: Annual delay per person is the ratio of the total annual hours of delay for all vehicles on Texas roadways to the estimated population of Texas (population estimates are sourced from the Texas Demographic Center). This measure calculates the estimated annual delay per person for the state inclusive of passenger vehicles and commercial trucks. Conducting a life-cycle benefit cost analysis will provide relevant information on projects.

5. Improve regional freight transportation facility performance.

The truck reliability index is the ratio of the 95th percent peak-period travel time (“rush hour”) to free-flow travel time (when traffic flows at the speed limit) in areas with populations over 50,000. The 95th percent is an indicator of the heaviest traffic time period. This index is useful as a trip-planning tool for drivers for understanding the longest amount of time it could take to drive to their destinations. Example: A person in Ingleside leaves home to travel downtown Corpus Christi on a Monday morning at 8:00 a.m. through heavy traffic, and the travel time is 30 minutes. On Wednesday at 8:00 p.m., the same person can make the same trip from home to downtown, able to drive the speed limit, and complete the trip in 20 minutes. The resulting Truck Travel Time Reliability (TTR) index is 1.5 (30 minutes divided by 20 minutes). The Texas statewide baseline was 1.5 in 2017, the 2020 target is 1.7 and the 2022 target is 1.79. Numbers closer to 1.0 are better.

Truck Travel Time Reliability (TTR)	2015	2016	2017	2018	2020	2022
Corpus Christi MPO Truck TTR	1.16	1.22	1.22	1.15	1.3	1.35
Statewide Truck TTR	2.01	2.24	1.39	1.41	1.45	1.50

Source: Texas Department of Transportation (TxDOT) Crash Reporting Information System (CRIS), TxDOT Multi-Year Roadway Data Tables

6. Use transportation investments to improve the regional economy.

The efficient movement of people and goods greatly influences the economic competitiveness of the region. This is especially true in the Corpus Christi MPO region where the area's regional economy is centered on transportation, distribution, and logistics, with Transportation and Storage/Warehousing a significant economic sector and Travel and Tourism also very important. The regional Comprehensive Economic Development Strategy states that the “...region will achieve economic growth through business and job attraction... by enhancing cooperation, livability and character of all communities...”. The initial performance measure is the number of jobs created within the region from year to year, with estimated number of direct and indirect jobs created the scoring criteria for future Transportation Improvement Programs.

Criteria	Weight	Description
Planning Time Index(PTI)	4.00%	Planning Time Index represents the total time that should be planned with sufficient buffer time is included to account for anticipated congestion.

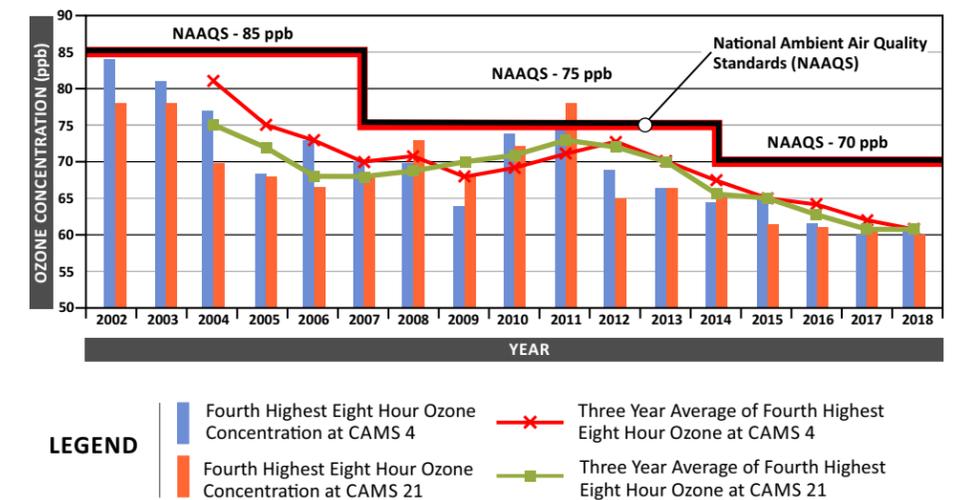
As an example of this type of investment, the Port of Corpus Christi Authority (PCCA) created a \$92 million project to deepen and widen their primary shipping channel serving the Port. The future depth will enable the movement of additional freight through larger ships as well as different types of ships in the future. The Harbor Bridge project being built by TxDOT increases the clearance of the bridge.

7. Protect and enhance communities, the natural environment, and historic and cultural resources.

The regional community's ability to reach key destinations such as jobs, schools, libraries, shopping, and entertainment is vital. Multimodal connectivity within the transportation network as well as between networks, such as walking or cycling to public transit stations, is a critical component of accessibility.

Criteria	Weight	Description
Direct Access to Destinations	7.06%	Destinations that the project has direct access to: Schools, Groceries, Medical Resources, Civic Institutions, Low Income Housing, Place of Worship, Recreation/Tourism and Retail.
Bike Mobility Network	7.94%	Is the project on the Strategic Plan for Active Mobility's bike mobility network?

Air Quality targets are projected to stay below the current air quality standards. Chapter 14, discusses this topic in greater detail.



8. Provide an equitable transportation system for all, regardless of age, ability, race, ethnicity, or income.

The projects for the Metropolitan Transportation Plan were evaluated for the USDOT Title VI and Environmental Justice (EJ) requirements. (See Chapter 4 for a TAZ/schematic map of these populations) A “distribution of investment” approach determined where projects fall in relation to identified EJ communities and the investment resulting from these projects within EJ communities versus non-EJ communities.

Criteria	Weight	Description
Number of the Title VI/ Environmental Justice population groups that are served.	7.06%	Number of population groups that the project serves. Title VI: Disability, Ethnic, Minority, Female, Limited English Proficiency, National Origin, Over 65, Under Age 18. Environmental Justice: Low Income and Minority.

EVALUATION METHODOLOGY

The Corpus Christi MPO refined the performance measures to weigh and prioritize projects for the 2020-2045 Metropolitan Plan Update. The planning process was adapted to build upon the strengths of Corpus Christi MPO's organizational structure and account for time constraints that existed. Any legitimate decision-making process must obtain meaningful input and utilize evaluation techniques and information-gathering processes that consider the needs and objectives of all potentially affected interests. A well-designed planning framework and evaluation system may not eliminate conflicts, but it can ensure credible decision-making and pinpoint areas and reasons for conflict. It can also contribute to building consensus by establishing the foundation to focus data-gathering efforts, shape the alternatives and evaluate tradeoffs between them, and finally, select the best options for investment. Goal-based evaluation criteria were vital in scoring member entities' project submissions. Corpus Christi MPO staff used the TxDOT Decision Lens Tool as the foundation for developing the evaluation process.

The evaluation criteria were approved and adopted by the Corpus Christi MPO Transportation Policy Committee in May 16, 2019. In February 2019, Corpus Christi MPO issued a call for projects to member governments for inclusion in the plan. The performance measure list began with more than 40 specific measures that were proposed for both project prioritization and for regional profiling. Using coordination with the Technical Advisory Committee (TAC) in 2017, the MPO staff refined the list into 33 performance measures. This list was further reduced in 2018, to 22 performance measures that were used for project scoring. This list was then streamlined into 15 measures that came from continued coordination with the TAC members and the MPO staff assessment based on research and data availability. The performance measures that were removed have been retained for data collection and the regional profile, except for a few that were identified as no longer pertinent or applicable to the planning process.

Developing the criteria for the prioritization of projects began with TxDOT's Project Criteria, Weights, and Descriptions (Decision Lens), these are shown in Exhibit 3-1. The MPO's weighting was developed by mirroring TxDOT's weighting to the MPOs performance measures where possible and adjusting the remaining weights to

reflect the MPOs assessment of regional priorities. The Corpus Christi MPO Project Performance Measures are shown in Exhibit 3-2. The resulting rankings were consistent with ranking found in the 2015-2040 MTP Project Table. A cursory analysis revealed that of the 51 included projects; 40 projects increased in relative priority, 2 projects remaining the same, 3 projects were new submissions, and 6 projects decreased in relative priority.

Systematically documenting the process, the information used, and the results of each step is critical to conducting transparent public involvement. This also ensures that information gathered and decisions made during long-range-plan development can be carried into the NEPA process for any project.

WEIGHTING OF EVALUATION CRITERIA

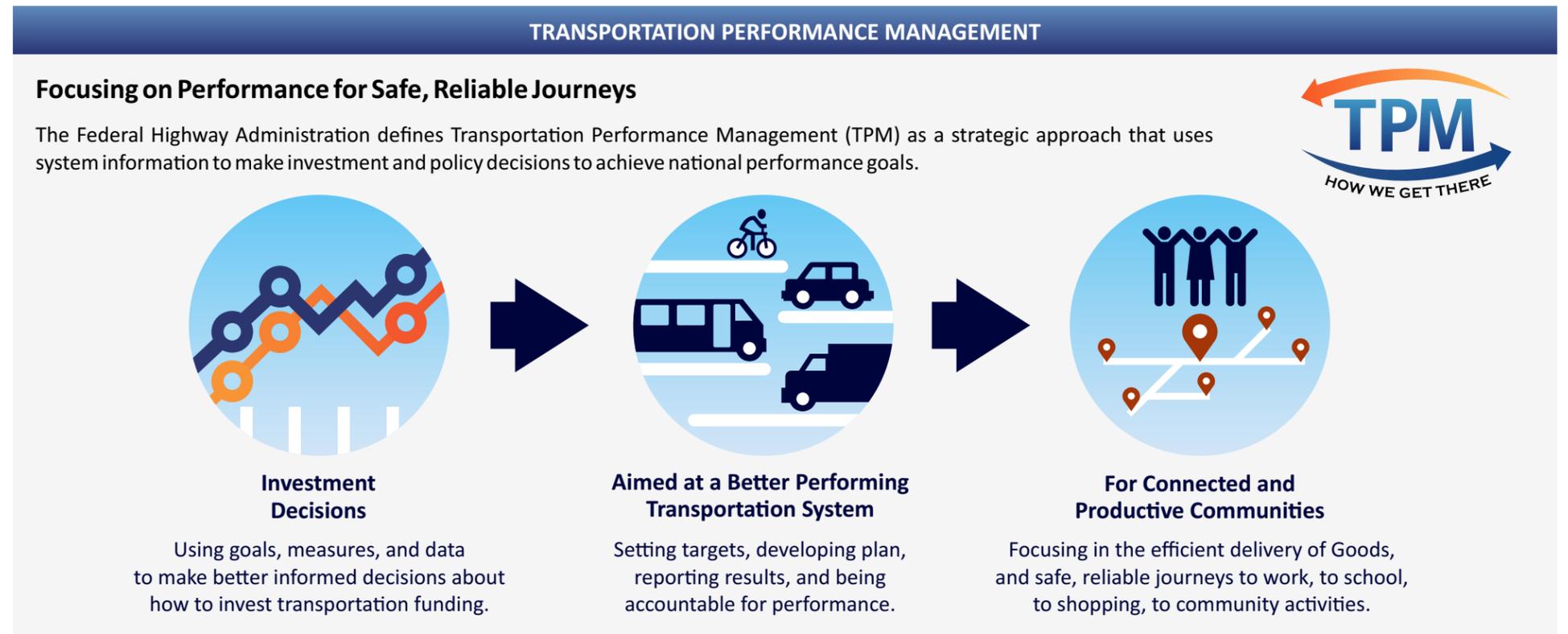
While evaluation criteria act as a tool to score possible investments, a process of prioritizing, or weighting, the evaluation criteria was needed to identify which criteria are more important or valuable to regional stakeholders and the community as a whole. The assigned weight of each criterion places a level of importance on each relative to the others; and assists in selecting projects that help to achieve the region's transportation system goals.

After the evaluation criteria were approved and adopted by the Corpus Christi MPO Transportation Policy Committee, staff solicited evaluation criteria weighting input from Corpus Christi MPO Transportation Advisory Committee. The approved weighting was incorporated into the project scores to develop the fiscally-constrained project list, a prioritized list of transportation projects recommended for funding and included in the 2020-2045 Metropolitan Transportation Plan.

DATA COLLECTION AND ANALYSIS

The planning process requires collection and evaluation of transportation, social/community, economic, and environmental conditions prior to, during, and after implementation of the plan. The information collected supports the baseline to facilitate the on-going selection of the projects utilizing both the goals developed during the planning process and issues discovered during project evaluation into consideration. Providing the linkages between regional transportation planning and NEPA studies is a key objective to streamline the environmental review process. The Corpus Christi MPO relied on Texas A&M Transportation Institute's (TTI) Congestion Management Process Assessment Tool (COMPAT). The data included in this are:

Annual Person Hours of Delay	Annual Pounds of CO2 Due to Traffic Congestion
Planning Time Index 80	
Planning Time Index 95	Annual Pounds of CO2 Associated with All Travel
Annual Truck Vehicle Hours of Delay	
Truck Planning Index 80	Total Highway Miles of Analysis
Truck Planning Index 95	Total Lane Miles of Analysis
Average Annual Daily Traffic (AADT)	Average Network Free Flow Speed
Daily Vehicle Miles of Travel (VMT)	Average Network Congested Speed
Daily Peak Vehicle Period Vehicle Miles of Travel	Average Network Truck Free Flow Speed
	Average Network Truck Congested Speed
Daily Truck Vehicle Miles of Travel	Travel Time Index
Annual Costs (\$) of Congestion	Truck Travel Time Index



UNCERTAINTY IN PLANNING

Decision makers need useful information about potential impacts and tradeoffs between alternatives in order to make the best decisions possible. Because negative consequences can potentially result from transportation investments, many people assume that transportation decisions are based on complete and accurate information. The complexity of land development, travel-decision dynamics, rapidly changing industry, shifting population structure, changing lifestyles, increasing motor-vehicle fuel costs, and other variables mean that even with excellent transportation forecasting methods, uncertainty will exist.

Likewise, other social, economic, and political information unrelated to transportation but that impacts transportation decision making is rarely complete. As a result, transportation policy-makers cannot wait until they are totally certain of the trade-offs between economic, ecological, and social impacts of a decision before the decision must be made.

Exogenous factors (those factors that are outside of our control) that will significantly impact transportation and travel between 2020 and 2045 include, but are not limited to:

- **Globalization, global trade, and cross-border freight flow.** In today's global economy, physical access to markets is essential to regional competitiveness. While trucks, ships and trains move more than two-thirds of all U.S. goods, air transportation is key to emerging sectors that emphasize innovative, high-value commodities. Investing in diverse transportation modes could support more efficient goods movement in tradable industries and emerging industry sectors.
- **Mobility as a Service (MaaS).** MaaS may reduce personal vehicle ownership. Personal mobility is less dependent on personal vehicle ownership. Many people now use a variety of on-demand services that provide convenient access without the high costs of owning a personal vehicle. This shift to MaaS is fueled by emerging services, like transportation network companies, micromobility (scooter) programs, and in the near future, connected and autonomous vehicles (CAV). These CAVs have their own requirements, such as improved striping during maintenance. Mobility as a service is further enabled by digital platforms that integrate multiple modes of transport into seamless trip chains and provide end-to-end trip planning, booking and payment services.
- **Improvements in communication and information technology.** Today, access to employment, education, and shopping is not always physical, and 24% of U.S. workers do some or all of their work at home. Telecommuting, telemedicine and online education have become pervasive across many sectors with the potential to reduce travel expenses, (and transportation funding) and limit traffic congestion.
- **Rise in Automation.** About half of today's jobs will be performed by machines in a decade or two. Job automation could limit employment in some of today's most common jobs, like in retail. Autonomous, self-driving vehicles could also reduce jobs in other sectors, like logistics, while presenting new employment opportunities in technology, business and maintenance. These autonomous vehicles will likely be electrified,

exacerbating transportation funding challenges due to reliance on fuel taxes.

- **Evolution of sharing and gig economies.** Online ride-sharing platforms enabled by digital technology are dramatically expanding transportation options. These companies reflect a broader shift towards freelance employment characteristic of the "gig economy." There are nearly 70 million of these "gig" workers estimated in the U.S., working non-traditional shifts and making more off-peak, non-rush hour trips, which might reduce road congestion during peak periods, especially with 5G communications on the near horizon.

Total certainty, even if achievable, is not necessary. Even when more detailed information becomes available, it may not lead to better decisions, because all decisions involve choosing between a range of positives and negatives, and the relative importance given to each trade-off. In addition, no decision is ever objectively "right," and will always be subjective and contestable. As we update the regional transportation plan every five years, we will investigate the status and future implementation of these ideas and several yet to be introduced in the transportation industry.

SUMMARY

The planning framework is crucial in guiding the development of the entire 2020-2045 MTP. These components state the purpose of what the Corpus Christi MPO region is trying to achieve, show the steps necessary, and provide the foundation required to complete the plan.

A good technical process includes uncertainty and uses a precautionary approach to decision-making, while considering complex issues. This process must be documented in order to carry information from long-range planning into the environmental analysis and subsequent implementation of individual projects.

Exhibit 3-1. Table of TxDOT Project Criteria, Weights, and Descriptions

Criteria	Weight	Description
Safety	31.40%	
Crash Count	3.14%	Project's estimated impact on fatal (K) and serious injury (A) type crashes, based on the work that is being done and historical crashes. Total number of relevant crashes prevented in "Plan Horizon" window (default 10-yr). Units: Crashes
	3.14%	Project's estimated impact on all crashes, based on the work that is being done and historical crashes. Total number of crashes prevented in "Plan Horizon" window (default 10-yr). Units: Crashes
Crash Rate	3.14%	Project's estimated impact on fatal (K) and serious injury (A) type crashes, based on the work that is being done and historical crashes. Total number of relevant crashes prevented in "Plan Horizon" window (default 10y), divided by million vehicle miles traveled. Units: Crashes/MVMT
	3.14%	Project's estimated impact on all crashes, based on the work that is being done and historical crashes. Total number of crashes prevented in "Plan Horizon" window (default 10y), divided by million vehicle miles traveled. Units: Crashes/MVMT
Safety Project Classification (DCIS P1)	6.28%	Project is classified as a safety type project in DCIS (P01 Proj Class). The project classification in DCIS is one of: "GCP", "HES", "HPR", "RH", "RR", "SB", "SFT", "SRA", "TPD", "TS", "BIK", "PED".
Hurricane Evacuation Route (HER)	6.28%	Project is marked in DCIS (P01) as a hurricane evacuation route.
Societal Cost Savings	6.28%	Societal cost savings from the project's estimated impact on all crashes, based on the work that is being done and historical crashes. Sum of the total number of crashes prevented in "Plan Horizon" window (default 10-yr) by severity, multiplied by the average societal cost of crash's severity. Units: Dollars
Preservation		
Bridge Condition	5.21%	Total square feet of bridge deck area that is estimated to become structurally deficient (<= 4 condition rating) by the end of the "Plan Horizon" window (Default 10-yr), but will be better than structurally deficient (> 4 condition rating) within the same time frame if the project is completed. Units: Sq. ft.
	5.21%	Total square feet of bridge deck area that is estimated to remain sufficient (>= 7 condition rating) by the end of the "Plan Horizon" window (Default 10-yr), but is being further prevented from falling below that threshold within the same time frame if the project is completed. Units: Sq. ft.
Pavement Condition	2.61%	Total lane miles (lanes * miles) of pavement that is estimated to be in a "poor" state (< 2 Ride score) by the end of the "Plan Horizon" window (Default 10-yr), but will be better than poor (>= 2 Ride score) within the same time frame if the project is completed. Units: Lane-Miles
	2.61%	Total lane miles (lanes * miles) of pavement that is estimated to remain "good" (>= 3 Ride score) by the end of the "Plan Horizon" window (Default 10-yr), but is being further prevented from falling below that threshold within the same time frame if the project is completed. Units: Lane-Miles
Congestion Reduction	19.20%	
	4.80%	Average daily congestion savings over a 20-yr period following project completion for the non-truck percentage of traffic, based on the work that is being done. This is calculated based on volume to capacity ratios, versus volume to adjusted capacity ratios. This is an estimate of daily hours of travel time savings for autos. Over a 20-yr period based for specified improvements. Units: Hours
Benefit Congestion Index - Auto	4.80%	Average daily congestion savings over a 20-yr period following project completion for the truck percentage of traffic, based on the work that is being done. This is calculated based on volume to capacity ratios, versus volume to adjusted capacity ratios. This is an estimate of daily hours of travel time savings for trucks. Over a 20-yr period based for specified improvements. Units: Hours
Normalized Congestion Index - Truck	4.80%	Average daily congestion savings over a 20-yr period following project completion for the non-truck percentage of traffic, based on the work that is being done. This is calculated based on volume to capacity ratios, versus volume to adjusted capacity ratios, then divided by segment length. This is an estimate of average daily hours of travel time savings for autos over a 20-yr period based for specified improvements based on length of project. Units: Hours/Miles
Normalized Congestion Index - Truck	4.80%	This is calculated based on volume to capacity ratios, versus volume to adjusted capacity ratios, then divided by segment length. This is an estimate of average daily hours of travel time savings for autos over a 20-yr period based on specified improvements based on length of project. Units: Hours/Miles
Enhance Connectivity		
Affects Access and Reliability	3.37%	Project positively affects the access and reliability of a community with limited or unreliable connectivity. This is a professional judgement call by the user in PM-DIS on a per-project basis.
Trunk System Route	3.37%	Project is marked in DCIS (P01) as on the trunk system.
Intermodal Connector	3.37%	Project roadway is marked "On the NHS, is an intermodal connector" in TxDOT highway network data. (SEC_NHS >= 2)
Lane Miles of New Connectivity	3.37%	Lane miles (lanes * miles) of new alignment roadway if the project is adding to the system. Units: Lane-Miles
Effect on Economic Development		
Economic Importance	2.45%	Project is marked in DCIS (P01) as NHS, with a further filter based on whether the highway number in DCIS (P01) begins with "IH".
	2.45%	Project's roadway is marked "I" is a National Truck Route" in TxDOT highway network data. (SEC_NTRK = 1)
System Usage	1.64%	Current/most recent annual average daily traffic along the project span. DCIS (P3) AADT takes priority, but TxDOT highway network data is used in its absence. Units: Vehicles
	1.64%	Current/most recent annual average daily truck traffic along the project span. DCIS (P3) AADT and Percent Trucks take priority but TxDOT highway network data is used in their absence.
Effects of the Environment	1.64%	Project is marked in DCIS (P3) as Energy Sector.
	5.21%	
Effects on the Environment	5.21%	Project meets one or more of these criteria: the project classification in DCIS (P01) is one of: "LSE", "HPR", or "TPW"; the project contains category 5 in DCIS (P02); the project meets the criteria outlined in the PM-DIS performance metrics documentation for Environmental.

Exhibit 3-2. Table of Corpus Christi MPO Project Performance Measures

Criteria	Weight	Description
System Reliability		
40.00%		
Efficiency and Economic Competitiveness (Congestion)	4.00%	Planning Time Index represents the total travel time that should be planned when sufficient buffer time is included to account for anticipated Congestion.
	4.00%	Travel Time Index is the total elapsed time (in seconds) spent driving a specified distance. The ratio of the travel time during the peak period to the time required to make the same trip at free-flow speeds. A value of 1.30, for example, indicates a 20-minute free-flow trip requires 26 minutes during the peak period (20 minutes x 1.30 = 26 minutes).
	4.00%	Truck Travel Time Index is the ratio of the peak-period truck travel time as compared to the free-flow truck travel time. This measure is computed for the AM peak period (6:00 a.m. to 9:00 a.m.) and PM peak period (4:00 p.m. to 7:00 p.m.) on weekdays.
Infrastructure Condition	10.00%	Is the project on the THFN?
	10.00%	Is the project on the NHS?
Injuries and Fatalities	8.00%	IRI and PCI ratings were utilized to determine the overall condition of the corridor within the project limits: Poor, Fair, or Good. IRI was used for state maintained corridors. PCI was used for city maintained corridors.
	3.33%	Five year average of all fatal crashes within the project limits.
	3.33%	Five year average of all serious injury crashes within the project limits.
	3.33%	Five year average of all non-motorized fatal and serious injury crashes within the project limits.
Crashes	10.01%	Five year average of all crashes within the project limits.
Hurricane Evacuation Route (HER)	10.01%	Is the project on or serving as a hurricane evacuation route (HER)?
Multi-modal Use and Opportunity		
Active Mobility	15.00%	
Bike Mobility Network	7.94%	Is the project on the Strategic Plan for Active Mobility's bike mobility network?
Transit System	7.06%	Is the project on the local transit system?
Stewardship		
Equity/Accessibility	15.00%	
	7.94%	Number of population groups that the project serves. Title VI: Disability, Ethnic Minority, Female, Limited English Proficiency, National Origin, Over Age 65, Under Age 18. Environmental Justice: Low Income, Minority
Direct access to major points of interest	7.06%	Destinations that the project has direct access to: Schools, Groceries, Medical Resources, Civic Institutions, Low Income Housing, Place of Worship, Recreation/Tourism, Retail