



Customer-Focused Solutions

**Stamford Urban Transitway
New Starts Criteria Document
Text, Templates, and Figures**

Volume I of II

**City of Stamford
Stamford, CT**

**Prepared for:
Federal Transit Administration**

**Prepared by:
TRC
In association with:
Fuss & O'Neill**

June 2000

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Executive Summary

EXECUTIVE SUMMARY

Stamford Urban Transitway Project Description and Objectives

The City of Stamford, Connecticut in cooperation with the Connecticut Department of Transportation is proposing to expand, through the Stamford Urban Transitway (SUT) Project, the use of rail and bus service as a means to decrease personal automobile use for work trip commutation, improve the transportation mobility of low income households, and encourage redevelopment opportunities in the City. The SUT project consists of physical and access improvements to the City's highly utilized Stamford Intermodal Transportation Center (SITC). As a committed package, plans include improvements to the train station which will double the boarding platform capacity, and an addition to the parking garage for train ridership, street alignment and operational improvements (including sidewalks and bike pathways) to improve accessibility to the SITC. In addition, modifications to public bus routes made possible by street alignment and traffic signal improvements, will improve transportation mobility of project area low income households and bus to rail intermodal passengers. Figure 1-1 provides an overview of the project area, including the SITC and the SUT within the City of Stamford.

Given the importance of the railroad and bus service afforded by the Stamford Intermodal Transportation Center (SITC) to both regional and intra-city travel, the City of Stamford and the State of Connecticut have committed approximately \$150 million to the SUT and SITC improvements package. The City of Stamford is requesting Section 5309 funding of \$23 million of the capital cost total for the SUT Project. The City funds expended approximately \$280,000 for an Environmental Assessment, planning studies, traffic studies, and Transportation System Management (TSM) improvements north of the SITC.

In a regional perspective, the SITC is the most heavily utilized mass transportation facility in the State of Connecticut. Metro-North operates 190 daily trains that stop at the SITC. Approximately 30 trains leave Stamford for New York during the morning commuter peak period and 28 trains arrive from New York into the SITC during the evening peak period. Use of the train service is multifaceted with approximately 2,500 riders using the service to commute from the Stamford area to NYC, and 1,500 riders using the trains inbound to service and manufacturing employment positions at industries located within the City of Stamford during peak hours. These inbound train riders connect to both bus and van service. During peak hours, three local bus routes, the "A," "S," and "H" lines serve businesses and residents in the eastern and southern section of Stamford. The "CC," Commuter Connection, bus line provides access to employment centers located in the Central Business District (downtown area). Overall, the SITC served by the SUT, is the transfer point for 15 local bus routes by CTTransit.

In addition to the public bus routes, a number of corporations located in eastern and southern Stamford operate van shuttles from the SITC to their corporate offices. Approximately 750 employees are transported by van from the SITC to corporate facilities such as Clairol Inc. and Pitney Bowes. The SUT will enhance bus and van access from the corporate centers to the train station at the SITC. The primary users of this connecting service are lower income employees in service and manufacturing employment positions.

The bus route alignment modifications that will be possible with construction of the SUT will significantly enhance the accessibility to employment opportunities in Stamford for limited mobility groups that arrive by train, and the work and personal trip mobility of low income households located in the project area, as well as encourage redevelopment in the SUT corridor area. Approximately five percent of the households within the census tracts served by the bus and train service feeding the SITC and the downtown Stamford area are classified as low income by the U.S. Census. Of the 773 low-income households, 224 are located within a 0.5 mile radius of SITC boarding points. The number of low income households in the southern and eastern sections of the City have been increasing over the past two years due to the availability of lower wage employment opportunities.

Project Commitment

As previously noted, the SUT is a top priority of the State of Connecticut and the Southwestern Connecticut Region. This project will enhance accessibility to the SITC, which is currently under a \$150 million expansion plan. Under the expansion project, two center island platforms are being added to the railroad station which doubles the passenger platform capacity to four trains. A 1,205 space commuter parking garage expansion is being implemented. In addition to the commitment of State funds for these two project components, the City of Stamford has funded \$185,000 to date for the planning of the SUT. A total of approximately \$280,000 has been expended towards land use and environmental studies, including:

- Ridership forecasts and concept engineering design: completed by Fuss & O'Neill, engineering consultant to the City; and,
- Environmental analyses: The City's environmental consultant, TRC Environmental Corporation, has performed detailed evaluations of the SUT project corridor. Evaluations conducted include Phase I Environmental Site assessments, land use inventory, natural resources analyses, and socioeconomic impact review.

A detailed breakdown of the State and City financial commitments to the Stamford Urban Transitway project are contained in Section 7.0 of the New Starts application.

Land Use and Redevelopment

The present land use in the vicinity of the SUT project is a mix of high density residential, commercial, industrial, municipal and institutional facilities. The City's land use Master Plan for the project area calls for the redevelopment of vacant land parcels for high density mixed use consisting of residential, office and commercial. Housing and employment opportunities proximate to the center City area will be generated by the planned development. The SUT project will enhance multi-modal transportation access to this planned development on both a regional (train to bus and van, auto to train) and intra-community (bus, pedestrian) basis.

Transportation and Environmental Benefits

Subsequent sections of the following New Starts application document the significant transportation and environmental benefits of the SUT project. From a regional transportation perspective, the additional train ridership that will result from the new parking garage expansion and station platform improvements, in conjunction with the increased bus use attributable to more direct route alignments made possible by the SUT street access improvements to the SITC, will result in an annual decrease of 18.72 million vehicle miles of travel (VMT). This decrease in vehicle travel will benefit the I-95 corridor congestion and also improve the currently congested operations formed by the I-95 ramp and frontage road intersections with city streets, resulting in annual travel time savings of 0.89 millions of hours.

The 18.72 million reduction in VMT results in an energy saving of 116,724 MMBTU/year. Significant reductions in automobile generated air emissions (CO,NOx,VOC,PM-10) and greenhouse precursor emissions also result.

New Starts Application Content

The SUT New Starts Application herein follows the template presentation format for reporting of criteria/measures contained in the Technical Guidance on Section 5309 New Starts Criteria, July 1999, by the Federal Transit Administration and therefore starts with Section 4.0 and ends with Section 7.0. Each Specific section consists of the following:

- Section 4.0 - The general project description contains requisite Certification of Technical Assumptions and Project Description.
- Section 5.0 - Mobility Improvements and Environmental Benefits presents a series of worksheets that quantify the value of travel time savings and low income households; and, provides summaries of air emission reductions, and energy savings attributable to the project. Also evaluated are Operating Efficiencies through the quantification of the change in operating cost per passenger trip and Cost Effectiveness which represents project incremental cost on a passenger basis.
- Section 6.0 - Transit Supportive Existing Land Use and Future Patterns describes the City's existing land use patterns, it's Master Plan and Neighborhood Plans, and policies to enhance train and bus use.
- Section 7.0 - Local Financial Commitment provides details on local share of project costs and capital/operation financing plan. Letters indicating elected official and public support for the Urban Transitway Project are also located in Section 7.0.

4.0 Project Description

SECTION 4.0 PROJECT DESCRIPTION

Template 4.1 Project Description		
Name of Project	Stamford Urban Transitway (SUT)	
Participating Agencies		
Lead Agency	Name	City of Stamford
	Contact person	Mani Poola, P.E.
	Address	888 Washington Blvd. Stamford, CT 06904
	Phone	(203) 977-4237
	Fax	(203) 977-4004
	Email	MPOOLA@ci.stamford.ct.us
Metropolitan Planning Organization	Name	Southwest Regional Planning Agency
	Contact Person	Ms. Tonya Court
	Address	1 Selleck Street Suite 210 East Norwalk, CT 06855
	Phone	(203) 866-5543
	Fax	(203)866-6502
	Email	court@swrpa.org
Transit Agency	Name	Connecticut Transit - Stamford Division
	Contact Person	Robert Calling
	Address	26 Elm Court Stamford, CT 06902
	Phone	(203) 327-7433
	Fax	(203) 353-0701
	Email	stamfordinfo@cttransit.com
State Department of Transportation	Name	Connecticut Department of Transportation
	Address	2800 Berlin Turnpike Newington, CT 06131-7546
	Phone	(860) 594-2000
	Fax	
	Email	
Other Relevant Agencies	Name	TRC Companies
	Contact Person	Glenn Harkness, Senior Vice President
	Address	Boott Mills South Foot of John Street Lowell, MA 01852
	Phone	(978) 656-3603
	Fax	(978) 453-1995
	Email	gharkness@trccos.com

Template 4.1 Project Description		
Other Relevant Agencies	Name	Fuss & O'Neill Inc.
	Contact Person	Joseph Balskus, P.E.
	Address	146 Hartford Road
		Manchester, CT 06040
	Phone	(860) 646-2469 x. 253
	Fax	(860) 643-6313
Email	jbalskus@FandO.com	
Corridor Definition	Length	The Stamford Urban Transitway (SUT) project study area corridor is approximately 0.7 miles in length. The project encompasses the integration of existing intermodal transportation (Metro North, Amtrak, Greyhound, CT Transit, Employer Shuttle Buses, Avis, Budget, a Taxi stand, and 2,112 space parking garage), a transitway connector to the transportation center from the south and east, several bus routes along the transitway, a proposed bicycle path and pedestrian walkway, and transit supportive businesses. (See Executive Summary)
	Mode/Technology	Expanded railroad capacity (center island platform expansion). Bus, pedestrian, bicycle, and vehicle access to the center. Parking garage expansion for bicycles and vehicles.
	Utilization of Existing Tracks/Right of Way	The SUT leading to the station would connect local roadways that are currently very narrow, circuitous and difficult to navigate. The proposed transitway would ease traffic congestion on the streets north of the transportation center which are over capacity. The proposed pedestrian walkways and bicycle route that would lead directly to the transportation center would provide a safe, easy, and environmentally sound way to access the transportation center. The project study area would use existing railroad tracks while incorporating two center island platforms for the boarding of passengers on two additional trains.
	Number of Stations	There is one existing station, the Stamford Intermodal Transportation Center, SITC.
	Location of Stations	The Stamford Intermodal Transportation Center is located south of Interstate 95 and southwest of the Central Business District. See Figure 1-1.
	Station with Park and Ride Lots identifying number of parking spaces	The existing train station at the SITC is currently under construction to accommodate the center platform project. A new parking garage addition will accommodate an additional 1205 vehicles. After the addition, the parking garage will be able to accommodate 2,112 vehicles. The parking garage will also be able to accommodate bicycles.

Template 4.1 Project Description

	Station with major transfer	The SITC is a major transfer point for the Metro North Commuter Rail running between New York City and New Haven, CT. See attached schedule 1-1 (Metro North New Haven Line) in Appendix N. The SITC is also a point of transfer for Amtrak. Amtrak has services that run from Washington DC to Boston, MA. See attached schedule 1-2 (Amtrak Service Washington to Boston) in Appendix N. The new Accella train will make a stop at the transportation center. The transportation center is also a major transfer point for all bus and train riders. All of the Stamford Division CT Transit bus routes make stops at the transportation center. Additionally, there are several employer shuttles that make pick ups and drop offs at the SITC. The proposed SUT would provide easy access to this busy multi-modal transportation center by vehicle, bus, bicycle or foot. The SUT would decrease congestion on North and South State Streets which is primarily attributable to traffic entering and exiting Interstate 95 and local residential streets south of the station.
	Facilities to other modes	The SITC is a link to the major employers in the Stamford area. The center provides a link to Employer Jitneys (Clairol, Pitney Bowes, etc), vital pick up and drop off point for CT Transit bus service and Greyhound bus departure and docking station.
	Number of vehicles/rolling stock	N/A
Interim	Length	The distance between each proposed bus stop is approximately 0.25 miles. The length of the pedestrian walkway from Elm Street to the transportation Center is approximately 1 mile.
Segments/Phasing	Mode/Technology	N/A
	Utilization of Existing Tracks/Right of Way	N/A
	Number of Stations	N/A
	Location of Stations	
	Station with Park and Ride Lots identifying number of parking spaces	N/A
	Station with major transfer facilities to other modes	N/A
	Number of vehicles/rolling stock	N/A
Type of Alignment by Segment	Above grade	N/A
	Below grade	N/A
	At grade	N/A
	Exclusive	N/A
	Mixed Traffic	N/A

Template 4.1 Project Description			
Current Status of Existing Right of Way	Ownership - who owns the right of way?	The majority of the existing Right-of-Way (corridor) uses public streets owned by the City of Stamford.	
	Current Use: active freight or passenger service	The existing corridor is used for local travel. Additionally, several commercial vehicles (trucks) use the right-of-way to access existing businesses in the project corridor (i.e. recycling center).	
	Abandoned?	There are several buildings along the right-of-way that are currently not occupied by business or residents.	
Capital Cost Estimate	Current year dollars	23,000,000	
	Year of Expenditure	Section 7 outlines capital cost estimates.	
Levels of Service (Existing Transit)	Headways		
	Weekday Peak	See CTTransit, Metro North Schedules in Appendix N	
	Weekday Off-peak	See CTTransit, Metro North Schedules in Appendix N	
	Weekday Evening	See CTTransit, Metro North Schedules in Appendix N	
	Weekend	See CTTransit, Metro North Schedules in Appendix N	
	Hours of Service		
	Weekday	4am-8pm New Haven Line (Metro North), 6am-8pm CTTransit	
	Weekend	24 hours New Haven Line (Metro North), 6am-8pm CTTransit	
Travel Demand Estimates	Project Boardings	Opening Year	Forecast Year
	Average Weekday	1168 new riders	N/A
	Peak Period		
	Midday		
	Evening		
	Weekend		
	Peak Hour		
	Pk Hr, Peak Direction	During the Metro North Peak Period, 1,168 new riders board in am and depart in PM	
	Peak Load		
	Annual	292,000 new riders	
	Transit System Linked Trips	Opening Year	Forecast Year
	Average Weekday	N/A	N/A
	Annual	N/A	N/A
Annual New Riders			
Project Function	<i>Summarize or reference documentation addressing the following:</i>		
	Purpose and Need	The City of Stamford in cooperation with the Connecticut Department of Transportation is proposing to expand through the Stamford Urban Transitway (SUT) Project the use of rail and bus service as a means to decrease personal automobile use for work trip commutation, improve the transportation mobility of low income households, and encourage redevelopment opportunities in the City.	

Template 4.1 Project Description			
	Goals and Objective	The project has four goals: increase bus and train ridership, decrease personal automobile use, provide a catalyst for redevelopment south and east of the SITC, and provide Opportunity for low income households.	
	Relationship of project to regional transportation system including:	The existing SITC is the most heavily utilized mass transportation facility in the State of Connecticut.	
	Intermodal access points	Stamford Intermodal Transportation Center is an access point for Metro North, Amtrak, CT Transit, Greyhound, and other modes of transportation. Stamford is a "gateway" to Washington, D.C., N.Y. City, and Boston, MA.	
	Impact of project and overall use of regional transportation system	The project will result in an increase in both bus and train ridership and additional trains going into and out of the station.	
Corridor Travel Markets	Number of Riders	Number	Percent
	To Central Business District	N/A	
	To Suburban Employment/Activity Centers	See Table 6.3	
	Work Trips		
Project Milestones/Schedule	Planning Milestones	The City of Stamford began construction on the center island platforms in 1996. The platforms are expected to be completed by 2002. The parking garage expansion is in the final engineering design phase and has funds appropriated to complete the project. Redevelopment is expected to occur for several years after the construction of the SUT.	
	Planning Studies Initiated	Neighborhood Development Plans	
	Planning Studies Completed	Stamford Harbor Area Development Plan, Sasaki Associates, Inc. and the Stamford Master Plan	
	LPA selected	N/A	
	LPA included in the financially constrained long range plan	N/A	
	Proposed Implementation Schedule	N/A	
	Included in Financially Constrained TIP	N/A	
	Initiation of DEIS	A Draft Environmental Assessment was completed by the City's Consultant TRC Environmental Corporation, in January 2000. A DEIS is not anticipated at this time.	
	Completion of DEIS	N/A	
	Initiation of FEIS	N/A	
	Completion of FEIS		

Template 4.1 Project Description		
	FFGA	
	Start-Up	
	Public Referenda	
Project Management Project Manager	Name	City of Stamford
	Contact	Mani Poola, P.E.
	Address	888 Washington Blvd Stamford, CT 06904-2152
	Phone	(203) 977-4237
	Fax	(203) 977-4004
	Email	MPOOLA@ci.stamford.ct.us
Agency CEO	Name	Dannel Malloy, Mayor
	Address	888 Washington Blvd Stamford, CT 06904-2152
	Phone	(203) 977-4150
	Fax	
	Email	
Key Staff: Overall New Starts Criteria	Name	TRC Environmental Corp.
	Contact	Glenn Harkness
	Address	Boott Mills South Foot of John Street Lowell, MA 01852
	Phone	(978)656-3613
	Fax	(978) 453-1995
	Email	gharkness@trccos.com
Key Staff: Overall New Starts Criteria	Name	Fuss & O'Neill
	Contact	James Parry, P.E.
	Address	146 Hartford Road Manchester, CT
	Phone	(860) 646-2469
	Fax	(860) 643-5921
	Email	jparry@fando.com
Key Staff: Ridership Forecasts	Name	Fuss & O'Neill
	Contact	Joseph Balskus, P.E.
	Address	146 Hartford Road Manchester, CT
	Phone	(860) 646-2469
	Fax	(860) 643-6313
	Email	jbalskus@FandO.com
Key Staff: Cost Estimates	Name	Mani Poola, P.E.
	Address	City of Stamford 888 Washington Street Stamford, CT
	Phone	(203) 977-4237
	Fax	(203) 977-4004
	Email	MPOOLA@ci.stamford.ct.us

Template 4.1 Project Description		
Key Staff: Environmental Documentation	Name	Steve Damiano
	Address	Boott Mills South Foot of John Street Lowell, MA 01852
	Phone	(978) 656-3657
	Fax	(978) 453-1995
	Email	sdamiano@trccos.com
Key Staff: Land Use Assessment	Name	Judy Bartos
	Address	Boott Mills South Foot of John Street Lowell, MA 01852
	Phone	(978) 656-3506
	Fax	(978) 453-1995
	Email	jbartos@trccos.com
Key Staff: Financial Assessment	Name	Mani Poola. P.E.
	Address	City of Stamford 888 Washington Street Stamford, CT
	Phone	(203) 977-4237
	Fax	(203) 977-4004
	Email	MPOOLA@ci.stamford.ct.us
Key Staff: Project Maps	Name	Judy Bartos
	Address	Boott Mills South Foot of John Street Lowell, MA 01852
	Phone	(978) 656-3506
	Fax	(978) 453-1995
	Email	jbartos@trccos.com

Template 4.1 Project Description

Contractors

Current Prime Contractors	Name	TRC Environmental Corp.
	Address	Boott Mills South Foot of John Street Lowell, MA 01852
	Phone	(978) 970-5600
	Fax	(978) 453-1995
	Email	
Prime Contractor: Project Manager	Name	Glenn Harkness
	Address	Boott Mills South Foot of John Street Lowell, MA 01852
	Phone	(978) 656-3603
	Fax	(978) 453-1995
	Email	gharkness@trccos.com
Current Subcontractors	Name	Fuss & O'Neill
	Address	146 Hartford Road Manchester, CT 06040
	Phone	(860) 646-2469
	Fax	(860) 643-6313
	Email	
Previous Planning Consultants	Name	Sasaki Associates, Inc.
	Address	64 Pleasant Street Boston, MA 02472
	Phone	(617) 926-3300
	Fax	
	Email	

Template 4.2 Certification Of Technical Assumptions

Lead Agency Certification Of Technical assumption in the development of The new starts criteria submission

The _____, acting in the capacity as lead agency for _____, the proposed New Starts project, understands that the Section 5309 New Starts criteria are used to evaluate the worthiness of proposed projects across the nation and that it is important that projects sponsors address the criteria in a consistent manner.

As Chief Executive Officer of _____, I hereby certify that _____ has followed FTA's Technical Guidance on Section 5309 New Starts Criteria in the preparation of this submission, including:

- Assuming identical highway and transit networks outside the corridor for the No Build, the TSM and the Build alternatives for the travel demand forecasts;
- Defining the build alternative as the project for which we are seeking FTA New Starts funding;
- Developing ridership forecasts for the New Starts project that are based on the same set of growth forecasts and land use assumptions that are used to estimate ridership for the NO Build and TSM alternatives;
- Allocating the population and employment growth on the basis of locally adopted land use plans;
- Analyzing the Build, TSM and No Build alternatives within the same basic policy setting, i.e., the model assumptions, parameters, and inputs are the same for all alternatives except for changes in the transportation network or other data that are directly attributable to each alternative.
- Reporting the New Starts criteria and specific measures only for the Section 5309 New Starts transit investment and not for the complete build alternative.

Any methods and assumptions that differ from those described in this section have been discussed with and concurred in by FTA.

Chief Executive Officer

Date

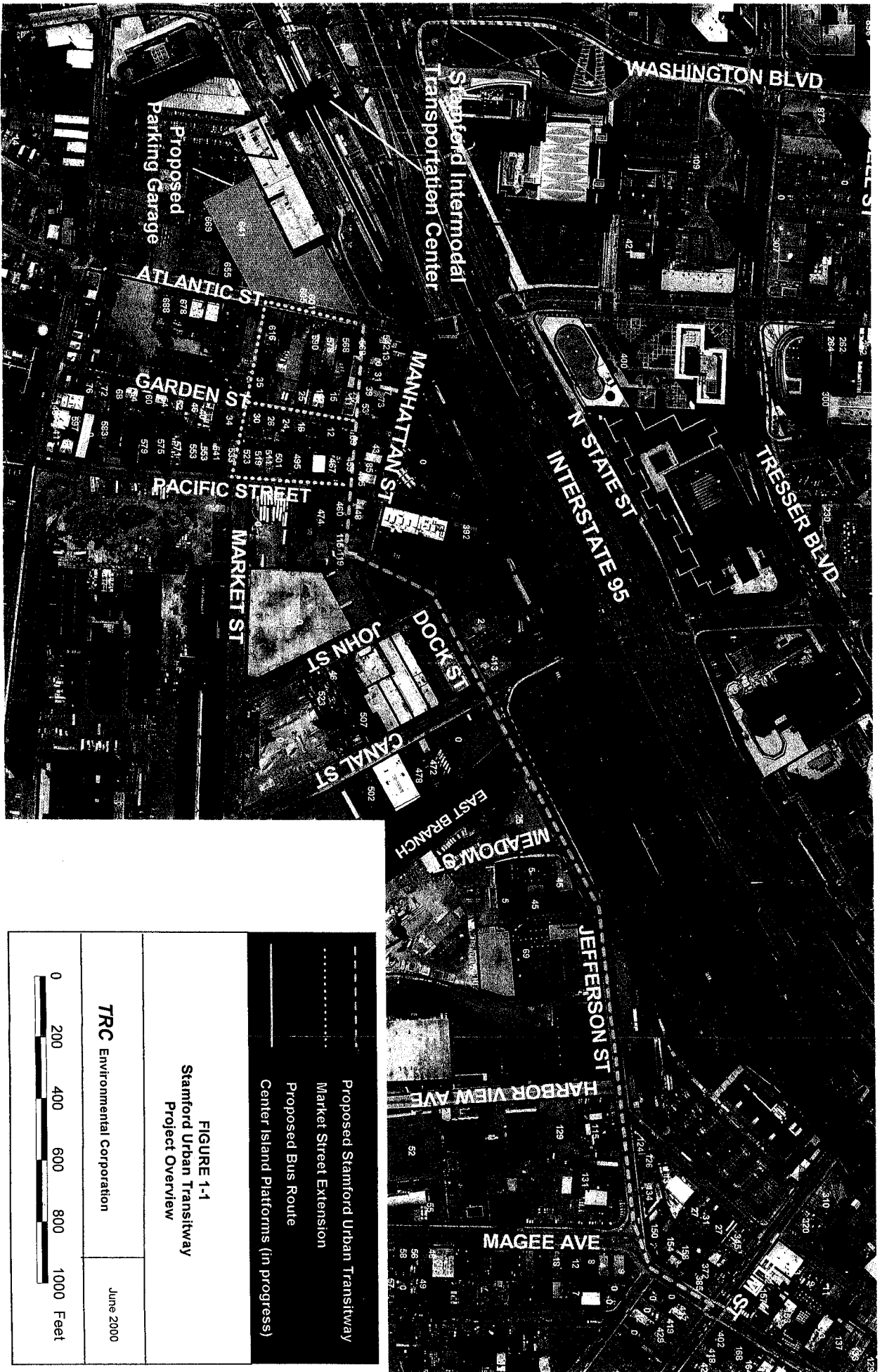


FIGURE 1-1
Stamford Urban Transitway
Project Overview

TRC Environmental Corporation

June 2000



*5.0 Mobility Improvements
and
Environmental Benefits*

SECTION 5.0 MOBILITY IMPROVEMENTS

5.1 Travel Time Savings (New Starts Criteria Template 5.1)

The proposed Stamford Urban Transitway (SUT) corridor project will enhance the vehicle travel link to the Stamford Intermodal Transportation Center (SITC), therefore will provide the following travel time savings as analyzed under the New Starts Criteria. Also planned and approved by the City of Stamford is the SITC Parking Garage investment, which will result in travel time savings. The City of Stamford has analyzed the “build” SUT project under New Starts Criteria versus the “No Build” (existing) and “Transportation System Management” (TSM) alternatives for the project. The following summarizes New Starts Template 5.1 – Travel Time Savings.

5.1.1 New Start Forecast vs. No Build Existing Service

Bus/Rail Transit

Automobile travel time savings compared with the “No Build” (existing) will occur as a result of the increased bus and rail ridership incurred by the construction of the SUT and use of the new parking garage addition at the SITC. The proposed SUT will provide an efficient direct link to the SITC, and is therefore more attractive to the general public to access the transit facility. A review of Bus/Rail transit analysis follows.

The existing Cove Road and Shippan Avenue bus routes, designated as the “A” and “S” routes respectively (see Figure 1-1, originate in residential neighborhoods in Stamford’s south side and proceed northerly towards downtown Stamford. Both routes ultimately converge on Elm Street and make various downtown stops on Tresser Boulevard and Atlantic Street before stopping near the SITC and returning to their point of origin in the Cove Road and Shippan Avenue neighborhoods. The “A” route experiences nearly 600 daily riders while the “S” route registers just under 300 riders per day. Many of these passengers work in Westchester County and the New York City area and use bus transit as a means of commuting to the SITC to board the Metro North railroad. Due to the northerly diversions along Tresser Boulevard and the frequent number of downtown stops, railroad bound passengers along the existing “A” and “S” bus routes often experience significant delay before reaching their destination, and use automobiles to access the SITC.

To calculate the total vehicle hours per day and total hours per year saved, it is assumed that the average vehicle travel speed throughout the intra-Stamford commute is less than 30 miles per hour due to the number of traffic signals within this area. For commuters to New York City, a one-way trip was estimated to take approximately 1 hour and 15 minutes. Travel time savings will occur for existing bus transit users (Routes “A” and “S”) as a result of existing routes being diverted to the proposed SUT. Of the 589 daily riders on the “A” route, approximately 50% are estimated to be traveling to the rail station (295 riders). Nearly 80% of the 278 riders on the “S” route are estimated to be traveling to the rail station (222 riders). “A” route riders will experience approximately 2.5 minutes of travel time savings while “S” route riders experience over 4 minutes of travel time savings compared to the No-Build and TSM alternatives.

The construction of the proposed SUT, with priority lanes and priority bus signals, will enable buses to provide faster and efficient access to the SITC from the Cove Road and Shippan Avenue neighborhoods. The Cove Road neighborhood also is part of the City's redevelopment plans. The new SUT will preclude the need for buses to divert north to Tresser Boulevard by providing direct access from Elm Street to the SITC via Jefferson Street and the realigned Dock Street (i.e. SUT improvements). Upon discharging the passengers off at the SITC, buses along the "A" and "S" routes will turn north on Washington Boulevard and traverse Atlantic Street and Tresser Boulevard on route back to Shippan Avenue and Cove Road.

The revised "A" bus route will provide a savings of 0.13 miles and over 2 minutes in travel time per bus while the revised "S" route will save over .3 miles and 4 minutes of travel time per bus. Since each revised bus route will traverse the downtown area in the reverse direction as the existing routes, the majority of the major downtown stops along Washington Boulevard, Atlantic Street, and Tresser Boulevard will be retained. Bus passengers from the Shippan and Cove neighborhoods commuting to the Tresser Boulevard/Atlantic Street area will not experience an increase in travel time as a result of the revised bus routes.

Stamford Intermodal Transportation Center (SITC) New Parking

Also linked to increased transit ridership is the State of Connecticut Department of Transportation's plan to build additional parking for the SITC users. Of the 1205 new parking spaces in the garage, it is assumed that 60% (723) of the facility users are new transit riders while 40% (482) of the users are existing riders currently using other stations or getting dropped off. The 723 new riders were previously commuting by car 50 miles to work in New York City for a total of 100 miles round trip. It can now be assumed their current commute by car is reduced to an average of only 10 miles round trip to the rail station (all intra-Stamford travel). Of the remaining 482 transit users, it is assumed that 50% of them are riders that have chosen to divert to the SITC from other stations, thereby reducing their round trip commute to the rail station from 30 miles to 10 miles. The remaining 50% of existing riders which were previously dropped off at the station will now choose to park and ride, thereby eliminating one 10 mile intra-Stamford round trip per passenger.

For commuters that are reverting from car use to the train, there will be a significant travel time savings experience. It was calculated that there will be 723 new rail riders as a result of the SITC and SUT New Starts Project. With the proposed project, the new rail riders will travel only 10 miles round trip (intra-Stamford) by car to the rail station and board a 45 minute express train to Grand Central Station, a total time savings of 1,076 hours/day or 269,000 hours/year.

5.1.2 Transportation System Management (TSM) Improvements Alternative

The City of Stamford has been engaged in TSM improvements throughout the downtown area north of the SITC and in some areas to the south. The TSM alternative in the immediate SITC area for existing bus transit users is limited to priority bus signals installed primarily along Tresser Boulevard for the "A" and "S" routes. Although signal delay would be reduced along the existing bus routes, the routes to the rail station are longer and traverse more signals than the

proposed SUT routes. Therefore, the total travel time saved under the TSM alternative is significantly less than the time saved under the SUT New Starts proposal.

By incorporating the TSM measures, it is assumed that the maximum increase in the number of new transit riders will be approximately 5%. According to the latest United States Census Tract Survey (1990), there are 8,817 workers in the project area neighborhoods that currently have bus service available. Approximately 10% of these workers currently use public transportation. The study area neighborhoods where public transportation is available include Census Tract numbers 219, 220, 221, and 224. As a result of the TSM alternative, a 5% increase in the bus ridership is assumed to result in over 40 additional riders and a net travel time savings of 108 hours/day, or 27,000 hours/year. This is far less than the savings anticipated under the SUT New Start proposal.

Travel Time Savings Worksheet

e (hrs)	Total Daily Change (hours)		Annual Factor	Total Annual Change (millions of hours)	
	New Start vs. No-Build	New Start vs. TSM		New Start vs. No-Build	New Start vs. TSM
Users	27	15	250	0	0
ers	1,283	108	250	0.321	0.027
al	314	139	250	0.079	0.035
el Time	1,624	262	250	0.4	0.066

Annual factor is derived from 50 five day work weeks per year (assumes 10 holidays/non-business days per year)

(Continued on Next Page)

Template 5.2 Low Income Households Worksheet

Census Tract	Number of Total Households	Number of Low-Income Households	Fraction of Tract within 1/2 mi. of New Start Boarding Points	Number of Total HH's within 1/2 mile of boarding Points	Number of Low-Inc. HH's within 1/2 Mile of Boarding Points
City of Stamford	41,945	1,105			
Tract 201	1,404	29	0.63	878	18
Tract 215	1,946	133		-	
Tract 217	2,430	43	0.54	1,322	23
Tract 218	3,633	118		-	
Tract 220	1,097	31		-	
Tract 221	2,454	58	0.54	1,323	31
Tract 222	924	108	0.61	565	66
Tract 223	1,663	253		-	
Total for All Boarding Points	15,551	773		4,087	139

Please see attachment QQ, U.S. Census Bureau Poverty 1999.

1. The 1990 census states 2.83 persons per family for tract 201, therefore used Three person family poverty level as low income household (\$13,423). The actual low income level used is \$14,999 because it is the end of income level 3 outlined in the Census data.
2. The 1990 census states 2.82 persons per family for tract 217, therefore used Three person family poverty level as low income household (\$13,423). The actual low income level used is \$14,999 because it is the end of income level 3 outlined in the Census data.
3. The 1990 census states 3.11 persons per family for tract 221, therefore used Three person family poverty level as low income household (\$13,423). The actual low income level used is \$14,999 because it is the end of income level 3 outlined in the Census data.
4. The 1990 census states 3.47 persons per family for tract 222, therefore used average of three person and four person household poverty threshold. Average poverty threshold used is \$15,170.50 $(13,410+13,423+16,895+16,954) / 4$ The actual low income level used is \$14,999 because it is the end of income level 3 outlined in the Census data.

Template 5.3. Environmental Benefits

The current air quality designation for the region as designated by the U.S. Environmental Protection Agency (EPA) in accordance with National Ambient Air Quality Standards (NAAQS) is "attainment" for carbon monoxide (CO), nitrogen dioxide (NO₂), lead (Pb), and sulfur dioxide (SO₂). Current designations for ozone and particulate matter (PM₁₀) are "non-attainment".

The proposed project results in a net reduction of Carbon Monoxide (CO), particulate matter (PM₁₀), nitrogen oxides (NO_x). Greenhouse gas emissions (CO₂) also result in a net reduction from the TSM and No Build alternatives. The proposed SUT New Starts project results in a net reduction in criteria pollutant, precursor emissions, and greenhouse gas emissions because of the number of new rail passengers and the increased usage of bus transportation to the SITC and Central Business District. Additionally, the project does not cause any other transportation related pollutant emissions.

Template 5.6, Change in Regional Energy Consumption, shows a reduction of 116,724 mmBTU/year and 115,789 mmBTU/year when compared to both the No-Build and TSM alternatives respectively.

Template 5.3

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5-9

Template 5.4

Template 5.5. Change in Greenhouse Gas Emissions Worksheet

Fuel Type	Change in mmBTU/Year		CO2 consumption (tons CO2/ million BTU)	Change in CO2 Emissions (TPY)	
	New Start vs. No- Build	New Start vs TSM		New Start vs. No-Build	New Start vs. TSM
Gasoline	-116,724	-116,724	0.0765	-8,929	-8,929
Diesel	-0.000114	-0.000114	0.0788	-0.00000898	-0.00000898
CNG	N/A	N/A	0.0585		
LPG	N/A	N/A	0.0678		
M85/E85	N/A	N/A	0.0765		
Electricity	N/A	N/A	0.0665		
Total				-8,929	-8,929

Template 5.6. Change in Regional Energy Consumption Worksheet

Veh. Class	Regional VMT/Year			Change in VMT/Year		Energy Consumption (BTU/veh-mi)	Change in mmBTU/Year	
	*No-Build	TSM	New Start	New Start vs. No-Build	New Start vs TSM		New Start vs. No-Build	New Start vs. TSM
Passenger Veh. (LDV/LDT)	0	0	-18,726,750	-18,726,750	-18,726,750	6,233	-116,724	-116,724
Heavy-Duty Vehicle	0	0	0	0	0	22,046	0	0
Bus/Diesel	0	0	0	-0.00273	-0.00273	41,655	-0.000114	-0.000114
Bus/CNG	N/A	N/A	N/A	N/A	N/A	41,655	N/A	N/A
Bus/LPG	N/A	N/A	N/A	N/A	N/A	41,655	N/A	N/A
Bus/M85 or E85	N/A	N/A	N/A	N/A	N/A	41,655	N/A	N/A
Bus/Electric	N/A	N/A	N/A	N/A	N/A	41,655	N/A	N/A
Light or Heavy Rail/Electric	N/A	N/A	N/A	N/A	N/A	77,739	N/A	N/A
Commuter Rail/ Diesel	N/A	N/A	N/A	N/A	N/A	100,000	N/A	N/A
Commuter Rail/ Electric	N/A	N/A	N/A	N/A	N/A	100,000	N/A	N/A
Total							-116,724	-116,724

* The Regional Vehicle Miles Traveled per year is not easily calculated. Additionally, regional vehicle miles traveled would not be representative of the project area. As a result, the existing conditions/No-Build Alternative was used as a base (0) in order to calculate the change in energy consumption as a result of the TSM and New Starts alternatives.

Template 5.7. Change in Operating Cost Per Passenger Trip

The new Starts Technical Guidance, July 1999, Template 5.7 requires a cost per passenger mile summary. In order to get a better understanding of the project, it was determined that developing costs per passenger trip instead of per passenger mile would be more appropriate for this project. The MetroNorth, New Haven Line and CT Transit Stamford Division costs were taken from the available Connecticut Department of Transportation (ConnDOT) publications for Fiscal Year 1999. The change in operating cost per passenger trip was determined for the MetroNorth railroad as well as CT Transit (bus).

The rail costs reveal a minimal change in overall system related costs due to the fact that the system related costs include transit facilities outside the project area. The Metro North New Haven Line includes all train stations between New Haven, CT and Grand Central Station, NY. (See Appendix N for a complete listing of New Haven Line Metro North Stations). Adding the increased passengers from the SUT New Start Project reflects a modest increase in the passenger trips when compared to the regional bus and rail transit system.

