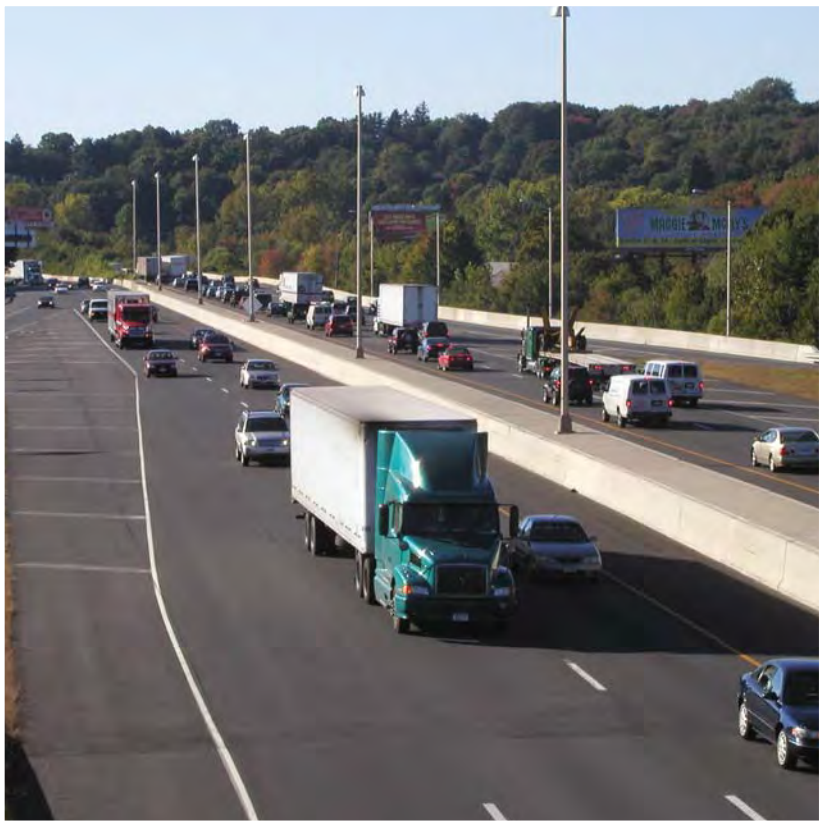

Central Naugatuck Valley

Long Range Regional Transportation Plan

2015-2040

NAUGATUCK VALLEY
COUNCIL of GOVERNMENTS

in conjuntcion with the

Central Naugatuck Valley Region
Metropolitan Planning Organization

March 2015

TITLE:	Long Range Regional Transportation Plan 2015-2040
AUTHOR:	Naugatuck Valley Council of Governments
SUBJECT:	A long range plan for the Central Naugatuck Valley Region's transportation system
DATE:	February 2015
LOCAL PLANNING AGENCY:	Naugatuck Valley Council of Governments
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SERIES NO:	N/A
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ABSTRACT:	An analysis of the Central Naugatuck Valley Region's existing transportation system as well as projections of future transportation needs and recommendations for improvement of the transportation system.

The preparation of this report was financed through grants from the U.S. Department of Transportation, the Federal Highway Administration and the Federal Transit Administration; a grant from the Connecticut Department of Transportation; a grant from the Connecticut Office of Policy and Management; and by contributions from member municipalities of the Central Naugatuck Valley Region.

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Figure 1.1 Regional Location

1. Introduction

The Central Naugatuck Valley Regional Planning Agency (CNVRPA) first became involved in transportation planning in the early 1960s with the Waterbury Area Transportation Study. The study analyzed land use, population, and employment, projected traffic volumes, and recommended improvements to the region's highway system. At the time, transportation planning focused on the construction and improvement of highways necessary to accommodate the growing preference of automobiles for transportation. Since then, the Central Naugatuck Valley Region Metropolitan Planning Organization's (CNVRMPO) involvement in transportation planning has expanded to include public transportation, transit services linking low-income families and welfare recipients to workplaces, transportation for elderly and disabled persons, energy efficient and cleaner modes of transportation, highway safety, pedestrian, bicycle, and greenway planning, and the environmental and economic impacts of highway projects. CNVRMPO is challenged to address these issues with limited financial resources for transportation services and facilities.

This update of the regional transportation plan examines the existing highway network and the region's transit services, projects future needs, and recommends improvements to the region's transportation system. Planning recommendations are primarily for 2015 to 2020. Analysis of the region's major highway needs extends to the year 2040. The plan is intended to meet the requirements of Title 23 of the United States Code, Section 134–135, which requires each Metropolitan Planning Organization (MPO) to carry out a transportation planning process for its designated region. The Naugatuck Valley Council of Governments (NVCOG) hosts the CNVRMPO, the state-designated Metropolitan Planning Organization (MPO) for the Central Naugatuck Valley Region (CNVR). The previous regional transportation plan was approved in 2011. Title 23 of the Federal Code of Regulations, Part 450, Section 322 specifies the requirements for the plan.

THE CENTRAL NAUGATUCK VALLEY REGION METROPOLITAN PLANNING ORGANZATION

The Central Naugatuck Valley Region Metropolitan Planning Organization (CNVRMPO) encompasses a total of 311 square miles in west central Connecticut. Thirteen municipalities form the CNVMPO: Beacon Falls, Bethlehem, Cheshire, Middlebury, Naugatuck, Oxford, Prospect, Southbury, Thomaston, Waterbury, Watertown, Wolcott, and Woodbury (see Figure 1.1).

THE NAUGATUCK VALLEY COUNCIL OF GOVERNMENTS

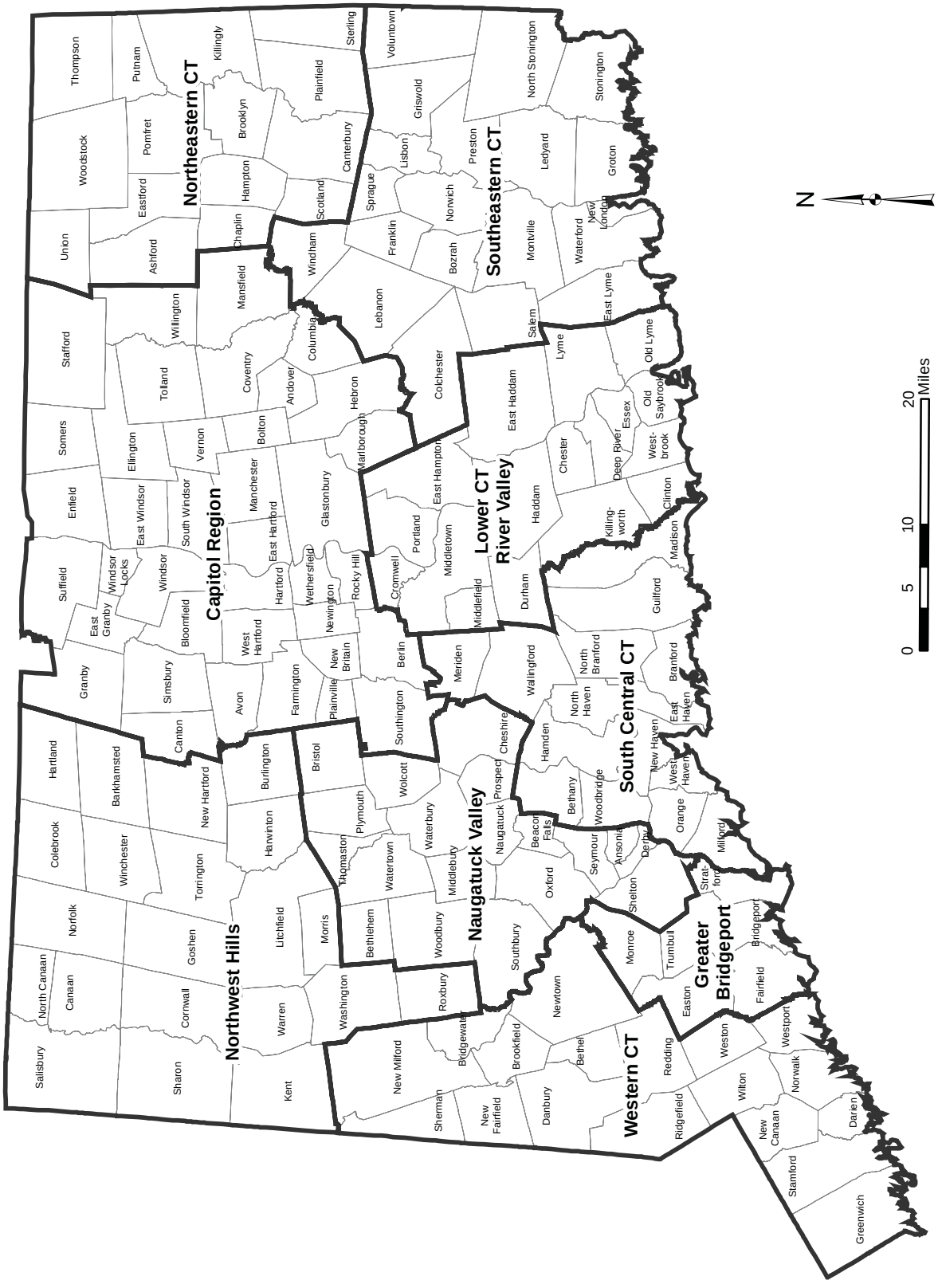
On January 1, 2015, the Naugatuck Valley Council of Governments (NVCOG) succeeded the Council of Governments of the Central Naugatuck Valley (COGCNV) as the host organization for th Central Naugatuck Valley Region MPO. Nineteen municipalities form the NVCOG: Ansonia, Beacon Falls, Bethlehem, Bristol, Cheshire, Derby, Middlebury, Naugatuck, Oxford, Plymouth, Prospect, Seymour, Shelton, Southbury, Thomaston, Waterbury, Watertown, Wolcott, and Woodbury. NVCOG also co-hosts the Greater Bridgeport Valley MPO and the Central Connecticut MPO. The Regional Planning Commission (RPC), whose members are appointed by the CEOs and local planning commissions, serves as the planning group within NVCOG. The RPC's recommendations are presented to NVCOG and the CNVRMPO

TRANSPORTATION PLANNING PROCESS

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) fund the region's transportation planning program. Funding comes from the federal *Moving Ahead for Progress in the 21st Century Act* (MAP-21)[1].

[1] MAP-21 funding has been extended through May 31, 2015 through a continuing resolution (H.J. Res 124)

Figure 1.2 Regional Planning Organizations in Connecticut



The regional planning grant is administered by the Connecticut Department of Transportation (CTDOT). MAP-21 contains a number of transportation funding programs (see Appendix B for a listing of funding sources). Each funding program has specific eligibility requirements, funding ratios, and other limitations. MAP-21 requires each metropolitan planning organization to develop and implement a performance-based, multimodal regional transportation planning process.

As the region's Metropolitan Planning Organization, the Central Naugatuck Valley Region Metropolitan Planning Organization is responsible for the regional transportation planning process for the greater Waterbury area. MAP-21 requires CNVRMPO to have a continuing, cooperative, and comprehensive transportation planning process, resulting in plans and programs that consider all transportation modes and support metropolitan community development and social goals. The Central Naugatuck Valley Metropoiltan Planning Organization is responsible for two primary transportation planning documents required under MAP-21: the Long-Range Regional Transportation Plan (LRP) and the Transportation Improvement Program (TIP).

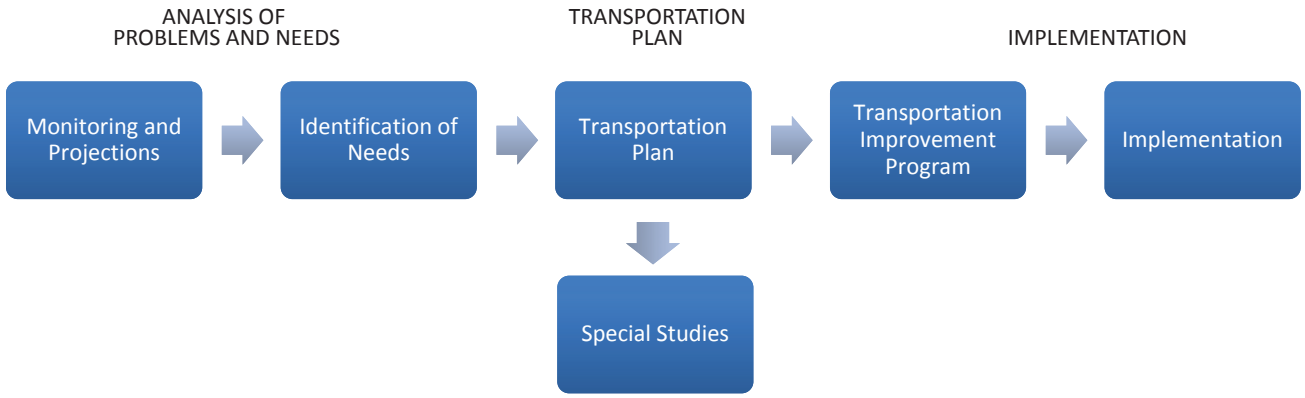
Long-Range Regional Transportation Plan

The Long-Range Regional Transportation Plan (LRP) identifies transportation deficiencies, recommends improvements, and advances priority transportation projects, in cooperation with CTDOT, municipal officials, and other organizations and interested citizens. The plan must consider the entire range of transportation choices and be financially constrained. All proposed projects must be consistent with the amount of funding that can be reasonably expected to be available. Priority projects from the plan are advanced for funding and implementation. CTDOT analyzes recommendations in the plan for conformity with the State Implementation Plan (SIP) for air quality. The analysis of the March 2015 Air Quality Conformity Report concludes that CTDOT's transportation program and regional long-range transportation plans are in conformity with requirements of the State Air Quality Implementation Plan (SIP) and the 1990 Clean Air Act Amendments.

Transportation Improvement Program

The Transportation Improvement Program (TIP) is a four-year funding schedule for highway and transit projects receiving federal funding from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). (Appendix B describes the funding programs.) The regional TIP is integrated into a Statewide Transportation Improvement Program (STIP). The TIP document with a project list can be viewed online at *www.nvcogct.org/content/top-publications*

The transportation planning and project implemention process is outlined in the diagram below.



TRANSPORTATION STRATEGY BOARD/ TRANSPORTATION INVESTMENT AREAS

In September 2000, state leaders convened a Transportation Summit to discuss the state's major transportation problems and possible strategies. An important outgrowth of the summit was state legislation creating the Connecticut Transportation Strategy Board (TSB), charged with developing a state transportation strategy plan. The TSB completed its latest state plan on January 6, 2003.

To assist the Connecticut Transportation Strategy Board (TSB) in developing a statewide strategic plan, Transportation Investment Areas (TIAs) were created for five major transportation corridors in Connecticut. The Regional Planning Organizations (RPOs) are the TIAs' building blocks because of the RPOs' role in transportation planning. The TIAs are responsible for corridor-level strategic transportation plans for the TSB. CNVRMPO is in the I-84 TIA as well as the Coastal (Western I-95) TIA. Without funding, most TIAs are no longer active.

Completed segment of the Naugatuck River Greenway in Beacon Falls

GOAL AND OBJECTIVES OF THE CENTRAL NAUGATUCK VALLEY REGION MPO

MAP-21's programs and initiatives seek to increase transportation safety, protect the environment, advance economic growth, improve system reliability, reduce congestiont, preserve the existing system, and reduce project delivery times MAP-21 also emphasizes outcome based performance measures. CNVRMPO will work closely with CTDOT, FHWA, FTA to establish performance measures and targets that comply with the National Goals The goals and objectives of the CNVRMPO's Regional Transportation Plan reflect the goals of MAP-21:

Goal

To develop and maintain an efficient transportation system that will provide the public with a high level of mobility, safety, and choice, while also addressing social, economic, and environmental needs and concerns.

Objectives

1. To provide a transportation system that reinforces and compliments the regional plan of conservation and development and the land use planning objectives of the region's 13 municipalities.

2. To maintain and improve the region's highway system with an emphasis on making better use of existing transportation facilities while seeking to improve safety and security and reducing traffic congestion, energy consumption, and motor vehicle emissions.

3. To maintain and improve public transportation service to provide a choice of travel modes, reduce highway congestion, improve efficiency, and provide mobility for people who are transit dependent.

4. To provide transportation services to expand employment opportunities.

5. To provide transportation services responsive to the elderly and persons with disabilities.

6. To plan and program transportation improvements according to existing and realistic future funding.

7. To support strong, sustainable, and livable communities.

8. To provide "walkable communities," especially in downtown centers and in congested areas, connecting these areas with commuter parking lots, residential areas, schools, commercial and industrial corridors, and recreation areas.

9. To increase the safety and security of the transportation system for motorized and non-motorized users.

2. Land Use

DEMOGRAPHICS

In 2010 the total population of the CNVR was 287,768, an increase of 5.6% from 2000 (see Table 2.1). The region grew faster than the state as a whole over the period. From 2000 to 2010, the state's population increased 4.9%.

Regional population growth continues to be greater in the rural and suburban areas outside of Waterbury, although the rate of suburban growth has slowed over the last three decades. The city's population rose 2.9% between 2000 and 2010. The three fastest growing municipalities over the period were Oxford (29.1%), Middlebury (17.4%), and Beacon Falls (15.3%).

The outward movement of population to the region's rural and suburban communities and away from the central city–experienced since the 1950s–is expected to continue in the CNVR but at a slower pace. Waterbury's population is anticipated to remain fairly stable.

Table 2.1 CNVR Total Population, by Municipality: 1980-2010

Geographic Area	Total Population				Percent Change		
	2010	2000	1990	1980	2000-2010	1990-2000	1980-1990
CNVR	287,768	272,594	261,081	237,382	5.6%	4.4%	10.0%
Waterbury	110,366	107,271	108,961	103,266	2.9%	-1.6%	5.5%
Remainder of Region	177,402	165,323	152,120	134,116	7.3%	8.7%	13.4%
Region							
Beacon Falls	6,049	5,246	5,083	3,995	15.3%	3.2%	27.2%
Bethlehem	3,607	3,422	3,071	2,573	5.4%	11.4%	19.4%
Cheshire	29,261	28,543	25,684	21,788	2.5%	11.1%	17.9%
Middlebury	7,575	6,451	6,145	5,995	17.4%	5.0%	2.5%
Naugatuck	31,862	30,989	30,625	26,456	2.8%	1.2%	15.8%
Oxford	12,683	9,821	8,685	6,631	29.1%	13.1%	31.0%
Prospect	9,405	8,707	7,775	6,807	8.0%	12.0%	14.2%
Southbury	19,904	18,567	15,818	14,156	7.2%	17.4%	11.7%
Thomaston	7,887	7,503	6,947	6,276	5.1%	8.0%	10.7%
Watertown	22,514	21,661	20,456	19,489	3.9%	5.9%	5.0%
Wolcott	16,680	15,215	13,700	13,008	9.6%	11.1%	5.3%
Woodbury	9,975	9,198	8,131	6,942	8.4%	13.1%	17.1%
Connecticut	3,574,097	3,405,565	3,287,116	3,107,576	4.9%	3.6%	5.8%

Source: U.S. Bureau of the Census, 2010 Census Redistricting Data (Public Law 94-171) Summary File; U.S. Bureau of the Census, Census of Population: 1980, 1990, 2000

Whites, the largest racial group in the region (79.4%), did not increase over the last decade, and Waterbury saw a -9.9% decline in the white population between 2000 and 2010. The region's population is 20.6% non-white, with a little over three-quarters living in Waterbury. African-Americans are the largest racial group, followed by Other Races, most likely residents who listed their race as Hispanic. Hispanics (of all races) make up 15% of the region's population.[1]

To assess whether minority and low-income populations may be disproportionately affected by transportation plans and projects, a civil rights/environmental analysis is included in the regional transportation plan (See Appendix F).[2] Waterbury has the only block groups with both 50% or greater minority populations and 20% or more of the population below 150% of the poverty level. There were 40 block groups meeting both criteria.

RESIDENTIAL

The CNVR has a higher population density than the state as a whole. In 2010, the region had an estimated 931 persons per square mile (which includes non-residential

Table 2.2 CNVR Population Density, by Municipality: 1970-2010

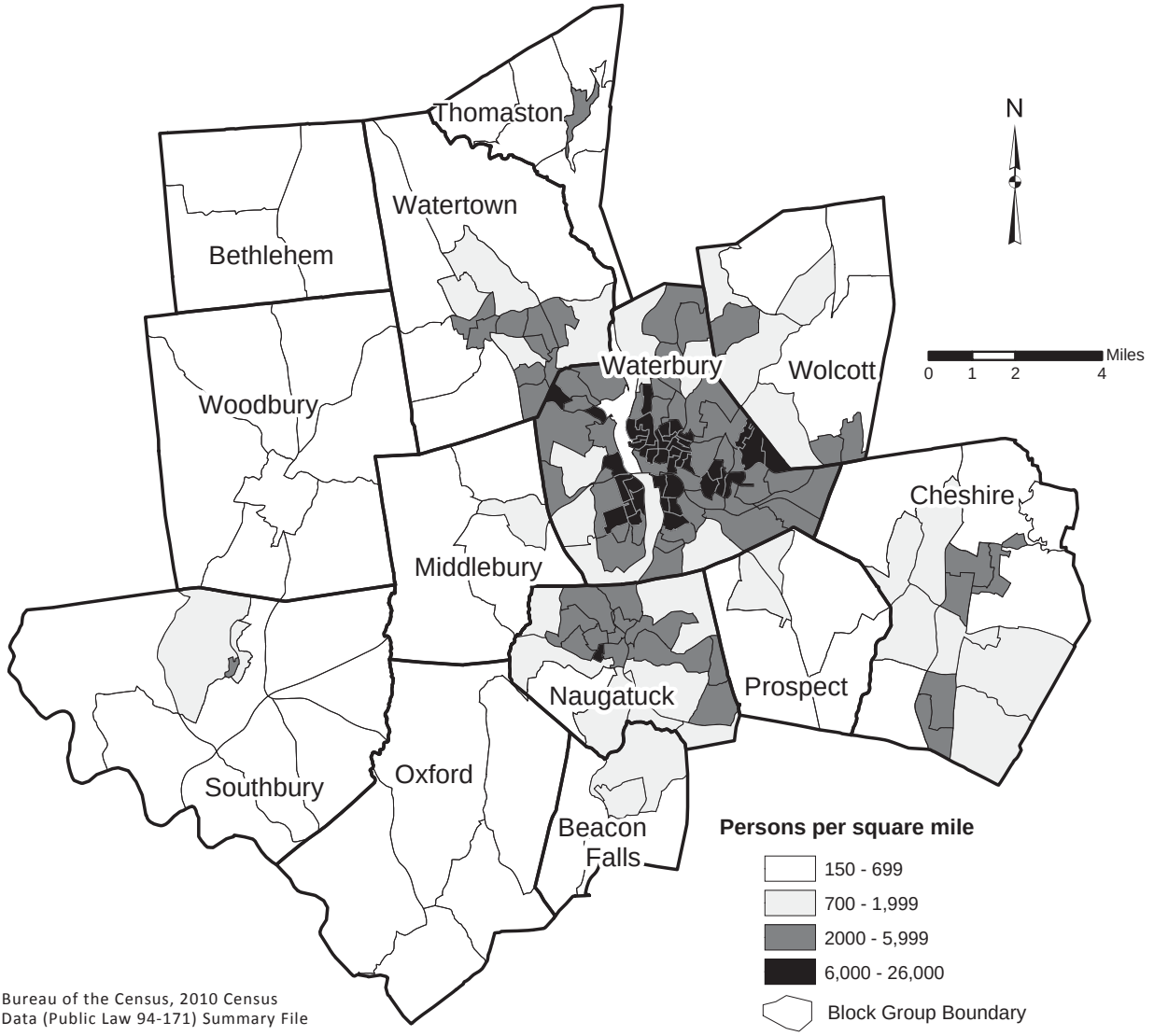
Geographic Area	Land Area (Sq Mi)	Population per Sq. Mile				
		2010	2000	1990	1980	1970
CNVR	309.02	931	882	845	768	722
Waterbury	28.55	3,866	3,757	3,816	3,617	3,784
Remainder of Region	280.47	633	589	542	478	411
Region						
Beacon Falls	9.77	619	537	520	409	363
Bethlehem	19.36	186	171	159	133	99
Cheshire	32.90	889	868	781	662	579
Middlebury	17.75	427	363	346	338	312
Naugatuck	16.39	1,944	1,891	1,869	1,614	1,405
Oxford	32.88	386	299	264	202	136
Prospect	14.32	657	608	543	475	457
Southbury	39.05	510	475	405	363	201
Thomaston	12.01	657	625	578	523	519
Watertown	29.15	772	743	702	669	638
Wolcott	20.43	816	745	671	637	612
Woodbury	36.46	274	252	223	190	161
Connecticut	4,844.13	738	703	679	642	626

Source: U.S. Bureau of the Census, 2010 Census Redistricting Data (Public Law 94-171) Summary File, U.S. Bureau of the Census, 1970 Census of Population, Number of Inhabitants, Final Report (PC91-A8), CT., U.S. Bureau of the Census, 1980 Census of Population and Housing Final Population and Housing Unit Counts, Connecticut (PHC 80-V-8). U.S. Bureau of the Census, 1990 Population Counts., U.S.Bureau of the Census, Census 2000 Summary File 1 (SF1)., U.S. Bureau of the Census, July 1, 2009 Population Estimates for Incorporated Places and Minor Civil Divisions, Vintage 2009

[1] U.S. Bureau of the Census, 2010 Census Redistricting Data (Public Law 94-171) Summary File

[2] Appendix F: Environmental Analysis presents detailed maps showing the location of the region's minority, low income, elderly populations, households without access to a vehicle, households using a bus as a means to work, and households that are linguistically isolated.

Figure 2.1 Population Density in the Central Naugatuck Valley Region: by Block Group, Census 2010



Source: U.S. Bureau of the Census, 2010 Census Redistricting Data (Public Law 94-171) Summary File

land and roads), compared to 738 statewide. From 2000 to 2010, the population density of the CNVR increased slightly both in the suburban areas and in Waterbury, the region's central city. Waterbury, which is extensively developed and has the largest proportion of multi-family units, had the highest population concentration in the region (See Figure 2.1). In 2010, Waterbury had 3,866 persons per square mile. Naugatuck was a distant second with 1,944 persons per square mile. The remaining towns in the central (Watertown, Thomaston, and Beacon Falls) and in the eastern (Wolcott, Cheshire, and Prospect) portions of the region had densities between 619 and 889 persons per square mile. The municipalities to the west (Bethlehem, Middlebury, Oxford, Southbury, and Woodbury) had densities ranging from 186 to 510.

The towns in the eastern and central portions of the region are partially sewered, allowing greater densities. Prospect has only a limited number of properties connected to sewer systems through adjacent municipalities. In the western portion of the region, Bethlehem and Woodbury

have no municipal sewer service of any kind, and service in Oxford and Southbury is limited although Oxford's is planned to expand significantly through Naugatuck. Some new developments are using alternative treatment plants to serve increased densities in unsewered areas. This newer technology requires approval from the Department of Environmental Protection.

EMPLOYMENT

Historically, the CNVR's employment and business centers have been in the core of the region — Waterbury, Naugatuck, and the Oakville section of Watertown. Employment has been shifting away from Waterbury to the suburban areas of the region. According to the Connecticut Department of Labor, 41% of the jobs were outside the city in 1970, 51% by 1990, and 60% by 2013.

Despite Waterbury's declining percentage of the region's employment base, the central city is still, by far, the largest employment center in the region (Figure 2.2). Cheshire, Watertown, Southbury, and Naugatuck are the major suburban employment locations. Manufacturing, especially fabricated metals, remains a strong part of the region's economy at 12% of employment. Most manufacturing jobs are now located outside of the urban core. Education and health services; trade, transportation, and utilities; and government are now the largest sectors of the region's economy.

COMMUTING PATTERNS

Commuting patterns in the Central Naugatuck Valley Region reflect national trends. Movement of the region's population from the central city to the suburbs and rural areas is accompanied by decentralized travel. As people move farther away from urban areas, they assume longer commutes and increased reliance on the automobile. CNVR commuting data indicate that the region's center is becoming less of a destination for work. The length of the average work trip of CNVR residents increased from 21 minutes in 1990 to 25 minutes in 2010.

In 2011, 41% of CNVR residents worked in the region. Another 14% traveled to the South Central (New Haven) Region, 10% to the Capitol Region, and 6% to the Housatonic Valley (Danbury) Region. (See Figure 2.3.) Almost 56% of those working in the Central Naugatuck Valley Region also resided in the region. The remaining workers in the region travel here from the South Central Region (10%), Central Connecticut (8%), Capitol (6%), elsewhere in Connecticut (19%), or out of state (3%). (See Figure 2.4.)

With 60% of the region's jobs in suburban towns, low-income residents are cut off from many jobs and services because they cannot afford a car. According to the 2009-2013 American Community Survey, 18% of Waterbury's households were without a vehicle.[3] Public transit cannot effectively serve low and medium density areas, but employment and shopping are growing outside of the city. Waterbury has, however, been able to retain a majority of the region's retail.

COMMERCIAL AND INDUSTRIAL BASE

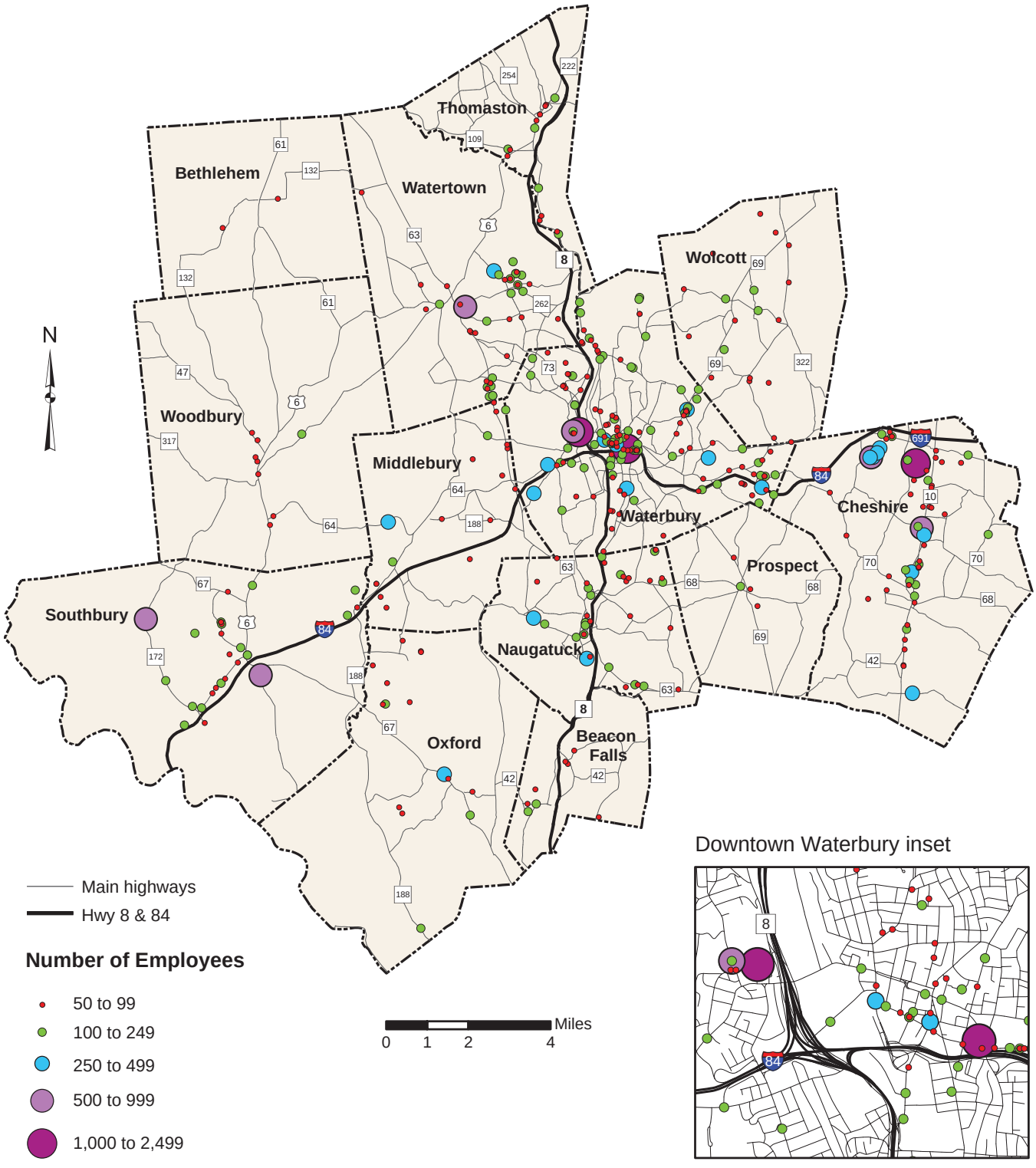
Downtown Waterbury

Downtown Waterbury has been the region's historical business, government, and cultural center. Waterbury is situated at the interchange of an interstate highway (I-84) and an expressway (Route 8), although access to downtown from the interchange requires improvement. The mixmaster, as the interchange of I-84 and Route 8 is commonly called, does not provide easy access for either local or through traffic. Truck traffic through Waterbury is hampered by the interchange. Traffic circulation, parking, and security are concerns of commuters and visitors to the city.

The downtown Waterbury redevelopment projects of the past decade have the potential to maintain downtown Waterbury as a major business and cultural center. The initiative has resulted in the construction of an arts magnet school, renovation of the Palace Theater, and the relocation of the University of Connecticut at Waterbury to East Main Street. The initiative established a 42-block area of downtown Waterbury as an Information Technol-

[3] U.S. Census Bureau, 2009-2013 American Community Survey
See Appendix G - Environmental Analysis

Figure 2.2 Major Employers in the Central Naugatuck Valley Region: 2010



Source: CERC (Connecticut Economic Resource Center) with updates by COGCNV, 2010

Figure 2.3. Place of Employment of CNVR Residents - Top Fifty Municipalities: 2011

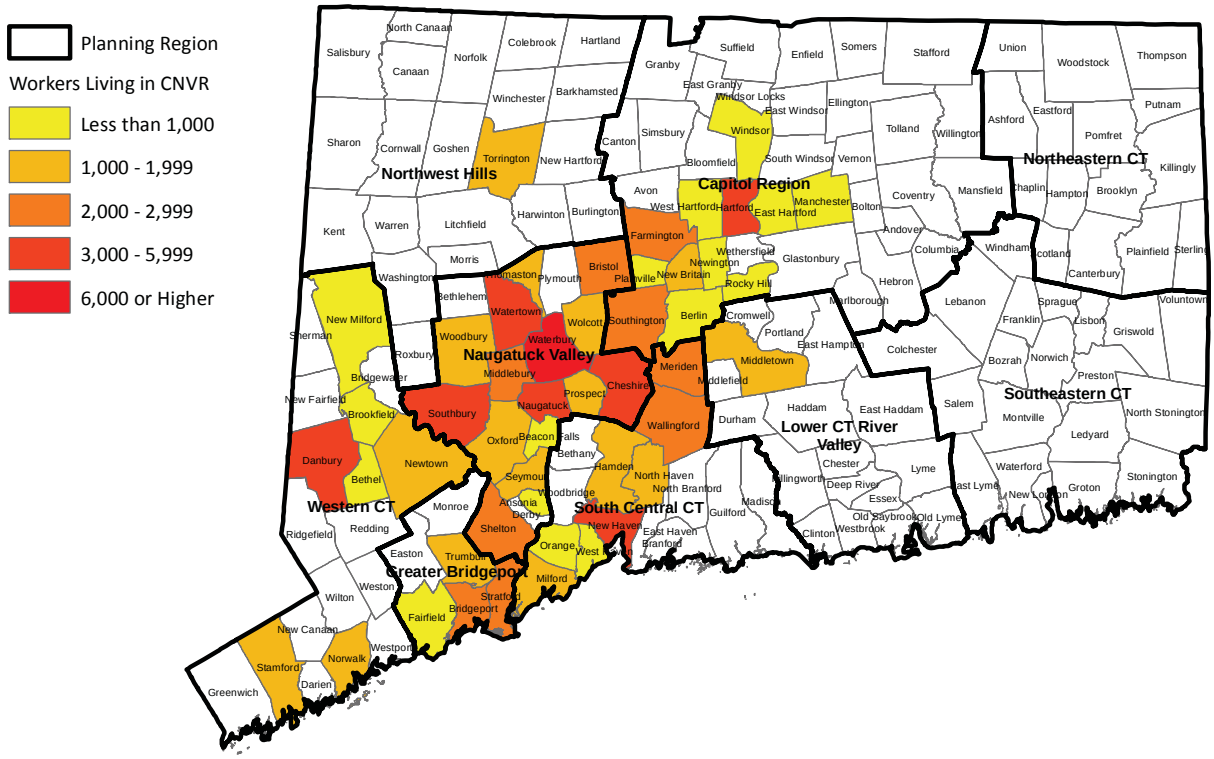
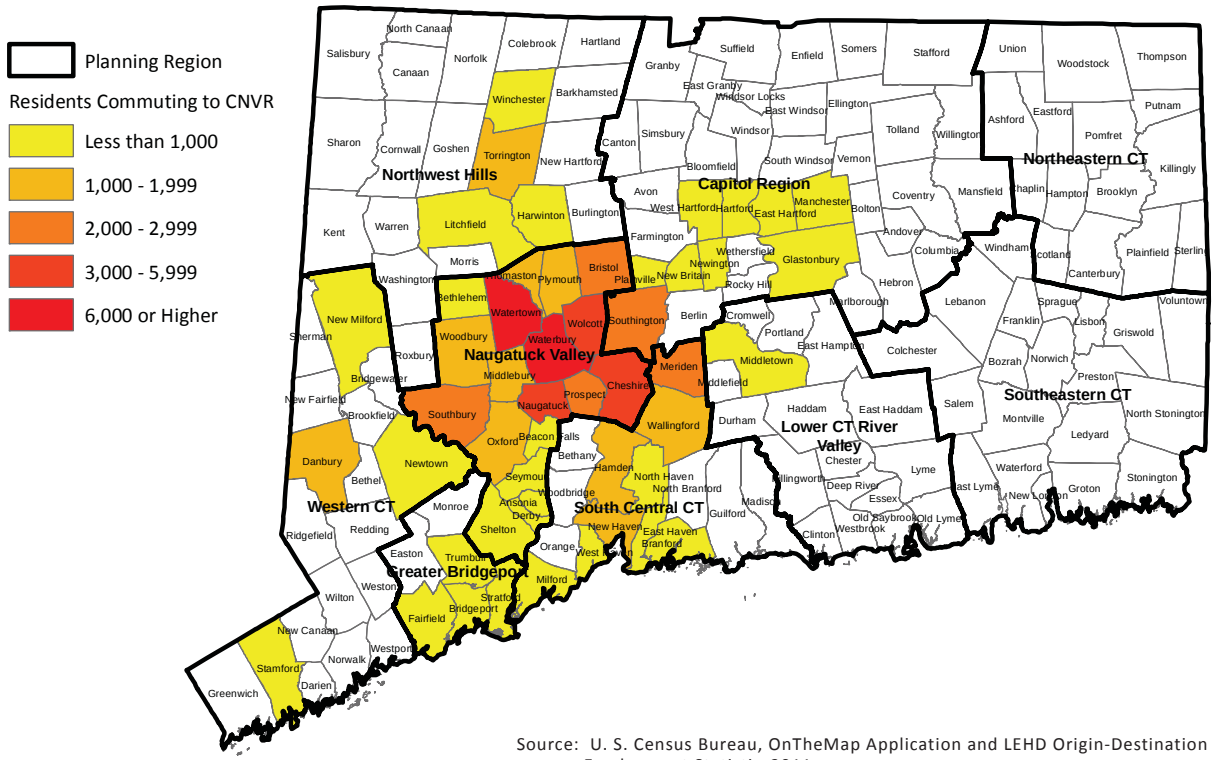


Figure 2.4. Place of Residence of CNVR Employees - Top Fifty Municipalities: 2011



Source: U. S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics2011.

ogy Zone (ITZ). In July 2014, the State of Connecticut and City of Waterbury announced the *Waterbury Next* initiative which will invest $12.2 million in economic development and infrastructure projects downtown. In September 2014, the City was also awarded a $14.4 million TIGER Grant which will fund complete streets improvements, and bicicyle and pedestrian amenities that will better connect Downtown to the Metro North Station and the future Naugatuck River Greenway.

Commercial Centers

The Brass Mill Center and Commons, located northwest of the I-84 and Route 69 interchange, is the region's largest retail center. Waterbury, Cheshire, Watertown, Naugatuck, and Southbury are the major commercial areas. Figure 2.5 is a map showing CNVR's thirty-one major commercial centers. Not surprisingly, they are located along major roads with high traffic volumes.

Industrial Parks

Because of a limited supply of suitable land for industrial development in Waterbury, a majority of the region's industrial growth is expected to continue in suburban areas. There are thirty two industrial parks located in seven towns in the region (see Figure 2.5). Cheshire and Oxford each have eight industrial parks. Waterbury has eleven which are dispersed and at the city limits with Prospect, Cheshire, Watertown, and Middlebury. Commerce Park has been proposed as a joint venture between the City of Waterbury and the Borough of Naugatuck on land abutting the Naugatuck Industrial Park. Oxford's rapidly developing industrial parks are concentrated around the Waterbury-Oxford Airport. Cheshire's industrial parks are generally near the I-84 and I-691 Interchange. The Watertown Industrial Park is near Echo Lake Road and Route 262. Beacon Falls has two industrial parks, Pinesbridge Industrial Park and Murtha Industrial Park, west of the Naugatuck River. Prospect Industrial Park is on the north side of Route 68 in the vicinity of Gramar Avenue. Other communities are marketing significant acreage of industrially zoned land which has not yet been developed, such as the proposed Southbury Corporate Park in Southbury between I-84 Exits 13 and 14.

OTHER SIGNIFICANT TRAFFIC GENERATORS

Educational Institutions

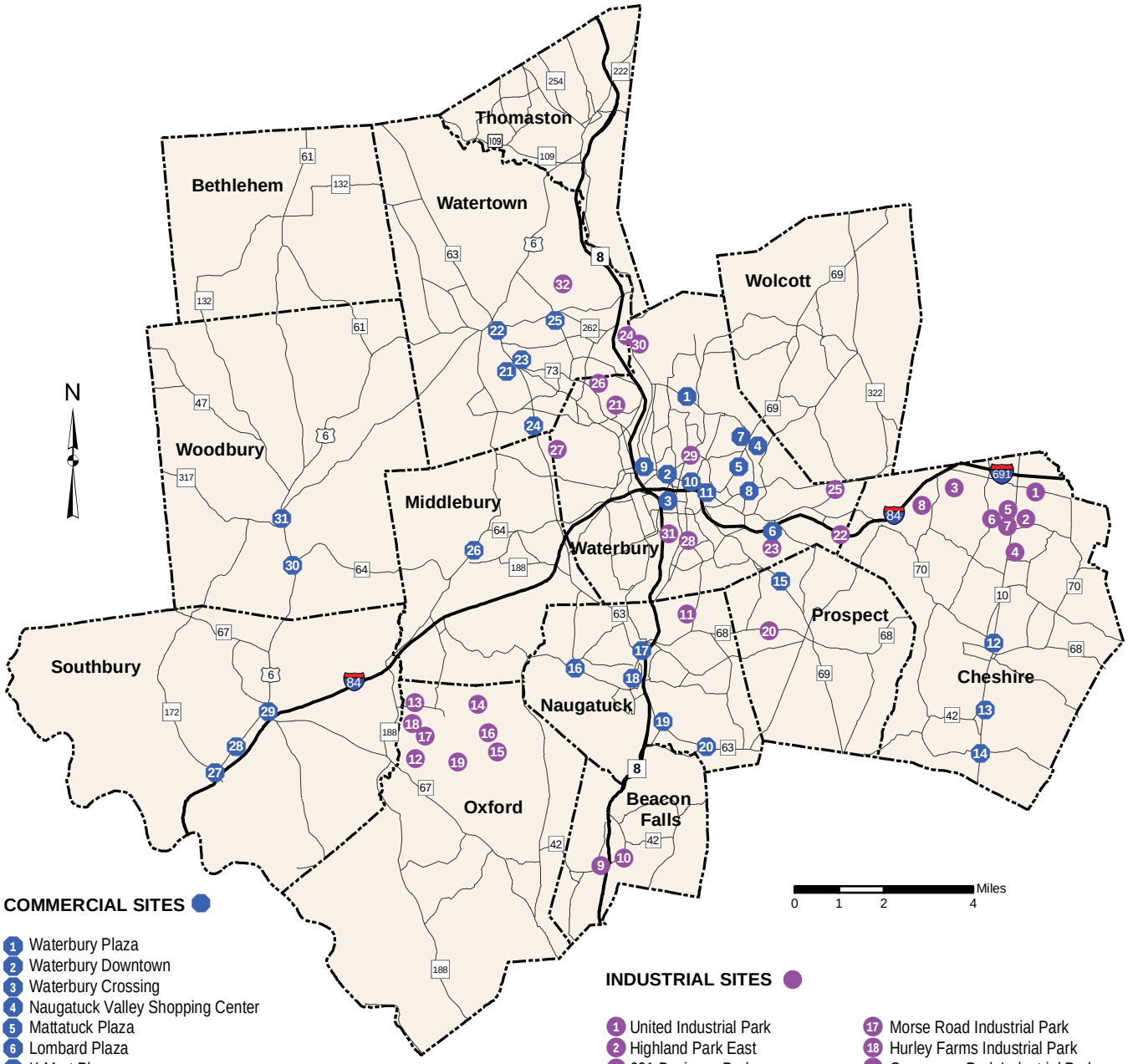
The region's higher educational facilities are concentrated in Waterbury. Post University, located in southwestern Waterbury, is the only college in the region with on-campus student housing. Approximately 465 students live on-campus while total daytime on-campus enrollment is approximately 800 students. Additionally, the university also has evening, weekend, and on-line enrollment for a total of about 15,000. Naugatuck Valley Community College (NVCC), located in western Waterbury, has an enrollment of close to 7,195 students. The Waterbury campus of the University of Connecticut, located on East Main Street in downtown Waterbury, serves more than 1,000 students, both undergraduate and graduate. All students attending these two institutions are commuters.

Medical Facilities

The region's two hospitals, Waterbury Hospital and Saint Mary's Hospital, are located in the city. Waterbury Hospital is northwest of the interchange of I-84 and the Route 8 expressway, and Saint Mary's Hospital is east of downtown Waterbury. The hospitals are two of the largest employers in the region. Together, they constructed a 36,000 square foot health care facility, the Harold Leever Cancer Center, in western Waterbury.

Some medical services are moving out of the city. Southbury, for example, has the 40,500 sq. ft. Southbury Medical Building on Old Waterbury Road as well as an urgent care facility on Main Street South and Diagnostic Imaging at Union Square. These facilities include doctors and hospital support from Waterbury, St. Mary's, and Danbury Hospitals. An additional 150,000 sq. ft. of space is either approved or in the planning process in Southbury. Similar medical office and laboratory space has been proposed in Watertown and Naugatuck.

Figure 2.5. Major Commercial and Industrial Sites in the Central Naugatuck Valley Region: 2015



COMMERCIAL SITES

1. Waterbury Plaza
2. Waterbury Downtown
3. Waterbury Crossing
4. Naugatuck Valley Shopping Center
5. Mattatuck Plaza
6. Lombard Plaza
7. K-Mart Plaza
8. East Gate Plaza
9. Colonial Plaza
10. Brass Mill Commons
11. Brass Mill Center Mall
12. Maple Croft Plaza
13. Cheshire Shopping Center
14. Ten South
15. Prospect Country Plaza
16. Mountview Shopping Plaza
17. Big Y Plaza
18. Naugatuck Downtown
19. Cross Point Plaza
20. Wal-Mart
21. Lombard Commons
22. Watertown Downtown
23. Watertown Shopping Plaza
24. Ten Acre Mall
25. Watertown Commercial Area
26. Middlebury Hamlet
27. Southbury Green
28. Union Square
29. Southbury Shopping Plaza
30. Middle Quarter
31. Woodbury Downtown

INDUSTRIAL SITES

1. United Industrial Park
2. Highland Park East
3. 691 Business Park
4. Commerce Park
5. Highland Park West
6. Grandview Court Industrial Park
7. Commerce Court Industrial Park
8. Cheshire Industrial Park
9. Pinesbridge Industrial Park
10. Murtha Industrial Park
11. Naugatuck Industrial Park
12. Willenbrock Industrial Park
13. Technology Park
14. Woodruff Hill Industrial Park
15. Jacks Brook Industrial Park
16. Fox Hollow Industrial Park
17. Morse Road Industrial Park
18. Hurley Farms Industrial Park
19. Commerce Park Industrial Park
20. Prospect Industrial Park and Center
21. Brookside Park
22. Captain Neville Industrial Park
23. Reidville Industrial Park
24. Waterbury Industrial Commons
25. Avenue of Industry
26. Mattoon Road Industrial Park
27. Commerce Campus Industrial Park
28. Pierpont Park
29. Great Brook Industrial Park
30. South Common Industrial Area
31. Roundhouse Industrial Park
32. Watertown Industrial Park

Source: Council of Governments of the Central Naugatuck Valley, 2010

3. Existing Transportation System in the Central Naugatuck Valley Region

The region's highway network is the mainstay of its transportation system. Although most households have at least one car for transportation, some people remain transit dependent. Local bus service, as well as a minibus service for the disabled and elderly residents, is provided in the more urban, densely populated areas of the Central Naugatuck Valley Region. In addition, all of the region's communities provide minibus service for the elderly. The Job Access and Reverse Commute program provides rides to work or to job training for low-income and welfare-to-work clients. Intercity bus service links the region to Hartford, New Haven, Boston, Springfield, Providence, Danbury, and New York City. Limited service is available to Torrington and Pittsfield, MA. Taxi service is also available in the region.

Passenger rail service links the region to cities in southern Connecticut and to New York City. Although trucks handle most of the region's freight shipments, rail service is available along the Naugatuck River. The region's aviation facility, the Waterbury-Oxford Airport, provides general aviation service as well as charter passenger and airfreight service. Walkways, bikeways, greenways, and other transportation enhancements offer alternatives to motorized transportation and help provide a seamless trip for the user. This section describes the region's transportation facilities and services.

HIGHWAYS AND ROADWAYS

Existing Highway Network

The regional highway system functions as the primary means of distributing people and goods within and through the region. Most of the highway traffic is accommodated by 46 miles of expressways. Interstate 84 is the region's principal east-west expressway. To the west, I-84 provides access to Danbury and the New York metropolitan area. To the east, it connects to I-91 in Hartford and I-90 in Massachusetts, which links to the Boston metropolitan area. Within the CNVR, traffic volumes on I-84 peak through Waterbury where average daily traffic (ADT) in 2012 reached 124,900 vehicles. Trucks constituted 13.6% of traffic on the highway in 2009.[1]

Route 8 is the region's north-south limited access expressway. It connects Interstate 95 to I-84, linking Bridgeport and Waterbury, and intersects the Merritt Parkway in Trumbull. To the north, Route 8 provides access to Torrington, Greater Litchfield County, and southwest Massachusetts. Traffic volumes peak in Waterbury, where ADT in 2012 reached 77,500 vehicles.

Interstate 691 serves as an expressway connector between I-84 in Cheshire and Interstate 91 in Meriden. In 2009, ADT along I-691 in Cheshire was estimated to be 53,400 vehicles. Trucks constituted 13.9% of traffic on the highway in 2009.[1]

The highway network includes 200 miles of arterial roads, which facilitate the flow of traffic within and between municipalities. Some of the principal arterial routes in the CNVR are State Routes 10, 63, 68, 69, 70, and 188, and U.S. Route 6. To the southeast, Routes 10, 63, and 69 link the CNVR with the New Haven metropolitan area. To the north and the east, Route 6 and Route 69 provide access to Bristol, with Route 6 rejoining I-84 in Farmington. Figure 3.1, located on the next page, shows the region's major roads.

[1]Connecticut Department of Transportation, *2012 and 2009 Traffic Volumes: State Maintained Highway Network.*

Figure 3.1 Major Highways and Roadways in the Central Naugatuck Valley Region: 2010

Source: Connecticut Department of Transportation, Cartographic Transportation Data, 2007

Highway Congestion

Highway traffic congestion impedes the flow of vehicles, causing motorist delays, decreased safety, and increased fuel consumption and vehicle emissions. The Federal Highway Administration (FHWA) defines congestion as "the level at which transportation system performance is no longer acceptable due to excessive travel times and delays."[2] FHWA reports that forty percent of all delay is caused by insufficient capacity, which is evidenced by "bottlenecks." Incidents such as crashes and disabled vehicles account for twenty-five percent of all delay. Inclement weather, construction work zones, special events, and poor signal timing are also causes of delay. [3]

A common measure of highway congestion is the volume-to-capacity (v/c) ratio. The v/c ratio is defined as the peak hour traffic volume divided by a road segment's hourly vehicle capacity. Road segments with v/c ratios over 1.00 have peak hour traffic volumes that exceed the road's hourly capacity. Factors used in determining v/c ratios include: number of lanes, lane width, truck traffic, traffic signal timing, abutting land use, and terrain. In addition, CNVRMPO collects and analyzes travel speed data for corridors identified as congested in its updates to the *CNVR Congestion Management System Report*. Both measures for identifying congestion bottlenecks are presented below:

Volume to Capacity Ratios

The v/c ratios and projections in this plan are obtained from the Connecticut Department of Transportation's *2009 Congestion Screening and Monitoring Report.* State roads carry a majority of the region's passenger and commercial traffic. The volume-to-capacity analysis serves as a "first cut planning method," or first round of congestion analysis, to identify corridors for further study.

A summary of the region's most congested locations in 2008 is listed below, organized by route. A comprehensive list of congested locations (with v/c ratios at or above 1.0) is listed in Table 3.1. These same segments are shown in Figure 3.2.

Route 10 in Cheshire

- Route 42 to Elmwood Dr.
- Chipman Dr. to Wallingford Rd
- Fieldstone Ct. to E. Johnson Ave.
- I-691 to Cheshire-Southington Town Line

Route 70 in Cheshire

- Winslow St. to Moss Farm Rd
- Mountain Rd. to Route 10 (Highland Ave.)

Route 69 in Waterbury

- East of Union St.
- Frost Rd. to South Circle
- Harpers Ferry Rd. to Edgewood Ave.

Interstate 84 in Waterbury

- In the vicinity of Route 8
- East of Washington St. overpass to Austin Rd.

Route 42 in Beacon Falls

- At Cook Ln.

Travel Speed Delay

COGCNV staff performed a traffic delay study in 2008. The study evaluated congestion within the region by estimating travel speeds for selected major corridors with high v/c ratios. A GPS receiver was used to collect travel speeds along the study corridors during peak periods. Below is a list of congested locations identified in the *CNVR Congestion Management System Report: 2008*

Route 10 in Cheshire

- Near the Route 42 junction
- Near the Route 68/70 junction
- Near the I-691 interchange

Route 63 in Naugatuck, Middlebury, and Watertown

- At Route 8/S. Main St (SR 709) in Naugatuck
- At Route 64 in Middlebury
- At Bunker Hill Road in Watertown

Route 69 in Waterbury and Prospect

- Harper's Ferry Road to I-84 overpass in Waterbury
- At Union Street/Washington Street in Waterbury

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[2] *Management Systems*. 23 CFR 500.109. 2010.

[3] *Traffic Congestion and Reliability: Trends and Advanced Strategies for Congestion Mitigation*, Cambridge Systematics, Inc. for FHWA Resource Center, 2004. *www.ops.fhwa.dot.gov.*

Table 3.1 Congested State Highway Segments in the CNVR, Ranked by Route and Municipality: 2008

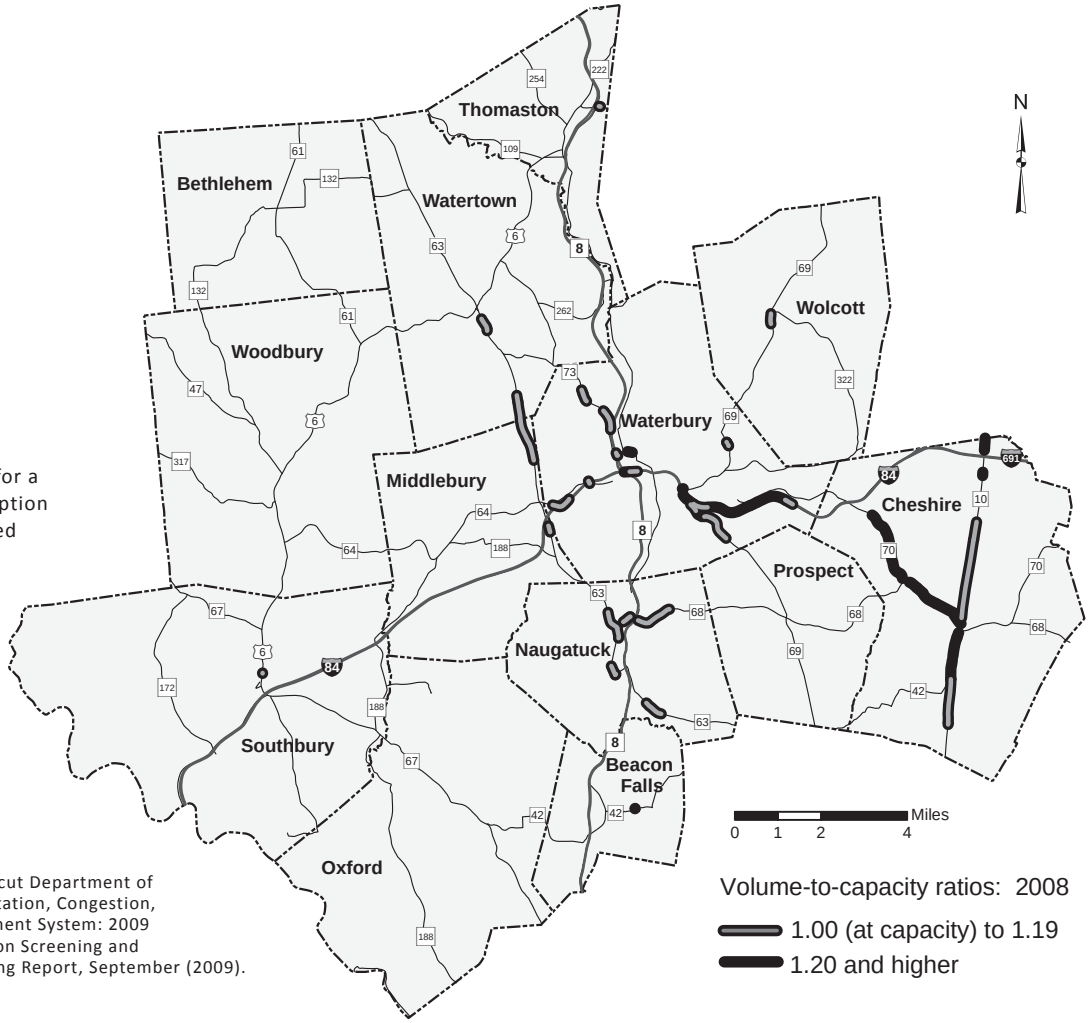
Rte	Town	Description	V/C ratio 2008
Volume to capacity ratio of 1.0 or greater (Traffic volumes at or above capacity)			
6	Southbury	At Pine Hill Rd	1.06
6	Thomaston	Route 222 to Prospect St	1.08
8	Waterbury	At Rte 73 junction	1.13
10	Cheshire	At Cook Hill Rd	1.02
10	Cheshire	N of Cook Hill Rd to Rte 42 (EB)	1.02
10	Cheshire	At Rte 42 (No Brooksvale Rd)	1.75
10	Cheshire	Rte 42 (No Brooksvale Rd) to .1 Miles N of Elmwood Dr	1.57
10	Cheshire	S of Chipman Dr to Cornwall Ave	1.57
10	Cheshire	Cornwall Ave to N of Wallingford Rd	1.48
10	Cheshire	.12 Miles N of Rte 68/70 Junction to Creamery Rd	1.02
10	Cheshire	Creamery Rd to Sandbank Rd	1.11
10	Cheshire	.13 Mi N of Fieldstone Ct to .09 Mi S of East Johnson Ave	1.43
10	Cheshire	Exit from WB I-691 to Southington TL	1.30
42	Beacon Falls	At Cook Ln	1.35
63	Naugatuck	Hazel Ave to .17 Mi N of Warren Ave	1.08
63	Naugatuck	Bland St to Cherry St	1.14
63	Naugatuck	Cherry St to Rubber Ave	1.00
63	Naugatuck	Water St to Route 68	1.04
63	Naugatuck	Rte 68 to Field St	1.02
63	Middlebury	.10 Mi N of Country Club Rd to Wooster Brook Overpass	1.05
63	Middlebury	Park Rd to Middlebury-Watertown TL	1.06
63	Watertown	Middlebury-Watertown TL to State St	1.14
63	Watertown	State St to Bunker Hill Rd	1.15
63	Watertown	French St to Echo Lake Rd	1.01
64	Waterbury	Chase Parkway to Interchange 17 on I-84	1.09
68	Naugatuck	Spring St to Greenwood St	1.12
68	Naugatuck	Union & Golden St to Lines Hill St	1.04
68	Naugatuck	Lines Hill St to Union City Rd	1.09
69	Waterbury	East Mountain Rd to N Junction of Hamilton Ave	1.02
69	Waterbury	Harpers Ferry Rd to Edgewood Ave	1.26
69	Waterbury	Edgewood Ave to Access to EB I-84	1.07
69	Waterbury	E of Union St	1.83
69	Waterbury	Near Frost Rd	1.15
69	Waterbury	N of Frost Rd to South Cir	1.23
69	Waterbury	At South Cir	1.15
69	Wolcott	N Junction of Potuccos Ring Rd to Rte 322	1.05
70	Cheshire	Winslow St to .13 Miles West of Marion Rd	1.25
70	Cheshire	.08 Miles West of Marion Rd to Marion Rd	1.25
70	Cheshire	Marion Rd to Moss Farms Rd	1.35
70	Cheshire	Quarry Village Rd to .04 Miles West of Peck Ln	1.76
70	Cheshire	Carter Lane to Willow St	1.28
70	Cheshire	Willow St to Maple Ave	1.39
70	Cheshire	Maple Ave to Rte 10 (Highland Ave)	1.31
73	Waterbury	Deerfield Ave to Gertrude Ave #1	1.10
73	Waterbury	Gertrude Ave #1 to Irvington Ave	1.10
73	Waterbury	East Aurora St to Junction with Rte 8	1.08
84	Waterbury	EB Access From SB Rte 8 to W of EB Access from NB Rte 8	1.32
84	Waterbury	EB Access From NB Rte 8 to EB Exit to Meadow St #1	1.04
84	Waterbury	.19 Miles E of Washington St Overpass to EB Access from Rte 69	1.22
84	Waterbury	EB Access from Rte 69 to EB Exit to Harpers Ferry Rd	1.18

Table 3.1 Congested State Highway Segments in the CNVR, Ranked by Route and Municipality: 2008

Rte	Town	Description	V/C ratio 2008
84	Waterbury	EB Exit to Harpers Ferry Rd to Harpers Ferry Rd Underpass	1.29
84	Waterbury	Harpers Ferry Rd to underpass to Scott Rd	1.28
84	Waterbury	Scott Rd Underpass to EB Access from Scott Rd	1.29
84	Waterbury	EB Access From Scott Rd to EB Exit to Austin Rd	1.22
84	Waterbury	EB Exit to Austin Rd to .04 Miles E of EB Exit to Austin Rd	1.12
84	Waterbury	.04 Mi E of EB Exit to Austin Rd to .1 Mile W of Austin Rd Underpass	1.18
845	Waterbury	West Main St to Country Club Rd	1.17
846	Waterbury	Riverside St NB to start of one way access to NB Route 8	1.15
847	Waterbury	Judd St to .04 Mi N of Sperry St	1.24

Source: ConnDOT, Congestion Management System: 2009 Congestion Screening and Monitoring Report (2009)

Figure 3.2 Highway Congestion in the Central Naugatuck Valley Region: 2008



*See Table 3.1 for a detailed description of the congested locations.

Source: Connecticut Department of Transportation, Congestion, Management System: 2009 Congestion Screening and Monitoring Report, September (2009).

- At E. Main Street in Waterbury
- Manor Avenue to Meriden Road
- Woodtick Road to South Circle Road
- Wolcott Road to Lakewood Road in Waterbury
- At the Route 68 junction in Prospect

Route 70 in Cheshire

- At the I-84 interchange
- At the west junction with Route 68
- At the Route 10 junction

Route 73 in Waterbury and Watertown

- Near Steele Brook Shopping Center and Falls Ave. in Waterbury
- Buckingham St. to Davis St. in Watertown
- Near the Route 63 junction in Watertown

Interstate 84 in Waterbury

- Washington Street overpass in Waterbury to the Route 70 exit in Cheshire.

Highway Safety

High Hazard Accident Locations

High hazard accident locations consist of state highway segments and intersections with a higher frequency of accidents than would be expected for that type of roadway. To be classified as hazardous by CTDOT, a location must

Table 3.2 High Hazard Accident Locations on State Roads in the CNVR: 2010-2012

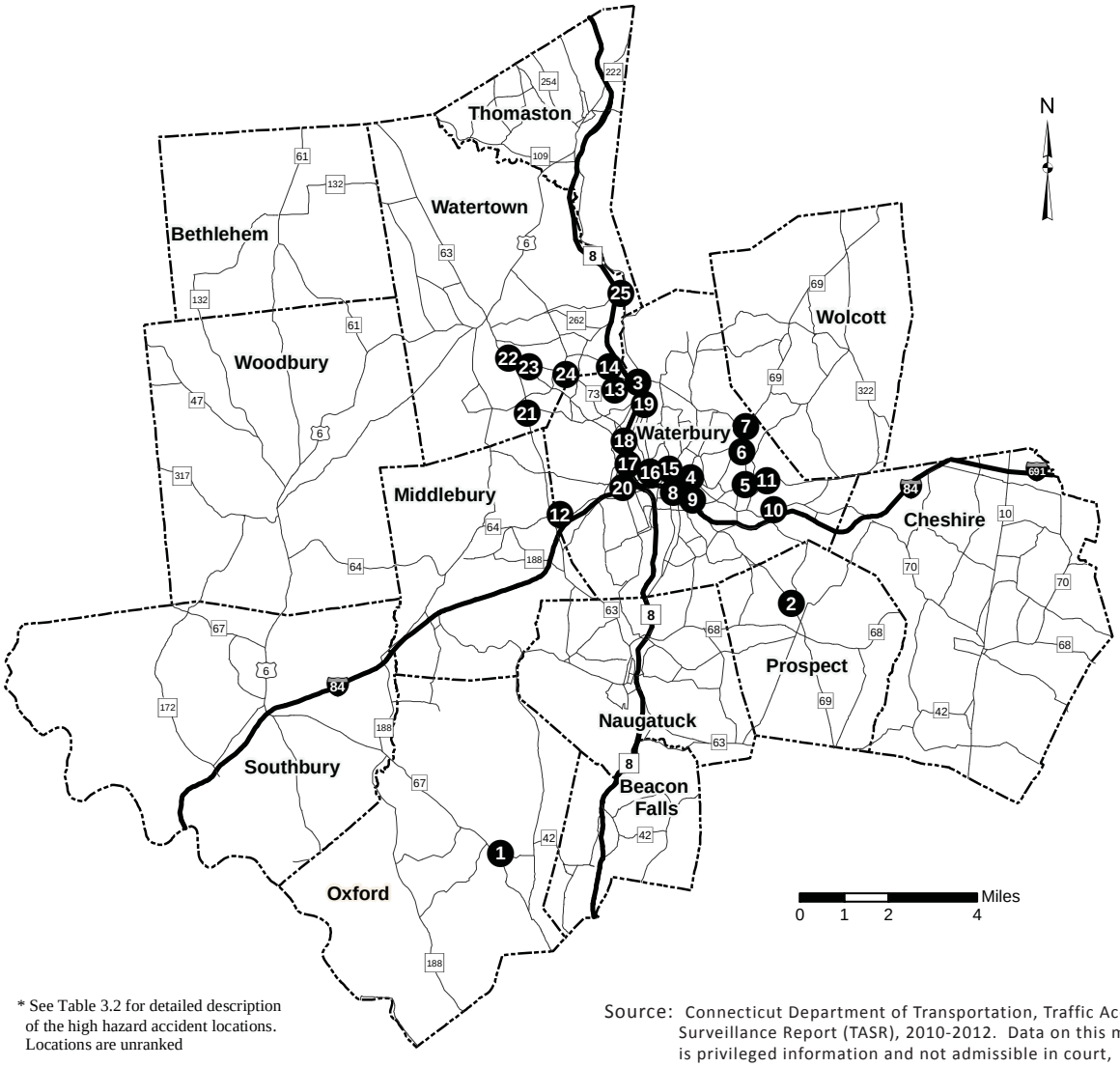
ID Number	Town	Route	Description
1	Oxford	67	at Route 42
2	Prospect	69	between Orchard Drive and Knapp Drive
3	Waterbury	8	at Exit 36 Huntingdon Avenue
4	Waterbury	69	at Union Street and Washington Street
5	Waterbury	69	at Southmayd Road
6	Waterbury	69	at South Circle and Richard Terrace
7	Waterbury	69	0.1 miles south of Lakewood Road
8	Waterbury	84	between Exit 21 on ramp and Exit 23 off ramp
9	Waterbury	84	at Exit 23 off ramp (Route 69)
10	Waterbury	801	East Main Street between Bryan Street and Scott Road
11	Waterbury	844	Meriden Road .01 miles east of Frost Road
12	Waterbury	845	Chase Parkway at Route 64
13	Waterbury	846	Watertown Avenue between Coolidge Avenue and Aurora Street
14	Waterbury	846	Watertown Avenue at Aurora Street
15	Waterbury	847	Grand Street between Cottage Place and Field Street
16	Waterbury	847	West Main Street at Gilbert Street and Sperry Street
17	Waterbury	847	West Main Street at Thomaston Avenue
18	Waterbury	847	Thomaston Avenue at West Main Street
19	Waterbury	847	Thomaston Avenue at Homer Street and Huntingdon Avenue
20	Waterbury	849	Watertown Avenue at West Main Street Riverside Street
21	Watertown	63	between State Street and Bunker Hill Road
22	Watertown	73	between Candee Hill Road and Rockdale Avenue
23	Watertown	73	between Roackdale Avenue and Welton Street
24	Watertown	73	between Hillside Avenue and Buckingham Street
25	Watertown	262	at Echo Lake Road and Route 8 NB on ramp

Source: Connecticut Department of Transportation, Traffic Accident Surveillance Report (TASR), 2010-2012.
Suggested List of Surveillance Study Sites (SLOSSS) are locations that experienced 15 or more accidents from 2010-2012
Data on this map is privileged information and not admissible in court, pursuant to Title 23 USC Section 409.

have experienced 15 or more accidents during a three-year period and have an actual accident rate greater than a statistically derived improbable accident rate. From 2010 to 2012, there were 149 hazardous locations in the Central Naugatuck Valley Region (see Table 3.2 for the 25 worst sites, illustrated in Figure 3.3).

All municipalities in the region, except for Beacon Falls and Bethlehem had at least one hazardous state highway location. Sixty percent of the locations were in Waterbury. Watertown and Cheshire each accounted for another 9% of accident locations. Interstate 84, Route 69, and Route 63 were the most accident-prone locations. Fifty percent of the hazardous accident locations were along these three roads. Seventy-two percent of the locations for Interstate 84 (23 of 32) and 83% of the locations for Route 69 (20 of 24) were in Waterbury..

Figure 3.3 High Hazard Accident Locations on State Roads in the CNVR: 2010-2012



* See Table 3.2 for detailed description of the high hazard accident locations. Locations are unranked

Source: Connecticut Department of Transportation, Traffic Accident Surveillance Report (TASR), 2010-2012. Data on this map is privileged information and not admissible in court, pursuant to Title 23 USC Section 409.

High Hazard Accident Locations for Pedestrians and Bicyclists

In the 2009 report, *Pedestrian and Bicycle Safety in the CNVR*[4], staff reviewed accidents in the region from 2003–2007 to identify areas where there were high frequencies of motor vehicle accidents involving pedestrians or bicycles. A list of these locations appears in Tables 3.3 and 3.4.

Table 3.3. High Hazard Accident Locations for Pedestrians in the CNVR: 2003 - 2007

Town	Description
Beacon Falls	N. Main Street from Route 42 to Church Street
Cheshire	South Main Street in the vicinity of Highland Avenue (Route 10)
Naugatuck	Meadow Street from Hillside to Rubber Avenue
Naugatuck	Rubber Avenue from Meadow to Aetna Street
Naugatuck	Maple Street from High to Church Street
Prospect	Route 68 in the vicinity of Route 69
Thomaston	Route 6 in the vicinity of Route 109
Thomaston	Main Street from Route 254 to E. Main Street
Waterbury	Downtown between Grand, Meadow, Grove, and N. Elm Street
Waterbury	E. Main Street from the Green to Wolcott Road
Waterbury	W. Main Street from the Green to Thomaston Avenue
Waterbury	N. Main Street in the vicinity of East Farm Street
Waterbury	S. Main Street in the vicinity of East & West Liberty Street
Waterbury	Willow Street in the vicinity of Ridgewood Street
Watertown	Main Street (Route 63) from Route 6 to Woodruff Avenue
Watertown	Main Street, Oakville, (Route 73) from Davis to Buckingham Street
Woodbury	Main Street (U.S. Route. 6) from Middle Quarter to Sherman Hill Road

Table 3.4 High Hazard Accident Locations for Bicycles in the CNVR: 2003-2007

Town	Description
Waterbury	E. Main Street in the vicinity of Wolcott Street
Waterbury	W. Main Street in the vicinity of Holmes Avenue
Waterbury	N. Main Street in the vicinity of Division Street
Waterbury	S. Main Street from East & West Dover to Washington Street
Waterbury	Lounsbury Avenue in the vicinity of South Street
Waterbury	Willow Street in the vicinity of Hillside Avenue
Waterbury	Cherry Street from High to E. Main Street
Waterbury	Walnut Street in the vicinity of Dikeman Street
Waterbury	Bishop Street from Hawkins to Elizabeth Street
Waterbury	Meadow Street at Freight Street
Cheshire	Highland Avenue from Weeks Road to Cheshire High School
Naugatuck	Spring Street between Anderson Street and Route 68

Source: COGCNV, Pedestrian and Bicycle Safety in the CNVR: An Assessment of Existing Conditions, 2010.
Data on this map is privileged information and not admissible in court, pursuant to Title 23 USC Section 409.

[4] Council of Governments of the Central Naugatuck Valley, Pedestrian and Bicycle Safety in the CNVR: An Assessment of Existing Conditions, 2010.

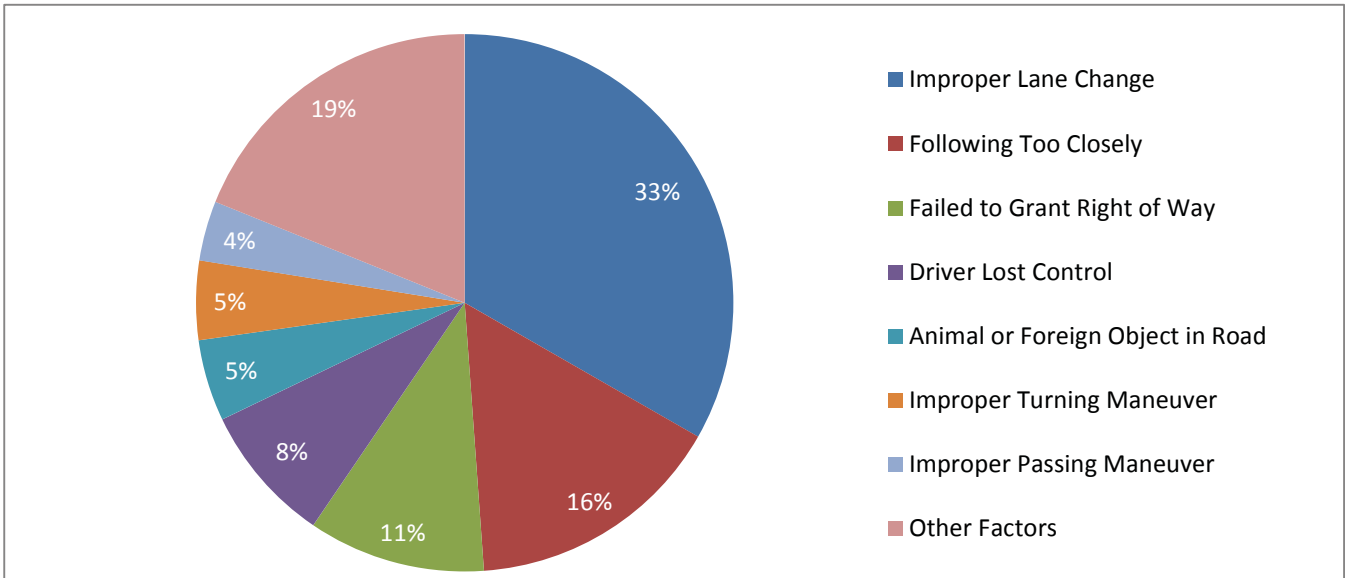
Waterbury experienced the highest frequency of accidents – 81% of pedestrian and 68% of bicycle accidents. As the region's urban core, Waterbury has a much higher population density than surrounding towns, and therefore, a higher volume of pedestrian and bicycle traffic. Locations throughout the rest of the region exhibited a significant number of accidents as well, though not on the same scale as Waterbury.

High Hazard Accident Locations for Tractor Trailers

Accidents involving tractor trailers were compiled for state roads from 2011-2013.[5] The majority of the accidents occurred on I-84 and the other two expressways. A few locations along arterial routes also experienced frequent heavy vehicle accidents.

Among factors that contributed to tractor trailer accidents, the most common were improper lane changes (33%) and following too closely (16%). The most common accident type were sideswipes-same direction (49%), which is much more common on expressways. This could reflect the impact of weaving.

Figure 3.4 Contributing Factors in Tractor Trailer Accidents in the CNVR: 2011-2013



Source: Connecticut Crash Data Repository, Univsersity of Connecticut. Updated 2013

[5] Connecticut Crash Data Repository, Univsersity of Connecticut. Updated 2013

Truck on I-84 eastbound

Locations with a high number of truck accidents are listed below by route. The most common location was on I-84 between exit 25A and the Cheshire town line. This segment is located near a chokepoint where I-84 WB narrows from four lanes to two.

I-84
- Waterbury – From Austin Road to Cheshire town line
- Waterbury – Baldwin Street to Hamilton Avenue
- Waterbury – Route 8 to Baldwin Street
- Waterbury – Hamilton Avenue to Scott Road

Route 8
- Waterbury – I-84 to Riverside Street
- Naugatuck – South Main Street to Maple Street

I-691
- Cheshire – Route 10 to I-84

Route 6
- Thomaston – At Route 8 ramps

Route 68
- Naugatuck – Route 63 (Church St) to Greenwood Street #2

Route 69
- Waterbury – Manor Avenue to Monroe Avenue

Route 847 (West Main Street)
- Waterbury – at Naugatuck Railroad overpass

Bridge Conditions

All bridges on state highways and local bridges over 20 feet in length are inspected biannually and rated by CTDOT. Bridges in poor condition are inspected more frequently. The state gives each bridge a sufficiency rating for setting priorities for its bridge funding programs.

Bridges are qualified if the physical condition of the deck, superstructure, or substructure (piers and abutments and surrounding areas), or culverts are rated "poor" or worse ("serious," "critical," or in "imminent failure"). The carrying capacity of the bridge and its structural integrity are the most heavily weighted factors in calculating the bridge's sufficiency rating. Serviceability, functional obsolescence, and vital importance for public use are also considered in CTDOT's numerical formula.

Under federal guidelines, bridges with sufficiency ratings below 50 are eligible for replacement or rehabilitation under the *Highway Bridge Replacement and Rehabilitation Program*. In the CNVR, 14 bridges had sufficiency ratings below 50 in 2009. Five of these bridges carry over 10,000 vehicles per day.

1. Naugatuck – Maple Street over the Naugatuck River
2. Waterbury – I-84 EB over I-84WB, Route 8, and the Naugatuck River
3. Waterbury – East Main Street over the Mad River
4. Oxford/Monroe – Route 34 over the Housatonic River (Stevenson Dam)
5. Naugatuck – Route 63 over the Metro North RR and the Naugatuck River
   Update: Renovations have been completed.

Municipally-owned bridges under 20 feet in length are funded by the Local Bridge Program. To qualify for the Local Bridge Program, a bridge must carry a certified local road and be structurally deficient according to Federal Highway Administration criteria. Bridges must be located on roads functionally classified as "rural local roads," "rural minor collectors," or "urban local roads." (See Appendix B for more information about funding bridge repairs.)

Intelligent Transportation Systems (ITS)

Intelligent Transportation Systems (ITS) are technologies to improve the safety and efficiency of the transportation network. Typical ITS projects include variable message signs on highways, embedded roadway sensors that actively control traffic signals or report traffic congestion, and technologies to better inform transportation system users.

Major elements of ITS in the CNVR are variable message signs (VMS) and traffic cameras on I-84 and the Route 8 expressway. As of March 2015, CTDOT operates five VMSs along I-84 (three permanent and two portable)and four along Route 8 (two permanent and two portable) (see figure 3.5). The Connecticut Department of Emergency Management and Homeland Security (DEMHS) has three portable variable message signs staged in Waterbury for emergency use. CTDOT has additional portable variable message signs outside of the CNVR that can be deployed if needed.

CTDOT operates twelve traffic cameras along I-84 and twelve along Route 8 (see figure 3.5), which are monitored at the CTDOT Traffic Operations Center. The public can view traffic conditions from the cameras through the CTDOT website.

CTDOT completed the installation of four additional CCTV traffic cameras and two permanent variable message signs along I-84 between Austin Road in Waterbury and Marion Road in Southington. In November 2014, CTDOT began displaying travel time information on VMSs.

The CNVR is served by highway advisory radio transmitters located in Waterbury and Southington. A sign on I-84 eastbound in Middlebury, Route 8 southbound in Waterbury north of I-84, and Route 8 northbound in Naugatuck advise drivers of the highway advisory radio frequency (AM 1670). When hazardous condition advisories are broadcast or Amber Alerts for abducted children are issued, yellow beacons flash on the highway advisory radio signs.

On the municipal level, traffic signals in downtown Waterbury and several arterial roads in the city are computer-controlled. The system, however, is no longer fully functioning. The City was awarded a Congestion Mitigation Air Quality (CMAQ) grant to improve traffic signals downtown.

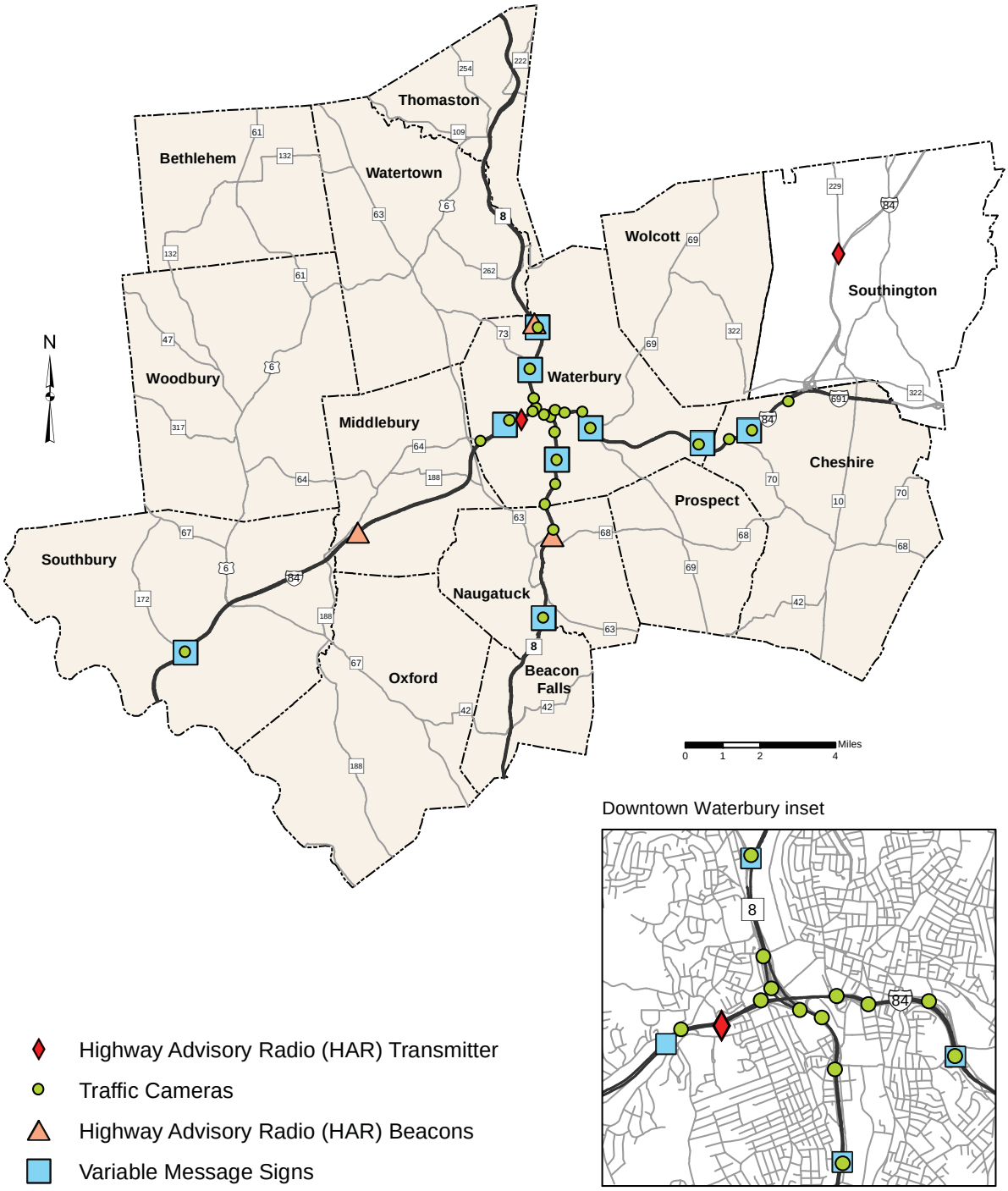
Increasingly, traffic and transit information is becoming available to transportation system users through the internet, mobile phones, and GPS navigation systems. CTDOT provides access to incidents and traffic cameras on its website. Live traffic information is also available on many internet mapping websites such as Google Maps. CT Transit offers online bus trip planning for the CNVR on its website (tripplan.cttransit.com). Metro North trips can be planned on the MTA's website (mta.info). Various smartphone applications provide mobile Metro North schedule information. New York State's 511 website (511ny.org) provides transit trip planning to and within the New York Metropolitan Area. United Way of Connecticut's 2-1-1 social services hotline now includes transportation service information.

CTDOT seeks to establish a statewide 511 travel and transit hotline and website. However, funding has not been secured.

For rail passenger service, a variable message sign for train information has been installed at the Waterbury train station. Loudspeakers at each train station allow for automated broadcasts of train service information.

Waterbury Train Station

Figure 3.5 Intelligent Transportation Systems (ITS) in the Central Naugatuck Valley Region: 2015



Source: Connecticut Department of Transportation

Commuter Parking Facilities

State Designated Commuter Parking Facilities in the CNVR

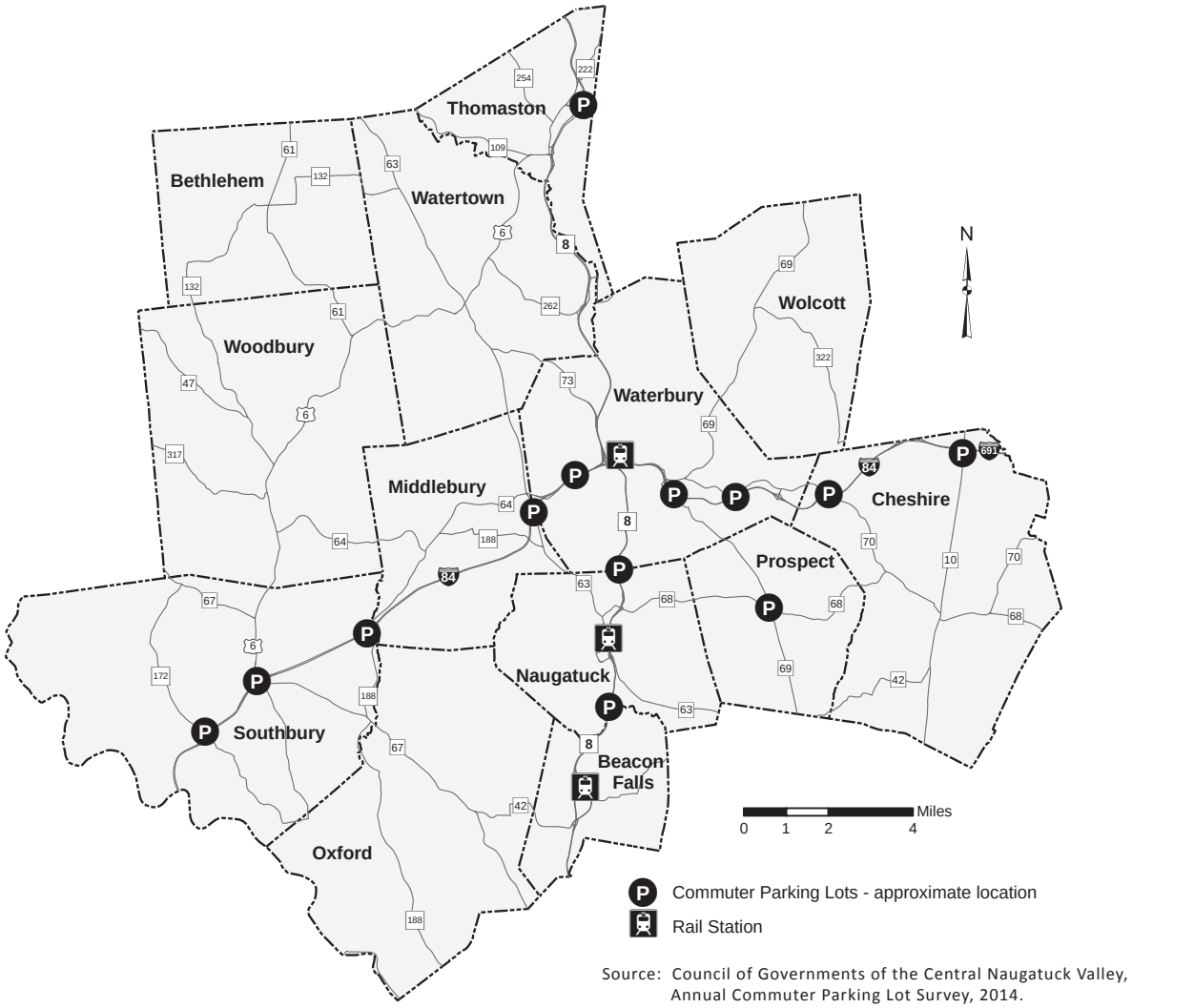
The Central Naugatuck Valley Region has thirteen state-designated commuter parking lots — three less than in 2007 — with a combined capacity of 988 vehicles. Most are in the vicinity of I-84 and Route 8 interchanges. Eight of these lots are located along Interstate 84, three along the Route 8 expressway, one along Interstate 691, and one at the intersection of Route 69 and Route 68 in Prospect. Figure 3.6, shows the approximate location of each lot.

CNVRMPO conducts quarterly field surveys of commuter parking lot use. The results of the 2014 surveys are summarized in Table 3.5. Commuter lots with 75 percent or greater occupancy are considered candidates for expansion. Three commuter lots had maximum occupancy of 75 percent or more in 2014:

1. Waterbury, Route 8 South Main Street 113%
2. Middlebury, Interstate 84 at Route 63 107%
3. Naugatuck, Route 8 at Cotton Hollow Rd. 86%

Use of these lots declined in 2014 due to decreases in gasoline prices. For example, staff observed empty spaces

Figure 3.6 Central Naugatuck Valley Region Commuter Parking Lots: 2015



Source: Council of Governments of the Central Naugatuck Valley, Annual Commuter Parking Lot Survey, 2014.

Table 3.5 CNVR Commuter Parking Lots: 2014
Average and Maximum Occupancy

Municipality	Location of Lot	Capacity	Average Occupancy	Percent Occupied	Maximum Occupancy	Percent Occupied
Cheshire	I-84 @ Route 70	109	43	39%	44	40%
Middlebury	I-84 @ Route 63	138	67	48%	71	51%
Naugatuck	Route 8 @ Cotton Hollow Rd.	61	57	93%	65	107%
Prospect	Route 68 & 69 @ St. Anthony's	50	39	77%	43	86%
Southbury	I-84 @ Route 188	81	31	38%	41	51%
Southbury	I-84 @ Route 67	42	19	44%	30	71%
Southbury	Route 172 @ Main Street South	25	12	48%	15	60%
Thomaston	Route 8 @ Route 6	84	38	45%	43	51%
Waterbury	I-84 @ Chase Parkway	48	29	60%	32	67%
Waterbury	I-84 @ Route 69 (Exit 23)	126	63	50%	76	60%
Waterbury	I-84 @ Scott Rd. & East Main St.	164	64	39%	87	53%
Waterbury	Route 8 @ South Main Street	15	4	23%	6	40%
Total		988	505	51%	604	61%
Rail Stations						
Beacon Falls	RR Station - Railroad Avenue	53	6	12%	10	19%
Naugatuck	Water St @ RR Station	125	31	25%	35	28%
Waterbury	Meadow St @ RR Station	95	36	37%	44	46%
Total		273	73	27%	89	33%

Source: Council of Governments of the Central Naugatuck Valley, Quarterly Commuter Parking Survey: 2014

at the Route 63 lot in Middlebury, where cars had parked in unmarked spots for several years prior to 2014. If gas prices increase, these near-capacity lots will continue to be monitored and should be considered for expansion. Beginning in March 2015, CT Fastrak express bus service will serve two commuter lots in Cheshire, one commuter lot in Waterbury, and the Waterbury Train Station.

Carpooling and Vanpooling

As of 2013, 8% of CNVR workers carpooled to work, compared to 10% in 2000 and 12% in 1990. As employment decentralizes out of the urban core into the suburbs, carpooling becomes less convenient. The Connecticut Department of Transportation monitors vehicle occupancy rates (VOR) to measure progress with ridesharing. The 2007 a.m. peak VOR was 1.26 occupants per vehicle, and the p.m. peak VOR was 1.42 for the CNVR. Statewide vehicle occupancy rates are slightly lower

The Connecticut Department of Transportation sponsors the CT Rides program. CT Rides assists employers and commuters with carpooling, vanpooling, telecommuting, and provides information on transit services. Hartford area destinations are served by the Rideshare Company, which also oversees the Easy Street vanpool program. Metropool, serving Fairfield County destinations, offers vanpools as well. In January 2015, the CNVR had eight Easy Street vanpools. Two vanpools travel to Middletown and Hartford, while Oxford, West Haven, East Hartford, and Waterbury are destinations for one vanpool each. There are no East Street vanpools traveling to employers in the CNVR.

[6] US Census Bureau, 2009-2013 American Community Survey, B08002

[7] CTDOT extracts vehicle occupancy data for each planning region and the stats from the state's traffic accident database.

BUS TRANSIT

Local Bus Service

The Waterbury division of CT Transit provides local bus service in the Waterbury area. North East Transportation Company (NETCO), under contract to the Connecticut Department of Transportation, operates the service. The bus operation is based out of an old foundry building at 1717 Thomaston Avenue in Waterbury. A new bus maintenance garage is planned in Watertown on Route 262 east of Route 8 at the old Watertown drive-in site. The new facility is expected to open in 2017.

Evening bus service began in October 2011. The service was initially funded through a CMAQ grant but has since been added to NETCO's annual operating budget. Additional funding for evening service is provided by the U-Pass partnership between Naugatuck Valley Community College (NVCC) and CT DOT. The U-Pass is funded with NVCC student transportation fees and provides students with unlimited rides on CT Transit routes during the semester.

Service Area and Routes

The local bus routes are primarily in Waterbury, with limited service from Waterbury to Middlebury, Naugatuck, Watertown, and Wolcott. The buses operate on 22 designated routes, radiating outward from downtown Waterbury, with two additional bus routes serving Naugatuck (see Figure III-B1). The CT Transit New Haven division operates a bus route (J) between Waterbury and New Haven via Routes 70 and 10 in Cheshire. This route provides the only fixed bus route service to Cheshire. On the weekends fewer CT Transit Waterbury routes operate (19 on Saturday and 18 on Sunday), and several routes are combined (27/28 and 40/42). Route J to New Haven also operates on the weekends. Ten routes operate during on weekday and Saturday evenings. Five of the evening routes are combined and cover one route on the outbound run and a second route on the inbound run.

In addition to CT Transit's regular routes, there are runs (known as trippers) serving industrial parks, schools, and other destinations in Beacon Falls, Cheshire, Naugatuck, Waterbury, and Watertown. JobLinks, funded by under the Job Access and Reverse Commute program, operates some of these special runs. JobLinks service is described later in this chapter.

New hybrid-electric bus, Waterbury

Hours of Operation

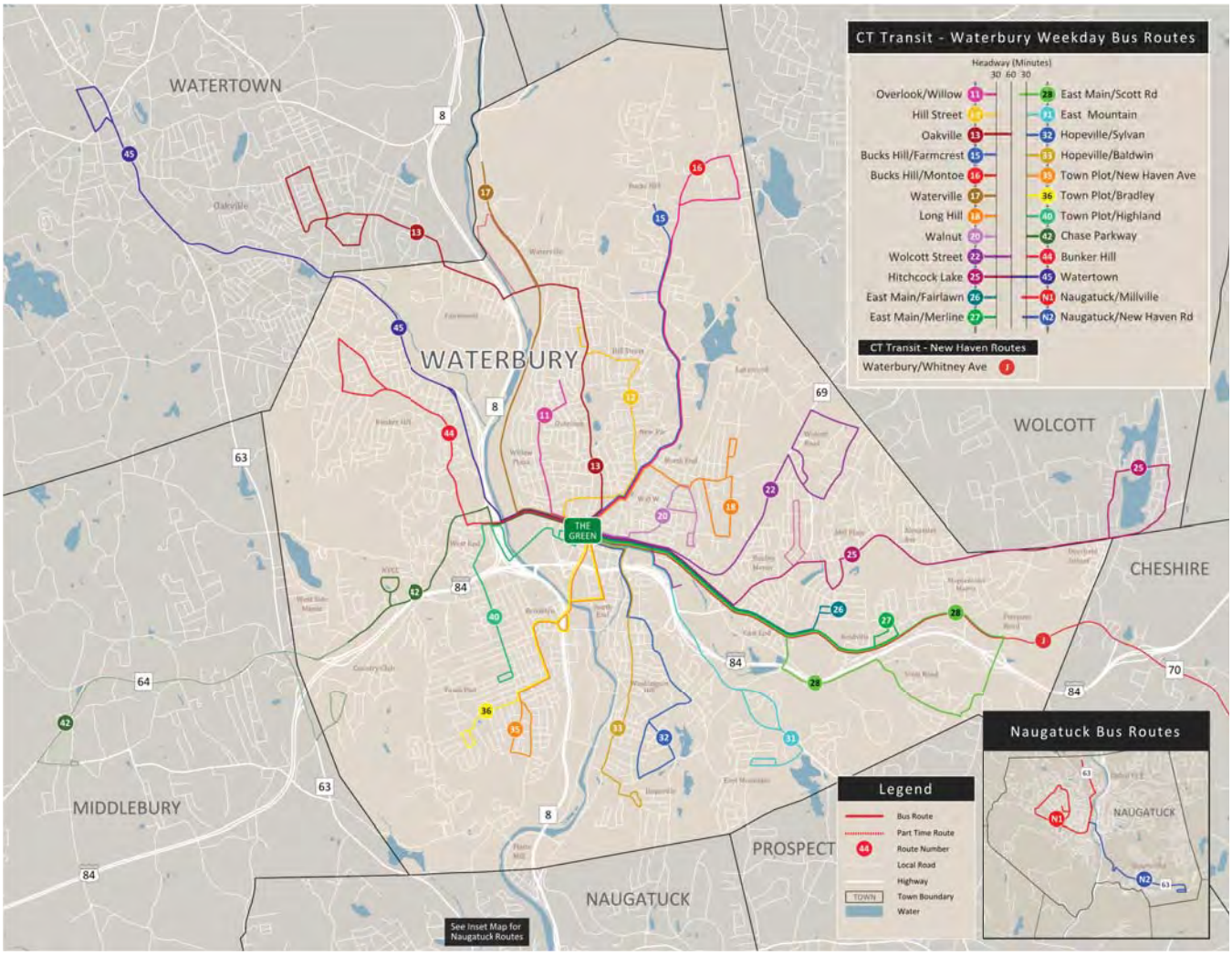
Eighteen of CT Transit's regular bus routes operate Monday through Sunday, one route operates Monday through Saturday, and the five remaining routes operate on weekdays only. Regular service is provided between 5:30 A.M. and 6:30 P.M. on weekdays and Saturdays and between 9:15 A.M. and 5:30 P.M. on Sundays. Evening service operates from 6:30 P.M. to 12:30 A.M. on weekdays and Saturdays. There are no fixed route services on major holidays or after 5:30 P.M. on Sunday. The New Haven bus (route J) operates from Waterbury on weekdays between 5:30 A.M. and 8:05 P.M. on weekdays, between 6:50 A.M. and 7:25 P.M. on Saturdays, and between 9:35 A.M. and 4:40 P.M. on Sundays. Almost all of CT Transit's fixed route buses run either every half hour or every hour from Exchange Place at the Waterbury Green.

Headways, the time period between bus runs, are generally 30 or 60 minutes during weekdays and 60 minutes on weekends and evenings. The two Naugatuck routes are exceptions, with regular headways of 80 minutes. The tripper routes run once or twice per day. The New Haven bus (route J) runs every 60 minutes on weekdays and every 120 minutes on Saturdays and Sundays.

Fares

As of March 2015, the base fare is $1.50 per bus ride throughout the service area. The fare for senior citizens and persons with disabilities is 75¢. The youth fare for

Figure 3.7 Waterbury Local Bus Routes: 2015



Source: Council of Governments of the Central Naugatuck Valley, Waterbury Regional Bus Ridership Study: 2013,

Table 3.6 Waterbury Local Bus Routes: 2015

Route Number	Route Name	Frequency of Service	Days of Operation[a]	Municipalities Served
CT Transit-Waterbury (North East Transportation)				
11	Overlook/Willow	30 min. / 60 min. Sundays	all	Waterbury
12	Hill Street	30 min. / 60 min. weekends	all	Waterbury
13	Oakville/Fairmount	60 min.	all	Waterbury, Watertown
15	Bucks Hill/Farmcrest	60 min.	all	Waterbury
16	Bucks Hill/Montoe	60 min.	all	Waterbury
T17	Thomaston Ave	12.5 times daily	Weekdays, Sat.	Waterbury
18	Long Hill/Berkeley	30 min. / 60 min. weekends	all	Waterbury
20	Walnut Street	60 min.	all	Waterbury
22	Wolcott	60 min.	all	Waterbury
25	Hitchcock Lake	60 min.	all	Waterbury, Wolcott
26	Fairlawn/East Main	60 min.	Weekdays	Waterbury
27	Reidville/East Main	60 min.	Weekdays	Waterbury
28	Scott Road	60 min.	Weekdays	Waterbury
27/28[b]	Scott Road / East Main Combo	60 min.	Weekends	Waterbury
31	East Mountain	60 min.	Weekdays	Waterbury
32	Hopeville/Sylvan	60 min.	Weekdays	Waterbury
33	Hopeville/Baldwin	30 min. / 60 min. weekends	all	Waterbury
35	Town Plot/New Haven Ave	60 min.	all	Waterbury
36	Town Plot/Bradley	60 min.	all	Waterbury
40	Town Plot/Highland	60 min.	Weekdays	Waterbury
42	Chase Parkway	60 min.	Weekdays	Waterbury, Middlebury
40/42[b]	Highland / Chase Pkwy Combo	60 min.	Weekends	Waterbury
44	Bunker Hill	60 min.	all	Waterbury
45	Watertown	60 min.	all	Waterbury, Watertown
N1	Naugatuck	6 times daily	Weekdays	Naugatuck
N2	Naugatuck/New Haven Rd	6 times daily	Weekdays	Naugatuck
CT Transit-New Haven				
J	Waterbury-New Haven Bus	60 min. Weekdays and Sundays / 120 min. Saturdays	all	Waterbury, Cheshire, Hamden, New Haven

[a] Bus service does not operate on the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, or Christmas Day.
[b] Weekend route combination

Source: CT Transit website accessed on 10/29/10

children aged 5-18 is $1.20. Children aged four years and younger ride for free. Transfers on the system are free. An all-day pass can be purchased on the bus for $3.00. Weekly, 3 and 5 day, 31-day, and 10-ride passes are also available for purchase online, by phone, at the Travel Center in downtown Waterbury, and at grocery stores. Fares were last increased in January 2014.

Bus Fleet

As of January 2015, the CT Transit Waterbury operator, North East Transportation, had a fleet of 39 buses:

Quantity	Year	Make/ Model	Length (in feet)	Capacity (passengers)
5	2004	New Flyer	40	38
34	2010	New Flyer	35	30

In 2011, North East Transportation received 34 New Flyer buses to replace its fleet of 1996 buses. Half of the new bus fleet have efficient hybrid electric engines. Both hybrid and conventional buses run on diesel fuel.

Thirty-four buses in the fleet serve Waterbury fixed bus routes and tripper runs, or serve as spares. North East Transportation uses the other five buses for service in Meriden and Wallingford.

Ridership

Expanded service hours on Sundays and evenings, a successful U-Pass Partnership with Naugatuck Valley Community College, and high car ownership costs have led to tremendous ridership growth over the last few years. From 2009 to 2013, fixed-route ridership grew by 40% from 6,181 trips per weekday to 8,649 trips per weekday. Evening service sees an additional 986 passenger trips on weekdays and 851 trips on Saturdays. The bus system experiences its heaviest ridership during the first week of the month. Most users of the bus system are lower income and transit dependent.

In 2013, the most heavily used bus routes, as measured by passengers per hour of bus service on weekdays were:

- 22 Wolcott Street – 68.5 passengers per hour
- 42 Chase Parkway/NVCC – 68.0 passengers per hour
- 44 Bunker Hill – 61.3 passengers per hour
- 28 East Main/Scott Road – 59.6 passengers per hour
- 36 Town Plot/Bradley –55.8 passengers per hour
- 27 East Main/Merline – 54.5 passengers per hour

The bus routes with the least use, as measured by passengers per hour of bus service on weekdays were:

- N2 Naugatuck/New Haven – 2.0 passengers per hour
- N1 Naugatuck/Millville – 5.8 passengers per hour
- 31 East Mountain – 13.6 passengers per hour
- 32 Hopeville/Sylvan – 16.2 passengers per hour
- 45 Watertown – 25.5 passengers per hour

Bus Stops

Popular trip destinations include Exchange Place (The Green), Brass Mill Center, Walmart, Stop & Shop, and Naugatuck Valley Community College. In the fall of 2009, uniform CT Transit bus stop signs were installed at all bus stops along fixed bus routes. The bus stop signs include a phone number for information and a unique number on the back of the sign to identify a caller's location if unknown.

On-Time Performance

The Waterbury bus system operates on a "pulse point" or timed transfer, meaning that buses congregate every 30 minutes to allow for transfers. 20 - Walnut, 26 - Fairlawn/East Main, 11 - Overlook, and 32 - Hopeville/Sylvan were observed to be 100% on-time during passenger counts in the fall of 2013. 28 - Scott Road/East Main, 16 - Bucks Hill/Montoe, and 36 - Town Plot/Bradley were late the most. On these routes, over 80% of the runs arrived after their scheduled departure from Exchange Place. Most buses arrive at Exchange Place in time for transfers, but the transfer time is tight. The median total layover time was two minutes at Exchange Place.

Seating Capacity

Most bus trips have ample seating capacity for riders, although overcrowding has become more frequent in recent years due to growing ridership and smaller buses. Standing room only was most frequently observed buses to the mall and Wolcott Road (Route 22) which was overcroded on 32% of weekday trips and 44% of Saturday

Table 3.7 Waterbury Weekday Bus Route Ridership and Performance: 2013

Route Number	Route Name	Daily Ridership	Round Trips Per Day	Passengers Per Hour	Passengers Per Mile	Passengers Per Run
Local Bus Routes						
11	Overlook/Willow	532	21.0	50.7	8.2	25.3
12	Hill Street	282	18.5	30.5	2.6	15.2
13	Oakville/Fairmount*	601	12.5	48.1	4.3	48.1
15	Bucks Hill/Farmcrest*	453	13.0	34.8	5.2	34.8
16	Bucks Hill/Montoe	393	12.5	31.4	3.8	31.4
T17	Thomaston Ave/Waterville*	284	12.0	43.1	3.5	23.7
18	Long Hill/Berkeley*	576	26.0	44.3	4.8	22.2
20	Walnut Street	268	13.0	41.2	6.5	20.6
22	Wolcott*	856	12.5	68.5	7.1	68.5
25	Hitchcock Lake*	527	15.0	35.1	2.6	35.1
26	Fairlawn/East Main	252	13.0	38.8	3.7	19.4
27	Reidville/East Main*	340	12.5	54.4	4.1	27.2
28	Scott Road*	318	8.0	59.6	4.4	39.8
31	East Mountain	58	8.5	13.6	1.0	6.8
32	Hopeville/Sylvan	81	10.0	16.2	1.3	8.1
33	Hopeville/Baldwin	649	25.5	50.9	4.3	25.5
35	Town Plot/New Haven*	293	12.5	46.9	4.4	23.4
36	Town Plot/Bradley*	363	13.0	55.8	4.9	27.9
40	Town Plot/Highland	179	12.5	28.6	2.5	14.3
42	Chase Parkway*	584	17.0	68.0	4.2	34.4
44	Bunker Hill	383	12.5	61.3	4.7	30.6
45	Watertown*	332	13.0	25.5	1.9	25.5
N1	Naugatuck*	22	6.0	5.8	0.4	3.7
N2	Naugatuck/New Haven	7	6.0	2.0	0.2	1.2
	Fixed Route Totals	8,649	326.0	42.1	3.8	26.5
Tripper Routes						
4	Naugatuck Shuttle	17	1.0	11.3	0.9	17.0
47	Watertown/Straits Turnpike	26	2.0	16.3	1.3	13.0
49	Watertown Industrial Park	42	2.0	23.3	1.4	21.0
81	Cheshire Industrial Park	83	3.0	25.2	1.7	27.7
74	Naugatuck Industrial Park	69	3.5	24.6	0.8	19.7
114	Beacon Falls Industrial Park	127	3.0	55.2	1.8	42.3
	Totals / Averages	364	14.5	27.4	1.3	25.1

* All route variations included in totals. Weekday evening service is not included

Source: Council of Governments of the Central Naugatuck Valley, 2013 Ridership Survey

trips. Other routes that are frequently overcrowded are Naugatuck Valley Community College (Route 42), Oakville - Fairmont (Route 13), and Beacon Falls Industrial Park (Tripper Route 114).

Financial Trends

The Waterbury local bus system has operated under a growing deficit nearly every year since 1975, when the state began subsidizing the service. In FY 2013 the bus system's expenses were $8,327,549 and revenue was $1,991,799. The percentage of bus service costs covered by bus fares dropped from 52% in 1980, to 36% in 1990, 33% in 2000, and 24% in 2010 (Table 3.8). Statewide, revenue only covered 19.7% of fixed-route bus operations costs. In Waterbury, increased fuel costs, and the increased use of multi-ride tickets, were responsible for the decline in cost recovery.

Improvements

The Federal Transit Administration considers twelve years to be the useful life for a fixed route bus. A fleet of new buses were delivered in early 2011 to replace the 1996 RTS fleet of buses. The existing five 2004 New Flyer buses will be due for replacement in 2016, and the 2011 fleet of buses is expected to need replacement in 2023.

CTDOT is designing a new state-owned bus garage and maintenance facility in Watertown on Route 262 (Frost Bridge Road) east of Route 8 and west of the Naugatuck River. The planned route of the Naugatuck River Greenway will cross the grounds of the facility. The new garage will replace the present one, a cramped industrial building ill-suited for use as a bus garage.

Table 3.8 Waterbury Local Bus System Financial and Ridership Trends: 2002-2013

Year	Expenses	Revenues	Deficit	Unlinked Passenger Trips	Recovery Rate
FY 2002	$ 4,860,078	$ 1,234,839	$ 3,625,239	1,788,124	25.4%
FY 2003	$ 5,031,065	$ 1,187,488	$ 3,843,577	1,792,443	23.6%
FY 2004	$ 5,258,023	$ 1,236,207	$ 4,021,816	1,798,844	23.5%
FY 2005	$ 5,691,657	$ 1,391,576	$ 4,300,081	1,806,403	24.4%
FY 2006	$ 5,936,740	$ 1,599,815	$ 4,336,925	1,799,461	26.9%
FY 2007	$ 6,191,072	$ 1,570,302	$ 4,620,770	1,822,136	25.4%
FY 2008	$ 6,841,152	$ 1,704,345	$ 5,136,807	2,620,613	24.9%
FY 2009	$ 7,280,949	$ 1,641,167	$ 5,639,782	2,625,193	22.5%
FY 2010	$ 7,480,466	$ 1,503,028	$ 5,977,438	2,648,358	20.1%
FY 2011	$ 7,388,611	$ 1,586,057	$ 5,802,554	2,819,946	21.5%
FY 2012	$ 7,689,069	$ 1,890,201	$ 5,798,868	2,425,629	24.6%
FY 2013	$ 8,327,549	$1,991,799	$ 6,335,750	2,542,922	23.9%

Source: National Transit Database, Table 26: Fare per Passenger and Recovery Ratio: 2002-2013, NVCOG staff calculations

The following conditions and deficiencies were identified in CNVRMPO and State bus studies:

1. *Improvements to Existing Service*
   The routes should be modified to better serve residents in the region. These recommendations include introducing additional service on overcrowded routes and altering lightly used routes. One major recommendation is to introduce additional bus service on the often overcrowded Wolcott Street (Route 22) and North Main Street (Routes 15 and 16) and provide new service to the Lakewood Road corridor. Routes N1 and N2 in Naugatuck should be modified to create one route that would meet the pulse at Exchange Place in Waterbury. Also, routes with poor on-time performance should be shortened or modified. The Waterbury Area Transit Study (WATS) began in October 2014 and will receommend changes to routes and schedules, analyze downtown operations, and examine other improvements.

2. *Bus Stop Shelter Improvements*
   In 1982, the existing bus shelters were installed at major boarding points along North East Transportation's routes by a private company, Bus-stop Shelters, Inc. The present owners (Colbert and Amherst, Inc.) maintain them, free of charge, in return for the right to display advertising on them. The shelters, however, contain no transit information and need repairs or replacement. In December 2014, a passenger survey was conducted as part of the WATS study. Passengers identified "more passenger shelters" as their most desired potential improvement.

   Bus stop accessibility should also be improved. Some shelters block wheelchair access, and these shelters should be moved. Curb cuts and crosswalks should compliment the placement of shelters for improved access and pedestrian safety.

3. *Public Information*
   The Connecticut Department of Transportation *State wide Bus System Study* recommends expanding the dissemination of bus route and schedule information. The study suggests displaying and distributing bus route maps in bus shelters and on public information kiosks to inform the public about the system and how to use it. Marketing and improved information dissemination could help to increase ridership and complement suggested route changes. Better use of the internet and mobile phone applications to disseminate transit information and plan transit trips is also recommended.

4. *Additional Service Needs*
   The *Statewide Bus System Study* proposes several cross-town connections to improve service. The study recommends expanding regular bus service to other major employment areas that were identified and are served under the federally funded Job Access and Reverse Commute program. A circulator bus that would serve the Green, train station, mall, and hospitals in downtown Waterbury is recommended as an early implementation project for the I-84/Route 8 interchange replacement project.

   Financial resources may need to come from eliminating unproductive bus runs. For example, many early-morning Saturday runs have little or no ridership and could be eliminated.

   The need for public transit services in the outlying suburban towns in the Central Naugatuck Valley Region continues to grow. As employment and professional offices, particularly doctor's offices, relocate to outlying towns such as Southbury and Prospect, transit dependent residents and the elderly are unable to easily access jobs or their doctors. As residents of suburban towns age, there will be greater demand for public transportation, especially in towns with large numbers of age-restricted housing units. This will prove difficult in towns like Oxford that have no public transit services and lack transit-supporting densities.

Intercity Bus Service

Peter Pan Bus Lines is the only intercity bus company serving the Central Naugatuck Valley Region (CNVR). Peter Pan provides service from Waterbury to Southbury, Danbury, Hartford, New York City, Boston, Providence,

and points on Cape Cod. It also has limited service to Torrington, Winsted, and Western Massachusetts. Not all Peter Pan coaches are wheelchair accessible. An accessible coach can be requested at least 48 hours in advance of a scheduled trip.

CTDOT operates a commuter express bus (route 924) from Cheshire and Southington into downtown Hartford. The bus stops at commuter parking lots on Route 70 (I-84 exit 26) and Route 10 (north of I-691) in Cheshire.

Beginning in March 2015, CT Fastrak will operate a new express route (925) between Waterbury and Hartford and a new off-peak route (928) between Waterbury, Cheshire, Southington, and Hartford. New express bus stops include the Waterbury Train Station, Exchange Place, and the commuter parking lot on Hamilton Avenue in Waterbury. Express buses will operate every 30 minutes during the peak hour and every 60 minutes during the off-peak.

Airport Shuttles

Connecticut Limousine offers regularly scheduled trips from Waterbury and Southbury to John F. Kennedy (JFK) and LaGuardia Airports in New York. It has dropped service to Bradley International Airport in Windsor Locks and Newark Liberty International Airport in Newark, NJ, and no other transportation services provide scheduled trips to those airports.

PARATRANSIT

Paratransit services provide specialized transportation, including taxis, livery, and chair-car services, for the elderly and people with disabilities.

Regional Minibus Service for the Disabled

North East Transportation (NETCO) operates, under contract to CTDOT, a demand-response, paratransit minibus service for persons with disabilities, as defined by the Americans with Disabilities Act (ADA), and the elderly in the Greater Waterbury Transit District (GWTD) service area. The Greater Waterbury Transit District Board is an organization comprised of representatives of the nine municipalities in the CNVR that receive paratransit services (see Figure 3.8). The GWTD provides advisory guidance to NETCO on the operation of its paratransit services and runs a regional Dial-A-Ride program that is operated under contract by NETCO. COGCNV staff offers technical assistance to GWTD and NETCO.

ADA Paratransit

ADA paratransit service is available to any individual with a temporary or permanent disability who is unable to board or exit a fixed route bus or who is unable to understand how to navigate or use the fixed route bus system. ADA paratransit is available only from and to locations that are within three-quarters of a mile from a fixed route bus line. A fixed route bus is defined as having service at least once every two hours. Requests for ADA paratransit trips cannot be denied. Disabled people throughout Waterbury and in portions of Cheshire, Middlebury, Naugatuck, Prospect, Thomaston, Watertown, and Wolcott are eligible for ADA Paratransit service. ADA paratransit service is also provided between Waterbury and New Haven, in cooperation with the Greater New Haven Transit District.

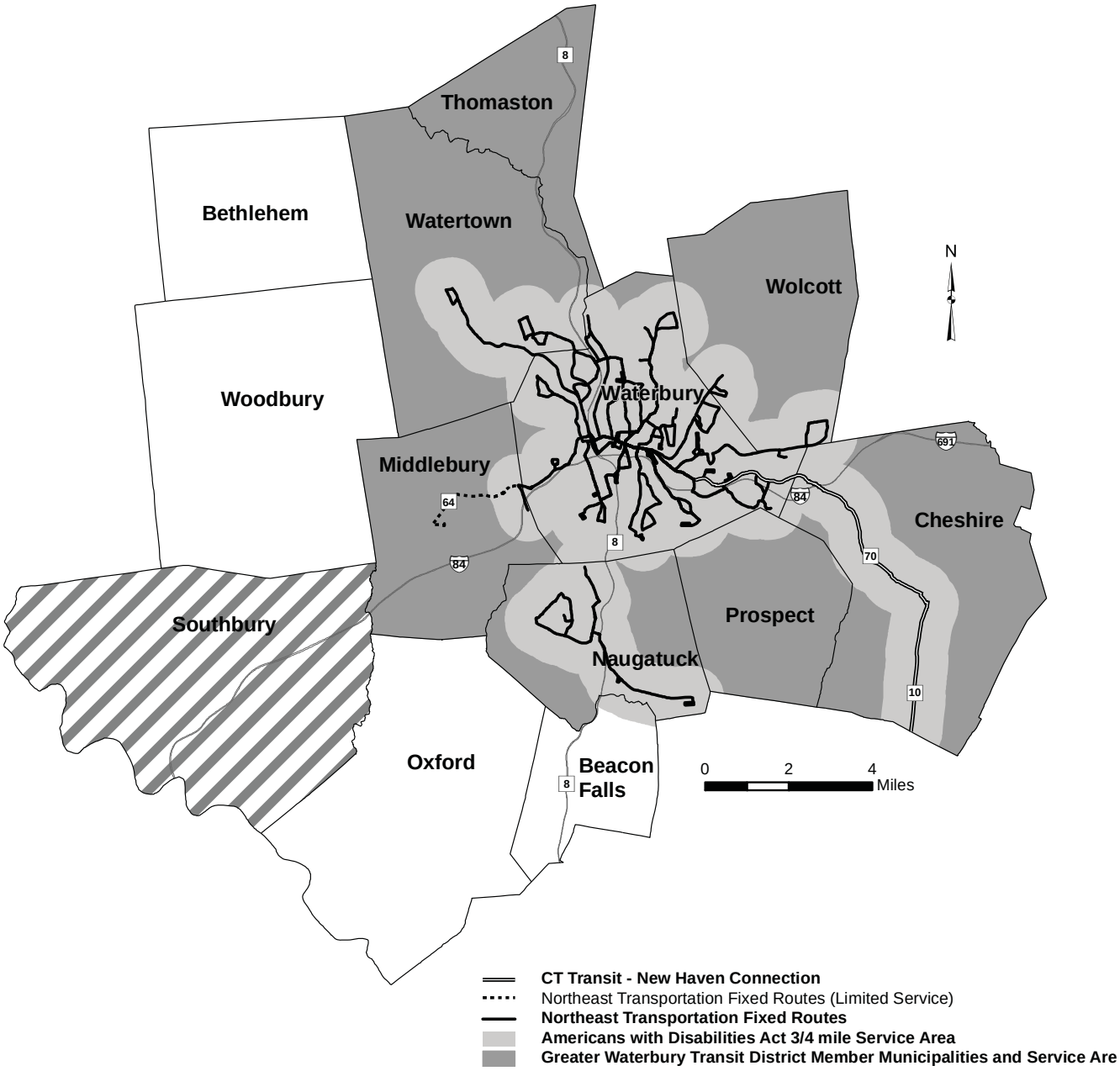
Non-ADA Paratransit

Non-ADA Paratransit service is available to disabled people living more than three quarters of a mile from a fixed route bus living within the municipalities of the GWTD. Reservations for trips are made based on vehicle availability. Non-ADA paratransit trips are kept to about 30% of total paratransit trips. GWTD municipalities pay a portion of the cost of residents' non-ADA paratransit trips.

Dial-A-Ride

The Dial-A-Ride program, funded by the State of Connecticut under the Municipal Grant Program for Elderly and Disabled Demand Responsive Transportation (13b-28bb), provides rides to people with disabilities and to people aged 60 years and older. Funding is allocated to each municipality based upon municipal land area and elderly population. Dial-A-Ride funds require a 100% match that can come in the form of existing municipal disabled and senior transportation spending. Acceptance of a Dial-A-Ride grant requires the municipality to agree to maintain at least level funding of municipal disabled and senior transportation service. Any reduction of mu-

Figure 3.8 Greater Waterbury Transit District Service Area: 2015



Source: Central Naugatuck Valley Region Bus Route Study 2010

Note: Southbury is a member of the Greater Waterbury Transit District (GWTD), but does not participate in all GWTD programs such as regional dial-a-ride

nicipal funding will result in a commensurate cut in the municipality's Dial-A-Ride grant. The state fully funded the program in FY 2015.

GWTD administers a regional Dial-A-Ride program on the behalf of its eight member municipalities. NETCO operates the service under contract with the GWTD using state-owned paratransit vehicles. Each municipality receives at least one weekday of service a month. Faced with rising operating costs, Dial-A-Ride service has been cut back to four days a week. Municipalities with light reservations are paired together, to optimize the service. No fare is collected by the GWTD for Dial-A-Ride trips. Advanced reservations are required for GWTD Dial-A-Ride trips. Depending on the municipality reservations are made through either NETCO or the municipal senior center.

Beacon Falls, Bethlehem, Oxford, and Southbury have used their Dial-A-Ride grants to expand existing municipal transportation for senior and disabled residents. Vehicles used for this service are generally wheelchair accessible.

New Freedom Initiative

The federal New Freedom Initiative (NFI) program funds expansions of or improvements to transportation services for people with disabilities. Though the LOCHSTP (Locally Coordinated Human Services Transportation Plan) planning process, a number of service expansions were identified and implemented in the CNVR. Using federal New Freedom Initiative funds, matched 50% with state funds, the state has expanded non-ADA paratransit in the GWTD to include evening service from 6 to 9 p.m. Monday – Saturday, Sunday trips outside of ADA paratransit boundaries, and trips to Gaylord Rehabilitation Hospital in Cheshire. Funding for trips to Southbury for medical appointments were allocated under NFI beginning in July 2011. NFI also funded an expansion of United Way's 2-1-1 social services hotline to include transportation referral information for the CNVR.

Vehicle Fleet

North East Transportation (NETCO) operates 36 paratransit vehicles for ADA paratransit, non-ADA paratransit, and Dial-A-Ride services in the eight towns of the GWTD. The vehicles are 15 passenger minibuses with wheelchair lifts. Paratransit vehicles have a usable life of four years or 100,000 miles.

Eligibility and General Policies

According to ADA definitions, to be eligible for the paratransit service, an individual must have a disability that prevents him or her from accessing or navigating the regular fixed-route bus system. Individuals are required to fill out an application stating the nature of their disability and why they are unable to travel independently. North East Transportation certifies each applicant's suitability for paratransit services. Certification is required to reserve ADA or non-ADA paratransit trips. As of February 2015, North East paratransit has approximately 3,783 certified riders, up 70% from 2011. A rider's ADA certification is valid on any transit system in the United States.

The Dial-A-Ride service can be used by anyone with a disability or aged 60 years or older. ADA certification is not required for the Dial-A-Ride service, but riders must apply and receive an identification card to use the service. Dial-A-Ride trips are coordinated and in some towns scheduled by the senior centers in the eight towns of the Greater Waterbury Transit District.

Hours of Operation

In accordance with ADA guidelines, ADA paratransit service operates during the same time period as NETCO's fixed route service. The service day runs from 6:00 a.m. to 12:00 a.m., Monday through Saturday, and from 9:00 a.m. to 5:00 p.m. on Sunday.

Non-ADA paratransit is operated from 6:00 a.m. to 12:00 a.m., Monday through Saturday, and from 9:00 a.m. to 5:00 p.m. on Sunday.

The Dial-A-Ride program operates from 9 a.m. to 4:30 p.m. Tuesday through Friday.

Ridership

In fiscal year 2014, the paratransit service operated by NETCO provided 54,060 ADA trips and 16,162 non-ADA trips, a total of 95,422 trips. Ridership has steadily

increased since the GWTD began operations in 1991. GWTD's Dial-A-Ride program operated for ten months in fiscal year 2010 and provided 5,479 trips. In fiscal year 2009 the program operated for a full twelve months and provided 9,218 trips.

Financial

In fiscal year 2014, NETCO paratransit expenses totaled $3,249,857 with an average cost per passenger of $40.95. With FY14 revenues of $188,859, the fare recovery rate was 5.8%. As of March 2015, the fare is $3.00 per one-way trip. Ten-ride coupon books are also available. Paratransit fares are twice the fixed route bus fare. Expenses have steadily increased for the paratransit service. (See Table 3.9).

Funding for the minibus service for the disabled comes primarily from CTDOT and the eight GWTD municipalities. A small portion of the funding also comes from the Federal Transit Administration (FTA). Minibus expenditures from GWTD's member municipalities are used as a local in-kind match to leverage FTA Section 5307 funds. In addition, because of state transit funding shortfalls, most GWTD municipalities have agreed to pay a fee for non-ADA paratransit trips to keep the fare to the passenger at $3.00.

The Dial-A-Ride program is funded by a $242,804 state grant. The state grant was delayed in the summer of 2009, forcing the GWTD to suspend operations for two months. Expenses have steadily increased since the program started in 2006, requiring a reduction in service hours. The GWTD collects no fare for Dial-A-Ride trips.

Local Minibus Services

All CNVR municipalities operate their own minibus service for elderly residents. Private, non-profit agencies in the region also provide specialized transportation for their clients. These local agencies receive operating funds from various sources. For example, the Waterbury Senior Shuttle receives money from a Community Development Block Grant (CDBG) and from the Western Connecticut Area Agency on Aging (WCAAA). In 2009, the WCAAA also helped fund New Opportunities Inc.'s Senior Companion Program and the Borough of Naugatuck and Town of Beacon Falls minibus service.

Some local, non-profit agencies that own and operate their own vehicles also obtain them through the federal Section 5310 vehicle grant program. Eighty percent of the cost of vehicles is covered by the federal grant for a vehicle costing up to a maximum of $40,000. Grants applications for the 5310 program are administered by

Table 3.9 Waterbury Regional Paratransit Financial and Ridership Trends

Year	Expenses	Revenues	Deficit	Passengers	Recovery Rate
FY 2005	$ 1,893,958	$ 219,196	$ 1,674,761	83,910	11.6%
FY 2006	$ 2,013,744	$ 212,319	$ 1,801,425	80,735	10.5%
FY 2007	$ 2,086,210	$ 223,206	$ 1,863,004	78,854	10.7%
FY 2008	$ 2,388,452	$ 225,587	$ 2,162,866	88,059	9.4%
FY 2009	$ 2,729,999	$ 241,631	$ 2,488,368	95,785	8.9%
FY 2010	$ 2,957,897	$ 245,867	$ 2,712,031	97,927	8.3%
FY 2011	$ 2,583,093	$ 168,169	$ 2,414,924	71,392	6.5%
FY 2012	$ 2,835,039	$ 171,431	$ 2,663,607	70,367	6.0%
FY 2013	$ 3,080,707	$ 178,306	$ 2,902,401	70,661	5.8%
FY 2014	$ 3,249,857	$ 188,859	$ 3,060,998	74,751	5.8%

* Combined ADA and non-ADA paratransit service

CNVRMPO staff, and CNVRMPO-approved recommendations are submitted to CTDOT for consideration and funding. Applicants are required to demonstrate their efforts to coordinate transportation services with other organizations and providers. Since 2000, 56 buses have been granted to municipalities and non-profits in the region including all municipalities except Bethlehem, Thomaston, and Waterbury.

JOBLINKS

The Northwest Region Access to Jobs program, referred to as JobLinks, provides low-income people and welfare-to-work clients with affordable and accessible transportation to and from work in the greater Waterbury, Danbury, and Torrington areas. Eligible individuals can register for work-related transportation assistance through job developers, temporary agencies, and other referral sources, as well as directly through the JobLinks program.

Routes have been established from cities to targeted employment areas with growing job opportunities. Customized rides home for second-shift positions have afforded entry-level job opportunities to workers transitioning off of public assistance. Employer flexibility and creativity with work-hour schedules has been important for developing JobLinks service to targeted employment sites such as industrial parks with clusters of employers.

Ridership

Between July 1, 2009 and June 30, 2010, JobLinks, through North East Transportation and Managed Transportation Services, provided 58,836 trips.

Service Area

In the CNVR, JobLinks serves employment areas in Watertown, Cheshire, Naugatuck, Southbury, Beacon Falls, and Waterbury, including evening service to the Brass Mill Center. In addition, JobLinks provides transportation to Waterbury childcare facilities (by reservation).

JobLinks Administration

A JobLinks Coordinator, hired through Rideworks and stationed at WorkForce Connection, has assumed the role of transportation broker, as well as acting as an information clearinghouse. The JobLinks Coordinator works closely with job developers, employers, and transportation providers.

The JobLinks Policy Committee, which includes transportation service providers, job placement and training providers, educational institutions, regional planning organizations, the regional workforce development board, and state agencies — provides guidance on service operations and policies. Most of the participating agencies work directly with the targeted JobLinks consumer (low-income people and welfare-to-work clients) in Northwest Connecticut and represent their needs.

Funding

JobLinks services are funded by the CTDOT, the Federal Transit Administration (FTA), and the CT Department of Social Services (DSS).

TAXIS AND LIVERY

Yellow Cab is the primary cab company in the CNVR. As of 2011, Yellow Cab maintains 17 cars and runs approximately eight taxis a day. The vehicles are kept on call in Waterbury and dispatched as needed.[8] In addition to Waterbury, Yellow Cab is authorized to serve Naugatuck, Southbury, and Watertown. Other taxi companies located outside the region serve Beacon Falls, Bethlehem, Cheshire, Oxford, and Thomaston. No company is licensed to serve Middlebury, Prospect, Wolcott, and Woodbury.[9] For these communities service authority depends on the taxi ride's destination. Taxi service has been in a decline, with companies going out of business or cutting back on vehicles in service. Illegal gypsy taxis are flourishing in Waterbury, often serving areas where the regular cab drivers refuse to go.[10]

There are also numerous liveries that provide individually scheduled service. Several ambulance companies offer wheelchair van livery service.

[8] Waterbury Yellow Cab Co.

[9] CTDOT taxi company certificates listing. Discussion with Sheldon Lubin, Utilities Examiner, Regulatory and Compliance Unit, Bureau of Public Transportation, CTDOT

[10] Discussion with Gene Morris, Transit Investigator, CTDOT (9/28/2010)

RAIL

Passenger Service

Since 2007, ridership on the Waterbury Branch rail line has risen dramatically. The branch carried 501 passengers per weekday in 2012, up 41% since 2007[11]. Increased gasoline prices, more frequent rail service, better promotion, and reasonable fares have all supported branch line ridership growth.

The Waterbury Branch Line commuter rail service is operated by Metro-North and stops in Waterbury, Naugatuck, Beacon Falls, Seymour, Ansonia, Derby, and Bridgeport. The train runs seven daily round trips between Waterbury and Bridgeport, plus a single weekday trip from Waterbury to Stamford. One Bridgeport bound train stops at Stratford in the morning and one Waterbury bound train stops at Stratford in the afternoon. The first weekday morning train departing Waterbury to Bridgeport continues express to Stamford. There is no return through train from Stamford to Waterbury in the evening.

At Bridgeport and Stamford, passengers can transfer to New Haven mainline commuter trains bound for New York City or New Haven. Connections to Amtrak can also be made at Bridgeport and Stamford. Connections to Shoreline East service to New London can be made at New Haven and Bridgeport (limited service).

Of the three commuter train stations in the region, the Waterbury Station is the most used with an average of 297 weekday inbound passenger boardings in 2012, Naugatuck an average of 95 boardings, and Beacon Falls an average of 7 boardings[12]. Average weekday inbound boardings for the entire line was 501 passengers in 2012 Ridership is heaviest on weekends. The average ridership at the Waterbury Station in 2012 was 17% higher on Sundays than on an average weekday.

The Waterbury Branch line cost $8.1 million to operate in 2009. With revenue from ticket and pass sales of $714,651, the average subsidy per passenger trip was $25.78[13]. As ridership on the line has grown, so has revenue and the average subsidy per trip has declined. In 2006 the average subsidy per passenger was $30.47. The Waterbury branch rail line has the lowest fare recovery rate among all rail services supported by the State. In 2015 the one-way fare between Waterbury and Bridgeport cost $2.25. The last fare increase was in January 2005.

The Waterbury branch line has a single track without passing siding or signals, limiting rail operations to a single train at a time. When maintenance or repairs are necessary, the branch line passenger service is replaced with buses. A significant amount of reconstruction of aging railroad bridges and culverts is needed on the Waterbury branch. Much of this work will require suspension of rail service.

Replacement of rail service with buses can be inconvenient to passengers. At the Waterbury, Naugatuck, and Bridgeport stations, replacement buses pick up passengers a distance from the train platform, causing confusion and delays. Some of the replacement buses run express from Bridgeport to Waterbury which can also be confusing to passengers.

In 2010, CTDOT completed the *Waterbury and New Canaan Branch Lines Needs and Feasibility Study*. The study investigated options for the Waterbury branch line and recommended improvements. Some of the recommended improvements include passing siding, train station improvements, a new transfer station at the Devon Junction with the New Haven mainline, and supplemental express bus service between Bridgeport and Waterbury. In the fall of 2014, the State of Connecticut announced $7.1 million in funding for the design and installation of the federally-mandated positive train control and passing sidings on the Waterbury Branch Line.

The Naugatuck Railroad operates train service between Waterbury and Torrington. Passengers board at the Thomaston train station (Railroad Museum of New England) for scenic excursion trips. The railroad provides local freight service along the corridor.

Train Stations

Waterbury Station is the largest and most used train station in the CNVR. The station consists of a sheltered, handicapped accessible, high level platform adjacent

[11, 12, 13] Information from CT Department of Transportation, Rail Section

to the former Waterbury train station building, currently owned by the Republican-American newspaper. Although ample free parking is available at the station, a majority of passengers arrive or depart the station by other means. A new passenger entrance to the facility and off-street passenger drop off space was built at the station in late 2010. The abandoned SNET office building and parking garage was demolished in 2014, improving visibility for the parking lot and platform.

The City of Waterbury is proposing smaller scale improvements at the train station, including the renovation of parking areas, redesign of passenger and vehicle access, and the eventual provision of a small train station facility with a waiting area and restrooms.

In September 2014, the City of Waterbury was awarded a $14.4 million TIGER grant from USDOT for the *Waterbury Active Transportation and Economic Resurgence* (W.A.T.E.R.) project. Planned improvements include complete streets conversions on Freight Street and Meadow Street, an extension of Jackson Street to West Main Street, and a new bicycle and pedestrian bridge connecting Library Park to the train station and Jackson Street. The City hopes that these investments combined with service improvements on the Waterbury Branch, will help spur transit-oriented development.

Other than the Merritt 7 station on the Danbury branch, the Waterbury branch has the only low platform stations in the state. The Waterbury station has a high platform, but none of the other Waterbury branch line stations are handicapped accessible. Additionally, the platforms along the Waterbury branch are short, limiting the length of trains that operate on the branch.

The Naugatuck Station has the second highest boardings on the Waterbury branch with 95 on an average weekday in 2012. Naugatuck Station has ample free, safe parking. The *Waterbury and New Canaan Branch Lines Needs and Feasibility Study* proposes moving the Naugatuck Station south to the railroad overpass over Maple Street. This location would allow for a longer platform which in turn could lead to longer trains.

The Beacon Falls Station has the lightest use with 7 boardings on an average weekday in 2012.

Freight Service

While most commercial goods are transported over the region's highways, some freight is shipped to the CNVR by rail. PanAm Southern Railway (PAS) transports freight into the region over the Plainville-Waterbury line (the Terryville Line) to customers in Plainville, Bristol, Southington, Waterbury, Beacon Falls, and Seymour. Freight is typically oversized and overweight: chemicals, materials, construction and demolition debris, and equipment. PanAm runs a weekly train from E. Deerfield, MA, the railroad's main connection to the North American rail network, to Plainville. On alternate days, PAS runs out of Plainville to customers as demand warrants. Car loadings have increased in recent years from local business expansions. A second train and crew will be needed as new customers in the state begin operations.[14] The Naugatuck Railroad Company, primarily a scenic passenger rail service operating from Waterbury to Torrington, carries some freight brought to Waterbury by PanAm.[15] Figure 3.9 presents a map of western Connecticut's rail system.

Rail accounts for 3.6% of freight shipped to Connecticut and 2.8% from the state.[16] The decline of heavy manufacturing and the lack of a direct rail route into Connecticut has taken its toll. Connecticut is isolated for rail freight transport. Freight enters the state from Springfield, MA on the Amtrak mainline, which has costly track use fees. For CNVR customers, freight comes from the mainline in Berlin, to Plainville, and on to Waterbury. Out-dated, underweight track —except on the state's mainlines— cannot handle he high capacity freight cars now standard in North America. Fees charged by the different rail companies for trackage rights also deter rail use.

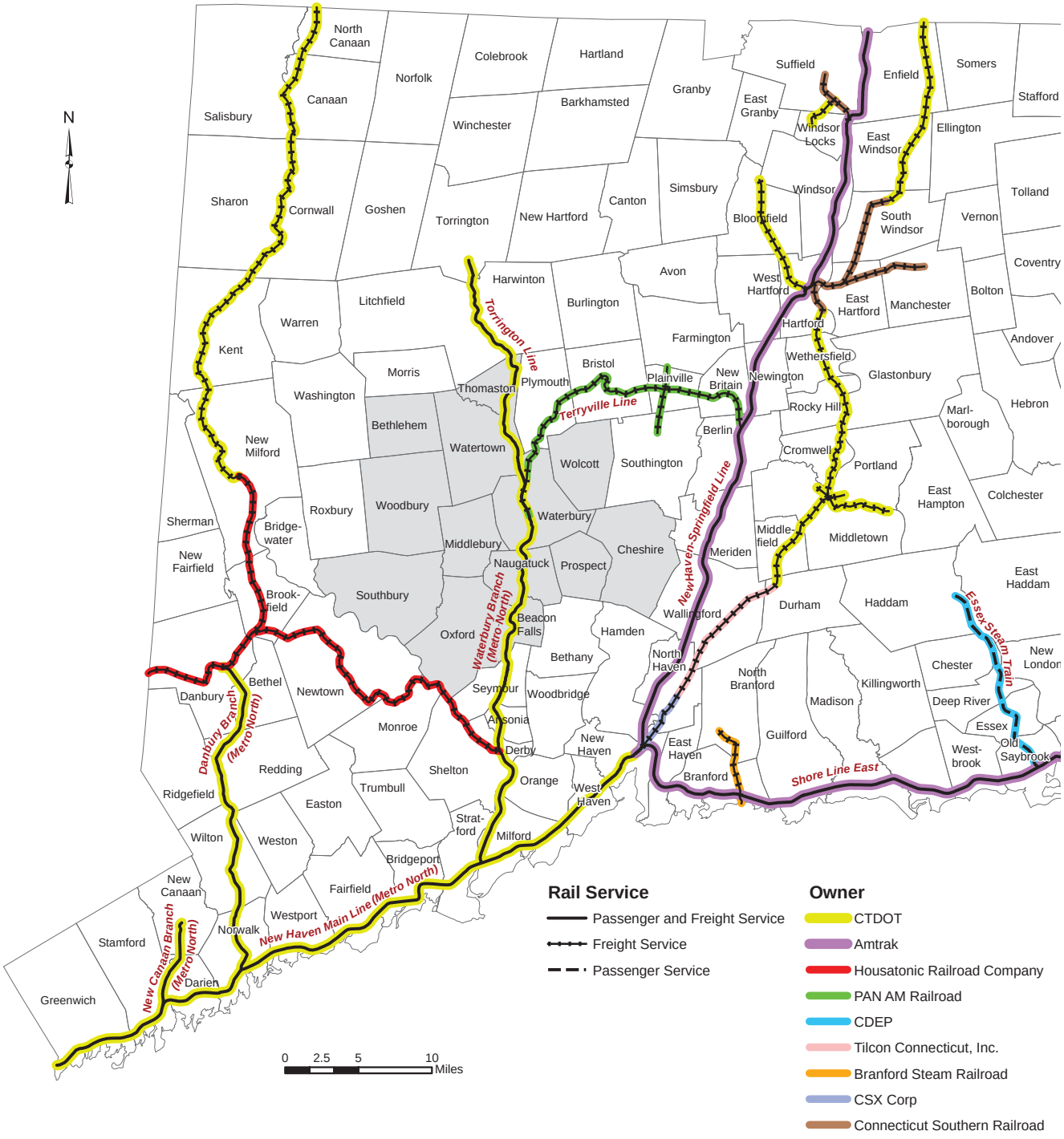
AIRPORT FACILITIES

The Waterbury-Oxford Airport (OXC) is a state owned and operated general aviation airport located in both Oxford and Middlebury. In 2007, it handled an average of 205 flights a day, approximately 75,000 flights a year. Situated seven miles southwest of Waterbury, it is acces

[14, 15] Information from CT Department of Transportation, Rail Section, and CTDOT, Connecticut State Rail Plan: 2010-2030

[16] FHWA, Freight Analysis Framework, Freight Shipments to, from, and within Connecticut: 2007 (www.ops.fhwa.dot.gov/freight)

Figure 3.9 Rail System in Western Connecticut: 2015



Source: Connecticut Dept. of Transportation, Bureau of Public Transportation, Office of Rail, as of October 2006

sible from Route 188 and I-84.[17] The airport offers facilities for corporate, freight, and recreational flights. It is owned and operated by CTDOT, and has provided general aviation services since its completion in 1971. It occupies 424 acres within a 3,000 acre zone of industrial land. The airport's runway is 5,800 feet long by 100 feet wide. In 2010, there were 174 aircraft based at the Waterbury-Oxford Airport, of which 36 were medium and large corporate jets, 9 were multi-engine, and 129 were single-engine aircraft. Although the number of planes based at the airport has been increasing, the lack of adequate hangar space limits growth.

Additional hangars and tie-down areas are recommended in CTDOT's Waterbury-Oxford Airport Master Plan, and Keystone, the fixed-base operator, is proposing the construction of a hangar and office space with a 206,000 square-foot footprint at the airport.[18]

Keystone Aviation Service offers servicing and maintenance as well as charter passenger service and air freight. Double Diamond/Richmor Aviation offers charter passenger service. Business Air Service provides medium and small jet servicing and aircraft charter. Classic Air Service, Oxford Flight Training, and Executive Flight Services provide flight school training.

An air traffic control tower became operational in 2001. The State of Connecticut has implemented various infrastructure improvements such as additional taxiways, gas mains, electrical service, and a sewer system. A rear access road, entrance improvements including a gateway, and additional signage are also planned for the airport.

The Waterbury-Oxford Airport Master Plan calls for safety improvements including expanded taxiways, new lighting, and obstruction removal. Concurrent with the latest master plan update, an airport noise study was completed by the Federal Aviation Administration to understand the noise impacts of the airport and to identify the areas around the airport that are eligible for noise abatement. The study found that some residences in Middlebury experience noise levels considered incompatible with residential uses. CTDOT has initiated a voluntary buyout program for the Triangle Hills subdivision in Middlebury. The study also recommends that undeveloped, land near the airport be rezoned for non-residential uses.

In 2010, the airport contricbuted 2,374 direct and indirect jobs to the local economy and had an economic impact of $254 million. In 2013 the Waterbury-Oxford Development Zone was designated by the state of Connecticut. Companies that move into the Development Zone may be eligibile for property tax abatements and state corporation business tax credits.

WALKWAYS, BIKEWAYS, AND GREENWAYS

CTDOT's 2009 *Connecticut Statewide Bicycle and Pedestrian Transportation Plan*, COGCNV's 1994 *Regional Bicycle Plan*, and COGCNV's 2010 *Pedestrian and Bicycle Safety in the CNVR Assessment* propose improvements to promote bicycle and pedestrian transportation opportunities and safety. The state bicycle and pedestrian plan assesses the suitability of state highways for bicycling, leading to the creation of a new state bike route map. The assessment and map can be useful in identifying priority locations for on-road bicycle improvements.

The Farmington Canal recreation trail in Cheshire and the Trolley Line recreation trail in Middlebury are the region's two main bike paths. With assistance from CNVRMPO's regional transportation planning work, funding for the bike paths came through the federal Surface Transportation Program—Enhancements (STP-E). Other trails include the Larkin Bridle Trail and Steele Brook Greenway.

CNVRMPO is working with municipalities on the planning of a Naugatuck River Greenway and connecting loop trails. In 2010, COGCNV completed the *Regional Naugatuck River Greenway Routing Study*, which recommends a routing for the 22 mile CNVR section of the Naugatuck River Greenway. The study also recommends construction phasing and estimates costs. In addition to transportation and recreational uses, the Naugatuck River Greenway is seen as important to economic development for the five municipalities in the region along the river. Segments of the Greenway have been completed in Beacon Falls and Naugatuck.Final design for Phase 1 of the Naugatuck River Greenway in Waterbury is underway.

[17] FAA Airport Master Record for OXC (Form 5010-1) Effective Date 2011-01-13

[18] CTDOT "Public Hearing October 13 on New Hangar at Oxford Airport Draft Environmental Document Now Available" 2010-09-08 Accessed 2010-11-02 *http://www.ct.gov/dot/cwp/view.asp?A=1373&Q=465390*

4. Projected Trends and Impacts

PROJECTED TRENDS AND IMPACTS ON TRANSPORTATION NEEDS

Population

Population projections are important in projecting future travel demand. For Connecticut very little growth is forecast for the next two decades.[1] The post-World War II baby boom population, people between the ages of 50 and 64, will increase substantially. A noticeable increase will be seen in the very frail elderly, those 85 and over, while the proportion of adults under the age of 50 will decrease. Similar trends are anticipated for the CNVR. The state and the region's population will continue to age, which is likely to damper traffic growth but raise the demand for public transportation. Waterbury's population is anticipated to grow modestly. The greatest population growth is expected in the southwestern section of the region, whereas the slowest growth is likely for the older mill communities along the Naugatuck River.

Transportation Challenges

Land Use

Waterbury has the region's highest population density (3,866 persons per square mile). With exceptions mostly in Naugatuck and Watertown, the population in the rest of the region tends to be spread outward (with an average suburban town density of 633 persons per square mile). Over the long term, the location of businesses, services, and other employment has been gradually shifting from the region's central core to surrounding suburban towns, although there has been a pause in the past few years. Moreover, employment has not been increasing in the region, and consequently where residents live and work is becoming more spread out, placing a greater stress on the region's transportation system.

The trend also affects the approximately eighteen percent of Waterbury households without access to an automobile. These city households face increased transportation barriers as jobs, stores, and services locate to areas in the suburbs inaccessible by public transit.

The increase in older residents will affect transportation services. While the baby-boom generation of older Americans is expected to be more independent and active than past generations, many seniors cannot or choose not to drive, relying on public or private transportation. Land use decisions and institutional developments will reflect this as well. Elderly housing developments, as well as active adult, age-restricted housing developments should consider locating on bus routes or close to town services to ensure that residents are not isolated from needed services. The U.S. Department of Housing and Urban Development, the Environmental Protection Agency, and the Department of Transportation are jointly encouraging planning for sustainable communities — places that increase access by being close to transportation hubs, local shopping areas, and government and social services, and thereby minimizing transportation and infrastructure costs and reducing the use of natural resources (see the six livability principles in Appendix C).

Mode of Travel

Cars are still the most common and convenient way to travel in the CNVR, and greatest growth in the region is anticipated in areas lacking transit supporting densities. Not everyone drives, and the transit-dependent population is growing — the elderly, the disabled, and low-income households unable to afford a car. For the foreseeable future, fixed-route bus service will be primarily in the region's urban core. Ridesharing can benefit commuters in low density areas, especially those with long distance commutes. The role of the Waterbury passenger rail line could increase as congestion on Route 8 in the lower Nau-

[1] Connecticut State Data Center, Population Projects: 2015-2025

gatuck Valley worsens, and rail improvements are implemented to enable greater train frequency.

Financial

Financial deficits will restrain federal and state funding budgets, hampering needed transportation maintenance and limiting improvements unless new revenue sources are found. Slower economic growth and rising elderly populations complicate the financial situation, and lack of transportation investments can hamper the economic health of the state and region. Implementing relatively inexpensive programs can lead to significant improvements in certain areas. Some examples include: traffic signal timing to ensure smooth and efficient traffic operations; pavement management programs that help towns allocate money for road improvements by assessing pavement deterioration rates and the cost of major reconstruction; local bus studies to determine the best bus routes for serving people efficiently; and access management techniques to control curb cuts and driveways. Electronic tolls and congestion pricing will be studied by CTDOT as strategies for raising funds to pay for expressway improvements.

Fuel Prices and Supplies

Electric Vehicle charging station, , GE Plant, Plainville

In recent years gasoline prices have fluctuated between $3.50 and $4.00 a gallon[2], reflecting the uncertainties over petroleum supplies in light of uprisings in northern Africa and the Mid-East. High gasoline prices, coupled with high unemployment have reduced highway travel and increased bus and rail ridership. Since mid-2014 prices have droped significantly due to the increase in production[3]; but for the long term the United States may face more periods of disruption in supply and high prices. Over the long haul this could favor higher density land use development and closeness to work and services.

New Technology

The gasoline-powered internal combustion engine has been with us for over a century, and the private vehicle as the primary means of transportation since the 1950s. A plan that looks over a quarter of a century into the future has to consider new technology. Within the time frame of this plan, it is possible that new vehicle technologies will emerge, replacing the internal combustion engine. Hybrid gas/electric vehicles have gained in popularity. Strides are being made with battery-powered electric cars. Bus rapid transit can combine the characteristics of passenger rail with the route flexibility of a bus. Interconnected electronic road and intersection management and control systems, coupled with real-time electronic travel information — intelligent technology systems — can increase efficiency and safety of transportation systems and vehicles, and convenience for the traveler.

TRAVEL DEMAND PROJECTIONS

CNVRMPO uses the traffic projections and road capacity estimates from the 2009 Congestion Screening and Monitoring Report, prepared by CTDOT, to pinpoint future traffic bottlenecks. The report identifies congested segments of the state highway system, by calculating the ratio of traffic volume to road capacity (v/c) for each road segment. The future traffic volumes are derived from CTDOT's statewide travel demand forecasting model.
CTDOT uses the Highway Capacity Manual to estimate

[2]American Automobile Association, AAA's Daily Fuel Gauge Report – Connecticut (as of 3/1/2015)

[3] Other factors that could affect petroleum supply and price include refinery production levels, the global economic climate, and stabil ity of the U.S. currency.

the road capacity of state highways. The concept of capacity is defined as the maximum hourly rate at which persons or vehicles can be reasonably expected to pass a point or uniform segment of roadway during a specified time period under prevailing road, traffic, and traffic control conditions. The capacity values are based on system-wide planning assumptions, and serve as a first-cut planning analysis.

Using the capacity values and traffic volumes projected for each segment, the CTDOT report calculates v/c ratios. Segments with v/c ratios above 1.00 are defined as over capacity, where traffic signals, signal timing, road geometry, or a combination of these factors, are inadequate for projected peak hour traffic volumes.[4]

Table 4.1 and Figure 4.1 present the state-maintained road segments in the CNVR expected to be at or over capacity by 2030. The region's most congested segments in 2030 are listed below. All of these locations are projected to have severe congestion (v/c ratios over 1.2) in 2030.

Route 6 in Southbury
- At Pine Hill Rd.

Route 6 in Thomaston
- Route 222 to Prospect St.

Route 8 in Waterbury
- At Route 73 Junction

Route 10 in Cheshire
- Cook Hill Road to Sandbank Rd.
- Fieldstone Ct. to E. Johnson Ave.
- WB Exit from I-691 to Southington TL

Route 42 in Beacon Falls
- At Cook Ln.

Route 63 in Naugatuck
- Hazel Ave. to Cross Pointe Plaza Driveway
- Bland St. to Cherry St.
- Water St to Field St.

Route 63 in Middlebury and Watertown
- Country Club Rd. to Wooster Brook Overpass
- Park Rd. to Bunker Hill Rd. in Watertown
- French St. to Echo Lake Rd. in Watertown

Route 64 in Waterbury
- Chase Pkwy. to Access to I-84

Route 68 in Naugatuck
- Spring St. to Greenwood St.
- Union & Golden St. to Union City Rd.

Route 69 in Waterbury
- East Mountain Rd. to Access to EB I-84
- Near Union St.
- Frost Road to South Cir.

Route 69 in Wolcott
- Potuccos Ring Rd. to Route 322

Route 70 in Cheshire
- Winslow St. to Moss Farms Rd.
- Quarry Village Rd. to Route 10 (Highland Ave.)

Route 73 in Waterbury
- Deerfield Ave. to Irvington Ave.
- E. Aurora St. to Route 8 Junction

Interstate 84 in Waterbury
- EB Access from SB Rte. 8 to EB Exit to Meadow St.
- EB Access from Meadow St. to EB Exit to Route 69

Chase Parkway (SR 845) in Waterbury
- At the I-84 overpass

Riverside St. (SR 846) in Waterbury
- W. Main St. to Access to NB Route 8

West Main St. (SR 847) in Waterbury
- Judd St. to Sperry St.

[4] Transportation Research Board, *Highway Capacity Manual Special Report 209*, 1997, pg. 9-31.

Table 4.1 Severely Congested State Highway Segments in the CNVR, by Volume to Capacity Ratios: 2030

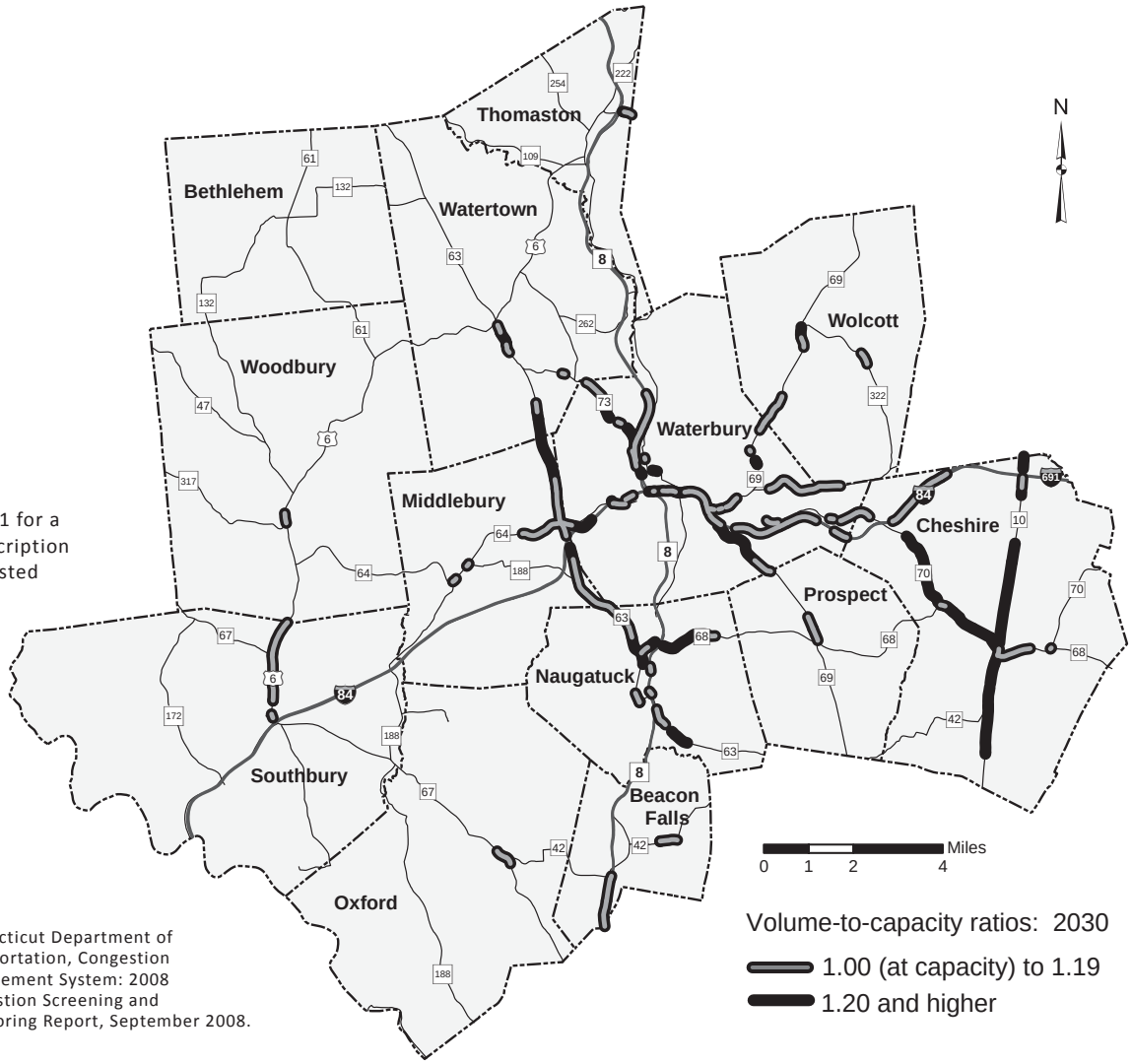
Rte	Town	Description	V/C ratio 2030	V/C ratio 2008	Percent Change
6	Southbury	At Pine Hill Rd	1.32	1.06	25%
6	Thomaston	Route 222 to Prospect St	1.36	1.08	26%
8	Waterbury	At Rte 73 Junction	1.47	1.13	30%
10	Cheshire	Cook Hill Rd to .02 Mi N of Cook Hill Rd	1.24	1.02	22%
10	Cheshire	Cook Hill Rd to Rte 42	1.24	1.02	22%
10	Cheshire	At Rte 42 (No Brooksvale Rd)	2.14	1.75	22%
10	Cheshire	Rte 42 (No Brooksvale Rd) to .1 Miles N of Elmwood Dr	1.91	1.57	22%
10	Cheshire	.04 Miles S of Chipman Dr to Cornwall Ave	1.91	1.57	22%
10	Cheshire	Cornwall Ave to .03 Mi N of Wallingford Rd	1.80	1.48	22%
10	Cheshire	.12 Miles N of Rte 68/70 Junction to Creamery Rd	1.24	1.02	22%
10	Cheshire	Creamery Rd to Sandbank Rd	1.36	1.11	23%
10	Cheshire	.13 Mi N of Fieldstone Ct (WB) to .09 Mi S of East Johnson Ave	1.74	1.43	22%
10	Cheshire	Exit from WB I-691 to Southington TL	1.58	1.30	22%
42	Beacon Falls	At Cook Ln	1.69	1.35	25%
63	Naugatuck	Hazel Ave to .17 Mi N of Warren Ave	1.29	1.08	19%
63	Naugatuck	Bland St to Cherry St	1.35	1.14	18%
63	Naugatuck	Water St to Rte 68	1.24	1.04	19%
63	Naugatuck	Rte 68 to Field St	1.21	1.02	19%
63	Middlebury	Country Club Rd to Exit from EB I-84	1.24	0.99	25%
63	Middlebury	.10 Mi N of Country Club Rd East to Wooster Brook Overpass	1.33	1.05	27%
63	Middlebury	Park Rd to Middlebury-Watertown TL	1.34	1.06	26%
63	Watertown	Middlebury-Watertown TL to State St	1.39	1.14	22%
63	Watertown	State St to Bunker Hill Rd	1.40	1.15	22%
63	Watertown	French St to Echo Lake Rd	1.23	1.01	22%
64	Waterbury	Chase Parkway to Interchange 17 on I-84	1.29	1.09	18%
68	Naugatuck	Spring St to Greenwood St	1.33	1.12	19%
68	Naugatuck	Union & Golden St to Lines Hill St	1.23	1.04	18%
68	Naugatuck	Lines Hill St to Union City Rd	1.30	1.09	19%
69	Waterbury	East Mountain Rd to N Junction of Hamilton Ave	1.21	1.02	19%
69	Waterbury	Harpers Ferry Rd to Edgewood Ave	1.50	1.26	19%
69	Waterbury	Edgewood Ave to Access to EB I-84	1.27	1.07	19%
69	Waterbury	.02 Miles E of Union St	2.18	1.83	19%
69	Waterbury	N of Frost Rd	1.37	1.15	19%

Table 4.1 Severely Congested State Highway Segments in the CNVR, by Volume to Capacity Ratios: 2030

Rte	Town	Description	V/C ratio 2030	V/C ratio 2008	Percent Change
69	Waterbury	Frost Rd to South Cir	1.47	1.23	20%
69	Waterbury	At South Cir	1.37	1.15	19%
69	Wolcott	Potuccos Ring Rd to Rte 322	1.24	1.05	18%
70	Cheshire	Winslow St to .13 Miles West of Marion Rd	1.53	1.25	22%
70	Cheshire	.08 Miles West of Marion Rd to Marion Rd	1.53	1.25	22%
70	Cheshire	Marion Rd to Moss Farms Rd	1.64	1.35	21%
70	Cheshire	Quarry Village Rd to Peck Ln	2.14	1.76	22%
70	Cheshire	Carter Lane to Willow St	1.57	1.28	23%
70	Cheshire	Willow St to Maple Ave	1.70	1.39	22%
70	Cheshire	Maple Ave to Rte 10 (Highland Ave)	1.60	1.31	22%
73	Waterbury	Deerfield Ave to Gertrude Ave #1	1.31	1.10	19%
73	Waterbury	Gertrude Ave #1 to Irvington Ave	1.31	1.10	19%
73	Waterbury	East Aurora St to Junction with Rte 8	1.29	1.08	19%
84	Waterbury	EB Access From SB Rte 8 to .03 Miles W of EB Access from NB Rte 8	1.64	1.32	24%
84	Waterbury	EB Access From NB Rte 8 to EB Exit to Meadow St #1	1.29	1.04	24%
84	Waterbury	EB Access From Meadow St #1 to .05 Mi E of S. Main St Overpass	1.23	0.99	24%
84	Waterbury	.05 Miles E of S. Main St Overpass to EB Exit to Rte 69	1.23	0.99	24%
845	Waterbury	West Main St to Country Club Rd	1.40	1.17	20%
846	Waterbury	Riverside St NB to start of one way access to NB Route 8	1.37	1.15	19%
847	Waterbury	Judd St to .04 Mi N of Sperry St	1.48	1.24	19%

Source: ConnDOT, Congestion Management System: 2009 Congestion Screening and Monitoring Report (2009)

Figure 4.1 Highway Congestion in the Central Naugatuck Valley Region: 2030



*See Table 4.1 for a detailed description of the congested locations.

Source: Connecticut Department of Transportation, Congestion Management System: 2008 Congestion Screening and Monitoring Report, September 2008.

5. Recommended Plan

The highway and transit recommendations presented in this plan are intended as guidelines for programming federal and state funds for regional transportation improvements, and identifying locations for further study. The recommendations are based on the severity of the deficiencies, the Transportation Plan's goals and objectives, the previous work and scheduling of projects by the State and CNVRMPO, and discussions with local officials (see Appendix A for local transportation priorities). The Plan emphasizes maintaining and improving the existing transportation system rather than constructing new facilities. Also, while the region's highways will remain the focal point of its transportation system, the plan seeks to enhance the role of public transportation services and ridesharing. Appendix D contains the estimated costs and funding years related to these recommendations.

HIGHWAYS

The primary objective of this section is to maintain and improve the region's highway system with an emphasis on making better use of existing transportation facilities, while seeking to improve safety and reduce traffic congestion, energy consumption, and motor vehicle emissions. For both expressways and other highways, the maintenance of roads and bridges is the highest priority.

Highway recommendations are divided into the following categories: *Expressways, Major State Highways, Urban Highway Projects, Bridges, and Commuter Services.*

Expressways

Interstate 84 in Eastern Waterbury — Widen I-84 to three lanes in each direction and modify interchanges between Hamilton Avenue (Route 69) and Pierpont Road in Waterbury (the final phase of the I-84 upgrade). *Projects 151-273 & 151-285*.

I-84/Rte 8 Interchange, Waterbury, COGCNV Aerial Flight April 2007

Interstate 84 West of Waterbury — Complete early implementation projects at deficient interchanges as recommended in the CTDOT report, *I-84 West of Waterbury Needs and Deficiencies Study* (November 2001). *Projects 130-173 & 080-128*

Interstate 84/Route 8 Interchange — Complete early implementation projects as recommended in the *I-84/Route 8 Waterbury Interchange Needs Study* (June 2010), including downtown circulation improvements and a new bridge across the Naugatuck River. Initiate design for the preferred long-term alternative for the interchange

Interstate 84/Route 8 Interchange — Upgrade the interchange as recommended in the CTDOT interchange study.

Interstate 84 West of Waterbury — Widen I-84 to three lanes in each direction from Route 8 in Waterbury to the New York state line, as recommended in the CTDOT report, *I-84 West of Waterbury Needs and Deficiencies Study* (November 2001) and a comparable study for the Housatonic Valley Region.

Major State Highways

A high priority is given to state highway corridors with current or anticipated traffic congestion and high hazard accident locations. The findings and recommendations of previously studied corridors are also considered.

Route 69 in Waterbury — Recommendations for Route 69 from the COGCNV Study, *Route 69 Traffic Operations Study: Final Report* (2000).

- Route 69 at Southmayd Road — Realign the Southmayd Road approach to Route 69 (Meriden Road).
- Route 69 from East Main Street to Manor Avenue — Widen and improve lane configuration at Route 69 and East Main Street intersection. Minor widening at Manor Avenue intersection.
- Route 69 and Wolcott Street from Long Hill Road to Lakewood Road — Major upgrade including street widening for additional lanes, double turn lanes, and raised median dividers.
- Route 69 near Orchard Drive — Minor widening to allow motorists to bypass left-turning vehicles.

Route 64 at Route 63 in Middlebury

- Reconfigure the Route 64/Route 63 intersection as recommended in the *I-84 West of Waterbury Needs and Deficiencies Study* including a new connector road between the Route 64 and Route 63 interchanges. Project *080-128*.

E. Main Street (SR 801) in Waterbury

- Implement improvements at Scott Road and E. Main Street (SR 801) as planned for the I-84 Waterbury to Southington upgrade project.

Route 73 in Watertown

- Realign Route 73 in the vicinity of old railroad bridge abutment (near Rockdale Avenue) as recommended in the COGCNV *Route 73 Corridor Study Waterbury to Watertown (1997). Project 153-118*

Other Locations to be considered for further evaluation:

Route 69 in Waterbury

- Evaluate traffic operations at Washington Avenue/ Union Street
- Evaluate safety improvements between Frost Road and Richard Terrace, including the marking of additional travel lanes as recommended in the Route 69 Traffic Operations Study.
- Improve traffic operations on Route 69 from Harpers Ferry Road to I-84.

Route 63 in Naugatuck

- Widen Route 63 near the intersection of interchange 26, Route 63, and S. Main Street (SR709) and perform geometric improvements as recommended in the *Route 8 Deficiencies/Needs Study (Interchanges 22-30).*
- Study traffic at major intersections between S. Main Street (SR 709) and Route 68 (Bridge Street) in Naugatuck.

Route 10 in Cheshire

- In southern Cheshire, investigate improvements at Route 42 and sections north to the Route 70/68 junctions. Also evaluate operations between Cook Hill Road and Route 42.
- In northern Cheshire, investigate improvements in the vicinity of I-691 as well as between Maple Avenue and Sandbank Road.

West Main Street (SR 846/847) in Waterbury

- Evaluate safety and congestion on W. Main from Route 8 to railroad bridge over W. Main (SR 847) east of Thomaston Ave.
- Coordinate signals to improve traffic flow on Grand Street and Meadow Street
- Evaluate safety issues on Grand Street between Cottage Place and Leavenworth Street.

Route 63 in Watertown

- Evaluate area between Davis Street and French Street in Watertown.
- Evaluate traffic operations from Middlebury town line to Bunker Hill Road in Watertown.
- Evaluate downtown area between French Street and Echo Lake Road in Watertown.

Route 70 in Cheshire

- Evaluate traffic operations between Winslow Street and Route 10.

Route 73 in Watertown

- Improve signal timing at Buckingham Street, Hillside Avenue, and Riverside Street/Davis Street.

Route 6 in Thomaston

- Evaluate traffic and safety at E. Main Street and the Route 8 NB onramp.

Route 42 in Prospect and Cheshire

- Evaluate safety issues between Candee Road and Inverness Court.

Meriden Road (SR 844) in Waterbury

- Evaluate safety and congestion on Meriden Road at Frost Road.

Chase Parkway (SR 845) in Waterbury

- Evaluate safety issues on Chase Parkway at the I-84 overpass and at the intersection with Highland Avenue.

Route 68 in Naugatuck

- Evaluate traffic operations between Route 8 and Union City Road.

Urban Highway Projects

Urban highway projects consist of high priority highway improvements for major roads in the urbanized portion of the CNVR. Projects were proposed by local officials for the Federal Highway Administration's Surface Transportation Program for urban areas (STP-Urban). In 2011, CNVRMPO ranked the projects based on the importance of the road, its condition, its safety, the amount of use it received, and the proposed project's impact on surrounding land uses. CNVRMPO's prioritized list of projects also reflects a funding balance between Waterbury and the rest of the urban area, each town's proportional share of the region's STP-U allocation, and the amount of STP-U funding a town has already received.

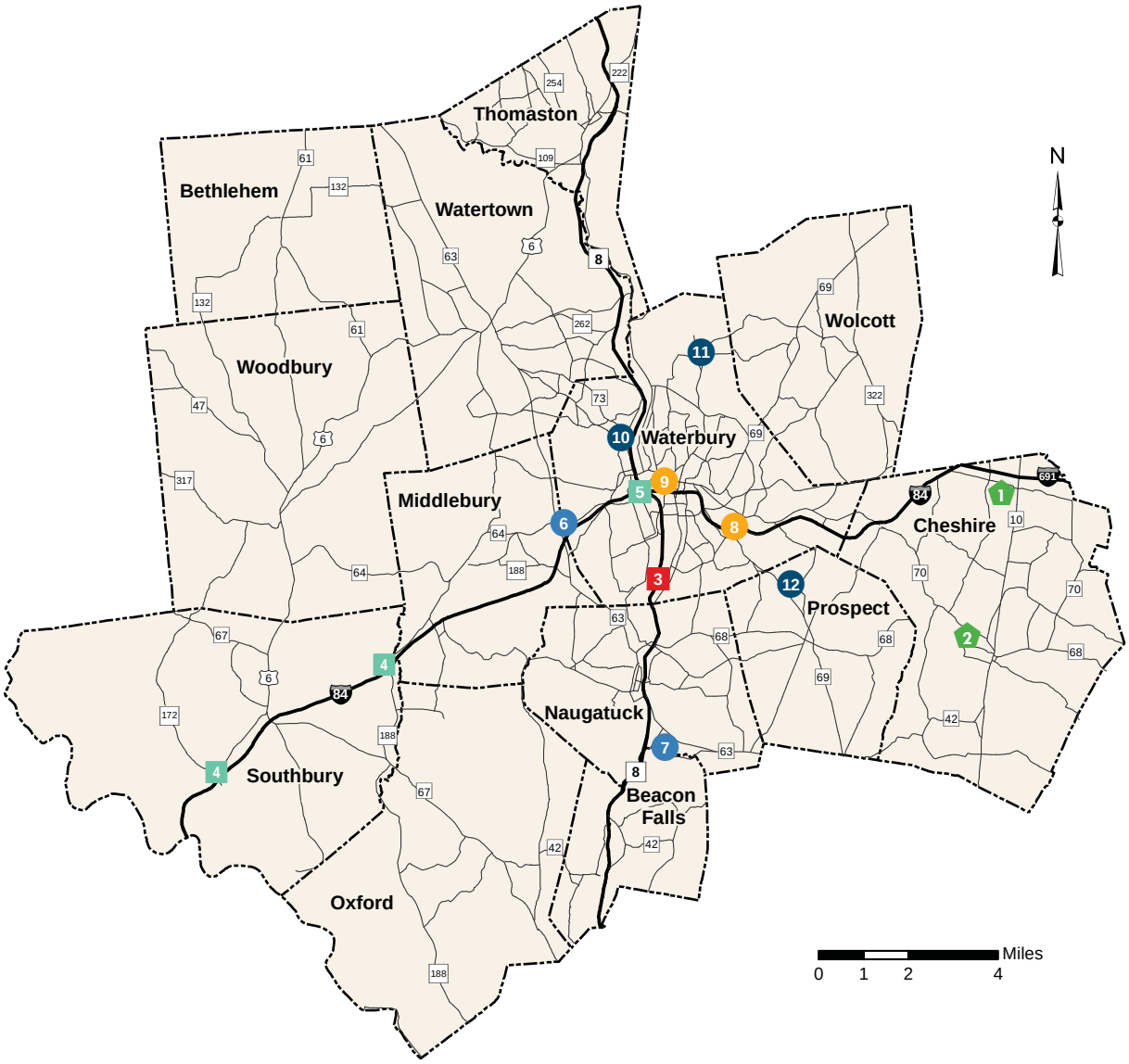
The following set of priorities, grouped by urbanized area, are CNVRMPO's approved project rankings. Projects that have been completed, moved to another funding program, or cancelled are excluded from the list. Figure 5.1 shows the location of the urban highway projects.

Waterbury Urbanized Area (Beacon Falls, Middlebury, Naugatuck, Prospect, Waterbury, Watertown, Wolcott, Woodbury)

1. Waterbury, Homer Street/Chase Avenue – Reconstruct and widen from Waterville Street to North Main Street
2. Waterbury, Aurora Street – Widen from Bunker Hill Road to Watertown Avenue.
3. Prospect, Scott Road II – Reconstruct and widen from Nicholas Court to Maria Hotchkiss Road.
4. Naugatuck, Cross Street – Reconstruct and widen from Route 8 to Route 63.
5. Waterbury, Boyden Street Extension – Construct new road east to Bucks Hill Road.
6. Prospect, Scott Road III – Reconstruct and widen Maria Hotchkiss Road to Route 69.

Scott Road Construction, Prospect

Figure 5.1 Surface Transportation Program Projects in the Central Naugatuck Valley Region: 2015



Surface Transportation Program

Enhancement:

1. Farmington Canal Trail Jarvis Street to Southington Town Line, Cheshire
2. Farmington Canal Trail Cornwall Avenue to West Main Street, Cheshire

High Priority Projects

3. Naugatuck River Greenway, Platts Mill Road and South Main Street, Waterbury

National Highway Performance Program

4. Improvements to Interstate 84 at Exits 14 and 16, Southbury
5. Interstate 84 and Route 8, Rehabilitate 5 Bridges, Waterbury

Urban:

6. Improvements to Interstate 84 at Exit 17, Route 63, and Route 64, Middlebury
7. Reconstruct and widen Cross St from Route 8 to Route 63, Naugatuck

Urban - Anywhere:

8. Widen Interstate 84 from Hamilton Avenue to Austin Road, Waterbury
9. ADA Curb Ramp Installation, Waterbury

Urban - Proposed:

10. Widening of Aurora St from Bunker Hill Rd to Watertown Ave, Waterbury
11. Construct new road from Boyden St Ext. to Bucks Hill Rd, Waterbury
12. Reconstruct and Widen Maria Hotchkiss Rd to Route 69, Prospect

Source: Transportation Improvement Program 2015-2018, Naugatuck Valley Council of Governments, CNVRMPO, and Statewide Transportation Improvement Program 2015-2018, Connecticut Department of Transportation, 2015

Bridgeport-Stamford Urbanized Area (Beacon Falls, Oxford, Southbury, Woodbury)

All submitted projects have been completed

New Haven UA (Cheshire)

All submitted projects have been completed

Hartford Urbanized Area (Thomaston)

There are currently no submitted or programmed CNVR projects.

Bridges

Four bridges in the CNVR that carry over 10,000 vehicles per day had sufficiency ratings below 50 as of 2009. All will require rehabilitation or replacement in the near-term.

1. Naugatuck — Maple Street over the Naugatuck River
2. Waterbury — I-84 EB over I-84WB, Route 8, and the Naugatuck River
3. Waterbury — East Main Street over the Mad River
4. Oxford-Monroe — Route 34 over the Housatonic River

Commuter Services

1. Install "Park and Ride" signs along Interstate 84 and Route 8, and at other lot sites in the region, to increase driver awareness of the region's commuter lot facilities. Install special signs identifying CT Fatrak express bus stops.
2. Install directional signs from expressway exits to the region's commuter railroad stations.
3. Expand the commuter parking lot located at Route 63 and Interstate 84 in Middlebury to accommodate demand (part of project 080-129).
4. Continue monitoring the region's commuter parking lots to determine lots warranting expansion or closing.
5. Support construction of the CT Fastrak and the extension of commuter express bus service from the busway to Cheshire and Waterbury.

LOCAL BUS SERVICE

1. Ensure continued and stable funding to cover operating expenses for the local bus service.
2. Modify bus routes and schedules based on the recommendations of CTDOT and CNVRMPO bus route studies.
3. Encourage replacement of damaged bus shelters and installation of additional shelters at heavily used boarding points.
4. Promote the CTTransit-Waterbury bus service, including up-to-date route schedules and maps and other marketing materials at key bus stops, on buses, and on the internet (CTTransit.com)
5. Construct a new bus maintenance facility for CT-Transit-Waterbury.
6. Replace the local bus fleet in 2023, and 2035.
7. Initiate a circulator bus that would directly connect destinations in downtown Waterbury including the train station, hospitals, mall, and the Green.
8. Work with North East Transportation, City of Waterbury, CTDOT, and major stakeholders on initiating bus service on Lakewood Road. and additional service on Wolcott Street.

The Wolcott Street bus (Route 22) has become severly overcorwded in recent years and is need of additional service.

SPECIALIZED TRANSPORTATION MINIBUS SERVICES

1. Provide stable funding for the regional minibus service for the disabled, including non-ADA transportation services and dial-a-ride.
2. Continue to provide human services transportation information through United Way of Connecticut's 2-1-1 hotline.
3. Encourage and facilitate coordination among local transportation service providers to increase efficiency and service capacities.
4. Provide technical assistance to the Greater Waterbury minibus service for the disabled.

RAIL

1. Implement recommendations of the Waterbury Branch Line Study, including new passing sidings, signalization, train storage, a new transfer station at Devon Junction, and supplemental express buses.
2. Promote use of the Waterbury Branch line through marketing.
3. Improve maintenance, pedestrian and automobile circulation, security, and attractiveness of the Waterbury Train Station.
    a. Construct a new surface parking lot.
    b. Install bus shelters for CT Fastrak and local bus patrons.
    c. Investigate the reopening of the old train station baggage office for use as a passenger waiting area and public restrooms.

FL-9 Train pulling into Naugatuck

4. Support efforts for transit-oriented development in the region such the as the $19 million in planned improvements near the Waterbury Train Station as part of the W.A.T.E.R. (TIGER) proejct.

JOB ACCESS AND REVERSE COMMUTE PROGRAM

1. Provide stable funding for JobLinks, the access-to-jobs transportation service for the four planning regions in Northwestern Connecticut.

AIRPORT FACILITIES

1. Continue the Waterbury-Oxford Airport expansion plan and associated infrastructure improvements.
    a. Construction of a new hangar to increase capacity and improve aircraft operations.
    b. Construction of airport service roads.
    c. Obstruction removal and approach lighting system for Runway 36.
2. Expedite the process of acquiring properties in the Runway Protection Zone (RPZ) under the voluntary property acquisition program.

WALKWAYS, BIKEWAYS, AND GREENWAYS

1. Extend the multi-use Farmington Canal Trail from Cheshire to Southington.
2. Construct the proposed multi-use Naugatuck River Greenway Trail along the Naugatuck River, as recommended in the NRG routing study
3. Establish streetscapes, walkways, bike paths, and greenways in the region, especially connecting downtown areas with train stations, commuter parking facilities, bus stops, schools, residential areas, open spaces, and recreation areas.
4. Implement the recommendations of the *Pedestrian and Bicycle Safety in the CNVR: 2010* and the *2009 State Bicycle and Pedestrian Plan* .
    a. Perform safety audits and implement low-cost improvements at high-hazard corridors and "hot spots" in the region as recommended in the Pedestrian and Bicycle Safety study.
    b. Develop bike paths and shared use facilities along state routes as shown on the 2009 Connecticut Bicycle Map.

   c. Direct funds from Transportation Alternatives Program (TAP) and the state Complete Streets set aside law to major bicycle routes and pedestrian facilities in the region including the Farmington Canal Trail, Naugatuck River Greenway, and on-road state bicycle routes.
5. Upgrade sidewalks, curbs, and crosswalks to comply with the Americans with Disabilities Act.
6. Support the planning of the Housatonic Riverbelt Greenway Trail in Oxford and Southbury.

OTHER RECOMMENDATIONS

Access Management

1. Work to implement the recommendations of the *Route 69 Traffic Operations Study: Access Management* (2002) for Waterbury, Prospect and Wolcott.
2. Encourage amendments to plans of conservation and development to reference the Route 69 Traffic Operations Study and other access management resources.
3. Encourage revisions to zoning and subdivision regulations and a strengthening of town road ordinances to reflect the need for access management and to give specific guidance on its implementation based on the Route 69 Traffic Operations Study. Such amendments would include sections pertaining to the purpose of the regulation, definitions, site plan approval process, required traffic impact report with developments of a certain size, and other relevant requirements for a complete integration of access management requirements.

Intelligent Transportation Systems

1. Complete the installation of traffic cameras and permanent variable message signs along I-84 and Rte. 8.
2. Optimize traffic signals in Waterbury to better facilitate traffic flow.
3. Initiate a 5-1-1 transportation information hotline.
4. Provide transit status and trip planning through the internet and mobile applications.

Transportation Security

1. In cooperation with the state police, DEMHS and its successor agency, and local municipalities, continue participating in traffic diversion planning and exercises related to the approved Traffic Diversion Plans for I-84 and Routes 7 and 8 and as well as other emergency management activities.
2. Include transportation security, as appropriate, in the activities of CNVRMPO's Central Naugatuck Valley Emergency Planning Committee.
3. Assist in the development of municipal plans for preparedness, mitigation, response and recovery as it relates to transportation emergencies.[1]
4. Participate on the Statewide Incident Management Task Force with other regional planning organizations, state agencies, and local emergency responders to develop and promote incident management projects.

Community Circulation and Road Connectivity

Connecting roads within communities is an important means of enhancing future traffic circulation. While cul-de-sac streets are often favored by developers and residents, numerous unconnected roads concentrate traffic on a few main roads in a municipality. Local street connections, in addition to pedestrian paths between neighborhoods, help bind communities together, increase social opportunities for children, and reduce parental "chauffeuring" of children. Moreover, a lack of alternate traffic circulation routes can create problems for emergency services. Each community should develop an overall traffic circulation plan to meet future needs and establish policies that emphasize connectivity and minimize cul-de-sacs.

1. Emphasize connectivity in developing local roads.

[1] Pre-disaster mitigation plans have been completed for the entire region and approved by the Federal Emergency Management Agency. These plans will be updated over the next three years if funding is approved.

Appendix A -
Local Priorities For Transportation Projects

A priority list of local transportation projects was developed from narrative reports provided by chief elected officials, municipal planning and zoning staff, and municipal engineers. Projects include state and local roads and bridges, bus service, paratransit services for the disabled and elderly, rail, multi-use paths, and streetscapes.

CNVRMPO cannot guarantee that local priorities will match regional or state priorities, although inclusion of these projects in the plan was vital to the public comment process. CNVRMPO will assist municipalities with their priorities whenever possible. Each of these projects will be prioritized, evaluated, and, if deemed to be a regional and/or state priority, it will be moved into the "Recommended Plan" (section V of the Long-Range Regional Transportation Plan). Funding has been included for road projects that are moved into the "Recommended Plan" in the cost estimates, under item "Future road improvements in member towns."

Beacon Falls

1. Complete the corridor study for a connector road between Route 42 in Beacon Falls and Route 67 in Seymour. Continue participating in the study process with Beacon Falls, Seymour, and Valley Council of Governments
2. Straighten and widen the intersection of Lopus Road and Pines Bridge Road (Route 42). This intersection will see increased activity with the development of Pines Bridge Industrial Park.
3. Continue work to implement the Naugatuck River Greenway Routing Study as part of a regional and interregional proposal.
   Update: Phase I has been completed.

Bethlehem

1. Improve sight lines and grading along Route 132 including intersections with Hard Hill Road; Nonnewaug Road and Magnolia Hill Road; Carmel Hill Road; and Judge Lane.
2. Improve sight lines at Route 61 intersection with Flanders Road.
3. Implement traffic calming and access management along Main Street (Route 61) or evaluate traffic congestion for other alternatives.
4. Improve sight lines at Double Hill and Munger Lane intersection.

Cheshire

1. Continue development of the Farmington Canal Trail.
   Update: Two segments of the trail are listed on the 2015-2018 TIP (projects 025-0144/025-0145).
2. Implement traffic calming techniques along Peck Lane and Cheshire Street.
3. Secure a shuttle to transport visitors to the prison.

Middlebury

1. Evaluate traffic congestion and safety concerns at Abbotts Pond where the existing bridge crosses a pond. Preliminary designs have been completed. Environmental issues should be addressed with the U.S. Army Corp of Engineers.
2. Implement traffic calming strategies to deter non-local traffic from using Tucker Hill and Regan Road as bypass roads.

Naugatuck

1. Widen Cross Street, reconstruct retaining walls where necessary, and improve the intersection with Cotton Hollow Road.
   Update: Listed on 2015-2018 TIP (project 087-0145).
2. Improve the intersection of Jones Road, Field Street, and Neumann Street. The intersection is dangerous; mirrors are used to create site lines.
3. Rubber Avenue Bridge, Maple Street Bridge, and Par-

son's Bridge (on Rubber Avenue) are listed as being in "poor" condition by the Connecticut Department of Transportation. These bridges must be repaired.
4. Conduct a corridor study of Route 63, Route 68, and Rubber Avenue.
5. A regional greenway is proposed along the Naugatuck River, and part of the conceptual plan is to link downtown Naugatuck with the train station commuter parking facilities, schools, recreation and open space areas, and the commercial and industrial zone.
6. Encourage economic development along Route 63, Rubber Avenue, and downtown Naugatuck by implementing transportation strategies.
7. Incorporate sidewalk repairs into road projects.
8. Widen Gunntown Road to provide safe access to recreational areas.
9. Straighten the curves on Mulberry Street between Simsberry and Hopkins Hill.
10. Install sidewalk on City Hill Street from John Street to City Brook Road.
11. Improve the intersection of Bridge Street (Rte. 68) and Spring Street.
12. Improve the intersection of Andrew Mt. Road and Andrew Avenue.
13. Improve the s-curve and grade on Hunters' Mountain Road between Old Highway Road and Perock Lane.

Oxford

1. Evaluate traffic operations on Routes 42, 188, and 34 for possible improvements.
2. Construct a rear access road from Julianno Drive on the Waterbury-Oxford airport, connecting Christian Street with Woodruff Hill Road. This would provide access to the Towantic Energy Site and the Woodruff Hill Industrial Park and provide through traffic access from Riggs Street via Prokop Road east of the airport.
3. Secure a shuttle for elderly residents.
4. Improve drainage along Quaker Farms Road (Route 188) north of Edmunds Road.
5. There are eight skewed intersections along Route 67, remaining from where the old highway was located approximately seventy years ago. Sight lines should be improved on spurs along Route 67, from Chestnut Tree Hill Road to Hawley Road. Spurs demanding attention include Old State Road 67, Old State Road #3, Old State Road #2, and Old State Road #1.
6. Improve the intersection of Chestnut Tree Hill Road (Route 42), Oxford Road (Route 67), and Riggs Street.
7. Straighten Chestnut Tree Hill Road (Route 42) at its intersection with Oxford Road. The spur (Old State Route #3) should be eliminated, and the intersection should be at a 90 degree angle.
8. Widen Christian Street to accommodate additional traffic to the airport and to a new school along the road. Curves along Christian Street, from Jacks Hill Road to Oxford Road, should be straightened and sight lines improved.
   Update: Phase I completed in 2014 (project 107-0166).
9. In conjunction with Oxford Greens, an elderly residential and golf course complex, construct a planned greenway to connect the Naugatuck State Forest with the Larkin State Bridle Trail in Oxford.
10. Soften a major curve on Pines Bridge Road (Rte 42) at the intersection with Old Litchfield Turnpike (now a gravel road). This road is a heavily used route into and out of Beacon Falls.
11. Consider the impact on Oxford of construction on the Stevenson Dam and widening of Route 34 in Monroe and Shelton.

Prospect

1. Conduct a corridor study of Route 68 through Prospect and Naugatuck, focusing on the intersection with Routes 69. Routes 68 and 69 are being used as an I-84 bypass, a situation that will worsen when construction begins on I-84 in eastern Waterbury.
2. Prepare for commercial development along Route 69 by implementing access management methods.
3. Determine the feasibility of JobLinks shuttle and fixed route bus stops in Prospect (at industrial parks, downtown, and along the Route 69 corridor).
4. Determine and analyze commuting patterns through Prospect. Examine and deter use of bypass roads such as Clark Hill Road from Naugatuck to Waterbury.
5. Reassess signal timing along Route 69 in Prospect and Waterbury, and Route 68 (at the intersections with Straitsville Rd and Old Schoolhouse Road).

Southbury

1. Secure funding for Pomperaug River Bridge repairs.
   Update: Funded under LOTCIP in FY 2014. Final design is underway.
2. Improve the Route 188 and Old Waterbury Road intersection with addition of right turn.
3. Reconstruct River Road.
4. Install sidewalk on the south side of East Hill Road from one lane bridge to *Hillhouse* Road.
5. Improve intersection of Burma Rd. and Rte 67.
6. Reconstruct Old Field Road and include sidewalks from Main St to Heritage Road.
7. Implement recommendations of the Interstate 84 West of Waterbury Needs and Deficiencies Transportation Study.
   Update: Short term improvements to interchanges 14 and 16 are listed in the 2015-2018 TIP (project 130-0173)
8. Realign Tuttle Road to reduce horizontal curve.
9. Implement the recommendations of the Route 67 Traffic Operations Study.
10 Conduct a corridor study of Route 6 from Interstate 84 to Woodbury.

Thomaston

1. Participate in a Route 6 corridor study.
2. Monitor any high volume-capacity major routes.
3. Monitor existing bus and JobLinks services.
4. Participate in planning a regional greenway along the Naugatuck River.

Waterbury

1. Demolish Prospect Street ramp-garage and replace as a regional surface lot serving the downtown central business district.
   Update: In July 2014 the City received $1.2 million in state funds tp demolish the parking garage.
2. Implement improvements to the rail station, including the demolition of the former SNET building.
   Update: SNET building was demolished in 2014. Design for updated parking and passenger waiting areas are underway.
3. Improve Aurora Street from CT Route 73 to Bunker Hill Avenue.
4. Improve Pearl Lake Road as defined in the currently proposed design.
   Update: Construction underway.
5. Identify and acquire properties necessary for the construction of the Naugatuck River Greenway project.
6. Improve arterial and collector roads operating at or below acceptable service levels. These include: Homer St, Boyden St., Huntingdon Ave., North Main Street, and East Main Street.
7. Provide evening and week-end bus service to the Naugatuck Valley Community College (NVCC).
   Update: Evening bus service began in October 2011. Evening service is partially funded by
8. Improve community safety and transportation circulation by connecting existing fragmented roads including the following: Academy Ave., Arden Rd., Belmont Ave., Bristol St., Columbia Blvd., Farrington Ave., Filmore St., Gertrude Ave., Geddes Terrace, Grassy Hill Rd., Hauser St., Hotchkiss St., Hull St., Inman Ave., Jackson St., Lucille St., Maple St., Mason Ave., Warren Ave., Waverly Ave., and Westwood Ave.

Watertown

1. Evaluate traffic congestion on Straits Turnpike (Route 63) in the vicinity of the Stop and Shop plaza for traffic operation improvements.
2. Alleviate congestion along Main Street (Route 63) with a bypass along the former railroad track, or by creating a new road adjacent to Steele Brook.
3. Construct sidewalks along Main Street connecting the public library and town hall; connecting elderly housing and a school on Buckingham Street with downtown Watertown and Main Street (Route 63); connecting residential housing on Davis Street with Straits Turnpike (Route 63). Link sidewalk projects with the regional Naugatuck River greenway (proposed).
4. Improve existing bus shelters, and install new shelters (without advertising).
5. Add access management techniques to zoning regulations, such as a provision for sharing driveways along primary arterials.
6. Request an easement for the Naugatuck River greenway at the site of the new North East Transportation bus garage.
   Update: CTDOT has incorporated the Naugatuck

River Greenway and a small parking area into the final design of hte bus garage.
7. Continue efforts to make town sidewalks wheelchair accessible.
8. Develop Steele Brook Greenway.
   Update: Phase I completed.
9. Improve Bunker Hill Road between Straits Turnpike and Quassapaug Road to address safety concerns.
10. Alleviate congestion on Main Street in Oakville (Rte 73) between Pin Shop Road and Route 73.
11. Construct improvements to Sunnyside Avenue and Sylvan Lake Road projects.

Wolcott

1. Analyze traffic operations on the bridge on Wolcott Road (Route 69) at Center Street (Route 322) for possible improvement.
2. Redesign the intersection of Woodtick Road, Todd Road, and Scovill Road to improve sight lines.
3. Improve sight lines at the intersection of Wolcott Road (Route 69) and Charles Drive.
4. Improve sight lines at the intersection of Wolcott Road (Route 69) and MacCormack Drive.
5. Improve the intersection of Todd Road and Meriden Road (State Road 844), by tree trimming and minor widening.
6. Consider a greenway along Route 69 in the town center as highlighted in the draft Village Center Study done by the University of Connecticut, Program of Landscape Architecture.
7. Monitor the intersection of Woodtick Road and Lindsley Drive.

Woodbury

1. Conduct a corridor study along Route 6 through Thomaston, Woodbury, and Southbury to examine the following intersections: Main Street (Route 6) and Sherman Hill Road (Route 64); Main Street (Route 6), Judson Avenue, and Old Middle Road Turnpike; Main Street (Route 6) and Sycamore Avenue (State Road 317). The study should include the impact of traffic from Bethlehem along Flanders Road.
2. Implement traffic calming mechanisms, rather than impose traffic lights or street widening, along Main Street.
3. Conduct an access management study along Rte 6 to connect commercial parking lots and consolidate curb cuts. Include recommendations in land use regulations.
4. Create a pedestrian friendly Main Street by improving crosswalks, providing amenities such as benches and providing tourist conveniences. Encourage greater walking to schools by Woodbury youth.
5. Secure a shuttle for weekend use along Main Street to transport tourists and shoppers and alleviate congestion.
6. Evaluate safety improvements at: Old Town Farm Rd.; Rte. 6 intersection with Quonopaug Trail, Flanders Rd., Middle Road Turnpike, and South Pomperaug Ave. & Old Sherman Hill Rd.; Rte. 64 intersection with Old Sherman Hill Rd. & Middle Quarter Rd., and Heritage Dr.; Rte. 317 intersection with Hollow Rd; Old Sherman Hill Rd intersection with Judd Hill Rd; White Deer Rocks Rd intersection with Old Middle Road Turnpike; and the single lane bridge on Middle Quarter Rd.
7. Conduct inspections of all bridges with a span of less than 20 feet, with particular attention to those that are structurally deficient or functionally obsolete. Apply for state funds to repair those that pose a serious safety risk.

Appendix B -
Transportation Funding Sources

FEDERAL FUNDING

Federal funding is determined by authorizations established under MAP-21. As of February 2015, Congress has extended MAP-21 through a continuing resolution ending May 31, 2015. Most federal transportation program funds are apportioned by formula using factors relevant to the specific program. Some are discretionary programs. Explanations of each highway and transit funding programs, including eligible uses of funds, limitations, federal and state funding ratios, and availability are presented below.

Federal Highway Administration Programs

The Federal Highway Administration (FHWA) is the federal funding source for highway projects:

High Priority Projects (HPPS) (80-20)
High Priority Project funds are made available for specific projects identified by Congress. These projects are referred to as demonstration projects.

National Highway Performance Program (NHPP) (80-20)
The NHPP provides support for the condition and performance of the National Highway System (NHS), for the construction of new facilities on the NHS, and to ensure that investments of Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in a State's asset management plan for the NHS. NHPP projects must be on an eligible facility and support progress toward achievement of national performance goals for improving infrastructure condition, safety, mobility, or freight movement on the NHS, and be consistent with Metropolitan and Statewide planning requirements
Highway Safety Improvement Program (HSIP) (90-10)
This program provides funds to achieve a significant reduction in traffic fatalities and serious injuries on all public roads.

Highway Safety Improvement Program (HSIP) (90-10)
This program provides funds to achieve a significant reduction in traffic fatalities and serious injuries on all public roads.

FHWA Surface Transportation Program (STP) (80-20)
The Surface Transportation Program funds may be used for roadway improvements on roads that are functionally classified as rural major collector or above. Functional classification of rural minor collector or local road is not eligible. This program has a variety of subcategories defined below.

FHWA Surface Transportation Program – Urban (STP-U)
STP-Urban funds are the largest of the STP programs. Funds are allocated to states and regions according to a formula that is based on the population of urbanized areas. CNVRMPO receives STP-U funds for four urbanized areas: Waterbury (Other Urban), Bridgeport-Stamford, New Haven, and Hartford. The STP-U Program provides funds for improvements to eligible roads in urban areas. The eligibility guidelines for STP-U funds are flexible. Funds can be used for a wide range of projects, such as roadway widening, roadway reconstruction, transit projects and ridesharing projects.

FHWA Surface Transportation Program - Anywhere (STP-A)
STP-A fund can be used anywhere in the state, regardless of rural or urban designation and for any type of transportation project. CTDOT determines where the funds will be spent. Project eligibility is the same as the STP-U program.

FHWA Surface Transportation Program - Rural (STP-R)
STP-R funds can be used in the rural areas of the state, excluding roads classified as rural minor collector or rural local. The amount of rural funds is based on mile-

age from a previous federal program called the rural secondary program. The funding ratio for the STP-rural Program is 80 percent federal funds to be matched by 20 percent state.

Bridge Program: Off System (80-20)
This program provides funds to assist the States in their programs to replace or rehabilitate deficient highway bridges and to retrofit bridges on public roads. The "Off System" Bridge Program is small federal bridge program. It provides funds to replace or rehabilitate bridges that are not on the Federal-Aid road system. CTDOT has a program of regularly inspecting and rating the condition of local, as well as State bridges. Candidate projects are selected from the list of local and State bridges with poor or fair condition ratings. Since most State roads are on the Federal-Aid road system, they are not qualified for this program. Many of the funded projects are municipal bridges. The funding ratio for the "Off System" Bridge Program is 80 percent federal funds to be matched by 20 percent state funds.

National Highway Traffic Safety (NHTS) (100)
The State of Connecticut is annually assessed a 3% penalty from it's NHS, STP, and IM program to the State's 402 Safety Program because it does not meet Federal Open Container Legislation Requirements under 23.U.S.C. 154. The Department programs these funds towards hazard elimination eligible projects. This program is designed to save lives, prevent injuries and reduce economic costs due to road traffic crashes, through education, research, safety standards and enforcement activities. The funding ration is 100 percent Federal.

FHWA Congestion Mitigation and Air Quality (CMAQ) (80-20)
Congestion Mitigation and Air Quality (CMAQ) is a program that addresses congestion and air quality problems. Funds must be used for projects that reduce congestion and/or vehicular emissions. The funds are intended to help achieve the goal of the Clean Air Act Amendment (CAAA). In determining project eligibility under these criteria, priority should be given to implementing those projects and programs that are included in an approved State Implementation Plan (SIP) as a Transportation Control Measure (TCM) and will have air quality benefits. All CMAQ funded projects and programs require an assessment and documentation of air quality benefits by the State.

Transportation Alternatives Program (TAP) (80-20)
MAP-21 establishes a new program to provide for a variety of alternative transportation projects that were previously eligible activities under separately funded programs. This program is funded at a level equal to two percent of the total of all MAP-21 authorized Federal-aid highway and highway research funds, with the amount for each State set aside from the State's formula apportionments. Unless a State opts out, it must use a specified portion of its TA funds for recreational trails projects. Subcategories include the Transportation Enhancement program, Recreational Trails program, and the Safe Routes to Schools program. Funds have been suballocated by urbanized area.

Transportation Investments Generating Economic Recovery (TIGER) (80-20)
TIGER funds are awarded on a competitive basis for capital investments in surface transportation projects that have a significant national, regional, and local impact. Objectives of the program include preserving and creating jobs, promoting economic recovery, investing in transportation infrastructure that will provide long-term economic benefits, and assisting those most affected by the current economic downturn.

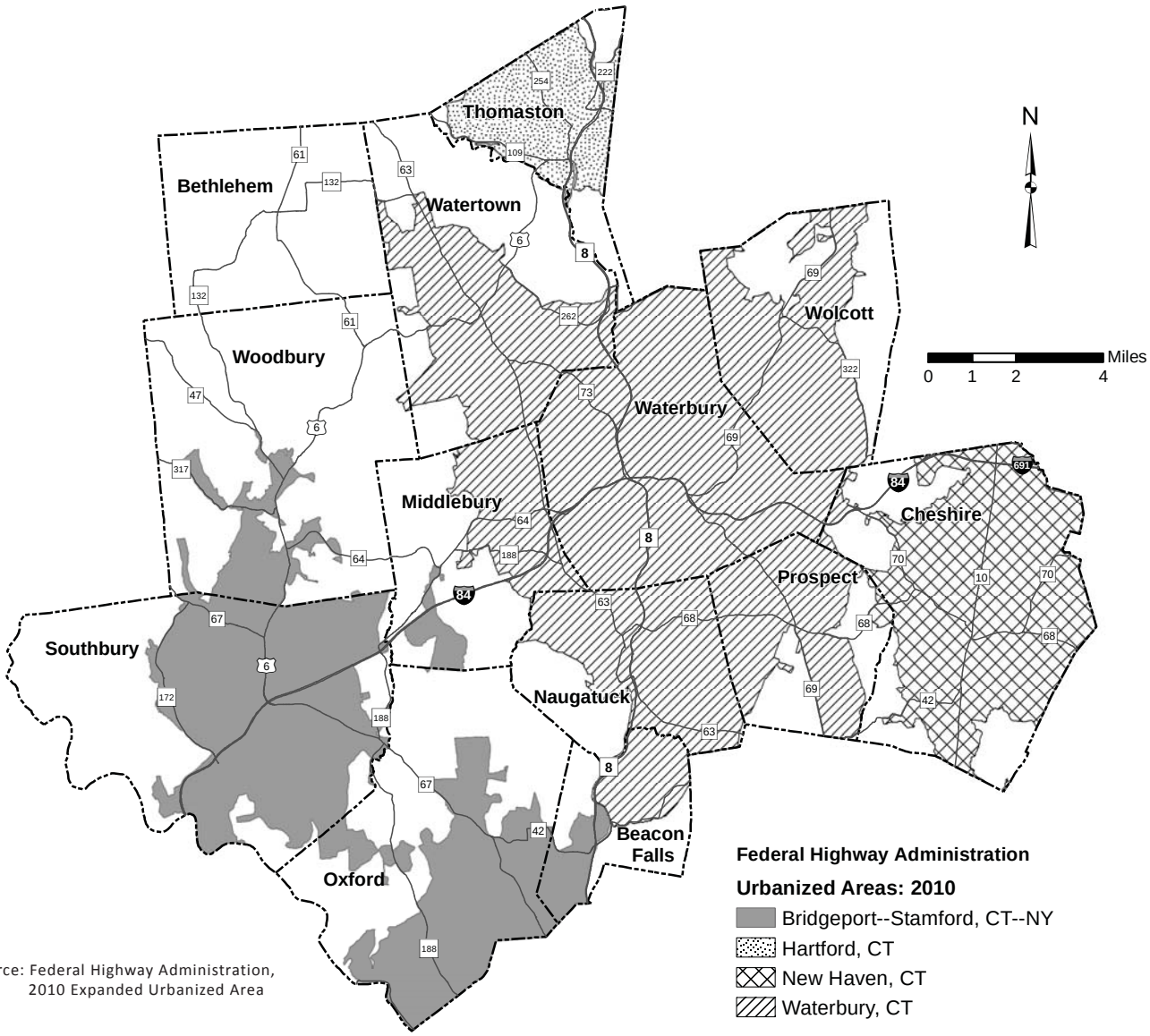
Ferry Boat Discretionary (FBD) (80-20)
This program is administered by the FHWA to fund the construction of ferry boats and ferry terminal facilities.

Historic Covered Bridge Preservation (HCBPP) (80-20)
This program provides funds to assist States in their effort to rehabilitate or repair and to preserve the Nation's historic covered bridges.

National Corridor Planning and Development (NCPD) (80-20)
This program provides funding for the planning, design, and construction of corridors of national significance, economic growth, and international or interregional trade. Eligible corridors are listed in ISTEA, the 1995 Highway Designation Act and TEA-21.

Public Lands Highways Discretionary (PLHD) (100)
This program was originally established in 1930 by the

Figure B.1 Urbanized Area Boundaries: 2010



Source: Federal Highway Administration, 2010 Expanded Urbanized Area

Amendment Relative to Construction of Roads through Public Lands and Federal Reservations. The intent of the program is to improve access to and within the Federal lands of the nation. In accordance with 23 U.S.C. 204(b)(5), the PLH funds are available for "any kind of transportation project eligible for assistance under Title 23, United States Code, that is within, adjacent to, or provides access to" Federal lands or facilities. Under the provisions of 23 U.S.C. 204(b)(1)(A), the PLH funds are available for transportation planning, research, engineering, and construction of the highways, roads, and parkways, and of transit facilities within the Federal public lands. Under the provisions of 23 U.S.C. 204(b)(1)(B), the PLH funds are also available for operation and maintenance of transit facilities located on Federal public land.

Scenic Byways Program (SB) (80-20)
This program provides funds for the designation by the Secretary of Transportation of roads that have outstanding scenic, historic, cultural, natural, recreational and archaeological qualities as All-American Roads or National Scenic Byways. This program also provides funds for projects on existing Scenic roadways and for planning, designing, and developing State scenic byway programs.

The renovated Depot Street Bridge, Beacon Falls

Transportation and Community and System Preservation Program (TCSP) (80-20)
This program provides funding for the planning and implementation of projects that address the relationships between `transportation and the community. Projects should include improving the efficiency of the transportation system; reducing the impacts of transportation on the environment; reducing the need for costly future public infrastructure investments; ensuring efficient access to jobs, services and center of trade; and examining and encouraging private sector development patterns which meet these purposes. The funding levels are 80 percent federal and 20 percent local.

Section 330, 115, 117, 112, 120 & 378 (100)
This program is dedicated for those projects that are established by congressional designation. The funding ratio is 100 percent federal and is available until expended

Value Pricing Pilot Program (VPPP) (80/20)
Congress has mandated this program as an experimental program to learn the potential of different value pricing approaches for reducing congestion. The grant program supports efforts by State and local governments or other public authorities to establish, monitor and evaluate value pricing projects, and to report on their effects. A pricing project under this program may include tolls on Interstate highways. Federal funds can be used to support pre-implementation costs, including costs of public participation and pre-project planning for up to 3 years, and to support project implementation costs for up to 3 years.

Federal Transit Administration

The Federal Transit Administration (FTA) is the federal funding source for transit projects:

FTA Section 5307 Capital and Subsidy (Operating) Program (80/20)
FTA Section 5307 funds are primarily for capital assistance projects, such as the purchase of new buses. A small portion of the funds are reserved for operating assistance; federal regulations restrict the amount that can be used for operating assistance. Section 5307 funds are pooled and applied first to the highest priority bus needs as iden-

tified in regional TIPs and the STIP. The FTA provides 80% of Section 5307 funds, and CTDOT provides the non-federal share for all local bus systems in Connecticut.

FTA Section 5309 Capital (5309) (80/20)
With Section 5309 funds, the FTA provides capital funding to establish new transit service projects ("New Starts" - 40%), improve and maintain existing rail and other fixed guideway systems ("Rail Modernization - 40%), and rehabilitate bus systems ("Bus and Other" - 20%. New Start funds are awarded on a discretionary basis. Proposed new rail services must compete against proposals from other areas of the country.

Section 5310 Capital (5310) (80/20)
Under Section 5310, the FTA provides capital assistance to non-profit organizations that provide specialized transportation for elderly people and persons with disabilities and certain public organizations. The program provides cash grants from the federal government of up to 80% or a maximum of $40,000 towards the purchase of wheelchair-accessible vehicles. Many CNVR municipalities and non-profit agencies have used Section 5310 grants to purchase or replace vehicles

FTA Section 5311 Non-Urbanized and Small Urbanized Area Capital and Operating Program (80/20)
This program provides funds to assist in the development, improvement, and use of public transportation systems in non-urbanized and small urban areas.

FTA Section 5317 New Freedom Initiative (5317J) (50/50 operations, 80/20 capital)
This program provides funds that assist individuals with disabilities with transportation. Eligible activities include new public transportation services and public transportation alternatives beyond those required by the ADA.

STATE OF CONNECTICUT FUNDING

The Special Transportation Fund (STF) supports debt service on state bonds issued to pay for transportation projects (including matching federal funds), and it supports a small program of pay-as-you-go activities. The major sources of STF dollars are the motor fuels tax and motor vehicle receipts.

Governors' Transportation Initiative (GOV) (100)
This funding source is 100 percent state funded committed by the Legislature and the Governor.

Local Transportation Capital Improvement Program (LOTCIP) (100)
This program is intended to address regional transportation priorities through capital improvement projects prioritized and endorsed by the RPOs. Projects must meet the eligibility requirements of the Federal STP-Urban Program, such as being located on a roadway classified as a collector or higher. RPOs may use up to 15 percent of their annual LOTCIP funds for pavement rehabilitation and sidewalk projects. Municipalities are responsible for all design and rights of way costs and the state is responsible for 100 percent of construction costs.

LOCAL FUNDING

Some funding programs require a local match from the municipality where a project is located to match federal and/or state funds. Local funding may include bonding, LOCIP, or other sources.

Appendix C -
Metropolitan Planning Factors and Six Livability Principles

Metropolitan Planning Factors

The cornerstone of MAP-21 is the transition to a performance and outcome-based program. CNVRMPO will implement performance measures upon the publication of final rules by FHWA, FTA, and CTDOT. MPOs will invest resources in projects to achieve individual targets that make progress towards the seven (7) national performance goals stated below. MAP-21's seven national performance goals and how the transportation plan addresses them are summarized below:

1. Safety – *To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.*

CNVRMPO supports the program areas of emphasis that have been developed by the CTDOT and are summarized in Appendix E. High hazard accident locations, where safety improvements should be targeted, are discussed specifically in Chapter 3, "Existing Transportation System," and Appendix A of the Plan.

In addition, CNVRMPO requests applications annually for the Local Road Accident Reduction Program, funding hazardous locations on local roads that are not part of the federal aid road system.

2. Infrastructure Condition – *To maintain the highway infrastructure asset system in a state of good repair*

As part of CNVRMPO's goals and objectives in Chapter 1, the preservation of the existing transportation system is highlighted as follows:

"To maintain and improve the region's highway system with an emphasis on making better use of existing transportation facilities while seeking to improve safety and security and reducing traffic congestion, energy consumption, and motor vehicle emissions."

3. Congestion Reduction – *To achieve a significant reduction in congestion on the National Highway System.*

Chapter 3 identifies existing congested highway segments while Chapter 4 identifies future congested highway sengments in 2030.

The "Recommended Plan" in Chapter 5 supports improvements on the congested segments identified in Chapters 3 and 4 such as the widening of Interstate 84 in Eastern Waterbury. In addition, Chapter 5 supports improvements to the region's rail, bus, ridesharing, and non-motorized transportation systems as a way to reduce congestion. CNVRMPO solicits applications for the Congestion Mitigation and Air Quality Program (CMAQ).

4. System Reliability – *To improve the efficiency of the surface transportation system.*

The development of the Long Range Regional Transportation Plan promotes efficient system management and operation. All of the transportation modes in the region are considered in developing the Plan and recommendations with consideration given to existing and future transportation needs and a reasonable expectation of funding availability.

Chapter 5 of the Plan recommends using Intelligent Transportation System (ITS) to improve system efficiency and reliability. Suggested improvements include installing more variable message signs and traffic cameras on expressways, optimizing and coordinating traffic signals in downtown Waterbury, implementing a 5-1-1 trans-

I-84 westbound, Waterbury

portation information hotline, and providing transit trip planning through mobile and web applications.

5. Freight Movement and Economic Vitality – *To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.*

Freight movement is discussed in Chapter 3. with most of the goods being transported on the region's highway network, alleviating congestion on the expressways remains a high priority to ensure the mobility of goods. The plan also advocates for rail improvements on the Waterbury Branch Line. The curerent line operates on a single track, limiting freight shipment opportunities. Improvements such as signalization and passing sidings would increase the capacity for both freight and passenger service.

6. Environmental Sustainability – *To enhance the performance of the transportation system while protecting and enhancing the natural environment.*

Through CNVRMPO's efforts to support and develop walkways, bikeways, and greenways, alternatives to motorized modes of transportation are fostered. Cleaner air and cleaner water are products of reduced dependence on motorized vehicles. Through these initiatives, the quality of life for CNVR residents is also improved.

CNVRMPO encourages its municipalities to apply for funding sources such as the Congestion Mitigation and Air Quality (CMAQ) program and the Electric Vehicle Charging Station Incentive Program.

7. Reduced Project Delivery Delays – *To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completing through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.*

CNVRMPO will work with CTDOT, FHWA, FTA, and member municipalities to ensure timely and efficient project delivery times.

Performance Measurement

CNVRMPO will work closely with CTDOT, FHWA, FTA to establish performance measures and targets that comply with the National Goals described above.

Chapter 3 discusses the CNVRMPO's data collection and analysis efforts. NVCOG staff regularly conducts commuter lot counts, transit ridership and operations studies, traffic safety studies, and congestion management. CNVRMPO will continue its data collection programand use the data to establish benchmarks and policy objectives.

The Partnership for Sustainable Communities' Six Livability Principles

In June 2009, the U.S. Department of Housing and Urban Development (HUD), U.S. Department of Transportation (USDOT), and Environmental Protection Agency (EPA) formed the Partnership for Sustainable Communities in order to help all communities gain better access to affordable housing, more transportation options, and support economic growth. The Partnership agreed on Six Livability Principles to support these efforts. These livability principles will be considered as part of CNVRMPO's transportation planning process.

- **Provide more transportation choices.** Develop safe, reliable, and economical transportation choices to de-

crease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.

- **Promote equitable, affordable housing.** Expand location-and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.
- **Enhance economic competitiveness.** Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services, and other basic needs by workers, as well as expanded business access to markets.

- **Support existing communities.** Target Federal funding toward existing communities—through strategies like transit oriented, mixed-use development, and land recycling—to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.

- **Coordinate and leverage Federal policies and investment.** Align Federal policies and funding to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.

- **Value communities and neighborhoods.** Enhance the unique characteristics of all communities by investing in healthy, safe, and walk able neighborhoods—rural, urban, or suburban.

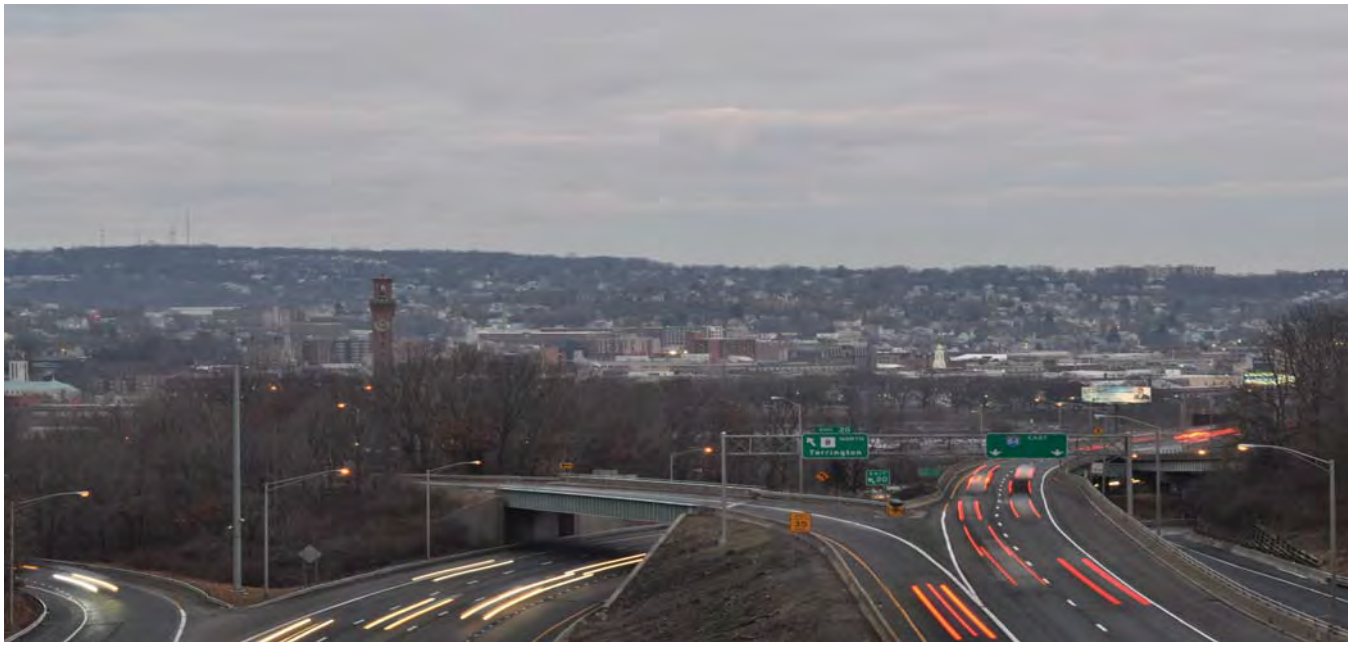
Trolly Line Greenway, Middlebury

Appendix D - Financial Constraints

The Central Naugatuck Valley Region (CNVR) can anticipate $3.2 billion dollars in road project funding between 2015 and 2040, according to Connecticut Department of Transportation projections. This is 11.5% of the projected statewide spending on roads. Additional money will be spent on rail and bus capital improvement and operating subsidies in the CNVR.

The majority of the CNVR's future road project funding will be spent on widening I-84 from Waterbury to Southington and replacing the "mixmaster" interchange at I-84 and Route 8 in Waterbury. The remaining money will be required for system preservation and improvement projects. System preservation projects maintain existing roads and include road repaving, bridge repair or replacement, and any other form of reconstruction in place. System improvement projects build new road infrastructure and include such projects that enhance safety, improve mobility, increase system productivity, or promote economic growth. (See Tables D.1 and D.2).

The largest transit projects anticipated in the CNVR between 2015 and 2040 are the construction of a bus maintenance garage in Watertown for CT Transit-Waterbury and improvements to the Waterbury branch rail line (passing sidings and signalization). Other major expenditures include fixed route and paratransit bus fleet replacements. Several complete fleet replacements will be required between 2015 and 2040. The rail coaches serving the Waterbury branch will need rehabilitation and replacement during the planning period. Annual operating subsidies for fixed route bus, paratransit, and commuter rail (Waterbury branch line) services in the CNVR are also expected to continue between 2015 and 2040. (See Table D.3)



D.1 Allocation of Anticipated Transportation Funds for the CNVR 2015-2040

Roads					Estimated Year of Expenditure	Estimated Expenditures
CNVR System Preservation (details in Table D.2)					2015-2040	$505,237,139
CNVR System Improvements (details in Table D.2)					2015-2040	$434,576,855
Major Projects of Statewide Significance						$1,904,200,000
	Waterbury	I-84	Replace Sanitary Sewer Station at Harpers Ferry Rd (151-285)	$18,000,000	2015	
	Waterbury	I-84	Widening I-84 ito three lanes in each direction and modify interchanges between Rte. 69 and Pierpont Rd. (151-273)	$286,200,000	2015-2018 TIP	
	Waterbury	I-84	Upgrade the interchange and nearby ramps as recommended in the I-84/Route 8 Waterbury Interchange Needs and Deficiencies Study (151-TBD)	$1,600,000,000	2035	
	Southbury, Middlebury, Waterbury	I-84	Widen to three lanes from interchanges 13-18	*$1,101,478,000*	*unfunded*	
Total Road Project Funding for the CNVR 2015-2040						$2,844,013,994

D.2 Anticipated Highway Expenditures for the CNVR 2015-2040

Roads				Estimated Year of Expenditure	Estimated Expenditures
CNVR System Preservation				2015-2040	$505,237,139
Waterbury	I-84 WB	Bridge Rehab near Rte. 8 (0151-0313)	$12,200,000	2015	
Waterbury	I-84 EB	Bridge Rehab near Rte. 8 (0151-0312)	$17,000,000	2015	
Naugatuck	Maple St.	Bridge Rehab over the Naugatuck River (9087-4214)	$3,800,000	2015	
Waterbury	I-84 / Rte. 8	Rehab five bridges near the I-84 and Rte 8 interchange, (0151-0326)	$61,800,000	2017	
		Balance remaining for unscheduled projects			$410,437,139
CNVR System Improvements				2015-2040	$434,576,855
Watertown	Rte. 73	Realign at RR abutment (153-118)	$2,300,000	2015	
Waterbury	Downtown Waterbury	Signal timing and coordination and traffic sign improvements as recommended in the I-84/ Route 8 Waterbury Interchange Needs and Deficiencies Study (151-0325)	$2,868,000	2015-2018 TIP	
Naugatuck	Cross St.	Reconstruct and widen from Rte. 8 to Rte. 63.	$4,850,000	2015-2018 TIP	
Middlebury	I-84 / Rte. 63 / Rte. 64"	Improvements at Interchange 17 on I-84 including a new connector road (Chase Parkway Extension) between Route 64 and Route 63 (080-0128).	$32,251,000	2015-2018 TIP	

D.2 Anticipated Highway Expenditures for the CNVR 2015-2040 continued

CNVR System Improvements continued				2015-2040	
Southbury	I-84	Complete early implemention on projects at Interchange 14 and 16 as recommended in the I-84 West of Waterbury study (130-0173)	TBD	2015-2018 TIP	
Prospect	Scott Rd.	Reconstruct and widen from Nicholas Ct. to Maria Hotchkiss Rd. (114-081)	$3,039,000	2017	
Waterbury	Rte. 69	Improve traffic operations on Rte. 69 from Harpers Ferry Road to I-84.	partially included in project 151-273	2020	
Middlebury, Waterbury	Rte. 64	Lower the vertical curve and widen Route 64 to 4-lanes from Exit 17 to the Route 63 intersection. (174-309)	included in project 080-0128	2020	
Waterbury	Scott Rd.	Implement improvements at Scott Road and E. Main.	included in project 151-273	2020	
Waterbury	Downtown Waterbury	New Jackson Street extension from West Main Street to Bank Street. Complete streets improvements on Freight Street and Meadow Street, and a new pedestrian bridge between Library Park, the Waterbury Train Station, and Jackson Street. Funded by TIGER Grant (0151-TBD)	$19,500,000	2021	
Cheshire	Rte. 10	Various intersection improvements and signal coordination.	TBD	TBD	
Waterbury	Rte. 69	Widen and improve lane configurations at Rte. 69 and E. Main St. Minor widening at Rte. 69 and Manor Ave.	$1,843,000	2025	
Waterbury	Rte. 69	Major upgrade from Long Hill at Wolcott Street to Wolcott Rd. (Rte. 69) at Lakewood Rd.	$29,658,000	2025	
Waterbury	Aurora St.	Widen from Bunker Hill Rd. to Watertown Ave.	$5,940,000	2025	
Prospect	Scott Rd.	Reconstruct and widen Maria Hotchkiss Rd. to Rte. 69.	$5,572,000	2025	
Waterbury	New	Boyden Street Extension	$21,879,000	2025	
Waterbury	New	New local connection from Sunnyside Avenue to Field Street as recommended in the I-84/Route 8 Waterbury Interchange Needs and Deficiencies Study (151-TBD)	$103,469,000	2025	
Waterbury	New	New local connection from Bank Street to South Main Street as recommended in the I-84/Route 8 Waterbury Interchange Needs and Deficiencies Study (151-TBD)	$28,596,000	2025	
Waterbury	Rte. 69	Realign the Southmayd Road approach to Rte. 69 (Meriden Road).	$288,000	2030	
Prospect	Rte. 69	Minor widening to allow motorists to bypass left-turning vehicles.	$1,749,000	2030	
Naugatuck	Rte. 63	At intersection with Rte. 8 Interchange 26 and S. Main Street (SR 709).	$11,725,000	2030	
Balance remaining for unscheduled projects					$156,083,855

D.3 Anticipated Transit Expenditures for the CNVR 2015-2040

Transit (capital)		Estimated Year of Expenditure	Estimated Expenditures
CT Transit - Waterbury Bus Garage		2017	$70,000,000
Bus Fleet Replacements (assuming constant fleet and vehicle size)			
	34 hybrid buses	2023	$28,761,253
	34 hybrid buses	2035	$41,006,669
Para-Transit Fleet Replacements (assuming constant fleet and vehicle size)			
	36 paratransit vans	2015	$2,390,581
	36 paratransit vans	2019	$2,690,620
	36 paratransit vans	2023	$3,028,316
	36 paratransit vans	2027	$3,408,396
	36 paratransit vans	2031	$3,836,180
	36 paratransit vans	2035	$4,317,655
	36 paratransit vans	2039	$4,859,558
Waterbury Branch Line Improvements			
	Passing Siding	2020	$32,000,000
	Signalization	2020	$128,000,000
Transit (operating subsidies for current services)			
Waterbury Area Fixed Route Bus Service (cost in FY13)	$ 6,335,750		
GWTD Paratransit Service (cost in FY14)	$3,060,998		
Waterbury Branch Line Commuter Rail (cost in CY09)	$7,479,491		

Appendix E -
Strategic Highway Safety Plan

The general goals of the *State of Connecticut Highway Safety Plan: Federal Fiscal Year 2011* are:

- To increase safety belt use rates and remain at a level that is consistently above the national average.
- To continue to reduce the number of fatal and serious injury crashes occurring in construction/work zone areas.
- To develop a delivery system to provide timely, complete, accurate, uniform, integrated, and accessible traffic records to manage highway and traffic safety programs.
- To improve safety and highway operations of the State's roadways by reducing traffic congestion, and crashes due to diminished signage and pavement markings.

The first two goals, seat belt use and construction zone safety, apply to State of Connecticut efforts. The last two goals apply to CNVRMPO transportation planning tasks and long range regional transportation plan.

- *Traffic records delivery system:* CNVRMPO staff participates in the statewide Traffic Records Coordinating Committee, which seeks to develop an integrated electronic traffic records system for state agencies, municipalities, regional planning organizations, and other interested groups. Electronic accident and citation reports tied to GPS coordinates are beginning to be used by state and municipal police with notebook computers in cruisers. The University of Connecticut Civil Engineering Department is testing a statewide repository for highway accident data. Previously, CNVRMPO coordinated a regional mobile data communication system for municipal police departments.

- *Highway safety operations:* A major focus of the highway portion of the regional transportation plan is on reducing traffic congestion and improving safety at high hazard locations on the region's state highways.

I-84 Westbound

Appendix F - Environmental Analysis

As part of the regional planning organization's responsibilities, transportation projects must be reviewed for impacts on both environmental justice - the effect on communities - and environmental mitigation - the effect on the natural environment.

Environmental Justice

This section describes federal goals and requirements of Environmental Justice and the analysis of the CNVRMPO to meet those requirements.

The Civil Rights Act of 1964 protects individuals from discrimination based on race, color, or national origin that can limit the opportunity of minorities to gain equal access to services and programs. Recipients of federally assisted programs **cannot**, on the basis of race, color, or national origin, either directly or through contractual means:

- Deny program services, aids, or benefits;
- Provide a different service, aid, or benefit, or provide them in a manner different than they are provided to others; or
- Segregate or separately treat individuals in any manner related to the receipt of any service, aid, or benefit.

Effective transportation planning and decision-making depends on understanding and properly addressing the unique needs of different socioeconomic groups. The Federal Highway Administration and the Federal Transit Administration have specified three principles of environmental justice which must be addressed:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects on minority populations and low-income populations.
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits for minority and low-income populations.

For its Regional Transportation Plan, CNVRMPO has four measures to reach these goals: 1) Identification of minority and low-income populations in the region; 2) Methods for identifying the needs of minority and low-income populations; 3) Development of a process to evaluate the effectiveness of public outreach efforts; and 4) Preliminary analysis of the distribution of the benefits and burdens of transportation investments in the region. This chapter updates these objectives.

IDENTIFICATION OF MINORITY AND LOW-INCOME POPULATIONS IN THE REGION

CNVRMPO staff bases its approach on the *Environmental Justice Challenge Grant Final Report*, prepared by the Capital Region Council of Governments, using the goals of ease of data collection, analysis, and comprehension and usefulness to decision-makers[1]. CNVRMPO sought to identify the effects of all programs, policies, and activities on minority and low-income populations and develop tasks and activities to mitigate those effects. Staff determined the census block groups from the American Community Survey 2009-2013 and the 2010 Census which would be the target population as the first step to reach these objectives.

[1] *Environmental Justice Challenge Grant Final Report,* Capital Region Council of Governments, 2002

Minority Target Areas

Following the lead of the Capital Region, CNVRMPO classified a census block group as a "minority district" where the percentage of population was in excess of 50% Hispanic or Non-White. This area is a smaller, more focused one to compare the distribution of transportation investments. CNVRMPO identified forty-seven block groups which met the criterion. These groups represent 55% of the region's minority population. The figures are shown in Figure F.1. The only block group outside of Waterbury meeting this criteria is in Cheshire and includes the correctional facility. Nonwhites and Hispanics were 28% of the entire regional population and 55% of the population of the City of Waterbury.

Low Income Target Areas

The Census measures poverty level by income in relation to the number of people in the household. See Figure F.2.

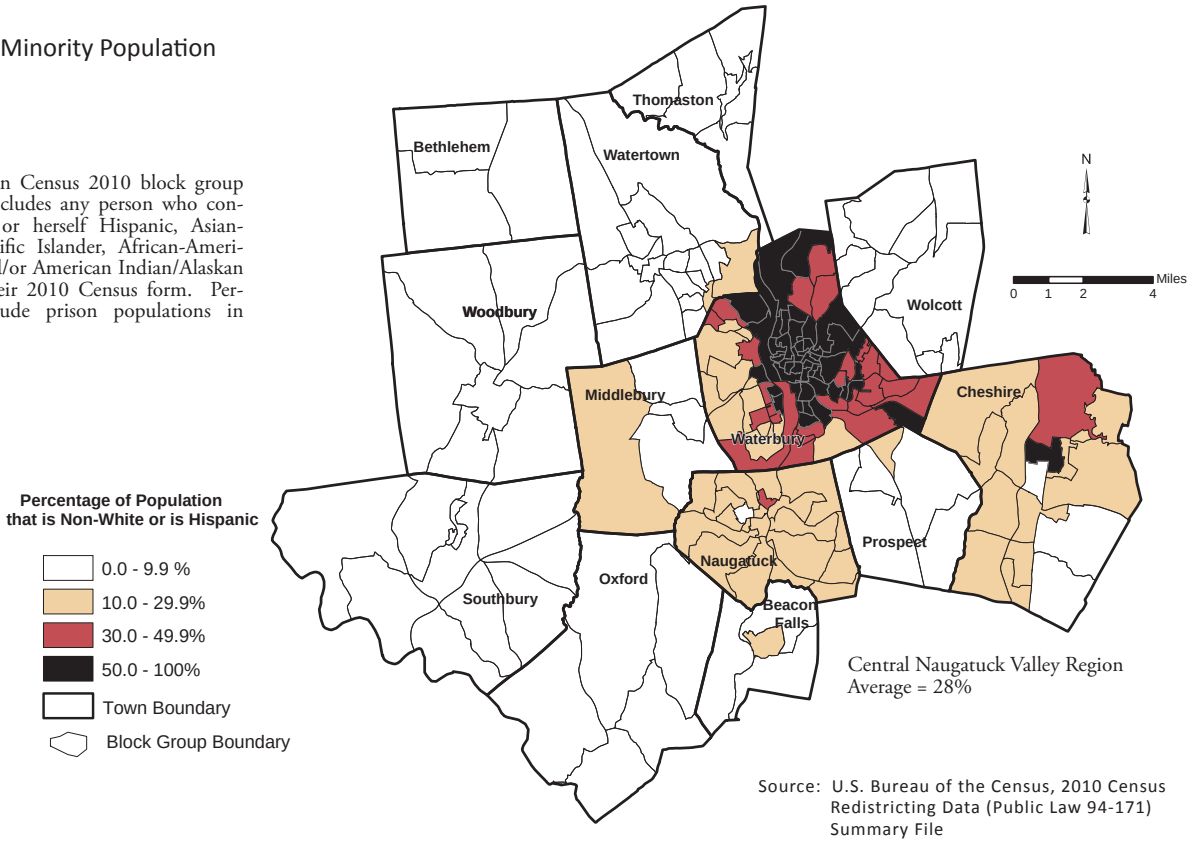
The plan uses a standard of 150% of the poverty level as the Environmental Justice standard as it includes more people for whom car ownership is extremely difficult. CNVRMPO staff decided to use tracts where 20% or more of the population was below the 150% standard since 20% includes a reasonable proportion of all low income persons.

Combined Target Areas

Using these two criteria, minority (50% or more) and 20% of population below 150% of the Poverty Level, staff determined that, in 2010, 40 block groups within the City of Waterbury met both criteria. This is an increase from 31 in the 2007 plan. See Figure F.3. This area included 13% of the regional total population and 49% of the regional minority population. No block groups outside Waterbury met both criteria.

Figure F.1 Minority Population

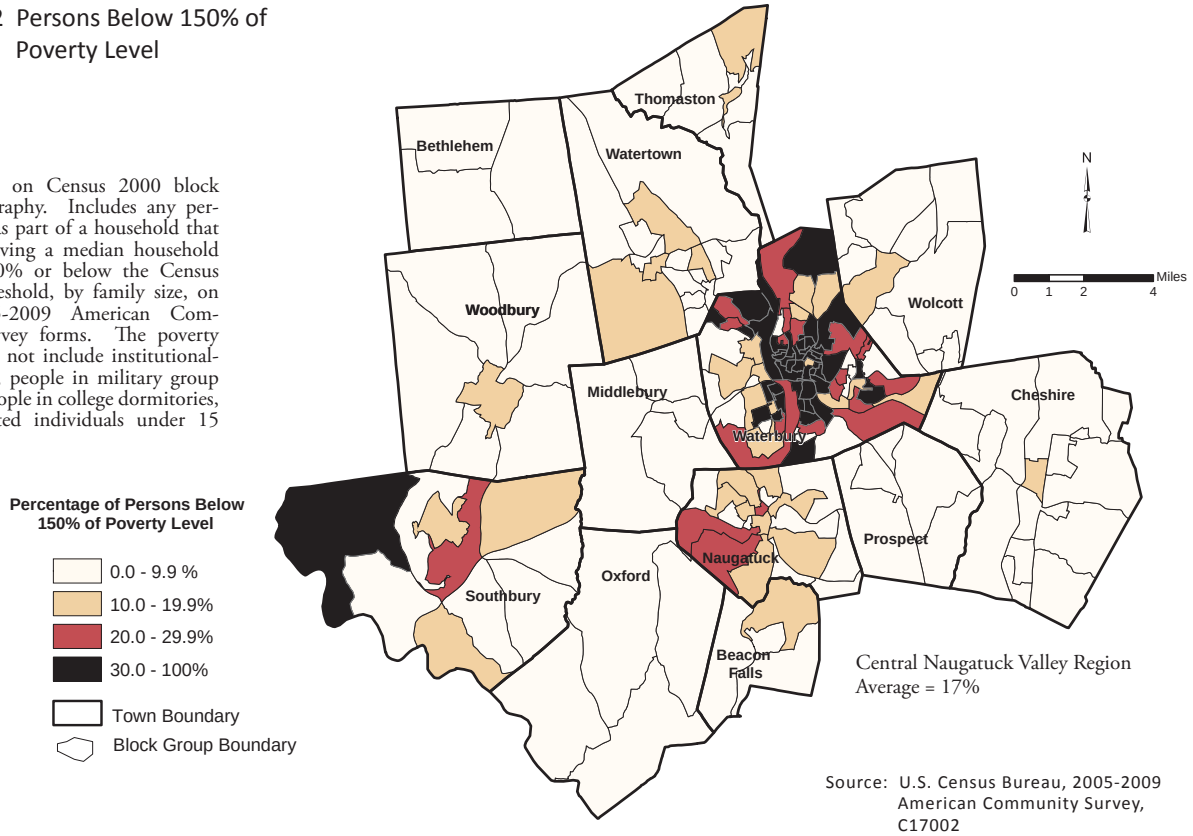
Data based on Census 2010 block group geography. Includes any person who considered him or herself Hispanic, Asian-American/Pacific Islander, African-American/Black and/or American Indian/Alaskan Native on their 2010 Census form. Percentages include prison populations in Cheshire.



Source: U.S. Bureau of the Census, 2010 Census Redistricting Data (Public Law 94-171) Summary File

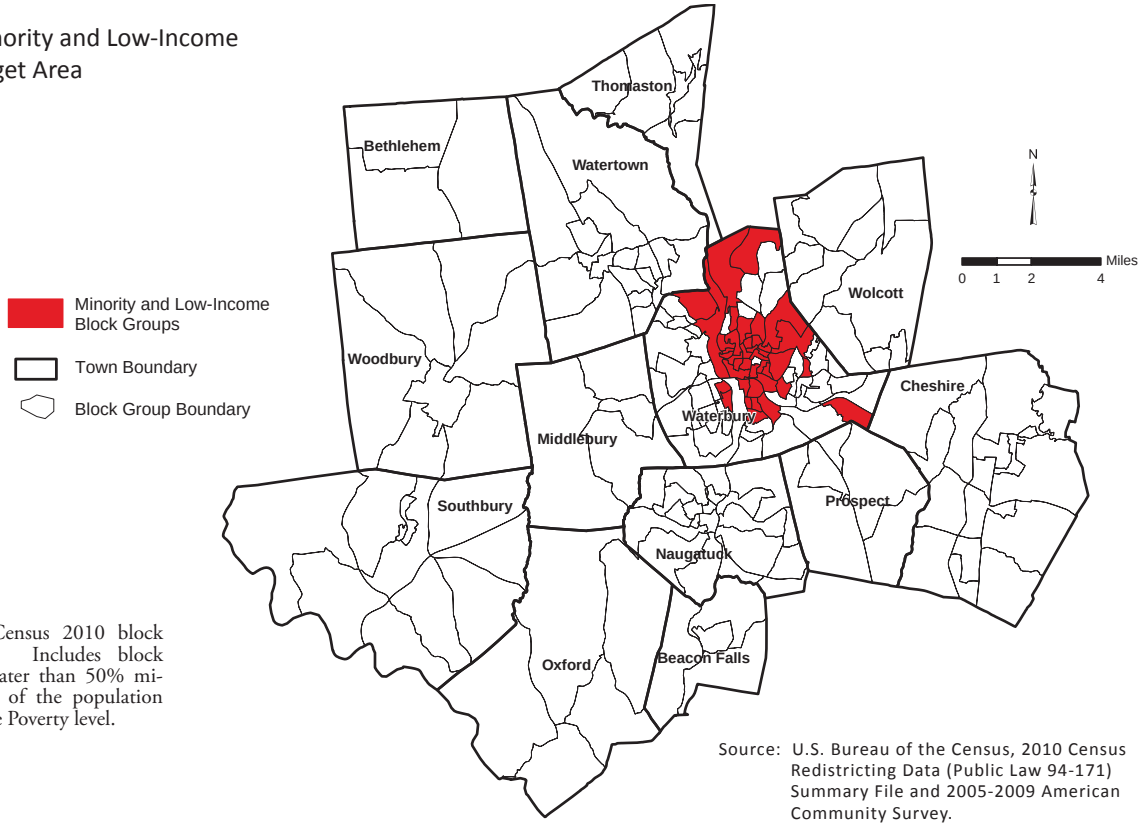
Figure F.2 Persons Below 150% of Poverty Level

Data based on Census 2000 block group geography. Includes any person who was part of a household that reported having a median household income 150% or below the Census poverty threshold, by family size, on their 2005-2009 American Community Survey forms. The poverty statistics do not include institutionalized people, people in military group quarters, people in college dormitories, and unrelated individuals under 15 years old.



Source: U.S. Census Bureau, 2005-2009 American Community Survey, C17002

Figure F.3 Minority and Low-Income Target Area



Data based on Census 2010 block group geography. Includes block groups having greater than 50% minorities and 20% of the population below 150% of the Poverty level.

Source: U.S. Bureau of the Census, 2010 Census Redistricting Data (Public Law 94-171) Summary File and 2005-2009 American Community Survey.

Table F.1 Estimates of 150% of Poverty Level

Municipality	Number of Individuals Below 150% of the Poverty Level	Estimated 2009 Population	Percent of Individuals Below 150% of the Poverty Level Based on Estimated 2009 Population
Cheshire	1,228	25,746	4.8%
Naugatuck	4,140	31,331	12.8%
Waterbury	32,965	104,588	31.5%
Watertown	1,404	22,003	6.4%

Source: American FactFinder, American Community Survey, 2005-2009 5-year Estimates,

The American Community Survey for 2005-2009 provides a 5-year average for individuals below 150% of the poverty level for Cheshire, Naugatuck, Waterbury and Watertown. Of these four largest CNVR municipalities, Waterbury remains the only municipality with more that 20% of its population below the 150% criteria. See Table F.1.

Other Demographic Groups of Interest

Figure F.4 shows the percentage of elderly in census block groups in the CNVR in 2009. Regionally, 14%, or 39,983 persons, were age 65 or older, and 14 block groups had more than 30% elderly — 8 in Waterbury, 3 in Southbury, 2 in Naugatuck, and 1 in Cheshire. Every municipality has census block groups with 10% or more elderly, including block groups covering the entire municipalities of Bethlehem, and Middlebury.

In Figure F.5, five block groups within the City of Waterbury are the only households where 50% or more of the units have no access to an automobile. These households all fall within the target area established by the minority and low income criteria in 2009 and are generally located in the downtown area.

Per Capita Income is shown on Figure F.6. Waterbury contained the only block groups with per capita incomes under $12,000, which were 5.1% of the region's households. These seventeen block groups are also within the target area. Figure F.7 shows those block groups where the households in 2009 received public assistance. Seven municipalities — Naugatuck, Waterbury, and Watertown, Thomaston, Wolcott, and Cheshire — had block groups where more than 5% of households met this criteria. Only Waterbury had block groups where more than 15% of the households received public assistance.

Those who use the bus as a means to work are shown by block group in Figure F.8. Cheshire, Wolcott, and Waterbury all had some workers meeting this criterion, but Waterbury was the only municipality with block groups where more than 5% of the workers use the bus as a means to work. Waterbury also has the most extensive bus service.

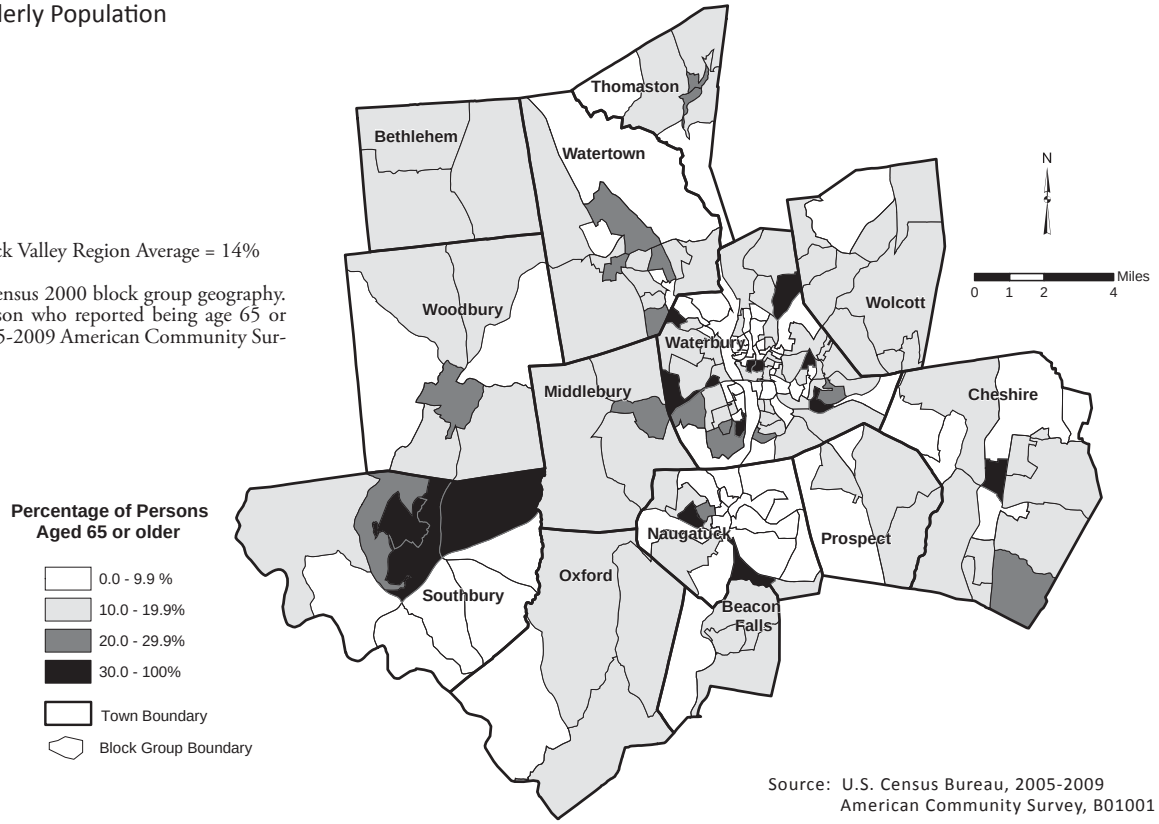
Figure F.9 shows the distribution of the 4.5% of the region which is "linguistically isolated" in 2009. Block groups with more than 5% of these households fell in 65 block groups which are concentrated in the Regional Core (Waterbury, Naugatuck and Watertown), Cheshire and Prospect. A linguistically isolated household is one in which *no member* 14 years and older speaks only English or another language and English "very well" , meaning all members 14 years old and over have at least some difficulty with English. In the CNVR, Bethlehem was the only municipality which had no households in this category.

When surveying bus riders, CNVRMPO distributes forms in Spanish as well as English to mitigate this issue.

Figure F.4 Elderly Population

Central Naugatuck Valley Region Average = 14%

Data based on Census 2000 block group geography. Includes any person who reported being age 65 or over on their 2005-2009 American Community Survey forms

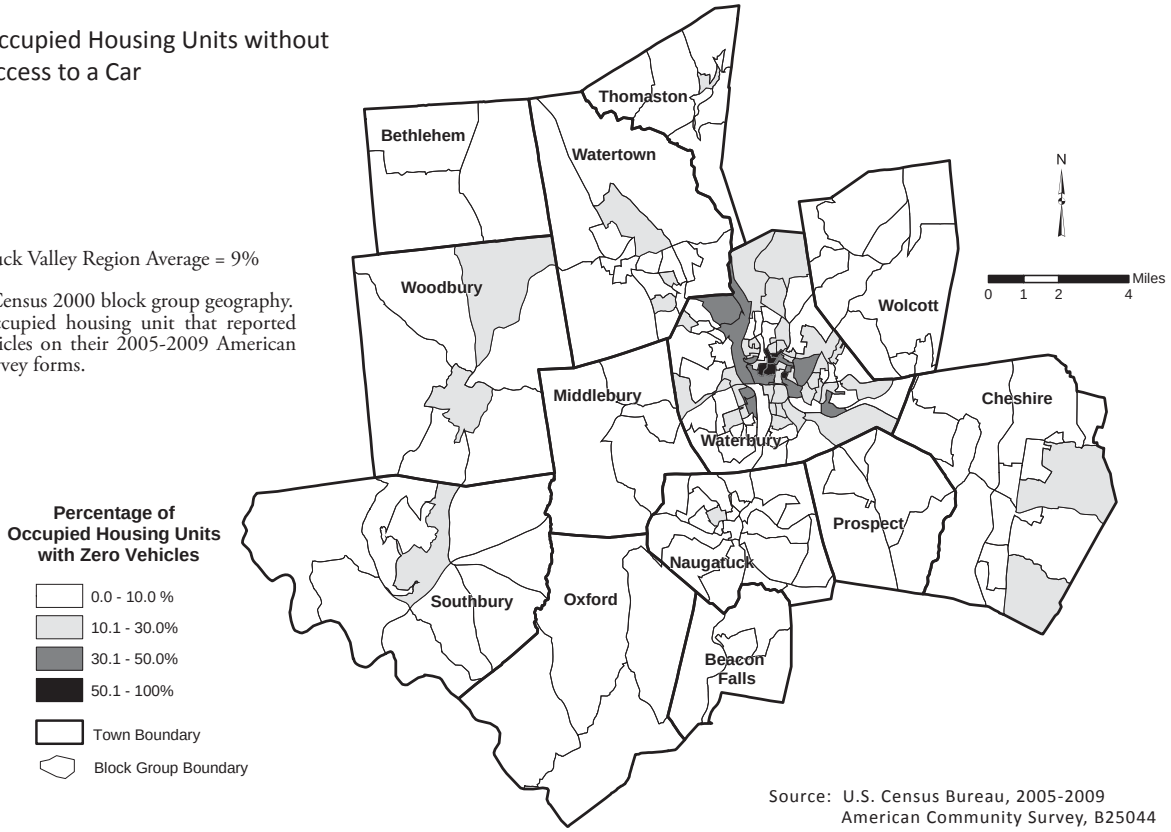


Source: U.S. Census Bureau, 2005-2009 American Community Survey, B01001

Figure F.5 Occupied Housing Units without Access to a Car

Central Naugatuck Valley Region Average = 9%

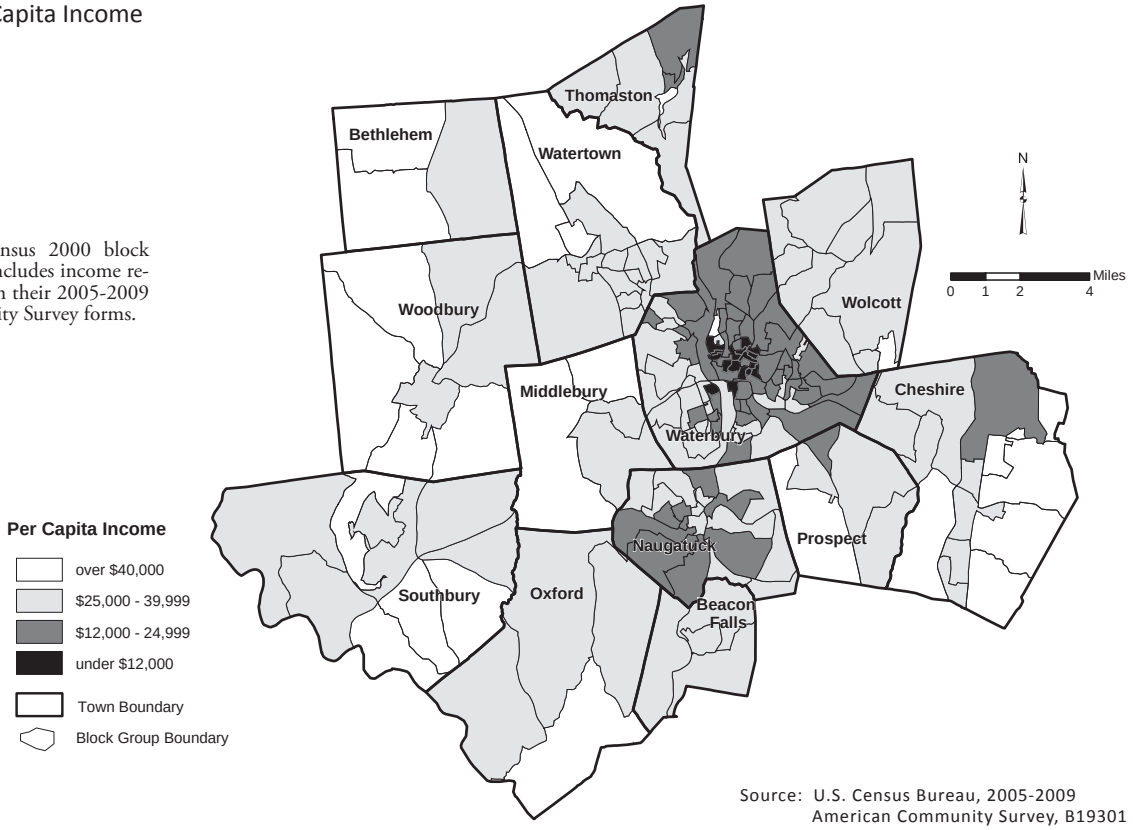
Data based on Census 2000 block group geography. Includes any occupied housing unit that reported having zero vehicles on their 2005-2009 American Community Survey forms.



Source: U.S. Census Bureau, 2005-2009 American Community Survey, B25044

Figure F.6 Per Capita Income

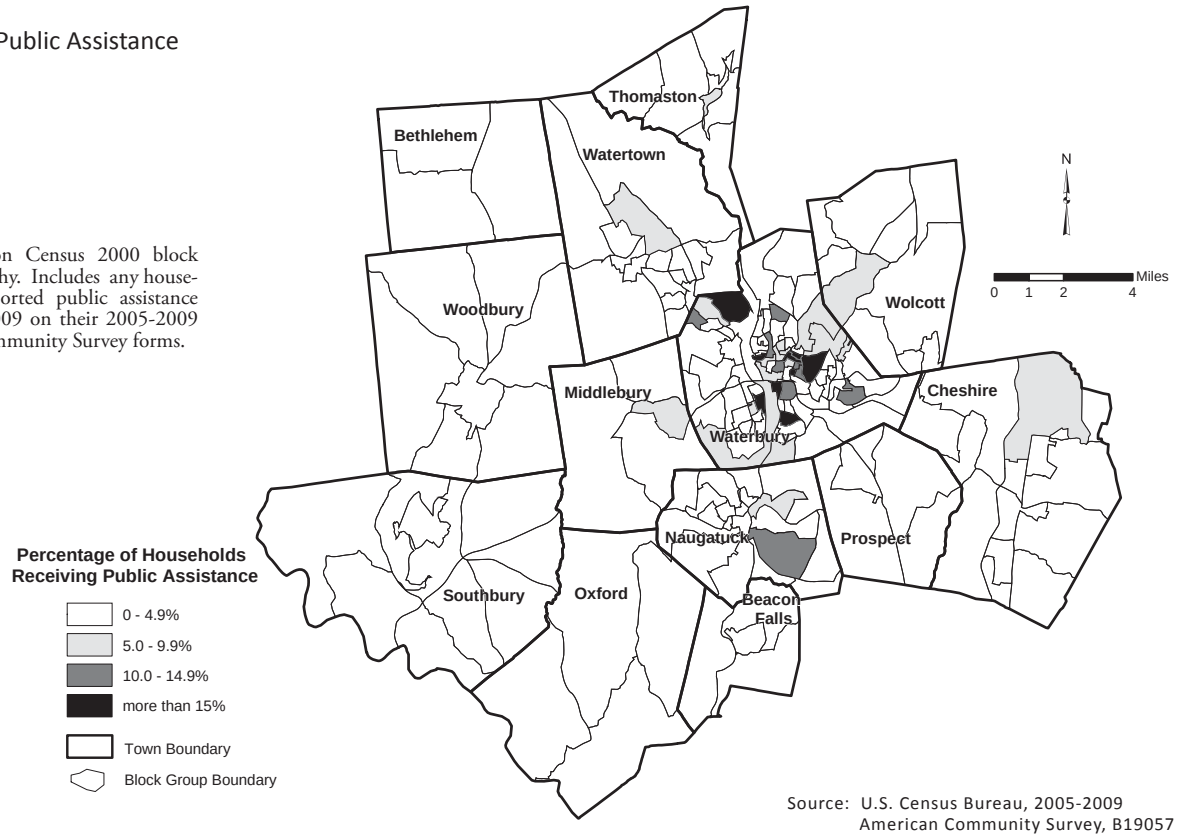
Data based on Census 2000 block group geography. Includes income reported by persons on their 2005-2009 American Community Survey forms.



Source: U.S. Census Bureau, 2005-2009 American Community Survey, B19301

Figure F.7 Public Assistance

Data based on Census 2000 block group geography. Includes any household that reported public assistance income for 2009 on their 2005-2009 American Community Survey forms.

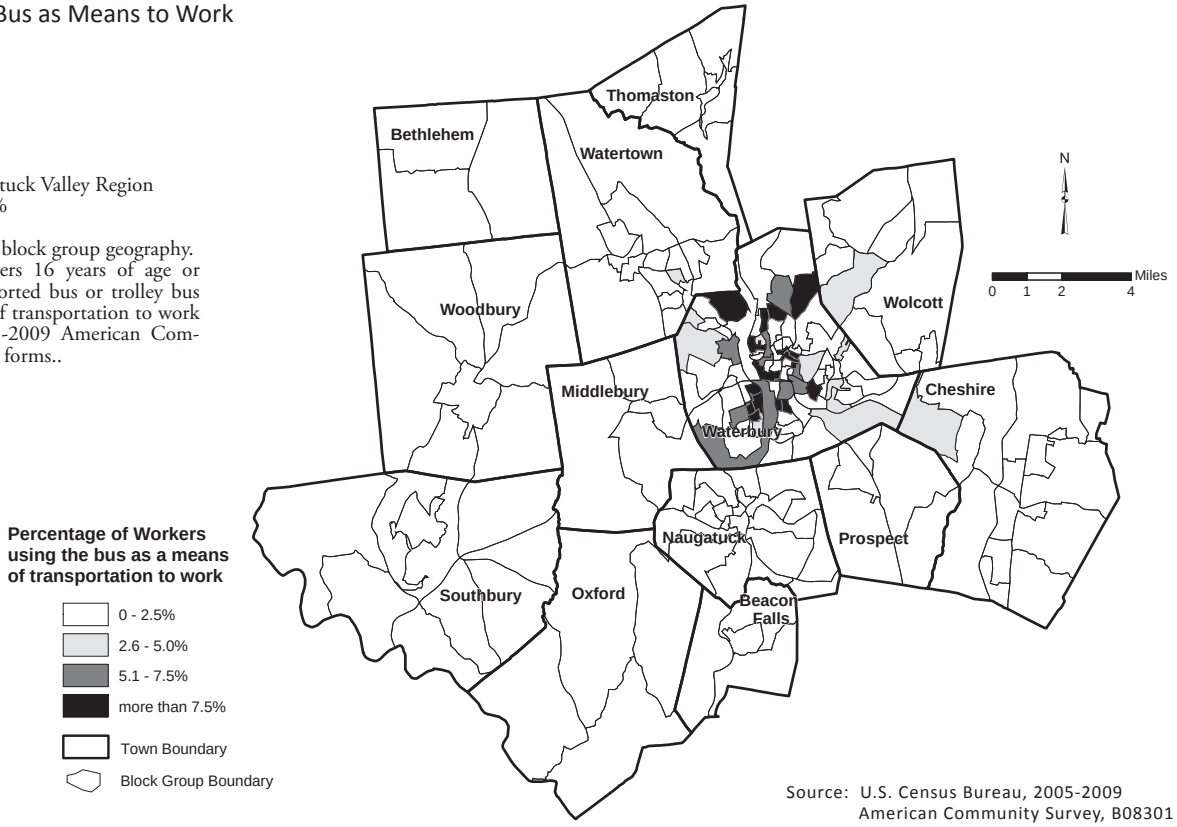


Source: U.S. Census Bureau, 2005-2009 American Community Survey, B19057

Figure F.8 Bus as Means to Work

Central Naugatuck Valley Region
Average = 1.3%

Data based on block group geography. Includes workers 16 years of age or older who reported bus or trolley bus as the means of transportation to work on their 2005-2009 American Community Survey forms..

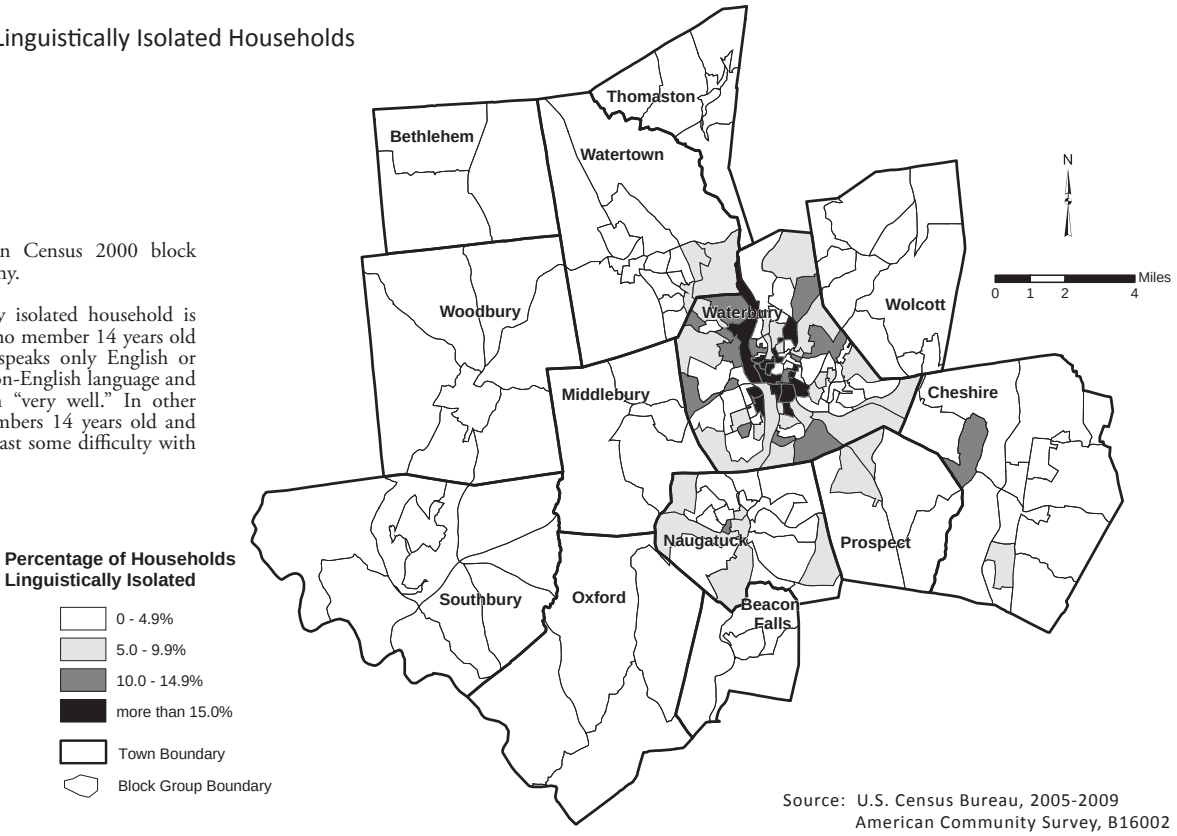


Source: U.S. Census Bureau, 2005-2009
American Community Survey, B08301

Figure F.9 Linguistically Isolated Households

Data based on Census 2000 block group geography.

A linguistically isolated household is one in which no member 14 years old and over (1) speaks only English or (2) speaks a non-English language and speaks English "very well." In other words, all members 14 years old and over have at least some difficulty with English.



Source: U.S. Census Bureau, 2005-2009
American Community Survey, B16002

IDENTIFYING THE NEEDS OF LOW-INCOME AND MINORITY POPULATIONS

CNVRMPO keeps an updated "interested and affected organizations" mail list, which includes neighborhood groups in the target area. The mail list is a starting point for community outreach and has been used by CNVRMPOto seek input on significant issues such as the Naugatuck River Greenway project. CNVRMPO takes other actions to identify needs of minority and low-income groups:

- Demographic information is used to focus CNVRMPO public involvement process in the regional core, where minority and low-income populations are concentrated.
- Attention is paid to the location of meetings to coincide with bus services.
- CNVRMPO offices are located in downtown Waterbury, the most convenient location to local bus routes.
- Meeting notices are mailed to minority and community organizations, and the mail list database is updated annually.
- Regular monitoring of the needs of low-income and minority populations are reflected in the following actions: review of and recommended improvements to public transit service delivery and participation in the Job Access and Reverse Commute Program and Greater Waterbury Transit District Board meetings and activities.

Waterbury Green

EVALUATING PUBLIC OUTREACH EFFORTS

Public outreach efforts are evaluated by CNVRMPO staff for their effectiveness so that improvements can be made to other meetings. Some issues that are considered when evaluating the public participation process include:

1. Are meeting or workshop locations in the target areas?
2. Is the time convenient for neighborhood residents?
3. Was notification of the meeting/workshop effective? How can it be improved? Were local community groups (in the target areas) used to advertise?
4. Is the purpose of the meeting or workshop clearly identified on advertisements?
5. Are informational materials on transportation planning issues easy to understand for the "layman"? How can they be improved?
6. Do workshop attendees have a previous affiliation with CNVRMPO?
7. What was the attendance?
8. How were public comments incorporated into final plans?
9. How did the public participation process affect final outcomes of major transportation projects?
10. Were transportation plans and TIPs available for viewing in advance of meetings where adoption was discussed?
11. What visualization techniques were incorporated? Was electronic means utilized?

OTHER COGCNV EFFORTS IN SUPPORT OF TITLE VI

CNVRMPO has engaged in an ongoing set of activities to insure the participation of minority and low income groups in the regional transportation planning process:

Using Local Media To Target Low-Income and Minority Populations

- Staff sends legal notices to local newspapers; the Republican-American for the annual TIP update, and La Voz Hispana de Connecticut for the region's longe-range transportation plan. Staff at La Voz Hispana de Connecticut newspaper are bilingual in Spanish and provide translation services.
- News releases are sent to local newspapers including the Republican-American, Voices, Prime Publishers, Cheshire Herald, Citizens News, as well as other newspapers when appropriate.
- Staff has been interviewed by Republican-American, Voices, and Citizens News about transportation planning activities.
- WATR, a local radio station, and area television stations are also sent news releases for major TIP, long-range plan, and TIA activities. Staff has been interviewed for specific transportation projects such as the Naugatuck River Greenway.
- A summary of CNVRMPO's efforts is shown below in Table F.2.

Table F.2 COGCNV's use of Media to target Low-Income and Minority Populations

	Number						Total
Type of Outreach	Greenway	Ped-Bicycle	Multi-Modal	Bus Route	Diversion	Other	
Press release/report	18		11	4		70	103
Public notice	4						4
Solicited municipal	2	3		1	1	9	16
Staff meetings							
in office	13	9	1	15	7	11	56
out of office	24	7	6	3	5	33	78
COG/RPC Agenda Item	39	7	3	18	11	32	110
Website Postings (periodically updated)	1	1		1	1	1	5

Source: CNVCOG January 2007 to October 2010

Engaging Minority and Low-Income Populations

- CNVRMPO holds public informational meetings for the long-range plan and the annual TIP update.
- Transportation planning documents are available for review by the public, and ample time is provided for public comment.
- Staff responds to comments and provides a summary in the final transportation planning documents.
- CNVRMPO encourages involvement by a diversity of groups and communities as part of public participation process.
- Staff assists and participates in the activities of the Greater Waterbury Transit District.

All CNVRMPO meetings and Regional Planning Commission meetings include an agenda item for public comment. Public comment is also welcomed at committee meetings. CNVRMPO's annual UPWP includes a provision for monitoring the effectiveness of the public involvement process.

EVALUATING THE DISTRIBUTION OF THE BENEFITS AND BURDENS OF TRANSPORTATION PROJECTS ON MINORITY AND LOW-INCOME POPULATIONS

Each RPO is charged with developing a framework for assessing civil rights concerns, which includes an examination of the distribution of the benefits and burdens of the transportation investments in the region, and those proposed in this plan. Because the target areas have significantly lower rates of automobile ownership, CNVRMPO staff concluded these areas are more heavily transit dependent, and transit investment would have a positive effect on the population. In five block groups of the target area, over 50% of the population does not have access to a vehicle. For the CNVRMPO analysis, accessibility is defined as either lying directly on a bus route or within three-quarter of a mile of a bus route.[2]

[2]Staff participated extensively in discussions around the Waterbury Transit Center, advocating about the impact on the downtown residents of moving the bus "pulse point" from the Waterbury Green to the proposed facilities. A modified plan is currently being developed.

Accessibility to Employment

Residents in the target area can access a majority of the major employers in the region via transit services. The 2010 major employer list at the CNVRMPO shows 166 employers with over 100 employees in the region. Of these, 138 or 83% are accessible to a CT Transit-Waterbury bus or a Joblinks route. Thirty two industrial parks were identified, and 68% are in proximity to a bus route. All residents in the target area fall within three-quarters of a mile to a bus route, and have access to the transit services described below.

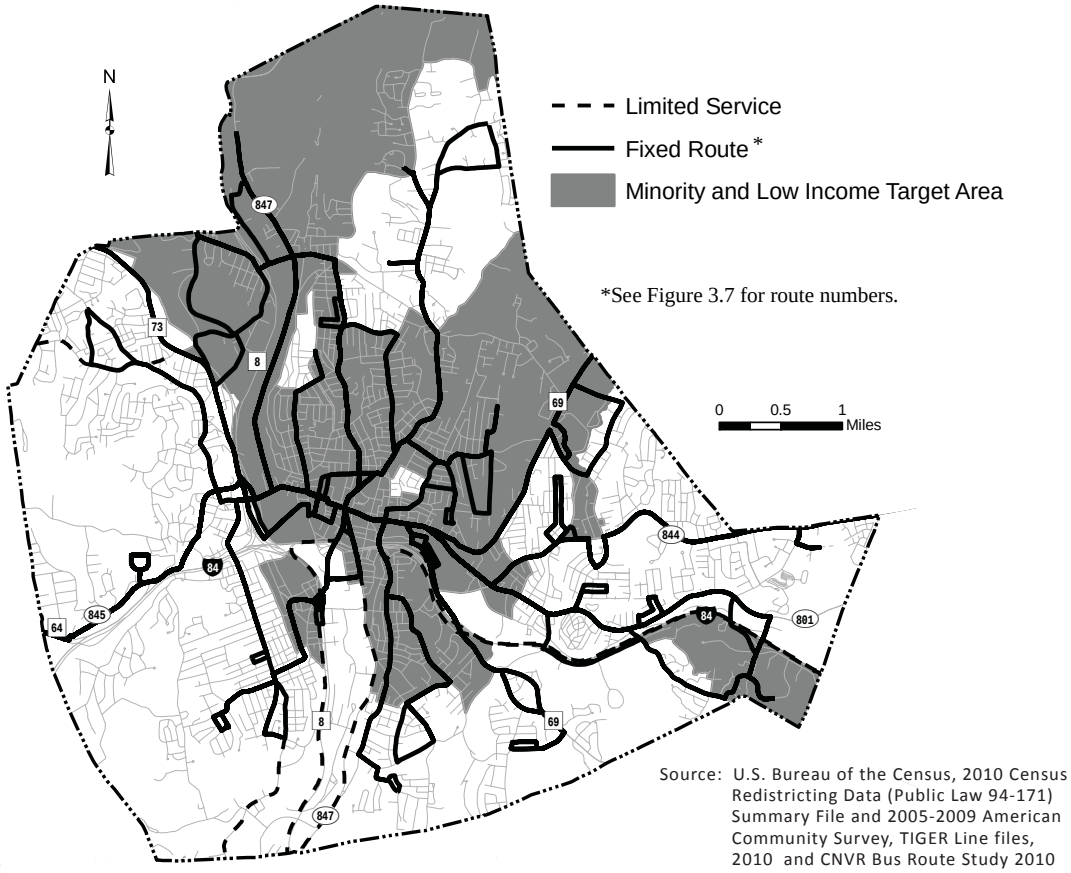
Waterbury Local Bus Services

A description of the fixed route bus service can be found in Chapter 3. The service, operated by Northeast Transportation, runs weekdays and Saturdays, from 5:30 A.M. to 12:30 A.M. and on Sunday from 9 A.M. to 5 P.M. Bus service is provided primarily to Waterbury, with limited service from Waterbury to Middlebury, Naugatuck, and Watertown. The buses operate on 22 designated routes, radiating outward from downtown Waterbury (see Figure F.10). In addition to North East Transportation Company's regular routes, there are special runs (trippers) serving industrial parks, schools, and other destinations in Cheshire, Middlebury, Naugatuck, Waterbury, and Watertown.

JobLinks

As discussed in Chapter 3, JobLinks is a transit service which connects passengers to employment and training opportunities in the region. JobLinks connects people to employers and training previously unaccessible by transit, or after regular bus service ends for the day. Routes have been established from Waterbury to targeted employment areas with growing job opportunities. In the CNVR, JobLinks serves employment areas in Beacon Falls, Cheshire, Naugatuck, Southbury, Waterbury, and Watertown. It has an evening service to the Brass Mill Center which includes a "Customized Ride Home" (CRH) that will provide a passenger with door-to-door service to their home from a job. In addition, JobLinks provides transportation to Waterbury childcare facilities by reservation.

F.10 Local Bus Routes Near or Within the Minority and Low Income Target Area



MetroNorth Rail Service

Limited rail service is provided by MetroNorth from the Waterbury train station, which lies within the target area. Waterbury residents who seek employment opportunities in Southwestern Connecticut have one early morning train to Stamford, but no similarly direct train in the evening. Passengers on other trips transfer to another train at the Bridgeport train station for mainline rail service. A Waterbury local bus route serves the Waterbury train station directly.

Accessibility to Other Key Services

Major Commercial Sites

The bus system serves major retail areas. Major commercial sites in the region are illustrated in Figure 2.5. There are thirty-one commercial sites in the region, and 26, or 84% of these sites are accessible to transit or Tripper routes. These sites include large grocery stores and major retail stores such K-Mart and Wal-Mart. The largest shopping mall in the region, the Brass Mill Center Mall in Waterbury, is directly served by both a local bus route and JobLinks services. Locations not served include the center of Woodbury and the north end of Prospect.

Hospitals

Both hospitals in the region, St. Mary's and Waterbury hospitals, are located in Waterbury and are directly served by NET bus routes.

Higher Education Facilities

Higher education facilities in the region are discussed in Chapter 2. The downtown UConn Waterbury campus and Naugatuck Valley Community College are located on local bus routes.

Short -Term Transportation Projects in the Target Area

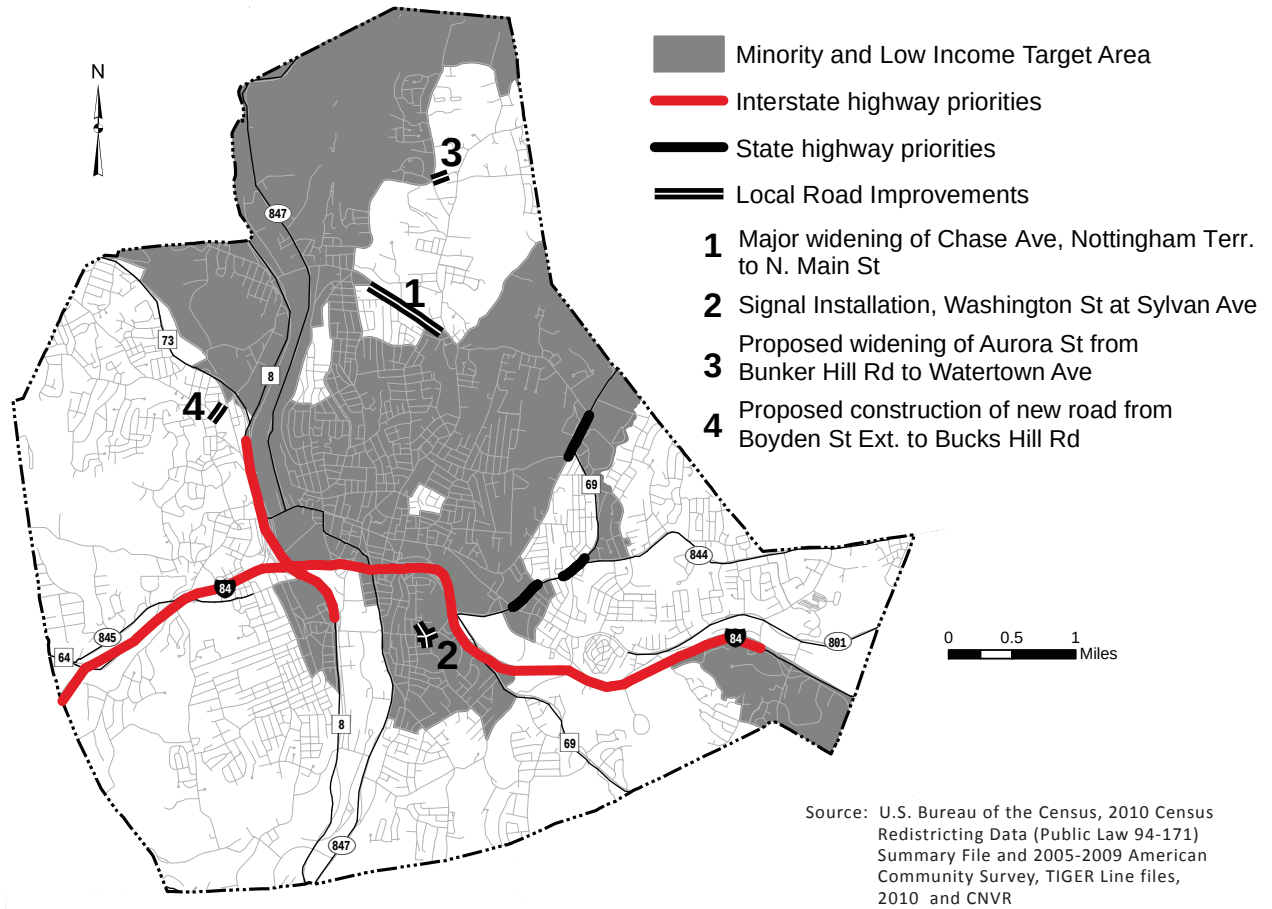
It is important to note the limitations of an analysis of a 4 year (short term) TIP. The TIP provides a "snap shot" of the current status and costs of projects in the region. Some projects will be delayed, cost estimates adjusted, and major projects may be excluded from the analysis because they fall outside of the 4 year program.

To identify projects in the target area, projects in the TIP were mapped using GIS. These projects are illustrated in Figure F.11. As a next step in this analysis, a more detailed study using GIS and financial analysis of past and present TIPs should be considered to examine the distribution of highway and transit investments in the region.

Medium and Long-Term Transportation Projects affecting Low-Income and Minority Populations

The two major long term transportation projects that could affect low-income and minority populations in the CNVR are the replacement of the I-84 and Route 8 Interchange in Waterbury and the widening of I-84. The planning studies for both projects have been completed. During these studies CNVRMPO helped the State and planning consultant contact and involve minority and neighborhood groups. CNVRMPO will continue promoting public involvement in the environmental, design, and construction phases of these major projects.

F.11 Current and Potential Transportation Projects Near or Within the Minority and Low Income Target Area



Source: U.S. Bureau of the Census, 2010 Census Redistricting Data (Public Law 94-171) Summary File and 2005-2009 American Community Survey, TIGER Line files, 2010 and CNVR

Environmental Mitigation

The metropolitan planning organization is responsible for considering the effect of projects on the natural environment. The Regional Transportation Plan recommends minimizing areas of environmental concern through consultation with state and local officials, educating decision-makers about such areas as soon as possible, and assisting in determining mitigation activities as necessary. Today, Geographic Information Systems (GIS) and up-to-date parcel data for all CNVR municipalities have improved the effectiveness of this process.

Two projects of regional significance have been identified which will increase highway capacity and require rights-of-way acquisition: I-84 West of Waterbury and the I-84/ Route 8 Interchange. Both will require an Environmental Impact Statement (EIS).

Determining the Issue (s)

CNVRMPO has the following maps available to municipalities and regional and state agencies for preliminary environmental input to these studies and other transportation work:

Figure F.12. Ambient Air Pollution Attainment —All of the Central Naugatuck Valley Region is in 8-hour non-attainment for ozone levels as determined by the Department of Public Health.

Figure F.13. Elevation in the Central Naugatuck Valley Region — This map highlights the basis for the settlement patterns in the Region and the difficulty and potential scenic loss of developing steep slopes in a river valley region.

Figure F.14. Wetland soils, Aquifer Protection Areas (APA), Floodplains, and Natural Diversity Data base — Wetland soils, Aquifer Protection Areas (both final Level A and draft Level B), and the Natural Diversity Database, an annual listing of flora and fauna sites of endangered species, are shown from the Department of Environmental Protection as well as floodplain data from FEMA.

Figure F.15. Waterbodies Not Meeting Water Quality Standards — This listing is required by the Federal Clean Water Act for the state to monitor, assess and report on the quality of its water relative to designated uses.

Figure F.16. Historic and Archaeologic Sites — Sites are shown from the National Register as well as those identified by the State Archaeologist.

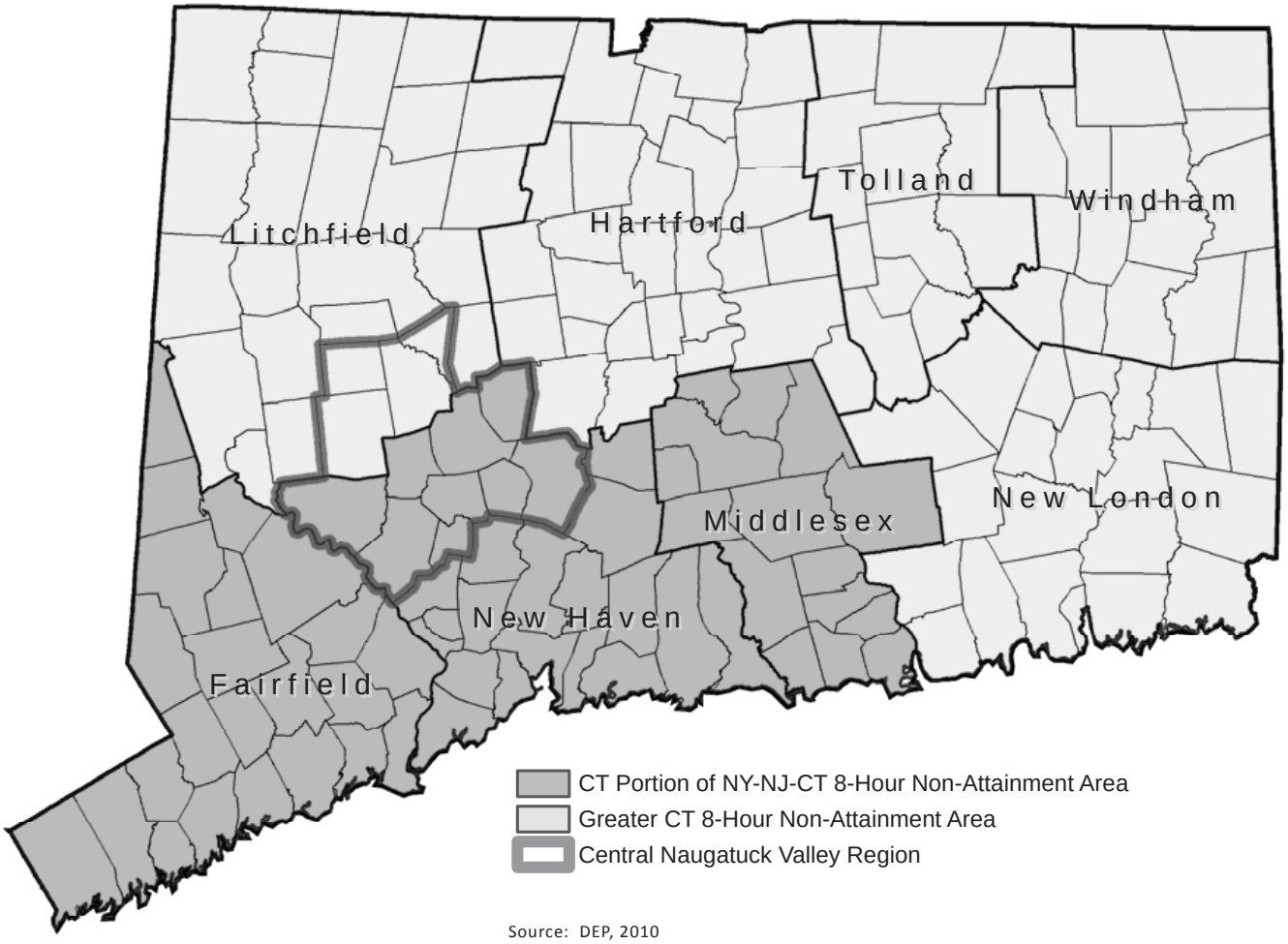
Figure F.17. Committed Open Space and Open Space Action Areas — Areas of regional significance as open space areas which were identified in 1967 by CNVRMPO's predecessor, the CNVRPA, and continue to be viable. Properties that continue to be viable, and committed federal, state and local open space have been mapped by CNVRMPO staff.

Figure F.18. Brownfields — Staff has a preliminary listing of 42 possible brownfields sites in the region.

Figure F.19. Land Use — The Center for Land Use Education and Research at the University of Connecticut provides LandSAT data showing the change in developed land from 1985 to 2006.

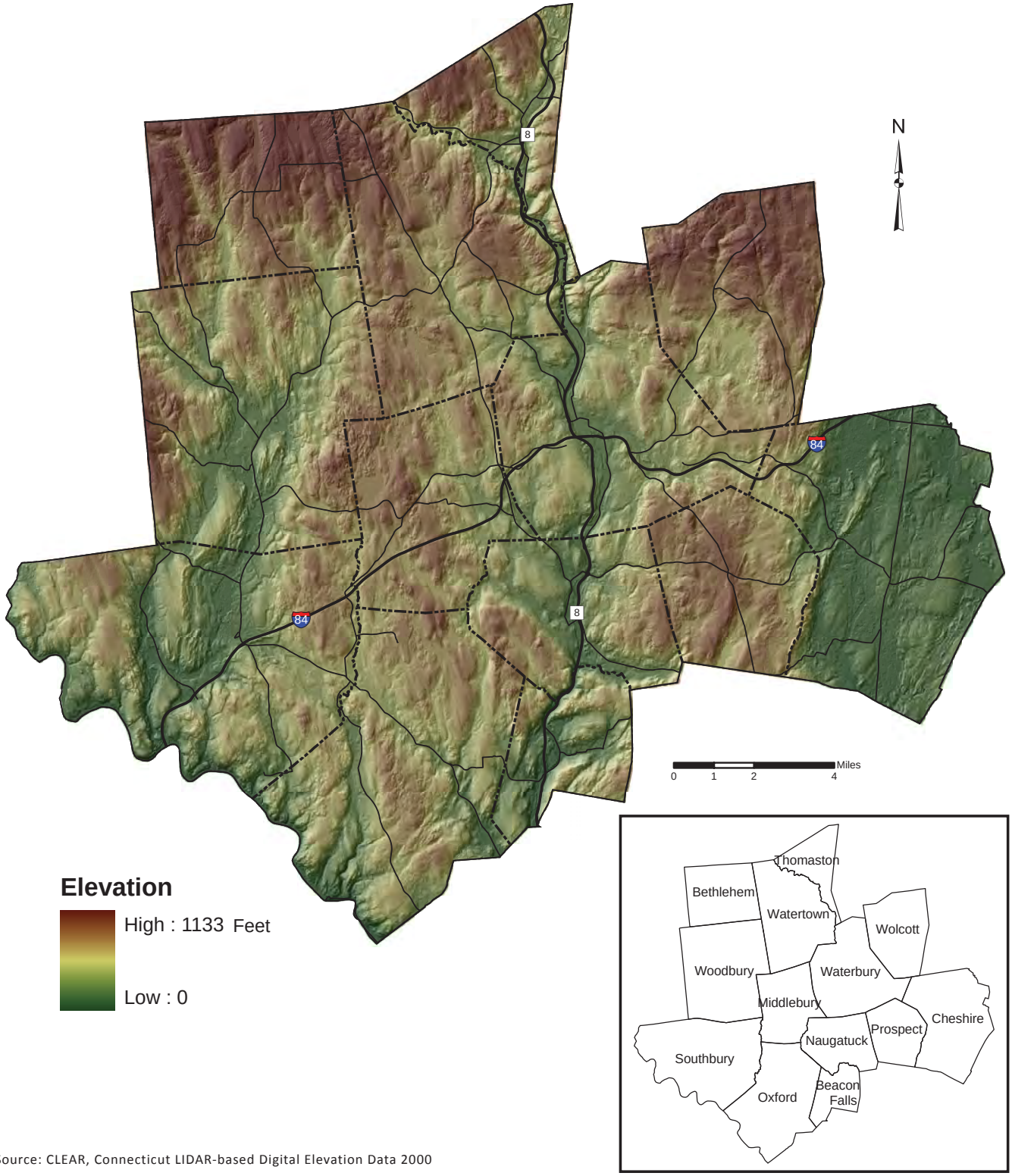
No known mapped data is available for noise, acquisition and displacements, and accessibility at this time. Mitigation goals would be in keeping with the *2008 Regional Plan of Conservation and Development.*

Figure F.12 Connecticut's Recommended 2008 8-Hour Ozone NAAQS Non-attainment Area Boundaries



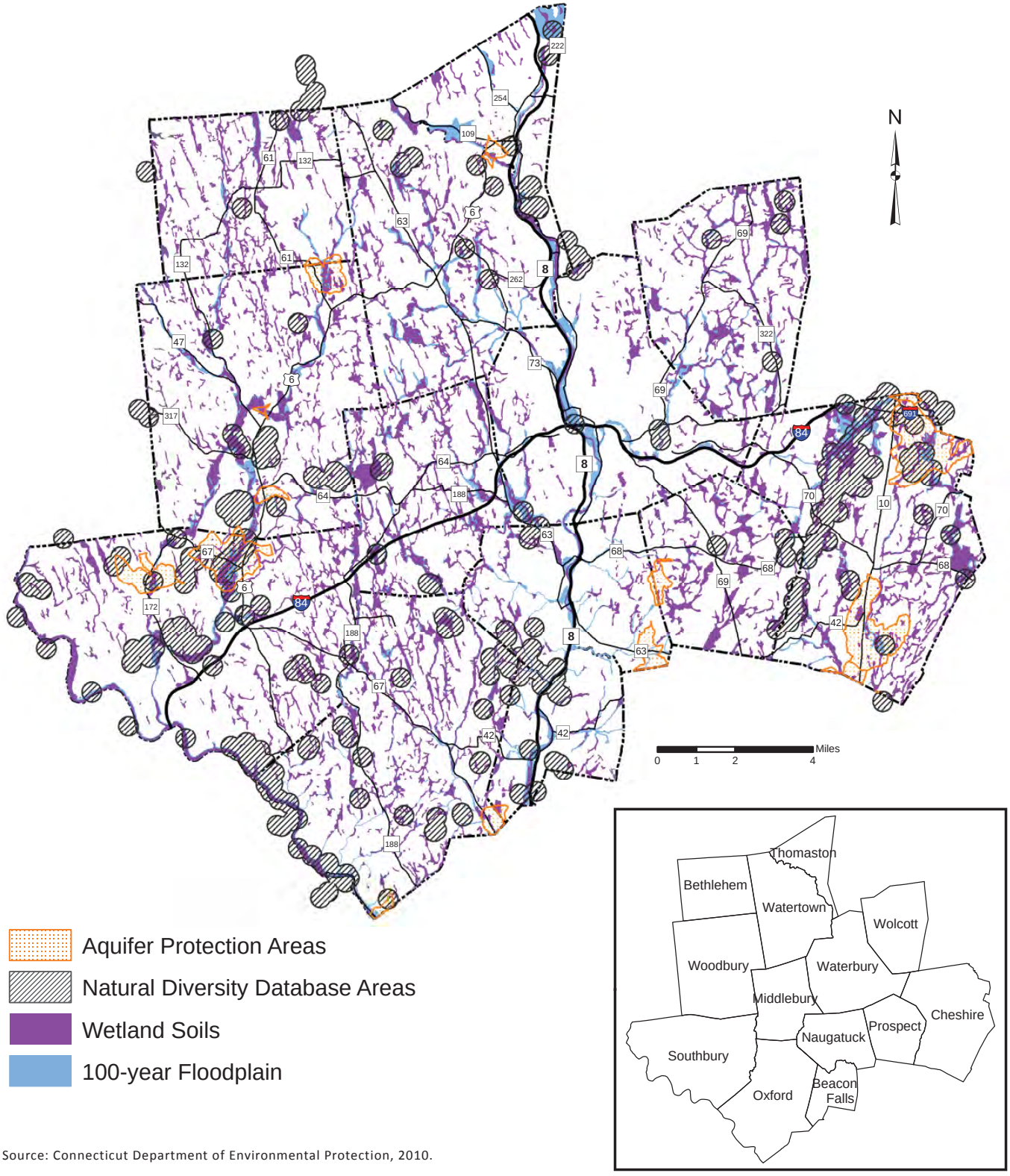
Source: DEP, 2010

Figure F.13. Elevation in the Central Naugatuck Valley Region



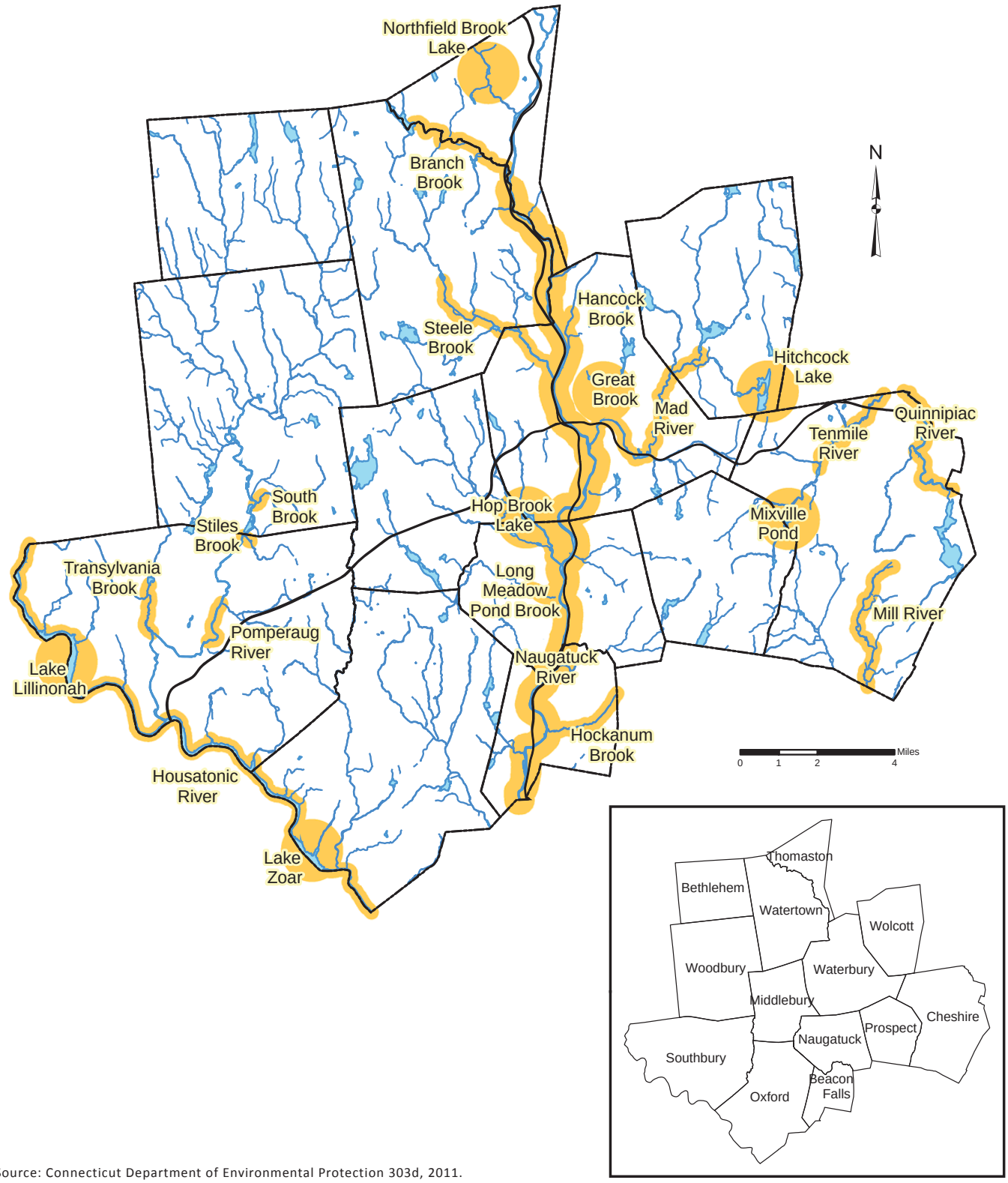
Source: CLEAR, Connecticut LIDAR-based Digital Elevation Data 2000

Figure F.14 Wetland Soils, Aquifer Protection Areas (APA), Floodplains, and Natural Diversity Database Areas



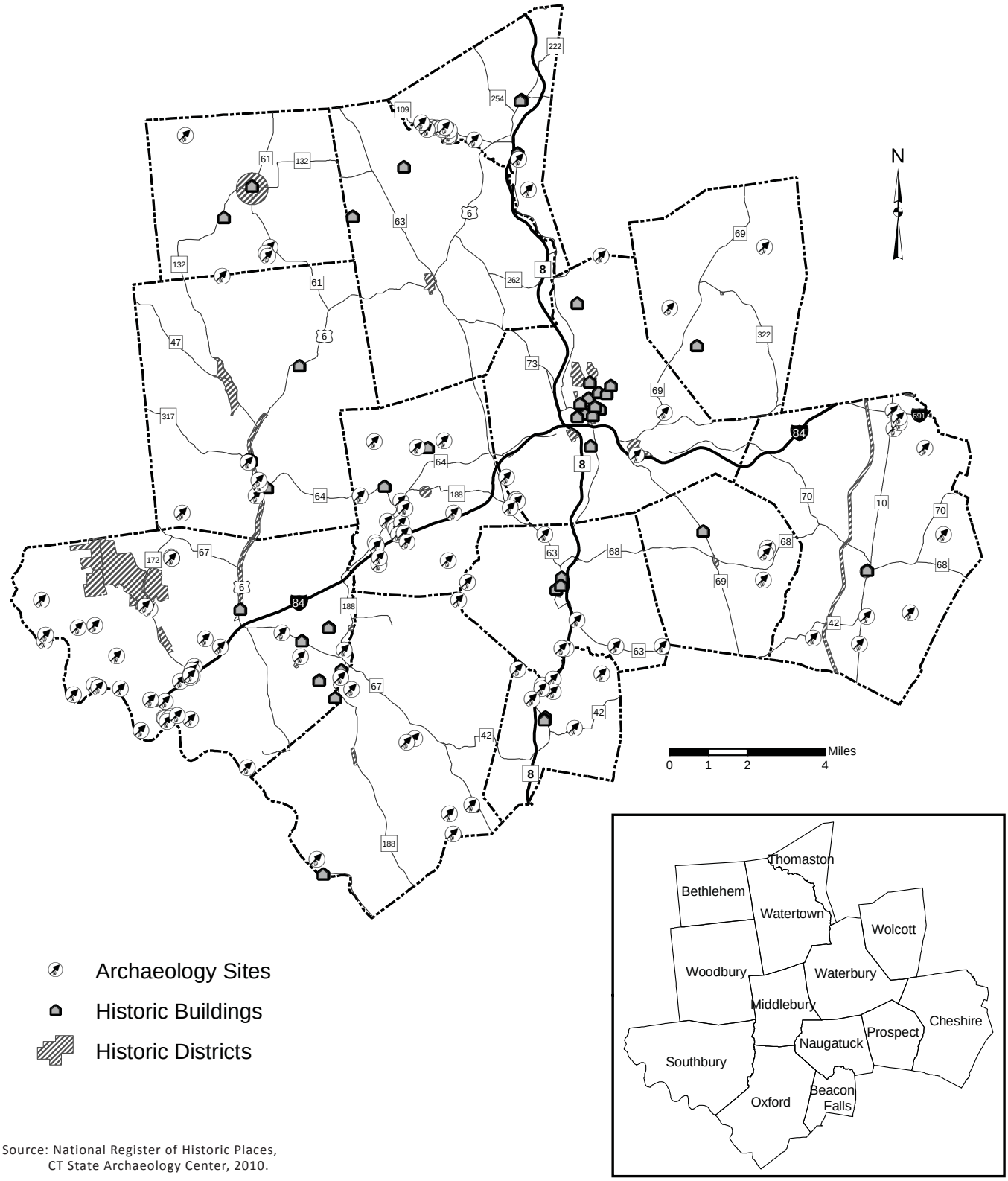
Source: Connecticut Department of Environmental Protection, 2010.

Figure F.15 Waterbodies Not Meeting Water Quality Standards, Central Naugatuck Valley Region: 2011



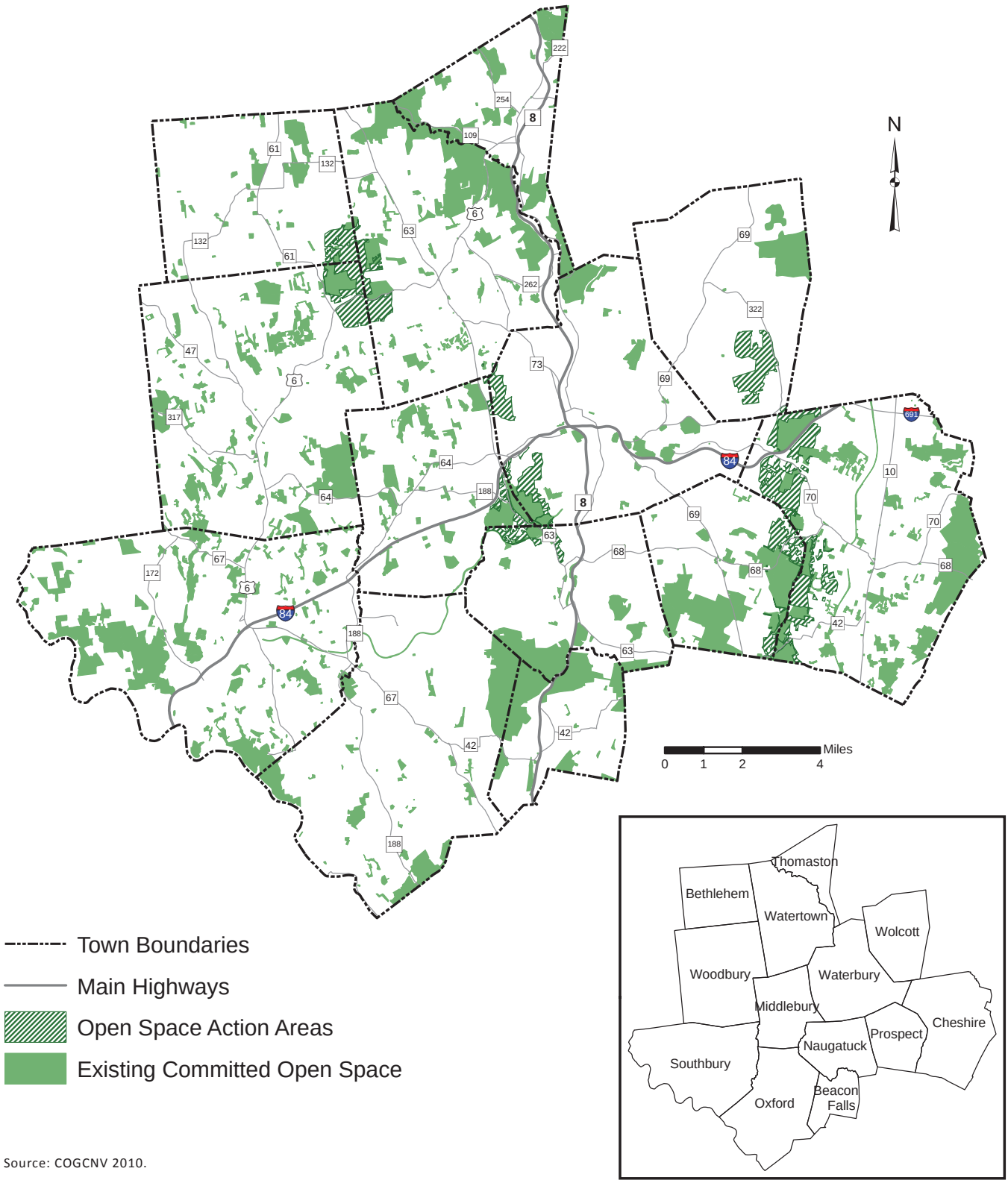
Source: Connecticut Department of Environmental Protection 303d, 2011.

Figure F.16 Historic and Archaeologic Sites



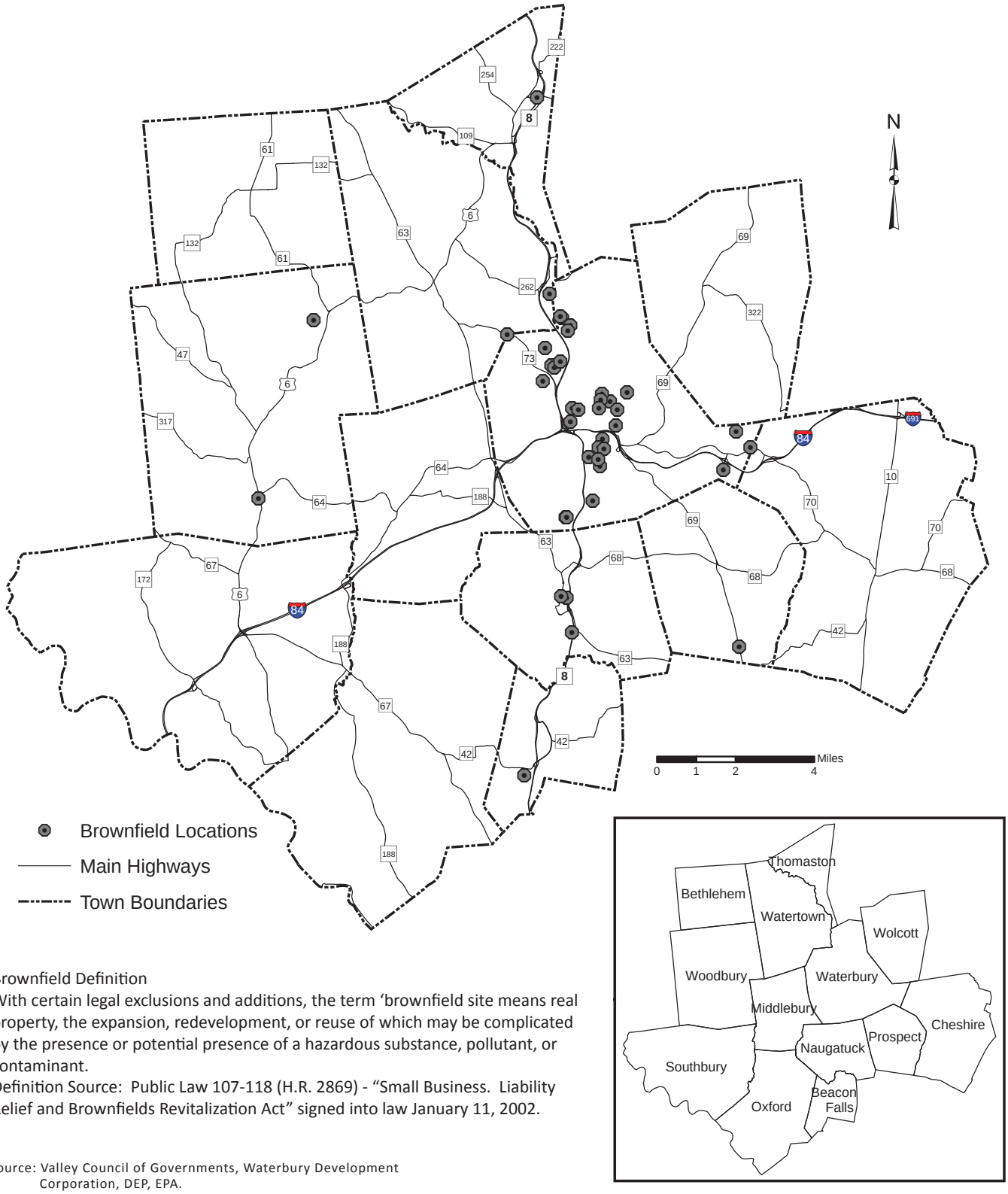
Source: National Register of Historic Places,
CT State Archaeology Center, 2010.

Figure F.17 Committed Open Space and Open Space Action Areas



Source: COGCNV 2010.

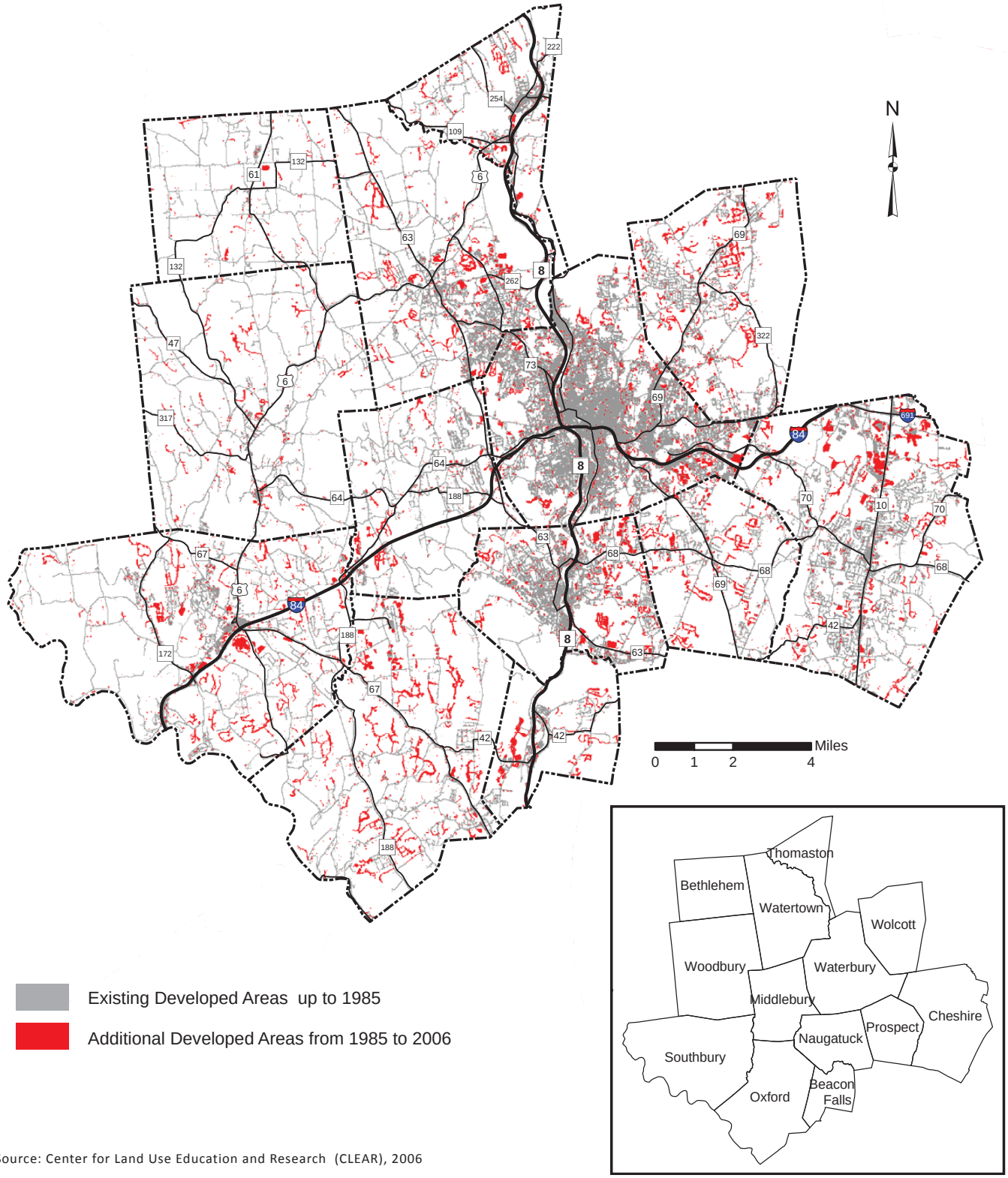
Figure F.18 Brownfield Locations in the Central Naugatuck Valley Region



Brownfield Definition
With certain legal exclusions and additions, the term 'brownfield site means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.
Definition Source: Public Law 107-118 (H.R. 2869) - "Small Business. Liability Relief and Brownfields Revitalization Act" signed into law January 11, 2002.

Source: Valley Council of Governments, Waterbury Development Corporation, DEP, EPA.

Figure F.19 Change in Developed Area 1985 to 2006



Source: Center for Land Use Education and Research (CLEAR), 2006

Mitigation Activities

For each of the issues discussed in this appendix, the following table identifies the organizations with primary responsibility and lists suggested mitigation measures.

Issue	Involved Agencies	Possible Mitigation
Air Quality	Due to its small size, the state has the primary responsibility of improving air quality in Connecticut. Principle agencies are the Department of Environmental Protection (DEP) and CTDOT. DEP prepares the state air quality implementation plan (SIP).	A range of transportation control measures required in the SIP are recommended in the LRTP: improved bus and rail service, traffic flow improvements, ride-sharing, bicycle & pedestrian improvements.
Elevation	Local land use commissions are responsible for implementation.	The Regional Plan calls for prohibiting development on slopes in excess of 25%. The RPO can provide education on mitigation measures such as screening, buffers, and berms.
Wetland soils, Aquifer Protection Areas (APA), Floodplains, and Natural Diversity Data base	Wetlands soils are regulated by municipal Inland Wetlands Agencies, Level A Aquifer area by municipal Aquifer Protection Agencies through a permitting and registration process, Floodplains through a zoning process using FEMA data, and the Natural Diversity Database by local land use commissions and the Department of Environmental Protection.	Maintain up-to-date materials, maps and training. Work with local commissions as they implement regulations. State guidelines on erosion and sedimentation controls and stormwater should be followed.
Waterbodies not Meeting Water Quality Standards	Monitored by the Department of Environmental Protection	Encourage watershed protection and provide information.
Historic and Archaeology Sites	Archaeology sites maintained by the state archaeologist. Historic sites are maintained by the Commission on Culture and Tourism.	Document sites; assist town efforts to relocate facilities; modify designs to avoid or mitigate impact; and develop educational material
Open Space	Using the GIS parcel data layers, COGCNV staff works with municipalities and land trusts to keep up-to-date information on open space holdings.	Discourage fragmentation. Encourage cluster subdivisions and land preservation.
Brownfields	The Regional Brownfields Partnership of West Central Connecticut operates through the Valley Council of Governments and manages the brownfields areas in the Central Naugatuck Valley.	Participate on advisory board and encourage municipalities to join.
Climate Change	The Governor's Steering Committee, consisting of leaders from key state agencies including the Department of Environmental Protection, Public Utility Commission, Transportation, Administrative Services, Office of Policy and Management, and Connecticut Clean Energy Fund, led a collaborative effort that developed a Climate Change Action Plan for Connecticut in 2010.	Continue work with the Department of Environmental Protection, the CTDOT, and other state, local, and professional initiatives to ensure that climate change is taken into consideration.
Land Use	Land use is determined by aerial photography with field checking as necessary. COGCNV maps are used by a variety of public and private, municipal, regional, and state organizations and agencies. Organizations sharing information include the COGCNV, the Center for Land Use Education and Research of the University of Connecticut, the Connecticut Office of Policy and Management, and the municipalities.	Provide training on latest guidelines and other information; encourage an active public review process; encourage farmland, watershed, and open space protection.

Appendix G - Record of Public Outreach

Federal guidelines require an effective and proactive public participation program to ensure transportation stakeholders and public are apprised of transportation plans, projects and program and are provided an opportunity to review plans and projects and provide comments. This process is detailed in the COGCNV Public Participation Plan available on the CNVRMPO website (nvcogct.org).

This appendix summarizes the public outreach during the preparation of the long range regional transportation plan. The summary consists of:

- A schedule of major events in the preparation of the plan, including the public review period
- Comments received on the Plan and CNVRMPO responses

The draft Long Range Regional Transportation Plan was initially presented to the CNVRMPO Board at its April meeting. CNVRMPO also presented the draft Plan to municipal engineers and planners at separate meetings for their review and comment.

The draft plan was sent to libraries in member municipalities and posted on the CNVRMPO website for a 30-day public review period, beginning on March 31, 2015. A legal notice was submitted to the Waterbury Republican-American announcing the start of the public comment period and the scheduling of a public hearing in April. A request for comments and invitation to the public hearing was sent to state and local officials and other interested groups.

A public hearing was held on the draft plan at 5 p.m. on April 9, 2015 at the CNVRMPO offices. A press release was sent out to local media and the local Spanish-language newspaper. Comments from that meeting are included in the following pages.

The final plan was presented to the CNVRMPO board and approved at their meeting on April 10, 2015.

All comments were responded to and considered for the final revised plan presented to COGCNV.

PUBLIC REVIEW AND COMMENTS

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(CNVRMPO staff also used comments from meetings and discussions with municipal staff and CTDOT)

CENTRAL NAUGATUCK VALLEY METROPOLITAN PLANNING ORGANIZATION BOARD MEMBERS

Municipality	Chief Elected Official
Beacon Falls	Christopher Bielik, First Selectman
Bethlehem	Leonard Assard, First Selectman
Cheshire	Timothy Slocum Chairman, Town Council
Middlebury	Edward St. John, First Selectman
Naugatuck	Robert Mezzo, Mayor
Oxford	George Temple, First Selectman
Prospect	Robert Chatfield, Mayor
Southbury	Edward Edelson, First Selectman
Thomaston	Edmond Mone, First Selectman
Waterbury	Neil O'Learly, Mayor
Watertown	Raymond Primini, Chairman, Town Council
Wolcott	Thomas Dunn, Mayor
Woodbury	William Butterly, First Selectman

NAUGATUCK VALLEY COUNCIL OF GOVERNMENTS STAFF

Rick Dunne, Executive Director
Glenda Prentiss, GIS Program Coordinator
Pat Gallagher, Senior Regional Planner II
Joanna Rogalski, Regional Planner
Sean Kelleher, Policy Coordinator
Clare Falcha, Finance Director
Lauren Rizzo, Administrative Assistant
Mark Nielsen, Planning Director
Arthur Bogen, Environmental Planner
Aaron Budris, Regional Planner - GIS Specialist
Christian Meyer, Transportation Planner II
Mark Pandolfi, Transit Capital Administrator
Patricia Bauer, Office and Financial Manager


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