

Executive Summary



Overview

Mobility2040 is the long range transportation plan developed by the Central Massachusetts Metropolitan Planning Organization (CMMPO) for the south central Massachusetts planning region. Its purpose is to identify the multi-modal transportation needs of the region, the resources available to address the needs, and the initiatives and project investments planned for the next 25 years. An extensive process of public outreach was undertaken to achieve community input on regional performance management goals and to prioritize resource allocation.

As part of the development of the 2016 Mobility2040, the Central Massachusetts MPO reiterated its future transportation-related vision for the region:

The CMMPO believes that a safe, efficient, and well-maintained transportation system, along with prudent land use planning and economic development, is an essential component of sustainable public policy aimed at improving people’s lives.

The CMMPO envisions Central Massachusetts in 2040 as a growing region of 40 well-connected, livable communities with congestion reduction, and improved multi-modal mobility and air quality. Healthy, creative transportation methods that integrate active travel modes through the use of technology will safely and efficiently move people between homes, jobs, and services and move products between places of manufacturing and sale.

Mobility2040 reflects the federal emphasis areas by:

- developing the plan through a performance-driven, outcome-based approach,
- examining access to essential services,
- coordinating across metropolitan planning boundaries, and
- through use of scenario planning strategies.

Together these emphasis areas help to determine the optimal mix of projects, initiatives, and funding allocation across modes and programs in order to address the needs of the region through 2040.

The plan also reflects federal guidance to:

- provide a benefits and burdens analysis to ensure fair treatment for minority, transportation vulnerable, and non-minority communities,
- work to improve livability in communities, and

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- achieve sustainability by assessing and mitigating the potential effects of climate change.

The plan also considers the MassDOT emphasis on reducing greenhouse gases, the Healthy Transportation Compact Policy and other GreenDOT goals of improving the availability of alternative healthy modes of transportation, including achieving the future year mode shift goal set by MassDOT.

Finally, with extensive community involvement, Mobility2040 underscores the regional goals set by the CMMPO of:

- Goal 1: Reduce Congestion and Improve Mobility for all modes
- Goal 2: Improve the Safety and Security of the region
- Goal 3: Achieve State of Good Repair
- Goal 4: Increase Transportation Options and Promote Healthy Modes
- Goal 5: Reduce Greenhouse Gas and Promote Sustainable practices
- Goal 6: Equitable Transportation for all populations
- Goal 7: Improve Economic Vitality and Freight Movement

Future Growth

Future growth is an important consideration in transportation planning. Between years 2010 and 2040 the region is expected to add over 75,000 people and approximately 25,000 jobs. By comparison, in the last few decades Central Massachusetts growth averaged approximately 6-7% per decade and is now projected to increase at approximately 5% for each of the next three decades. This growth is in line with overall Massachusetts growth that is expected to slow compare to previous decades. Comparing to other regions in the Commonwealth Central Massachusetts growth, it is still robust. Within the region, it's significant to understand where growth will happen. The following explains where population and employment growth will occur.

Population

The communities in the CMRPC region can be grouped in the following three categories based on the past growth trends, available land and infrastructure for future growth, and planned future residential projects. The average growth for population is projected around 5% for the next few decades.

- **Low growth communities** (expected to remain close to the 2010 numbers): Auburn, Barre, Brookfield, Dudley, East Brookfield, Hardwick, Hopedale, Leicester, New Braintree, North Brookfield, Oakham, Oxford, Paxton, Princeton, Southbridge, Webster, West Brookfield, and Worcester.
- **Medium growth communities** (expected to grow at a rate close to the regional average): Blackstone, Boylston, Douglas, Holden, Mendon, Millbury, Millville, Shrewsbury, Spencer, Sutton, Upton, Warren, West Boylston, and Westborough.
- **High growth communities** (expected to grow more rapidly than the region as a whole): Berlin, Charlton, Grafton, Northborough, Northbridge, Rutland, Sturbridge, and Uxbridge.

Employment

The communities in the CMRPC region can be grouped in the following three categories based on the past employment and planned future projects. The average growth for employment is projected around 3-4% for the next few decades.

- **Low growth communities** (expected to remain close to the 2010 numbers): Blackstone, Brookfield, East Brookfield, Hardwick, Hopedale, Leicester, Mendon, Millbury, Millville, New Braintree, North Brookfield, Princeton, Southbridge, Spencer, Upton, Uxbridge, Warren, and West Brookfield.
- **Medium growth communities** (expected to grow at a rate close to the regional average): Auburn, Barre, Dudley, Grafton, Holden, Oakham, Oxford, Paxton, Rutland, Sturbridge, Webster, West Boylston, and Worcester.
- **High growth communities** (expected to grow more rapidly than the region as a whole): Berlin, Boylston, Charlton, Douglas, Northborough, Northbridge, Shrewsbury, Sutton, and Westborough.

Public Outreach

During the Mobility2040 development process, public participation was conducted through a variety of accessible outreach methods as outlined in the CMMPO Public Outreach Program (POP). CMMPO Staff used diverse approaches to educate and inform the public about the long-

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range transportation plan process and encourage interested parties to express their views and provide input on transportation issues and prioritizing limited funding resources.

Information was distributed to the public through press releases, a Mobility2040 webpage, social media, and e-mails to a robust distribution list. The webpage focused on study information, the planning process, and how the public can be involved, including a five-minute informational video. The Mobility2040 Twitter account served the purpose of detailing public information meetings locations and times. Messages were sent to various committees, stakeholder groups, member community staff and boards, interested parties, and others.

A series of stakeholder meetings were held with transportation stakeholders in the region throughout the Mobility2040 development process. The purpose was to learn what issues and challenges exist within the current multi-modal transportation network while seeking input on crafting performance measures and targets that would be used to guide a vision for the future. This type of outreach allowed for interaction with a broad range of participants from a variety of expertise and backgrounds.

Fourteen public information meetings were held in different communities throughout the region, in a variety of venues including grocery stores, colleges, shopping centers, farmer's market, and business exposition. These meetings were designed for the public to interact with staff and learn about the Mobility2040 process and transportation happenings in their area. In addition to public information and stakeholder meetings, 623 surveys were completed by the public.

Overall, public input indicated that the automobile would continue to be the most important transportation method in the future and that roadway maintenance, safety, and congestion should remain the top priorities for transportation funding investment. As secondary and tertiary options, survey respondents displayed a shift in preference towards utilizing alternative transportation modes in the future. The results highlighted that bicycling, walking, and public transportation (both WRTA buses and MBTA commuter rail) would be important transportation modes to prioritize and fund.

While public input shared a general theme, but there were slight variations based on demographics. Younger people seem more interested in commuter rail and bicycle as options to consider and prioritize for funding allocation, while older individuals place more emphasis on walking and transit as focus points for future planning and investment. Input also fluctuated marginally based on the subregion.

Financially-Constrained Recommendations & Future Initiatives

Federal MAP-21 regulations require that the long-range regional transportation plan be a financially-constrained document. To ensure financial constraint, it is necessary to estimate the costs of all projects recommended in Mobility2040 and to assess the amount of funds that are expected to be available over the course of the planning horizon (2016-2040). Ultimately, the costs of the proposed projects should not exceed that of the expected funding. Because there is not enough expected revenue to meet all the need, not all the projects identified in the needs analysis can be included in the Financial Plan.

Throughout the past year, the CMMPO has embarked on a process to define and assess projects and initiatives for future programming based on:

- Review of all available data, including management systems data
- Sought and received extensive public input on needs and priorities for funding
- Developed policies, projects, and initiatives for possible consideration

In order to prioritize projects for funding, projects and initiatives then went through a two-step process. In the first step, projects and initiatives were prioritized into three tiers based on how well they address measures within the CMMPO performance management goals of:

- Reduce congestion & improve mobility for all modes
- Improve the safety & security of the region
- Achieve a state of good repair
- Increase transportation options & promote healthy modes
- Reduce greenhouse gas & promote sustainable practices
- Equitable transportation for all populations
- Improve economic vitality & freight movement

In the second step, the projects, primarily drawn from Tier 1, were combined into five scenarios which placed the projects into financially-constrained five-year bands for implementation through 2040. These scenarios were then analyzed in the Travel Demand model, and assessed for:

- congestion reduction and savings in vehicle miles travelled
- greenhouse gas effects
- geographic equity
- environmental justice benefits and burdens
- consistency with prior public input

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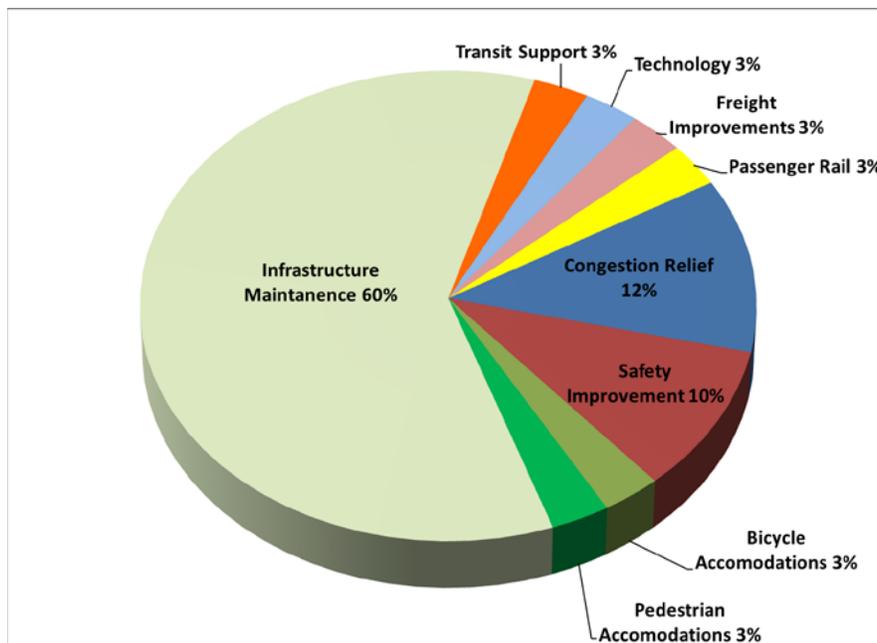
Following mix of program strategies, study initiatives, and projects were endorsed by the CMMPO based on the analysis mentioned above, project specific information, and community consensus.

Management & Operations Considerations

Given the limited funding, competing priorities, and the comprehensive list of unmet needs, it is crucial to maintain the current system at optimal efficiency. Also various management and operation methodologies such as ITS, Transportation Demand Management strategies, Park & Ride lots, Transit Signal Priority, and Corridor Management strategies, such as signal coordination, will help the region reach its goals of improving mobility, reducing greenhouse gases, improving sustainability and promoting economic development.

Based on these considerations, the CMMPO chose to spend the regional target funding among diverse transportation programs and modes. The chosen funding scenario maintains current roadway and bridge infrastructure in the “fair” category with 60% of the total regional transportation spending allocation. High funding allocations are also included for improved safety and congestion reduction projects, as well as separate funding categories created for bicycle and pedestrian infrastructure improvements. The remaining categories (transit support, technology, freight, and passenger rail) were funded at an allocation of 3% each.

Figure 1: Regional Target Funding Programs



Policies

While the CMMPO did not adopt any new policies during the development of Mobility2040, their adoption of Option 1 allocation of funding from regional targets and their choices of major initiatives and infrastructure projects re-affirms the commitment to:

- provide for an increasingly balanced multi-modal transportation system that will improve the mobility for users of all modes;
- provide adequate funding to maintain the current system;
- increase healthy options that reduce congestion and greenhouse gas, and are more sustainable;
- improve system safety and security; and
- continue to promote economic vitality & freight movement.

Initiatives

There are several projects that still require more definition before moving forward, and they have been termed Initiatives. The Blackstone River Greenway, the Multimodal connection between the Blackstone River Greenway to the Mass-Central Rail Trail and the Pedestrian Connection between Blackstone River Greenway to the Mid-State Trail are all initiatives that require identification of the project lead agency and more definition of project scope. These initiatives will help move the project forward in future years.

Table 1: Bicycle and Pedestrian Initiatives

Study Cost will be included in the Unified Planning Work Program

Recommended Implementation Schedule	Project	Project Scope
2015-2020	Blackstone River Greenway (Segments 3,4 and 5)	To collaborate with the lead agency to identify segments, establish costs for each segment and project scope
2020-2025	Multimodal Connection: Blackstone River Greenway to Mass-Central Rail Trail	To collaborate with the lead agency to establish costs and project scope
2020-2025	Pedestrian Connection: Blackstone River Greenway to Mid-State Trail	To collaborate with the lead agency to establish costs and project scope

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Major Infrastructure Projects

The CMMPO deliberated extensively on what major infrastructure projects to recommend in the Mobility2040 Plan, given the need to remain within the constraints of estimated funding available, and given that revenues are only expected to grow at 1.5% and costs are projected to grow at 4%. This task was made more difficult for projects in the later years of the plan because it was often necessary to estimate costs on projects that are in the early concept stages. The following represent the CMMPO recommendations.

Table 2: Major Infrastructure Projects

Highway Projects

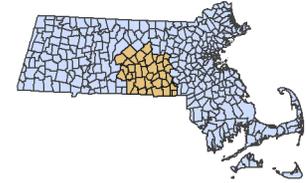
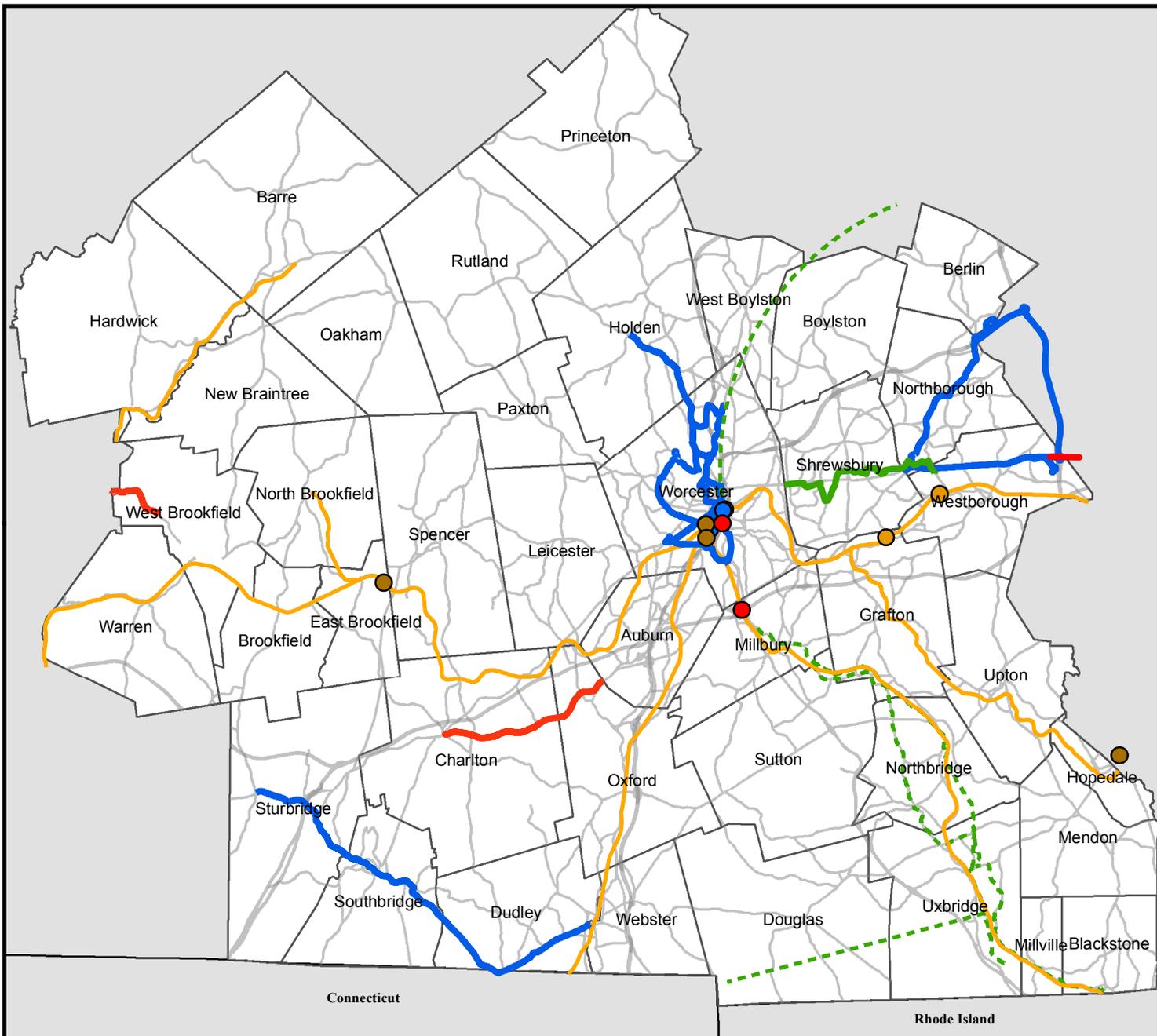
Recommended Implementation Schedule	Project Name	Project Scope	Project Cost (in Millions)
2016-2020	Route 9 - West Brookfield	2.1 mile segment of rural highway requires widening by 10' to address safety and accommodate bicycles and pedestrians	\$12.17
2021-2025	Rte 9 Improvements from Rte 9/I-495 interchange to Rte 9/Crystal Pond Road intersection	Enhance safety and capacity improvements along Rte 9	\$11.40
	Rte 20 Oxford (Rte 20/12 to Rte 20/56 intersection)	Rte 20 modernization with median barrier and intersection improvements Charlton/Oxford	\$23.00
2026-2030	Rte 20 Oxford/Charlton (West of Rte 20/56 to Richardson's corner)	Rte 20 modernization with median barrier and intersection improvements Charlton/Oxford	\$34.00
2031-2035	I-290/Vernon St/Kelly Square Bridge Expansion - Worcester	Reconstruction & widening of Vernon Street (Route 122A) bridge over I-290 and related ramp work	\$23.84
2036-2040	Route 146/20/MassPike Interchange - Millbury	Observed congestion causes operational issues. Investigate improved signals and interchange roadways.	\$29.00

Bicycle and Pedestrian Projects

Recommended Implementation Schedule	Project	Project Cost (in Millions)	Project Scope
2015-2020	Boston Worcester Air-Line Trail	\$0.50	TIP or TAP funding

Freight Rail Projects

Recommended Implementation Schedule	Project	Project Scope	Project Cost (in Millions)	Comment
2015-2020	Grafton & Upton Railroad	At-grade highway crossing improvements	\$0.50	Private funding
2020-2025	Providence & Worcester Railroad	Bridge over Southbridge Street	\$2.00	Private funding
2015-2040	East Brookfield & Spencer Railroad	Various expansion and IRAP track improvements for improved operations	\$0.50	Private funding
2015-2040	Providence & Worcester Railroad	IRAP track improvements	\$0.50	Private funding



- Highway Projects
- Freight Projects
- Transit Projects
- Passenger Rail Projects
- Highway Projects
- Bike/Ped Projects
- - - Bike/Ped Initiatives
- Transit
- Freight/ Passenger Rail Projects



0 0.75 1.5 3 4.5 6 Miles

Information depicted on this map is for planning purposes only. This information is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis. Use caution interpreting positional accuracy.

Source: Data provided by the Central Massachusetts Regional Planning Commission (CMRPC), massDOT/Office Of Transportation Planning Geospatial Resources Section and the Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, InformationTechnology Division.

Produced by the Central Massachusetts Regional Planning Commission (CMRPC)
 2 Washington Square, Union Station
 Worcester, MA 01604

Figure II Major Infrastructure

Transit-Related Initiatives

The WRTA is considering expansion/upgrade of the WRTA Hub Transfer facility at Union Station and implementation of Transit Signal Priority to improve transit operations in congested areas.

The major capital rail initiatives anticipated over the planning horizon of Mobility2040 is the continued MassDOT study of expanding high speed passenger rail between Worcester and Springfield, as well as possible private passenger rail service re-instituted over Providence & Worcester rail lines through the Blackstone Valley from Worcester to Providence, RI. An additional initiative is considering upgrades to the three MBTA commuter rail stations in Westborough, Grafton, and Worcester.

Some of these initiatives are more likely to become projects than others, but each will require additional study to move forward, and costs and revenue sources will have to be identified.

Transit-Related Projects

A major transit capital project anticipated over the planning horizon of Mobility2040 is the creation of transit “mini hubs” within the region, to house vehicle fleets and serve as connection and transfer facilities. Another capital project is the replacement of the WRTA Maintenance and Operations facility, which is currently underway, and will be completed in 2016.

The WRTA also intends to embark on a replacement of the fixed route fleet once again in 2020 and has programmed a modest expansion of the fleet in the current four-year Transportation Improvement Program. The WRTA will be purchasing nine expansion vehicles beginning in 2017 to accommodate recommendations contained in the 2015 Comprehensive Service Analysis.

Table 3: Transit and Commuter Rail Projects

Transit Projects

Recommended Implementation Schedule	Project	Project Scope	Project Cost (in Millions)	Comments
2015-2020	Route 43 - New route connecting Webster, Dudley, Southbridge, and Sturbridge	Draft recommendation from the Comprehensive Service Analysis. Implementation of the project is dependent on operating funds available and final approval by the WRTA	Operating cost	Not part of capital expenditure
2015-2020	Route 32 - New route to connect Holden with Worcester.	Draft recommendation from the Comprehensive Service Analysis. Implementation of the project is dependent on operating funds available and final approval by the WRTA	Operating cost	Not part of capital expenditure
2020-2025	Route 17 - New route to connect Westborough Office Park, Solomon Pond Mall, and Northborough Crossing (Wegman's).	Draft recommendation from the Comprehensive Service Analysis. Implementation of the project is dependent on operating funds available and final approval by the WRTA	Operating cost	Not part of capital expenditure
2020-2025	Route 44 - Proposed new route to connect colleges: - Becker, WPI, Assumption, WSU, Clark, Holy Corss, Quinsigamond CC	Draft recommendation from the Comprehensive Service Analysis. Implementation of the project is dependent on operating funds available and final approval by the WRTA	Operating cost	Not part of capital expenditure
2015-2040	New fixed route buses	Replacement or expansion of the WRTA fixed route fleet.	\$93.00	Fleet expansion item

Commuter Rail Projects

Recommended Implementation Schedule	Project	Project Cost (in Millions)	Comment
2020-2025	Worcester-Providence passenger service and railroad improvements	TBD	Private Railroad operations and funding
2015-2040	MBTA commuter rail station upgrades	TBD	MBTA funding

Conclusion

Mobility2040 provides a blueprint to achieving a balanced multi-modal transportation system that is reasonably maintained. Although additional funding would could be well-spent on expanding and better maintaining the system, the resources that are expected to be available have been programmed in a responsible manner. Based on the above considerations, Mobility2040, the long range plan for the CMMPO region, meets all federal planning and financial constraint requirements.