Connecticut Department of Transportation

PROVIDENCE AND WORCESTER RAILROAD

TIGER Discretionary Grant Application

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Contact Information (B)

James P. Redeker
Bureau Chief – Public Transportation
Connecticut Department of Transportation
2800 Berlin Turnpike
Newington, Connecticut 06131
860.594.2802
James.Redeker@ct.gov

Project Information (K)

i. Type of Project
Freight Rail

ii. Project Location
Plainfield, Canterbury, Lisbon, Sprague, Scotland, and Windham Connecticut (Willimantic Branch) and Rocky Hill, Wethersfield, and Hartford Connecticut (Middletown Branch), within the 1st and 2nd Congressional Districts

iii. Project Area
Urban and Rural

iv. Amount of Grant Funds Sought
$12,114,065

v. DUNS Number
807854583

vi. Central Contractor Registration Confirmation Number
QZX9NA

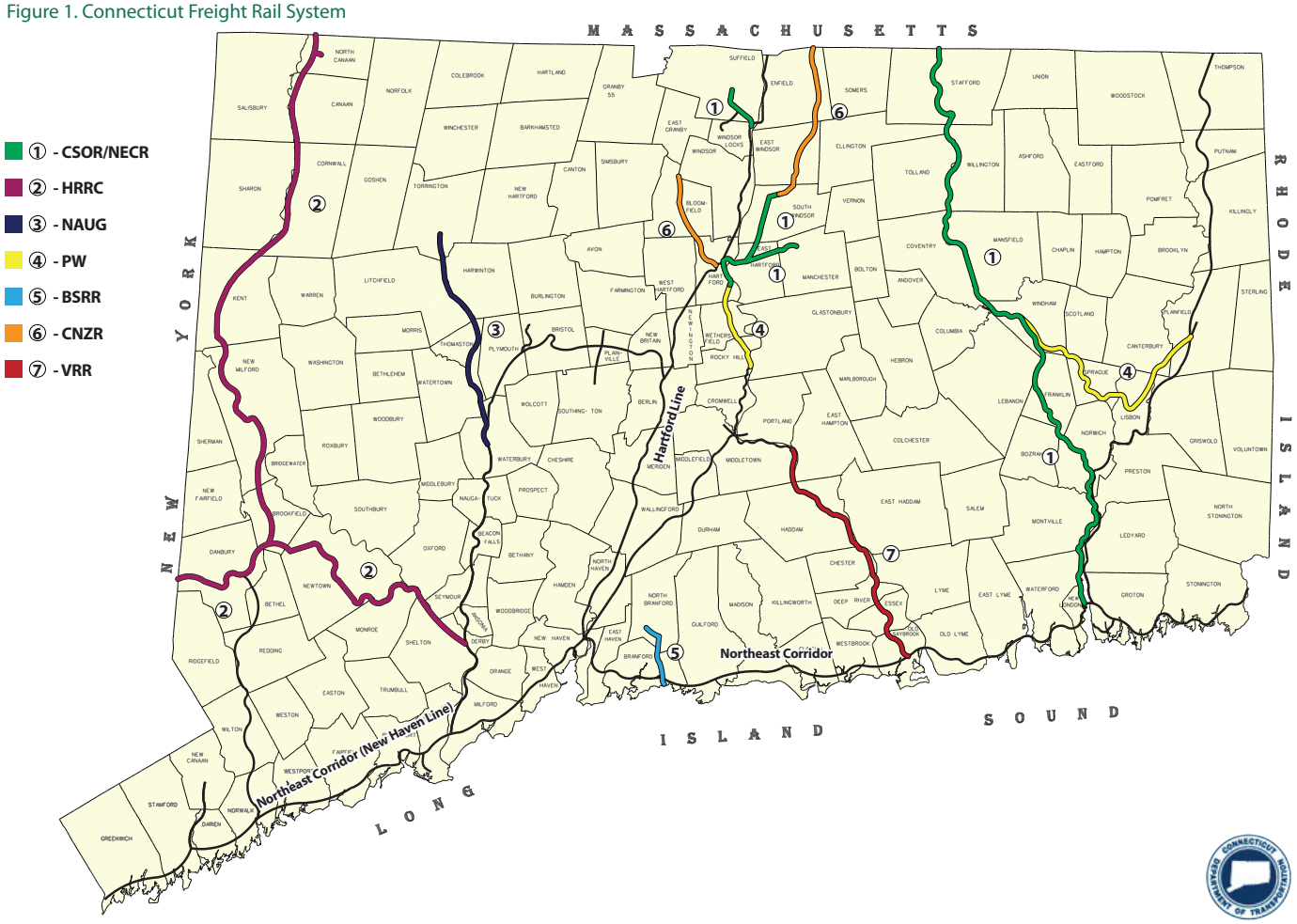
Ladies and Gentlemen of the Selection Committee:

Thank you for the opportunity to request ARRA TIGER Discretionary Grant funding (TIGER funding) for Connecticut's continuing efforts to improve our statewide freight rail network. Over the past ten years, the Connecticut Department of Transportation (ConnDOT) has directly invested over $282.5 million into the freight rail network. This investment has allowed ConnDOT to incrementally improve the rail infrastructure. In addition, the State has invested over $1.56 billion in the New Haven Main Line (NHML), a key segment of the Northeast Corridor. The NHML investments, targeted for passenger rail service, also secondarily benefit freight rail by permitting increased freight train speeds. Numerous upgrades and improvements are still necessary however, to make the overall system economically viable for the future. In some cases, urgent repairs and upgrades are needed in order to provide a more cost effective, safe, and sustainable means of efficiently transporting goods.

The receipt of the requested funding from the TIGER Discretionary Program, which is significantly less than the investment already made by the state, will provide the much needed incremental funding to completely address priority improvements in the system. To ensure that the greatest needs are addressed, ConnDOT has partnered with seven of the freight rail operators in the state to determine which projects have the highest priority and ability to leverage past investment in the network. The projects associated with each of these freight rail operators will be submitted as a separate application, for a total of seven applications. These projects, which are in keeping with the intent of the TIGER Grant program and will benefit operations on over three-quarters of the state freight rail system (Figure 1), are:

- Central New England Railroad (CNZR): Rail improvements to Armory Line and Griffin Line to increase operating speeds.
- Housatonic Railroad (HRRC): Replacement of track and crossings, bridge modifications, upgrades to crossings, and access to businesses along several key segments of their 83-mile system.
- Naugatuck Railroad Company (NAUG): Upgrades to the 19.5-mile Torrington Line, including culverts, ties and ballast, and grade crossing improvements.

Figure 1. Connecticut Freight Rail System



- Providence & Worcester Railroad (PW): Rail improvements to Willimantic and Middletown Branches to increase operating speeds.
- RailAmerica's Connecticut Southern Railroad Company (CSO) and New England Central Railroad (NECR): Bridge work, replacement of ties and ballast, surfacing, and switch rebuilding over 76 miles of track.
- Tilcon/Branford Steam Railroad (BSRR): Replacement and repowering of locomotives and replacement of hopper railcars.
- Valley Railroad Company (VRR): Resurrection of a key dormant section of the line and track rehabilitation along the remaining segments.

These upgrades and improvements will:

- Reduce the number of truck trips and amount of carbon emissions associated with cargo shipment
- Create new jobs throughout the state
- Not require any additional environmental permits
- Not be contingent upon the completion of any other projects
- Be immediately ready to begin work with all funds being utilized prior to February 2012.

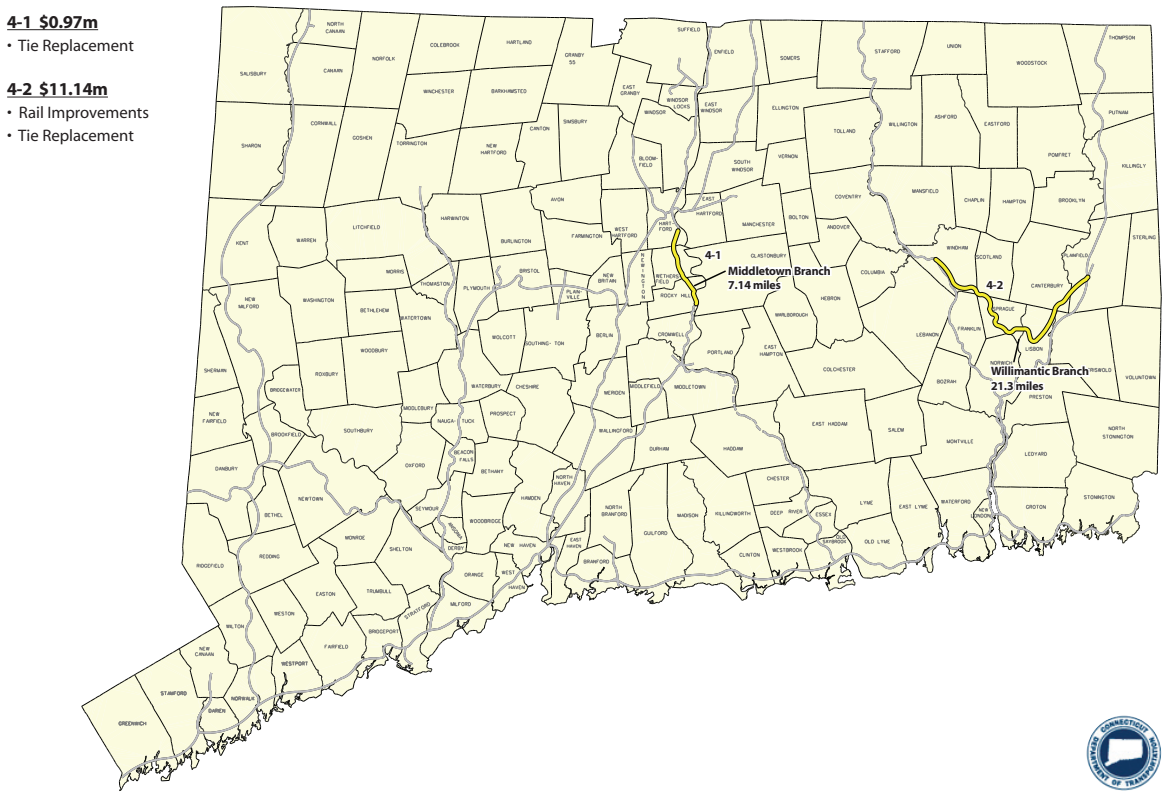
This application specifically addresses the Providence and Worcester Railroad project, which includes rail improvements to the Willimantic and Middletown Branches to increase operating speeds and improve service reliability. The sections of the statewide freight rail network included in this application are shown in Figure 2.

Application Overview

The application document responds specifically and in detail to the interim notice published in the Federal Register on May 18, 2009 and the operative notice published June 17, 2009. This application consists of two parts.

1. The first describes the needs of the state freight rail system and the broad-based resultant benefits from TIGER funding for the entire State of Connecticut.
2. The second addresses the Providence and Worcester Railroad project and its specific application for the TIGER Grant funding. This project will cost $12,114,065 and is a critical piece of the repair needed for the statewide freight rail network.

Figure 2. Providence and Worcester Railroad



Background of Project and Existing Condition of Freight Rail Network

The Connecticut freight rail network is a critical component of the northeast regional rail system. Freight rail service is an important component of the American industries supply chain and a vital component to Connecticut's economy. Connecticut moves 3.6 million tons of freight over 10 freight railroads annually. This network connects with the Ports of New York and New Jersey, which are critical to the continued economic growth and success of the Northeast region.

The Connecticut freight rail system needs infrastructure upgrades and repairs immediately in order to meet the need to move freight more efficiently and ensure its continued role in the movement of goods throughout the state and the northeast region. Portions of the rail lines are so severely worn that they are at the end of their serviceable life. Older, under-maintained tracks result in reduced operating speeds, which slow the movement of cargo and ultimately increase costs for the consumer. Bridges and track structure require strengthening and clearances increased to meet the demands of today's higher capacity rail equipment. Inadequate grade crossing protection systems create conditions that are less desirable for pedestrians, vehicles, and trains and result in unnecessary delays to both vehicular and train traffic.

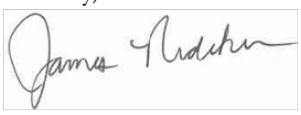
This image shows the relationship between the freight rail network and the regional electric grids. NAUG is hauling over-dimension and overweight electric transformers to Northeast Utility's Watertown Substation, which feeds Fairfield County. Repairs and improvements to the network are imperative to ensure the ability to move over-size loads.

Project Benefits

The combined benefits of these seven initiatives include reducing truck trips and carbon emissions, creating jobs, providing economic growth opportunities, and improving safety measures within the statewide freight rail system. Each rail car carries the equivalent of four trucks. Enabling the increased use of freight rail will reduce the number of truck trips necessary along the roads of New England, thereby reducing traffic congestion, reducing crashes and saving lives, and reducing carbon emissions.

Thank you for your time and consideration of our submission.

Sincerely,



James P. Redeker
Bureau Chief – Public Transportation

C. Project Description

Overview

Connecticut plans to increase rail freight shipments by 25 percent over the next two decades to support economic growth and reduce the volume of truck traffic. The state currently moves 3.6 million tons of freight over 10 freight railroads annually. To realize a 25 percent increase, upgrades and improvements are urgently needed to repair or replace aging infrastructure and equipment.

Connecticut is strategically located between the major northeastern urban centers of New York City and Boston, offering the state unlimited opportunities for shipping cargo. Its rail system also assures workable freight rail access to the Ports of New York and New Jersey, as well as the corridor related to the North American Free Trade Agreement. Over the past ten years, the state has invested over $282.5 million in the network to improve the movement of freight rail. Among the many projects is the reconstruction and relocation of the main rail spur on the east side of the Port of New Haven to achieve a direct rail connection to this strategic port. Direct port to rail connections in the state will serve the rapidly growing container segment of rail traffic to help remove long-haul trucks from highways and deliver products to consumers faster, as well as offer an alternate to the larger ports (New York and New Jersey).

Implementing the proposed upgrades and infrastructure improvements to the state's freight rail network will allow the continued growth of the freight industry and will result in a reduction in the number of truck trips made on the regional highways. Trucks

This image shows a track worker conducting much needed maintenance. An NAUG track worker is jacking and leveling the track in preparation for the tamping machine to vibrate and compact the stone ballast around and beneath the wooden crossties.

have a significant effect on highway traffic conditions, particularly along the highly congested I-84, I-91, and I-95 corridors in Connecticut. Much of the congestion occurs at the bottlenecks in the Hartford and New Haven areas. The congestion results in increased fuel usage, increase green houses gas emissions, increased travel time, and thus increased cost to the consumer.

The freight rail network improvements will also result in fewer carbon dioxide emissions being released. The movement of cargo by rail produces much lower emissions than the movement of the same amount of cargo by truck. On average, it takes four trucks to move the same amount of cargo that one rail car can move.

There are a number of jobs that would be created as a result of these infrastructure improvements. In addition to new positions within each freight rail company, there would be a number of construction positions, for both the rail construction and any subsequent induced developments, as a result of the improvements. Using the standard formula for stimulus job creation, where a $50,000 investment creates one full-time job (2080 work-hour per year basis), 2,180 jobs will be created by the proposed improvements and repairs for the statewide freight rail network. Follow-on jobs will also occur in other regions and businesses, fueled by the growth of transport throughout the state. These follow-on jobs will include positions in the manufacturing and supply industry. Private companies are increasingly seeking to transport cargo via rail due to its cost savings and environmental benefits. The improvements and upgrades to the statewide freight rail system are required to stay competitive with the market.

Detailed Description of Statewide Rail Infrastructure Improvements

ConnDOT has partnered with seven freight rail operators to determine the most critical repairs that need to be made to improve the network. These freight rail companies and their projects include:

- Central New England Railroad is a short-line railroad that operates in Connecticut over the Department's Griffin Line between Hartford and Windsor (8.7 miles) and over the Department's Armory Branch Line between South Windsor and the Massachusetts State Line in Enfield (13.5 miles). CNZR priority projects include rail improvements to the Armory Line and the Griffin Line to increase operating speeds.
- Housatonic Railroad Company (HRRC) is a regional short line that operates in the western part of Connecticut and in Massachusetts and New York along the Berkshire Line (50.0 miles) and the Maybrook Line (33.5 miles). These two lines form a portion of a critical rail route in western Connecticut. Priority improvements for HRRC include replacement of track and crossings, bridge modifications, upgrades to at-grade crossings, and improved rail access to businesses.
- Naugatuck Railroad Company (NAUG) is a shortline railroad that operates over the Department's Torrington Branch Line between Waterbury and Torrington (19.5 miles). Torrington Line improvements include repairing or replacing culverts, ties and ballast, and grade crossing improvements.
- Providence and Worcester Railroad Company (PW) is a regional Class II railroad that operates in southern New England, and as far south as New York City. In Connecticut, PW operates over 238.5 miles of track. Priority projects for PW include track improvements to the Willimantic Branch and the Middletown Secondary to increase operating speeds and improve system interconnectivity.
- Rail America, Incorporated has two subsidiaries that operate in Connecticut: the New England Central Railroad (NECR), and the Connecticut Southern Railroad (CSOR). NECR operates on their own line between New London and Stafford (55.8 miles) and on to East Alberg, Vermont where they connect with the Canadian National Railroad. CSOR operates on CSX from West Springfield to Springfield, Massachusetts, and on Amtrak from Springfield to North Haven (53 Miles). CSOR owns and operates the Manchester Secondary Line (9.6 miles), the Armory Branch Line (6.8 miles), and the Suffield Branch Line (4.4 miles). They also operate on the spur track to Bradley Airport that is owned by the state (2.4 miles). Work for NECR and CSO includes bridge improvements, replacement of ties and ballast, surfacing, and switch rebuilding to improve operating speeds and rail areas to existing and potentially new customers.
- (Tilcon) Branford Steam Railroad (BSRR) is a subsidiary of Tilcon Connecticut, Incorporated, and provides service between their trap rock quarry in North Branford and their barge loading facility on Long Island Sound in Branford (7.2 miles). Priority projects for BSRR include replacement and upgrade of locomotives and replacement of hopper railcars.

- Valley Railroad Company (VRR) operates between Old Saybrook and Haddam along the right-of-way owned by the Connecticut Department of Environmental Protection. Priority repairs for VRR include the restoration of a 10-mile dormant segment of the line and track and bridge improvements along the remainder of the corridor.

This image shows NAUG crosstie insert machine making repairs.

The proposed projects for the VRR and the PW Middletown Secondary are along the same freight rail corridor and when completed, will provide an alternate route for freight rail movements between Old Saybrook and Hartford via Middletown that does not currently exist. This new route will remove freight rail traffic from the Northeast Corridor between Old Saybrook and New Haven as well as along the Hartford Line between New Haven and Hartford. It will also reduce freight shipment miles by 22.7 miles by traveling from Old Saybrook to Middletown to Hartford (44.6 miles) versus Old Saybrook to New Haven to Hartford (67.3 miles). This will not only reduce the short line operating cost as a result of reduced travel miles and avoidance of access fees on the Northeast Corridor, but it will also reduce congestion on the Northeast Corridor and benefit passenger rail that shares that corridor.

This application addresses upgrade to the portions of the active freight service network operated by the PW. PW is a regional Class II railroad that operates in Massachusetts, Rhode Island, Connecticut, and as far south as New York City on the New Haven Line. PW operates in Connecticut over 238.5 miles of track, serving local freight generators and receivers and enabling the through movement of freight for national and international destinations. Priority improvements for PW include rail replacement and tie installation to upgrade the status of the Willimantic Branch from a Class 1 with 10 mile per hour (mph) operations to a Class 3 with 40 mph operations and tie installation to rehabilitate and/or reconstruct the Connecticut River Line (Middletown Branch) from Middletown to Hartford. The reconstruction of the Middletown Branch in conjunction with the Valley Railroad's rehabilitation project will result in a new, shorter freight route between Hartford and Old Saybrook.

Addressing Urban and/or Rural Area Needs

The statewide freight rail system navigates through both urban and rural populations. The projects address needs critical to both areas through implementing quick turnaround strategies for modernizing operations, thereby creating a more efficient system and improving safety. These steps will ensure the continued movement of freight into and out of urban and rural areas in Connecticut and throughout the surrounding region.

Freight rail improvements will foster economic growth and development in the state. Connecticut has nine municipalities that are categorized as Economically Distressed Areas (EDAs) within the eight Comprehensive Economic Development (CED) regions. The municipalities include Bridgeport; New Britain; Waterbury; New Haven; New London; Hartford; East Hartford; Torrington; and Windham. Per the U.S. Census Bureau Factfinder (2007), these municipalities either have a per capita income that is less than 80 percent of the national per capita income or have unemployment rates that are at least 1 percent greater than the national unemployment rate. Four of the seven projects serve an EDA. Furthermore, the freight railroad industry as a whole is in distress and needs the proposed improvements and upgrades to regain its place in the market and be able to maintain its current levels of employment.

Transportation Challenges that the Project Aims to Address

The infrastructure improvements to the freight rail system seek to address the transportation challenge of moving freight in a cost effective, sustainable, and timely manner. Achieving this includes:

- Increasing load-bearing capabilities of rail bridges
- Decreasing travel times and operating costs
- Improving rail-to-rail connections
- Improving port-to-rail connections

Attaining travel time reductions and increases in load-bearing capabilities of rail bridges to be competitive with alternate modes of freight movements, specifically trucking goods on congested highways, is critical to the growth and success of the state's freight rail network. The proposed improvements and repairs will enable portions of the rail network to handle a 286,000 pound rail car load, while ensuring that the remaining portions of the network will continue to handle this load. While some vertical clearance projects have been funded by the freight operators, RailAmerica completed one on the NECR Palmer Line and PW completed one on the Norwich Line (Plainfield Secondary), additional increases to vertical clearances are needed within the network to accommodate modern loading practices and will be included as part of this proj-

ect. Connecticut's freight rail system needs updates and infrastructure improvements in order to be economically competitive in facilitating the movement of goods into and through the state, specifically in comparison to transporting cargo via trucks.

This image shows the first Connecticut double-stack container, operated by RailAmerica, Inc. Increased vertical clearances enable double-stack containers, which increase shipment volumes.

Transportation is a major consumer of energy and a significant contributor of carbon dioxide emissions, both of which are a factor in the rise in green houses gases and resultant climate changes that are increasingly causing concerns globally. Moving freight by rail results in fewer carbon emissions and green house gases due to the amount of truck trips one freight train can displace. This then results in decreased congestion on the highway network and improved safety measures on the roadway. The roadway network becomes safer as a result of less traffic congestion overall, as well as fewer trucks.

D. Project Parties

The primary project parties are the State of Connecticut and the Connecticut Department of Transportation. The Providence and Worcester Railroad is another important project party since they own and/or operate freight rail over the portion of the state's freight rail network that is being considered. The State of Connecticut (www.ct.gov) would be the official grant recipient, and the Connecticut Department of Transportation (ConnDOT) (www.ct.gov/dot) would be administering the grant funds and managing the project in partnership with the Providence and Worcester Railroad.

E. Grant Funds and Sources and Uses of Funds

The Connecticut Department of Transportation is seeking 100% funding for the proposed improvements and repairs identified in this application for each of the seven freight rail operators. These funds are intended to leverage the $282.5 million the state has invested in the freight rail network over the past ten years. The receipt of the requested funding from the TIGER Discretionary Program, which is significantly less than the $282.5 million investment already made by the state, will provide the much needed incremental funding to completely address priority improvements in the system.

Another $1.56 billion has been invested by the state in the New Haven Main Line for infrastructure improvements, such as track, signals and power, and bridges. This work provides a secondary benefit to freight rail because it allows the freight rail trains that operate on the New Haven Line to increase their operating speeds, reducing transit times. In total, the TIGER Discretionary Program requests represent a small portion of the total state rail investment but will provide tremendous benefit through renewed connectivity and increased productivity to the state rail freight system.

This image shows the construction work on the Waterfront Street Rail Extension at the Port of New Haven.

The improvements and repairs proposed for TIGER funding will benefit approximately three-fourths of the statewide freight rail network at an investment that is significantly lower than previous investments made by ConnDOT for the freight rail system.

F. Selection Criteria Compliance

Continuing to improve the statewide freight rail network is consistent with the goals and objectives of the TIGER Grant funding.

1. Primary Selection Criteri

a. Long-Term Outcomes

- **State of Good Repair:** The proposed repairs and/or improvements to the statewide freight rail network will minimize life cycle costs, as operational efficiency will be improved and new equipment will require less fuel and maintenance. Right-of-way work and tie and rail replacements will return portions of the network to a State of Good Repair. In addition, the removal of trucks from the state highway system will extend the life cycle of roads and bridges by reducing the wear and tear caused by frequent truck traffic. These improvements coincide with the State Rail Plan and rehabilitate portions of the rail line that urgently require attention to avoid threatening their economic future.
- **Economic Competitiveness:** The projects proposed for the statewide freight rail network will provide long-term contributions to growth in employment, as well as the more efficient movement of goods, which results in cost competitiveness. Repair and replacement of equipment and track will increase operating speeds and reduce the cost of moving freight. The connection of the Middletown Secondary and the Valley Railroad will reduce operating costs via reduced travel miles and access fees by avoiding a section of the Northeast Corridor. These changes will reduce costs for the freight operator and the supplier, thereby making goods more cost competitive in the marketplace. Job growth will continue beyond the duration of construction, as the improved operations will result in additional positions with the freight operator, positions with suppliers who will be able to move more cargo, and follow on positions in other regions as a result of increased operations.
- **Livability:** The repairs and/or improvements to the statewide freight rail system will significantly improve the availability of goods to the state, including nine municipalities designated as EDAs. The proposed projects will take truck traffic off of the roads on the arterial and interstate roadway system, thereby reducing congestion and emissions. This will also make the roadway network safer for drivers, particularly senior citizen drivers who may be averse to driving alongside trucks. The engines on the proposed new equipment will exceed the Tier II emissions standards and also reduce noise associated with the movement of the freight trains. The combined efforts of VRR and PW will provide an alternate route for freight rail movements between Old Saybrook and Hartford, which will reduce freight rail traffic on the NEC, thus benefiting passenger rail traffic on that corridor.
- **Sustainability:** The proposed repairs and improvements to the statewide freight rail network will improve energy efficiency through improved operating speeds and by permitting the through routing of the modern rail car.. Replacing outdated and inefficient equipment will reduce the operators' dependence on oil, since they will be traveling the same distance using less fuel. The projects contribute to a decrease in the movement of goods by less energy efficient vehicles by providing strengthened bridges and cleared routes for 286,000 pound rail car loads and double stack shipments. The proposed projects also avoid adverse environmental impacts since they are simply replacing or repairing existing infrastructure and equipment. Environmental benefits include decreased green house gas emissions and improved air quality, as a result of replacing old and inefficient equipment, and the subsequent reduction in truck trips from the highway network. Net emissions reductions of Volatile Organic Compounds (VOC), Nitrogen Oxide (NOx), and green house gas emissions (CO2) have been calculated, with the results posted at: http://www.ct.gov/dot/lib/dot/documents/dcommunications/stimulus/tiger/freightrail/Project_Emission_Analysis.doc.
- **Safety:** Removing truck traffic from the arterial and interstate roadway system will improve the overall safety of the roadway system. Studies have shown and concluded that a reduction in truck traffic will increase the overall safety of roadway facilities. Improvements and repairs to at-grade railroad crossings throughout the statewide freight rail system will make these crossings safer for pedestrians, vehicles, and trains.
- **Evaluation of Benefit Cost Analysis:** The benefits associated with the proposed improvements and repairs will results in travel and transit time savings, improved operations and safety, removal of trucks from highways, reduced emissions and green house gases, and an increase in the use of freight rail, more than substantiating the costs associated with the project.
- **Evaluation of Project Performance:** Key criteria will be tracked and reported accordingly to effectively evaluate the performance after the proposed repairs and improvements have been implemented.

b. Job Creation and Economic Stimulus

Using the standard formula for stimulus job creation, 2,180 new jobs will be created as a result of the total project investments on the statewide freight rail network. The majority of the created jobs will be in the construction trade workforce. Additional positions will be created within the freight companies as a result of expanded coverage or and increased volume of shipments. Follow on jobs within and outside of the region as a result of the increased operations will also be created, although these are not accounted for in the estimated total.

- **Project Schedule:** The projects are ready to start construction immediately upon receipt of a TIGER Grant, and the monies will be steadily spent throughout construction, with the projects being completed by February 2012.

- **Environmental Approvals:** All work will be completed within the existing right-of-way; no new approvals are anticipated as part of the proposed work.
- **Legislative Approvals:** Legislative approval is not needed for the proposed work.
- State and Local Planning: The proposed improvements are consistent with the Statewide Rail Plan and the business plans for each of the individual freight line operators. Furthermore, the improvements are being incorporated into the Connecticut TIP per the Commissioner's letter located at: http://www.ct.gov/dot/lib/dot/documents/dcommunications/stimulus/tiger/freightrail/Inclusion_Document_for_STIP.pdf.
- **Technical Feasibility:** All of the projects consist of typical railroad construction techniques, materials, and equipment. None of the proposed repairs or improvements is contingent upon the completion of another project. The projects coincide with the State Rail Plan and are ready for immediate implementation.
- **Financial Feasibility:** Cost estimates have been prepared as shown in each application. TIGER Grant funding is necessary for the implementation of each of these projects.

2. Secondary Selection Criteria

- **Innovation:** The proposed improvements include replacing outdated locomotives and rail cars. This will not only ensure significantly reduced emissions, but it will also reduce fuel consumption. The new locomotives are innovative in their design, featuring power on demand engine systems, regenerative dynamic braking, a smokeless start engine, and clean emissions through a clean-burning MOH Tier 3 Engine with self-cleaning ceramic particulate filters.
- **Partnership:** The State of Connecticut is fully supportive of each individual project and has worked individually and collaboratively with each of the freight rail operators towards the overall goal of creating an efficient and effective regional freight rail system that plays an integral role in the overall transportation infrastructure and Connecticut in the region.

G. Federal Wage Requirement

ConnDOT certifies that it will be in compliance 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. A letter from the Commissioner, stating ConnDOT's compliance with the Federal Wage Requirement, is located at: http://www.ct.gov/dot/lib/dot/documents/dcommunications/stimulus/tiger/Federal_Wage_Certification_082509.pdf.

H. National Environmental Policy Act (NEPA) Requirement

None of the proposed improvements or repairs will significantly impact the natural, social, and/or economic environment. As the projects involve replacement of existing equipment or track components and repairs to existing structures, they are anticipated to fall within Federal Railroad Administration's Categorical Exclusion (CE) category under the NEPA protocol.

I. Environmentally Related Federal, State, and Local Actions

None of the projects for the statewide freight rail network will require actions by other agencies, as the projects include replacement and/or repairs to existing rail equipment and infrastructure.

J. Protection of Confidential Business Information

Information provided in ConnDOT's TIGER Discretionary Grant application is public information and is not considered confidential.

IX. Reporting Requirements

ConnDOT understands that entities receiving TIGER Discretionary Grants will be required to report on grant activities on a routine basis. Reporting categories include maintenance of effort, reports on use of funds, and environmental reporting. ConnDOT ensures that the appropriate reporting would be submitted in conjunction with the Grant Funding.

X. Certification Requirements

ConnDOT understands that it must comply with the Certification requirements of the Recovery Act.

The following section includes the project specific portion of the application for the Providence and Worcester Railroad.

TIGER Discretionary Grant Application
Freight Rail Transportation Project
Connecticut Department of Transportation Office of Rail

Providence and Worcester Railroad Improvements

Willimantic Branch - MP 3.0 to MP 24.3
Plainfield, Canterbury, Lisbon, Sprague, Scotland, Windham CT
Windham County
Congressional District 2
Rural Area

Middletown Branch (Hartford Line) - MP 28.74 to 35.88
Rocky Hill, Wethersfield, Hartford CT
Hartford County
Congressional District 1
Urban Area: Hartford Standard Metropolitan Statistical Area

Grant Request

Construction only (projects ready for construction in 90 days):
Willimantic Branch: $11,136,675
Middletown Branch: $977,390

DUNS Number

Providence and Worcester Railroad: 00-150-3614

Submitted By

Providence & Worcester Railroad Company
75 Hammond Street, PO Box 16551
Worcester, MA 01610
Tel. (508) 755-4000

Contact Information

Bernard A. Cartier, Director of Engineering
Providence & Worcester Railroad Company
Tel: 508-459-4545
Email: bernie@pwrr.com

Prepared By

Pare Corporation
8 Blackstone Valley Place
Lincoln, RI 02865
Tel: 401 334-4100

September 8, 2009

TIGER Grant Application
Freight Rail Transportation Project
Providence and Worcester Railroad Improvements
Willimantic Branch and Middletown Branch, Connecticut

1.0 Project Description

The Providence and Worcester Railroad Company (P&W) has continued to operate through the private market to serve not just local freight generators and receivers, but to enable the through movement of freight to and from national and international destinations. Freight rail is an efficient utilization of transportation resources that reduces truck volumes on the interstate highway network and state and local roads, with reduced energy consumption compared to trucks.

Over the past decade the P&W has strived to improve its route structure, and enhance the viability of freight rail for companies operating in Connecticut and throughout southern New England. These efforts have involved working with other rail carriers such as the New England Central Railroad (NECR) as well as the state departments of transportation in Connecticut (CDOT), Rhode Island, Massachusetts, and Vermont. To date, many of these improvements have been completed with internally generated (private) funds. These projects will support significant prior federal investment in several rail projects including the Freight Rail Improvement Project in Rhode Island and the Bellow Falls tunnel project in Vermont, among others.

Proposed projects include upgrade to the Willimantic Branch and the Middletown Branch. Both rail segments are presented in Figure 1: *Providence & Worcester Railroad Company Operated and Controlled Lines.* Utilization of TIGER Discretionary Grant funding for improvements on these two segments meets many of the primary and secondary selection criteria outlined in the June 17, 2009 *Federal Register* Notice of Funding Availability for Supplemental Discretionary Grants for Capital Investments in Surface Transportation Infrastructure under the American Recovery and Reinvestment Act.[1] Proposed improvements have the potential ability to (i) deliver programmatic results, (ii) achieve economic stimulus by optimizing economic activity and the number of jobs created or saved in relation to the Federal dollars obligated, (iii) achieve long-term public benefits through investing in transportation that fosters energy independence and reduces traffic congestion, and (iv) are planned to satisfy the Recovery Act's transparency and accountability objectives. These points are addressed in Sections 2.0 and 3.0 for both the Willimantic Branch and Middletown Branch.

1.1 Willimantic Branch

The Willimantic Branch is located in a rural section of east central Connecticut. The alignment extends 21 miles from Plainfield west to Willimantic through Canterbury, Lisbon, Sprague, Scotland, and Windham in Windham County. Although the branch has the ability to serve local customers, the majority of freight on the line is "bridged" through. Track is located in P&W right of way from Plainfield to the Versailles Yard in Lisbon (MP 0 to MP 10.34). From the Versailles Yard to Willimantic the P&W operates under a perpetual operating agreement with CDOT on a state-owned right of way (MP 10.34 to MP 24.3).

P&W has continued to implement improvements on the Willimantic Branch to attract increased freight rail usage. Most recently P&W has improved vertical clearance on the Willimantic Branch. P&W has been working with the New England Central Railroad and the Vermont Agency of Transportation on vertically clearing the P&W/New England Central Railroad route to connections with the Canadian Pacific and Canadian National Railways to the height of 19'-6". This route was cleared late in 2007, the cornerstone being the improvement of the Bellows Falls, VT tunnel to full double stack, 20'-8". P&W and New England Central Railroad each cleared ten structures on their own rights of way to an initial 19'-6" with long term plans to attain 20'-6".

[1] June 17, 2009 *Federal Register* Notice of Funding Availability for Supplemental Discretionary Grants for Capital Investments in Surface Transportation Infrastructure under the American Recovery and Reinvestment Act, pages 28755 to 28767.

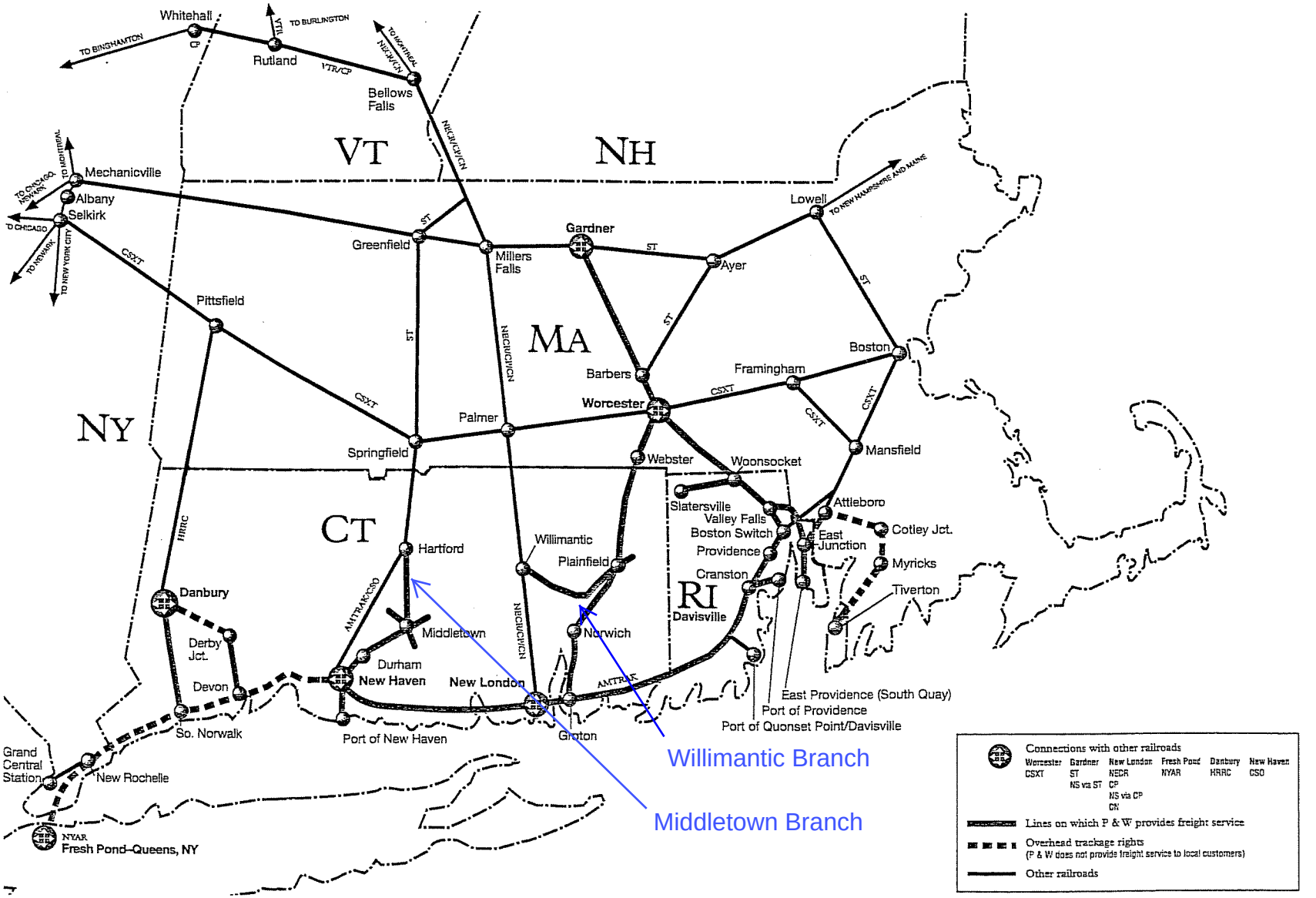


Figure 1: Providence & Worcester Railroad Company Operated and Controlled Lines

The existence of a cleared route, including the Willimantic Branch, is important to the overall transport of freight to and from Canada, New England's largest international trading partner. The Willimantic Branch is a link between the southern New England ports of New London and New Haven in Connecticut and Davisville at the Quonset Business Park in North Kingstown, Rhode Island, and the Worcester Intermodal facility in Massachusetts. This segment provides a link for transport of automobiles from the Port of Davisville via Worcester and opens global markets through Canadian ports such as Halifax on the east coast and Prince Rupert and Vancouver on the west coast. The New England Central Railroad and P&W lines, including the Willimantic Branch, provide a cost-effective alternative to the CSX line through Massachusetts. The significance of the Willimantic Branch upgrade, and its implications to the region for years to come, cannot be overstated.

The proposed project includes rail replacement and tie installation to upgrade the status of the Willimantic Branch from a Class 1 with 10 mile per hour (mph) operations, to a Class 3 line, with 40 mph operating speeds. The proposed Willimantic Branch project includes the request for $11.1 million funding, as outlined below. Engineering and design has been completed by the P&W. The P&W has no plans at this time to participate in cost sharing for construction of these improvements.

Rail replacement, MP 9.4 to 23.22	$8,550,250
Tie Installation, MP 3.0 to 10.34 (PW ownership)	$ 857,080
Tie Installation, MP 10.34 to 24.30 (CDOT ownership)	$1,729,345
TOTAL	*$11,136,675*

1.2 Middletown Branch

Proposed improvements on the Middletown Branch are located in Rocky Hill, Wethersfield, and Hartford CT (MP 28.75 to MP 35.88), an urban area in Hartford County. Until recently P&W operated through service on the line to interchange with Connecticut Southern (CSO). Due to track conditions, P&W has placed the line north of Rocky Hill out of service pending repair. P&W continues to market the properties in Rocky Hill and south for freight use. The proposed project would fund needed repairs to resume freight rail service on this seven-mile segment as a Class 1 rail line. The Middletown Branch also extends south to Middletown, through Cromwell.

The proposed project is to preserve and enhance the improvements undertaken several years ago by CDOT and P&W (70/30) to rehabilitate, and in some sections, reconstruct, the Connecticut River Line from Middletown to Hartford. When the CDOT/P&W program was undertaken, the goal was to rebuild the line to Rocky Hill to Class 2 standards and reactivate the line north to Hartford. The initial program enabled the line to open, preserving a disappearing right of way for future freight and commuter use, but was not sufficient to rehabilitate the line from Rocky Hill, MP 28.75 to Hartford, MP 35.88. Investment in this right of way will last years beyond the lease expiration date of 2017.

The proposed $1.0 million Middletown Branch project includes the following:

Tie Installation, MP 28.75 to 35.88	$ 977,390

Engineering and design has been completed by the P&W. The P&W has no plans at this time to participate in cost sharing for these improvements.

2.0 Primary Selection Criteria

The Willimantic Branch and Middletown Branch projects meet the five primary selection criteria outlined in the June 17, 2009 *Federal Register*. These include both long- and short-term outcomes.

2.1 Long Term Outcomes

State of Good Repair

Proposed improvements to both branches will minimize life-cycle costs by maintaining the lines in operation. Both the P&W and CDOT have invested in restoring the previously abandoned segment of the Willimantic Branch between Versailles Junction and Willimantic. This project, completed in 2007, was an initial investment in restoring service on this important link. The P&W has

cleared the branch to 19'-6" for transport of automobile carriers. The proposed project will not only maintain the Willimantic Branch in a state of good repair, but improve operations by upgrading the line from Class 1 to Class 3 operations.

The objective of the Middletown Branch project is to restore service by upgrading this line to a state of good repair. An important objective of this application is to rehabilitate, reconstruct, or upgrade lines that threaten future economic growth.

Consistency with State and Regional Plans. Both projects are consistent with relevant state and regional transportation plans including *Connecticut on the Move* Strategic Long-Range Transportation Plan 2009 and regional transportation plans conducted by the Windham Region, Capitol Region, and Southeastern Connecticut Councils of Government. More specifically, one objective of the state plan is to participate in discussions about the opportunities to divert a portion of the projected 70 percent growth in regional truck traffic to rail and barge modes in order to reduce significantly the greenhouse gas impact of freight transportation. A goal of 5 percent of truck traffic shifting to rail or barge by 2020 is desirable.[2]

The Willimantic Branch project area is located within three councils of governments and is addressed in the *Windham Regional Transportation Plan 2005* (Windham) and the *Southeastern Connecticut Regional Transportation Plan FY2007-2035* (Sprague). Although the Northeastern Connecticut Council of Governments (Plainfield, Canterbury, Lisbon, Scotland) does not have a transportation plan, rail improvements are cited in the Comprehensive Economic Development Strategies (CEDS) plan.

The *Windham Regional Transportation Plan 2005* indicates that several large employers depend on freight rail, and "the Region supports preservation and improvement of existing active rail lines. These lines are important for interstate and international (Canada) connections, and for intermodal connections, including the rail/truck trans-shipment facilities in Windham and access to New London Harbor. The regional land use plan adopted in 2002 supports this by recommending that towns zone land with rail access for light industrial use wherever possible, to encourage additional use of this resource."[3] This document goes on to indicate that it is the objective of *regional economic vitality* to "encourage rail freight and preserve rail connections to marine ports and rail hubs to promote integrated intermodal transportation networks that ultimately decrease transportation costs and decrease the burden on local highway networks. Ensure that improvements to roads/bridges over railroad tracks can accommodate double height rail cars and other future specifications."[4] This grant application is therefore consistent with this regional plan.

The Northeastern Connecticut Economic Partnership's *2007 CEDS Five Year Update: Comprehensive Economic Development Strategy*, indicates that although P&W and New England Central Railroad connections were listed as strengths in the Partnership Region, the speed and capacity limitations of existing rail lines was viewed as a weakness in infrastructure items.[5] Upgrade of the Willimantic Branch is therefore consistent with the regional CEDS plan.

The *Regional Transportation Plan FY2007-2035 for Southeastern Connecticut* addresses the Sprague and Versailles communities along the Willimantic Branch. The plan indicates that the P&W provides extensive freight services on over 500 miles of track and that it has positioned itself as the premier carrier of municipal and other solid waste in New England.[6] The plan acknowledges that the region lacks a major trucking terminal that could integrate transfer of freight from highway, rail, marine, and air modes to make the region a viable freight distribution center.[7] Upgrade of the Willimantic Branch is consistent with developing the region's capability for accessing intermodal service.

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[2] *Connecticut on the Move* Strategic Long-Range Transportation Plan 2009-2035, http://www.ct.gov/dot/cwp/view.asp?a=1383&q=259760, page 3-17.
[3] *Windham Region Council of Governments Regional Transportation Plan 2005*, http://www.wincog.org/publications/RTP.pdf, page II-1.
[4] *Ibid*, page II-10.
[5] The Northeastern Connecticut Economic Partnership, *2007 Five Year CEDS Update: Comprehensive Economic Development Strategy*, Approved June 14, 2007, pages 24-25.
[6] *Regional Transportation Plan FY2007-2035 for Southeastern Connecticut*, http://www.seccog.org/pdfs/REG_TRANSP_PLN_07-35.pdf, page 68.
[7] *Ibid*, page 75.

The *Capitol Region Transportation Plan* addresses the Middletown Branch area.[8] Of specific relevance to freight rail transport is the finding that trucks carry 98 percent of the freight moving in, out, and through the region (higher than the national average of 79 percent). About 40 percent of truck traffic in the Capitol Region is through traffic that passes through without stopping. As a consumer economy, inbound freight exceeds outbound freight by a more than 2:1 margin.[9] Diversion from truck to rail intermodal is cited as a means to reduce vehicular congestion, especially for bulky items such as lumber, paper, and fuel oil.[10] This grant application is therefore consistent with this regional plan.

Long-term sustainability of operations. Long-term operations and maintenance of both the Willimantic Branch and Middletown Branch will be the responsibility of the P&W in these project areas. As rail traffic increases, additional revenue will be generated to assure that the facilities will be maintained in a state of good repair. Volume on the Willimantic Branch has increased dramatically in just the past year. In 2007 2,384 carloads (revenue movements) were recorded. In 2008, 2,950 revenue movements were recorded. Through August 25, 2009, 1,420 revenue movements were recorded. In October 2009 through intermodal movements are anticipated to increase to six days per week. This marks a significant increase in rail traffic since 1995 when 300 car trips were recorded at the New England Central Railroad interchange in Willimantic. P&W projects that rail movements will double in the next five years with implementation of projected improvements to Class 3 operations. Revenue generated from these improvements will assure long term operations and maintenance of this line.

Projected revenue for the Middletown Branch is less dramatic or secure. The Middletown Branch is currently out of service and all through traffic has been diverted to other lines. No customers are currently located along this segment although the P&W continues to market to customers to the south. Provision of freight rail service to the corridor could enhance the economic recovery of this depressed area south of Hartford. Increased rail operations could contribute toward sustainable long term operations.

Economic Competitiveness

The Willimantic Branch and Middletown Branch project areas are both in Economically Distressed Areas as defined by the Public Works and Economic Development Act of 1965, as amended. The Willimantic Branch project area is within the Northeast Economic Partnership Comprehensive Economic Development Strategies (CEDS) area where the 2007 unemployment rate was 14.9 percent with a per capita income of $18,702. The Middletown Branch project area, located in the MetroHartford CEDS area, had a 16.8 percent unemployment rate with a $16,982 per capita income in that year (the last year for which this data is available). Both areas meet the definition of Economically Distressed Areas based on the 2007 US unemployment rate at 6.6 percent with a per capita income at $26,178. The per capita income in both project areas is less than 80 percent of the national level ($20,942) in that year. The Northeast Economic Partnership is operated by the Windham Regional Council of Governments. The MetroHartford Alliance operates CEDS programs in the Hartford region. P&W will coordinate with these two community-based organizations to support job creation along the project area corridors in these economically distressed areas.

Several Willimantic and Middletown Branch communities are designated as Enterprise Zones or Enterprise Corridors by the Connecticut Enterprise Zone Program. This program, administered within the Connecticut Department of Economic and Community Development, provides support for business expansion, retention and recruitment as well as tax incentives for job growth in economically depressed areas that meet demographic criteria. The City of Hartford includes many census tracts designated within the Hartford Enterprise Zone. An Enterprise Corridor Zone is located along I-395 in the eastern region of the state and includes Lisbon, Plainfield, and Sprague, three Willimantic Branch communities. State investment in these areas will be supported and bolstered by improvements in freight rail access that will lead to long-term job creation.

Improvements to the Willimantic Branch will dramatically increase operational speed from 10 to 40 mph. This will have several important implications for economic competitiveness. Currently one round trip operation is conducted five or six times weekly. The 21-mile segment from Plainfield to Willimantic currently has a five-hour round trip running time. With track improvements, round trip running time will be reduced to 1.5 hours. That savings would allow P&W to operate the crew from Worcester with a turn at Willimantic and still complete all switching requirements.

[8] *Capitol Region Transportation Plan*, A Guide to Transportation Investments through 2035, http://www.crcog.org/publications/TransportationDocs/RTP2007/6-Freight.pdf,
[9] *Ibid*, page 44.
[10] *Ibid*, page 45

P&W will be initiating intermodal (containerized freight) service with the Canadian National (CN) toward the end of September 2009. Strict operating timetables must be kept to assure the competitive edge of this operation. With current 10 mph speeds, one crew will operate between Plainfield and Willimantic to make the connection with the New England Central Railroad (CN haulage) from Montreal. P&W then makes a connection with the normally scheduled road train from Plainfield to Worcester, MA. This train is held at Worcester while the containers are removed and return containers are reloaded, then the train returns to Plainfield. At that time the containers will sit awaiting the next New England Central Railroad northbound train for approximately 12 hours. A direct train turn from and back to Worcester would eliminate that wait and move the traffic faster and at less equipment cost than what is possible at this time. This time schedule will also assure that transcontinental shipment of automobiles from the Port of Davisville may be conducted within three days. More efficient rail freight operations will therefore improve the economic competitiveness not just of the Windham region but of the state and southern New England as well.

By increasing the efficiency and effectiveness of the transportation system, especially with international connections to Canada and connections to intermodal facilities in Worcester MA and port facilities in New Haven CT, New London CT and Davisville (North Kingstown, RI), economic benefits will result to the state and regional economies as well. Proposed upgrades will enable the P&W to more fully benefit from federal investment in the enlarged Bellows Fall, VT rail tunnel that opened in October 2007. The tunnel now provides clearance for tri-level auto racks, which transport 18 or 21 automobiles. Clearance at the Bellows Falls tunnel on the New England Central Railroad (which interchanges with the P&W at the Willimantic Yard) will enable transport throughout North America of imported autos arriving at the port facility in Davisville (North Kingstown, RI) via connections with the Canadian Pacific, Canadian National and CSXT. This enables the domestic transportation of imported and exported automobiles at competitive prices, thereby enhancing this market.

Jobs generated from manufacturing or aggregate transport in the local areas (Economically Distressed Areas), together with additional train crew required to operate increased train cars would help meet the long term goal of providing quality jobs. These jobs would also have secondary effects of generating increased economic development as workers spend money in the local area (multiplier effect).

Livability

The proposed Willimantic Branch and Middletown Branch projects meet at least one of the four livability criteria addressed in the *Federal Register* notice. As freight rail projects, they are not designed to enhance user mobility or improve transport services for disadvantaged populations, non-drivers, senior citizens, or persons with disabilities. Although a public process was conducted prior to restoration of freight rail service in 2007 on the Willimantic Branch, no public hearings have been conducted for upgrade of service from Class 1 to Class 3 operations. Prior to restoration of freight service, CDOT held a regional informational meeting in June, 2006, followed with a hearing held in Willimantic February 28, 2007 to address reactivation of the three at-grade crossings on Route 97 and Route 138 in Sprague and Route 203 in Windham. As indicated in the announcement for the 2007 hearing, CDOT Commissioner Ralph J. Carpenter said "Safety is our number one concern when reactivating any rail service in the state. The Department has been proactive, reaching out to the community from the beginning to keep everyone apprised of our efforts to restore the Willimantic Branch."[11]

Most critical to livability are the anticipated improvements "in existing transportation choices by enhancing points of modal connectivity or by reducing congestion on existing modal assets." Each train car has the capacity to replace four trucks on the highway. Each 10-car train therefore replaces 40 trucks on Connecticut and/or Massachusetts interstates or state and local roads. With freight rail volume on the Willimantic Branch projected to double within five years, approximately 24,000 truck trips will be diverted annually from area roads including I-84, I-91, I-95, I-395, Route 2, and Route 9, among others. Reduction in truck volumes on I-90 in Massachusetts could also be expected.

Improvements on the Middletown Branch would reduce truck volumes on I-91 although these volumes are less easy to quantify and are dependent upon generating local customers. Assuming operation is resumed with one round trip daily with five revenue producing cars in one direction with return cars empty, approximately 5,616 truck trips could be diverted annually from area roads. It might be anticipated that cargo haulage on the Middletown Branch would include general cargo that would not require specialized cars for auto transport, fuel tanks, or aggregate that generally travel full in one direction only, regardless of the mode via rail or truck. Although

[11] Connecticut Department of Transportation News Release, February 2, 2007, Department of Transportation Continues Work On Restoring Willimantic Branch For Freight Rail Service, http://www.ct.gov/dot/cwp/view.asp?A=1373&Q=332200

rail cars on the Middletown Branch would generally travel full in one direction only, it may be more likely that trucks would have the flexibility to carry freight in two directions.

Connecticut on the Move specifically indicates that "CTDOT must also facilitate the efficient and cost effective movement of people and freight within and through the state" to maintain the quality of life for state residents.[12] Implementation of improvements on the Willimantic Branch and Middletown Branch both support this objective.

Sustainability

Increased speeds on the Willimantic Branch will significantly reduce fuel consumption with a reduction in greenhouse gas emissions. Currently the Willimantic Branch operates at an average fuel consumption of 26 gallons of fuel per hour per locomotive. The line operates with two locomotives on a five-hour round trip for a daily fuel consumption of 520 gallons per day. By increasing the running speed and decreasing round-trip crew time to 1.5 hours (with two locomotives), fuel consumption will be reduced to 181.5 gallons per day or an overall daily savings of 338.5 gallons. This fuel savings does not reflect the reduction in truck fuel required when 24,000 truck trips are diverted to rail. It is anticipated that the current two-locomotive train set will be sufficient to haul projected doubling of rail volume in the next five years. A third locomotive would be added if train lengths exceed 35 to 40 cars.

Savings on the Middletown Branch are less compelling although a diversion of 1,040 truckloads to rail annually (20 trucks daily) will reduce the truck fuel required for a 14-mile roundtrip (at 8.2 miles per gallon) by 34 gallons. Assuming Class 1 operations, total fuel consumption on the Middletown Branch would be 104 gallons per day for one round trip train.

No adverse environmental impacts are projected with upgrade of the Willimantic Branch and Middletown Branch. Both are currently developed as rail corridors. No wetland impacts are anticipated with rail and tie replacement. As train speed increases on the Willimantic Branch, air quality emissions will be reduced.

Safety

Diversion of 24,108 trucks annually from state highways (24,000 to the Willimantic Branch and 108 to the Middletown Branch) will be important in increasing safety along these roadways. Rail transport is a safer transportation mode than truck. In 2007, FHWA reports that 12,896 million tons were transported by truck and 2,030 million tons were transported by rail.[13] For that year, 367,920 large truck accidents and 2,962 railroad accidents were reported nationally, resulting in 28.7 accidents per ton for trucks and 0.7 accidents per ton by rail. With improvements to the Willimantic Branch, transportation of ethanol and other hazardous cargos will be facilitated, thereby improving the safety of regional interstate, state and local roads.

The Willimantic Branch currently has three at-grade crossings on state highways on Route 97, Route 138, and Route 203. P&W reports that there have been no accidents at these crossings.

The Middletown Branch has 13 at-grade crossing between MP 28.4 and 34.6. This line is currently out of service; no accidents have been reported by P&W at these crossings.

2.2 Short Term Outcomes

Jobs Creation and Economic Stimulus

The Association of American Railroads (AAR), using RIMS II methodology from the US Department of Commerce, has determined that for every one billion dollars in freight rail infrastructure investments that 20,000 primary and secondary new jobs are created. This converts to 20 jobs created for every one million dollars of investment in rail freight infrastructure. Projected short-term construction jobs created with proposed projects are included in Table 1. The Willimantic Branch and Middletown Branch project areas are both in Economically Distressed Areas as defined by the Public Works and Economic Development Act of 1965, as amended.

[12] *Op cit, Connecticut on the Move*, page 4.
[13] Ibid, pages 11 and 53.

Table 1: Short Term Jobs Creation

Rail Line	Construction Cost	Job Creation
Willimantic Branch	$11,136,675	225
Middletown Branch	$ 977,390	20

Construction jobs will be in accordance with Federal laws ensuring that American workers are safe and treated fairly. The project will implement best practices, consistent with our nation's civil rights and equal opportunity laws.

3.0 Secondary Selection Criteria

3.1 Innovation

Proven engineering design has been proposed for upgrade of both the Willimantic and Middletown Branches. The innovation criterion does not apply.

3.1 Partnership

The proposed branch upgrades are an important example of partnership between the P&W, a private business, and CDOT. The Willimantic Branch right of way is owned by the P&W for 7.34 miles (MP 3.0 to 10.34) with an additional 13.96 miles owned by the state (MP 10.34 to 24.30). Improvements on the branch were completed by P&W in 2007 when operation of the line was restored, grade crossings were upgraded and 19'-6" clearance was achieved. This grant application is a continuation of the partnership that has been demonstrated in the past, for upgrade on both publicly- and privately-owned land.

Completion of improvements on the Willimantic Branch will also support P&W's partnership and coordination with other rail organizations throughout New England and Canada, including the New England Central Railroad, the Vermont Agency of Transportation, and the Canadian Pacific and Canadian National Railways. Upgrading the Willimantic Branch will vastly improve P&W's capability to offer an option to I-91 and I-89 and better position Connecticut industry to remain competitive and grow business with New England's largest trading partner, Canada. Completion of a cleared route to an initial 19'-6" with longer term plans to attain 20'-6" demonstrates the commitment of the P&W to this partnership.

Restoration of operations on the Middletown Branch also demonstrates an opportunity for a more focused partnership with adjacent businesses and potential partners in support of state and regional initiatives to encourage economic development in this corridor. Several years ago CDOT and P&W undertook a 70/30 project to rehabilitate, and in some sections, reconstruct, the Connecticut River Line from Middletown to Hartford. The goal at that time was to rebuild the line north to Rocky Hill to Class 2 standards and reactivate the line north to Hartford. Although the initial program enabled some of the line to open, preserving a disappearing right of way for future freight and commuter use, funding was not sufficient to rehabilitate the line from Rocky Hill, MP 28.75 to Hartford, MP 35.88.

Increased energy efficiency for freight transportation is a major objective of both this project and others to reduce dependence on oil and reduce greenhouse gas emissions. This supports the Regional Greenhouse Gas Initiative (RGGI) plan to reduce carbon dioxide emissions in ten northeastern and mid-Atlantic states.

4.0 Program Specific Criteria

None of the program-specific criteria listed in the *Federal Register* notice apply to freight rail projects that don't include bridge replacement, transit, port infrastructure investments, or TIGER TIFIA payments.

5.0 Costs and Benefits

Construction of improvements on both the Willimantic Branch and the Middletown Branch will result in benefits for freight movement. Table 2 outlines the costs and benefits of rail upgrade. Upgrade of the Willimantic Branch is especially compelling. When benefits are identified for increased travel speed, decreased travel time, reduced fuel consumption, reduced labor costs, reduced maintenance costs, and diversion of truck traffic (and associated diesel cost savings), the Willimantic Branch will accrue an annual benefit of nearly $900,000. This figure does not reflect the cost associated with the reduction of greenhouse gas emissions.

Table 2: Benefit Costs, Willimantic and Middletown Branches
(2007 dollars, assumed constant during project life)

	Willimantic Branch			Middletown Branch		
	Current	**Projected with Improvements**	**Benefit**	**Current**	**Projected with Improvements**	**Benefit**
Track length, miles	21.3	21.3		0	7.14	
Average daily mileage per train	42.6	42.6		0	14.28	
Rail speed	10 mph	40 mph	30 mph	0	10 mph	
Travel Time						
Daily round trip, hours	5.0	1.5	3.5	0.0	2.0	-2.0
Annual travel time, hours	1300	390	910	0	520	-520
Fuel						
Fuel/gallons per day	520	181.5	338.5	0	104	
Cost /gallon (CT - 9/4/09)	$ 2.92	$ 2.92		$ 1.99	1.99	
Daily fuel cost	$ 1,518	$ 530	$ 988	$ -	$ 207	$ (207)
Annual fuel cost	$ 394,649	$ 137,748	$ 256,901	$ -	$ 53,810	$ (53,810)
Labor						
Round trip operation						
Employee cost / day (with benefits)	$ 725.69	$ 725.69			$ 725.69	$ (726)
Crew time (2 trainmen) / roundtrip, hours	5.50	1.50	4.00	0	2	-2
Labor cost per roundtrip	$ 998	$ 272	$ 726	0	$ 363	$ (363)
Labor cost, annual	$ 259,433	$ 70,754	$ 188,679	0	$ 94,340	$ (94,340)
Inspection						
Weekly labor costs	$ 1,950	$ 975	$ 975		$ 975	$ (975)
Annual labor costs	$ 101,400	$ 50,700	$ 50,700		$ 50,700	$ (50,700)
Maintenance (equipment, materials)						
Weekly costs	$ 750	$ -	$ 750	0	$ -	$ -
Annual costs	$ 39,000	$ -	$ 39,000	0	$ -	$ -
Operations and Maintenance (fuel, labor, materials)						
Annual	$ 794,482	$ 259,201	$ 535,281	$ -	$ 198,849	$ (198,849)
Truck Diversion						
Annual railcar shipments (revenue producing)	2,950	6,000	3,050	-	260	260
Annual railcar movements (including return cars)	5,900	12,000	6,100		520	520
Truck equivalence (4 trucks/railcar)		24,000	24,000		1,040	1,040
Annual truck fuel, 8.2 mpg for daily rail round trip mileage at $2.919 gal (9/4/09)			$ 363,949			$ 5,287
Annual Benefit - O&M rail costs plus truck diversion fuel costs			**$ 899,230**			**$ (193,563)**
CO2 Emissions						
CO2 per day, lbs (22.2 pounds/gallon)	11,544.00	4,029.30	7,514.70	-	2,308.80	(2,309)
CO2 tons per year, tons	1,501	524	977		300	(300)
30-year life, tons (rounded)	45,000	15,700	29,300			
Construction Cost		**$ 11,136,675**			**$ 977,390**	

Per Circular A-94,[14] the standard criterion for deciding whether a government program can be justified on economic principles is net present value – the discounted montized value of expected net benefits (i.e., benefits minus costs). Net present value is computed by assigning monetary values to benefits and costs, discounting future benefits and costs using an appropriate discount rate, and subtracting the sum total of discounted costs from the sum total of discounted benefits.

Table 3 presents the discounted cost benefit analysis for the Willimantic Branch, based on the 30-year life of anticipated improvements. As indicated, utilizing the 7% discount factor, the present value of costs is $10.4 million while the present value of benefits is $11.8 million. Government investment is therefore justified on Willimantic Branch improvements. These figures do not reflect the value of decreased greenhouse gas emissions.

Because the Middletown Branch is currently out of service, it is more difficult to portray benefits compared to current operations.

Table 3: Willimantic Branch Discounted Cost Benefit Analysis (30 year life cycle)
Excluding costs for greenhouse gas reduction

Years since initiation	Expected yearly cost	Expected yearly benefit	Discount factors for 7%	Present value of costs Col. 2 x Col 4	Present value of benefits Col 3 x Col 4
Col 1	Col 2	Col 3 (1)	Col 4	Col 5	Col 6
1	$ 11,136,675	$ -	0.9346	$ 10,408,107	$ -
2	0	$ -	0.8734	$ -	$ -
3	0	$ 305,648	0.8163	$ -	$ 249,500
4	0	$ 611,297	0.7629	$ -	$ 466,355
5	0	$ 899,230	0.7130	$ -	$ 641,139
6	0	$ 926,207	0.6663	$ -	$ 617,171
7	0	$ 953,993	0.6227	$ -	$ 594,099
8	0	$ 982,613	0.5820	$ -	$ 571,890
9	0	$ 1,012,091	0.5439	$ -	$ 550,511
10	0	$ 1,042,454	0.5083	$ -	$ 529,931
11	0	$ 1,073,728	0.4751	$ -	$ 510,120
12	0	$ 1,105,940	0.4440	$ -	$ 491,050
13	0	$ 1,139,118	0.4150	$ -	$ 472,693
14	0	$ 1,173,291	0.3878	$ -	$ 455,023
15	0	$ 1,208,490	0.3624	$ -	$ 438,012
16	0	$ 1,244,745	0.3387	$ -	$ 421,638
17	0	$ 1,282,087	0.3166	$ -	$ 405,876
18	0	$ 1,320,550	0.2959	$ -	$ 390,703
19	0	$ 1,360,166	0.2765	$ -	$ 376,097
20	0	$ 1,400,971	0.2584	$ -	$ 362,038
21	0	$ 1,443,000	0.2415	$ -	$ 348,503
22	0	$ 1,486,290	0.2257	$ -	$ 335,475
23	0	$ 1,530,879	0.2109	$ -	$ 322,934
24	0	$ 1,576,805	0.1971	$ -	$ 310,862
25	0	$ 1,624,110	0.1842	$ -	$ 299,241
26	0	$ 1,672,833	0.1722	$ -	$ 288,054
27	0	$ 1,723,018	0.1609	$ -	$ 277,286
28	0	$ 1,774,708	0.1504	$ -	$ 266,920
29	0	$ 1,827,950	0.1406	$ -	$ 256,942
30	0	$ 1,882,788	0.1314	$ -	$ 247,336
TOTAL				$ 10,408,107	$ 11,497,400
Rounded				*$10.4 million*	*$ 11.5 million*

(1) Assumes two year construction period with 1/3 benefits accruing in Year 3, 2/3 benefits accruing in Year 4. Annual 3% CPI increase from Year 6.

Fuel and Travel Time Savings

A freight train hauls one ton of freight an average of 457 miles on one gallon of fuel – more than three times farther than a truck. This fuel efficiency is increasing annually, up 94 percent since 1980 and up from 436 miles per gallon per ton in 2007.[15] In 2006, the average miles traveled per gallon for single-unit trucks (2-axle 6-tire or more) was 8.2 while combination trucks traveled an average of 5.1 miles per gallon.[16]

With implementation of the Willimantic Branch, round trip travel time will be reduced from 5 hours to 1.5 hours. With track improvements, operation speeds will be improved from 10 mph to 40 mph. This will result in significant fuel savings, as outlined in

[14] OMB Circular A-94 *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs.*
[15] Association of American Railroads, *Railroads: Green From the Start*, July 2009.
[16] Federal Highway Administration Office of Freight Management and Operations. *Freight Facts and Figures* 2008, pages 56 and 57. http://ops.fhwa.dot.gov/freight/freight_analysis/nat_freight_stats/docs/08factsfigures/pdfs/fff2008_book.pdf

Table 2. Annual fuel consumption is projected to be reduced 65 percent, at a savings of over $250,000 (assuming P&W's current fuel costs of $1.99/gallon increases to the current, September 4, 2009 diesel fuel price in Connecticut of $2.919[17]).

Upgrade of the Willimantic Branch will also enable more efficient crew operations. Currently two crew are assigned to the round trip run. With a shorter turnaround time, they may be assigned to other tasks following the completion of the run for more cost effective P&W operations.

With increased travel speeds and decreased travel time, rail becomes a more attractive freight option. The Willimantic Branch will divert 24,000 truckloads annually. Fuel savings from truck operations (or from diverted truck operations) are over $360,000 annually as indicated in Table 2.

The Middletown Branch will require 104 gallons of fuel per day for rail operation. This will divert 40 trucks per day for 14 miles (round trip distance) at 8.2 miles per gallon or 68 gallons per day (not a beneficial impact).

Greenhouse Gas Emissions

Diversion of 24,000 truckloads to the Willimantic Branch will capitalize on this fuel efficiency and resultant greenhouse gas emission reduction. Improved operations on the Willimantic Branch will result in a decrease of 997 tons of CO2 annually. With diversion of 12,000 trucks to rail for 42 miles per day at 8.2 mpg, an additional 45 tons of CO2 would be reduced annually. This will improve air quality and reduce the carbon footprint of truck, freight transfer and rail utilization. During the 30-year life expectancy of improvements, over 29,000 tons of CO2 emissions would be eliminated with freight rail. As a rule of thumb, up to 35 carloads may be hauled with two locomotives (it generally takes the same energy to haul two railcars as it does to haul 35). After 35 to 40 cars, a third locomotive would be required. It is anticipated that short-term increases in freight demand will be met with two locomotives for the fuel consumption identified in Table 2.

Greenhouse gas emissions will be reduced on the Middletown Branch as truck traffic is diverted to rail, with lower emissions per mile.

Water Quality Benefits

Improvements to the Willimantic and Middletown Branches will have no net positive or negative impacts on water quality.

Public Health and Safety Benefits

Increased fuel economy will result in reduced air quality emissions, as demonstrated in the reduction in greenhouse gas emissions. See Section 2.1, Safety for discussion.

Economic Competitiveness

The P&W anticipates that improvements to the Willimantic Branch will result in increased economic competitiveness, both for businesses in northeastern Connecticut and southern New England ports, and for the railroad itself. Turning the assets (railcars) in less time has a direct benefit. P&W is charged "car hire" when another railroad's equipment is on our lines. If a piece of equipment can make more trips per year, it translates to more freight being moved with the same number of assets. More efficient means better rates, which in turn enhances the competitiveness (business/jobs) of our customers.

6.0 Additional Requirements

6.1 Evaluation of Project Performance

P&W is prepared to evaluate project performance through the following metrics:

- Short term jobs creation during construction
- Operating speeds

[17] http://www.etrucker.com/apps/promiles/fuelprices.asp

- Expansion or establishment of new rail customers, including job creation
- Coordination with the Enterprise Zone program and the Northeastern Partnership to document job creation in the depressed northeastern part of the state
- Revenue movements including local generators and through traffic
- Fuel consumption
- Crew-hours

Information on these metrics will be provided to CDOT on an annual basis for both the Willimantic Branch and the Middletown Branch to demonstrate how improvements in rail condition translate to economic development, efficiency of line operation, and reduction in greenhouse gas emission (to be provided by CDOT based on P&W data).

Businesses to specifically benefit include those associated with the transport of automobiles, aggregate, steel, fuel (including ethanol), and lumber, in addition to any traffic generated by new businesses along the upgraded lines. This will also benefit the P&W and shareholders.

6.2 Project Schedule

It is anticipated that construction work on both the Willimantic Branch and the Middletown Branch could commence within 90 days. P&W is committed to spending grant funds steadily and expeditiously once construction starts. Tie and rail installation on the Willimantic Branch, an active rail line, would be completed in four quarters with an average of 40-man gang assigned. Tie replacement on the Middletown Branch would be completed in two quarters, with a 40-man gang assigned. As the Middletown Branch is currently out of service, construction may be completed more expeditiously than on the Willimantic Branch.

Construction work on both lines will be completed prior to February 17, 2012 in compliance with the Recovery Act.

6.3 Environmental Approvals

No National Environmental Policy Act (NEPA) documentation has been conducted to date. As the Willimantic Branch and the Middletown Branch are currently developed as rail corridors, it is anticipated that rail and tie improvements will require filing a Categorical Exclusion (CadEx) under the Federal Railroad Administration's NEPA protocol.

P&W is not aware of any additional permit approvals required to conduct upgrades of the two lines.

6.4 Legislative Approvals

P&W is not aware of any legislative approvals required for upgrade of the Middletown Branch or Willimantic Branch.

6.5 State and Local Planning

Freight rail projects are not listed on the Statewide Transportation Improvement Plan (STIP) for the State of Connecticut. Per guidance provided in the July 2, 2009 Responses to Questions and Request for Clarifications Submitted to the Department of Transportation Regarding the TIGER Discretionary Grants Program, projects not required to be in long range transportation plans, STIPSs and TIPs will not need to be included in such plans in order to receive a TIGER discretionary grant.

As indicated on pages 4, 5 and 6 of this application, the proposed projects are consistent with state and regional transportation plans. A letter of support for this project has been requested from the Northeastern Connecticut Council of Government.

6.6 Technical Feasibility

Preliminary engineering work has been conducted. Rail and tie replacement are technically feasible on these lines.

6.7 Financial Feasibility

The following information from the P&W website demonstrates the capacity of the P&W to manage the proposed Willimantic Branch and Middletown Branch rail improvement packages:

"P&W is a regional freight railroad operating in Massachusetts, Rhode Island, Connecticut and New York. The Company is the only interstate freight carrier serving the State of Rhode Island and possesses the exclusive and perpetual right to conduct freight operations over the Northeast Corridor between New Haven, Connecticut and the Massachusetts/Rhode Island border. Since commencing independent operations in 1973, the Company, through a series of acquisitions of connecting line, has grown from 45 miles of track to its current system of approximately 545 miles. P&W operates the largest double stack intermodal terminal facilities in New England in Worcester, Massachusetts, a strategic location for regional transportation and distribution enterprises.

In April 2004, the Company was one of two local companies selected by Worcester's Better Business Bureau to receive its highest award for marketplace ethics, and in May 2004, *The Boston Globe* for the third year in a row, named the Company to the Globe 100, the newspaper's annual list of top-performing publicly held companies in Massachusetts.

In 2004 the Company received a Bronze Harriman Award from the American Association of Railroads and a silver safety award from the American Short Line and Regional Railroad Association (ASLRRA) for its impressive safety record for the year. The Company also received an ASLRRA Marketing Award at the ASLRRA 2004 Annual Meeting in St. Louis, MO for developing the coal traffic that the Company has been moving in unit trains since 2000.

In September 2000, The ASLRRA named the Company one of four winners in its Fifth Annual Marketing Awards Competition. The Company's winning entry, entitled "Growing Our Eastern Canadian Steel Traffic", focused on the Company's delivery of consistent and economical service to three receivers, two of which are located on Amtrak's high-speed Northeast Corridor. Working with the Canadian National and the New England Central, the Company captured the business of transporting steel from several Canadian mills from origins less than 350 miles away, traffic that would otherwise have been handled by trucks.

The Company transports a wide variety of commodities for its customers, including automobiles, construction aggregate, iron and steel products, chemicals, coal, ethanol, lumber, scrap metals, plastic resins, cement, processed foods and edible food stuffs, such as frozen foods, corn syrup and animal and vegetable oils. Its customers include the Dow Chemical Company, Northeast Utilities, Exxon/Mobil, Frito-Lay, Inc., International Paper Company, Smurfit Stone Container Corp and Tilcon Connecticut, Inc. In 2007, P&W transported approximately 31,000 car loads of freight and approximately 40,500 intermodal containers. The Company also generates income through sales of properties, grants of easements and licenses and leases of land and tracks. As a result of two stock offerings in 1998, to the best of our knowledge, for the first time in 155 years of existence, the Company has retired all of its debt obligations.

P&W's connections to multiple Class I railroads, either directly or through connections with regional and short-line carriers, provide the Company with a competitive advantage by allowing it to offer creative pricing and routing alternatives to its customers. In addition, the Company's commitment to maintaining its track and equipment to high standards enables P&W to provide fast, reliable and efficient service.

Over the past decade, consumer product companies have increasingly turned to intermodal transportation, i.e., the shipment of containerized cargo via more than one mode of transportation. By using a hub-and-spoke approach to shipping, multiple double stacked containers can be moved by rail to and from an intermodal terminal and then either delivered to their final destinations by trucks or transferred to ships for export. Headquartered in a major population center in New England, the Company is well situated to capitalize on this trend.

There are a number of development projects underway in New England to increase port capacity along its extensive coastline and to improve the intermodal transportation and distribution infrastructure in the region. These projects include the Commonwealth of Massachusetts' $250 million highway reconstruction project to create a direct Worcester connection to the Massachusetts Turnpike and improve road connections to Worcester; the State of Connecticut's project to restore rail access to the Port of New Haven; and the State of Rhode Island's $120 million expansion and improvement of the Quonset Point/ Davisville port and industrial park located near the entrance to Narragansett Bay.[18]

Further information on P&W corporate governance is provided at http://www.pwrr.com/invest.html.

[18] Providence and Worcester Railroad Investor Relations, http://www.pwrr.com/invest.html.

6.8 Federal Wage Rate Requirement

Providence and Worcester Railroad Company certifies that it will comply with the requirements of subchapter IV of chapter 31 of title 40, United State Code (Federal wage rate requirements), as required by the Recovery Act.

Signature 

Title Director of Engineering

Date 09/03/2009

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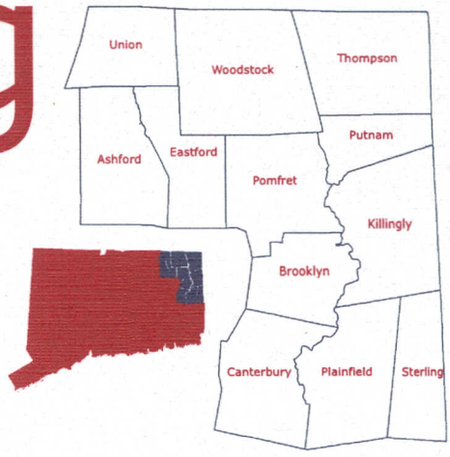

September 4, 2009

Peter M. LaBouliere
Rail Officer II
Connecticut Department of Transportation
Office of Rail
50 Union Avenue, 4th Floor West
New Haven, CT 06519

Dear Mr. LaBouliere:

This letter is in **support** of the application put forth by the Providence and Worcester Railroad for a TIGER Discretionary grant application to CDOT on behalf of the Providence & Worcester Railroad for proposed upgrade of the Willimantic Branch from Plainfield to Windham. The improvement of this 21 mile section of rail line has long been a priority of our region and is reflected in our Comprehensive Economic Development Strategy and the priorities of the I-395 Transportation Investment Area.

Linking the P&W line to the New England Central Line opens up many opportunities for our region and Connecticut. Such an improvement will provide a more direct link to the port of New London and intersecting rail lines. Currently, the P&W line is limited due to an undersized tunnel south of Plainfield, issues with the Sub Base (related to homeland security) and access to the intersecting rail line in Groton. Fixing the 21 mile section overcomes those issues. Additionally, this improvement will result in positive air quality results due to decreased trucks in use and will lessen congestion on our already overburdened highway system.

Thank you for your consideration of our position. Should you require any additional information, please do not hesitate to contact me.

Very Truly Yours,

John Filchak
Executive Director

cc Bernard A. Cartier, Director of Engineering, Providence & Worcester Railroad Co.

125 Putnam Pike (PO Box 759), Dayville, CT 06241 - 860-774-1253 - fax: 860-779-2056 - neccogoffices@neccog.com