



Appendix G  
2045 MTP Vs 2050 MTP Comparison

**MOVING FORWARD TOGETHER**  
2050 METROPOLITAN TRANSPORTATION PLAN

Adopted on August 15, 2024

# Comparison of the CORE MPO 2045 MTP and 2050 MTP

## - Project Selection and Prioritization

The Coastal Region Metropolitan Planning Organization (CORE MPO) 2045 and 2050 Metropolitan Transportation Plans (MTPs) both utilize the Performance-Based Planning and Programming (PBPP) process. The goals and visions identified in the 2045 and 2050 Plans implement performance-based planning by supporting a multimodal transportation system that provides a safe, connected, and accessible network for all users.

There are consistencies between these two plans, but there are also differences. This report will compare the consistencies and differences between the two plans in terms of the project selection and project prioritization processes, including analyzing the differences in the project scoring of some example projects and describing how advancements in technology and data capture informed the processes. In particular, the comparison will center on the addition of the goals of equity and resiliency in the 2050 MTP and how that impacted the project selection and prioritization process.

## Project Selection

Constructed to remain in compliance with all federal and state requirements, both plans utilize project selection processes that integrate land use with transportation as well as a complete streets/context sensitive design approach, and are focused on mobility, sustainability, and quality of life for residents and visitors.

### *2045 MTP*

The 2045 MTP utilized the following process to select projects.

1. Mobility 2045 Working Group
2. Travel Demand Model analysis
3. Project prioritization process with performance measures supporting regional goals and the PBPP
4. Congestion Management Process
5. Incorporation of contributing studies and plans
6. Public Engagement

#### **The Mobility 2045 Working Group**

The 2045 MTP Working Group was a subcommittee of the CORE MPO Technical Coordinating Committee (TCC). The Working Group met several times to help make key recommendations to the TCC and the CORE MPO Board. The Working Group was instrumental in weighing technical information and making key decisions on financial assumptions, project input for model and analyzing model and prioritization results.

#### **Travel Demand Model**

The Travel Demand Model is a tool of analysis that simulates the transportation network. The network is described via levels of service for each portion of infrastructure. For example, roadways are given levels of service from LOS "A" which means free flow of traffic, to LOS "F" which means gridlock. As part of the Mobility 2045 analysis, the regional travel demand model was updated to reflect updated census, socioeconomic and transportation data.

The 2045 Travel Demand Model created various scenarios, which were analyzed and utilized in the decision-making process. Model results were provided to technical committee members for review and used as an aid in determining issues and strategies to resolve areas with poor level of service. The following are the model input results for six model runs, reviewed by the Working Group and the full TCC.

1. 2015 Base year
2. 2045 level of service with no new project implemented
3. 2045 level of service with existing and committed projects
4. 2045 level of service results with all current Transportation Improvement Projects completed
5. 2045 level of service results for non-financially constrained projects
6. 2045 level of service results for financially constrained projects

### **Congestion Management Process**

The Congestion Management Process is a tool that provides guidelines on how to ameliorate traffic congestion throughout the region. The objective of the CORE MPO Congestion Management Process (CMP) is the application of strategies to improve performance and reliability of the transportation system. The 2045 MTP analyzed strategies and recommendations from the 2017 CMP to inform the project selection process.

### **Incorporation of Contributing Studies and Plans**

Many studies and plans throughout the region focus on certain roadways and elements of the transportation infrastructure. These studies and plans are recommended to be conducted by larger plans, like the Metropolitan Transportation Plan, or the Congestion Management Process. These corridor studies, and other infrastructure studies delve deeper into the workings of a particular section of infrastructure to determine how to make it operate better. The results of these studies and plans create strategies and recommendations that then create projects to be adopted into regional plans, like the MTP, upon further analysis.

Four plans and studies contributed to the 2045 MTP - the CORE MPO's 2016 Freight Plan, CORE MPO's Non-Motorized Transportation Plan, I-16 at Little Neck Study, and I-95 at Airways Avenue Study.

### **Public Engagement**

The public is one of the many stakeholders in the regional planning process. Public engagement entails informing the public of the CORE MPO plans and studies, like the Metropolitan Transportation Plans (MTP), and garnering feedback to inform the planning process. Whether going out to community events, and soliciting feedback from area organizations like Neighborhood Associations, Chambers of Commerce, and so on, or consulting with CORE MPO's advisory committees such as the Citizens Advisory Committee, and other groups, public engagement ensures that the public is involved with the planning process and contribute to the results of that process.

The CORE MPO reached out to the public with several methods to engage, inform and collect feedback on the 2045 MTP.

- Interactive exercises to introduce population and economic information which fed into the development of the socioeconomic data
- Online Survey to define goals and objectives
- Open houses (1<sup>st</sup> round for development and refinement of goals and 2nd round for review of the draft plan)
- Public Speaking opportunities
- MPC Newsletter article
- Newspaper insert article
- Development of an online interactive map

## 2050 MTP

The 2050 MTP utilized all of the 2045 MTP methods to select projects, but added some steps and refined the project selection process.

1. **Reviewing Committees** - The CORE MPO Technical Coordinating Committee (TCC) replaced the 2045 MTP Working Group in reviewing technical information and making key decisions on financial assumptions, project input for models and analyzing model and prioritization results. The TCC held a series of regular and special called meetings for the 2045 MTP development.

Two more committees, the Non-Motorized Plan Steering Committee and the Vulnerability Assessment Committee, informed the project selection and prioritization process with specific emphasis areas.

2. **Travel Demand Model analysis** – the **Travel Demand Model** (TDM) was updated based on the latest socioeconomic data and the model outputs contributed to the project selection process. The following model outputs were reviewed. In particular, the outputs from the 3<sup>rd</sup> model run (existing + committed) and the 4<sup>th</sup> model run (existing + committed + STIP) were included in a matrix for project selection.

- 1) 2020 Base year
- 2) 2050 level of service with no new project implemented
- 3) 2050 level of service with existing and committed projects
- 4) 2050 level of service results with all current Transportation Improvement Projects
- 5) 2050 level of service results for non-financially constrained projects

3. **Project prioritization process with performance measures supporting regional goals and the PBPP** – the 2050 MTP incorporated additional considerations (see the next section).
4. **Congestion Management Process** – The 2050 MTP analyzed strategies and recommendations from the updated 2024 CMP to inform the project selection process.
5. **Incorporation of contributing studies and plans** – More regional and sub-area plans and studies covering all modes of transportation contributed to the 2050 MTP – CORE MPO’s 2023 Regional Freight Transportation Plan, 2024 Congestion Management Process, Non-Motorized Transportation Plan and updated project list, Urban Flooding Model Study, 2045 MTP and Vision Plan, and the FY 2024 - 2027 TIP; the GDOT Coastal Empire Study; North Bryan Transportation Study; Belfast Keller Road Transportation Assessment; Chatham County 2023 TSPLOST; Effingham County Transportation Master Plan; SR 307 Corridor Study; SR 21 Access Management Study; US 80 Corridor Study; President Street Railroad Crossing Elimination Study; as well as CAT Master Transit Plan and Transit Development Plan.

Unlike the 2045 MTP where contributing plans and studies confirmed identified needs, the 2050 MTP utilized a matrix to assist project selection. Projects recommended from multiple plans and studies have higher probabilities of being selected and for the next step (prioritization process). This matrix approach creates a direct link between contributing plans and the MTP project selection and prioritization process.

## 6. Public Engagement

- The 2045 MTP included two rounds of public involvement (1<sup>st</sup> round for developing goals and 2<sup>nd</sup> round for reviewing the draft plan). The 2050 MTP had three rounds of public involvement (1<sup>st</sup> round for goals and objectives development and launching of the survey and map survey; 2<sup>nd</sup> round to provide plan development status and collect further input; and 3<sup>rd</sup> round to review and refine the draft plan). More than 100 public engagement activities were carried out.
- All of the techniques used for the 2045 MTP were utilized and more have been created for the 2050 MTP. Some examples of the additional outreach methods are listed below.

- A map survey was created for the public to pinpoint problem areas and/or make recommendations.
  - The 2050 MTP survey was made available in four different languages – English and Spanish (same as 2045 MTP), and Chinese and Vietnamese (new to 2050 MTP).
  - A dedicated website and two social media platforms (Facebook and Instagram) were created for the 2050 MTP to inform the public and collect input (2045 MTP utilized social media from members agencies to help spread the word).
  - Interviews with the local newspaper and local TV stations were conducted.
  - Individual meetings with various jurisdictions (Pooler, Richmond Hill, etc.) were conducted to collect input on project needs in these areas.
  - In addition to attending various neighborhood meetings, the CORE MPO staff attended various community events (Farmer’s Market at Forsyth Park, October festivals, Earth Day, etc.) to reach out to more people and educate the public on the MPO planning process and the 2050 MTP, and to collect input on transportation needs.
  - Virtual meetings and virtual/in person hybrid meetings were conducted during both work hours and after-work hours. This outreach reduced some barriers for members of the public who don’t have transportation accommodation or cannot attend meetings during work hours. Another benefit is that virtual meetings are recorded which provides better documentation and wider public outreach.
- The survey results provided input not only for refinement of goals and objectives, but also for project selection. For example, one of the top survey results is to have more bike/ped accommodations. Thus, CORE MPO allocated more revenues for bike/ped improvement projects (more than the regional mode share).

### *Consistencies for Project Selection between 2045 MTP and 2050 MTP*

Both plans carried forward pipeline projects from previous plans - the 2045 MTP Cost Band One included the projects from the 2040 MTP that have not been implemented; and the 2050 MTP Cost Band One incorporated non-implemented 2045 MTP pipeline projects. This is because these projects are still needed to address deficiencies within the current transportation network.

For both plans, the CORE MPO staff conducted project status research and worked with project sponsors to confirm the implementation status. As most of the pipeline projects were already programmed into the Transportation Improvement Program (TIP) for some phase, the staff also relied on the TIPs to confirm project status and derive cost estimates – FY 2018 – 2021 TIP for 2045 MTP and FY 2024 – 2027 TIP for 2050 MTP.

Both plans include a project prioritization process for final project selection.

Both plans consider geographic equity. For example, even though some projects in the Richmond Hill area rank low in the project prioritization process, they are included in the plans since this is a major growing area which will have significant impacts on the transportation system.

Both plans consider local support, consistency with previous plans and alternative funding during project selection and prioritization.

Both plans include projects that receive grant awards.

Both plans include set aside highway revenues for projects in the categories of Maintenance, Operational Improvements, Transit Improvements, and Bicycle/Pedestrian Improvements.

Both plans separate highway and transit sections for project selection, prioritization and the development of the financially constrained plans.

## *Differences for Project Selection between 2045 MTP and 2050 MTP*

### Long-Term Project Selection - Sources

**2045 MTP** - Due to the Year of Expenditure (YOE) requirements, the previous MTPs including the 2045 MTP were focusing on implementing projects that were already included in the previous plans. Not many new projects could be added.

**2050 MTP** - The 2050 MTP is the first plan in recent history that allows more new projects to be added. This is because some big projects such as I-16 Widening, I-16 @ I-95 Interchange Reconstruction, Brampton Road Connector, Ogeechee Road Widening, etc. are being implemented, thus more revenues are available for other projects. The sources for the new projects are much larger, not only because more plans and studies were conducted in the past five year, but also because the CORE MPO Metropolitan Planning Area boundary has been expanded to more areas in the neighboring Effingham and Bryan Counties.

### Long-Term Project Selection - Methods

**2045 MTP** - For the 2045 MTP, the Cost Band Two and Cost Band Three projects in the 2040 MTP were automatically carried forward to the new plan. A limited number of new projects were selected from the recently completed studies (I-16 at Little Neck Interchange Study and I-95 at Airways Avenue Interchange Study), but no selection method was defined.

**2050 MTP** - For the 2050 MTP, the Cost Band Two and Cost Band Three projects in the 2045 MTP were placed in a matrix with newly identified priority projects from the contributing plans and studies for further analysis. These projects in the matrix were evaluated based on how often they were included in various plans and studies across the CORE MPO MPA. The projects most frequently cited among area plans/studies were placed on the highest tier for inclusion. This matrix approach creates a direct link between the project selection for the 2050 MTP and the contributing plans and studies. For example, the 2017 CMP and 2045 TDM confirmed the needs for the projects included in the 2045 MTP, while the 2024 CMP and 2050 TDM are two defined categories for the 2050 MTP project selection in the matrix.

The selected projects from the matrix went through further analysis for prioritization which has different criteria than the 2045 MTP (see the next Section).

In addition, the project concepts and cost estimates were re-evaluated and the validity for project selection was re-examined. Adjustments have been made. Here are some examples.

- President Street Improvements - the needs for improvements at President Street/Truman Parkway were identified in both Plans. However, the projects included in the plans are different.
  - In the 2045 MTP, the project in the area was based on a previous GDOT project - President Street/Islands Expressway/CSX Railroad Overpass (PI# 522860). The focus was mostly ramp reconstruction.
  - In the 2050 MTP, the project is based on the recommendation from Chatham County's President Street Railroad Crossing Elimination Study. The concept included not only ramp improvements and grade separation, but also improvements to President Street from E. Broad Street to Dulany Avenue, including bicycle and sidewalk accommodations.
- I-95 @ Airways Avenue - the needs for improvements were identified in both Plans. However, the projects included in the plans are different (both based on recommendations from the I-95 at Airways Avenue Interchange Study).
  - In the 2045 MTP, the project was based on the concept for a Diverging Diamond Interchange (DDI).

- In the 2050 MTP, the project is based on the concept for a flyover at the interchange for the following reasons: (1) the scoping phase is ongoing and the concept for the preferred alternative is yet to be determined; and (2) the local project sponsor (the Savannah Airport Commission) requested the flyover concept for the 2050 MTP.
- Port Royal Road Widening - the needs for improvements were identified in both Plans. However, approaches to address them are different.
  - In the 2045 MTP, the project is included based on input from Richmond Hill.
  - In the 2050 MTP, the project is not included. This is because the MTP's revenue projections rely mostly on federal sources. Port Royal Road is a Local Street on the federally approved Functional Classification (FC) system, thus it is not eligible for federal funding for widening. The CORE MPO staff is working with the City of Richmond Hill and Bryan County to send a request to GDOT to up-classify the roadway to make it eligible for federal funding. After the FC update and when revenues become available, this project can be amended into the 2050 MTP. This process involved more education to the CORE MPO members on the MPO's planning process.

## Project Prioritization

The final selection of projects for both 2045 MTP and 2050 MTP is the result of project prioritization and financial balancing.

The project prioritization process was similar in both the 2045 MTP and the 2050 MTP. Both Plans utilized a process that highlights the performance-based planning concepts to meet identified goals and planning factors. The process also followed the Federal Highway Administration's guidance using the "SMART" principle which focused on using existing data, but the 2050 MTP benefitted from advancements in technology and new types of data and processes.

**The major difference between the 2045 MTP and 2050 MTP prioritization is the Inclusion of Equity and Resiliency.**

### *2045 MTP*

The 2045 MTP is similar to the 2050 MTP in that a screening system is utilized to prioritize projects. The 2045 MTP incorporated a two-tiered system consisting of a **needs** tier and a **sustainability** tier. The tiers expanded upon the goals of the 2045 MTP, which were based on the CORE MPO guiding vision. The tiers utilized metrics which were labeled 'factors' and identified data sources.

**The Needs Tier:**

**Screen 1:**

| Goal                                     | Factor  | Data Source   |
|--|---|---|
| System Performance                       | <ul style="list-style-type: none"> <li>Level of service</li> <li>Truck Traffic</li> <li>Freight connections to strategic infrastructure</li> </ul>                                  | <ul style="list-style-type: none"> <li>Travel Demand Model</li> <li>GIS</li> </ul>  |
| Safety and Security                      | <ul style="list-style-type: none"> <li>Crash rate</li> <li>Designated evacuation route</li> </ul>   | <ul style="list-style-type: none"> <li>Georgia Department of Transportation</li> <li>Chatham Emergency Management Agency</li> </ul>         |
| Accessibility, Mobility and Connectivity | <ul style="list-style-type: none"> <li>Connecting population and employment</li> <li>Freight last mile</li> <li>Transit ridership</li> <li>Non-motorized Plan priorities</li> </ul> | <ul style="list-style-type: none"> <li>Travel Demand Model</li> <li>Freight Plan</li> <li>CAT</li> <li>Non-motorized Plan</li> </ul>        |
| State of Good Repair                     | <ul style="list-style-type: none"> <li>Bridge rating</li> <li>Bridge Conditions</li> <li>Pavement Conditions</li> <li>Benefit/Cost</li> </ul>                                       | <ul style="list-style-type: none"> <li>Georgia Department of Transportation</li> <li>Cost Estimates</li> <li>Travel Demand Model</li> </ul> |

Source: CORE MPO 2045 MTP

**The Sustainability Tier:**

**Screen 2:**

The second screen incorporates those goals more focused on a sustainable mobility system. The table below details the goals, prioritization factors and data sources encompassed in the Sustainability Screen.

| Goal                            | Factor  | Data Source   |
|---------------------------------|---|---|
| Environment and Quality of Life | <ul style="list-style-type: none"> <li>Impacts to environmental, cultural and social resources</li> </ul>   | <ul style="list-style-type: none"> <li>GIS</li> </ul>   |
| Intergovernmental Coordination  | <ul style="list-style-type: none"> <li>Project Status</li> <li>Local Priority</li> <li>Consistency with other local, regional and state plans</li> <li>Financial feasibility</li> </ul> | <ul style="list-style-type: none"> <li>Local Governments</li> <li>Georgia Department of Transportation</li> <li>Financial analysis</li> </ul> |

Source: CORE MPO 2045 MTP

**2050 MTP**

The 2050 MTP utilized a three-tiered approach to evaluate transportation needs, resiliency and transportation equity.

- For the Needs and Equity screening, the goals aligned with the goals of the 2050 MTP are paired with factors, which are internal metrics. The metrics rely on various data sources and tools to assess the efficacy of the goals.
- Rather than a third screening for sustainability, a new tool, the Federal Highway Administration (FHWA) vulnerability framework, was incorporated into the analysis for resiliency.

**Screen 1 – Needs (PBPP)**

**Needs Project Prioritization Screening**

| Goal                                     | Factor  | Data Source   |
|--|---|---|
| System Performance (PBPP PM3)            | <ul style="list-style-type: none"> <li>Level of service</li> <li>Truck Traffic (Freight Significance)</li> </ul>  | <ul style="list-style-type: none"> <li>Travel Demand Model</li> <li>GIS</li> <li>Freight Plan</li> </ul>  |
| Safety and Security (PBPP PM1)           | <ul style="list-style-type: none"> <li>Freight Crashes</li> <li>Crash Density (facilities with most crashes)</li> </ul>   | <ul style="list-style-type: none"> <li>Georgia Department of Transportation</li> <li>Chatham Emergency Management Agency</li> <li>2024 CMP</li> </ul>   |
| Accessibility, Mobility and Connectivity | <ul style="list-style-type: none"> <li>Connecting population and employment</li> <li>Freight last mile (freight connection to infrastructure)</li> <li>Connecting Activity Centers</li> </ul> | <ul style="list-style-type: none"> <li>Travel Demand Model</li> <li>Freight Plan</li> <li>2024 CMP</li> </ul>   |
| State of Good Repair (PBPP PM2)          | <ul style="list-style-type: none"> <li>Bridge rating</li> <li>Bridge Conditions</li> <li>Pavement Conditions</li> </ul>   | <ul style="list-style-type: none"> <li>Georgia Department of Transportation</li> <li>Cost Estimates</li> <li>Travel Demand Model</li> <li>Freight Plan</li> <li>Local Maintenance and Improvement Grant (LMIG)</li> </ul> |

Source: CORE MPO

**Screen 2 – Resiliency (Federal Planning Emphasis Area)**

**Vulnerability Assessment: Exposure Scoring Descriptions**

| Score | Definition   |
|-------|--|
| NE    | Not exposed to climate hazard (essentially zero).                  |
| 1     | Low likelihood of experiencing stressor (relative to other assets) |
| 2     | Moderate likelihood of experiencing stressor                       |
| 3     | High likelihood of experiencing stressor                           |
| 4     | Very high likelihood of experiencing stressor                      |

**Vulnerability Assessment: Sensitivity Scoring Descriptions**

| Score | Definition   |
|-------|--|
| NE    | Exposure would not cause any damage or disruption                      |
| 1     | Exposure would cause minimal damage or disruption                      |
| 2     | Exposure would cause moderate disruption (hours) and/or minor damage   |
| 3     | Exposure would cause major disruption (days) and/or moderate damage    |
| 4     | Exposure would cause severe damage and associated long-term disruption |

## Vulnerability Assessment: Adaptive Capacity Scoring Descriptions

| Score | Definition  |
|-------|---|
| 1     | Damage or disruption to the asset would have a minimal effect on activity in the CORE MPO region                      |
| 2     | Damage or disruption to the asset would have a moderate effect on activity in the CORE MPO region                     |
| 3     | Damage or disruption to the asset would have a severe effect on activity in a discrete portion of the CORE MPO region |
| 4     | Damage or disruption to the asset would have a severe effect on activity in the CORE MPO region                       |

### Screen 3 – Equity (Federal Planning Emphasis Area)

#### Equity Project Prioritization Screening

| Goal                | Factor  | Data Source   |
|---------------------|---|---|
| Quality of Life     | <ul style="list-style-type: none"> <li>Connects underserved populations to destination attractions (grocery stores, medical facilities, parks, schools, banks, etc.)</li> <li>Transportation system use costs</li> <li>Inputs/investments vs. outcomes</li> </ul> | <ul style="list-style-type: none"> <li>GIS</li> <li>Travel Demand Model</li> <li>Local Governments</li> <li>CAT</li> <li>Human services transportation</li> </ul> |
| Safety and security | <ul style="list-style-type: none"> <li>Concentration of crashes in certain geographic areas (e.g. lane widening can create more pedestrian crashes without proper pedestrian facilities)</li> <li>Facility placement</li> </ul>                                   | <ul style="list-style-type: none"> <li>Georgia Department of Transportation</li> <li>GIS</li> </ul>   |
| Connectivity        | <ul style="list-style-type: none"> <li>Broad modal shares across geographic areas</li> <li>Proportion of traffic congestion/delays across geographic areas</li> <li>Various Accessibility Measures</li> <li>Journey to work time</li> </ul>                       | <ul style="list-style-type: none"> <li>GIS</li> <li>2024 CMP</li> <li>CAT</li> </ul>  |

Source: CORE MPO

### Consistencies for Project Prioritization between 2045 MTP and 2050 MTP

Both Plans used a tiered approach for project prioritization.

Both Plans used some common goals and factors such as roadway level of service, crash rates, truck traffic, etc.

Both Plans used available data. For example, the LOS data came from the GDOT Travel Demand Models (TDM) - 2045 TDM for 2045 MTP and 2050 TDM outputs for the 3<sup>rd</sup> and 4<sup>th</sup> networks assisted the 2050 MTP project prioritization.

Both Plans considered a multimodal approach (highway, freight, transit, non-motorized).

## *Differences for Project Prioritization between 2045 MTP and 2050 MTP*

**Equity:** The 2050 MTP added a new tier for project screening – transportation equity, which was not a part of the 2045 MTP. This is in response to the new federal emphasis on equity. The Equity screening benefitted from new data like the traffic congestion and delays gathered from the 2024 Congestion Management Process.

**Sustainability/Resiliency:** The 2050 MTP also contained enhanced resiliency considerations to make the screening more comprehensive. The addition of resiliency, by utilizing the FHWA vulnerability tool, expanded the category of sustainability from the 2045 MTP into the 2050 MTP. The inclusion of resiliency measured the climate change vulnerability of the transportation infrastructure as a function of the transportation system’s exposure to climate effects, sensitivity to climate effects, and adaptive capacity.

- For the 2045 MTP Sustainability screening, the qualitative factor “Impacts to Environmental, Cultural and Social resources” was used.
- For the 2050 MTP Resiliency assessment, the CORE MPO utilized the FHWA vulnerability assessment tool (more quantitative) to assist the prioritization process. According to the FHWA, vulnerability is “the degree to which a system is susceptible to, or unable to cope with adverse effects of climate change or extreme weather events. In the transportation context, climate change vulnerability is a function of a transportation system’s exposure to climate effects, sensitivity to climate effects, and adaptive capacity.” The three pillars of exposure, sensitivity, and adaptive capacity are defined as follows.
  - Exposure refers to whether the asset or system is located in an area: experiencing direct effects of climate variables.
  - Sensitivity refers to how the asset or system fares when exposed to a climate variable.
  - Adaptive capacity refers to the system’s ability to adjust to or cope with existing climate variability or future climate impacts.

The process utilized the FHWA Vulnerability Assessment and Adaptation Framework 3rd Edition, and required six steps carried out by CORE MPO staff and other professionals. The six steps of the FHWA Framework are outlined below.

1. Articulation objectives and defining study scope
2. Obtaining asset data for the vulnerability assessment
3. Obtaining climate data for the vulnerability assessment
4. Assessing vulnerability
5. Identifying, analyzing and prioritizing adaptation options
6. Incorporating assessment results in decision-making

The assessment was conducted from December 2023 to May 2024. The results of the study determined which assets were most vulnerable to events like sea level rise, storm surge, and wind, and created a scoring mechanism to prioritize assets for mitigation measures.

## **Project Scoring**

Project scoring entailed assigning numerical values, or weights, to an array of metrics that evaluate the progress of specified goals. The metrics and programs employed to attain those goals varied. The scoring mechanisms for both the 2045 MTP and 2050 MTP are similar, yet the 2050 MTP incorporates more data and scoring categories.

## The Scoring Process for the 2045 MTP

The 2045 MTP did not have an equity category, therefore, there are fewer scoring fields for the 2045 MTP and lower scores since there are less weights. The 2045 MTP has a minimum value of 0, while the maximum value is 5. This made the maximum total value score of 65 for any project in the 2045 MTP.

## The Scoring Process for the 2050 MTP

The 2050 MTP benefitted from advancements in data collection and availability, as well as taking advantage of the FHWA Vulnerability Assessment Tool. The scoring field for the 2050 MTP contained more categories and variability, including the new category of Equity. The scoring weights had high max and min values given the detail involved in each category. The 2050 MTP had a minimum value of 1, while the maximum value was 10. This made the maximum total value score of 160 for any project in the 2050 MTP.

## 2045 MTP vs 2050 MTP

The scoring fields for both the 2045 MTP and 2050 MTP are included in the final page of this document.

The 2045 MTP had no equity category and had different metrics for the sustainability category. The Sustainability Category encompasses the environment and quality of life, having fields for *Adverse Environmental Impacts*, *Adverse Cultural, Historic, Community Resources*, and *Adverse Environmental Justice Impacts*.

The 2050 MTP had a new equity category and had different metrics for the Sustainability/Resiliency category.

- The Equity Screen, with goals centered on Quality of Life, Title VI, and Environmental Justice, had metrics that consisted of *Transit Connection and Accessibility*, *Bike/Ped Connection and Accessibility*, *Title VI/Environmental Justice Consideration*, *High Bike Crash*, and *High Pedestrian Crash Rate*.
- The Environment/Resiliency Screen focused on the environment and had metrics which consisted of *Vulnerability Scores for Temperature Changes*, *Precipitation Changes*, *Sea Level Rise*, *Storm Surge*, and *Wind*. The *Designated Evacuation Route* and *Road Redundancy* are included in the composite scores.

In addition to the alignment between goals and project prioritization criteria like the 2045 MTP, the 2050 MTP made direct connections between the 2050 MTP screening criteria and the Performance Based Planning and Programming (PBPP – PM1, PM2 and PM 3) as well as the federal emphasis areas (resilience, equity, etc.) in the prioritization process.

## Project Scoring Example – President Street

To demonstrate the differences in scoring between the two MTPs, a sample project is scored in this Section. The scoring will follow the same process as the rest of the projects in the 2045 MTP and the 2050 MTP. The difference in scores will be explained.

### Concept

**2045 MTP** - The President Street project in the 2045 MTP focused on ramp construction at Truman Parkway without any bicycle and pedestrian accommodation.

**2050 MTP** - The President Street project in the 2050 MTP consists of a “grade separate [of] East President Street over the Savannah & Old Fort Railroad and canal beginning at East Boundary Street and returning to existing grade prior to the Harry Truman Parkway bridge overpass, eliminating the at-grade railroad crossing and the adjacent signalized on-ramp intersection. The existing Truman Pkwy on-ramp would be reconstructed parallel to and outside of the existing off-ramp, and the two ramps would be combined into one three-way Continuous Green-T (CGT) intersection. The CGT would allow continuous free-flow eastbound travel on East President Street and provide signal control for westbound East President Street and the Truman Pkwy off-ramp. The project would be open to

traffic during construction. The proposed President Street bridge would be approximately 1,100 feet long and 112 feet wide. The reconstructed on-ramp would have the same typical section and would tie into the existing bridge overpass abutment. The project length is expected to be 1 mile.” This project also includes a pedestrian sidewalk, connecting to existing sidewalk on either side of the project.

### *Scoring*

The detailed scores for this project from 2045 MTP and 2050 MTP are shown on the last page.

**2045 MTP** - The scoring for President Street, within the parameters of the 2045 MTP, yield a lower Total Project Score than the 2050 MTP, at 40.00, receiving high scores of ‘5’, for all of the categories it received a score in. Given the differences in scores, President Street has a higher priority in the 2050 MTP than it does in the 2045 MTP, because the scoring system of the 2050 MTP is more robust and inclusive.

**2050 MTP** - The scoring for President Street, within the parameters of the 2050 MTP, yield a Total Project Score of 110.5. This score accounts for high level of service, low truck traffic, medium crash density as well medium truck crashes, bad pavement, good bridge rating, medium connectivity to activity centers and high connectivity to freight generating infrastructure, as well as high resiliency scores, and medium and high equity scores. This total score makes the President Street project a high priority project.

### *Key Differences*

The main difference between the project scores between the 2045 MTP and the 2050 MTP are the increase in categories given the plethora of data available and inclusion of the equity field, and the FHWA vulnerability tool. While the range in scores vary greater for the 2050 MTP, given the increase in minimum and maximum weight values, normalizing the scores and comparing them to each other for each project, reveals that the scoring mechanisms are more similar than different. For example, normalizing the President Street scores for the 2045 MTP yields: total project score/maximum score,  $40/65 = 0.615$ , and for the 2050 MTP yields: total project score/maximum score,  $110.5/160 = 0.69$ . As stated earlier, the scores are slightly higher in the 2050 MTP but remain consistent for comparing across MTPs.

2045 MTP Prioritization Criteria

| Yes = 5; No = 0<br>NEED SCREEN |                    |   |                             |   |   |  |   |                        |   | Yes = 0; No = 5<br>SUSTAINABILITY SCREEN |   |                                       | TOTAL PROJECT SCORE | Yes/No<br>Additional Considerations     |                                       |
|--------------------------------|--------------------|---|-----------------------------|---|---|--|---|------------------------|---|--|---|---------------------------------------|---------------------|---|---------------------------------------|
| System Performance             |                    | Safety and Security                     |                             | Accessibility, Mobility, Connectivity           |   |  |   |                        | State of Good Repair                                  | Environment/Quality of Life              |   |                                       |                     | In Total Mobility 2040 Constrained Plan | Alternate Funding Source in 2040 Plan |
| Facility LOS E or F            | High Truck Volumes | Facility Crash Rate Above State Average | Designated Evacuation Route | Connects Population Centers to Activity Centers | Does the project connect major freight generators with infrastructure | Is the project identified in the Freight Plan? | Is the project identified in the CAT TDP? | Non-Motorized Priority | Bridge Sufficiency of less than 50 or poor conditions | Adverse Environmental Impacts            | Adverse Cultural, Historic, Community Resources | Adverse Environmental Justice Impacts |                     |   |                                       |

Source: CORE MPO 2045 MTP

2050 MTP Prioritization Criteria

| 2050 MTP Prioritization       |   |                                |                    |                                 |   |   |   |  |  |                                     |                                  |                           |                                      |                                       |   |   |                 |                            |  | TOTAL PROJECT SCORE | Yes/No<br>Additional considerations |                          |                                       |                       |                          |
|-------------------------------|---|--------------------------------|--------------------|---------------------------------|---|---|---|--|--|-------------------------------------|----------------------------------|---------------------------|--------------------------------------|---------------------------------------|---|---|-----------------|----------------------------|--|---------------------|-------------------------------------|--------------------------|---------------------------------------|-----------------------|--------------------------|
| NEED SCREEN                   |   |                                |                    |                                 |   |   | SUSTAINABILITY/RESILIENCY SCREEN                                      |  |  |                                     |                                  | EQUITY SCREEN             |                                      |                                       |   |   |                 |                            |  |                     | Local Priority                      | In 2045 Constrained Plan | Alternate Funding Source in 2040 Plan | Financial Feasibility | Project Status (PE, ROW) |
| System Performance (PBPP PM3) |   | Safety and Security (PBPP PM1) |                    | State of Good Repair (PBPP PM2) |   | Accessibility, Mobility, Connectivity           |   | Environment/Resiliency                   |  |                                     |                                  |                           | Quality of Life/Title VI/EJ          |                                       |   |   |                 |                            |  |                     |                                     |                          |                                       |                       |                          |
| Facility LOS E or F           | High Truck Volumes (Freight Significance) | Freight Crashes                | High Crash Density | Bad Pavement Condition          | Bridge Sufficiency of less than 50 or poor conditions | Connects Population Centers to Activity Centers | Does the project connect major freight generators with infrastructure | Vulnerability Score: Temperature Changes | Vulnerability Score: Precipitation Changes | Vulnerability Score: Sea Level Rise | Vulnerability Score: Storm Surge | Vulnerability Score: Wind | Transit Connection and Accessibility | Bike/Ped Connection and Accessibility | Connection and Accessibility to Critical Features | Title VI/ Environmental Justice Consideration | Safety Features | High Pedestrian Crash Rate |  |                     |                                     |                          |                                       |                       |                          |

Source: CORE MPO 2050 MTP

2045 MTP Prioritization Sample – President Street Project

| Project Name   | From                              | To | Project Cost (\$2014 unless in Freight plan \$2016, I-16 Widen, I-16 Little Neck, Truman) | Yes = 5; No = 0<br>NEED SCREEN |                    |   |                             |   |   |  |   |                        |   | Yes = 0; No = 5<br>SUSTAINABILITY SCREEN |   |                                       | TOTAL PROJECT SCORE | Yes/No<br>Additional Considerations     |                                       |
|--|-----------------------------------|----|---|--------------------------------|--------------------|---|-----------------------------|---|---|--|---|------------------------|---|--|---|---------------------------------------|---------------------|---|---------------------------------------|
|  |                                   |    |   | System Performance             |                    | Safety and Security                     |                             | Accessibility, Mobility, Connectivity           |   |  |   |                        | State of Good Repair                                  | Environment/Quality of Life              |   |                                       |                     | In Total Mobility 2040 Constrained Plan | Alternate Funding Source in 2040 Plan |
|  |                                   |    |   | Facility LOS E or F            | High Truck Volumes | Facility Crash Rate Above State Average | Designated Evacuation Route | Connects Population Centers to Activity Centers | Does the project connect major freight generators with infrastructure | Is the project identified in the Freight Plan? | Is the project identified in the CAT TDP? | Non-Motorized Priority | Bridge Sufficiency of less than 50 or poor conditions | Adverse Environmental Impacts            | Adverse Cultural, Historic, Community Resources | Adverse Environmental Justice Impacts |                     |   |                                       |
| I-516 / I-16 Interchange                                 | --                                | -- | \$116,477,947   | 5                              | 5                  | 0                                       | 5                           | 5   | 5   | 5  | 0   | 0                      | 0   | 5  | 5   | 5                                     | 45.00               | ✓                                       |                                       |
| I-95 at SR 21 / Augusta Interchange Reconstruction       | --                                | -- | \$114,242,793   | 5                              | 5                  | 0                                       | 5                           | 5   | 5   | 5  | 0   | 0                      | 0   | 5  | 5   | 5                                     | 45.00               | ✓                                       |                                       |
| President Street / Truman Parkway Interchange Bridge and | President Street / Truman Parkway |    | \$108,883,054   | 5                              | 0                  | 0                                       | 5                           | 5   | 5   | 5  | 0   | 0                      | 0   | 5  | 5   | 5                                     | 40.00               | ✓                                       |                                       |

2050 MTP Prioritization Sample – President Street Project (Different Concept)

| 2050 MTP Prioritization       |                                   |                                |               |                                 |   |                                       |                                  |                        |   |   |   |  |  |                                     |                                  |                           |                                      |                                       |   | TOTAL PROJECT SCORE                           | Yes/No<br>Additional considerations |                            |                                       |                       |                          |  |  |  |
|-------------------------------|-----------------------------------|--------------------------------|---------------|---------------------------------|---|---------------------------------------|----------------------------------|------------------------|---|---|---|--|--|-------------------------------------|----------------------------------|---------------------------|--------------------------------------|---------------------------------------|---|---|-------------------------------------|----------------------------|---------------------------------------|-----------------------|--------------------------|--|--|--|
| NEED SCREEN                   |                                   |                                |               |                                 |   |                                       | SUSTAINABILITY/RESILIENCY SCREEN |                        |   |   |   | EQUITY SCREEN                            |  |                                     |                                  |                           |                                      |                                       |   |   | Local Priority                      | In 2045 Constrained Plan   | Alternate Funding Source in 2040 Plan | Financial Feasibility | Project Status (PE, ROW) |  |  |  |
| System Performance (PBPP PM3) |                                   | Safety and Security (PBPP PM1) |               | State of Good Repair (PBPP PM2) |   | Accessibility, Mobility, Connectivity |                                  | Environment/Resiliency |   |   |   |  | Quality of Life/Title VI/EJ                |                                     |                                  |                           |                                      |                                       |   |   |                                     |                            |                                       |                       |                          |  |  |  |
| PI #                          | Project Name                      | From                           | To            | Facility LOS E or F             | High Truck Volumes (Freight Significance) | Freight Crashes                       | High Crash Density               | Bad Pavement Condition | Bridge Sufficiency of less than 50 or poor conditions | Connects Population Centers to Activity Centers | Does the project connect major freight generators with infrastructure | Vulnerability Score: Temperature Changes | Vulnerability Score: Precipitation Changes | Vulnerability Score: Sea Level Rise | Vulnerability Score: Storm Surge | Vulnerability Score: Wind | Transit Connection and Accessibility | Bike/Ped Connection and Accessibility | Connection and Accessibility to Critical Features | Title VI/ Environmental Justice Consideration | Safety Features                     | High Pedestrian Crash Rate |                                       |                       |                          |  |  |  |
|                               | President Street Grade Separation | E Broad Street                 | Dulany Avenue | 1                               | 1   | 5                                     | 5                                | 10                     | 0   | 5   | 10  | 5  | 2.5  | 7.5                                 | 2.5                              | 5                         | 5                                    | 15                                    | 4   | 5   | 12                                  | 10                         | 110.50                                |                       | X                        |  |  |  |