



PAWTUCKET/CENTRAL FALLS

Commuter Rail Station Project

- ✓ An engine for economic growth that immediately activates two million square feet of development potential in adjacent historic mills
- ✓ A much-needed transit investment for communities that have a staggering 20 - 30 percent poverty level and 33 percent minority base
- ✓ Significant public and private interest and support

TIGER VIII Grant Application

Contact Information

Peter Alviti, Jr., PE, Director

Rhode Island Department of Transportation

peter.alviti@dot.ri.gov

Two Capitol Hill | Providence, RI 02903

401.222.2481 x4000



Dear TIGER Evaluation Team:

Project Funding

Significant overmatch: 64%
"local" share towards project
36% TIGER request

Project Support

Support from host communities
Support from MBTA as
service operator
Support from Amtrak as
corridor owner

Project Benefits

An engine for economic growth
2 million square feet of
development potential
Transit investment for commu-
nities with 20-30% poverty level
and 33% minority base

Project Readiness

NEPA and PE to be completed in
summer 2016
Will advance with Design Build
procurement
RIDOT has excellent working
relationships with MBTA
and Amtrak

Over the past seven years, USDOT through the TIGER Discretionary Grant Program has invested in a variety of transportation opportunities that have helped spur millions of dollars in economic growth throughout the country. With the help of this TIGER Discretionary Grant, we will make monumental strides for the historically vibrant Cities of Pawtucket, Central Falls and the surrounding regions.

Rhode Island is proud to have one of the fastest growing demands for public transportation in the country. This project will construct a Commuter Rail Station that would be served by existing commuter rail service between Providence and Boston, which has existed for nearly 30 years, and by Rhode Island's premier, rapid bus line. Limited funding, however, is challenging our ability to advance these mobility improvements, specifically in an area where significant numbers of transit dependent users reside.

The state-local partnerships we have forged for nearly ten years on this project have set the stage for this funding opportunity. We are committing to over a 60% "local" share for our TIGER request of \$14.5 million. We will have the environmental review and preliminary engineering completed by September of 2016. The host communities fully support this transformative project and also enjoy support from the two passenger railroad organizations that operate on the existing tracks.

With this TIGER Grant, we will be able to advance design and construction of the Pawtucket/Central Falls Commuter Rail Station and position these communities for development, which has the opportunity to transform the area and provide much needed economic opportunity for local residents. The Pawtucket/Central Falls Commuter Rail Station Project offers undeniable equity benefits that strengthen the local economy, provide access to jobs and education and support future transportation investments and development plans. We seek your support in this pursuit.

Sincerely,



Peter Alviti, Jr., PE
Director
Rhode Island Department
of Transportation



James Diossa
Mayor
City of Central Falls



Don Grebien
Mayor
City of Pawtucket

Table of Contents

Why the Pawtucket/Central Falls Commuter Rail Station Project?	3
Evaluation Criteria Summary	4
I. Project Description	6
II. Project Parties	9
III. Grant Funds and Sources/Uses of Funds	11
IV. Selection Criteria	12
a. Primary Selection Criteria	12
Safety	12
State of Good Repair	12
Economic Competitiveness	12
Quality of Life	17
Environmental Sustainability	19
b. Secondary Selection Criteria	19
Innovation	19
Partnership	20
V. Demonstrated Project Readiness	23
VI. Project Benefits and Costs	26
VII. Federal Wage Rate Certification	28
Attachments	



Why the Pawtucket/Central Falls Commuter Rail Station Project?

- › Provides significantly improved transit connection for residents living along a corridor where 72 trains pass each day but to which these residents currently have no access.
- › Improves safety by reducing vehicle miles traveled.
- › Promotes development and activates two million square feet of new development opportunities.
- › Fully supports all six HUD "Livability Principles".
- › Improves quality of service and quality of life for a large population of transit dependent individuals.
- › Promotes economic and environmental sustainability in Pawtucket and Central Falls, one of the most densely populated cities in the country.
- › Commits transit investment for a community that has a 20-30 percent poverty level and 33 percent minority population.

Evaluation Criteria Summary

Primary Selection Criteria	
Safety	The Project would improve safety on local roads by reducing vehicle miles of travel and, therefore, the rate of accidents. Intermodal connection between the rail station and RIPTA's bus stop would occur at a new off-street location, reducing potential for pedestrian/vehicular conflict. Consolidating bus and rail activity in a common location would help foster a safer, more connected, and accessible multi-modal transportation system for Rhode Island residents and workers. The pedestrian bridge would also improve pedestrian/bicycle safety.
State of Good Repair	The Project would make improvements to Northeast Corridor infrastructure, which would be constructed in a way to allow future electrification of the MBTA service track, both stated goals in Amtrak's plan. Track, signals and catenary upgrades in the station area will extend the useful life of these assets. Additionally, Pawtucket Station's existence would alleviate pressure on the nearby South Attleboro commuter rail station, which is seeking major upgrades to its worn infrastructure.
Economic Competitiveness	The Pawtucket/Central Falls Commuter Rail Station Project will immediately open up opportunities. Two million square feet of mill space within ½ mile of the Project are currently vacant or underutilized. Development of the station is a high priority project for both cities as a means of catalyzing development on these parcels and many supportive local TOD initiatives are already in place. Private sector and non-profit partners alike (Pawtucket Foundation, PCF Development, Roger Williams University, etc.) have taken active steps to support this project and its TOD potential.
Quality of Life	The two cities are some of the most progressive in Rhode Island in terms of bicycle infrastructure, with dedicated bike lanes on Dexter Street, Exchange Street, and along to the Blackstone Valley Bikeway, a 48-mile bikeway connecting Pawtucket with Providence, RI and Worcester, MA. In addition, with 59 percent of Rhode Island's population living within a ¼-mile of a bus stop, and with 85 percent of RIPTA riders transit dependent, the Project will be a transformative, positive quality of life investment for both the City and State. The Pawtucket/Central Falls Commuter Rail Station will provide immediate quality of life benefits by supporting the priorities of the City of Pawtucket Healthy Places by Design initiative, which focuses on walking and bicycle access as its top priority. The Project aligns with all six HUD Sustainability Principles and creates an infill station in a densely developed urban area with a high level of affordable housing and underutilized historic mill space.
Environmental Sustainability	<p>The Project would increase transit ridership, reduce regional VMT and provide more opportunity for auto free living and increased pedestrian and bike activity.</p> <p>A rail station that is served by bus will provide more efficient use of energy (e.g. shared passenger amenities). The Station, which is in a state-designed urban growth area, will also open up opportunities to reuse historic mill buildings part of state designated urban growth that are vacant, or underutilized.</p> <p>Several of these sites are classified as brownfields and would have increased potential for remediation and redevelopment if the Commuter Rail Station is built.</p>



Historic Pawtucket Central Falls Station

Secondary Selection Criteria

Innovation

Redeveloping and revitalizing two million square feet of underutilized mill space is a top priority for the City of Pawtucket and the City of Central Falls who have taken an innovative approach to engaging residents and local student groups, conducting design charrettes, and combining the priorities of both Pawtucket and Central Falls to advance a clear community desire to use transit to help drive development. The Slater Mill/ Blackstone Valley National Heritage Park is also the “Birthplace of the American Industrial Revolution”. Using a new state tax credit program targeting areas with transit access for investment, the Project will reinvigorate transit oriented development and awaken the economic vitality of the area utilizing modern transportation planning and complete streets practices.

Partnership

The Project is a key local priority in community Comprehensive Plans. The new station is also a State priority, highlighted as one of six designated Growth Centers, in a recent economic development report. It is included on the Statewide TIP. The Project advances a pursuit that RIDOT, the City of Pawtucket, the City of Central Falls, and Pawtucket Foundation have been working on collaboratively for many years, in a community that federal government has targeted for Economic Development assistance. The Project has also partnered with private developers who would provide station parking and with the local community to integrate art and culture into the station design.



Historic Pawtucket/Central Falls Station (Built in 1915 on City line)

I. Project Description



Historic rendering of a thriving Pawtucket in the late 1800's

Throughout the 19th and 20th centuries, Pawtucket and Central Falls, Rhode Island were thriving cities with a strong industrial base. The birth of the Industrial Revolution took place across the street from the current transit center at Stater Mill. In the late 1950's, however, both communities began a downward economic spiral as they experienced a loss of industry and manufacturing. The loss of these jobs translated to a loss of retail and commercial uses within the downtown areas and later, passenger rail service. Though once thriving, Pawtucket and Central Falls are today some of the most disadvantaged areas in Rhode Island. They continue to struggle to recover from the recession. With unemployment rates of 12.1 percent and 13.6 percent respectively, Pawtucket and Central Falls remain among the most economically disadvantaged communities locally and nationally.

The two Cities have started a number of initiatives to reinvigorate their economies by closely integrating transportation, development and recreational elements.

The Cities hope through these planning initiatives to create a thriving economic vitality of its past.

Pawtucket and Central Falls have focused on their main streets, riverfront, and the station area to help realize a successful revitalization. The focus includes transportation investment prioritizing complete streets, sustainable development strategies, particularly in untapped corners of the Cities, and a dedication to the disadvantaged demographic that relies heavily on transit service for access to jobs, education and recreation.

One of the next steps includes dedicated investment into a new Pawtucket/Central Falls Station on Amtrak's Northeast Corridor and the Massachusetts Bay Transportation Authority's (MBTA's) Providence commuter rail line. Amtrak and the MBTA currently operate passenger service through the area with the Providence & Worcester (P&W) Railroad Company running freight service on an independent third track. This project proposes a new passenger station,

Locus Map



Unemployment



which would reintroduce passenger rail service to Pawtucket and neighboring Central Falls. The Project also proposes a new intermodal connection between MBTA commuter rail service and RIPTA local bus service, better enhancing local mobility for residents of these communities, increasing access to regional jobs and activity centers, and supporting local planning goals. Although the currently proposed infrastructure for this site includes a bus pull-out and shelter suitable for local bus service, a longer term vision for the area includes

Median Household Income



a full-service bus hub with indoor amenities for bus patrons as well as berthing infrastructure for end of line requirements. The Project would provide related benefits in environmental quality and sustainable economic development for residents of Pawtucket, Central Falls, and the surrounding area.

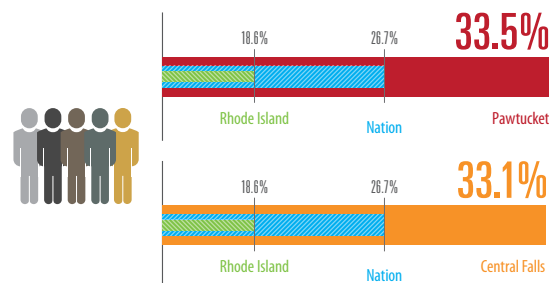
The Pawtucket/Central Falls Commuter Rail Station supports the FTA's Ladders of Opportunity initiative. By having a bus stop at the proposed rail station with a pedestrian

bridge connection, a whole new area of Pawtucket and Central Falls will be served by multi-modal transportation. People living in this area will have improved Ladders of Opportunity (or access) to jobs in Providence and Boston, TF Green Airport and the emerging City Centre Warwick District.

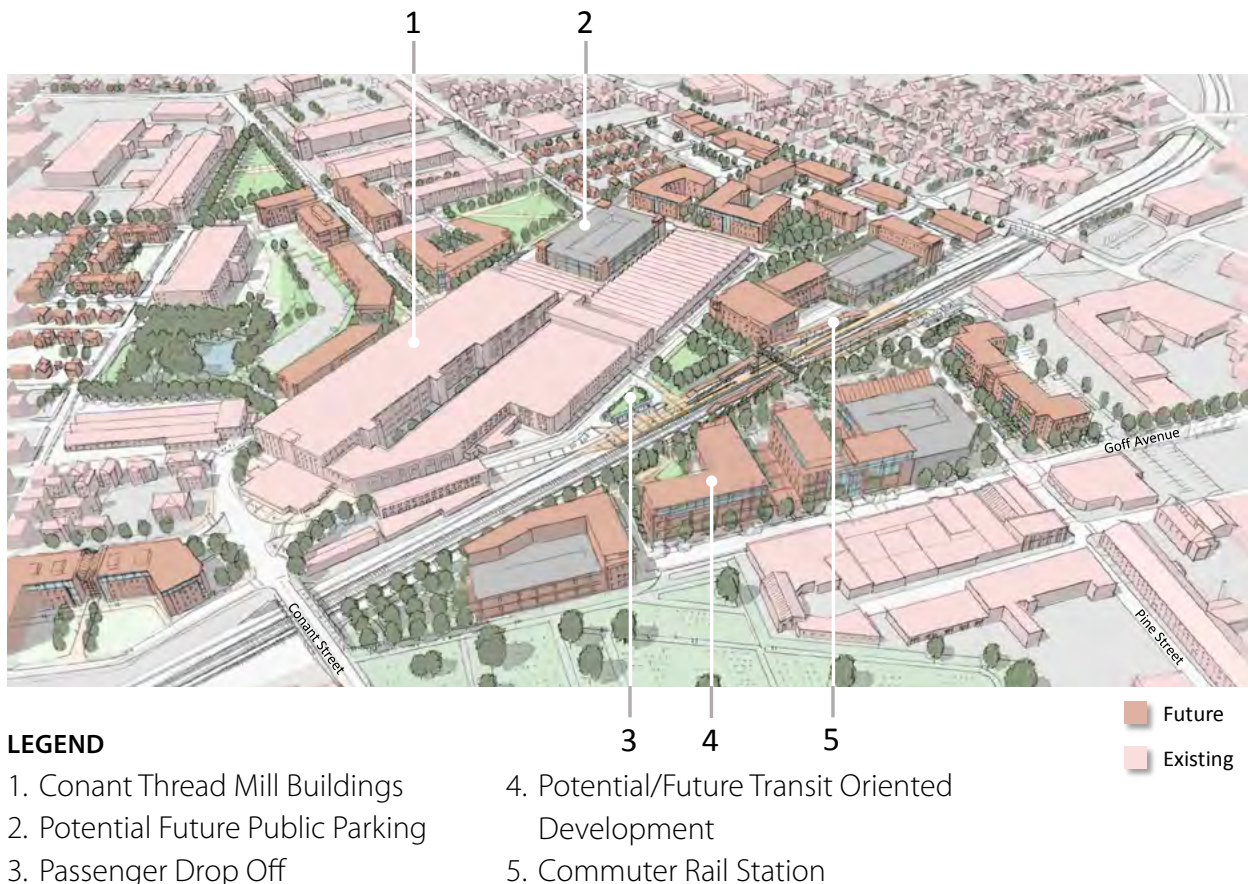
The Project will open Ladders of Opportunity for people around the region to access jobs at new developments adjacent to the station. This in turn will lead to increased tax revenues for both Cities, further supporting long-term economic growth. Both state and local planning documents point to this project as a top priority and the benefits outlined above.

Pawtucket and Central Falls have a consistently high percentage of minority areas. Minority populations, however, have historically attracted lower levels of public investment, which perpetuate poverty levels, unemployment rates and median household incomes below state and national averages.

Percentage of Minority



Proposed commuter rail station set within potential transit oriented development build-out, as determined by TOD study.



In addition to a station project, RIDOT and the Cities have been working to develop transit-oriented growth strategies that incorporate development opportunities surrounding the station. Transit-oriented development options will further evaluate opportunities to partner with local investors to deliver the station as a potential Design-Build or P3.

II. Project Parties

The Pawtucket/Central Falls Commuter Rail Station will be constructed and operated by a collaborative partnership that includes the Rhode Island Department of Transportation (RIDOT), the City of Pawtucket, and the City of Central Falls.

In addition to the collaborative partnership between the agency and the two Cities, the Pawtucket/Central Falls Commuter Rail Station project is also supported by business groups including The Pawtucket Foundation. The Project is further supported by public and non-profit stakeholders, such as PCF Development, a community housing developer that sees the benefits this project brings to their constituents. Included in the Attachments of this application are letters of support and commitment to this project.



Rhode Island Department of Transportation (RIDOT) Implementer and Owner

RIDOT designs, constructs, and maintains the state's surface transportation system.

With a staff of more than 700 transportation professionals, RIDOT serves as the steward of a statewide multi modal transportation network, consisting of 3,300 lane miles of roadway, 1,154 bridges, multiple rail stations, and more than 60 miles of bike and pedestrian paths. RIDOT is currently leading the Project's design and environmental review phase, funded by a FTA New Starts grant and supports the multi-modal connection the Pawtucket/Central Falls Commuter Rail Station would provide.



Historic Slater Mill in Downtown Pawtucket.



City of Pawtucket Sponsor

Called the “place by the waterfall,” Pawtucket, with a population of 71,148, is located where the Blackstone River runs into the Pawtucket River and the tidewaters of the Narragansett Bay. The City plays a special role in the history of our country as the birthplace of the American Industrial Revolution. In 1793, at the Slater Mill Historic Site, power from the Blackstone River was used to spin cotton into yarn, beginning a new era of prosperity. Much has changed, but Pawtucket remains a manufacturing center with nearly 200 companies producing jewelry, metals works and textiles in the city. In recent years, Pawtucket has also become home to a growing art and design community, with more than 1,000 creative sector companies located here. Many companies have been drawn to Pawtucket’s Arts & Entertainment District and numerous historic mill properties by various incentive programs offering tax-free art sales, grants, targeted loans, historic tax credits and community support.

Over the last ten years, more than \$184 million in private development has occurred, with millions more planned. In addition to arts and history centric programs, Pawtucket offers tax-abatements, flexible financing plans, permitting guidance and infrastructure investments.



City of Central Falls Sponsor

From the great Blackstone Valley industrial powerhouse, Central Falls emerged. As a result of this rich manufacturing history focused along the Blackstone River, Central Falls is one of the smallest and most dense communities in the United States. Central Falls has been a city of immigrants since its founding. In recent years, concurrent with national trends, the majority of immigrants have been from Central and South America, resulting in Rhode Island’s first majority Hispanic municipality. Many families have remained in Central Falls for generations, creating a diverse community with civic pride. The community suffered from the loss of American manufacturing leading to a difficult municipal bankruptcy. Under enigmatic leadership and wave of rejuvenated community spirit, Central Falls is now in the midst of a dramatic comeback from its recent struggles.

Letters of support in the Attachments illustrate the broad, diverse, and dedicated support for the Pawtucket/Central Falls Commuter Rail Station.

III. Grant Funds and Sources/Uses of Funds

The follow table provides details of the funding sources to support the \$ 40 million cost estimate for the Project. As can be seen, the TIGER request represents only 36% of the Project's cost. The remaining 64% is funded from "local" sources. This includes a state-funded \$ 3.6 million hard match for the TIGER grant itself, a \$ 3 million contribution from the cities of Pawtucket and Central Falls (see attached *MunicipalFunding.PDF*), and \$ 18.9 million of federal formula funds that will be used as "overmatch".

The state and federal formula funds are funded from the \$ 80 million of state and federal funds made available to the department as a result of the passage of the

RhodeWorks legislation. RhodeWorks was signed into law in February 2016 and funded Rhode Island's bridge and pavement needs, allowing additional funds to be allocated to transit. With the passage of RhodeWorks, RIDOT was able to propose a constrained 10 year plan to the state's Metropolitan Planning Organization (MPO) that included \$ 80 million in transit funding. Prioritization of the use of that funding went through the state's MPO. The MPO ranked Pawtucket Station as it's #3 priority behind two projects that are already funded. With the approval of this TIGER grant, RIDOT would propose a Statewide Transportation Improvement Program (STIP) modification to add the \$ 14.5 million of TIGER funds to the STIP to fully fund the Project.

CATEGORY	FUNDING AMOUNT	PERCENT OF GRANT TOTAL	TIGER VS "LOCAL"
TIGER Funds			
TIGER Discretionary Funding Request	\$ 14,500,000	36%	36%
State Funds	\$ 3,600,000	9%	64%
Pawtucket & Central Falls Contributions	\$ 3,000,000	8%	
Federal Formula Funds	\$ 18,900,000	47%	
Total Project Cost	\$ 40,000,000	100%	100%

IV. Selection Criteria

a. Primary Selection Criteria

Safety

The Project would improve safety on local roads, by reducing vehicle miles of travel and reducing rate of accidents. Station construction would involve upgrades to track and signals on the Northeast Corridor (including both the main line and adjacent freight track), improving long term safety in this heavily utilized rail corridor. Local pedestrian and bike safety would also be improved by creating a more direct pedestrian/bike route on an overhead bridge across the rail right-of-way, and by making upgrades to local sidewalks in the station area.

Providing a design with off-street intermodal connections between rail and bus will permit a reduced vulnerability for pedestrian/vehicle conflicts.

State of Good Repair

The proposed station is included within the Northeast Corridor Commission's 5-year Capital Investment Plan: FY2017-2021. It makes upgrades to the freight rail track and would be constructed in a way to allow for future electrification of the MBTA service track, both stated goals in Amtrak's plan. Track, signals and catenary upgrades in the station area will extend the useful life of these assets. By constructing a north-bound station siding and a southbound platform off the mainline, the Project will allow commuter trains to stop off the main line without interrupting Amtrak and will help preserve the overall capacity of this corridor.

A sustainable source of revenue is available for operations and maintenance of the Project.

Economic Competitiveness

The cities of Pawtucket and Central Falls have identified the proposed Project as a key step in revitalizing the economic competitiveness of their communities. The State has likewise identified the station area as a priority for state investment and development, designating it as one of six Rhode Island Growth Centers. A Growth Center Concept Plan, developed as part of a regional HUD Sustainability planning effort entitled *RhodeMapRI*, focuses on enhancing economic opportunities and outcomes, meeting housing needs across all income levels, and strengthening economic vitality by promoting development. The Plan identifies the existing rail corridor as a barrier that divides neighborhoods and hinders redevelopment potential in the Conant Thread Mill complex. The pedestrian bridge connection over the Northeast Corridor would improve access to future (re) development in the Conant Thread Mill complex and provide a walking/biking



connection for transit dependent users and other local residents.

A TOD concept plan has been prepared as part of project planning and both cities have already taken meaningful actions to encourage investment in these areas (e.g. mixed-use overlay district and reduced parking requirements).

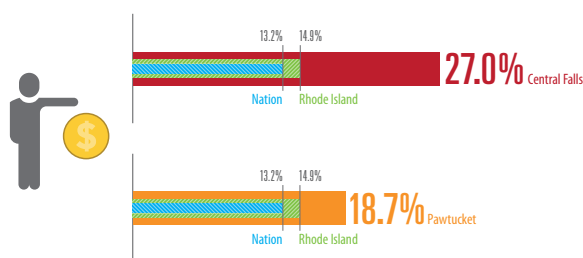
The communities of Pawtucket and Central Falls are some of the most disadvantaged in the State, with household incomes and employment levels well below the state and national averages.

The Project will decrease overall transportation costs and offer local residents increased access to employment centers, education and training opportunities. The Project will increase the economic productivity of land in the station area by spearheading community revitalization efforts and private investment that result in long-term job creation and other economic opportunities.

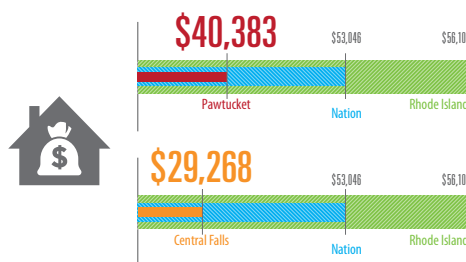
The pedestrian bridge will also provide faster and more convenient access to the transit options for the overwhelmingly low income and minority populations.

The Cities of Pawtucket and Central Falls have consistently high rates of poverty and unemployment compared to both state and national averages. Coupled with low rates of college education, local populations are in need of transportation infrastructure investment to increase access to opportunities and rebound out of ongoing economic disadvantages.

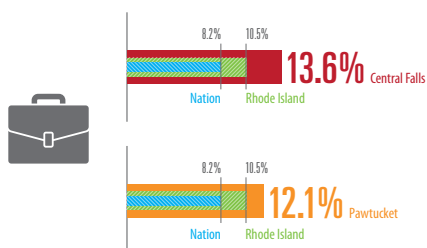
Percentage in Poverty



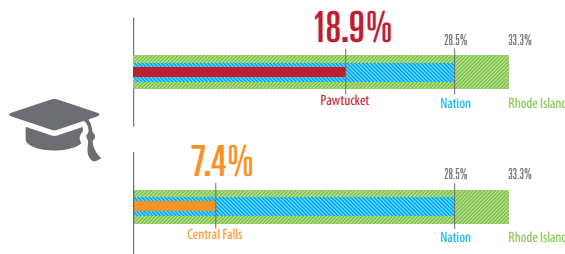
Median Household Income



Unemployment Rate



Percentage of Adults with College Degree



State of Rhode Island Incentives for Transit Oriented Development

REBUILD RI TAX CREDIT	QUALIFIED JOB INCENTIVES TAX CREDIT
Provides tax credits up to 20% of total project costs for commercial and residential developments:	Provides companies with a tax credits up to \$7,500 for each new job created in the state.
Over \$5M and 25,000 SF	Additional \$ 1,000 credit for jobs in communities with high percentage of families below federal poverty level.
With 25+ employees (FTEs)	
TOD incentives	TOD incentives
Credits up to 30% of total project costs for projects in Transit Oriented Development Areas (or that redevelop historic structures)	Additional \$4,000 in credits for new jobs within 1/2 mile of a passenger rail station
	Additional \$1,000 credit for jobs within designated TOD areas.

Recognizing the importance of transit and transit supportive development in meeting state land use objectives, the State offers two incentives that will greatly increase the likelihood of Transit Oriented Development in the station area. Specifically, these include:

- › **Rebuild RI Tax Credit:** New commercial or residential development projects (> \$ 5M) in the Project area are eligible for state tax credits up to 30% of project costs.
- › **Qualified Job Incentives Tax Credit:** New or existing companies in the Project area are eligible for up to \$ 13,500 in state tax credits for each new job created.

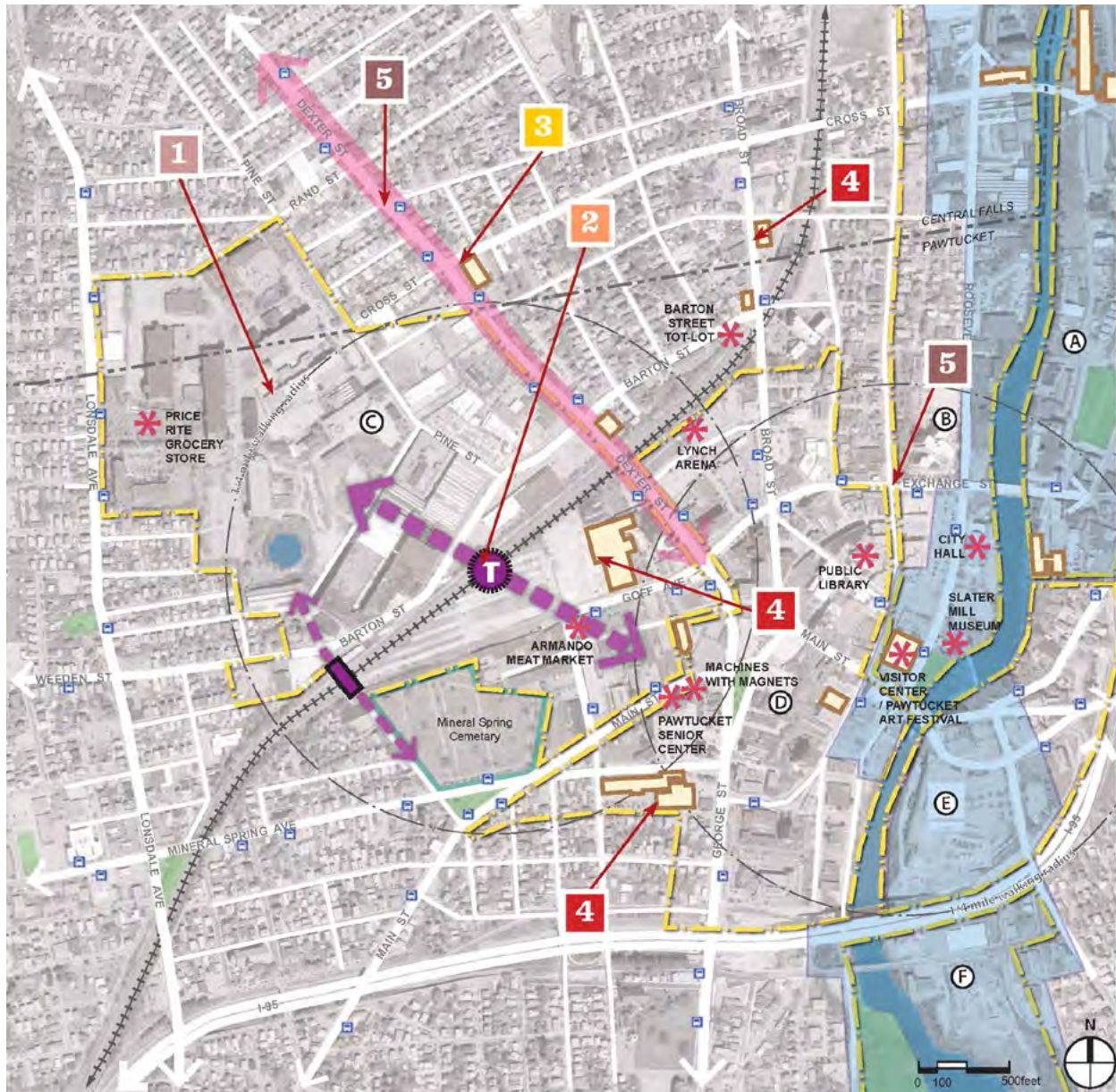
The RI Historic Preservation Tax Credit program has been successfully used on 400 projects within ½ mile of the station site. The program's successor, the Rebuild RI Tax Credit, is expected to continue these accomplishments into the future. A commuter rail station would undoubtedly benefit the anticipated redevelopments.

The Commuter Rail Station will strengthen existing efforts to spur development in this area of Pawtucket/Central Falls. Due to

diligent marketing, rezoning and other economic development efforts on part of both communities, there have already been a number of successful redevelopments in the station area. Most recently, a private developer began renovations to turn a 130,000 square foot historic building into a contract brewery and tasting room across the street from the proposed Commuter Rail Station. The historic Union Wadding mill has recently been developed into residential lofts and includes more than 200 units. Other locally-active real estate developers have purchased property in the vicinity of the station in anticipation of its construction and may potentially partner with state to provide station parking.



Existing Assets



PAWTUCKET/CENTRAL FALLS GROWTH CENTER
TOD and Conant Industrial Park District **Existing Assets**

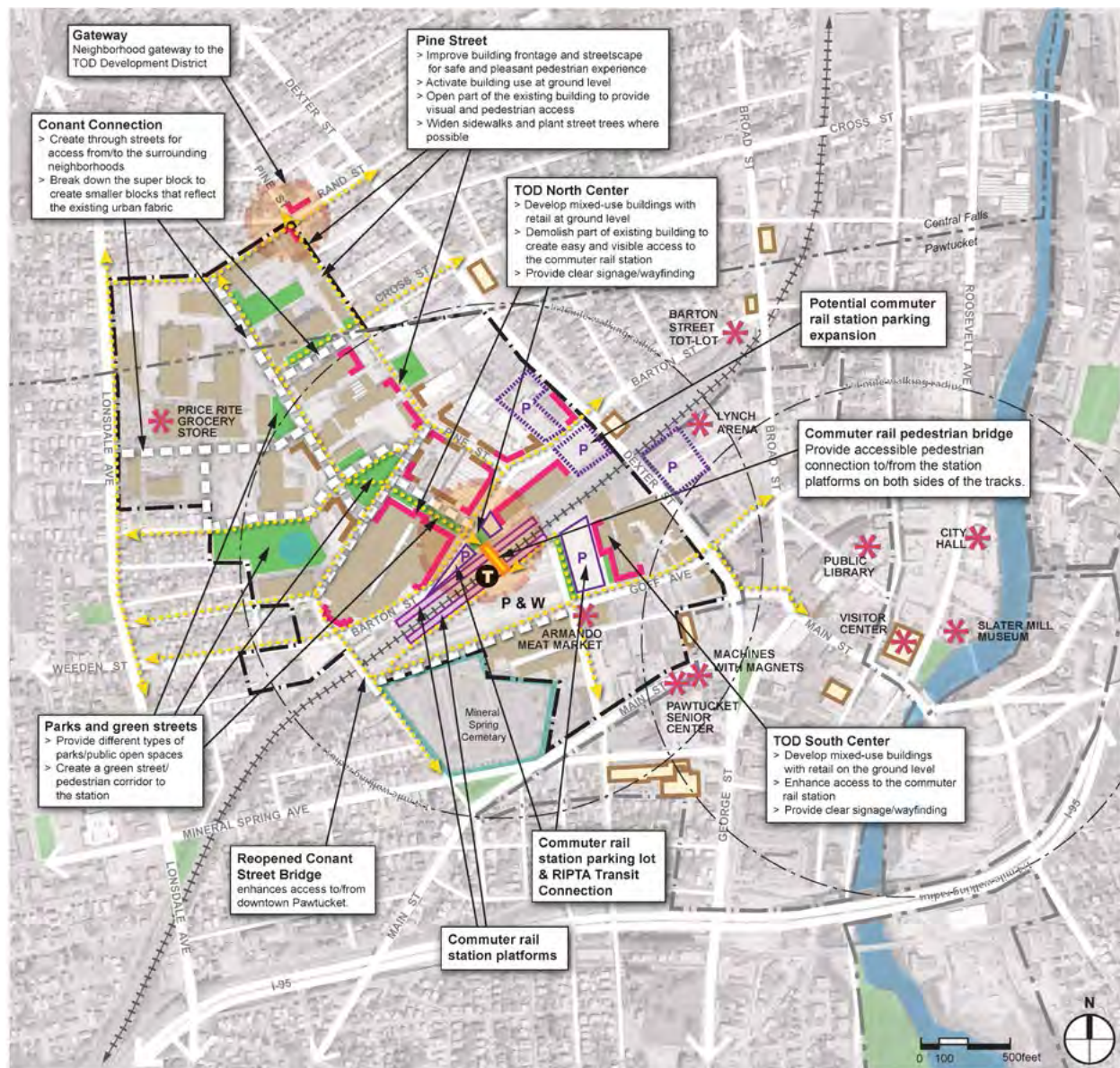
LEGEND

City boundary	Recently developed	Pawtucket Downtown Growth Center Development District
Railroad tracks	Community destination	Armory Arts District
Neighborhood commercial corridor	RIPTA service stop	Roosevelt Avenue District
River Corridor Development Plan area	Open space/park	TOD & Conant Industrial Park District
		Historic District
		Riverfront Commons District
		Tidewater District

- 1** Proposed redevelopment at the Conant Street Industrial Park site
- 2** Proposed commuter rail stop, transit center, and associated transit-oriented development serving both downtown Pawtucket and Central Falls
- 3** Dexter Street is an important neighborhood commercial corridor running through Central Falls to Pawtucket. RIDOT recently completed streetscape and bike lanes.

- 4** New/recent developments prove the site's market potential.
- 5** RIPTA Transit center provide connections to important destinations

Growth Center Opportunities



PAWTUCKET/CENTRAL FALLS GROWTH CENTER

TOD and Conant Mixed-Use District Opportunities



Quality of Life

The Project also aligns with community and statewide land use planning and economic development goals that improve quality of life, including:

- › **RhodeMapRI:** a sustainable statewide planning effort funded through a US Department of Housing and Urban Development regional planning grant which led to designation of the station area as one of six priority Growth Centers in Rhode Island.
- › **Healthy Places by Design:** the City of Pawtucket was selected for the RI Department of Health's Healthy Places by Design Pilot Program and achieved federal Health Equity Zone designation with the City of Central Falls in 2015. Near term implementation priorities include increased pedestrian safety, transit amenities and bike lanes.
- › **Blackstone River Valley National Historic Park:** The Project complements the new National Park by providing visitors with non-auto options in line with the federal "Transit in the Parks" goals.
- › **The Pawtucket Arts District:** RI has nine designated arts districts intended to catalyze economic development and revitalization through tax incentives. The Pawtucket Arts District overlaps with the station area and encompasses 23 historic mill buildings, several of which include live-work space for artists as well as a number of art galleries and performance spaces.
- › **Pawtucket Complete Streets Initiative:** This plan focuses on increasing walking and bicycling to directly address public health concerns, as well as reduce automobile traffic, improve air quality, and create a greater sense of community. As shown in the BCA, the Project will further reduce our nations' dependence on foreign oil, improve air quality, and reduce greenhouse gas emissions. The location of the rail station complements Pawtucket's planned transit emphasis corridor which incorporates complete streets concepts along Exchange Street and Goff Avenue, as proposed in Pawtucket's Downtown Design Plan, River Corridor Development Plan and the RIPTA Relocation Study.



Rendering Pawtucket Station

HUD/DOT/EPA Livability Principles

	How Project Supports
Provide more transportation choices	34% within ½ mile of station do not own autos, and 38% fall under the federal poverty level. These residents would benefit from increased transportation choice and access to jobs and education.
Promote equitable/affordable housing	More than 18,000 currently live within ½ mile of the proposed station; 1,149 units in this area are affordability restricted. A Market Analysis conducted as part of station planning found that residential growth potential is over one million square feet. Pawtucket/Central Falls Development, a key project partner and supporter that has worked in this area for 20 years, is diligently working to increase home ownership and affordability-restricted units in the area.
Improve economic competitiveness	TOD planning efforts estimate the Project would catalyze two million square feet of redevelopment in adjacent vacant or underutilized commercial structures. By improving access to Boston, the Route 128 employment corridor, Providence, Warwick and points south, local residents will also have improved access to employment centers, and employers will have a larger pool of available workers.
Invest in existing communities	The Project is located in a densely developed urban area (almost 14,000 people per square mile). The RI State Guide Plan calls for new development to be concentrated in existing urban areas and around transit services, thereby increasing the efficiency of public investments and preserving open space. The station area is one of six designated Growth Centers in the state, with significant opportunity to redevelop urban brownfields and support significant levels of TOD.
Coordinate policies and leverage federal investment	The Project will leverage ongoing federal investment in the area, including: development of the new National Historic Park, a recent EDA grant focused on long-term economic recovery, and federal Health Equity Zone goals. There are also 1,149 units of HUD supported housing within ½ mile of the station.
Enhance the unique characteristics of the community	Pawtucket and Central Falls have a rich history dating back to the Industrial Revolution, the focus of the new National Historic Park, and the community developed around the historic rail corridor. By restoring commuter rail, this project will revitalize historic properties and provide access to the new national park. As a Federal Health Equity Zone, increased walkability and reduced dependence on auto travel will further meet community goals.

Construction of a rail station with intermodal connectivity will support the success of each of the initiatives above. The Project is also directly supportive of all six HUD “Livability Principles:”

Environmental Sustainability

The Project would increase transit ridership and reducing regional VMT. By constructing an infill station in a densely developed environment, the Project would not only meet State land use and development goals, but would provide more opportunity for auto free living and increased pedestrian and bike activity.

The station site is largely already developed and limited parking (or shared parking) is planned, so storm water impacts will be negligible. In addition, the creation of a rail station served by bus in Pawtucket will lead to more efficient use of energy and other resources.

The Project also has great potential to spur brownfield redevelopment. A number of brownfields in the area are targeted for development and identified in proposed TOD plans done as part of station planning, which would reduce exposure for residents. As an example, conversations with local developers conducted as part of a recent market analysis indicate adjacent properties (the undeveloped portion of Union Wadding or the P&W yard) would be likely candidates for redevelopment, turning potentially contaminated sites into a new and positive use consistent with the adjacent transportation investment. The Station will also open up opportunities for re-use of surrounding mill buildings sites that have either been torn down, are vacant, or underutilized. Several of these sites are classified as brownfields and would have increased potential for restoration and

redevelopment if the Commuter Rail Station are built. Older homes would also be incentivized for investment, which would reduce environmental risks assuming these investments comply with lead paint abatement laws.

b. Secondary Selection Criteria Innovation

Pawtucket is known as “the Birthplace of the American Industrial Revolution”, a fact showcased in the Blackstone Valley National Historic Park. This history challenges the two cities with large, underutilized historic mills and widespread site contamination. The State of RI has provided incentives to encourage reuse of these unique historic resources through the designation of a State Arts District, State Growth Center and targeted tax incentives. Both communities have identified the commuter rail station as their number one priority for reinvigorating these largely vacant historic mill complexes and, to this end, each city has created unique Historic Mill Overlay zoning districts to allow for a mix of uses and reduce parking requirements. Other zoning and land use policies have been put into local code to help facilitate transit oriented development.

Developing the two million square feet of the historic but blighted Conant Thread Mills and Coates & Clarke complexes is a top priority for both cities, who have taken an innovative approach to engage local student groups, conduct design charrettes, and offer a shared vision to use transit to drive this development. One such initiative included Roger Williams University students to evaluate the redevelopment potential at Conant Thread Mill as well as the infrastructure needed to realize its full development potential.

The City of Pawtucket is dedicated to its thriving artist community and has incorporated artwork into a number of recent infrastructure projects, including colorful LED lights on the I-95 Bridge spanning the Pawtucket River. Further, the City created an “Art Bridge” program funded by the National Endowment for the Arts (NEA). The first recipient of this program will be the George Street Bridge, just south of the I-95 Bridge spanning the Pawtucket River. As part of planning for this project, a design review committee was established to guide concept development of the overhead pedestrian bridge to ensure it would fit within the community’s artistic vision. The committee included local architects, historians, and stakeholders and resulted in a design that was favorably received by the community as a whole.

Other innovation points include:

- › The use of a gauntlet track is an innovative way to minimize cost without restricting freight movements that are vital to the RI economy
- › Potential private development of shared parking by Union Wadding or other adjacent private development
- › Integrating art and culture into station design



In addition, RIDOT intends to pursue a Design Build process that encourages creativity and cost savings for the Project. RIDOT, the RI Department of Administration and Commerce RI Corporation have already established strategies to engage private developers. With many private parcels adjacent to the station, there are many opportunities suitable for station amenities such as parking, bus, pedestrian, and bike accommodations to be privately funded and supported. Options to incorporate transit infrastructure into private development (e.g. overbuild, shared facilities such as parking) could also be private initiatives that would both support the station investment and make it a more cost-efficient project delivery mechanism.

Partnership

The Project is the result of a robust planning process, advanced by a committed group of stakeholder entities that have consistently worked to advance the Project for over 10 years. The station is a top priority, and is prominently highlighted in both communities’ Comprehensive Plans. Local planning policies and investment decisions in the station area all support and incentivize future TOD development.



Potential TOD build out options at the station would include a mix of residential, office, retail. These options will be future defined with the Cities and the adjacent developers.

To achieve this shared vision, the communities and other committed local business and non-profit partners have been working with RIDOT throughout this project's planning process to advance implementation.

Simultaneously, virtually every planning effort conducted in these two communities over this time has highlighted the station as a top priority and has structured itself around this project.

The Project has unwavering local and state support as demonstrated by the 42 support letters attached to this application.

The passion and commitment of the two cities, local business leaders and local housing groups cannot be overstated. The partnership is unrelenting. The restoration of commuter rail service in these disadvantaged urban communities is seen as the most important step towards reversing the history of local poverty and disenfranchisement. This passion and commitment has survived the terms of four Mayors, three Governors and three Executive Directors at the Pawtucket Foundation and has committed significant local investment. The question of "when is the rail station going to open?" is the question asked at every public meeting.

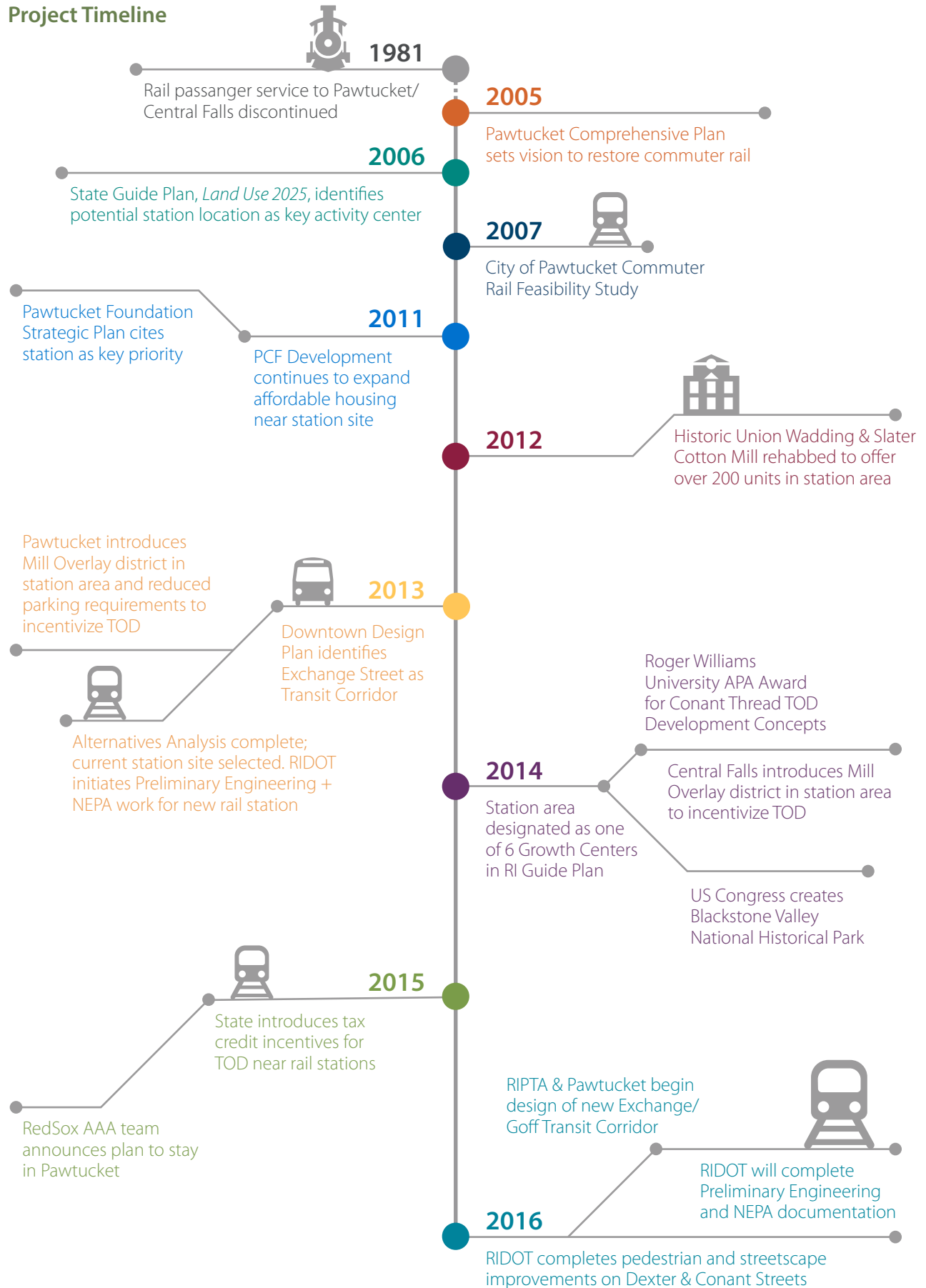
The Pawtucket Foundation, an advocacy group made up of local business leaders, and Pawtucket Central Falls Development (the non-profit community development entity) have endlessly advocated for the Project, committed staff time, created marketing brochures and dedicated other resources to project planning.

The collaboration on this project has been comprehensive and inclusive spanning more than a decade.

RI Statewide Planning committed resources to the development of a Growth Center Concept Plan as part of the *RhodeMapRI* sustainability initiative. The Project sponsor, RIDOT, demonstrated their commitment to these ideals by working with the communities to develop more detailed TOD plans in the area. RIPTA has committed staff time and federal transit funds to investments in the area. The MBTA and Amtrak have also cooperated in station planning, providing technical assistance, review and overall approval of the plans. A support letter from Amtrak is attached, and a support letter from MBTA is forthcoming. Roger Williams University provided imaginative and creative TOD development concepts, and participated in community charrettes to engage the public in station area planning.



Project Timeline



V. Demonstrated Project Readiness

Technical Feasibility

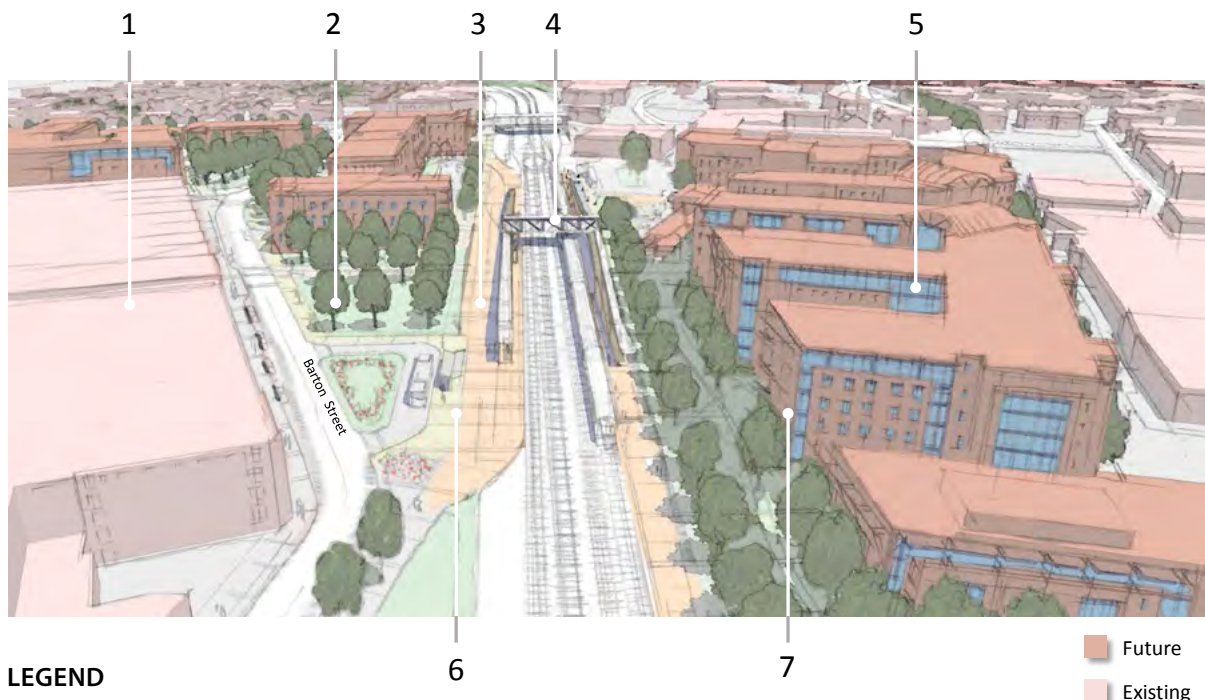
The Pawtucket/Central Falls Commuter Rail Station is a straight-forward and well-coordinated project that has been developed through more than a decade of comprehensive coordination with local and state officials as well as bus transit and railroad stakeholders. The Project would build a new commuter rail station on Amtrak's Northeast Corridor and would reintroduce passenger rail service to Pawtucket and Central Falls.

The commuter rail station would include dedicated platforms for northbound service to Boston and southbound service to Providence, TF Green Airport/Warwick and Wickford Junction. The platforms would be

connected by a pedestrian bridge overpass, ramps and stairs. The Project would also propose a seamless intermodal connection between MBTA commuter rail service and RIPTA local bus service.

The Project has already undergone 30% design level, which provides a reliable capital cost estimate for continued project development. Cost savings opportunities will be evaluated in the next phase including the potential to reduce infrastructure needed by sharing parking with adjacent development and by using elevators where access requirements allow.

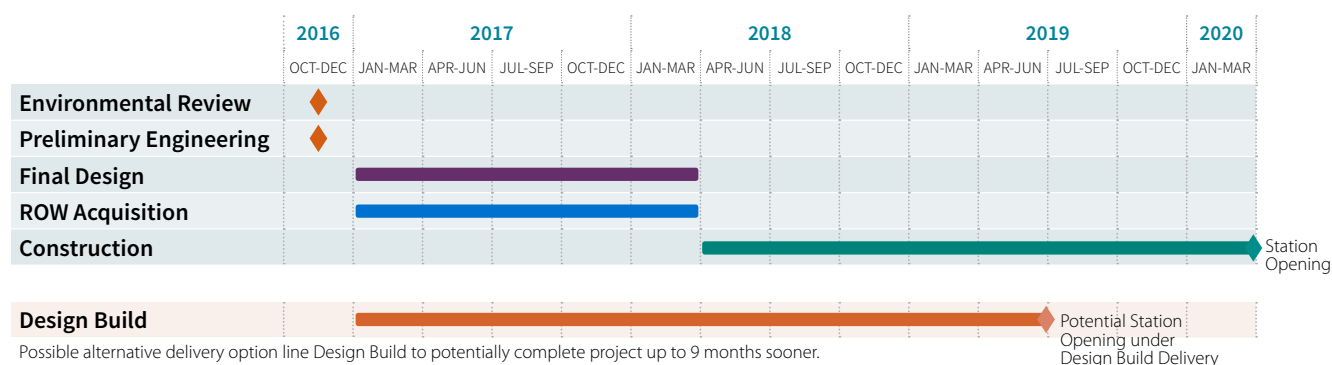
Proposed commuter rail station set within potential transit oriented development build-out, as determined by TOD study.



LEGEND

- | | |
|---------------------------|--|
| 1. Conant Thread Mill | 5. Potential/Future Transit Oriented Development |
| 2. Potential Future Plaza | 6. Passenger Drop Off |
| 3. Commuter Rail Station | 7. Pedestrian & Bike Connections |
| 4. Pedestrian Bridge | |

Pawtucket/Central Falls Commuter Rail Station Implementation Schedule



Financial Feasibility

The estimated capital cost for the Project is \$ 40 million including construction, acquisition, professional services and railroad force accounts. Pawtucket/Central Falls Commuter Rail Station is one of the priority investment strategies for the Cities and the State as outlined in the RI State Guide Plan and both communities' local planning documents. It is also a stated high priority for the Pawtucket Foundation, Blackstone Valley Tourism Council and other local groups.

State and local funds are committed to this project in excess of the 20% minimum. Sufficient "local" funding from the state, from both non-federal and federal formula sources, has been made available due to the passage of RhodeWorks legislation in February 2016. The legislation funded Rhode Island's bridge and pavement needs, allowing additional funds to be allocated to transit. With the passage of RhodeWorks, RIDOT was able to propose a constrained 10 year plan to the state's Metropolitan Planning Organization (MPO) that included \$ 80 million in transit funding. Through a public process, Pawtucket/Central Falls Commuter Rail Station was highly prioritized by the MPO.

Strong local support is also being shown through the \$ 3 million commitment from the cities of Pawtucket and Central Falls (see attached *MunicipalFunding.PDF*), and the cities have identified a wide variety of funding sources to support that commitment.

RIDOT intends to use Design Build to construct the Project but will also be exploring any and all possible alternative delivery methods. The schedule outlined in the next section helps demonstrate some of the schedule efficiencies that can be gained from this form of alternative delivery.

Project Schedule

The planned schedule includes completing final design, ROW acquisition and construction. Total duration for the remainder of the phases for the Pawtucket/Central Falls Commuter Rail Station implementation would span approximately 3 years with anticipated opening in early 2020.

The City of Pawtucket and RIPTA have already initiated design of a new Exchange-Goff bus transit corridor that will complement the Project by extending bus passenger amenities along the designated downtown transit corridor.

Required Approvals

The Project will soon be completing the Preliminary Engineering and NEPA Documentation phase, that included comprehensive stakeholder coordination, public outreach and local review. The Support Letters included in the attachments demonstrate the level of coordination and approval from all key stakeholders of this project. Moving into the next phase, the Project will only be required to complete final design and construction. The Project would not need any additional local approval or legislative review.

Assessment of Project Risks and Mitigation Strategies

The greatest risks to this project are funding and schedule. While the TIGER Grant will allow the Project to move into final design and construction, the Project will mitigate the schedule risk by continuing weekly team and stakeholder coordination meetings with the same team that has been guiding the Project for three years. The schedule will be adhered to strictly with a full commitment to award the construction contract by April 2018.



*Historic Pawtucket/
Central Falls Station*

VI. Project Benefits and Costs

The Benefit Cost Analysis compares the direct and indirect benefits of the Project against the required capital investment. The expected benefits include travel time savings, reduced accidents, reduced fuel consumption and vehicle operations costs, and economic competitiveness benefits such as increased access to jobs both in the vicinity of the station and to other large job markets served by the MBTA's rail service today. In addition to generating ridership, the Project is expected to:

- › Reduce travel time compared to driving;
- › Reduce overall regional vehicle-miles-traveled and, thereby, vehicle operating costs, fuel consumption, car exhaust emissions, reliance on oil imports, pavement wear and tear, as well as the number of automobile accidents;
- › Increase the number of jobs around the station area;
- › Increase access to jobs for local low-income residents and others connected by the new transit services;
- › Increase property values; and
- › Increase tax revenues for the Cities.

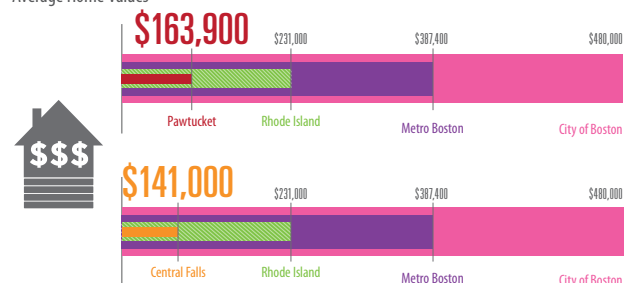
The analysis indicates a BCA ratio of 2.82 to 3.27 as shown on the next page.

There are a number of positive benefits of the Project related to the users in need of transit investment. The Pawtucket/Central Falls Commuter Rail Station would serve Pawtucket and Central Falls, some of the most disadvantaged areas in the state. They continue to struggle to recover from the recession and are one of the poorest, highest unemployment areas in a state that continues to have staggering statistics compared to national averages. The Project would increase this community's access to not only jobs, but also advanced education opportunities in Boston and Providence.

Pawtucket and Central Falls have the highest levels of poverty, unemployment, transit dependency and minority populations in the State and the Pawtucket/Central Falls Commuter Rail Station would make urgently needed investments in mobility and quality of life.

Homes in Pawtucket and Central Falls are currently quite affordable compared to Boston real estate markets and an estimated 1,149 affordability restricted housing units are within ½ mile of the station. Construction of this station will provide Pawtucket and Central Falls residents with a one-seat ride to Boston and other nearby job centers. This will increase opportunities for a range of low income and market rate housing units.

Average Home Values



This project would help open up new direct access to two million square feet of potential development space at the historic mill complex that the two Cities are aggressively working together to rehabilitate. Not only would the station, intermodal connectivity

and pedestrian access help catalyze transit-oriented development at this complex, but as development occurs, it would set the stage for even higher levels of future transit mode share for both residents and workers at this site.

BCA Elements

BENEFIT DESCRIPTION	BENEFIT VALUE (7% DISCOUNT RATE)	BENEFIT VALUE (3% DISCOUNT RATE)
State of Good Repair		
Reduction in Pavement Damage	\$ 6,273	\$ 10,632
Category subtotal	\$ 6,273	\$ 10,632
Economic Competitiveness		
Increase in Property Values	\$ 88,200,441	\$ 107,373,293
Fuel savings for automobiles	\$ 299,891	\$ 593,656
Reduction in oil imports	\$ 181,781	\$ 323,994
Fare Revenue	\$ 3,891,365	\$ 7,056,425
Category subtotal	\$ 92,573,478	\$ 115,347,368
Sustainability Livability		
Emission Abatement	\$ 222,436	\$ 385,014
Travel Time Savings	\$ 129,819	\$ 220,008
Category subtotal	\$ 352,255	\$ 605,022
Safety		
Safety Increase	\$ 10,158,488	\$ 17,215,902
Category subtotal	\$ 10,158,488	\$ 17,215,902
Total Project Benefits	\$ 103,090,494	\$ 133,178,924

COST DESCRIPTION	BENEFIT VALUE (7% DISCOUNT RATE)	BENEFIT VALUE (3% DISCOUNT RATE)
Capital costs	\$ 34,794,126	\$ 37,627,239
Operating and maintenance costs	\$ 1,783,808	\$ 3,044,428
Total Project Costs	\$ 36,577,934	\$ 40,671,667
Net Present Value	\$ 66,512,560	\$ 92,507,257
Benefit Cost Ratio	2.82	3.27

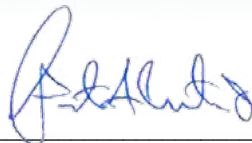
VII. Federal Wage Rate Certification

RIDOT certifies that it will comply with the requirements of subchapter IV of chapter 31 of title 40, United States Code (Federal wage rate requirements), as required by the Recovery Act.

FY 2016 TIGER Discretionary Grant Application
Pawtucket/Central Falls Commuter Rail Station

FEDERAL WAGE RATE CERTIFICATION

The undersigned agrees to comply with the requirements of Subchapter IV of Chapter 31 of title 40, United States Code regarding Federal wage rate requirements, as required by the Consolidated and Further Continuing Appropriations Act, 2016.



Peter Alviti, Jr.,
Director, Rhode Island Department of Transportation
April 29, 2016

Attachments

Benefit Cost Analysis Narrative

Benefit Cost Analysis Tables

Municipal Funding Commitment

Support Letters

City of Pawtucket City Council Resolution



PAWTUCKET/CENTRAL FALLS

Commuter Rail Station Project

Attachment—Benefit Cost Analysis

Table of Contents

Executive Summary.....	1
Introduction.....	2
Assumptions Used in the Analysis.....	3
Economic Benefits.....	6
Economic Costs.....	13
Results of the Benefit-Cost Analysis.....	14
Attachments	

Executive Summary

The Rhode Island Department of Transportation (RIDOT), in cooperation with the Cities of Pawtucket and Central Falls, is proposing a new Pawtucket/Central Falls Commuter Rail Station. The commuter rail station will be located on Amtrak's Northeast Corridor and the Massachusetts Bay Transportation Authority's (MBTA's) Providence commuter rail line. Amtrak and the MBTA currently operate passenger service through the area with the Providence & Worcester (P&W) Railroad Company running freight service on an independent third track. This project proposes a new passenger station, which would reintroduce passenger rail service to Pawtucket and neighboring Central Falls. The Project would provide related benefits in environmental quality and sustainable economic development for residents of Pawtucket, Central Falls, and the surrounding area.

The Pawtucket Station Benefit Cost Analysis (BCA) is intended to compare the direct and indirect benefits of the Project against its costs. The expected benefits include travel time savings, reduced accidents, reduced fuel consumption and vehicle operations costs, and economic competitiveness benefits such as increased development, access to jobs both in the vicinity of the station and in the other urban areas served by the MBTA commuter rail service. The expected costs include both capital and operating costs. The BCA results indicate the Project has benefits that exceed the capital investment needed to complete it. As shown in the table below, the Benefit-Cost Ratio ranges from 2.82 to 3.27.

BCA Summary Results

DISCOUNT RATE	BENEFIT-COST RATIO
7%	2.82
3%	3.27

Introduction

This Benefit-Cost Analysis (BCA) supports the TIGER VIII Grant Application for the Pawtucket/Central Falls Commuter Rail Station project. The BCA is criterion VI for the TIGER VIII program as stated in the February 26, 2016 Notice of Funding Opportunity (Federal Register Vol. 81, No. 38, pg. 9935). It has been prepared in accordance with the BCA Guidance for TIGER Grant Applicants and the Tiger BCA Resource Guide last updated 3/27/15 and provided by the USDOT.

The BCA compares for this project the direct and indirect benefits of the Project against its costs. The expected benefits include travel time savings, reduced accidents, reduced fuel consumption and vehicle operations costs, and economic competitiveness benefits such as increased access to jobs both in the vicinity of the station and in the other urban areas served by the MBTA commuter rail service. The expected costs include both capital and operations costs.

The BCA elements are the specific benefits and costs that are most directly relevant to the Pawtucket Station project. Many elements of the BCA will rely on the expected differences in VMT as a result of the Project, and many are described in detail through the TIGER BCA Resource Guide, available online. Below is annotated outline of the BCA.

BCA Elements

BENEFIT DESCRIPTION	BENEFIT VALUE (7% DISCOUNT RATE)	BENEFIT VALUE (3% DISCOUNT RATE)
State of Good Repair		
Reduction in Pavement Damage	\$ 6,273	\$ 10,632
Category subtotal	\$ 6,273	\$ 10,632
Economic Competitiveness		
Increase in Property Values	\$ 88,200,441	\$ 107,373,293
Fuel savings for automobiles	\$ 299,891	\$ 593,656
Reduction in oil imports	\$ 181,781	\$ 323,994
Fare Revenue	\$ 3,891,365	\$ 7,056,425
Category subtotal	\$ 92,573,478	\$ 115,347,368
Sustainability Livability		
Emission Abatement	\$ 222,436	\$ 385,014
Travel Time Savings	\$ 129,819	\$ 220,008
Category subtotal	\$ 352,255	\$ 605,022
Safety		
Safety Increase	\$ 10,158,488	\$ 17,215,902
Category subtotal	\$ 10,158,488	\$ 17,215,902
Total Project Benefits	\$ 103,090,494	\$ 133,178,924
COST DESCRIPTION	BENEFIT VALUE (7% DISCOUNT RATE)	BENEFIT VALUE (3% DISCOUNT RATE)
Capital costs	\$ 34,794,126	\$ 37,627,239
Operating and maintenance costs	\$ 1,783,808	\$ 3,044,428
Total Project Costs	\$ 36,577,934	\$ 40,671,667
Net Present Value	\$ 66,512,560	\$ 92,507,257
Benefit Cost Ratio	2.82	3.27

Assumptions Used in the Analysis

Several assumptions were used in the BCA for the Project, which are outlined below.

Discount Rate

The BCA uses a 7 percent discount rate for its analysis as required by USDOT, and 3 percent discount rate as an alternate as suggested by USDOT. The BCA results are provided and discussed for both discount rates.

Discounting is a method used to convert future costs and benefits into a common year. The procedure expresses future outcomes in their present value and permits the level-playing field comparison of options whose costs and benefits occur at different rates over time. The conversion involves the use of a discount rate—the annual percentage change in the present value of a future dollar (or other unit of account). The discount rate shows the sum of all future cash flows discounted back to current dollars. A higher discount rate equates to a greater “discount” on benefits received in the future, whereas a lower discount rate envisions that future benefits are valued at almost the same as benefits realized upon day of opening.

Evaluation Period

The evaluation period for this BCA is 25 years from the initial year of construction, or to the year 2045. The analysis assumes expenditures would begin during the first year of construction, which is 2017. The construction schedule is three years, with service opening in 2020. Expenditures therefore span the years 2017 through 2020, with benefits beginning in 2020 and continuing for 25 years, through the horizon year of 2045. All values are reported in current year (2016) dollars.

Annualizing Factor Assumptions

Some data are available only as daily values. An annualization factor is thus necessary to convert the travel demand outputs into yearly values. The National Transit Database indicates an annualizing factor of 307.7 for transit ridership data. This annualization factor was used for VMT factors.

Study Area

The Project is located within the City of Pawtucket, RI, within and adjacent to the Amtrak owned railroad right-of-way between Conant Street bridge and Dexter Street bridge. The Project is located in the northwest corner of the City of Pawtucket, near its border with Central Falls. The study area is a densely-populated mixed-use area, bisected by the rail corridor. Existing land use patterns are largely characterized by under-utilized and/or vacant historic mills and multi family housing, with scattered retail along main corridors.

The immediate station area is historically industrial, with mixed uses introduced over recent decades as manufacturing has declined. Land use on the southeast side of the rail corridor includes: the Union Wadding, a recently revitalized mixed-use commercial and residential development on Goff Avenue; a former rail yard and a cemetery; and single-family and multi-family residences between Conant Street and Mineral Spring Avenue. Land use on the northwest side of the rail corridor includes commercial, retail and industrial buildings along Barton Street, and single-family and multi-family residences, a daycare center, and industrial properties between Conant Street and Mineral Spring Avenue. To the east, land use includes Dexter Street, one of Central Falls' primary commercial corridors and additional multi-family housing.

The proposed station site, as currently envisioned, is consistent with Rhode Island's State Guide Plan for future land use and transportation. *Land Use 2025* sets an overall goal to focus growth within an established Urban Services Boundary and identified growth centers. The area proposed for the new commuter rail station falls within the Urban Services Boundary. The State has also identified the station area as a designated Growth Center. The state's long-range transportation plan, *Transportation 2035* includes the station in its targeted expansion scenario.

Travel Demand Assumptions

Results were prepared for both a build and a no build scenario—with and without construction of the station. Both scenarios assumed the same land uses and highway travel times from the Rhode Island and Massachusetts Statewide models. Ridership forecasts used the Simplified Trips-on-Project Software (STOPS) which is "a series of programs designed to estimate transit project ridership using a streamlined set of procedures that bypass the time-consuming process of developing and applying a regional travel demand forecasting model." The STOPS model uses census data, information from available regional models, census data and General Transit Feed Specification Data (GTFS). Service assumptions were based on operations analysis conducted by the consultant team in coordination with the MBTA, Amtrak, and RIDOT, and assumes that all MBTA commuter rail trains serving Providence would stop at the Pawtucket Station. Fare assumptions use the existing Zone 8 fares set by the MBTA for Providence Station. Boardings information is illustrated in Table 1 on the next page.

MBTA COMMUTER RAIL STATIONS	FARE ZONE	ADDITIONAL BOARDINGS
Wickford Junction	10	-7
T.F. Green Airport	9	-22
Providence	8	-179
Pawtucket	8	519
S. Attleboro	7	-235
Attleboro	7	13
Total New Riders Providence Line		89

The information above shows an increase in the total number of boardings per day along the MBTA Providence Commuter Rail line as a result of introducing the Pawtucket Station.

Change in Vehicle Miles Traveled

The Federal Transit Administration's (FTA's) Simplified Trips-on-Project Software (STOPS) was used to prepare ridership forecasts for the Pawtucket Station Benefit Cost Analysis. STOPS is designed to generate estimates of project related ridership using available information including the American Commuting Survey (ACS) Journey-to-Work flows, existing ridership counts, existing transit schedules as maintained in General Transit Feed Specification (GTFS) format, and MPO-based estimates of population, employment, and zone to zone highway travel times. The analysis area of the STOPS application included all of Rhode Island, the eastern towns of Connecticut and the MBTA service area of Massachusetts. The Rhode Island Statewide Model and the Massachusetts Statewide Model were used to develop auto travel times between each traffic analysis zone in the analysis area as well as existing and forecasted land use assumptions. The GTFS data was used estimate transit travel times between each traffic analysis zone in Rhode Island and Massachusetts. A build set of GTFS files were created to include the service changes needed to add Pawtucket Station to the corridor. The STOPS application produced daily boardings at the commuter rail stations in Rhode Island with and without the proposed Pawtucket Station. The STOPS software also produced daily changes in person vehicle miles (PMT) of travel between geographic areas.

The daily person vehicle miles of travel were converted to vehicle miles of travel assuming an average occupancy of 1.0066281. The finally the daily number was converted to an annual number by multiplying by 307.7.

The auto occupancy source was:

<http://www.nctr.usf.edu/clearinghouse/censusavo.htm>

Economic Benefits

This section describes the factors considered as economic benefits in the BCA. It describes each benefit area including the source of the information, assumptions employed, and results.

Travel Time Savings

With commuter rail passenger service to Pawtucket/Central Falls Commuter Rail Station, ridership at the station will grow as area employment and City of Pawtucket population grows. According to the STOPS data, a conservative estimate of net 89 riders are expected.

Net travel time savings is the total travel time savings experienced by passengers, less additional daily travel time for existing passengers. It measures the extra travel time needed by passengers traveling on trains versus driving whose final destination is South Station. Projects whose net travel time savings are positive are considered by RIDOT planners and federal transit officials to have a positive impact on the system as a whole, whereas projects with a negative net travel time savings are much less attractive. The Project is anticipated to reduce overall travel time between Pawtucket and Boston by six minutes. As a result of this decrease in total travel time, there would be a positive net impact in ridership and lower individual automobile emissions.

Fuel Consumption

This category includes the costs to own and operate a vehicle.

Methods

Average Vehicle Occupancy

The average vehicle occupancy used for this BCA is 1.066281, as calculated by the University of South Florida Center for Urban Transportation Research (CUTR), State Averages for Private Vehicle Occupancy, Carpool Size and Vehicles per 100 Workers¹.

Vehicle Operating and Ownership Costs

The reduction in vehicle operating and ownership costs is tied to a reduction in VMT as a result of the Project. The BCA used assumptions for average vehicle operating costs as derived from the American Automobile Association (AAA)². These numbers are provided on a per mile basis and broken down by vehicle classification and average annual VMT. The Pawtucket Station Project BCA

¹ University of South Florida, Center for Urban Transportation Research. State Averages for Private Vehicle Occupancy, Carpool Size and Vehicles Per 100 Workers. <http://www.nctr.usf.edu/clearinghouse/censusavo.htm>

² AAA, 2015. Your Driving Costs: How much are you really paying to drive? <http://exchange.aaa.com/wp-content/uploads/2015/04/Your-Driving-Costs-2015.pdf>

used numbers assuming a mid-sized sedan driving on average 15,000 miles/year which is \$ 0.58/mile/year. Costs included in this number are:

- › Maintenance
- › Fuel
- › Insurance
- › License, Registration, and Taxes
- › Depreciation
- › Finance

The BCA determined the reduction in vehicle operating and ownership costs associated with a reduction in VMT.

Fuel Efficiency and Fuel Prices

This category includes the costs to purchase fuel over time.

This element consists of two pieces—the average price of fuel over time and the average vehicle fuel efficiency. The average price of fuel was taken from the latest available information from the U.S. Energy Information Agency (EIA)³ which was \$ 1.84/gallon for a regular grade retail price of fuel. State and Federal fuel taxes are not included in the benefit calculations of a BCA because they are considered a transfer payment. USDOT provides specific guidance to not consider transfer payments as part of a BCA.⁴ This price of fuel was grown at 197% over a 30 year period.⁵ These were applied to the average fuel efficiency of a vehicle which was determined over time at an average 2% annual growth rate from the EIA based on vehicle classification.⁶ For this analysis the “Light-duty Stock” vehicle was used.

Findings

The annualized savings for this category are based on VMT reduction. With the station, people either drive a shorter distance instead of driving to South Attleboro or Providence, or driving to their destination, and some do not drive at all as a result of the Project. Together this leads to a modest savings of between \$ 10,000 and \$ 78,000 a year of money not spent purchasing fuel and maintaining a vehicle.

³ EIA, 2016. Short-Term Energy Outlook. Last accessed March 29, 2016 <http://www.eia.gov/forecasts/steo/index.cfm>.

⁴ USDOT, 2016. 2016 TIGER Benefit-Cost Analysis Guidance. <https://www.transportation.gov/policy-initiatives/tiger/2016-tiger-benefit-cost-analysis-guidance> (last accessed March 29, 2016).

⁵ Future Inflation Scenarios: The Next 30 Years. <http://economistsoutlook.blogs.realtor.org/files/2011/11/commentary111811b.png>

⁶ EIS Energy Outlook 2015. Table A7 Transportation sector key indicators and delivered energy consumption <https://www.eia.gov/forecasts/aeo/pdf/tbla7.pdf> (last accessed March 29, 2016).

⁷ NHTSA, 2012. Final Regulatory Impact Analysis, Corporate Average Fuel Economy for MY 2017-2025, pg. 903.

Oil Imports

The Project BCA uses the estimation from the National Highway Traffic and Safety Administration (NHTSA) that connects fuel savings (tied to VMT reduction) to a reduction in oil imports.

Methods

According to NHTSA's Final Regulatory Impact Analysis (2012), the agency estimates that approximately 50 percent of the reduction in fuel consumption resulting from adopting higher CAFE standards is likely to be reflected in reduced U.S. imports of refined fuel, while the remaining 50 percent would be expected to be reflected in reduced domestic fuel refining. Of this latter figure, 90 percent is anticipated to reduce U.S. imports of crude petroleum for use as a refinery feedstock, while the remaining 10 percent is expected to reduce U.S. domestic production of crude petroleum. Thus on balance, each gallon of fuel saved as a consequence of higher CAFE standards is anticipated to reduce total U.S. imports of crude petroleum or refined fuel by 0.95 gallons.⁷

The VMT reductions as a result of the Project are tied to the fuel efficiency and gallons of fuel saved as a result of the Project, as described in the earlier section on fuel consumption. Gallons of fuel saved, which relies on the average expected cost for a gallon of gasoline and assumed fuel efficiency of vehicles, are then converted in the reduction in oil imports needed as a result of the Project.

Findings

With the station, people driving or taking another mode to reach the Pawtucket station are driving less than if the Project were not built. This VMT reduction is converted into a benefit by factoring it to the vehicle fuel efficiency, the cost of oil imports, and inflation. Together this leads to a modest savings of between \$ 15,000 and \$ 28,000 a year of money not spent importing oil.

Safety

The inclusion of safety in the BCA is standard, with extensive guidance provided by the USDOT.

Methods

The value of improved safety as a result of the Project is tied to VMT reduction. Crash rates were obtained and classified as follows, using values from the USDOT TIGER BCA Resource Guide:

CLASSIFICATION	DESCRIPTION	MONETARY VALUE
K	Fatality	\$ 9,600,000
A	Serious Injury (Incapacitating)	\$ 5,692,800
B	Non-Incapacitating Injury	\$ 2,553,600
C	Complaint Injury	\$ 1,008,000
O	Property Damage Only/No Injury	\$ 4,198

Crash rates are reported in order of incident per 100 million VMT. Therefore the reduction of VMT as a result of the Project can be translated into a reduction of crashes by crash type, and monetized through the values provided in the table above. This method is provided by the USDOT in its TIGER BCA Resource Guide.

Findings

The construction of the Project has a positive effect on safety, to the extent of approximately \$ 1.1 million each year. Reduced VMT as a result of people driving to Pawtucket, or taking other modes to access the rail service, mean that fewer cars are on the road, or are driving less miles, reducing the number of fatal and injury crashes. The greatest impact was from a reduction in the number of Complaint Injury crashes as a result of the Project.

Change in Property Values

This element considers the change in property values for those owning property currently within a one-mile radius of the station.

Methods

Existing property values were obtained from the City tax assessor database and aggregated. These data were inclusive of land and structures for a total property value. Property values were then grown in three concentric rings:

- › From station to ¼ mile from station:
50% increase in land value
- › From ¼ mile to ½ mile from station:
33% increase in land value
- › From ½ mile to ¾ mile from station:
15% increase in land value
- › From ¾ mile to 1 mile from station:
5% increase in land value

The number used in the BCA is the net difference between the grown property values and the existing property values to obtain the property value increases directly attributed to the Project. The precedent for this method is from recent (TIGER VII) TIGER applications.

Findings

Slightly more than 2,000 parcels are located within one mile from the proposed station location, including parcels in both Pawtucket and Central Falls. The benefit of the Project is approximately \$ 125 million, spread over the horizon of the Project.

Reduction in Emissions

This element describes the reduction in emissions as a result of the Project. Like safety, the methods for this element are well documented from USDOT in its TIGER BCA Resource Guide.

Methods

The analysis begins with emissions rates for the State of Rhode Island in grams/mile driven. This allows the BCA to identify the reduction in emissions as a result of reduced VMT. The following emissions are included in the analysis:

- › Carbon Dioxide (CO₂)
- › Volatile Organic Compounds (VOCs)
- › Nitrogen Oxides (NO_x)
- › Particulate Matter (PM)
- › Sulfur Dioxide (SO_x)

USDOT provides the monetized values in \$ /short ton and \$ /metric ton from reduction of each of the emissions above which were applied to the reductions associated with the reduced VMT. The following rates were used, and are taken from the USDOT TIGER BCA Resource Guide.

EMISSION TYPE	\$ /SHORT TON (2013\$)	\$ /METRIC TON (2013\$)
CO ₂	Varies	Varies
VOCs	\$ 1,813	\$ 1,999
NO _x	\$ 7,147	\$ 7,877
PM	\$ 326,935	\$ 360,383
SO _x	\$ 42,240	\$ 46,561

The dollar values associated with CO₂ range from \$ 39-\$ 86/metric ton of carbon depending on year (2010 to 2050). The ranges applicable to the Pawtucket Station Project are \$ 47-\$ 80/metric ton.

Findings

The reduction in VMT as a result of the Project equate to a minor benefit in emissions reductions, of between \$ 21,000 and \$ 27,000/year, or approximately \$ 623,000 over the course of the project horizon.

Reduction in Pavement Damage

Reduction in pavement damage is also attributed to a reduction in VMT.

Methods

The method for determining noise reductions from the Project are from the Federal Highway Administration (FHWA) Cost Allocation Study, which identifies a value of 0.1 cent per mile driven by autos in an urban environment. For this analysis the Pawtucket station area was assumed to be a completely urban environment. The reduction in VMT was then translated into a value of the reduction in pavement damage using the logic above.

Findings

The Project results in a very minor benefit in relation to reduction in damage to pavement, of approximately \$ 17,000 over the Project horizon.

Benefits Not Monetized as part of the BCA

The following benefits are anticipated as a result of the Project or partially as a result of the Project, but were not monetized as part of the BCA.

Development Caused by the Project

The cities of Pawtucket and Central Falls have consistent visions to increase redevelopment and development activity in the station area, and both have taken active steps to catalyze such development over the last decade. Actions have included the modification of zoning ordinances to allow for mixed use redevelopment of historic mill buildings, reduced parking requirements, public investment in the area, and active marketing of parcels.

Additionally, the Project has prepared a market assessment and a Transit-Oriented Development (TOD) plan to explore the potential for and help guide new development within ½ mile of the station. A conceptual Master Plan for development has been prepared, outlining station area development over three future phases. Each phase would include local circulation, parking and other investments to support a growing mix of residential, retail, and commercial development. The specific development assumed in each phase included as Attachment A.

The TOD analysis first inventoried land uses within the ½ mile radius of the station, identified those parcels that are vacant or under-utilized, and established a baseline assumption for the level of growth that would occur in the area even if the Project were not build. The analysis then estimated the additional development that would occur as a result of the Project. This work identified an appropriate mix of land use type based on community zoning and plans, identified the development potential (size in s.f.), and needed circulation and parking to support such

growth. Assessed values were then applied on a s.f. basis by land use type to obtain an estimate of the area's full build out potential and a monetized assessed value this development. Total assessed value in the station area has risen by 6% over the last 10 years. The Project forecasts a future 6% increase under the no-build condition over the next 25 years, and a 12% increase if area development is supported by new commuter rail service. The full build out that is expected to occur under the TOD Master Plan concepts developed by the cities of Pawtucket and Central Falls vision is 1,448,750 s.f., with an estimated value of \$ 152 million.

Jobs Created by the Project

This element explores two types of jobs – temporary jobs created by the construction of the Project, and permanent jobs created by the TOD described above.

Temporary jobs are those to construct the Project, and include a variety of trades. The number and value of these jobs are related to the total construction value of the Project. Meaning the total construction value of the Project can be used to determine the approximate number of jobs that will be created by it, and the value of these jobs can be obtained through median salary information for the job code. This is a benefit attributed just to the construction period, which is 2017 through 2020. The standard rule of thumb is 6-8 jobs employed for each million spent on construction; the more conservative of the two (6 jobs per million spent on construction) was employed for this analysis. At the rate of 6 jobs for every million spent on construction, a total of 240 temporary jobs would be created as a result of the Project.

The Bureau of Labor Statistics (BLS) provides information about the number and average salary of jobs by North American Industry Classification System (NAICS) code. The NAICS code 23 for construction was used to identify the average salary of construction jobs for the Pawtucket Station project. The Project used BLS data for Earnings and Hours of all Employees (combination of supervisory and non-supervisory) which equates to \$ 27.85/hour and an average of 38.7 hours/week. Using the BLS data for NAICS code 23 construction this equates to an average yearly (gross) salary of \$ 56,045.34/year per worker, or \$ 13.5 million per year in benefits for the construction period.

Permanent jobs are those associated with the development attributed to the Project. This is derived from the land use types and size (s.f.) of the development. The value of these jobs can be obtained through median salary information for the job code. This is a permanent benefit, attributed to the period following construction. The assumptions used for this analysis were one new commercial/office worker job for every 250 s.f. of commercial office space provided by the Project, and one new retail worker job for every 175 s.f. of retail space. The BLS provides information about the number and average salary of jobs by NAICS code. The NAICS codes 44-45 for retail and 5611 for office were used to identify the average salary of permanent jobs associated with the Pawtucket Station TOD. The Project used BLS data for Earnings and Hours of all Employees (combination of supervisory and non-supervisory) which equates to \$ 17.77/hour and

an average of 31.1 hours/week for retail and \$ 19.17/hour and an average of 33.7 hours/week for office. At the rate of one job for every 175 s.f. for retail and every 250 s.f. for office, the Project would result in 245 new retail jobs and 92 new office jobs, equating to approximately \$ 10 million/year (2016 dollars) in new income every year.

These new temporary and permanent jobs are anticipated to result in new income tax revenue to the state and supplemental economic activity through retail spending.

Economic Costs

The costs section describes the capital costs, operations costs, and maintenance costs both in terms of the source of cost estimates, assumptions used in developing the estimates, and results.

Capital Costs

The Pawtucket/Central Falls Commuter Rail Station is a straight-forward and well-coordinated project that has been developed through more than a decade of comprehensive coordination with local and state officials as well as railroad stakeholders. The Project would build a new commuter rail station on Amtrak's Northeast Corridor and would reintroduce passenger rail service to Pawtucket and Central Falls. Station siding tracks, platforms, crossovers, signal interlockings and other railroad infrastructure must be configured in a manner that would not impact current passenger and freight operations or the overall capacity of the Northeast Corridor.

The capital cost to build the Pawtucket/Central Falls Commuter Rail Station, including with passenger amenities such as boarding platforms, ramps, a pedestrian bridge, and parking, is approximately \$ 40 million.

The Project has already undergone 30% design level, which provides a reliable capital cost estimate for continued project development. Cost savings opportunities will be evaluated in the next phase including the potential to reduce infrastructure needed by sharing parking with adjacent development and by using elevators where access requirements allow.

The current project cost estimate totals \$ 40 million.

Operations and Maintenance Costs

The Operations and Maintenance (O&M) costs are those incurred once construction is completed, to operate and maintain the station and other applicable project elements. O&M costs are accrued annually, and depend on:

- › Project service plan (the number of trains serving the station on a daily basis)

- › Dwell times at the station (peak and non-peak)
- › The number of trips serving the station (peak and non-peak)
- › The amount and price of fuel
- › Existing operating costs for MBTA

The expected O&M costs vary between \$ 150,000 and \$ 200,000/year, rising only with inflation through the Project horizon.

Results of the Benefit-Cost Analysis

The results section presents the benefit cost ratio for the discount rate or rates identified in section 3 above, as well as the net present value (the value of the BCA in today's dollars). It will provide at a BCA element level a sense of which elements contributed to the benefits and the costs, will describe costs over time, residual value, and cumulative benefits and costs.

BCA Summary Results

DISCOUNT RATE	BENEFIT-COST RATIO
7%	2.82
3%	3.27

Attachments

Rhode Island Department of Transportation
Pawtucket/Central Falls Commuter Rail Station
TIGER Grant
Benefit Cost Analysis
Analysis Summary

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	
Total Benefits	\$ -	\$ -	\$ -	\$ 42,485,710	\$ 38,782,223	\$ 25,162,012	\$ 24,013,580	\$ 1,526,925	\$ 1,580,570	\$ 1,633,797	\$ 1,636,823	\$ 1,639,913	\$ 1,643,066	\$ 1,646,284	\$ 1,649,570	\$ 1,652,924	\$ 1,656,348	\$ 1,659,844	\$ 1,663,413	\$ 1,667,056	\$ 1,671,016	\$ 1,674,814	\$ 1,678,692	\$ 1,682,653	\$ 1,686,696	\$ 1,690,826	\$ 1,695,043	\$ 1,699,349	\$ 1,703,746	
Total Costs	\$ 7,000,000	\$ 23,000,000	\$ 10,000,000	\$ 179,925	\$ 180,320	\$ 180,733	\$ 181,165	\$ 181,617	\$ 182,088	\$ 182,581	\$ 183,096	\$ 183,634	\$ 184,197	\$ 184,784	\$ 185,399	\$ 186,040	\$ 186,711	\$ 187,412	\$ 188,144	\$ 188,910	\$ 189,709	\$ 190,545	\$ 191,419	\$ 192,331	\$ 193,285	\$ 194,282	\$ 195,323	\$ 196,412	\$ 197,549	
Total Monetized Value Flow	\$ (7,000,000)	\$ (23,000,000)	\$ (10,000,000)	\$ 42,305,786	\$ 38,601,902	\$ 24,981,278	\$ 23,832,415	\$ 1,345,308	\$ 1,398,482	\$ 1,451,216	\$ 1,453,727	\$ 1,456,278	\$ 1,458,869	\$ 1,461,500	\$ 1,464,172	\$ 1,466,884	\$ 1,469,637	\$ 1,472,432	\$ 1,475,268	\$ 1,478,147	\$ 1,481,306	\$ 1,484,269	\$ 1,487,274	\$ 1,490,321	\$ 1,493,411	\$ 1,496,544	\$ 1,499,719	\$ 1,502,937	\$ 1,506,197	
7% Discount Rate	7.00%	14.49%	22.50%	31.08%	40.26%	50.07%	60.58%	71.82%	83.85%	96.72%	110.49%	125.22%	140.98%	157.85%	175.90%	195.22%	215.88%	237.99%	261.65%	286.97%	314.06%	343.04%	374.05%	407.24%	442.74%	480.74%	521.39%	564.88%	611.43%	
Discounted Benefits	\$103,090,496	\$0	\$0	\$0	\$32,412,145	\$27,651,189	\$16,766,511	\$14,954,451	\$888,684	\$859,725	\$830,540	\$777,643	\$728,141	\$681,814	\$638,458	\$597,880	\$559,903	\$524,357	\$491,088	\$459,947	\$430,799	\$403,572	\$378,028	\$354,115	\$331,729	\$310,772	\$291,153	\$272,784	\$255,586	\$239,483
Discounted Costs	\$36,577,933	\$6,542,056	\$20,089,091	\$8,162,979	\$137,264	\$128,566	\$120,430	\$112,821	\$105,703	\$99,044	\$92,815	\$86,988	\$81,536	\$76,435	\$71,663	\$67,197	\$63,018	\$59,108	\$55,448	\$52,023	\$48,818	\$45,817	\$43,009	\$40,379	\$37,917	\$35,613	\$33,454	\$31,433	\$29,541	\$27,768
BCA Ratio @ 7%	2.82																													
Net Present Value at 7% Discount Rate	\$65,575,754	(\$6,542,056)	(\$20,089,091)	(\$8,162,979)	\$32,274,881	\$27,522,623	\$16,646,081	\$14,841,630	\$782,982	\$760,681	\$737,725	\$690,655	\$646,605	\$605,379	\$566,795	\$530,683	\$496,884	\$465,249	\$435,639	\$407,924	\$381,981	\$357,755	\$335,019	\$313,736	\$293,812	\$275,160	\$257,698	\$241,350	\$226,045	\$211,715
3% Discount Rate	3.00%	6.09%	9.27%	12.55%	15.93%	19.41%	22.99%	26.68%	30.48%	34.39%	38.42%	42.58%	46.85%	51.26%	55.80%	60.47%	65.28%	70.24%	75.35%	80.61%	86.03%	91.61%	97.36%	103.28%	109.38%	115.66%	122.13%	128.79%	135.66%	
Discounted Benefits	\$133,178,923	\$0	\$0	\$0	\$37,748,003	\$33,453,886	\$21,072,789	\$19,525,238	\$1,205,369	\$1,211,375	\$1,215,698	\$1,182,476	\$1,150,202	\$1,118,848	\$1,088,388	\$1,058,796	\$1,030,048	\$1,002,118	\$974,983	\$948,621	\$923,009	\$898,253	\$874,073	\$850,580	\$827,754	\$805,576	\$784,027	\$763,090	\$742,746	\$722,979
Discounted Costs	\$40,671,667	\$6,796,117	\$21,679,706	\$9,151,417	\$159,861	\$155,546	\$151,361	\$147,304	\$143,370	\$139,555	\$135,857	\$132,273	\$128,797	\$125,429	\$122,164	\$119,000	\$115,934	\$112,963	\$110,085	\$107,296	\$104,595	\$101,978	\$99,444	\$96,990	\$94,614	\$92,314	\$90,087	\$87,932	\$85,847	\$83,829
BCA Ratio @ 3%	3.27																													
Net Present Value at 3% Discount Rate	\$51,591,103	(\$6,351,511)	(\$18,935,895)	(\$7,470,282)	\$28,675,814	\$23,741,256	\$13,940,830	\$12,067,604	\$618,093	\$582,999	\$548,936	\$498,944	\$453,516	\$412,234	\$374,718	\$340,625	\$309,642	\$281,484	\$255,892	\$232,633	\$211,494	\$192,311	\$174,844	\$158,967	\$144,536	\$131,418	\$119,493	\$108,653	\$98,799	\$89,841

Rhode Island Department of Transportation
Pawtucket/Central Falls Commuter Rail Station
TIGER Grant
Benefit Cost Analysis
Benefits Analysis

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Fuel Consumption	\$9,687	\$11,754	\$13,867	\$16,026	\$18,233	\$20,488	\$22,793	\$25,148	\$27,556	\$30,016	\$32,530	\$35,100	\$37,726	\$40,410	\$43,153	\$45,957	\$48,822	\$51,750	\$54,742	\$57,801	\$60,927	\$64,121	\$67,386	\$70,722	\$74,132	\$77,617
Oil Imports	\$14,895	\$15,267	\$15,649	\$16,040	\$16,441	\$16,852	\$17,274	\$17,705	\$18,148	\$18,602	\$19,067	\$19,544	\$20,032	\$20,533	\$21,046	\$21,572	\$22,112	\$22,664	\$23,231	\$23,812	\$24,407	\$25,017	\$25,643	\$26,284	\$26,941	\$27,614
Safety	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327	\$1,052,327
Pavement Damage	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650	\$650
Property Value Increase	\$41,323,339	\$37,566,672	\$23,792,226	\$22,540,003	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Travel Time Savings	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448	\$13,448
Fare Revenue	\$50,501	\$101,001	\$252,503	\$353,505	\$404,006	\$454,506	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007	\$505,007
Total Emission Benefits	<u>\$20,864</u>	<u>\$21,103</u>	<u>\$21,342</u>	<u>\$21,581</u>	<u>\$21,820</u>	<u>\$22,299</u>	<u>\$22,299</u>	<u>\$22,538</u>	<u>\$22,777</u>	<u>\$23,016</u>	<u>\$23,256</u>	<u>\$23,495</u>	<u>\$23,734</u>	<u>\$23,973</u>	<u>\$24,213</u>	<u>\$24,452</u>	<u>\$24,691</u>	<u>\$25,169</u>	<u>\$25,409</u>	<u>\$25,648</u>	<u>\$25,887</u>	<u>\$26,126</u>	<u>\$26,366</u>	<u>\$26,605</u>	<u>\$26,844</u>	<u>\$27,083</u>
Total Value of Benefits	\$42,485,710	\$38,782,223	\$25,162,012	\$24,013,580	\$1,526,925	\$1,580,570	\$1,633,797	\$1,636,823	\$1,639,913	\$1,643,066	\$1,646,284	\$1,649,570	\$1,652,924	\$1,656,348	\$1,659,844	\$1,663,413	\$1,667,056	\$1,671,016	\$1,674,814	\$1,678,692	\$1,682,653	\$1,686,696	\$1,690,826	\$1,695,043	\$1,699,349	\$1,703,746

¹Input Factor is from the TIGER Benefit-Cost Analysis (BCA) resource guide.

Rhode Island Department of Transportation
Pawtucket/Central Falls Commuter Rail Station
TIGER Grant
Benefit Cost Analysis
Cost Analysis

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Project Capital Cost	\$7,000,000	\$23,000,000	\$10,000,000																										
O&M Cost				\$179,925	\$180,320	\$180,733	\$181,165	\$181,617	\$182,088	\$182,581	\$183,096	\$183,634	\$184,197	\$184,784	\$185,399	\$186,040	\$186,711	\$187,412	\$188,144	\$188,910	\$189,709	\$190,545	\$191,419	\$192,331	\$193,285	\$194,282	\$195,323	\$196,412	\$197,549
Total Cost	\$7,000,000	\$23,000,000	\$10,000,000	\$179,925	\$180,320	\$180,733	\$181,165	\$181,617	\$182,088	\$182,581	\$183,096	\$183,634	\$184,197	\$184,784	\$185,399	\$186,040	\$186,711	\$187,412	\$188,144	\$188,910	\$189,709	\$190,545	\$191,419	\$192,331	\$193,285	\$194,282	\$195,323	\$196,412	\$197,549