CHAPTER 2

TRANSPORTATION PLANNING PROCESS

A. REQUIREMENTS

1. Moving Ahead for Progress in the 21st Century (MAP-21)

On July 6, 2012, the President signed into law the MAP-21 legislation authorizing highway, highway safety, transit and other surface transportation programs. MAP-21 replaced the SAFETEA-LU legislation and is the first long-term federal transportation legislation since 2005. The legislation has since been temporarily extended. MAP-21 creates a performance-based program that is intended to streamline the existing transportation process.

Significant features of MAP-21 include:

- Metropolitan planning organizations (MPOs) will be required to establish and use a performance-based approach to transportation decision making and the development of the RTP through the establishment of regional performance targets.
- Establishes a new requirement for regular updates to State Strategic Highway Safety Plans.
- The creation of the Transportation Alternatives Program (TAP). TAP replaces the funding from pre-MAP-21 programs including Transportation Enhancements, Recreational Trails, and Safe Routes to School, to combine them into a single funding source.
- Expands the National Highway System (NHS) to include principal arterial roadways.
- Consolidates existing federal transportation programs into a smaller number of core programs.
- Incorporates changes to assist in the reduction of delivery times for transportation improvement projects.

As part of MAP-21 the RTP must address the following new requirements:

- The RTP must include a description of the performance measures and performance targets used in assessing the performance of the transportation system.
- The RTP must include a system performance report to evaluate the existing condition and performance of the transportation system.
- Examine how transportation connectivity gaps may affect access to essential services such as housing, employment, health care, schools/education, and recreation.

- Include coordination across regional boundaries and collaboration with MassDOT and transit operators to ensure a regional approach to transportation planning.
- Consider using scenario planning to develop potential regional investment strategies, population and employment growth, and the impact of regional performance measures.
- Conduct a benefits and burdens analysis based on the projects approved in the RTP.
- Include a section on livability and climate change.
- Continue to address the eight planning factors from the SAFETEA-LU legislation.

2. Clean Air Act Amendments of 1990

As a result of federal Clean Air legislation, the Regional Transportation Plan must include a complete analysis of air quality issues in the region, along with demonstrations of how this plan will work to achieve National Ambient Air Quality standards. Further, it must include regional short and long range transportation plans and projects indicating the future direction of the transportation system. The degree to which the short and long range plans are discussed is essentially the option of the organization(s) preparing the plan. It is important to note, however, that it is necessary for transportation projects/plans to be included in a Regional Transportation Plan if they are to receive federal funding for implementation.

3. Title VI / Environmental Justice

Title VI states that "No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Title VI bars intentional discrimination as well as disparate impact discrimination (i.e., a neutral policy or practice that has a disparate impact on protected groups).

The Environmental Justice (EJ) Orders further amplify Title VI by providing that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

In response to Environmental Justice Executive Order 12898, and at the request of the Massachusetts Department of Transportation and the Federal Highway Administration, PVPC has been incorporating environmental justice into the transportation planning process. Environmental Justice seeks to ensure equity in the distribution of benefits and burdens of transportation resources. As the Metropolitan Planning Organization (MPO), PVPC is

responsible for identifying minority and low-income populations within the region and ensuring that transportation programs, policies, and activities do not have a disproportionately high and adverse human health or environmental effects on these populations. In addition, PVPC is responsible for providing opportunities for participation in the decision making process for all socio-economic groups.

Goals of Title VI and Environmental Justice include:

- Identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of the transportation programs, policies, and activities on minority populations and low-income populations.
- Assess the distribution of impacts on different socio-economic groups for the investments identified in the transportation plan and TIP.
- Make a special effort to engage and involve representatives of minority and low-income groups to hear their views regarding changes to and performance of the planning process.
- Enhance analytical capabilities to ensure that the long-range transportation plan and the transportation improvement program (TIP) comply with Title VI. Integrate this analysis into transportation programs, policies, plans and activities.
- Identify strategies and efforts in the planning process for ensuring, demonstrating, and substantiating compliance with Title VI.
- Develop a demographic profile of the metropolitan planning area or State that includes identification of the locations of socio-economic groups, including low-income and minority populations as covered by the Executive Order on Environmental Justice and Title VI provisions.
- Identify the needs of low-income and minority populations. Use demographic information to examine the distributions across these groups of the benefits and burdens of the transportation investments included in the plan and TIP.
- Create an analytical process for assessing the regional benefits and burdens of transportation system investments for different socio-economic groups.
- Create a public involvement process that identifies a strategy for engaging minority and low-income populations in transportation decision making.
- Demonstrate efforts to engage low-income and minority populations as part of the certification review and public outreach effort.
- Identify mechanisms to ensure that issues and concerns raised by low-income and minority populations are appropriately considered in the decision making process.

B. PARTICIPANTS IN THE TRANSPORTATION PLANNING PROCESS

A variety of public and private entities are involved in the Transportation Planning Process. A summary of these organizations and their responsibilities follows.

1. Member Communities

The Pioneer Valley Region consists of 43 incorporated cities and towns. Each has a large responsibility to provide local transportation facilities and services. As a result, a significant portion of each local budget is expended for transportation purposes. Communities also receive state funds, called Chapter 90, for transportation purposes. Some of these local responsibilities and/or expenditures include:

- Initiation of federally assisted projects for roadways not under state jurisdiction;
- Support for public transit by more than half of the region's 43 municipalities that are members of the Pioneer Valley Transit Authority (PVTA);
- Contribution by some rural municipalities to special, local paratransit services in their towns;
- Provision of school transportation, public service vehicles (such as police, fire and, in some areas, trash removal), local traffic regulation, and road and sidewalk maintenance by all municipalities in the Pioneer Valley Region; and,
- Seasonal maintenance of local roadways (snow, etc.).

To provide a well-maintained and efficient transportation network for the Pioneer Valley region, it is important that the municipalities adopt suitable plans, policies, and programs for guiding future transportation and land use improvements in their areas, and that these municipal plans and programs be coordinated with regional planning efforts.

2. The Pioneer Valley Metropolitan Planning Organization (MPO)

The Pioneer Valley Metropolitan Planning Organization (MPO) implements and oversees the 3C transportation planning process in the Pioneer Valley region. The objective of the 3C transportation planning process is to assist, support, and provide the capability to maintain an open comprehensive, cooperative, and continuing transportation planning and programming process at all levels of government in conformance with applicable federal and state requirements and guidelines. The Pioneer Valley MPO was restructured in August of 2006 to enhance the role of the local communities in

the transportation planning process and allow local MPO members to represent subregional districts respective to community size and geographic location. The number of voting members was also increased from eight to ten. A more recent update in 2011 recognized changes to the MPO membership as a result of the creation of the Massachusetts Department of Transportation. The Pioneer Valley MPO consists of the following officials, their designee (as allowed under the current Memorandum of Understanding), or alternate.

- The Secretary of the Massachusetts Department of Transportation
- The Administrator of the Massachusetts Department of Transportation – Highways Division
- The Chairman of the Pioneer Valley Planning Commission
- The Chairman of the Pioneer Valley Transit Authority
- The Mayors of two of the following three (3) urban core cities:

  Chicopee Holyoke Springfield
- The Mayor or a Selectman of one of the following four (4) cities and towns:

  Agawam Southwick Westfield
  West
- The Mayor or a Selectman of one of the following five (5) cities and towns:

  Amherst Easthampton Hadley
  Northampton South Hadley
- A Selectman of one of the following fourteen (14) suburban and rural towns:

  Belchertown Brimfield East Longmeadow
  Granby Hampden Holland
  Longmeado Ludlow Monson
  Palmer Pelham Wales
  Ware Wilbraham

- A Selectman of one of the following seventeen (17) suburban and rural towns:

  Blandford Chester Chesterfield
  Cummington Goshen Granville
  Hatfield Huntington Middlefield
  Montgomery Plainfield Russell
  Southampton Tolland Westhampton
  Williamsburg Worthington

In addition, the Joint Transportation Committee (JTC) Chairman, and one representative each from the Federal Highway Administration (FHWA), the

Federal Transit Administration (FTA), the Chair of the Infrastructure Committee of the Western Massachusetts Economic Development Council (EDC), the five (5) alternate community MPO representatives, and one representative each from both the Massachusetts Department of Transportation Highways Division District One and District Two Offices shall be considered ex-officio, non-voting members of the Pioneer Valley MPO. Alternate members shall be additional chief elected officials from each of the above-cited categories of communities and he/she shall be eligible to attend, participate and vote at MPO meetings in the event that the primary member cannot attend.

The MPO jointly develops, reviews, and endorses annually a Planning Work Program which includes a Unified Planning Work Program; a Transportation Plan; a Transportation Improvement Program' as well as transportation plans and programs as may from time to time be required by federal and state laws and regulations. Each of the MPO members reviews regional transportation documents/plans and, if acceptable, indicates its acceptance by endorsing the document. Endorsement is made by a simple majority of those members present and voting, provided that one of the state agencies is included in the majority vote. The MPO is the forum for cooperative transportation decision-making in the Pioneer Valley region.

a) Pioneer Valley Planning Commission (PVPC)

The Pioneer Valley Planning Commission serves as the comprehensive regional planning agency for the 43 cities and towns of Hampshire and Hampden Counties in Western Massachusetts. It is one of the eight signatory bodies to the region's MPO and is responsible for guiding growth and development (both physical and economic) in the Pioneer Valley. In its role as the lead planning agency for the MPO, PVPC provides the staff to conduct MPO and other transportation planning activities for the Pioneer Valley. Transportation planning funds come from many sources including its member communities, the Federal Highway Administration, the Federal Transit Administration, the Massachusetts Department of Transportation, and the Pioneer Valley Transit Authority, among others.

b) Pioneer Valley Transit Authority (PVTA)

The PVTA is the regional transit authority in the Pioneer Valley. Like PVPC, it is also a signatory agency to the region's MPO. The Pioneer Valley Transit Authority provides fixed route bus services and paratransit van services to 24 cities and towns in the region.

The PVPC provides a significant planning support to the PVTA. Further, PVPC includes transit improvement projects in the Transportation Improvement Program (TIP) and in the Regional Transportation Plan (RTP),

both of which serve as guides for determining future facilities and service improvements of the PVTA. PVTA receives funds from the Federal Transit Administration, the Massachusetts Department of Transportation, member communities, passenger fares, and advertising.

c) Massachusetts Department of Transportation

The Massachusetts Department of Transportation is a merger of the former Executive Office of Transportation and Public Works and its divisions with the Massachusetts Turnpike Authority, the Massachusetts Highway Department, the Registry of Motor Vehicles, and the Massachusetts Aeronautics Commission. Developed under Chapter 25 of the Acts of 2009, this transportation reform legislation was signed into law in June 2009 and became effective in November 2009.

MassDOT oversees four divisions: Highway, Mass Transit, Aeronautics, and the Registry of Motor Vehicles (RMV) in addition to an Office of Planning and Programming, the Massachusetts Bay Transportation Authority (MBTA), and all Regional Transit Authorities (RTA).

The Mission of the MassDOT is to deliver excellent customer service to people who travel in the Commonwealth, and to provide our nation's safest and most reliable transportation system in a way that strengthens our economy and quality of life.

i) Massachusetts Department of Transportation – Highways Division

The Highway Division includes the roadways, bridges, and tunnels of the former Massachusetts Highway Department and Massachusetts Turnpike Authority. It also includes many bridges and parkways previously under the authority of the Department of Conservation and Recreation. They are responsible for the design, construction and maintenance of the Commonwealth's state highways and bridges. The Division is responsible for overseeing traffic safety and engineering activities including the Highway Operations Control Center to ensure safe road and travel conditions.

There are a total of five Highway Division offices representing distinct areas of the state. The majority of the Pioneer Valley region is located in District Two, with the westernmost portion of the region falling in District One.

From time to time, MassDOT issues formal engineering and policy directives to introduce new design standards or to supplement, clarify or amend existing design standards. The most recent list of MassDOT Engineering Directives to be used during project design is available at: http://www.massdot.state.ma.us/highway/DoingBusinessWithUs/DesignEngineering/EngineeringDirectives/ListofEngineeringDirectives.aspx

d) Joint Transportation Committee (JTC)

The JTC is a committee comprised of representatives of local, regional and state governments, as well as private groups and individuals involved in providing transportation facilities, services, and/or planning, including Peter Pan Bus Lines, Inc., the Pioneer Valley Railroad, and the Westfield Airport. The JTC was established by the 3C Memorandum of Understanding for the purpose of incorporating citizen participation in the transportation planning process. It is intended that the JTC be representative of both public and private interests in the region and provide a forum for reviewing transportation plans and projects, offering comments and recommendations to guide transportation planning and transportation improvements in the region. The JTC also serves in an advisory capacity to the MPO as they decide on whether accepting and endorsing a plan or project is appropriate. The JTC plays a key role in reviewing documents such as the Regional Transportation Plan, the annual Transportation Improvement Program and the Unified Transportation Work Program.

i) Bicycle and Pedestrian Subcommittee

The Pioneer Valley Joint Transportation's Bicycle and Pedestrian Subcommittee was established by the JTC in 2000. The subcommittee is responsible for oversight and coordination of activities related to the implementation of the Bicycle and Pedestrian Plan. The subcommittee establishes priorities for implementation of action items defined in the Bike and Ped Plan and provides recommendations to the JTC on work tasks included in the Unified Planning Work Program. Members on the subcommittee are appointed by the JTC and include representatives from the Pioneer Valley Chapter of MassBike, the West Springfield Community Police Department, Northeast Sport Cyclists, the Westfield Open Space Committee, the City of Northampton, MassDOT Highways Division District 2, and JTC representatives from Westfield, Springfield, East Longmeadow, South Hadley and Northampton.

ii) TIP Subcommittee

The Pioneer Valley Transportation Improvement Program (TIP) Subcommittee was established by the JTC in 2003. The subcommittee was formed to provide local input on the establishment of project milestones to track the status of current and future TIP projects. The goal of the subcommittee is to develop recommendations for the entire JTC on candidate projects to be included as part of the current TIP. Factors such as the projects score from the Pioneer Valley Transportation Evaluation Criteria (TEC), current design status, environmental permitting status, and status of any needed right of way acquisition are all used to develop the

listing of projects recommended for inclusion in the TIP. The subcommittee also assists the PVPC as community liaisons to increase public participation in TIP related tasks such as the update of the PVPC TIP database of projects.

3. Other State Agencies

In addition to federal transportation funding, the Commonwealth spends a large portion of its own available funds on transportation improvement projects. All federal funds received by the Commonwealth for transportation projects must be supplemented with a state match (usually 80% federal/ 20% state ratio). Assistance is also provided for some local street improvements, mass transit, school transportation, and special paratransit services. In order to provide these funds, the Commonwealth's Legislature periodically enacts a transportation bond bill. In each Transportation Bond, funds are appropriated to communities based on a formula under the provisions of MGL Chapter 90, section 34. These funds are commonly known as Chapter 90 funds. The Chapter 90 highway formula is comprised of three variables: local road mileage (58.33 %), employment figures (20.83 %) and population estimates (20.83 %). Under this formula, those communities with a larger number of road miles receive proportionately more aid than those with fewer road miles. Transportation Bonds have also earmarked funds for the design and/or construction of specific projects. Funding for these projects has occurred at the discretion of the legislature.

a) Department of Environmental Protection (DEP)

The Clean Air Act Amendments of 1990 require all states that do not meet federal air quality standards to prepare a State Implementation Plan (SIP) identifying specific strategies for achieving National Ambient Air Quality standards. The Commonwealth of Massachusetts is considered a non-attainment area, meaning that it does not meet the established air quality standards. The lead organization in preparing the required SIP is the Department of Environmental Protection. DEP monitors the air quality status and recommended improvement strategies (by region) from the Commonwealth's thirteen (13) Regional Planning Agencies. This information is then used to prepare a statewide strategy for meeting federal air quality standards.

4. Federal Agencies

The federal government and its various agencies develop national transportation policies and are the principal funding source for many transportation improvements. Most federal activity is exercised through

agencies of the US Department of Transportation (DOT), but the US Department of Health and Human Services (HHS) also provides some transportation assistance, predominantly paratransit funding.

a) Department of Transportation (DOT)

The US Department of Transportation administers and coordinates highway, transit, air, and rail planning at the federal level in addition to a substantial number of assistance programs to state and local governments. Specific activities (typically broken down by mode) are handled by individual federal agencies housed within the Department of Transportation. These agencies include the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the Federal Aviation Administration (FAA), the United States Coast Guard (USCG), the Surface Transportation Board (STB) and the Federal Railroad Administration (FRA).

i) Federal Highway Administration (FHWA)

The FHWA performs its mission through three main programs:

The Federal-Aid Highway Program provides federal financial assistance to the States to construct and improve the National Highway System, urban and rural roads, and bridges. The program provides funds for general improvements and development of safe highways and roads.

The Motor Carrier Safety Program develops regulations and enforces federal requirements for the safety of trucks and buses to reduce commercial vehicle crashes. It also governs hazardous cargoes as they move over the nation's highways.

The Federal Lands Highway Program provides access to and within national forests, national parks, Indian reservations and other public lands by preparing plans, letting contracts, supervising construction facilities, and conducting bridge inspections and surveys.

ii) Federal Transit Administration (FTA)

FTA is the primary federal funding source for planning and implementing mass transportation improvements. FTA provides financial assistance for both urban and rural mass transportation, and subsidizes some paratransit services for non-profit organizations. Both capital and operating funds are made available.

iii) Federal Aviation Administration (FAA)

FAA provides funding assistance for airport planning and construction, as well as for air traffic control, establishment of safety standards and inspection of accidents.

iv) Federal Railroad Administration (FRA)

FRA is a regulatory body concerned with safety issues related to rail traffic. The FRA is responsible for investigating rail accidents, but also works to develop and implement programs to promote safe rail operation.

b) Department of Health and Human Services

The Department of Health and Human Services assists service agencies in their effort to provide transportation for the elderly, medical services, and community service operations. Most of these are paratransit services.

c) Department of Homeland Security

The Department of Homeland Security was created on January 23, 2002. It is responsible for securing our nation's borders and transportation systems while working to prevent the entry of terrorists and instruments of terror. The Department of Homeland Security is comprised of four divisions:

- Border and Transportation Security
- Emergency Preparedness and Response
- Chemical, Biological, Radiological and Nuclear Countermeasures
- Information Analysis and Infrastructure Protection

A key mission of the Department is to increase measures to ensure the security of the nation's transportation system while continuing to efficiently serve the needs of legitimate travelers and industry.

5. Other Transportation Planning and Service Organizations

In addition to the many local, state, and federal government agencies involved in transportation planning and improvements, other public and private organizations are also important to the operation and improvement of transportation facilities and services in the Pioneer Valley region.

- A number of social and human service agencies in the Pioneer Valley region operate paratransit service. Although some of these operators receive federal assistance, many are privately operated and funded.
- Amtrak is the primary provider of intercity passenger rail service. No commuter rail is currently offered for inter-regional commuters to areas like Hartford and Boston.
- CSX Transportation took over Conrail's operations in the Pioneer Valley region in June of 1999. They are the largest rail freight operator in the region with providing services to the eastern half of the US. Several short lines and one regional railroad also operate freight service within the region.
- Many associations of transportation service providers, such as the American Trucking Association (ATA), are working within federal and state legislation to enact changes that have the potential to impact transportation planning and the focus of transportation improvements.

- The Pioneer Valley has been very successful in involving business leaders, environmentalists and developers in the transportation planning process. Efforts like the Plan for Progress and Valley Vision 4 - the Regional Land Use Plan bring these new partners to the transportation planning table.

C. KEY PRODUCTS

1. Transportation Improvement Program

The Transportation Improvement Program (TIP) is the central program management tool for structuring transportation programs. The TIP is to be fully consistent with the RTP and the planning process. In doing this, the projects identified in the TIP will concur with the goals, policies and objectives of the RTP.

The TIP is scheduled for update every year. Additional changes may be made to the TIP after the required public participation and an MPO meeting. The current TIP identifies a four year listing of projects for implementation. The TIP must be fiscally constrained and programmed according to a regional target (estimate of federal funds) which is provided by MassDOT. All projects, regardless of funding source, are to be identified in the TIP.

Projects identified in the TIP are to be prioritized. Conformity to environmental regulations is key in determining the feasibility and priority of projects. Environmental analysis will also assist in identifying the funding source of projects based on federal restrictions.

The TIP shall also be available for public official review and comment. Included in this public participation is the update on the amendment process associated with the TIP.

2. Unified Planning Work Program

The Unified Planning Work Program (UPWP) is a narrative description of the annual technical work program for a continuing, cooperative, and comprehensive (3C) transportation planning process in the Pioneer Valley Region. The UPWP provides an indication of regional long and short-range transportation planning objectives, the manner in which these objectives will be achieved, the budget necessary to sustain the overall planning effort, and the sources of funding for each specific program element.

Work tasks within the UPWP are reflective of issues and concerns originating from transportation agencies at the federal, state, and local levels. Many tasks are specifically targeted to implement provisions of federal legislation such as MAP-21, the CAAA, and the Americans with Disabilities Act (ADA).

3. Certification with Title VI

The State and the Metropolitan Planning Organization must annually certify to the Federal Highway Administration and the Federal Transit Administration that their planning process is addressing the major issues facing the region and is being conducted in accordance with all applicable requirements. FHWA and FTA jointly review and evaluate the transportation planning process of each Transportation Management Area (an urbanized area of greater than 200,000) to determine if the process meets the requirements. The review must take place at least once every four years. FHWA and FTA certify the transportation planning process and/or specify corrective actions. Highway and transit funds may be withheld from the region if it is determined that the planning process does not meet the requirements.

The certification process must identify which mechanisms are in place to ensure that issues and concerns raised by low-income and minority populations are appropriately considered in the decision making process. Appropriate evidence must be presented to demonstrate that these concerns have been appropriately considered and that the MPO has made funds available to local organizations that represent low-income and minority populations to enable their participation in the planning processes.

D. MAP-21 SEVEN NATIONAL GOAL AREAS

As part of the transition to a performance-based transportation program, the Pioneer Valley region has placed an emphasis on transportation improvements that demonstrate progress towards the following seven national goal areas of MAP-21:

- **Safety**—To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Infrastructure condition**—To maintain the highway infrastructure asset system in a state of good repair.
- **Congestion reduction**—To achieve a significant reduction in congestion o n the NHS.
- **System reliability**—To improve the efficiency of the surface transportation system.
- **Freight movement and economic vitality**—To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental sustainability**—To enhance the performance of the transportation system while protecting and enhancing the natural environment.

- **Reduced project delivery delays**—To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

The Pioneer Valley MPO has developed an annual Regional Performance Measures task as part of the UPWP to assist in the development of measures that advance the seven national goals and are consistent with Massachusetts GreenDOT policy. In addition, a number of tasks included as part of the UPWP serve to advance a number of planning efforts that support the seven national goals.

Table 2-1 – Pioneer Valley UPWP Support of National Goals Areas

UPWP Task Description	National Goals
Regional Transportation Plan Update consists of the update of the RTP as required every four years. The RTP focuses on incorporating new planning requirements from the MAP-21 legislation and advancing transportation improvements to address regional needs, strategies, and performance measures.	All
Transit System Surveys and Route Implementation collects existing route data and ridership surveys to assist in improving the reliability and performance of the PVTA fixed route system.	Safety, Congestion Reduction, System Reliability
Regional Freight Planning focuses on identifying opportunities to enhance the movement of freight in the region.	Freight Movement and Economic Vitality
Regional Congestion Management Process (CMP) uses a variety of data sources to measure congestion along regional corridors and identify congestion bottlenecks. Planning studies are developed for congested areas to assist in developing projects to reduce congestion.	Congestion Reduction, System Reliability
Regional Pavement Management System collects pavement condition data for all federal aid eligible roadways on a four year cycle. The impact of planned roadway improvement projects can be analyzed under a variety of funding levels to identify the level of investment required to keep pavement in a good state of repair.	Infrastructure Condition, Reduce Project Delivery Delays
Regional Safety and Planning Studies develops a list of the Top 100 High Crash Intersections to monitor the effectiveness of regional safety improvements and to advance planning studies to identify potential safety improvements.	Safety, Reduce Project Delivery Delays
Intelligent Transportation System (ITS) and Regional Evacuation Planning assists in ongoing regional ITS and evacuation planning efforts to increase the deployment of ITS technology, provide real time information to the public, and enhance regional transportation security.	Safety, Congestion Reduction, System Reliability
Climate Change Implementation assists Pioneer Valley communities to plan for the impacts of climate change on the regional transportation system. It also serves to develop strategies and projects that can have a positive impact on greenhouse gas emissions from transportation sources in compliance with the Massachusetts GreenDOT policy.	Infrastructure Condition, Environmental Sustainability
Green Street and Infrastructure encourages the use of green streets and infrastructure where practical to reduce stormwater and other environmental impacts by the regional transportation system.	Infrastructure Condition, Environmental Sustainability

1. The Eight Factors of SAFETEA-LU

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) required all metropolitan planning organizations to incorporate eight factors into their planning process. While this legislation has been replaced by MAP-21, MPOs are encouraged to continue to address the eight planning factors are part of their RTP. The Pioneer Valley MPO has taken great strides to incorporate these eight factors into the Regional Transportation Plan and the regional planning process. This section addresses each factor separately and shows how the Pioneer Valley has incorporated the factor into our regional planning process.

a) Support the economic vitality of the metropolitan areas, especially by enabling global competitiveness, productivity, and efficiency.

In 1994, the Pioneer Valley Planning Commission completed the "Pioneer Valley Plan for Progress: A Regional Economic Strategy for the Pioneer Valley." The Regional Plan for Progress brings together the vital economic interests of the Pioneer Valley to build a competitive regional community with a world class environment which stimulates development and growth. The Plan for Progress was updated in 2004 and reflects a broader concept of regional development that capitalizes on the dynamic interaction of people, place and work. In 2009, a new strategy was added – Develop a Green Regional Economy. The heart of the plan is seven cross-cutting themes that strategy teams must consider in their action plans in order to meet the region's goals: cross-border collaboration (with the greater Hartford region), diversity, education, industry clusters, sustainability, technology, and urban investment.

The Pioneer Valley Region was designated as an official Economic Development District (EDD) by the Economic Development Administration (EDA) in the Fall of 1999. The PVPC annually prepares a Comprehensive Economic Development Strategy (CEDS) report to update the current economic conditions of the Pioneer Valley region, summarize the current status of action strategies, and prioritize a listing of potential projects from our region that are likely to seek EDA financial assistance.

In September of 2000, the Hartford-Springfield Economic Partnership (HSEP) was formed. This partnership helps market the region north and south of the Connecticut-Massachusetts border along the I-91/Connecticut River Valley corridor. HSEP has advanced projects with regional implications and furthered the economic progress of the interstate region by capitalizing on historic, economic, natural, and cultural ties. The region was branded "New England's Knowledge Corridor: Gateway to Innovation" for marketing purposes.

The Pioneer Valley RTP promotes many strategies to enhance the economic vitality of the region. These include recommendations to revitalize the urban core, redevelop Brownfield sites, and improve congested locations. By promoting projects to maintain a safe and efficient multi-modal regional transportation system, local businesses are assured of quick, reliable access to the Interstate Highway System. This facilitates easy access by employees and the efficient movement of products to and from the region.

The PVPC has produced an annual State of the Region Report since February of 2000. This report identifies trends that are either improving or degrading the livability of the Pioneer Valley Region. Information on trends in community vitality, the regional economy, regional commuting trends, and environmental quality was compiled to assist our region in making wise choices to promote responsible growth in the future. The PVPC has created a dedicated website for the State of the Region Report (http://www.stateofthepioneervalley.org/). This web site is a source for evaluating the current state of the Pioneer Valley in western Massachusetts and to view trends of selected economic indicators for the region.

b) Increase the safety of the transportation system for motorized and non-motorized users.

The Pioneer Valley Planning Commission consciously addresses the area of safety in all aspects of our transportation planning process. All transportation studies conducted by the PVPC include a safety component. Historical crash data is utilized to identify past trends and existing pedestrian and vehicular safety issues. Short and long term recommendations are identified as part of these studies to both reduce congestion and improve safety.

The PVPC participated in the development of the Massachusetts Strategic Highway Safety plan to establish the context for how safety will be incorporated into all aspects of transportation planning and project implementation. The mission of this plan is to develop, promote, implement and evaluate data-driven, multi-disciplinary strategies to maximize safety for users of the roadway system.

In May 2013, PVPC updated its the Top 100 High Crash Intersections in the Pioneer Valley Region report. A defined strategy of the 2007 RTP to improve safety, this document ranks intersections based on the number and severity of crashes. It identifies the location of each intersection, current improvement projects that could improve safety, and locations with no currently planned improvements that could benefit from further study. The current version of the report also developed a process to rank the top 25 high crash roadway segments in the region.

Safety of pedestrians, bicyclists and motorists are analyzed and integrated into all transportation projects that PVPC conducts. PVPC is a Highway Safety Improvement Program (HSIP) partner with MassDOT. Road safety audits have become an integral part of the HSIP. A list of roadway safety audits that have completed in the Pioneer Valley region is included as part of Chapter 6.

Finally, the safety of pedestrians, bicyclists and transit riders are also addressed as part of ongoing transportation planning activities and in all transportation surveys produced by PVPC. A survey completed by the PVPC along the State Street corridor in the City of Springfield will assist in the identification of areas that required improved lighting and transit waiting areas. PVPC surveys users of regional off road bicycle facilities to specifically inquire about the safety of users. Concerns regarding pedestrian and bicycle safety expressed by the public during outreach efforts related to the Knowledge Corridor Rail Project were driving influences in securing funds for a grade separated railroad crossing in Northampton. Similar public hearings, studies and outreach efforts identified pedestrians and bicyclists concerns that resulted in safer crosswalks, intersection design, and improved traffic control devices. PVPC participates as part of the LiveWell Springfield coalition to improve access to active living opportunities such as walking and biking in the City of Springfield.

c) Increase the security of the transportation system for motorized and non-motorized users.

The security of the transportation system has quickly become a major priority in the transportation planning process. PVPC staff has worked closely with federal, state and local officials to improve existing databases and maps on critical areas of the transportation infrastructure. Correspondence with local emergency personnel has also been critical to develop plans to implement in the event of natural disasters and acts of terrorism.

Transit facilities in the Pioneer Valley are improving security capabilities and measures. PVTA has implemented an automated vehicle location system that will track the entire service fleet in real time. Security cameras and audio with alert equipment have been installed in passenger terminals, vehicle storage, and maintenance facilities.

The Merrick-Memorial Redevelopment Plan identified a number of issues surrounding the existing security of the CSX rail yard in West Springfield. This led to the development of a number of recommendations for this area and spurred numerous discussions with CSX to advance improvements in this area.

PVPC has conducted evacuation planning studies using the regional transportation model and dynamic traffic assignment. The TransCAD modeling software was used to analyze pre-determined evacuation scenarios at the macro level. Dynamic Traffic assignment was utilized because it is more responsive to operational factors, route changes, and produces more realistic results for modeling unexpected results than traditional travel demand models.

The Western Massachusetts Evacuation Plan was completed in 2013 to provide emergency responders on the local, state, and federal levels with the resources necessary for conducting a regional evacuation in as efficient and effective a manner as possible. The plan provides maps and lists of evacuation routes, population centers, infrastructure, and other critical assets. Contact information for municipal and state officials, as well as major employers, schools, and hospitals is also provided. The plan was completed in conjunction with other emergency plans that have been developed or are currently being developed for western Massachusetts, including a regional sheltering plan and regional communications plan.

d) Increase the accessibility and mobility of people and for freight.

Accessibility to the regional transportation system is a high priority in the Pioneer Valley. The Pioneer Valley Regional Congestion Management Process (CMP) proposes improvement alternatives to maintain convenient access to the regional highway system, and maintain the efficient mobility of vehicles in the region. Performance measures have been implemented into the CMP process for the movement of people and for the movements of goods. These performance measures are utilized to promote consistency with the RTP.

The Pioneer Valley Transit Authority (PVTA) provides wheelchair lifts on all of their fixed route transit vehicles and provides bicycle racks on all buses. Strategies to promote and enhance pedestrian and bicycle travel throughout the region are included as part of the Pioneer Valley Regional Bicycle and Pedestrian Transportation Plan.

The Holyoke Transportation Center was a joint development project between public and private partners that opened on September 27, 2010. This transportation center provides vastly improved transportation access, facilities and amenities for persons traveling to, from and through downtown Holyoke. The transportation center will facilitate intra- and intercity bus service. PVTA operates 7 bus routes to this transportation center; furthermore the center provides connection between bus routes that serve the northern and southern parts of the region. Union Station in Springfield is also under construction to create a state of the art regional intermodal center. The plan features an

expanded and enhanced passenger-rail and bus service. The station could potentially be served by Amtrak, Peter Pan Bus Lines and PVTA.

PVPC has been working with Connecticut DOT to establish commuter rail service between New Haven and Springfield. The corridor was identified as a key component in meeting the goals of improving and sustaining the regional economic viability and improving regional livability in the Pioneer Valley as well as in Connecticut's Capitol region. In addition to serving commuters traveling between the towns and cities along the corridor, the service could provide a connection to Bradley International Airport and multiple links to Amtrak Intercity service.

The efficient movement of freight is a high priority in the Pioneer Valley Region. Representatives from local freight carriers are included as part of the Pioneer Valley Joint Transportation Committee and their needs are addressed as part of the RTP. The movement of freight is also considered in the planning and design of local transportation improvement projects.

PVPC was directed by the FHWA district office in 2009 to update the inventory of freight connectors to the National Highway System (NHS) in the Pioneer Valley Region. This task included an inventory and evaluation of the condition of NHS connector highway infrastructure, a review of improvements and investments made or programmed for each connector; and the identification of impediments and options to making improvements to the intermodal freight connector.

In 2014, construction was completed to realign Amtrak service along 63 miles of the Knowledge Corridor between Springfield and the Vermont state line. This results in significant time savings for the movement of people and goods through the Pioneer Valley. The train now serves the City of Northampton and will serve the City of Holyoke via a new rail station in the near future.

The Merrick-Memorial Neighborhood Redevelopment Plan identifies ways to enhance the longstanding relationship between the CSX rail yard in West Springfield and the neighborhood's various constituencies including residents, industrial users and commercial businesses. A project, currently in the design stage, is being advanced to improve the vertical clearance of the existing Union Street overpass. When completed, this improvement will facilitate access to the CSX rail yard while reducing the impact on heavy vehicles on a residential area.

e) 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.

Travel demand management initiatives, land use strategies, and non-motorized transportation programs are all included in the RTP and will play a vital role in promoting energy conservation efforts in the region. The RTP focuses on both supply-side strategies such as travel demand management, traffic control measures and use of alternate modes of transportation and demand-side strategies such as stronger land use regulations to comply with the Clean Air Act Amendments in the Pioneer Valley.

The Pioneer Valley Planning Commission incorporates the strategies and recommendations of the Regional Transportation Plan into future versions of the Regional Transportation Improvement Program and the Unified Planning Work Program. Through the advancement of projects and studies of regional importance in combination with a strong public participation process it is hoped that an improvement in the quality of life in the Pioneer Valley can be realized.

In 1997, the Pioneer Valley Planning Commission unveiled their regional land use plan - Valley Vision. This plan developed a set of regional goals and objectives and specific action strategies that could be used for implementing our goals to preserve land use at the local level. The first update to the regional land use plan - Valley Vision 2 - expanded on the first plan to incorporate the latest data on population and the results of recent efforts by the Commonwealth to promote Smart Growth and Sustainable Development. Valley Vision 2 is a Smart Growth plan, in that it is designed to promote compact, mixed use development in and around existing urban and town centers, while promoting protection of open space and natural resources outside developed centers. In 2010, PVPC received a grant from the Massachusetts Executive Office of Housing and Economic Development. As part of the grant requirement PVPC has updated Valley Vision to reflect the Commonwealth's Sustainable Development Principals. Creating the new Valley Vision 3 included reviewing changes to regional growth and preservation trends, ensuring regional goals, strategies and tools are consistent with the Commonwealth's, identifying priority areas for protection and priority areas for future growth, and ensuring that our 43 communities are consistent with proposed legislation.

The Pioneer Valley Clean Energy plan focuses on actions that promote and develop clean energy generation in the region that increases the local circulation of profits generated from proposed developments to support a

regional clean energy economy—creating many new local businesses and employment opportunities. The goals of the Pioneer Valley Clean Energy Plan are:

- Reduce our region's energy consumption to 2000 levels by the end of 2009 and reduce that by 15 percent between 2010-2020.
- Site sufficient new capacity to generate 214 million kilowatt hours of clean energy annually in the Pioneer Valley by the end of 2009 and another 440 million kilowatt hours per year by 2020.
- Reduce our region's greenhouse gas emissions by 80 percent below year 2000 levels by 2050.
- Create local jobs in the clean energy sector.

GreenDOT was launched by the Massachusetts Department of Transportation's as a comprehensive initiative to encourage environmental responsibility and sustainability. Through the GreenDOT policy, MassDOT will promote sustainable economic development, protect the natural environment, and enhance the quality of life for all of the Commonwealth's residents and visitors through the full range of our activities, from strategic planning to construction and system operations. More information on GreenDOT is provided in the next section of the RTP.

The RTP for the Pioneer Valley Metropolitan Planning Organization adheres to GreenDOT's policies. All proposed transportation planning tasks for the MPO have been modified to incorporate these policies to the extent possible.

f) Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.

The Pioneer Valley transportation planning process focuses on new and innovative ways to enhance the integration and connectivity of the regional transportation system. The revitalization of Union Station in Springfield is an example of a regional project to improve the connectivity between transportation modes. Currently under construction, Union Station will be the new regional intermodal transportation center providing access to public transit, private bus companies, and passenger rail. The downtown Springfield location has convenient access to the Interstate Highway System, ample parking at local garages, as well as convenient pedestrian access.

The Holyoke Transportation Center at Veteran's Park serves downtown Holyoke and provides access to public transit, private bus companies, day-care, and adult education classes. The center is also within walking distance of a new passenger rail station. A Transit Center on a smaller scale is also proposed for the City of Westfield.

The Pioneer Valley RTP in combination with the Pioneer Valley Bicycle and Pedestrian Plan promotes strategies to encourage people to bicycle or walk

as an alternative to making a trip by car. Recommendations include providing bicycle racks at retail centers and places of employment as well as making neighborhoods more walkable, through the installation of sidewalks, bike paths and lanes, and traffic calming measures. The plan supports “complete streets” initiatives that reduce greenhouse gas emissions and promote the healthy transportation options of walking, bicycling, and public transit in balance with automobile use.

The New Haven-Hartford-Springfield Rail project represents a broad partnership between the State of Connecticut, Amtrak and the Federal Railroad Administration (FRA), as well as the states of Massachusetts and Vermont. The goal is ambitious – to provide those living, working or traveling between New Haven, CT, Hartford, CT and Springfield, MA with high speed rail service equal to the nation’s best rail passenger service. Since 1999, the Pioneer Valley Region and Connecticut have been working toward the implementation of passenger rail service between the three cities. The return of passenger rail service to the Connecticut River line in 2014 has improve service time and expanded service to the communities of Greenfield and Northampton. Rail service to the City of Holyoke will also be provided upon completion of their rail station project.

In its 2005 Transportation Appropriations Bill, Congress designated the Boston, MA – Springfield, MA to New Haven, CT as well as the Springfield, MA to Albany, NY corridors as part of the Northern New England High Speed Rail Corridor. Congress further provided funds to study the feasibility of High Speed Rail Service in the Boston – Springfield - New Haven Corridor. MassDOT is advancing a study of the corridor to explore opportunities for passenger rail service and provide a scalable, incremental plan for the implementation of new or expanded services.

g) Promote efficient system management and operation.

The Pioneer Valley Planning Commission utilizes the 3C (Comprehensive, Continuing, Cooperative) Transportation Planning Process for all transportation planning in this region. Public participation is included at all stages of the transportation planning process so that recommendations can be reflective of local needs.

All projects eligible for funding through the Transportation Improvement Program (TIP) are evaluated using the Transportation Evaluation Criteria (TEC) developed for the Pioneer Valley. This new set of criteria was endorsed by the MPO in February of 2015 and incorporates a wide range of criteria to assist in the advancement of MAP-21, GreenDOT, and regional performance measures. Each project is ranked numerically using the TEC in consultation with representatives from the PVPC, the state and local

government. The results of this procedure are used to develop a priority listing of projects for the TIP to be considered by the MPO.

Previously programmed transportation facilities and construction improvements are re-evaluated to determine changing regional transportation needs, priorities and long range considerations before including such projects in the RTP. The Pioneer Valley regional transportation model is utilized to evaluate long-range projects to determine their impact on congestion and air quality in the region.

The planning and development of transportation facilities and services in the Pioneer Valley is coordinated with adjoining Regional Planning Agencies such as the Berkshire Regional Planning Commission (BRPC), Franklin Regional Council of Governments (FRCOG), Central Massachusetts Regional Planning Commission (CMRPC), and the Capitol Region Council of Governments (CRCOG) in Hartford, Connecticut. Traffic counts performed along the regional borders are shared with the neighboring region. In addition, neighboring regions are invited to participate in transportation planning activities of interest.

PVTA has successfully integrated Intelligent Transportation System (ITS) technology on all transit vehicles. This ITS system enhances information and communications technology to increase the security of the transit system for operators and passengers while providing real-time transportation data to increase operational efficiency. Similarly, Interstate Route I-91 now has a fiber-optic communications and ITS surveillance system for the entire corridor from the Connecticut border to the Vermont border. The fiber-optic communications is central to the installation of ITS on this corridor and as a means of serving the local communities and businesses with broadband access to the Internet.

h) Emphasize the preservation of the existing transportation system.

Preserving and maximizing the efficiency of the transportation infrastructure has been identified as a high priority in the Pioneer Valley Planning process. A regional pavement management system has been in place in the Pioneer Valley since 1993 to ensure that federal-aid eligible roadways are maintained in the most cost effective and efficient manner. In addition, many communities in the region have enlisted planning commission assistance to establish a local pavement management system in order to efficiently maintain all community roadways.

The historic $3 billion Accelerated Bridge Program (ABP) represents a monumental investment in Massachusetts infrastructure. This program will greatly reduce the number of structurally deficient bridges in the state system,

while creating thousands of construction jobs. Since 2008, the number of former MassHighway and DCR structurally deficient bridges has dropped from 543 to 416, a decline of 23%. As of October 1, 2014, the ABP has completed 160 bridge projects, with another 29 bridge projects in construction, and an additional 5 bridge projects scheduled to start construction within the next calendar year. Over the course of the eight year program, well over 250 bridges are planned to be repaired or replaced.

Another form of infrastructure preservation consists of the efforts within the region to preserve abandoned rail corridors and toe path canal beds. These right of ways are maintained for future non-motorized transportation uses. The Norwottuck Rail Trail, Connecticut Riverwalk and the Manhan Rail Trail are all examples of projects that reuse existing transportation rights of way in the region.

2. GreenDOT

MassDOT launched its GreenDOT initiative on June 2, 2010. GreenDOT was developed to assure a coordinated approach to sustainability and to integrate sustainability into the responsibilities and decision-making of all MassDOT employees. The following three mutually-reinforcing goals form the foundation of GreenDOT:

- Reduce greenhouse gas (GHG) emissions
- Promote the healthy transportation modes of walking, bicycling, and public transit
- Support smart growth development

The initiative is a comprehensive response to a range of state and MassDOT laws, policies and initiatives including: the Global Warming Solutions Act, the Green Communities Act, the Healthy Transportation Compact, Leading by Example, YouMoveMassachusetts, and Complete Streets. The Global Warming Solutions Act requires Massachusetts to reduce economy wide GHG emissions: 10% -25% below 1990 levels by 2020 and an 80% reduction below 1990 levels by 2050. The transportation sector is the largest GHG emitter, producing 31% of 1990 emissions and projected to produce 38% of 2020 emissions. GreenDOT also incorporates a statewide mode shift goal to triple the percentage of trips made by bicycling, transit and walking.

GreenDOT is also comprised on an additional by seven goals that can be tied to regional planning efforts. In the Pioneer Valley region, these goals and their recommended strategies have been incorporated into the new Transportation Evaluation Criteria (TEC) used to prioritize transportation improvement projects included as part of the TIP. The TEC is described in greater detail in Chapter 12 of the RTP. Table 2-2 summarizes the seven

GreenDOT goals, their associated strategies and how they are addressed in the TEC for the Pioneer Valley.

Table 2-2 – Integration of GreenDOT Goals into the RTP

Policy/Planning - Design a Multi-Modal Transportation System, Triple Mode Share of Bicycling, Transit, and Walking, & Promote Healthy Transportation and Livable Communities	
Associated Strategy	**RTP/TEC Integration**
Providing secure and/or covered bicycle parking and shared used paths	Projects are eligible to receive up to 12 points for bicycle and pedestrian improvements in the "Livability" category. Projects receive 1 point for providing bicycle amenities such as bicycle parking.
Improving access to transit and other vital community services	Projects are eligible to receive up to 4 points by improving access to transit.
Designing complete street projects with municipalities	Complete Streets consistency is worth up to 3 points.
Encouraging Safe Routes to Schools projects	Projects that provide safe and reliable access to education receive 0.5 point.
Incorporating public health impacts in the transportation planning process	Projects that complete a Health Impact Assessment will receive 1 point.
Coordinating on regional and statewide bicycle and pedestrian planning efforts.	Many "Livability" subcategories in the TEC support regional and statewide bicycle and pedestrian planning efforts.
Supporting Bike Share programs locally and regionally.	Projects can receive 2 points for being part of a locally adopted Bike Share Program.
Prioritizing critical pedestrian and bicycle network gaps, i.e. Bay State Greenway	Critical Gaps are identified as part of PVPC's Regional Bicycle Linkages Map. Projects that provide connections to regional bikeways/walkways receive 1 point.
Improving bicycle and pedestrian counts	PVPC collects bicycle and pedestrian movements as part of all intersection turning movement counts.
Air - Reduce Greenhouse Gas Emissions & Improve Air Quality	
Associated Strategy	**RTP/TEC Integration**
Developing projects to improve air quality	Projects that demonstrate improvements to air quality can receive up to 1 point.
Analyzing GHG reduction strategies in transportation improvement projects and tracking progress	PVPC performs GHG analysis for all proposed RTP and TIP projects.
Setting regional goals for reducing VMT (travel demand)	Projects that demonstrate a significant reduction in single occupant vehicle use will receive 1 point.
Analyzing fleet fuel usage and supporting retrofits and procurement of alternative fuel vehicles	The RTP supports the use of alternatively fueled vehicles. PVTA has hybrid transit vehicles and is in the process of purchasing electric buses.
Supporting alternative fuels vehicle infrastructure	PVTA is in the process of purchasing an electric vehicle charging station.
Increasing bus and transit route efficiency	The PVPC has an ongoing task in its UPWP to study transit route efficiency.
Promoting anti-idling policies and educational outreach	Not specifically addressed in the TEC but included as a Need in the RTP

Table 2-2 – Integration of GreenDOT Goals into the RTP (cont.)

Energy - Consume Less Energy & Increase Reliance on Renewable Energy		
	Associated Strategy	**RTP/TEC Integration**
	Evaluating outdoor lighting and traffic signal systems, and retrofitting where feasible	Upgrades to traffic signal equipment can be worth up to 6 points.
	Planning for the implementation of energy efficient measures and renewable energy projects	The RTP incorporates strategies from the Pioneer Valley Clean Energy Plan.
Land - Minimize Energy and Chemicals Used in Maintenance & Enhance Ecological Performance		
	Associated Strategy	**RTP/TEC Integration**
	Implementing sustainable stormwater management	Up to 2.5 points can be received through the use of green infrastructure and the reduction of impervious surfaces to manage stormwater.
	Protecting and restoring native landscaping, woodland, and urban tree coverage	Projects that protect or enhance environmental assets receive 0.5 point.
	Implementing sustainable road salt and sanding practices	Included as a strategy in the RTP.
	Designing landscapes for wildlife habitat restoration, safe migration, and accommodation	Improvements to stream crossings and culverts that improve fish and wildlife passage receive 1 point.
	Reducing outdoor light pollution	Not specifically addressed.
	Advocating for urban trees into Complete Streets designs/studies	Complete Streets consistency is worth up to 3 points.
Materials - Improve Lifecycle Impacts of Investments & Purchase Environmentally Preferred Products		
	Associated Strategy	**RTP/TEC Integration**
	Planning for climate resiliency in the development of projects	Projects that preserve floodplains receive 0.5 point. Projects that improve storm resilience in areas prone to flooding receive up to 3 points.
	Supporting the use and identify appropriate applications for warm mix and recycled content paving materials	Not specifically addressed.
Waste - Achieve Zero Solid Waste Disposal		
	Associated Strategy	**RTP/TEC Integration**
	Identifying projects with zero construction waste diversion goals	Not specifically addressed.
	Implementing regional litter prevention programs with their respective municipalities	Not specifically addressed.
Water - Use Less Water & Improve Ecological Function of Water Systems		
	Associated Strategy	**RTP/TEC Integration**
	Planning projects that minimize impacts on surface water and enhance wetlands flood storage capacity	Projects that preserve wetlands receive 0.5 point.
	Considering sea level rise and storm surge projections in project planning	Projects that improve storm resilience in areas prone to flooding receive up to 3 points.