American Recovery and Reinvestment Act of 2009
Grants for Transportation Investment Generating Economic Recovery
"TIGER Discretionary Grants"

APPLICATION FOR THE CONSTRUCTION OF THE NEW BRITAIN – HARTFORD BUSWAY
NEW BRITAIN, NEWINGTON, WEST HARTFORD AND HARTFORD, CT

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION
PROJECT NO. 171-305

Submitted by:
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Project Overview

i. **Type of Project:**
Bus Rapid Transit Fixed Guideway – New Britain-Hartford Bus Rapid Transit

ii. **Project Location**:
- Hartford County, CT - Towns of New Britain, Newington, West Hartford and Hartford
- Congressional Districts #1 and #5

iii. **Is project in urban or rural area?**
The project is within an urban area.

iv. **Amount of TIGER funds requested:**
$63,900,000
Connecticut Department of Transportation DUNS Number: 807854583
Central Contract Registration Confirmation Number: QZX9NA

v. **Grant Application Summary:**
The New Britain-Hartford Busway will be a dedicated Bus Rapid Transit (BRT) facility along a 9.4-mile corridor between downtown New Britain and downtown Hartford utilizing a state-owned abandoned rail right-of-way for about four miles from Downtown New Britain to Newington, and sharing active right-of-way owned by Amtrak and used for inter-city rail service from Newington Junction into downtown Hartford's Union Station.

A total of up to 11 transit stations will serve the users of the Busway. The Busway service plan includes suburb-to-downtown express buses, shuttles between the two downtowns, circulator buses that can go off-Busway to connect to trip generators, and connecting feeder bus services. Buses in this corridor will have more competitive travel times when compared with automobiles, since they will bypass congestion on arterial streets and I-84. The Busway will offer more frequent service, giving current transit riders a faster trip, and current automobile users a viable public transit alternative. A multi-use trail will be constructed adjacent to the Busway from downtown New Britain to the Newington Junction Station in Newington.

The Busway connects two economically distressed communities with a new, high-quality rapid transit system. This will improve access to jobs for area residents, help manage roadway congestion on I-84 and parallel arterials, and provide opportunities to encourage Transit Oriented Development (TOD) around Busway stations.

An index to most of the Internet links contained in this application can be found at:

http://www.ct.gov/dot/cwp/view.asp?a=1372&Q=444928&PM=1

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1. Project Description

The New Britain-Hartford Busway will be a Bus Rapid Transit (BRT) facility operating along a 9.4-mile dedicated fixed-guideway between downtown New Britain and downtown Hartford utilizing a state-owned abandoned rail right-of-way for about four miles from Downtown New Britain to Newington, and operating adjacent to an active railroad right-of-way owned by Amtrak and used for inter-city rail service from Newington Junction into downtown Hartford's Union Station.

Buses using the Busway will have more competitive travel times when compared with automobiles since they will bypass congestion on arterial streets and I-84, the most heavily-traveled and congested roadway in the Hartford region. The facility will permit bus access at intermediate points so circulator bus routes can readily serve surrounding neighborhoods and then traverse the Busway, thus providing a one-seat ride. In addition, the Busway will include express, shuttle, circulator, and connecting feeder bus service. A multi-use trail will be constructed adjacent to the north/west side of the Busway from downtown New Britain to the Newington Junction Station in Newington to enhance pedestrian and bicycle mobility and safety.

A total of up to 11 transit stations will serve the users of the Busway. Union Station in Hartford will be an intermodal station connecting Busway services with Amtrak intercity rail service on the New Haven-Hartford-Springfield corridor. The Newington Junction and Flatbush Avenue Busway stations are proposed as intermodal stations on the planned ConnDOT commuter rail service between New Haven and Springfield. The stations and the Busway infrastructure itself will be incorporating the latest in Intelligent Transportation Systems (ITS) technology to enhance the customer experience, improve travel times and reliability of the Busway services, and insure customer safety and protection of assets.

Despite, or perhaps because of, being in an existing physically constrained transportation corridor, the project involves significant infrastructure investment including: construction or rehabilitation of 16 bridges to accommodate new roadway or grade-separate the Busway from local roadways, construction of an access road for Amtrak, relocation of one mile of existing Amtrak active rail, twenty total property acquisitions to clear land for stations, relocation of utilities, construction of six at-grade intersections, and numerous retaining walls and culverts.

Project History

In 1997, the Connecticut Department of Transportation (ConnDOT), the Capitol Region Council of Governments (CRCOG) and the Central Connecticut Regional Planning Agency (CCRPA) undertook a Major Investment Study (MIS) for the Hartford West corridor. The corridor was broadly defined to include Interstate 84 and the neighborhoods surrounding the highway right-of-way, the parallel arterial roadways, and two rail lines, the Bristol-Hartford line and the New Haven-Hartford line. The study area encompassed portions of five communities: Hartford, West Hartford, Farmington In 1997, ConnDOT, the Capitol Region Council of Governments (CRCOG) and the, Newington and New Britain.

After the preparation of three technical reports and a comprehensive public involvement program, the principal transportation improvement recommended was an exclusive busway. The Busway was selected as the preferred alternative for this corridor because it offered travelers the greatest travel time savings, flexibility and ease of use as compared with other transit and highway alternatives. Busway travel speed is enhanced by the use of the exclusive guideway. Therefore, bus travel times will be competitive with automobile travel times, attracting "choice" riders from the highways. Current bus services will also operate faster, thereby providing benefits to existing riders. Finally, the Busway utilizes an historic rail corridor, traveling through many former industrial areas and offering multiple opportunities for economic redevelopment in some of these economically distressed industrial areas and neighborhoods.

Although the Busway facility terminates in the two downtowns, the Busway services can extend beyond the termination points and offer a one-seat ride by providing loops through the downtowns, longer route extensions that leave the busway at selected individual stations or the terminals and connect with the regional highway network, and opportunities for transfers at the terminals to multiple routes at the downtown hubs.

Service Design

The Busway would provide a combination of express, local and shuttle bus services to accommodate customers:

Express Bus Service from Park and Ride Lots - A major element of the Busway service plan will be the long distance commuter express routes which currently originate in Cheshire and Southington, as well as a new service from Waterbury. The coach-style commuter buses will travel from outlying communities, enter the Busway in downtown New Britain and operate as expresses into Hartford with limited or no stops. This would allow a long distance bus commuter to avoid congestion on I-84, thus reducing the projected travel time for the final segment of the routes into Hartford with much greater travel time reliability. Once in Hartford, the express bus would exit the busway and circulate through the city to provide convenient drop-off points for passengers.

Shuttle Bus Service - The shuttle service would operate from end to end on the Busway and stop at all Busway stations. This service is expected to operate on a regular and frequent schedule so passengers would not need to reference bus schedules for the next bus arrival. This will offer faster and more direct service in both directions, providing better access to jobs and other destinations.

BRT limited stop bus service – Service from Bristol will operate limited stop until reaching Downtown New Britain Station where it will access the busway. The service will then operate as a local shuttle to Hartford.

Neighborhood Connectors and Circulators - These services would circulate on local streets within a community providing connections between the busway stations and residential areas, points of interest, or other locations in the surrounding area with the nearest Busway station. For the Central Connecticut State University connector, the buses would travel on the Busway between the East Street and Cedar Street stations. After exiting the Busway, the connector buses

would circulate again within the community, providing the customer access to and from the University campus.

Service Levels

At this time it is anticipated that the primary Busway service would operate at least 18 hours per day, from approximately 6:00 am until midnight. Consideration will be given to having the Busway operate parallel to the Hartford system's service day of 4:00 am to 1:30 am, although most routes using the Busway would operate for shorter spans. Frequent service would be provided during the peak periods with service headways averaging three to five minutes, and frequencies ranging between 14 and 24 buses per hour, varying by segment. During off-peak hours, service will be less frequent to meet the lower demand, ranging between 6 and 13 buses per hour in the off-peak, evenings, and weekends.

ConnDOT completed work on an updated Service Plan on August 13, 2009. This plan was developed based upon the latest project scope and takes advantage of new station access points on the busway, and further development of station layouts and engineering.

Challenges Addressed by the Project

The Busway project was selected as a recommended alternative of the regional corridor study referred to above and effectively addresses a number of concerns that the study considered. This includes the current and future problems of highway and arterial traffic congestion, access problems in the two downtown areas, the suburbanization of employment opportunities that increased traffic congestion and defied the traditional transit service model of downtown-oriented hub–and-spoke services, and transit market share and service quality overall (reliability and travel time) throughout the corridor

Both bus users and automobile commuters would benefit from the Busway, as would residents and businesses in the entire corridor. By offering an attractive transit alternative, the Busway will reduce travel demand on the congested I-84 roadway and other arterial roads. Both bus and auto travel speed and travel times would be improved, the physical capacity of the multi-modal corridor to carry more people and goods would be expanded, and accessibility to the downtown Hartford central business district, still the largest single employment center in the region, would be enhanced.

New bus routes designed to take advantage of the Busway will also be able to offer residents of the region greater access to suburban employment centers in all the corridor towns, directly accessing off-busway employment centers such as the Westfarms Mall area in West Hartford and Farmington, and the UConn Health Center in Farmington. The service design would also significantly increase the amount and quality of bus service into downtown New Britain from the western and southern suburbs of the region as well as from the immediate Hartford area for reverse commuting to New Britain and the western suburbs. Overall, the flexibility of busway operation would allow the transit system to more effectively respond to changing ridership demand and future development within the corridor.

Design Process

The Busway project design is broken into five line contracts, one station design contract and several breakout contracts: Amtrak Access Road, Railroad Relocation, Utility Relocation, and Broad Street Bridge Replacement. Having ten separate contracts is intended to reduce the overall costs, provide flexibility in the construction sequencing and project scheduling. and compress the schedule by involving more Contractors to bid on these contracts and having the Contractors provide their different methodologies and their particular expertise toward these contracts. This contract arrangement is also intended to induce more competition thus resulting in more favorable bids, reduce construction duration, reduce schedule risk, and complete all the contracts at about the same time allowing the Department to operate the entire Busway on opening day.

A major complementary project associated with the Busway is the project for grade-separation of Flatbush Avenue in West Hartford with the Busway and the Amtrak rail lines. This is a stand-alone project which must be completed before the Busway construction can be completed. It is being funded separately from the Busway project with Federal Highway Administration funds that are outside of the Busway financial plan.

The TIGER grant would provide advanced funding ahead of the current funding schedule and would allow the project to advance three breakout contracts – Amtrak access Road, Railroad Relocation and Broad Street Bridge.

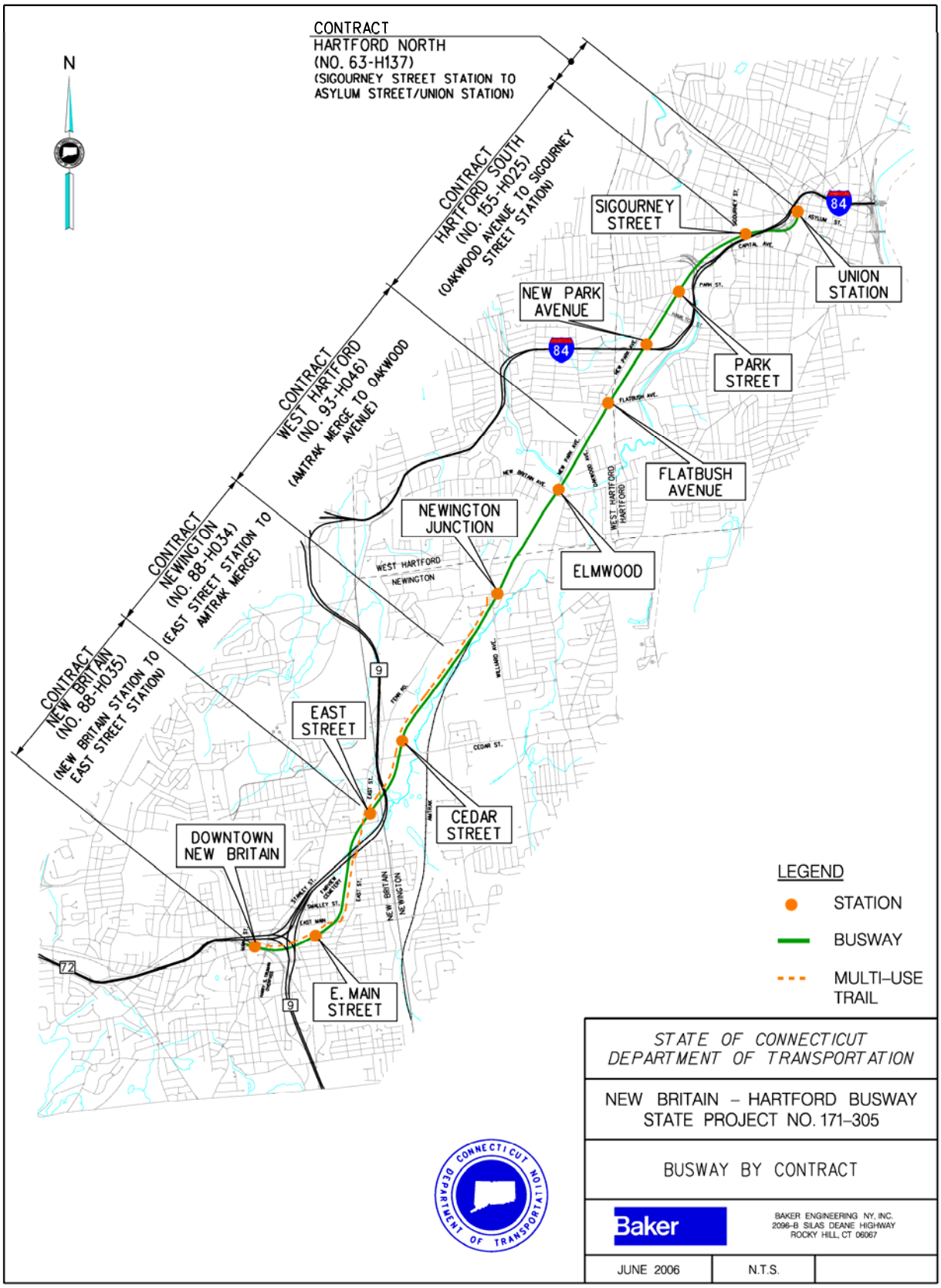
Exhibit-1 illustrates the Busway alignment, contract segments and station locations.

About the Agency

ConnDOT is the designated recipient for this TIGER grant and is the sponsoring agency for the New Britain - Hartford Busway.

ConnDOT is a department of state government with some 3,500 employees and an annual combined operating/capital budget of over $1.5 billion. ConnDOT is responsible for all transportation programs and projects for the state of Connecticut involving highways, airports, ferries, port operations, highway safety, and public transit efforts.

ConnDOT provides public transportation services, both bus and rail, to the citizens of Connecticut through the state-owned CTTransit bus system, bus and paratransit services managed and operated by transit districts, and the New Haven Line and Shore Line East rail services. These services are delivered through operating assistance contracts with private transit operators, transit districts and the Metro-North and Amtrak railroads. In addition to providing over 98% of the operating assistance needed to support these services, ConnDOT manages the capital investment required to support the equipment needs of all these services through its Bureau capital planning process. ConnDOT is the applicant for most of the federal grants and provides the vast majority of the non-federal capital funds for investments in the state-owned rail and bus systems and the transit district-owned bus and paratransit services.


CONTRACT
HARTFORD NORTH
(NO. 63-H137)
(SIGOURNEY STREET STATION TO
ASYLUM STREET/UNION STATION)
CONTRACT
HARTFORD SOUTH
(NO. 155-H025)
(OAKWOOD AVENUE TO SIGOURNEY
STREET STATION)
CONTRACT
WEST HARTFORD
(NO. 93-H046)
(AMTRAK MERGE TO OAKWOOD
AVENUE)
CONTRACT
NEWINGTON
(NO. 88-H034)
(EAST STREET STATION TO
AMTRAK MERGE)
CONTRACT
NEW BRITAIN
(NO. 88-H035)
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SIGOURNEY STREET
UNION STATION
NEW PARK AVENUE
PARK STREET
FLATBUSH AVENUE
NEWINGTON JUNCTION
ELMWOOD
EAST STREET
CEDAR STREET
DOWNTOWN NEW BRITAIN
E. MAIN STREET
84
9
72
LEGEND
STATION
BUSWAY
MULTI-USE TRAIL
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
NEW BRITAIN – HARTFORD BUSWAY
STATE PROJECT NO. 171-305
BUSWAY BY CONTRACT
Baker
BAKER ENGINEERING NY, INC.
2096-B SILAS DEANE HIGHWAY
ROCKY HILL, CT 06067
JUNE 2006
N.T.S.

The Bureau of Public Transportation (the Bureau) manages public transit programs statewide as an operating unit of ConnDOT. This includes commuter rail service, bus systems, paratransit programs, ridesharing, taxi and livery regulation, and other mobility management efforts. The annual operating budget proposed for fiscal 2010 for the Bureau is over $250 million, which primarily subsidizes rail, bus and paratransit operations, but also provides funds for transit vehicle insurance, drug and alcohol testing, park and ride lot leases, matching dollars for small capital projects, etc. The ongoing annual transit capital program is almost $200 million, with $41 million in state bond money authorized in state fiscal 2010, and $139.1 million provided by FTA from formula funding programs and $17.4 million provided from discretionary earmarks in federal fiscal 2009. Most recently, an additional $152 million in American Recovery and Reinvestment Act of 2009 funds was apportioned to the state capital program.

2. Project Parties

Federal Transit Administration – Providing design approvals and project management oversight; providing funding through Section 5309 New Starts, Section 5309 Fixed Guideway Modernization, Section 5309 Bus and Bus Facilities Earmarks, and Section 5307 Formula Funds.

Federal Highway Administration – Providing funding through Congestion Mitigation and Air Quality (CMAQ) and Section 115 Earmark.

Federal Railroad Administration – Providing design approvals and coordination with high-speed rail planning and modeling.

Amtrak – Grantor of the easement needed for the Busway construction; providing design approvals; and coordination with planning and modeling for high-speed rail, inter-city rail, and commuter rail in the corridor.

Connecticut Department of Transportation – Providing funding through State Special Transportation Obligation (STO) bond funds, "Roadmap for Connecticut's Economic Future" bond funds, and Special Transportation Fund capital and operating funds.

Connecticut Department of Environmental Protection – Permit applications pending for Inland Wetlands and Watercourses, Flood Management Certification, Stream Channel Encroachment Lines, Water Quality Certification, Connecticut Programmatic General Permit, and General Stormwater Registration for Discharges from Construction Activities.

US Army Corps of Engineers – Section 404 (Clean Water Act) Individual Permit application pending

Capitol Region Council of Governments – The MPO supported the project for inclusion in State Transportation Improvement Program (STIP).

Central Connecticut Regional Planning Agency – The MPO supported the project for inclusion in STIP.

City of New Britain – Supported the project through active participation in public involvement process.

Town of Newington– Supported the project through active participation in public involvement process.

Town of West Hartford– Supported the project through active participation in public involvement process.

City of Hartford– Supported the project through active participation in public involvement process.

3. Grant Funds

This section of the grant request will look at the cost estimates, or proposed uses of funds, for the entire Busway project. That will be followed by a breakdown of the uses of funds being requested by the TIGER grant. A description of the sources of funds for the overall project will be explained. There will then be a description of the uses of the funds that will be made available with the additional funding the award of the TIGER grant will provide to the ongoing ConnDOT capital program.

The total project cost is currently estimated at $572,690,000. Details on the cost estimates can be found below.

A Financial Plan was prepared and submitted to FTA in September 2009 for this project as part of the project's Federal Fiscal 2011 Annual Report of New Starts. That Plan indicates the sources and uses of all project funds.

The complete Financial Plan with all supporting documentation as submitted with the New Starts (The full New Starts Report has been posted on the Busway's ProjectWise ftp site. Access can be arranged for any additional USDOT personnel needing access.)

TIGER Request

This application is requesting $63.9 Million to provide the funding needed for three of the Breakout (Advanced) Contracts of the project: Amtrak access Road, Railroad Relocation and Broad Street Bridge. TIGER funding will allow a faster award of the contracts compared to awaiting New Starts and state grant anticipation bond funding.

Uses of Funds – Total Project

The program costs of the New Britain – Hartford Busway project are listed below. The contract items are based on the latest proposal estimate dated June 1, 2009 which was developed by the Final Designers for the respective contracts, and reconciled by the Program Manager, Michael Baker Engineering, Inc. (Baker) and escalated to Year of Expenditure dollars. The utility costs are based on estimates prepared by the Department for the adjustment and relocation of utility facilities. The costs for non-construction items are developed from estimates, actual agreements, and percentages of the contract cost that have been developed by ConnDOT and reviewed by FTA. For a project with a contract value greater than $100 million, the recommended percentages for contingencies are 9% for construction items and 7% for non-construction items. The program level contingency was developed at 5% of the cost to complete the project. Other costs include finance charges, and escalation at 4.0% per year.

Contract Items:	$ 274,175,000
Non-construction Items:	$ 172,198,000
Utilities:	$ 10,700,000

Contingencies:	$ 54,868,000
Finance Charges:	$ 10,813,000
Escalation:	$ 49,936,000
Total:	$ 572,690,000

The detailed project budget in 2009 dollars for the Main Build option, and the Inflation Worksheet showing expenditures by category and by year in Year-of-Expenditure dollars, are shown in Standardized Cost Category format at the following link:

http://www.ct.gov/dot/cwp/view.asp?a=1372&Q=444928&PM=1

Uses of Funds - TIGER

Table 3.1 below shows the proposed cash flow of TIGER funds by individual project. As the table shows, the TIGER funds will be mostly expended by the end of calendar 2011 based upon the project schedule, with most of the remaining funding expended in early 2012.

TABLE 3.1

BREAKOUT PROJECT	FFY2010	FFY2011	FFY2012	FFY2013
Amtrak Access Road	$ 236,230	$29,505,140	$ 7,859,340	
Railroad Relocation	$ 83,950	$10,387,250	$ 2,151,900	
Broad Street Bridge	$ 57,810	$ 3,798,460	$ 6,973,860	$ 2,822,090
TOTAL	$ 377,990	$43,690,850	$16,985,100	$ 2,822,090

Sources of Funds

Table 3.2 shows a funding plan for the Busway project if TIGER funding is awarded. In the first instance, TIGER funds will be used instead of certain FHWA funds that were shown in the Busway funding plan.

Table 3.2 - New Britain-Hartford Busway Funding Plan

Source of Funds	Funding Level (millions)	Funding Share	Evidence of Commitment
Federal Sources			
Section 5309 New Starts	$ 266.15	46%	Planned - Proposed for FFGA
Section 5309 New Starts	$ 5.88	1%	Budgeted - Fed Reg, Transit Capital Plan, FTA Grants
Section 5309 New Starts	$ 3.27	1%	Committed - FTA Grant
FTA 5307 Formula	$ 18.20	3%	Committed - Transit Capital Plan
FTA 5309 Bus & Bus Facilities	$ 25.92	5%	Committed - Fed Reg, Transit Capital Plan, FTA Grant
FTA 5309 Fixed Guideway Mod.	$ 21.18	4%	Committed - Fed Reg, Transit Capital Plan, FTA Grant
FHWA - CMAQ	$ 20.00	3%	Committed - FTA Grant
FHWA - Section 115 Earmark	$ 6.00	1%	Committed - FTA Grant
TIGER	$ 63.90	11%	Planned - TIGER Grant Request
FHWA - Balance of Funding	$ 28.85	5%	Planned - Proposed for Future yr
Total Federal Funds	**$ 459.35**	**80%**	
Non-Federal Sources			
State Match - STF	$52.80	9%	Planned - Proposed for Future yr
State Match - Roadmap	$46.21	8%	Committed - Remaining Balance Dedicated to Busway
State Match - STF/Roadmap	$14.33	3%	Committed - Matching Grants
Total Non-Federal Sources	**$113.34**	**20%**	
Total Project Budget	**$572.69**	**100%**	

New Projects Funded

Using the TIGER Grant Funds for the Busway breakout projects will allow the State of Connecticut to carry out other needed projects that will also create jobs for the economically distressed urbanized areas of Hartford and New Britain.

If the TIGER grant is awarded, the Busway breakout contracts specified earlier can be more expeditiously implemented. Further, the FHWA funding that would no longer be needed for the Busway budget will then be reallocated to new projects that are currently unable to be funded due to funding constraints of the overall ConnDOT capital program. The most immediate need is to implement a comprehensive pavement management program. The details and the proposed budget for the program are shown below.

Approach to Preservation

($21 M/year program for three years)

YEARLY PROGRAM SUMMARY (2010, 2011, 2012)

Treatment	Basic Cost / yd^2	Incidentals, ancillary work*	PS&E	Combined Cost / yd^2	Number of. Lane Miles Proposed**	Estimated. Cost ($M)
Crack Sealing and/or Filling	$ 0.75	(Included)	5.0%	$ 0.79	677	$5.0
Rubberized Chip Sealing	$ 4.40	35%	7.5%	$ 6.27	26	$1.5
Microsurfacing	$ 4.80	35%	7.5%	$ 6.84	35	$2.2
UltraThin HMA	$ 6.25	35%	7.5%	$ 8.91	85	$7.0
Thin Overlay (1.5")	$ 8.63	35%	7.5%	$12.30	26	$3.0
Mill and Fill (2")	$ 13.50	35%	7.5%	$19.24	13	$2.3
Total					862	**$21.0**

*Ancillary work may consist of isolated full-depth repair areas, etc.

** Lane miles have been taken to be 15 feet wide.

Total surface area in state highway network (including shoulders**): 96,305,000 yd^2** (approximately)

Total lane miles in state highway network (assuming 15-ft wide lane miles): **10,355 lane miles**.

Reference: http://www.fhwa.dot.gov/pavement/preservation/ppc06.pdf, p. 31.

The pavement preservation program contributes significantly to ConnDOT's ability to maintain its current roadway assets in a state of good repair, and can be implemented quickly which will rapidly create or preserve over 200 new jobs per year at the same time the TIGER funds are also creating jobs in the Busway breakout projects.

4. Selection Criteria

4.1 Primary Criteria

4.1.1 – Long Term Outcomes

This project very effectively addresses the primary selection criteria of state of good repair, economic competitiveness, livability, sustainability, and safety.

State of Good Repair

The TIGER funds are being directed towards new construction as part of the Busway project. Most importantly, ConnDOT has the capability to operate and maintain this facility over the life of the facility. Documentation of the long-term financial viability of the program has been provided in the Busway Financial Plan.

As noted in the prior section, the provision of TIGER funding will allow ConnDOT to initiate its comprehensive pavement management program. This program is specifically targeted at maintaining the state's roadway system by conducting proper preventive maintenance for its infrastructure at the most appropriate and cost-effective time. This will contribute to the long-term preservation of assets, extend the lifespan of those assets, and minimize the need to do complete rebuilding or replacement of pavements by better maintaining them now.

More tangentially, by attracting traffic from the interstate highways and arterials in the region, there will be some corollary benefit that the reduced traffic will potentially extend the lifespan of these assets and provide a viable traffic mitigation alternative when construction and maintenance activities are necessary.

Economic Competitiveness

The Busway is connecting two economically distressed urban centers with a high-quality rapid transit system and providing a significant enhancement to the mobility capacity of the entire corridor west of Hartford. I-84 is a major thoroughfare connecting Pennsylvania and New York with Massachusetts as it runs through Connecticut. It is also an alternative to the similarly congested I-95 corridor from Maine to Florida that runs through Connecticut. The Hartford West MIS study clearly showed that adding travel lanes to I-84 was unreasonable because of cost, environmental impact and public opposition, and would not contribute to any of the tenets of smart growth. Any project that expands capacity will be important to the economic competitiveness and the economic future of the northeastern United States.

The Busway expands the corridor's capacity in a cost-effective way, and simultaneously contributes to the quality of life, livability and sustainability of the region through reduced congestion and improved mobility. Access to jobs is improved for both downtown jobs and jobs in the outlying areas that will now be more accessible for low-income workers who live in the

urban portions of the region. All these elements will aid the region in retaining and expanding an employment base that might otherwise be threatened by the costs of congestion, increased commuting time and reduced quality of life. "The Case for the Project," which can be found on the ConnDOT TIGER website describes many of the benefits of the project for various subcategories of customers of the transit system and for economic development.

Livability

The Busway project was the genesis for several activities that will contribute to livable communities in the region. One of the first corollary studies after the Record of Decision was issued was a station-area planning study conducted by CRCOG. This study examined the potential for transit-oriented development (TOD) around all of the proposed Busway stations, and paid particular attention to six stations that showed the most potential. The study developed conceptual plans for how TOD could be implemented in these station areas. This study led to subsequent activities in all of the Busway towns. Some of these actions and plans are reflected in the Land Use section of the New Starts report (see the ConnDOT TIGER website for a link to the CRCOG study).

The Busway station design process placed a strong emphasis on livable and walkable communities. Design charrettes were held for each station, and the stations are being designed with pedestrian and bicycle access as key elements. When combined with bicycle storage at stations and bicycle racks on all buses, the concept of walkable and bike-able communities around the stations has great potential to become a reality.

Just by its nature, the Busway will enhance access to jobs and connections to the community and to other non-automotive travel modes, further contributing to livable communities. Other alternative modes that will be improved by the project are bicycle and pedestrian modes. A wide range of bicycle and pedestrian amenities and improvements will be provided at and near all busway stations to ensure that pedestrians and bicyclists can take full advantage of the busway. In addition, a multi-use path will be included with the project between the downtown New Britain Station and Newington Junction Station, where space is available for such a path. Consideration has also been given to off-corridor extensions of the multi-use path north of Newington Junction that could be pursued by local communities. ConnDOT will encourage such efforts.

The project will also increase opportunities for alternative modes due to the provision of a new downtown transit center in New Britain and improved access to the existing multi-modal center in Hartford's Union Station. Transit users will have greatly improved intermodal access to Amtrak services at Union Station and future ConnDOT commuter rail services at the Newington Junction and Flatbush Avenue stations.

Sustainability

The busway will provide a significant expansion of transit services throughout the region – about 130,000 extra annual service hours on a base of 600,000 service hours on the fixed-route urban transit system. Services will be attractive both to existing transit users, and new users that have a discretionary choice whether to use transit or drive a car. New bus routes and services are proposed to capitalize on the busway's exclusive, congestion-free right-of-way. In addition, improved existing services will increase transit's attractiveness. The hours of service, frequency of service, dependability of service, and trip duration will all be greatly improved.

A total of about 6000 new transit trips daily will be taken in the region, or about 2,000,000 annual boardings. Annual user benefits will total over 1,400,000 hours saved by current and new riders. These are significant benefits to the community as a result of enhanced transit service and improved transit amenities that the Busway project offers.

Other benefits include reduced emission of pollutants which is especially important in urbanized areas where diesel particulate matter is a major cause of health problems in urban children.

Safety

The Busway project will contribute directly and indirectly to safety improvements. For example, the multi-use trail will provide an off-road opportunity for pedestrians and bicyclists to accomplish more of their travel away from active city streets or on unsafe suburban roads with no sidewalks. The project also examined safety as design decisions were made. For example, while not directly a part of the Busway project, ConnDOT determined that a grade-separation was needed between Flatbush Avenue in Hartford and West Hartford and the Amtrak rail line and the Busway. This project element will both improve safety and greatly improve traffic flow in the area. The Busway design also grade-separated the mainline from the surface streets at East Street and Allen Street in New Britain. An at-grade intersection at what is already a five-way intersection would have been very complicated and created safety issues.

Overall, the project also has a Safety and Security Certification Committee that reviews the designs and points out potential safety and security issues that should be addressed through design changes or changes in the system operation in order to protect the public safety.

4.1.2 – Evaluation of Expected Project Costs and Benefits

Transportation investments can have significant impacts on land use and household budgets. The link below connects to a media release by the American Public Transportation Association stating that the average household with access to transit service can save $6,200 per year by reducing driving.

http://www.apta.com/mediacenter/pressreleases/2007/Pages/070109_energy_report.aspx

The Busway will provide frequent and reliable direct and connecting services to more destinations in the Hartford region and for more hours every week, freeing up household budgets of bus riders to spend their money in other productive ways in the regional economy.

Some of those user benefits were quantified in ConnDOT's New Starts submittal on the "Mobility and Effectiveness" template. Other benefits, while difficult to quantify, include: average speeds on I-84 will increase as a result of diversion of some of the travelers from their cars to the Busway; emissions will be reduced both as a result of trips diverted to transit from the highway, and from automobiles that emit lower levels of pollutants at the higher speeds they can now travel. In an air quality submittal for the federal fiscal 2006 New Starts Annual Report, ConnDOT reported the Busway project would result in an annual reduction of at least 12,800 tons of carbon dioxide emissions and an overall reduction of over 17,000,000 vehicle miles travelled.

4.1.3 – Evaluation of Project Performance

There are a number of measures that can be used to evaluate project performance of the Busway. As part of the FTA full-funding grant agreement process, ConnDOT needs to develop a "Before and After Study." The purpose of this study is to develop forecasts prior to the project opening, and tracking actual performance once the project is in operation to determine the level of success and the accuracy of the forecasts. This Plan is in a draft stage right now but will be finalized before the end of the calendar year.

On an ongoing basis the Busway project, as well as all other bus services in the region, will be routinely reviewed as part of the ConnDOT/CTTransit service review process. Further, ConnDOT tracks and reports other performance figures regularly. A link to the report entitled "DOT On The Move – Performance Measures Quarterly Update" can be found at this link:

http://conndot/Publications/PerformanceMeasuresQ12009.pdf

4.1.4 – Job Creation and Economic Stimulus

ConnDOT commissioned the state Department of Economic and Community Development (DECD) to come up with job forecasts based upon the investment in the Busway project. The DECD used the REMI model (see explanation below) to develop the estimates.

> REMI, from Regional Economic Models, Inc. in Amherst, MA, is a dynamic, open economy, structural economic model of Connecticut and its eight counties. REMI contains the regionalized, national input-output matrix that contains the forward and backward linkages in the regional economy of 466 industrial sectors. The model is built on general equilibrium concepts as well and in the absence of further shocks (changes), will settle on a new equilibrium

consistent with a long-range forecast of the Connecticut economy. As an open economy model, REMI allows the migration of capital and labor across county borders to seek its highest return. In addition, REMI incorporates agglomeration effects that influence the delivered price of intermediate and final goods. Thus, improving labor access by itself improves employment opportunities in the region and promotes growth.

Given that busway construction amounts to $319,750,000 from 2011 through 2013 and professional services amounting to $109,484,000 from 2009 through 2013 and that there is a 5% contingency and a 4% escalation over three years for each category, there is a total construction and technical services budget of $533,839,950. Included in the construction period is the impact of the proposed pavement management program amounting to $21 million per year in 2011, 2012 and 2013. The study period covered 2009 through 2030 and included initial architectural and engineering (and other technical services) work as well as the bond maturity period.

The annual average increases in total employment (all sectors) and the employment increases in selected sectors in Connecticut were reported for 2009-2013 and 2009-2030. In other words, the busway project creates 942 jobs in all sectors on average each year from 2009 through 2013 in the entire state. Of these, 491 are in construction. The 22-year average job creation is smaller because the construction employment effect dissipates quickly after the busway is built. Note: if the entire $534 million construction and technical services budget were spent in one year, approximately 4,710 jobs would be created in all sectors in the state in that year.

In 2014, an operation and maintenance budget of $14 million per year will commence. The ongoing bus operations will employ upwards of 65 bus drivers, 10 mechanics, and various other maintainers and support staff, plus the indirect impact on the economy of these new jobs, so there will be a long-term job creation impact.

4.1.5 – Project Readiness

The overall project is currently at 60% design. The breakout contracts are approaching 90% design. Construction can begin on the breakout contracts in late 2010 and early 2011. A summary project schedule is attached at the end of the application.

4.2 Secondary Criteria

4.2.1 – Innovation

There are a number of innovations in this project including the concept of a bus rapid transit system itself – introducing high-quality rapid transit service into a smaller city at an affordable price compared to rail.

The following innovative strategies have been integrated into the design of this project:

Facility Security and Defensible Space - Crime Prevention through Environmental Design has been used to help passengers feel secure when they approach stations, leave stations, and wait within stations. Design issues/features such as safety lighting, vandal resistant materials, safe sightlines, windows and mirrors for improved visibility, minimizing the ability to hide, and surveillance systems will be included at each station or stop.

Station Designed with "Context Sensitive Solutions" - The busway will be appropriately designed to blend into the context of the surrounding communities, rather than "stick out" from the existing landscape. As the design process has taken place, communities, agencies, and the general public have been provided with opportunities for input into the appearance and amenities at stations and along the roadway itself.

Multi-Use Trail -A Multi-Use Pathway between Downtown New Britain and Newington Junction will be constructed. The usable width of the multi-use trail will generally be ten feet wide. An additional two feet of pavement will be added between this ten-foot area and the barrier separating the busway and the multi-use trail resulting in 12 feet of pavement from the barrier to the edge of the trail

Intelligent Transportation Systems (ITS) - ITS will be employed throughout the busway facility to provide passengers with maximum levels of safety, efficiency, comfort, and information. A proof-of-payment system is proposed for the Busway, with ticket vending machines at each station and electronic validation equipment either on the platforms or on-board the buses in order to allow rapid boarding as you would have on a subway line. Sensors will be able to track bus locations to ensure that buses approaching at-grade intersections receive preference at busway traffic signals. Variable message signs at stations will enable waiting passengers to know the estimated arrival time for their next bus. ITS components are also being considered to provide an additional level of safety to waiting patrons at the stations. A central facility would manage the ITS resources.

Fleet Fueling - New technology buses will reduce on-road emissions from busway vehicles. Possible new technology buses under consideration include "clean" diesel, electric buses, and hybrid electric-diesel buses or other new fuels that may develop. No final decisions have been made about the specific fuel technology that will be used, as technology is changing rapidly. Alternative fuel types will be examined and buses that use proven technology, are not cost prohibitive, and are practical will be purchased. Two hybrid electric buses have been in service in Hartford since 2003, and by the end of the calendar year the Hartford Division will have five fuel cell buses in service, the second largest fleet of fuel cell buses in the nation. Additionally, all buses will be equipped with bike racks.

4.2.2 – Partnership

The entire project planning process has been a collaborative process with the metropolitan planning organizations, the towns in the Busway service area and other partners such as Amtrak.

These organizations have all been involved in our service planning efforts, our efforts to design an operating plan including security and public safety access, and, in the case of Amtrak, they will be our future neighbor and will be coordinating with our projects for high-speed rail and commuter rail.

Many other opportunities for partnering have come up. The City of New Britain is ripe for redevelopment and there has been a great deal of interest generated by the Busway project and our plans for the downtown station. Our station plans leave a 20,000 square foot site that can be used for development and which is currently planned to be deeded back to the City after station construction is compete. We have an agreement with Central Connecticut State University that would have them build us a parking structure and Busway station in exchange for lowering a bridge that will facilitate their access to a new development site. At the Cedar Street station there is coordination going on with private sector developers who have an interest in building a service road for us in exchange for a traffic signal and a shared stormwater drainage system.

4.3 Program Specific Criteria

ConnDOT submitted its Annual Report for New Starts for Federal Fiscal 2010 in September of 2008. As a result of that submission, the Busway project received a Recommended rating. In the proposed federal fiscal 2010 budget, no funding was earmarked for the project, but the project is eligible to receive funding during federal fiscal 2010 from the pool of unallotted funds in the New Starts program.

5. Federal Wage Rate Requirement

ConnDOT has signed a federal wage rate certification stating that it will comply with Subchapter IV of Chapter 31 of Title 40 of the United State Code. This certifation can be found at the following link:

http://www.ct.gov/dot/cwp/view.asp?a=1372&Q=444928&PM=1

6. NEPA Requirement

An Environmental Impact Statement (EIS) and Section 4(f) Evaluation was submitted for the New Britain – Hartford Busway, Project # FTA-CT-EIS-01-01-F, December 21, 2001. A Record of Decision and a Finding of No Significant Impact was issued March 21, 2002. The full EIS, an EIS Executive Summary and the Record of Decision can be viewed at the following Web site link:

http://www.ct.gov/dot/cwp/view.asp?a=1372&Q=444928&PM=1

7. Environmentally Related Federal, State, & Local Actions

Permits Anticipated Being Required Prior to Construction

Permit Type	Statutory Authority	Issuing Agency	Date Issued
Clean Water Act of 1972: Section 404 (Impact on Water [wetlands] of the U.S.)	33 USC 1251 et. seq.	US Army Corps of Engineers	
Clean Water Act of 1972: Section 401 (Water Quality Certification)	33 USC 401	Connecticut DEP	
Connecticut Inland Wetland and Watercourses Act	CGS 22a-36 through 22A-45	Connecticut DEP	
Flood Management Certification	CGS 25-68(b-h)	Connecticut DEP	
Stream Channel Encroachment	CGS 22a-342	Connecticut DEP	
Water Diversion	CGS 22a-372(e)	Connecticut DEP	
National Pollution Discharge Elimination System (NPDES)	CGS 22a-430b	Connecticut DEP	

8. Confidential Information

There is no confidential information that should be noted for this application per the Guidelines published in the Federal Register.

Project Schedule