



Coastal Region Metropolitan Planning Organization Project Prioritization Process

I. Introduction

The Coastal Region Metropolitan Planning Organization (CORE MPO) has developed a process for determining project priorities to be included in the Metropolitan Transportation Plan (MTP). With funding limitations for the Total Mobility Plan, the 2040 update of the MTP, no additional projects were incorporated into the Cost Feasible Plan; thus, the project prioritization process will be applied in future updates. Federal legislation under Moving Ahead for Progress in the 21st Century (MAP-21) requires that MPOs utilize a defined process for determining what projects are included in the long range plan, as well as developing performance measures to determine how well a plan is addressing the region’s transportation needs.

The CORE MPO recognized the need for the prioritization process to be developed within the framework of the eight planning factors presented in MAP-21. These planning factors include:

- 1) Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- 2) Increase the safety of the transportation system for motorized and non-motorized users;
- 3) Increase the security of the transportation system for motorized and non-motorized users;
- 4) Increase the accessibility and mobility of people and for freight;
- 5) Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- 6) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- 7) Promote efficient system management and operation; and
- 8) Emphasize the preservation of the existing transportation system

In addition, the CORE MPO also recognized the importance of developing a plan to meet the defined regional goals developed specifically for the CORE MPO, while addressing the required planning factors. These goals include:

1. Economic Activity	Support the economic vitality of the region, in concert with the community’s goals, especially by enabling local, regional and global competitiveness, productivity and efficiency.
2. Safety	Ensure and increase the safety of the transportation system for all users, including motorized vehicles, bicyclists and pedestrians.
3. Security	Ensure and increase the security of the transportation system for all users, including motorized vehicles, bicyclists and pedestrians.
4. Accessibility, Mobility and Connectivity	Ensure and increase the accessibility, mobility and connectivity options available to people and freight, and ensure the integration of modes, where appropriate.

5. Environment and Quality of Life	Protect, enhance and sustain the environment and quality of life, promote energy conservation and address climate change.
6. System Management and Maintenance	Assess the transportation system to determine what works well, what does not work well, and potential improvement options.
7. Intergovernmental Coordination	Ensure coordination in the transportation planning process between intra- and inter-regional partners, including both state and local agencies.

The prioritization process was developed within the framework provided by the defined goals and also followed the guidance provided by the Federal Highway Administration (FHWA). FHWA recommends utilizing the SMART principle in the development of the prioritization process, as well as the performance measures. The SMART principle focuses on utilizing measures that are **Specific, Measurable, Agreed upon, Realistic, and Time-Bound**. It was critical to identify a process that utilized existing data and did not place an unrealistic burden on staff when utilizing the process.

II. State of the Practice Review

With the identification of the goal-based process framework, the next step was to understand the state of the practice through a scan of other MPOs and their prioritization processes. This type of scan, or peer review, provides insights into the different prioritization approaches, as well as lessons learned. The MPOs included in the scan range in size and location and are shown in the table below.

MPO Peer Review: Project Prioritization Process
<ul style="list-style-type: none"> • Atlanta Regional Commission, Atlanta, Georgia • Capital Area Metropolitan Planning Organization, Austin, Texas • Denver Regional Council of Governments, Denver, Colorado • North Florida Transportation Planning Organization, Jacksonville, Florida • Rock Hill-Fort Mill Transportation Study, Rock Hill, South Carolina • Metroplan, Orlando, Florida • Capital Region Transportation Planning Agency, Tallahassee, Florida • Montgomery County Planning Department, Montgomery, Alabama • Greensboro Urban Area Metropolitan Planning Organization, Greensboro, North Carolina • Gastonia Urban Area Metropolitan Planning Organization, Gastonia, North Carolina • High Point Metropolitan Planning Organization, High Point, North Carolina • Wilmington Metropolitan Planning Organization, Wilmington, North Carolina • Capital Area Metropolitan Planning Organization, Raleigh, North Carolina • Madison, Athens, Clarke County Regional Transportation Study, Athens, Georgia • Columbus – Phenix City Metropolitan Planning Organization, Columbus, Georgia • Augusta Region Transportation Study, Augusta, Georgia/Aiken, South Carolina

The results of the peer review are described for each MPO included in the scan.

Atlanta Regional Commission, Atlanta, Georgia (ARC)



The ARC developed a weighted point-based system that focused on five categories. In addition, a benefit-cost ratio was applied on “top” of the categories. Other key decision points, both qualitative and quantitative, were identified for roadway expansion projects and include the following:

- Project must be included on the established strategic truck or thoroughfare networks
- Project is located in one of the unified growth policy map areas
- Project addresses an immediate safety need
- Project is a high priority
- Project status: the project is already underway

Category	Maximum Score	Weight
Mobility and/or Congestion	100	20%
Connectivity	100	20%
Safety	100	20%
Economic Growth	100	20%
Environmental/Community Impacts	100	20%
TOTAL	500	100%

Capital Area Metropolitan Planning Organization, Austin, Texas (CAMPO)

CAMPO developed a combination of a qualitative assessment and a point based system for five specific categories. Each of these categories had identified criteria, which are shown in the table below.

Category	Maximum Score	Weight
Current Congestion	20	Weighted Average of Vehicle to Capacity Ratio (Travel Demand Model)
Local Priority	20	Based on public input
System Preservation, Connectivity and Safety	20	Assessment
Future Congestion/Support of Growth	20	GIS assessment using a 1-mile buffer around projects
Environment, Land Use, and Environmental Justice	20	GIS assessment
TOTAL	100	

Denver Regional Council of Governments, Denver, Colorado (DRCOG)

DRCOG developed and utilized a point system for specific categories, basing the assigned points on a combination of a qualitative and quantitative assessment. Although points are not assigned a weight, the points are higher for those categories considered more of a priority.

Category	Points
Severity of Congestion	35
Cost per Person per Mile Traveled	15
Gap Closure	10
Arterial Roadway Spacing	5
Regional System Classification	4
Total Users	4
Serves Urban Forms	5
Safety Measure	6
Urban Growth Boundary/Area	2
Service Major Intermodal or High Security Facility	4
Multimodal Corridor	10
Total	100

North Florida Transportation Planning Organization, Jacksonville, Florida (NFTPO)

The NFTPO developed a point-based prioritization system that includes a combination of quantitative and qualitative assessments. The categories identified corresponded to their established planning goals and higher priority categories received higher points.

Category	Points
Mobility and/or Congestion	8
Connectivity	4
Safety	6
Economic Growth	3
Environmental/Community Impacts	4
Consistency with Existing Plans and Initiatives	5
Total	30

Rock Hill-Fort Mill Transportation Study, Rock Hill, South Carolina (RFATS)

RFATS developed a weighted system based on identified categories. These categories include a combination of quantitatively based assessments using available tools, as well as qualitative assessments.

Category	Points
Financial Viability and Maintenance Cost	10%
Public Safety	15%
Economic Development	10%
Traffic Volumes and Congestion	35%
Truck Traffic	10%
Pavement Quality Index	10%
Environmental Impacts	10%
Alternative Transportation Solutions	Not Applicable
Consistency with Local Land Use Plans	Not Applicable
Total	100

The category definitions and point determinations are described below:

Quantitative Criteria

- Financial Viability is based on estimated project cost and estimated 20-year maintenance cost in relation to the current vehicle miles of travel.
- Public Safety is based on accident data.
- Potential for Economic Development is based on an assessment of short-term, intermediate, and long-term development potential as a result of the proposed improvement.
- Traffic Volume and Congestion is based on current traffic volumes and the associated level-of-service condition.
- Truck Traffic is based on current volume and average daily truck traffic estimates.
- Pavement Quality Index is based on pavement condition assessments.
- Environmental Impact is based on an assessment of potential impacts to natural, social, and cultural resources.

Qualitative Criteria

- Alternative Transportation Solutions are considered independently of ranking process. Transit propensity is evaluated based on surrounding population and employment characteristics to support transit service as a potential alternative or in addition to a proposed improvement.
- Consistency with Local Land Use Plans is considered independently of ranking process. A determination of consistency will be made during the long-range plan development process.

Metroplan, Orlando, Florida

Metroplan has no prioritization process for long range plan projects; their process focuses only on those projects included in the Transportation Improvement Program (TIP). The MPO did utilize a quantitative, score based process, but discontinued that approach in 2000. Currently, projects are qualitatively assessed using level of service, functional classification and project status, with funded projects receiving the higher priority. A geographic distribution among the three MPO counties is also included

in the process. While no quantitative scoring process is used for roadway projects, the bicycle and pedestrian projects have a separate process that is based on quantitative scoring.

Capital Region Transportation Agency, Tallahassee, Florida (CRTPA)

The CRTPA uses a combination of quantitative and qualitative point based assessments in its project prioritization process. All projects, including bicycle and pedestrian, are prioritized using the process. The assessment categories were identified within the framework of the established goals and objectives.

Category	Points
Intermodal Connectivity	1
Service to Population/Employment Centers	1
Improve Bicycle/Pedestrian LOS	1
Incorporate Commuting Facilities and Improved LOS	1
Increase Connectivity Index	1
Connectivity to Schools	1
Increase Mobility Options for All Citizens	1
Increase Connectivity and Incorporate All Modes	1
Improve Multimodal Access to Activity Centers	1
Improve Transportation for Communities	1
Improve Freight Movement	1
Improve Hurricane Evacuation	1
Project Located within Identified Growth Center	1
Total	15

Montgomery County Planning Department, Montgomery, Alabama

The Montgomery MPO does not have a formally established prioritization process, although all capital projects contained in their Capital Improvement Program are ranked. From a transportation perspective, the highest priority projects are those supporting the established growth policies and provide added connectivity; address urban/community design elements, and have no adverse impacts on the environmental resources.

Greensboro Urban Area Metropolitan Planning Organization, Greensboro, North Carolina

The Greensboro MPO has a point based prioritization process that includes both quantitative and qualitative assessments. Prioritization categories have been established within the framework of the identified community goals. Several of these categories are focused on local priorities, as well as project status and funding availability. Categories with a higher priority receive a higher number of points.

Category	Points
Reduce Congestion	6
Safety	3
MPO Policy Priorities	2
Impacts on the Natural Environment	3
Project Status	6
Potential Funding Availability	3
Promotes Intermodal Connectivity	3
Local Share	1
Land Use Conformance	1
Multimodalism	1
Total	29

Gastonia Urban Area Metropolitan Planning Organization, Gastonia, North Carolina

The Gastonia MPO has established categories that include both qualitative and quantitative assessments. There are no prescribed points assigned to the categories and the process functions as more of a checklist than a point-driven process. The categories that are reviewed include:

1. Congestion (based on V/C Ratio)
2. Safety (based on Crash Rate)
3. Cost Efficiency
4. Cost per User
5. Air Quality
6. Consistency to Adopted Thoroughfare Plan
7. Effects on the Natural and Built Environment, and Historic Sites
8. Environmental Justice
9. Contributes to the Economic Development of the Area

High Point Metropolitan Planning Organization, High Point, North Carolina

The High Point MPO has a point-based process, with the identified categories of higher priority receiving the higher number of points. These categories are primarily qualitative assessments and incorporate local priority, public opinion, and project viability.

Category	Points
Consistency with Land Development Plans	10
Constructability	21
Opinion Climate	27
Purpose and Need	8
Supports Economic Vitality	8
Type of Environmental Document	24
Jurisdiction Rank	24
Total	122

Wilmington Metropolitan Planning Organization, Wilmington, North Carolina

The Wilmington MPO prioritization process classifies the projects into three types: congestion mitigation, roadway safety, and quality of life. Each of these projects are then ranked against each other within the project type. The categories identified are primarily qualitative in nature.

Category	Points
Efficiency	10
Safety	21
Multimodal Considerations	27
Appropriate	8
Integrated	8
Responsible	24
Total	998

Capital Area Metropolitan Planning Organization, Raleigh, North Carolina (CAMPO)

The Raleigh, North Carolina MPO, CAMPO, utilizes a project prioritization process that combines both a technical, quantitative assessment with a qualitative assessment and project status. There are no points associated with the process; the categories are used as a review tool and then the priorities are established based on the outcome of that review. The categories include:

1. Congestion (Delay, V/C Ratio and other MOEs)
2. Safety (Crash Rates)
3. Travel Time
4. Project Location
5. Cost/Benefit Analysis
6. Tier of Project

Madison, Athens, Clarke County Regional Transportation Study, Athens, Georgia (MACORTS)

MACORTS utilizes a process that is very similar to that of CAMPO (Raleigh, North Carolina). Categories for prioritization review have been established and each project is reviewed within each of the categories. The assessment is qualitative in nature and no points are assigned. The process is a review tool for the staff and stakeholders to establish the project priorities. The categories include:

1. Congestion
2. Safety
3. Travel Demand Model Results
4. Public Input
5. Technical Coordinating Committee Input
6. Consideration of federal planning factors

Columbus – Phenix City Metropolitan Planning Organization, Columbus, Georgia

Similar to MACORTS and CAMPO, priority categories have been established. These categories are used as review tools for each project; no points are assigned and the factors are assessed qualitatively. The factors or categories include:

1. Connect regional activity centers and responds to high traffic demands
2. Identified freight corridor
3. Provides service to transportation disadvantaged and provides modal alternatives
4. Responds to identified roadway and bridge needs
5. Consistency with land use plans

Augusta Region Transportation Study, Augusta, Georgia/Aiken, South Carolina (ARTS)

The ARTS MPO has a combination of a point-based process with a more qualitative “yes – no” assessment. Prioritization categories have been established, with the higher priorities receiving higher points. The process is only used for projects adding capacity.

Category	Points
Traffic Volumes/Level of Service	30
Safety	10
Development Potential Resulting from Project	10
Truck Traffic	8
Cost Estimate Compared to Vehicle Miles Traveled	14
Increasing Accessibility, Connectivity, Mobility	12
Alternative Transportation Solutions	Yes/No
Consistency with Local Land Use Plans	Yes/No
Potential Impacts to Natural, Social, and Cultural Resources	Yes/No
Total	84

Overall Peer Review Observations

Several general observations were gleaned from the peer review which provided insights into the development of the CORE MPO prioritization process. These observations include:

- While some quantitative scoring is used, the weighting and points are typically applied qualitatively
- Almost 50% of the MPOs surveyed only utilize qualitative prioritization process
- Qualitative processes have identified factors and consider the projects within the context of the factors
- Congestion, safety, and environmental, community and social Impacts are key factors
- 81% of the surveyed MPOs used congestion; 75% Safety, and 63% Impacts on environmental, community and social resources
- Other common factors include

- “Quality of Life, Livability, Multimodal, Economic Growth/Development”
- Financial viability / benefit cost
- Professional judgment and stakeholder input are the overriding tools

This information and the observations provided a valuable tool in the development of the prioritization process. The results of the peer review, combined with the CORE MPO goals and objectives, set the framework for the process to be developed.

III. Prioritization Process

The project prioritization process consists of two screening tiers. The first screen is based on need and the second screen is based on sustainability. These screens are structured around the CORE MPO goals for their long range planning efforts. Specific metrics were identified based on available data and tools. The table below details the Needs Screen, with associated goals, prioritization factors and data source.

Goal	Factor	Data Source
Economic Vitality	<ul style="list-style-type: none"> • Connecting population and employment • Freight connections to strategic infrastructure 	<ul style="list-style-type: none"> • Travel Demand Model • GIS
Safety	<ul style="list-style-type: none"> • Crash rate 	<ul style="list-style-type: none"> • Georgia Department of Transportation
Security	<ul style="list-style-type: none"> • Designated evacuation route 	<ul style="list-style-type: none"> • Chatham Emergency Management Agency
Accessibility, Mobility and Connectivity	<ul style="list-style-type: none"> • Level of Service • Truck Traffic • Non-motorized Plan priorities 	<ul style="list-style-type: none"> • Travel Demand Model • Non-motorized Plan

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"> • Impacts to environmental, cultural and social resources 	<ul style="list-style-type: none"> • GIS
System Management and Maintenance	<ul style="list-style-type: none"> • Bridge Sufficiency Rating • Benefit/Cost 	<ul style="list-style-type: none"> • Georgia Department of Transportation • Cost Estimates • Travel Demand Model
Intergovernmental Coordination	<ul style="list-style-type: none"> • Project Status • Local Priority • Consistency with other local, regional and state plans • Financial feasibility 	<ul style="list-style-type: none"> • Local Governments • Georgia Department of Transportation • Financial analysis

IV. Project Evaluation

The screening process for the project prioritization will be focused on the projects outside of the Cost Feasible Plan. The following ranking process will applied, with a total of 35 points available.

Need Screen:

Economic Vitality

Does the project connect population centers with employment and activity centers?

- Yes: 5 points
- No: 0 points

Does the project connect major freight generators with strategic infrastructure?

- Yes: 5 points
- No: 0 points

Safety

Is the project located on a facility with a crash rate above the state average for that functional classification?

- Yes: 5 points
- No: 0 points

Security

Is the project on a designated evacuation route?

- Yes: 5 points
- No: 0 points

Accessibility, Mobility and Connectivity

Is the project located on a facility with a Level of Service E or F, which is below the statewide Level of Service minimum of Level of Service D?

- Yes: 5 points
- No: 0 points

Is the project located on a facility with a high level of truck traffic (volumes and percentage) based on averages for similar functionally classified facilities?

- Yes: 5 points
- No: 0 points

Is the project ranked in the Non-motorized Plan as a high priority?

- Yes: 5 points
- No: 0 points

Sustainability Screen:

With the sustainability screen, there are a total of 20 points available. These points include a focus on the adverse impacts of a project on community resources and system management and maintenance. The benefit cost assessment and the factors included with the intergovernmental coordination are relative among the projects and will be applied as “tie-breakers” for those projects earning the same score.

Environment and Quality of Life

Does the project adversely impact environmental resources?

- Yes: 0 points
- No: 5 points

Does the project adversely impact cultural, historic and community resources?

- Yes: 0 points
- No: 5 points

Does the project adversely impact environmental justice communities?

- Yes: 0 points
- No: 5 points

System Management and Maintenance

Does the project include a bridge with a sufficiency rating below 50, making it eligible for replacement according to GDOT standards?

- Yes: 5 points
- No: 0 points

Do the project benefits justify the projects costs?

This assessment provides a relative comparison of projects based on the project costs and user benefits. To measure the cost effectiveness, the savings in delay is calculated. This calculation is based on information and research provided by the Texas Transportation Institute in their annual Urban Mobility Report.

The Annual Average Daily traffic for the project is identified. The TTI estimates the average number of persons per vehicle is 1.25, and the AADT is multiplied by 1.25 to determine the average number of persons per vehicle. Using the travel demand model, the savings in delay in hours from the base year model to the 2040 model with the project is identified and then the total time savings of person hours per day is calculated. The TTI estimates that the average cost per person in delay is \$16.79 per hour. This figure is multiplied by the total time savings to determine the total savings per day, which is then multiplied by 365 to determine the total savings per year. The resulting index provides a relative comparison of the benefit/cost of each project in delay savings per year. The table below provides example projects for determining the benefit/cost savings per year.

Project	Project Cost	AADT	Delay Savings (Hours/Person)	Total Time Savings (Person-Hours/Day)	Person Costs (\$/Person)	Total Savings per Day
Project A	\$1,000,000	5,500	0.08	550	\$16.79	\$9,235
Project B	\$8,000,000	12,500	0.10	1,563	\$16.79	\$26,234
Project C	\$25,000,000	29,000	0.20	7,250	\$16.79	\$121,728
Project D	\$25,000,000	54,000	0.30	20,250	\$16.79	\$339,998

Project	Total Savings per Year (Benefit)	Project Cost (Cost)	Final Benefit/Cost Index
Project A	\$3,370,593	\$1,000,000	3.37
Project B	\$9,575,547	\$8,000,000	1.20
Project C	\$44,430,538	\$25,000,000	2.96
Project D	\$124,099,088	\$25,000,000	4.96

As noted earlier, because this Benefit/Cost index is relative among projects, it will be utilized as an additional filter, or “tie-breaker” for those projects earning the same point total through the screening process.

Intergovernmental Coordination

In addition to the benefit/cost index, the criteria used as part of the intergovernmental coordination will also be applied as a “tie-breaker” for those projects receiving the same point total. The following elements will be assessed and utilized as part of these criteria and incorporate a more qualitative review, combined with professional judgment and local priorities.

- ***Existing Project Status***
 This element will include an assessment of how much work has already been accomplished and where the project is in development.
- ***Local Priority***
 The priorities of the local jurisdictions and planning partners are of critical concern. This assessment will recognize the importance of these priorities and incorporate them into the project assessment.
- ***Consistency with Other Local, Regional and State Plans***
 In combination with the local priority, a review of any other local, regional and state plans will be accomplished and the consistency of the project with these plans will be established.
- ***Financial Feasibility***
 Financial feasibility is also a realistic and crucial element in assessing projects. Each project incorporated must be financial feasible.