

**THE TRANSPORTATION IMPROVEMENT PROGRAM (TIP)
PROCESS AT THE BOSTON REGION METROPOLITAN
PLANNING ORGANIZATION**



An Instructional Handbook for Roadway Project Proponents
*Includes Guidance on Completing the Proponent Provided Information Form (PPIF) and
understanding the Project Information Form (PIF)*

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INTRODUCTION

The Boston Region Metropolitan Planning Organization

The Boston Region Metropolitan Planning Organization is responsible for conducting the federally required metropolitan transportation planning process for the Boston metropolitan area, which encompasses 101 cities and towns in eastern Massachusetts. The MPO is composed of 14 voting members and 3 nonvoting members:

Voting

- Executive Office of Transportation and Public Works (EOTPW)
- City of Boston; three elected cities—currently Newton, Salem, and Somerville; and three elected towns—currently Bedford, Framingham, and Hopkinton
- Massachusetts Bay Transportation Authority
- Massachusetts Bay Transportation Authority Advisory Board
- Massachusetts Highway Department
- Massachusetts Port Authority
- Massachusetts Turnpike Authority
- Metropolitan Area Planning Council

Nonvoting

- Federal Highway Administration
- Federal Transit Administration
- Regional Transportation Advisory Council

The MPO's Transportation Planning and Programming Committee, acting on behalf of the MPO members, meets regularly to provide ongoing coordination of the metropolitan transportation- planning work taking place within the region. It consists of a representative from each MPO member, with the EOTPW representative serving as chairperson.

The Transportation Planning and Programming Committee oversees the development of the Transportation Improvement Program (TIP) and provides direction to the MPO's Central Transportation Planning Staff (CTPS). CTPS is an independent staff created to provide the MPO and other members of the transportation community with planning, analysis, and informational products and services, including many of those essential for supporting the continuing, cooperative, and comprehensive ("3C") transportation planning process in the Boston region.

The Transportation Improvement Program

The Transportation Improvement Program (TIP) is produced annually by the MPO. The Transportation Improvement Program (TIP) programs, for a four year period, all the transit projects that will receive federal aid and all the roadway projects that will receive federal or non federal aid. A project must be programmed in the Transportation Improvement Program (TIP) in order to receive federal funding. The Transportation

Improvement Program (TIP) is financially constrained: the MPO can only program projects for which funds are expected to be available.

Projects are selected for inclusion in the Transportation Improvement Program (TIP) according to logical and transparent evaluation processes. Transit projects are evaluated by the MBTA as part of its long range plan, the Program for Mass Transportation (PMT), and its implementation document, the Capital Investment Program (CIP). Please refer to the MPO website for more information on the links to the MBTA's Program for Mass Transportation (PMT) at and Capital Investment Program (CIP) <http://www.bostonmpo.org/bostonmpo/pmt/index.html>. The evaluation process for roadway projects is explained below.

Roadway Project Evaluation

Roadway projects are evaluated by the MPO according to seven categories of criteria:

- Condition
- Safety
- Mobility
- Environmental Justice
- Environment
- Land Use
- Economic Development

The evaluation of each roadway project is based on the information assembled in the Project Information Form (PIF) for that project. The evaluation process, which employs numerical scoring of the project for each criterion, is described in detail in the Explanation of Project Evaluation section of this document. The following discussion focuses on the Project Information Form (PIF), first describing the information gathering process (including the role of the project proponent) and then examining the Project Information Form (PIF), item by item.

Gathering Project Information

The Project Information Form (PIF) is organized according to the MPO's criteria for the comparative evaluation of projects being considered for inclusion in the Transportation Improvement Program (TIP). These criteria have been developed from the MPO's policies, which are stated in its Regional Transportation Plan. Some of the specific criteria applied vary depending on the category of the project (such as Arterial and Intersection or Major Highway) being evaluated. For each of the types of criteria for which this is the case, the Explanation of Project Evaluation section of this document includes a table that states the specific criteria for each category of project.

The information assembled in the Project Information Form (PIF) is provided by the Central Transportation Planning Staff (CTPS), the Metropolitan Area Planning Council (MAPC), MassHighway, and the project proponent (municipality or other entity).

The project proponent is responsible for providing particular information; this is submitted in the project's Proponent Provided Information Form (PPIF), completed by the proponent. This handbook is designed to help proponents complete the Project Information Form (PIF) for the development of the upcoming federal fiscal years 2010–2013 Transportation Improvement Program (TIP). The information collected from this form is **highlighted in green** in this handbook. An item by item examination of the Project Information Form (PIF) is included in the Explanation of Project Evaluation section of this document. The MPO requests that the proponent in addition to completing the Project Information Form (PIF), provide a copy of the project's functional design report and the 25% design submission, which will provide information for evaluation of project effectiveness. This submission can be in an electronic format.

Many questions to be answered by the proponent are qualitative in nature and are meant to help assess the need for and anticipated effects of the project. The MPO will use these answers, project materials and plans, and other information provided during Transportation Improvement Program (TIP) development to determine the project's scores for each of the evaluation criteria.

While Project Information Form (PIF) answers may be filled out by any person(s) designated by the project proponent, the Transportation Improvement Program (TIP) Contact for each project is responsible for the accuracy of information submitted to the MPO.

Proponents are advised to carefully review all information contained in the Project Information Form (PIF)(s) for their project(s) and inform the MPO of any updated information or other issue, so that the most accurate and current information is available to the MPO during the Transportation Improvement Program (TIP) development process.

Proponents who have any questions about the process are encouraged to contact Hayes Morrison, Transportation Improvement Program (TIP) Manager, at hayesm@bostonmpo.org or 617.973.7129.

THE PROJECT INFORMATION FORM, ITEM BY ITEM

This section of the handbook describes the entire Project Information Form (PIF), provides detail and definition regarding each piece of information that must be included and each question that must be answered, and identifies the source from which the data or answer must come. Each numbered item below correlates to the same numbered item in the Project Information Form (PIF).

Information provided in the preceding sections is also used in determining the need ratings associated with this project. These ratings are recorded in Appendix A of the Transportation Improvement Program (TIP) and also provided to municipalities as the "Project Evaluation Matrix".

The items for which the project proponent is responsible are in green and have item numbers preceded by “P”. In addition to taking care of those items, the project proponent should request a correction to the Project Information Form (PIF) on the other information in the Project Information Form (PIF), as needed.

- 1 ID Number** – The MassHighway Project Information System (PROJIS) number assigned to the project. If the project does not have a PROJIS number, an identification number will be assigned to the project by the MPO for internal tracking purposes. (Source: MassHighway, MPO database)
- 2 Municipality(ies)** – The municipality(ies) in which the project is located. (Source: MPO database)
- 3 Project Name** – The name of the project. (Source: MPO database, MassHighway)
- 4 Project Category** (determined by MPO staff):
 - Arterial and Intersection – Arterial roadway and intersection projects
 - Major Highway – Limited access roadway projects
 - Bridge – Bridge projects
 - Bicycle/Pedestrian – Such projects as walkways, paths, and trails
 - Enhancement – Streetscape and other types of enhancements
 - Regional Mobility – Transportation demand management programs, including the MPO’s Suburban Mobility Program, and park and ride facilities
- 5 MHD District** – The MassHighway district in which the project is located. (Source: MPO database).
- 6 MAPC Subregion** – The MAPC subregion in which the project is located (Source: MPO database)
- 7 Cost** – The estimated total cost of the project. (Source: MPO database, MassHighway)
- 8 Earmark Funds** – The estimated total available federally earmarked funds for the project. (Source: MPO database)
- 9 Description** – A description of the project, including its major elements and its geographic limits. Maps, diagrams, and pictures will be provided by MPO agencies or staff when available, but may be provided by the proponent (electronic formats are preferred). A project type is assigned by MPO staff. (Source: MPO database, MassHighway)

The possible types within each project category are as follows:

- **Arterial and Intersection** and **Major Highway** projects can be categorized as new construction, reconstruction, resurfacing, intersection improvement, or other.
- A **Bridge** project can be categorized as reconstruction, replacement, rehabilitation, demolition, or new construction.

- A **Bicycle/Pedestrian** project can be categorized as new construction, an improvement, or other.
- An **enhancement** project can be categorized as reconstruction, historic preservation, environmental, streetscape, or other.
- A **Regional Mobility** project can be categorized as transportation demand management, transportation management association, suburban mobility, marketing, park-and-ride, improved intermodal connections, or other, or as a program that increases the available travel choices.

In addition, if a project adds user capacity to the system (for example, by adding a travel lane), this will be noted.

The following three items are GIS information based on the project description, and come from the MPO database.

- 10 Project Length (Miles)** – Length of project in miles.
- 11 Project Lane Miles** – Lane miles of project.
- 12 Additional Lane Miles by Project** – Additional lane miles to be constructed by project.

Community Support

- P1 Community Priority** – The priority of the project as determined by the community. (Source: Proponent Provided Information Form)
- 15 Subregional Priority** – Metropolitan Area Planning Council (MAPC) subregional priority for the project, usually voted on at a spring meeting of each Metropolitan Area Planning Council (MAPC) subregion. Check the MAPC calendar for the meeting dates at www.mapc.org/whats_new/monthly_calendar.html.

Additional Status

- 16 Additional Status** – Indicates if the project has additional conditions or approvals (source: MPO database):
 - ITS Conformity – Conforms with the Regional Intelligent Transportation Systems (ITS) Architecture for Metropolitan Boston
 - Approved CMAQ – Approved by the Congestion Management and Air Quality Mitigation Committee for the use of Congestion Mitigation and Air Quality funds
 - Approved Enhancement – Approved by the Regional Enhancement Committee or Statewide Enhancement Steering Committee

Readiness

“Readiness” is a determination of the appropriate year of programming for a project. In order to make this determination, the MPO tracks project development milestones and estimates when a project will be ready for advertising.

All **non-transit** projects programmed in the first year of the Transportation Improvement Program (TIP) must be advertised before the end of the federal fiscal year (September 30). That funding authorization is not transferred to the next federal fiscal year: any “leftover” funds are effectively “lost” to the region. If a project in the first year of the Transportation Improvement Program (TIP) is determined as “not ready to be advertised before September 30,” it will be **removed from the Transportation Improvement Program (TIP) and replaced with another project by amendment.**

For projects in the first year of the Transportation Improvement Program (TIP), it is important to communicate any perceived problems to the Boston Region MPO, c/o CTPS, as soon as possible.

- 17 Transportation Improvement Program (TIP) Status** – Programmed, Pre-TIP), or Conceptual (source: MPO database):
- **Programmed** projects are those identified for funds in the federal fiscal years 2007–2010 Transportation Improvement Program (TIP), as amended.
 - **Pre-TIP** projects that have received Project Review Committee (PRC) approval from MassHighway and have an “active” PROJIS number, but do not have funds identified in the Transportation Improvement Program (TIP).
 - **Conceptual** projects are project concepts or ideas that are not yet under design.
- 18 Design Status** – The project’s design status. Dates are provided where available. (Source: MPO database and MassHighway Project Info)
- 19 Right-of-Way** – The right-of-way status of the project (source: MassHighway Project Info):
- Required – Right-of-way action is required for completion of the project.
 - MassHighway Responsibility – Providing the required right-of-way is the responsibility of MassHighway.
 - Municipal Responsibility – Providing the required right-of-way is the responsibility of the municipality.
 - Municipal Approval – Municipal approval has been given to the right-of-way plan (with date of approval)
- Certification:
- Expected – Expected date of right-of-way plan and order of taking (Source: MassHighway)
 - Recorded – Date the right-of-way plan and order of taking were recorded at the Registry of Deeds (Source: MassHighway)
 - Expires – Expiration date of the rights of entry, easements, or order of taking (Source: MassHighway)

20 Required Permits – Permits required by the Massachusetts Environmental Policy Act. (Source: MPO database and MassHighway Project Info.) Possible required permits include:

- Environmental Impact Statement
- Construction Engineering Checklist
- Clean Water Act Section 404 Permit
- Rivers and Harbors Act of 1899 Section 10 Permit
- MEPA Environmental Notification Form
- MEPA Environmental Impact Report
- Massachusetts Historical Commission Approval
- M.G.L. Ch. 131 Wetlands Order of Conditions
- Conservation Commission Order of Conditions

CONDITION

Condition is used to develop a baseline of the current state of the project. This gives context to the project in the present time period and will help to establish project need.

Information provided in this section is also used in determining the need ratings associated with this project. These ratings are recorded in Appendix A of the Transportation Improvement Program and also provided to municipalities as the “Project Evaluation Matrix”.

21 Existing Pavement Condition

- Pavement Roughness (IRI) – Value reflects calibrated value in inches of roughness per mile. Ranges of 0- 190 are classified as “good,” ranges of 191- 320 are classified as “fair,” and any number above 320 is classified as poor. (Source: MassHighway Roadway Inventory File)
- Pavement Serviceability Rating (PSR) – Index value of roughness to the tenth and a range of one to five, with five being perfectly smooth. A rating of 3.0 or less warrants the recommendation of the start of a maintenance program. A PSR range of 2.75- 3 warrants the recommendation of routine maintenance; a PSR range of 2.5-2.75, a thin overlay; a PSR range of 1.75-2.5, a structural overlay; and a PSR range less than or equal to 1.75, total reconstruction. (Source: MassHighway Roadway Inventory File)

22 Degree of Bicycle and Pedestrian Provisions (Source: MassHighway Roadway Inventory File and MPO bicycle GIS coverage)

- Sidewalks – Indicates if sidewalks are present on one side or on both sides of the roadway

On Road Bicycle Accommodation:

- Striped Bicycle Lane – A striped bicycle lane greater than or equal to 4 feet
- Four Foot Shoulder – Identifies if the shoulder can accommodate bicycling by providing at least a four foot shoulder and is designated for bicycle use in the project
- Signed Bicycle Route – Roadway is designated and signed as a bicycle route

- Bicycle Trail – Identifies the presence of a trail near or alongside a roadway

Bridge Specific Information (Source: MassHighway)

- **Bridge ID** – Bridge identification number
- **AASHTO Rating** – American Association of State Highway and Transportation Officials rating of bridge deficiency. The lower the score, the more deficient the bridge
- **Year Built** – The year the bridge was built
- **Year Rebuilt** – The last year the bridge was rebuilt
- **Deficiency** – The deficiency of the bridge: either structurally deficient or functionally obsolete
- **Posted Weight Restriction** – Information on weight restriction
- **Current bicycle accommodations exist** – are there any bicycle accommodations currently existing
- **Current pedestrian accommodations exist** – are there any pedestrian accommodations currently existing
- **Double stack route** – Is the bridge located on a planned double- stack freight route

P2 What are the infrastructure condition needs or issues of the project area?

What are the existing or anticipated conditions or problems the project is designed to address? Please include additional pavement information from municipal pavement management programs. In addition, qualitative descriptions of problems or anticipated needs can be provided. Please see the Explanation of Project Evaluation section of this document for an explanation of how these existing conditions are evaluated. (When applicable, this information should be consistent with project need information provided in the MassHighway Project Need Form.) (Source: Proponent Provided Information Form)

P3 How does this project address the infrastructure condition needs or issues in the project area?

Please see The Explanation of Project Evaluation section of this document for specific examples and an explanation of project evaluation. For all projects, provide details of any pavement- management system the community or agency employs and of how this system will maximize the useful life of any pavement repaired or replaced by the project. (Source: Proponent Provided Information Form)

SAFETY

The Boston Region MPO is committed to developing and promoting programs and technologies to reduce the number of fatalities and injuries on our region’s roadways. We are striving to provide information that will help to improve the safety performance of our transportation system.

Information provided in this section is also used in determining the need ratings associated with this project. These ratings are recorded in Appendix A of the

Transportation Improvement Program and also provided to municipalities as the “Project Evaluation Matrix”.

Crash data are collected for a three year period from the **MassHighway Crash Data System**. The Crash Data System includes all motor vehicle crashes involving \$1,000 or more in property damage, an injury, or a fatality. Data are collected for up to three locations in a project area. (Source: MassHighway’s *Top 200 High Crash Intersection Location Report: 2004–2006*, April 2007, proponent submitted functional design reports, 25% design submissions)

23 Top 200 Rank – Ranks of highest crash intersection clusters in the project area that are included in MassHighway’s listing of top- 200 crash sites.

24 EPDO/Injury Value – An estimated value of property damage. Please see the Explanation of Project Evaluation section for an explanation of project scoring.

25 Crash Rate/Crashes per Mile – Intersection projects will have the project intersection’s crash rate. Arterial projects will have crashes per mile.

26 Bicycle Involved Crashes – Total bicycle involved crashes.

27 Pedestrian Involved Crashes – Total pedestrian involved crashes.

P4 What is the primary safety need associated with this project and how does it address that need?

Describe the need for the project from a local and a regional perspective. What are the existing safety needs/improvements the project is designed to address? How will this design accomplish those needed improvements? Please be as specific as possible. (Source: Proponent Provided Information Form, Functional Design Report) (When applicable, this information should be consistent with project need information provided in the MassHighway Project Need Form.) (Source: Proponent Provided Information Form)

MOBILITY AND OPERATIONS

Increased travel choices and improved access for and across all modes—pedestrian, bicycle, public transportation, and vehicular—is a key mobility issue. Mobility is not merely about moving motor vehicles more quickly through an intersection or along a roadway segment, but includes increasing access and promoting use of all modes.

Information provided in this section is also used in determining the need ratings associated with this project. These ratings are recorded in Appendix A of the Transportation Improvement Program and also provided to municipalities as the “Project Evaluation Matrix”.

28 LOS – Peak- hour level of service. (Source: Boston Region MPO’s Mobility Management System (MMS) data, calculations from Functional Design Reports, Environmental Impact Reports, and/or staff field work)

- 29 Transit Vehicles Use of Roadway** – Identifies the fixed route transit vehicles using the roadway
- 30 MMS Congested Area** – Identifies a project that is located within a Boston Region MPO Mobility Management System (MMS) area. For more information on these areas, please visit the MPO website at:
http://www.bostonmpo.org/bostonmpo/3_programs/6_mms/mms.html

Information provided in items 30, 31 and 32 are determined using the Boston Region MPO's Mobility Management System (MMS). The MMS is the MPO's ongoing program for monitoring and evaluating the performance of the regional transportation system. One element of the MMS is the gathering of information on travel speeds and delay on all limited access highways and most arterial roadways (mainly state numbered routes) in the region. These data are used to calculate two performance measures: average AM/PM peak period speed and average AM/PM peak period speed index.

If a Project Information Form (PIF) does not have any MMS data listed, this does not mean that the roadway or intersection does not experience congestion problems—this simply means that data from the MMS are not available. In such cases, the project proponent should provide any congestion related information (speed, delay, level of service, etc.) available for the project. Please indicate whether the information is for the peak period or the peak hour and the source of the information.

- 31 Average A.M./P.M. Peak Period Speed** – The average peak period, through vehicle travel speed along a corridor, for both directions of travel.
- 32 Average A.M./P.M. Peak Period Speed Index** – The level of service (LOS) based on the average peak period, through vehicle travel speed index along a corridor, for both directions of travel. The speed index is the ratio of the average observed peak period travel speed to the posted speed limit. The LOS associated with the speed index is loosely based on the definition provided by the *Highway Capacity Manual (HCM) 2000* for urban streets:

LOS A > 0.9
LOS B > 0.7
LOS C > 0.5
LOS D > 0.4
LOS E > 0.33
LOS F < 0.33

LOS A indicates traffic conditions at primarily free flow or speed limit values, and LOS F indicates the worst traffic conditions, characterized by extremely low speeds and likely congestion at critical signalized locations.

- 33 Equipment Condition** – Existing signal equipment condition. (source: MMS, Massachusetts permitted signal information, municipal signal information, referencing submitted design).

P5 What is the primary mobility need for this project and how does it address that need? Describe the need for the project from a local and a regional perspective. What are the existing or anticipated mobility needs the project is designed to address? Please be as specific as possible. Please include information on how the project improves level of service and reduces congestion, provides multimodal elements (for example, access to transit stations or parking, access to bicycle or pedestrian connections), enhances freight mobility, and closes gaps in the existing transportation system. For roadway projects, it is MPO and MassHighway policy that auto congestion reductions not occur at the expense of pedestrians, bicyclists, or transit users. Please explain the mobility benefits of the project for all modes. (Source: Proponent Provided Information Form) (When applicable, this information should be consistent with project need information provided in the MassHighway Project Need Form.) (Source: Proponent Provided Information Form)

P6 What intelligent transportation systems (ITS) elements does this project include? Examples are new signal systems or emergency vehicle override applications. (Source: Proponent Provided Information Form)

Numbers listed in the evaluation table as Mobility and Operations Need Average and Effectiveness Average are developed by Boston Region MPO staff. A full explanation of how these numbers are calculated is included in the Explanation of Project Evaluation section of this document.

ENVIRONMENTAL JUSTICE

The MPO developed its Regional Equity Program to provide a systematic method of considering environmental justice in all of its transportation planning work.

Environmental justice requires the MPO to:

- Examine the allocation of benefits and burdens, currently and in the planned future
- Ensure that minority and low-income communities are treated equitably in the provision of transportation services and projects
- Provide full participation for minority and low-income communities to advise the MPO during its planning and decision-making process

The examination of environmental justice for Transportation Improvement Program (TIP) development includes consideration of whether a project improves access to transit or safety for the population and whether it improves air quality in an MPO environmental justice area or population zone or addresses an MPO-identified environmental justice community need.

The transportation analysis zone (TAZ) is the geographic unit for environmental justice analysis used by the MPO. The questions below identify whether or not a project runs

through, or is contiguous to, an environmental justice transportation analysis zone (TAZ) and whether the project has an impact on transit access, safety, air quality, or identified need for the environmental justice community. If you have any questions about the MPO's program, please contact Annette Demchur, Regional Equity Program Manager, at annetted@ctps.org or 617.973.7140.

Information provided in this section is also used in determining the need ratings associated with this project. These ratings are recorded in Appendix A of the Transportation Improvement Program (TIP) and also provided to municipalities as the "Project Evaluation Matrix."

- 34 Located within ¼ mile of an Environmental Justice Area** – Twenty-eight areas were identified by the MPO based on percentage of minority residents and percentages of households with low incomes (see Figure 1 on next page). The following thresholds were determined by the MPO for low-income and minority environmental justice areas (Source: 2000 U.S. Census):
- **Low Income** – The MPO median household income in 2000 was approximately \$55,800. A low-income TAZ was defined as having a median household income at or below 60% of this level (\$33,480).
 - **Minority** – A minority TAZ was defined as having a percentage of minority population greater than 50% and a minimum minority population of 200 people.
- 34 Located within ¼ mile of an Environmental Justice Population Zone** – The MPO's thresholds for low-income and minority population zones are less restrictive, and therefore include many more TAZs:
- **Low Income** – The MPO median household income in 2000 was approximately \$55,800. A low-income TAZ was defined as having a median household income at or below 80% of this level (\$44,640). (Source: 2000 U.S. Census)
 - **Minority** – A minority TAZ was defined as having a percentage of minority population greater than 21.4%. Title VI guidelines suggest that a minority community be defined as one with a minority population which is greater than the regional percentage of minority residents. (Source: 2000 U.S. Census)
- 35 If this project is located in an MPO-defined environmental justice area or environmental justice population zone, how would it improve access to an existing transit facility?** Explain how this project would provide needed or additional access to a transit facility. Please see the Explanation of Project Evaluation section of this document for explication of scoring criteria. (Source: Proponent-Provided-Information Form)
- 36 If this project is located in an MPO-defined environmental justice area or environmental justice population zone, how would it improve safety for users of the transportation facility?** Explain how this project would provide needed or additional safety improvements to the facility identified. Please see the

Explanation of Project Evaluation section of this document for explication of scoring criteria. (Source: Proponent-Provided-Information Form)

- 37** **If this project is located in an MPO-defined environmental justice area or environmental justice population zone, how would it improve air quality?** Explain how this project would provide needed or additional air quality improvements to the area. Please see the Explanation of Project Evaluation section of this document for explication of scoring criteria. (Source: Proponent-Provided-Information Form)
- 38** **If this project is located in an MPO-defined environmental justice area or environmental justice population zone, does it address an MPO-identified EJ community need?** The MPO conducts outreach to the EJ communities and compiles a list of identified needs. Is this project addressing one of these needs? Please refer to the MPO website for a listing of these needs. Please see the Explanation of Project Evaluation section of this document for explication of scoring criteria. (Source: Proponent-Provided-Information Form)
- P7** **Are any other Environmental Justice issues addressed by this project?** This answer should only be addressed by those projects in an Environmental Justice area or population zone that address an environmental justice need. Please be specific.

Numbers listed in the evaluation table as Environmental Justice Benefit Average are developed by MPO staff. A full explanation of how these numbers are calculated is included in the Explanation of Project Evaluation section of this handbook.

ENVIRONMENT

Many projects are initiated for reasons other than geometric design deficiencies, and many projects are also located within limited rights-of-way, on main streets in city or town centers, or adjacent to natural resources, public lands, or historic resources. Often, projects on existing roadways are initiated in communities where land use and cultural characteristics are already well established. The purpose of this section is to identify the impacts of the project on the community within which it occurs and on the environment.

Information provided in this section is also used in determining the need ratings associated with this project. These ratings are recorded in Appendix A of the Transportation Improvement Program and also provided to municipalities as the “Project Evaluation Matrix”.

- 39** **Located in an Area of Critical Environmental Concern** – Areas designated as Areas of Critical Environmental Concern by the Massachusetts Secretary of Environmental Affairs. (Source: data from MassGIS)

- 40 Located adjacent to (within 200 feet of) a waterway** – Hydrographic (water related) features, including surface water (lakes, ponds, reservoirs), flats, rivers, streams, and others from MassGIS. Two hundred feet from the hydrographic feature is the distance protected by the Massachusetts Rivers Protection Act. (Source: data from MassGIS)
- 41 Percentage Wetland within One-Half Mile** – Percentage of land within a one-half-mile corridor that is wetlands on either side of the project. (Source: MassGIS wetlands coverage)
- 42 Located in BioCore Habitat Area** – Areas designated as biocore habitat through the National Heritage and Endangered Species Program. (Source: data from MassGIS)
- 43 Located in Approved Wellhead Protection Areas** – Areas designated as Department of Environmental Protection (DEP)–Approved Wellhead Protection Areas (Zone II). (Source: data from MassGIS)
- 44 Percentage Protected Open Space within One Half Mile** – Percentage of land within a one-half-mile corridor that is permanently protected open space or municipally owned on either side of the project. (Source: MassGIS coverage)
- P8 How does the project relate to community character?** Is the project located in an existing community or neighborhood center or other pedestrian oriented area? Explain the community context (cultural, historical, other) in which the project will occur and indicate the positive or negative effect this project will have on community character. (Source: Proponent Provided Information Form)
- P9 What are the environmental impacts of the project?** How will this project improve air quality, improve water quality, or reduce noise levels in the project area and in the region? Air quality improvements can come from reductions in the number or length of vehicle trips or from reductions in vehicle cold starts. Water quality improvements can result from reductions in runoff from impervious surfaces, water supply protection, and habitat protection. Noise barriers can reduce noise impacts. (Source: Proponent Provided Information Form)

Numbers listed as Environment Rating Average are compiled by MPO staff. A full explanation of how these numbers are calculated is included in the Explanation of Project Evaluation section of this document.

LAND USE

MAPC will make the draft evaluation for land use, subject to review by the Transportation Planning and Programming Committee, for all projects. This evaluation may be changed based on information supplied by the community/proponent.

- 45 Percentage of Greenfield Land** – Percentage of land within a ½ mile corridor that is previously undeveloped but developable (i.e. “greenfields”) on either side of the project. (Source: developable land GIS coverage)

All the following criteria apply to the zoning ordinances currently in place for land adjacent to the project. Zoning coverages were originally developed by MAPC for the buildout analysis and have been updated, as necessary, from the www.ordinance.com database. If more recent zoning information is available, or zoning changes are planned for the area in the near future, please provide that information to MAPC.

Using the current available zoning coverage, the following calculations will be made by MAPC:

- 46 Residential Density Threshold (7 Dwelling Units (DU)/acre (suburban) to 15 DU/acre (urban)]** – Residential areas are zoned for at least 7 dwelling units (DU)/acre (suburban) 15 DU/acre (urban). as an average for the entire developable residentially-zoned area within ½ mile of the project. For all residential-zoned, developable land within the 1- mile corridor (for all land that is either currently used or currently undeveloped), the average density, in dwelling units per acre allowed by the current zoning, will be calculated. In existing built-out areas, where there are no plans for large-scale redevelopment, actual developed densities can be substituted for zoned density.
- 47 Commercial FAR threshold [50 employees/acre (suburban) or 150 employees/acre (urban)]** – A Commercial floor-area-ratio (FAR) that results in an estimated 50 employees/acre (suburban) or 150 employees/acre (urban) as an average for the entire developable commercially zoned area within ½ mile of the project. For all commercially zoned, developable land within the 1-mile corridor (for all land that is either currently used or currently undeveloped), the average density, in building square-feet-per-acre allowed by the current zoning, will be calculated. In existing built-out areas, where there are no plans for large-scale redevelopment, actual developed densities can be substituted for zoned densities. The square feet will be converted to employees-per- acre using factors developed by MAPC. Floor-area-ratio is the gross floor area of all buildings or structures on a lot divided by the total lot area.
- 48 A future zoned population/employment ratio between 2.0 and 0.75 in the project area** – Dwelling units will be converted to population based on the average population per household for the community from the 2000 census. The total population within the 1 mile corridor will be divided by the total employment calculated within the 1 mile corridor to produce a population/employment ratio. If a project allows a community to move towards the ratio range or mixed use zoning (allowing both residential and Commercial development) has been adopted in a substantial portion of the corridor, MAPC may exercise professional judgment in allocating points.

Communities below the lower end of this ratio (0.75, meaning not enough housing for the local jobs) can provide supplementary information to indicate that

the community has established goals and undertaken actions that will achieve a balance of housing opportunities in the project area. Both planning for goals and the construction of new units must take place. If the new housing produced was within the 1- mile corridor around the transportation project being evaluated here, or if the transportation project otherwise improves access to the new housing units documentation should be provided as supporting evidence to the Boston Region MPO. Appropriate types of information are indicated below.

Using this criterion, municipalities are rewarded that have done substantial planning that addresses their housing inventory, needs, and goals and objectives. Eligible plans include E.O. 418 Housing Strategies (formerly used for Housing Certification), housing elements of E.O. 418 Community Development Plans, plans developed under the Planned Production regulation, and other types of local, subregional, or regional housing plans. Plans must have been adopted since January 1, 2000. Regional plans must have been adopted by the municipality in order to qualify. To be adopted, a plan must have been approved by vote of an appropriate elected or appointed municipal entity, such as a planning board, board of selectmen, city council, mayor, or town meeting.

If your municipality has a housing plan that qualifies, please submit a copy of the cover page, table of contents, and executive summary of the plan along with the date of the plan and which local elected or appointed entity approved the plan.

Documentation of new units constructed should come from the number of building permits issued, and the number of residential units approved annually since 2000.

If your community has applied to the Commonwealth Capital Development program, most of this information will be available under Questions 9 thru 12 in the community's application.

More information on the Commonwealth Capital Development program is available at the Commonwealth Capital website, www.mass.gov/commcap/

- 49 Mix of Uses Is Allowed within the Area** – Mixed- use zoning districts embody the traditional compact development of land, buildings, and structures by integrating a variety of complementary uses, such as residential, retail, office, civic, and entertainment. This criterion is intended to encourage communities to redevelop first and to give priority to transportation projects that support the concentration of development in new or existing mixed-use districts that include residential, commercial, and civic uses.

For the purpose of this criterion, mixed-use zoning must allow a combination of significantly different uses within the same district. Eligible mixed-use districts will typically occur in city, town, or village centers; around transit locations; or in other appropriate locations. Large zoning districts that are predominantly residential but allow limited non-residential uses, such as churches, schools, agriculture, and/or home occupations, are not eligible. At least part of these

districts must be within the 1-mile corridor around the transportation project being evaluated.

A transit-oriented development (TOD) district is considered a mixed-use district under this criterion. TOD is compact, walkable development centered around transit stations. In general, TODs include a mix of uses, such as housing, shopping, employment, and recreational facilities, within a design that puts a high priority on serving transit and pedestrians. Key features of TOD include a mix of uses, moderate to high density, pedestrian orientation/connectivity, transportation choice, reduced parking, and high-quality design. Projects serving areas designated by the Commonwealth as TOD districts should be considered to have met the Mixed Use criteria.

To demonstrate that mixed uses are allowed, submit the citation of the zoning ordinance or bylaw, provide a list of uses allowed, and describe using text and/or maps the area covered by the zone. Designation by the Massachusetts Department of Housing and Community Development (DHCD) as an approved 40R district will be considered proof that a mixed-use zone is in place. Information on building permits issued since July 1, 2003, for mixed-use development in these districts should also be provided.

If your community has applied to the Commonwealth Capital Development program, most of this information will be available under Questions 5, 5a, and 5b in the community's application. This same information can be provided to the Boston Region MPO to demonstrate that this criterion has been met.

More information on the Commonwealth Capital Development program is available at the Commonwealth Capital website, www.mass.gov/commcap/

50 Maximum Parking Requirements – ≤ 3 per 1000 square feet of commercial in suburban communities; ≤ 1.0 in urban communities.

51 TDM Program Required for All New Developments – For all new development, a TDM program is required that implements at least four of the following typical components:

- Ridesharing program
- Parking restrictions or pricing policies
- Alternative work hours
- Telecommuting options
- Subsidized transit use and other financial incentives
- Areawide strategies such as membership in Transportation Management Associations
- Subsidies for local transit service
- Multi-occupant vehicle access – Provide access to site and turnaround space for multi occupant vehicles up to 25 feet in length

In addition, if the community is taking steps as part of this project or in the project area to significantly reduce single-occupant travel then this criteria will be met. Please provide this information in your answer to question P14.

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- 52 50% of New Roadway Capacity Preserved in Corridor Land Use Plan** – If a corridor land use plan has been developed and adopted by all of the corridor communities that are designed to preserve at least 50% of the new roadway capacity of the project, then the project will receive a high rating.
- P10 How does the project improve access for pedestrians, bicyclists, and public transportation?** Describe what improvements are in the project for pedestrians, bicyclists, and public transportation, and what level of improvement will be achieved over existing conditions (Source: Proponent Provided Information Forms)
- P11 How is the project consistent with local land use policies?** Explain how this project will support existing or proposed local land use policies (Source: Proponent Provided Information Forms)
- P12 How does the zoning of the area within ½ mile of this project support transit-oriented development and preserve any new roadway capacity?** Will the project have an impact on adjacent land uses? Please review the land use information if the project is expected to have an impact on land use. Provide any information you have that is different from that reported on this form. Is there a local project currently under development that would provide a better balance between housing and jobs in this corridor? If so, please provide details on the project status. (Source: Proponent Provided Information Form)

ECONOMIC DEVELOPMENT

- 53 Serves a Targeted Redevelopment Site** – The redevelopment of brownfield sites, downtown districts, abandoned shopping centers, historic mill buildings, or otherwise decadent, substandard, or blighted areas serves as a critical strategy in expanding economic development, creating new housing opportunities, and building livable, vibrant communities. By redeveloping such areas, sites, and buildings, fewer “greenfield” sites are developed, compact and often historic centers are revitalized, and underutilized properties are returned to productive use. By cleaning up brownfield sites, environmental contamination is mitigated, improving ecological and human health as well as economic opportunity. This criterion rewards planning actions in the project corridor that contribute to successful redevelopment.

The proponent should provide information that planning is underway to redevelop brownfield sites, downtown districts, or other economic redevelopment target areas. The transportation project under review must assist in this redevelopment effort.

Planning can include any of these three activities:

a) *Inventory*: A local or regional inventory of brownfield sites; a building inventory of a downtown district; or an inventory of mill buildings. The inventory must contain basic descriptive information such as address and site ownership. Brownfield inventories must include the property information, brownfields data (such as DEP tracking number, assessment status, and liability status if known), and municipal contact info. These inventories must have been completed or updated since July 1, 2006. A slums and blight inventory that is approved by DHCD identifying vacant and deteriorating structures (“greyfields”) is also eligible—these must have been completed since January 1, 2003.

b) *Remediation, revitalization, or reuse strategy*: Eligible strategies include remediation, revitalization, or reuse strategies that outline the specific steps needed to bring sites, buildings, or districts back into productive use. A currently active Urban Renewal Plan or Commercial Area Revitalization District (CARD) Plan, approved by DHCD, are examples of eligible plans. Municipally funded feasibility or market studies are also eligible. The municipality must be an integral partner in the creation of the strategy. These strategies/plans must be no older than 5 years or demonstrated to be currently active.

c) *Site planning*: Site planning for reuse/redevelopment of brownfields, vacant buildings, or downtown districts. The municipality must be an active participant in the site planning activities. Examples of eligible activities include completing a plan by convening a design charrette or hiring an architect or landscape architect to create site plans for a redevelopment project. These site plans must have been completed since July 1, 2006.

If your community has applied to the Commonwealth Capital Development program, most of this information will be available under Question 15 in the community’s application. This same information can be provided to the Boston Region MPO to demonstrate that this criterion has been met.

More information on the Commonwealth Capital Development program is available at the Commonwealth Capital website, www.mass.gov/commcap/

- 54 Municipality Provides Financial or Regulatory Support for Targeted Redevelopment** – The proponent should provide information that the community has developed regulatory or financial incentives for redevelopment of the sites served by the project under question 52 above. Incentives can include:
- a) *43D Priority Development Site*: Approval by the Interagency Permitting Board of a locally designated Priority Development Site pursuant to Chapter 43D. The Executive Office of Housing and

Economic Development maintains a list of 43D communities on its Chapter 43D Expedited Permitting web page, along with information on the approval process. Go to www.mass.gov/eohed/ then click on *Start, Grow, & Relocate Your Business* in the middle gray box, then *Licensing and Permitting*, and then *Chapter 43D Expedited Permitting* or [click here](#).

b) *Financial Incentive*: Funding incentives must be at a meaningful level and have been used since July 1, 2006. Tax incentives must be currently active. Incentives can be provided through a variety of means including the creation of a revolving loan fund or brownfields cleanup program; approval of a bond authorization; local tax incentives or investments such as: Tax Increment Financing (TIF), District Improvement Financing (DIF), Urban Center Housing TIF, or Special Tax Assessment (STA) or creation of Business Improvement Districts (BIDs).

c) *Regulatory Incentive*: Substantive (non-procedural; permitting process enhancements are rewarded under the “Implementation of Best Permitting Practices” criterion) modifications to the community’s land use regulations (zoning, subdivision, etc.) since July 1, 2006 that encourage the redevelopment of brownfield, greyfield, infill, or other sites.

At least one of these incentives must be in place by the end of 2007 to qualify.

If your community has applied to the Commonwealth Capital Development program, most of this information will be available under Question 15 in the community’s application. This same information can be provided to the Boston Region MPO to demonstrate that this criterion has been met.

More information on the Commonwealth Capital Development program is available at the Commonwealth Capital website, www.mass.gov/commcap/

55 Encourages Development of Affordable Housing Accessible to Employment Centers – An insufficient supply of affordable housing continues to be a key problem facing the Commonwealth. Communities are rewarded under this criterion for having created a significant number of affordable units, as measured on the Subsidized Housing Inventory (SHI). The affordable housing developed must be within the 1 mile corridor around the transportation project under review.

A determination will be made based on information that the community has attained a Planned Production certification from DHCD or attained its Chapter 40B 10% affordable housing threshold, that funding for the rehabilitation of housing units from state, federal, or local sources has been authorized since July 1, 2003, and that the production of housing units on municipal land or with municipal funding has taken place since July 1, 2003.

An inclusionary zoning bylaw that applies to the corridor will also meet this criteria. Inclusionary zoning promotes the fair distribution of affordable housing units and the provision of long-term affordable housing in developments created by the private market. Inclusionary zoning normally requires a minimum percentage of lower and moderate income housing to be provided in new developments based on a mandated formula. Often inclusionary zoning provisions will provide developers a density bonus as compensation for provision of the affordable units, as is recommended by the Commonwealth. The zoning may allow ‘in-lieu-of’ payments that go to an affordable housing fund, creation or rehabilitation of off-site units, and/or creation of affordable units within the development project itself.

Communities that have issued a building permit for at least one inclusionary unit in the corridor since July 1, 2006 will also be considered to have met the criteria. These units may be created on- or off-site. The inclusionary unit may be created by a developer or by the municipality with funding from a dedicated account.

If your community has applied to the Commonwealth Capital Development program, most of this information will be available under Questions 12, 9, or 9a in the community’s application. This same information can be provided to the Boston Region MPO to demonstrate that this criterion has been met.

More information on the Commonwealth Capital Development program is available at the Commonwealth Capital website, www.mass.gov/commcap/

56 Supports Regional Freight Infrastructure

- Supports infrastructure improvements on a designated or known truck route
- Supports infrastructure improvement to a known or proposed industrial center
- Supports infrastructure improvement to a major port or airport or intermodal transfer facility

P13 How is the project consistent with state, regional, and local economic development priorities? Explain how this project will support economic development in the community or in the project area (Source: Proponent Provided Information Forms)

Numbers listed as Safety Need Average and Effectiveness Average are compiled by MPO Staff. An explanation of how these numbers are calculated is included in the Explanation of Project Evaluation section of this document.

Cost per Unit

These two measures of cost per unit are derived by dividing project cost by quantified data in the MPO database. They will only be used to compare similar types of projects.

57 \$ per User – (ADT for roadway projects or other user estimate) minus Cost (question 7) divided by ADT (question 28 or other user estimate)

58 \$ per Lane Mile – Cost (question 7) divided by project proposed total lane miles (questions 10 & 11)

EXPLANATION OF PROJECT EVALUATION

This section of the handbook is an explanation of the project evaluation criteria and the scoring mechanism. These scores are not only included in a proponent's Project Information Form(PIF), but also in the Transportation Improvement Program (TIP) Evaluation Matrix. This Transportation Improvement Program (TIP) Evaluation Matrix is included in the Transportation Improvement Program (TIP) document as Appendix A.

The Transportation Improvement Program (TIP) Roadway Project Information Forms are evaluated based on the Transportation Improvement Program (TIP) criteria that were developed from the policies of the MPO as stated in the Regional Transportation Plan. Evaluations are given to each project in the seven criteria categories based on information from the project information forms.

- Condition
- Safety
- Mobility
- Community
- Environmental Justice
- Environment
- Land Use
- Economic Development

THE BASIC STRUCTURE OF THE EVALUATION SYSTEM

Each criterion is evaluated as follows:

- Need criteria scored 3 to zero
- Effectiveness Outcome criteria scored 3 to negative 3

A score of 3 indicates the “highest need”/“most effective,” negative 3 the “most counter to the criteria,” with zero being “no need”/“neutral to the criteria.” Where no information is available, the item will be left blank and will count against the sum/average as zero (neutral).

The projects' scores for each criteria is averaged by criteria category

- Condition Need
- Condition Effectiveness Outcome
- Safety Need
- Safety Effectiveness Outcome
- Mobility Need
- Mobility Effectiveness Outcome
- Environmental Justice
- Environment

CONDITION CRITERIA – EXPLANATION OF MEASURES

The scores below are recorded in Appendix A of the current year Transportation Improvement Program (TIP). The condition category headers are included below for example and reference purposes.

Scores explained in the **CONDITION NEED CRITERIA** are recorded under **NEED** below. The page numbers reference these pages in the handout.

Scores explained in the **CONDITION EFFECTIVENESS OUTCOME CRITERIA** are recorded under **EFFECTIVENESS OUTCOME** below. The page numbers reference these pages in the handout. The letters reference the column in the chart that corresponds to the recorded score. These scores correspond to the numbers under each category on you municipalities Project Information Forms (PIF)s.

The blank chart provided below is a reference to the “Transportation Improvement Program (TIP) Evaluation Matrix”, which is Appendix A in the published Transportation Improvement Program (TIP) (a sample of this Evaluation Matrix is provided in Appendix B of this document):

CONDITION							
Need Rating: 0 to 3				Effectiveness Outcome Rating: -3 to 3			
Pavement roughness/serviceability							
Bicycle Provisions							
Pedestrian Provisions							
AVERAGE							
A: Improves Surface							
B: Repairs and/or Improves Bicycle Facilities							
C: Repairs and/or improves Pedestrian Facilities							
AVERAGE							

CONDITION NEED CRITERIA

Pavement condition in project area :

Pavement Roughness

- +3 *IRI rating greater than 320: Poor*
- +2 *IRI rating between 320 and 191: Fair*
- 0 *IRI rating less than 190: Good*

Pavement Serviceability Rating

- +3 *PSR Rating less than 1.75: Recommends total reconstruction*
- +2 *PSR Rating between 1.75 and 2.5: Recommends structural overlay*

- +1 *PSR Rating between 2.5 and 2.75: Recommends thin overlay*
- 0 *PSR Rating more than 2.75: Recommends routine maintenance or adequate pavement*

If both ratings are available the average of the two scores (rounded up) will determine the zero to three score.

Where the community has a pavement management system, rating is based on the type of work recommended:

- +3 *Total reconstruction*
- +2 *Structural overlay*
- +1 *Thin overlay*
- 0 *Adequate pavement*

Bicycle condition in project area:

- +3 *Project area does not have existing bicycle provisions*
- +2 *Project area has bicycle provisions on one side of the roadway*
- 0 *Project area has existing bicycle and pedestrian provisions*

Pedestrian condition in project area:

- +3 *Project area does not have existing pedestrian provisions*
- +2 *Project area has pedestrian provisions on one side of the roadway*
- 0 *Project area has existing pedestrian provisions*

CONDITION EFFECTIVENESS OUTCOME CRITERIA

For Condition, each project will be evaluated by criteria that are specific to the category of the project in the table below:

- +3 *Meets or addresses criteria to a high degree*
- +2 *Meets or addresses criteria to a medium degree*
- +1 *Meets or address criteria to a low degree*
- 0 *Does not meet or address criteria*
- 1 *Counter to criteria to a low degree*
- 2 *Counter to criteria to a medium degree*
- 3 *Counter to criteria to a high degree*

	Arterial	Major Highway	Bridge	Enhancement	Bicycle/ Pedestrian	Regional Mobility
A	Improves the roadway surface to state of good repair	Improves the roadway surface to state of good repair	Restores Bridge to Structural Adequacy			
B	Repairs existing bicycle amenities	Repairs existing bicycle amenities	Repairs existing bicycle amenities			

C	Repairs existing pedestrian amenities	Repairs existing pedestrian amenities	Repairs existing pedestrian amenities			
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SAFETY CRITERIA - EXPLANATION OF MEASURES

The scores below are recorded in Appendix A of the current year Transportation Improvement Program (TIP), referenced as “The Transportation Improvement Program (TIP) Evaluation Matrix”, the blank chart provided below is a reference to this matrix.

Scores explained in the **SAFETY NEED CRITERIA** are recorded under **NEED** below. The page numbers reference these pages in the handout.

Scores explained in the **SAFETY EFFECTIVENESS OUTCOME CRITERIA** are recorded under **EFFECTIVENESS OUTCOME** below. The page numbers reference these pages in the handout. The letters reference the column in the chart that corresponds to the recorded score. These scores correspond to the numbers under each category on you municipalities Project Information Forms (PIF)s.

SAFETY												
Need Rating: 0 to 3						Effectiveness Outcome Rating: -3 to 3						
Top 200	EPDO Value/Injury Value	Crash Rate/Crashes per Mile	Number of Bicycle Crashes	Number of Pedestrian Crashes	AVERAGE	A: Project design addresses primary safety need	B: Project design addresses primary MPO identified safety need	C: Effectiveness at crash reduction	D: Improves Freight Related Safety Issues	E: Improves Bicycle Safety	F: Improves Pedestrian Safety	AVERAGE

SAFETY NEED CRITERIA

Using the Commonwealth’s listing of top 200 crash sites:

+3 *If a top 50 crash location was located in the project area*

- +2 *If a top 100 crash location located in the project area*
- +1 *If a top 200 crash location located in the project area*
- 0 *No top 200 crash location located in the project area*

EPDO/Injury Value Using the Commonwealth's listing for Estimated Property Damage Only (EPCO) or Injury Value information:

- +3 *If the value is in the top 20% of most assessed value*
- +2 *If the value is in the top 49 to 21% of most assessed value*
- +1 *If the value is in the top 50 to 1% of the most assessed value*
- 0 *If there is no loss*

Crash Rate/Crashes per Mile:

- +3 *If the rate is in the top 20% of projects located in the Commonwealth*
- +2 *If the rate is in the top 49 to 21% of projects located in the Commonwealth*
- +1 *If the rate is in the top 50 to 1% of projects located in the Commonwealth*
- 0 *If project has no crashes*

Number of Bicycle Crashes:

- +3 *If a top 50 bicycle crash location was located in the project area*
- +2 *If a top 100 bicycle crash location located in the project area*
- +1 *If a top 200 bicycle crash location located in the project area*
- 0 *No top 200 bicycle crash location located in the project area*

Number of Pedestrian Crashes:

- +3 *If a top 50 pedestrian crash location was located in the project area*
- +2 *If a top 100 pedestrian crash location located in the project area*
- +1 *If a top 200 pedestrian crash location located in the project area*
- 0 *No top 200 pedestrian crash location located in the project area*

SAFETY EFFECTIVENESS OUTCOME CRITERIA

For Safety, each project will be evaluated by criteria that are specific to the category of the project in the table below:

- +3 *Meets or addresses criteria to a high degree*
- +2 *Meets or addresses criteria to a medium degree*
- +1 *Meets or address criteria to a low degree*
- 0 *Does not meet or address criteria*
- 1 *Counter to criteria to a low degree*
- 2 *Counter to criteria to a medium degree*
- 3 *Counter to criteria to a high degree*

	Arterial	Major Highway	Bridge	Enhancement	Bicycle/ Pedestrian	Regional Mobility
A	Project design will address the primary safety need identified by the proponent in the question P4	Project design will address the primary safety need identified by the proponent in the question P4				
B	Project design will address the primary MPO identified safety need	Project design will address the primary MPO identified safety need				
C	Project design will be effective at reducing crashes in the project area	Project design will be effective at reducing crashes in the project area				
D	Project design will be effective at improving freight related safety issues	Project design will be effective at improving freight related safety issues				
E	Provides will improve safety issues related to bicycle travel	Provides will improve safety issues related to bicycle travel				
F	Provides will improve safety issues related to pedestrian movement	Provides will improve safety issues related to pedestrian movement				

MOBILITY AND OPERATIONS CRITERIA - EXPLANATION OF MEASURES

The scores below are recorded in Appendix A of the current year Transportation Improvement Program (TIP), referenced as “The Transportation Improvement Program (TIP) Evaluation Matrix”, the blank chart provided below is a reference to this matrix.

Scores explained in the **MOBILITY NEED CRITERIA** are recorded under **NEED** below. The page numbers reference these pages in the handout.

Scores explained in the **MOBILITY NEED CRITERIA ARE** recorded under **EFFECTIVENESS OUTCOME** below. The page numbers reference these pages in the handout. The letters reference the column in the chart that corresponds to the recorded score. These scores correspond to the numbers under each category on you municipalities Project Information Forms (PIF)s.

MOBILITY and OPERATIONS																		
Need Rating: 0 to 3							Effectiveness Outcome Rating: -3 to 3											
LOS (peak time)	MMS- congested area	Intermodal Connection/Transit Accommodations	Equipment Condition	Existing Bicycle Infrastructure	Existing Pedestrian Infrastructure	AVERAGE	A: Project design addresses primary mobility need	B: Project design addresses MPO identified mobility need	C: Improves LOS/relieve congestion	D: Upgrades Equipment	E: Enhances freight movement	F: Regional Truck Network	G: ITS strategies	H: Improves Transit Reliability/Prioritizes signals for transit	I: Serves Evacuation Plan or Emergency Management function	J: Improves Bicycle Infrastructure	K: Improves Pedestrian Infrastructure	AVERAGE

MOBILITY AND OPERATIONS NEED CRITERIA

Level of Service (LOS):

- +3 Source data indicates project area has an LOS value of F at peak travel times
- +2 Source data indicates project area has an LOS value of E at peak travel times
- +1 Source data indicates project area has an LOS value of D at peak travel times
- 0 All other values

Mobility Management System:

- +3 *MMS data indicates project area is in the top 20% of the most congested project areas monitored*
 - +2 *MMS data indicates project area is in the top 40 to 21% of the most congested project areas monitored*
 - +1 *MMS data indicates project area is in the top 50 to 1% of the most congested project areas monitored*
 - 0 *MMS data indicates project area is in the top 80 to 51 % of the most congested project areas monitored*
 - 1 *MMS data indicates project area is at 81 or higher% of the congested project areas monitored*
- *municipalities that are not part of the MMS will not have a score recorded and will have their need average denominator reduced to four.*

Intermodal Connection/Transit Accommodations:

- +3 *Project area supports an intermodal connection*
- +2 *Project area accommodates transit service*
- 0 *All other results*

Equipment Condition

- +3 *Poor condition, all equipment must be replaced*
- +2 *Mediocre condition, replacement of majority of equipment*
- +1 *Fair condition, particle replacement needed*
- 0 *All other values*

Existing Bicycle Infrastructure

- +2 *No existing bicycle infrastructure*
- +1 *Poorly delineated or partial bicycle infrastructure*
- 0 *All other values*

Existing Pedestrian Infrastructure

- +3 *No existing pedestrian infrastructure*
- +2 *Poorly delineated or partial pedestrian infrastructure*
- +1 *Pedestrian infrastructure that is not ADA compliant*
- 0 *All other values*

MOBILITY AND OPERATIONS PROJECT CRITERIA

For Mobility and Operations, each project will be evaluated by criteria that are specific to the category of the project in the table below:

- +3 *Meets or addresses criteria to a high degree*
- +2 *Meets or addresses criteria to a medium degree*
- +1 *Meets or address criteria to a low degree*
- 0 *Does not meet or address criteria*
- 1 *Counter to criteria to a low degree*
- 2 *Counter to criteria to a medium degree*
- 3 *Counter to criteria to a high degree*

	Arterial	Major Highway	Bridge	Enhancement	Bicycle/ Pedestrian	Regional Mobility
A	Project design will address the primary mobility need identified by the proponent in the question P7 and evaluated by staff	Project design will address the primary mobility need identified by the proponent in the question P7 and evaluated by staff				
B	Project design will address the primary mobility need identified by MPO staff	Project design will address the primary mobility need identified by MPO staff				
C	Improves LOS or otherwise relieves traffic congestion	Improves LOS or otherwise relieves traffic congestion				
D	Includes signal equipment upgrades, including for adaptive signal controls and coordination with adjacent signals (ITS)	Includes signal equipment upgrades, including for adaptive signal controls and coordination with adjacent signals (ITS)				
E	Enhances freight movement/operations for regional or local commerce	Enhances freight movement/operations for regional or local commerce				
F	Project results in improvements along the regional truck network	Project results in improvements along the regional truck network				
G	Includes ITS elements to improve traffic flow as identified by an Identified ITS strategy for the municipality or state (e.g. variable message signs)	Includes ITS elements to improve traffic flow as identified by an Identified ITS strategy for the municipality or state (e.g. variable message signs)				
H	Prioritizes signals for transit vehicles (ITS)	Prioritizes signals for transit vehicles (ITS)				

	Arterial	Major Highway	Bridge	Enhancement	Bicycle/ Pedestrian	Regional Mobility
I	Provides benefit to Emergency Management System as identified in listed documents/resources	Provides benefit to Emergency Management System as identified in listed documents/resources				
J	Provides or repairs bicycle lanes or other infrastructure/elements	Provides or repairs bicycle lanes or other infrastructure/elements				
K	Provides or repairs sidewalks or other infrastructure/elements	Provides or repairs sidewalks or other infrastructure/elements				

ENVIRONMENTAL JUSTICE CRITERIA - EXPLANATION OF MEASURES

The scores below are recorded in Appendix A of the current year Transportation Improvement Program (TIP), referenced as “The Transportation Improvement Program (TIP) Evaluation Matrix”, the blank chart provided below is a reference to this matrix.

The section below is evaluated by MPO staff and is only evaluated for identified Environmental Justice areas. Municipalities that are not in an Environmental Justice area will not have a score recorded. Scores explained in this section are recorded as referenced above. The page numbers reference these pages in the handout.

Please reference information on pages 12 and 13 of this document. If you have further questions about the MPO’s program, please contact Annette Demchur, Regional Equity Program Manager, at annetted@ctps.org or 617.973.7140.

ENVIRONMENTAL JUSTICE				
Environmental Justice Benefits Rating: -3 to 3				
Improves access to transit for an EJ population	Improves safety for an EJ population	Project possibly improves air quality and in an EJ zone	Does this project address an MPO identified EJ community need	AVERAGE

ENVIRONMENTAL JUSTICE CRITERIA

Environmental Justice:

- +3 *Project located in an MPO environmental justice area and major project benefits outweigh the project burdens*
- +2 *Project located in an MPO environmental justice population zone and major project benefits outweigh the project burdens*
- +1 *Project located in an MPO environmental justice area or population zone and minor project benefits outweigh the project burdens*
- 0 *Where the local project benefits balance the project burdens*
- 1 *Project located in an MPO environmental justice area or population zone and minor project burdens outweigh the project benefits*
- 2 *Project located in an MPO environmental justice population zone and major project burdens outweigh the project benefits*
- 3 *Project located in an MPO environmental justice area and major project burdens outweigh the project benefits*

Improves access to transit for an Environmental Justice (EJ) population:

- +2 *Project located in an MPO environmental justice area or population zone and will provide access where non exists*
- +1 *Project located in an MPO environmental justice area or population zone and will provide improved access*
- 0 *Project provides no improvement in transit access or is not in an MPO environmental justice area or population zone*
- 1 *Project located in an MPO environmental justice area or population zone and could include components to improve transit access but does not*
- 2 *Project located in an MPO environmental justice area or population zone and hinders access to transit*

Improves safety for an EJ population:

- +2 *Project located in an MPO environmental justice area or population zone and the project will provide a substantially-needed safety benefit*
- +1 *Project located in an MPO environmental justice area or population zone and will provide a minor safety benefit*
- 0 *Project provides no additional safety benefit or is not in an MPO environmental justice area or population zone*
- 1 *Project located in an MPO environmental justice area or population zone and will have minor negative benefits on safety in the area*
- 2 *Project located in an MPO environmental justice area or population zone and will have major negative benefits on safety in the area*

Project has the potential to improve Air Quality:

- +2 *Project located in an MPO environmental justice area or population zone and the project may provide a substantial air quality benefit*

- +1 *Project located in an MPO environmental justice area or population zone and may provide a minor air quality benefit*
- 0 *Project provides no additional benefit or is not in an MPO environmental justice area or population zone*
- 1 *Project located in an MPO environmental justice area or population zone and may have negative impacts on air quality in the area*
- 2 *Project located in an MPO environmental justice area or population zone and the project may have substantial negative air quality impacts in the area*

Does this project address an MPO-identified EJ community need:

- +3 *Project located in an MPO environmental justice area and the project will provide a substantial benefit and or solution to an identified need*
- +2 *Project located in an MPO environmental justice population zone and project will provide a benefit and or solution to an identified need*
- +1 *Project located in an MPO environmental justice area or population zone and will provide a minor benefit and or solution to an identified need*
- 0 *Project provides no additional benefit or is not in an MPO environmental justice area or population zone*
- 1 *Project located in an MPO environmental justice area or population zone and will have a negative impact on an MPO identified EJ need*
- 2 *Project located in an MPO environmental justice population zone and project will have a negative impact on an MPO identified EJ need*
- 3 *Project located in an MPO environmental justice area and the project will have a substantial negative impact on an MPO identified EJ need*

ENVIRONMENTAL CRITERIA - EXPLANATION OF MEASURES

The scores below are recorded in Appendix A of the current year Transportation Improvement Program (TIP), referenced as “The Transportation Improvement Program (TIP) Evaluation Matrix”, the blank chart provided below is a reference to this matrix. The section below is evaluated by MPO staff. The page numbers reference these pages in the handout.

ENVIRONMENT				
Environment Rating: -3 to 3				
Mitigates Existing Issues/Adds Negative Impacts	Possibly Air Quality (Improves/Degrades)	Community Character (Improves/Degrades)	Possible CO2 Reduction	AVERAGE

Environmental mitigation of project:

- +3 *Project mitigates significant existing environmental issues*
- +2 *Project includes major elements mitigating existing environmental issues*
- +1 *Project includes minor elements mitigating existing environmental issues*
- 0 *Project has no significant environmental issues*
- 1 *Project includes minor elements that have negative environmental impacts*
- 2 *Project includes major elements that have negative environmental impacts*
- 3 *Project has significant negative environmental impacts*

Air quality improvement by project:

- +3 *Project significantly improves air quality*
- +2 *Project includes major elements improving air quality*
- +1 *Project includes minor elements improving air quality*
- 0 *Project has no significant air quality impacts*
- 1 *Project includes minor elements that have negative air quality impacts*
- 2 *Project includes major elements that have negative air quality impacts*
- 3 *Project has significant negative air quality impacts*

Community Character:

- +3 *Project specifically improves community character*
- +2 *Project includes major elements that improve community character*
- +1 *Project includes minor elements that improve community character*
- 0 *Project does not affect community character*
- 1 *Project includes minor elements that degrade community character*
- 2 *Project includes major elements that degrade community character*
- 3 *Project significantly degrades community character*

Possible CO2 Reduction:

- +3 *Project may provide a substantial air quality benefit*
- +2 *Project may provide an air quality benefit*
- +1 *Project may provide a minor air quality benefit*
- 0 *Project provides no additional benefit to air quality*
- 1 *Project may have negative impacts on air quality in the area*

LAND USE CRITERIA

Land Use Criteria score – total points from 45 through 51, and 40 and 44.

- 45** Average residential density allowed by zoning (within 1 mile corridor around project) – calculated by MAPC:
 - +1 *If above 7 DU/acre (for suburban communities);*
 - +1 *If above 15 DU/acre (for urban communities);*
 - 0 *Otherwise*
- 46** Average employment density allowed by zoning (within 1 mile corridor around project) – calculated by MAPC:
 - +1 *If above 50 employees/acre (for suburban communities);*

- +1 *If above 150 employees/acre (for urban communities);*
 - 0 *Otherwise*
- 47** Average population to employment ratio allowed by zoning (within 1 mile corridor around project) – calculated by MAPC:
- +1 *If the ratio is between 2.0 and 0.75, or*
 - +1 *If the ratio is below 0.75 but community responses indicate recent residential development in the corridor (designed as + on the spreadsheet)*
- 48** Mixed uses allowed in corridor – determined by MAPC based on zoning, Commonwealth Capital forms, and community responses:
- +1 *If mixed use allowed*
 - 0 *If not*
- 49** Maximum parking requirements in the corridor of 3 spaces or less/1000 sq/ft of commercial space in suburban communities, 1 space or less/1000 sq/ft in urban communities – determined by MAPC based on zoning:
- +1 *If maximum not exceeded;*
 - 0 *If exceeded*
- 50** Community requirements for TDM program for new development – determined by MAPC based on zoning:
- +1 *If community has appropriate TDM program*
 - 0 *If not*
- 51** Corridor Land Use Plan has been developed and adopted by all corridor communities that is designed to preserve at least 50% of all new roadway capacity from project:
- +1 *If plan exists and has been adopted by all communities*
 - 0 *If plan doesn't exist or has not been adopted by all communities*
- 40 & 44** Percentage of Wetlands (#40) and Greenfields (#44) in corridor – calculated by MAPC
- 1 *If the total for Wetlands and Greenfields is greater than 33% (except for bicycle/pedestrian and enhancement projects, which are not penalized)*
 - 0 *If the total is 33% or less, and for bicycle/pedestrian and enhancement projects*

ECONOMIC DEVELOPMENT CRITERIA

Economic Development Criteria score – total points from 52 through 55.

- 52** The project serves a targeted redevelopment site – determined by MAPC based on Commonwealth Capital forms, and community responses:
- +1 *If the project provides access to the site*
 - 0 *If the project does not provide access or if a redevelopment site has not been identified*

- 53** The community provides financial or regulatory support to the targeted redevelopment site – determined by MAPC based on Commonwealth Capital forms, and community responses:
+1 *If the project provides access to a designated redevelopment site and the community provides support*
0 *If the community does not provide support*
- 54** The project provides access between new affordable housing and employment centers – determined by MAPC based on Commonwealth Capital forms, and community responses:
+1 *If the community has recently developed affordable housing in the corridor (or affordable housing is currently under development in the corridor).*
0 *If the community has not recently developed affordable housing in the corridor.*
- 55** Supports regional freight movement – determined by MAPC based on community responses:
+1 *If the project supports regional freight movement*
0 *If not*