METROCOG
Connecticut Metropolitan Council of Governments

CONNECTICUT DEPARTMENT OF TRANSPORTATION

TOWN OF MONROE 1823 CONNECTICUT

SEAL TOWN OF TRUMBULL CONNECTICUT INCORPORATED 1797

Tighe&Bond

Engineering Planning Study for
Route 25 and Route 111
Monroe & Trumbull, CT

Final Study Report – Executive Summary

Connecticut Metropolitan Council of Governments and the
Towns of Monroe & Trumbull

July 2019

Executive Summary

Introduction

The Engineering Planning Study for Route 25 and Route 111 (Study) was conducted by the Connecticut Metropolitan Council of Governments (METROCOG) along with the Towns of Monroe and Trumbull (Towns). METROCOG was awarded funding to manage this Study for the Towns under the Connecticut's Local Transportation Capital Improvement Program (LOTCIP), which is administered by the Connecticut Department of Transportation (CTDOT).

The purpose of the Study was to develop a comprehensive transportation improvement plan for Routes 25 and 111 within the study area, and provide a planning document for the Towns, METROCOG, and State to guide the implementation of transportation system improvements to meet expected future development, address existing and future local and regional transportation needs, and support economic development goals.

The goals and objectives of the Study were identified by the project Technical Advisory Committee (TAC) and Community Advisory Committee (CAC). The TAC included members from the Towns of Monroe and Trumbull, METROCOG, and CTDOT. The CAC was composed of representatives from area businesses and stakeholder groups along with members of the TAC. The Study goals and objectives were identified at the onset of the Study through meetings and public input and included the following:

Goals and Objectives

- Develop cost effective physical transportation system solutions that improve operations to mitigate congestion, address identified safety concerns, and provide guidance on access control issues while accommodating future land use expansion opportunities

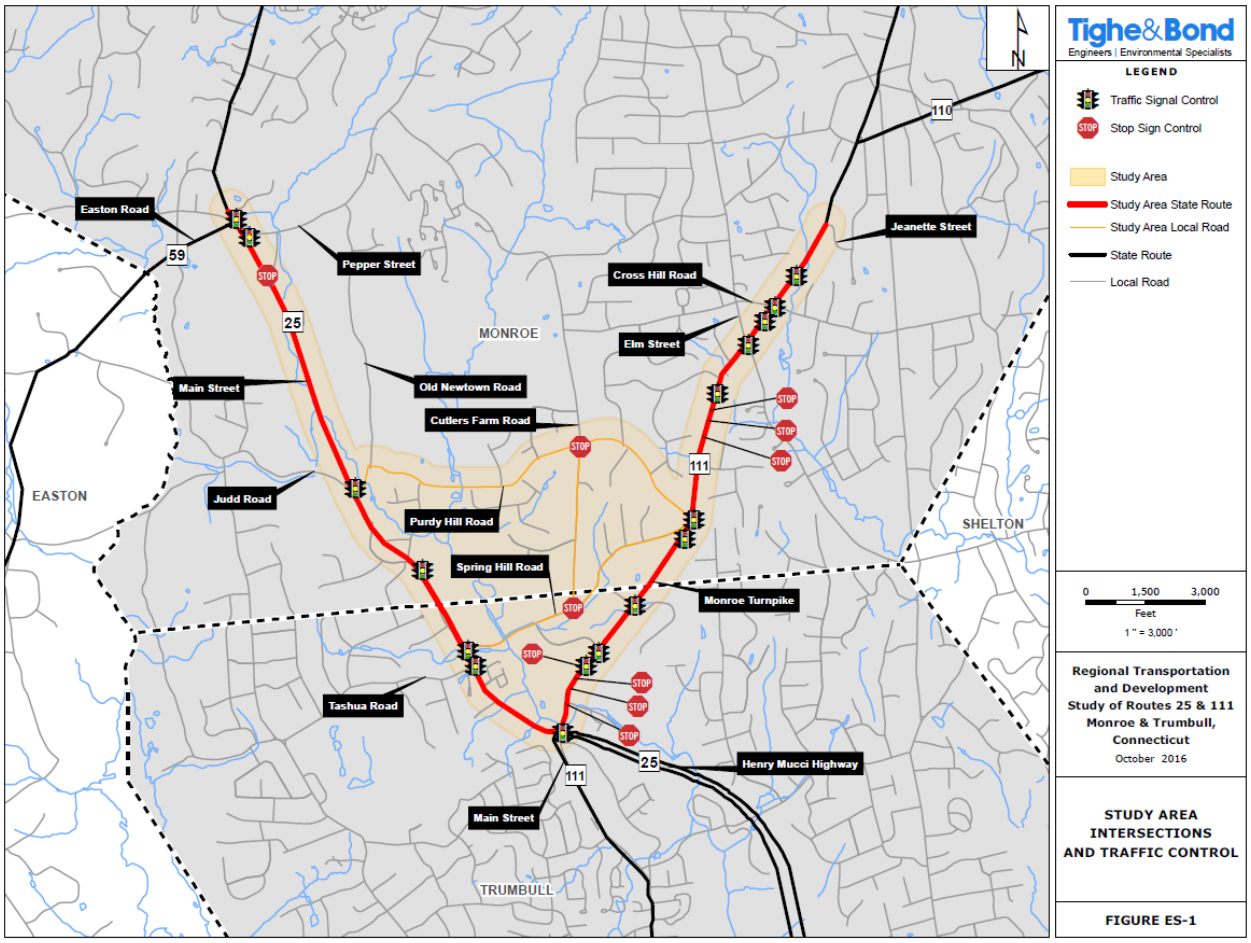
- Improve transportation system opportunities and mobility for alternative travel modes including sidewalk and bicycle infrastructure, improve pedestrian accommodations at intersections, enhance access and connectivity to the Pequonnock River Trail system, and improve transit amenities to provide a complete transportation system for all travelers

- Develop a comprehensive transportation improvement plan that facilitates the prioritization and implementation time frames to enable the programming and funding of improvements to meet both current and future corridor needs

Study Area

Approximately 3.2 miles of Route 25 and 2.9 miles of Route 111 make up the study area in the Towns of Monroe and Trumbull, as well as the commercial area between the corridors bounded by Purdy Hill Road to the north. The study area begins at the intersection of Route 25 (Main Street) and Route 111 (Monroe Turnpike) to the south, extending north on Route 25 to the intersection with Route 59 (Easton Road) and north on Route 111 to the intersection with Jeanette Street. Several signalized and unsignalized intersections are included in the study area for analysis. The study area is illustrated in Figure ES-1.

FIGURE ES-1
Study Area



Public Involvement

Throughout the Study, a Public Involvement Program was conducted by the Study Team in cooperation with the State and Local agencies. The goals of the outreach program were to:

- Obtain input from the public and project stakeholders on study area issues and concerns to help identify and frame the study goals and objectives
- Advise the public on the study findings
- Educate the Study Team with local knowledge from the public
- Involve stakeholders and the public in the development and refinement of recommendations that fit the character and future vision of the Towns
- Facilitate reviews by the town councils, boards, and commissions, as well as businesses and residents, leading to a Final Improvement Plan that was endorsed by the Towns and METROCOG to help guide future transportation system improvements

Project Committees

Technical Advisory Committee (TAC)

The TAC provided consistent input and oversight throughout the study process. The committee was composed of staff from the Towns, METROCOG, and CTDOT. TAC meetings were conducted at key milestones during the study process to provide an update on the Study and obtain guidance on the results, findings, and recommendations.

Community Advisory Committee (CAC)

The CAC was composed of members of area businesses and project stakeholders directly affected by operations in the study area as well as key members from the TAC to facilitate a comprehensive public outreach process. CAC meetings provided a forum for the members to give their perspectives on the study goals and objectives, and to help vet study findings and recommendations.

Summary of Outreach Activities

The Public Outreach initiatives were conducted throughout the Study through meetings with the TAC, CAC, Towns, and CTDOT as well as with key stakeholders and the public. The following meetings took place during the progression of the Study:

Project Kickoff Meeting:	February 22, 2016
Public Info Meeting #1:	April 6, 2016
TAC Meeting #1:	August 9, 2016
Economic Development Meeting with Towns #1:	October 26, 2016
Economic Development Meeting with Towns #2:	December 19, 2016
TAC Meeting #2:	April 17, 2017
CTDOT Review Meeting:	April 18, 2017
CAC Meeting #1:	April 25, 2017
Public Info Meeting #2:	April 27, 2017
First Selectman Review Meetings:	January 8 & 10, 2018
CTDOT Concepts Review Meeting:	February 27, 2018
Trumbull Stakeholder Meeting:	April 30, 2018
Monroe Stakeholder Meeting:	May 1, 2018
CAC Meeting #2:	May 23, 2018
Public Info Meeting #3:	June 13, 2018

Assessment of Existing Conditions

The assessment of existing conditions included an extensive data collection process to establish the current condition of the transportation system in the study area. The purpose of the existing condition assessment was to identify existing needs and deficiencies and begin the process of identifying opportunities for improvements to the transportation system in the study area. This section describes the assessment of the study area transportation system as it existed in 2016.

Traffic Volumes

Available historical traffic volume data was obtained from CTDOT. In addition, an extensive traffic counting program was conducted to supplement the available data. A review of the historic average daily traffic (ADT) volume data collected indicates daily traffic volumes along Routes 25 and 111 peaked around 2008 before the economic recession and then began to decline. Volumes have since returned to their approximate levels prior to the recession. Figures ES-2 through ES-4 show the change in average daily traffic at multiple locations in the study area, and Figure ES-5 shows the Average Daily Traffic Volumes geographically within the study area.

FIGURE ES-2

Route 25 Historical Average Daily Traffic

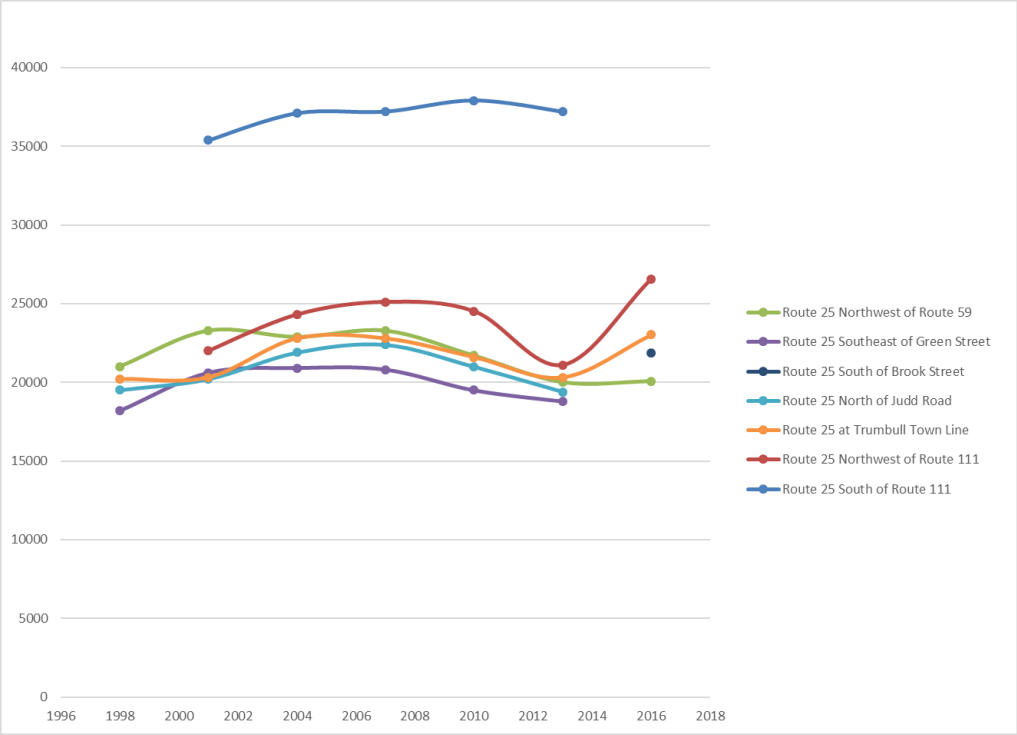


FIGURE ES-3

Route 111 Historical Average Daily Traffic

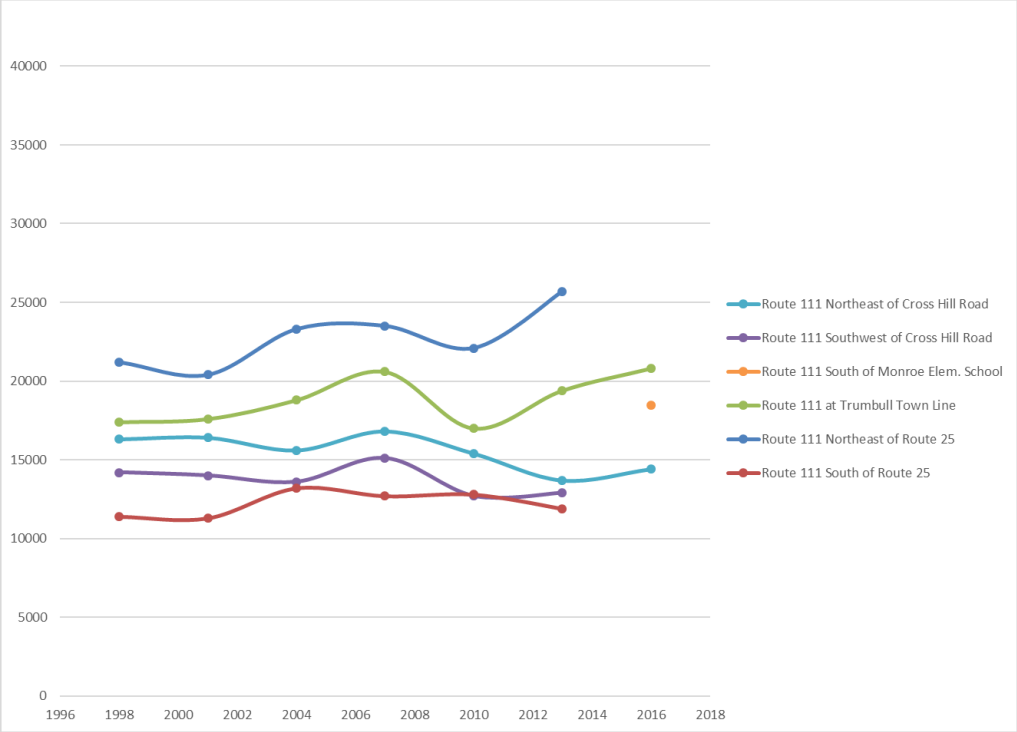


FIGURE ES-4

Side Streets Historical Average Daily Traffic

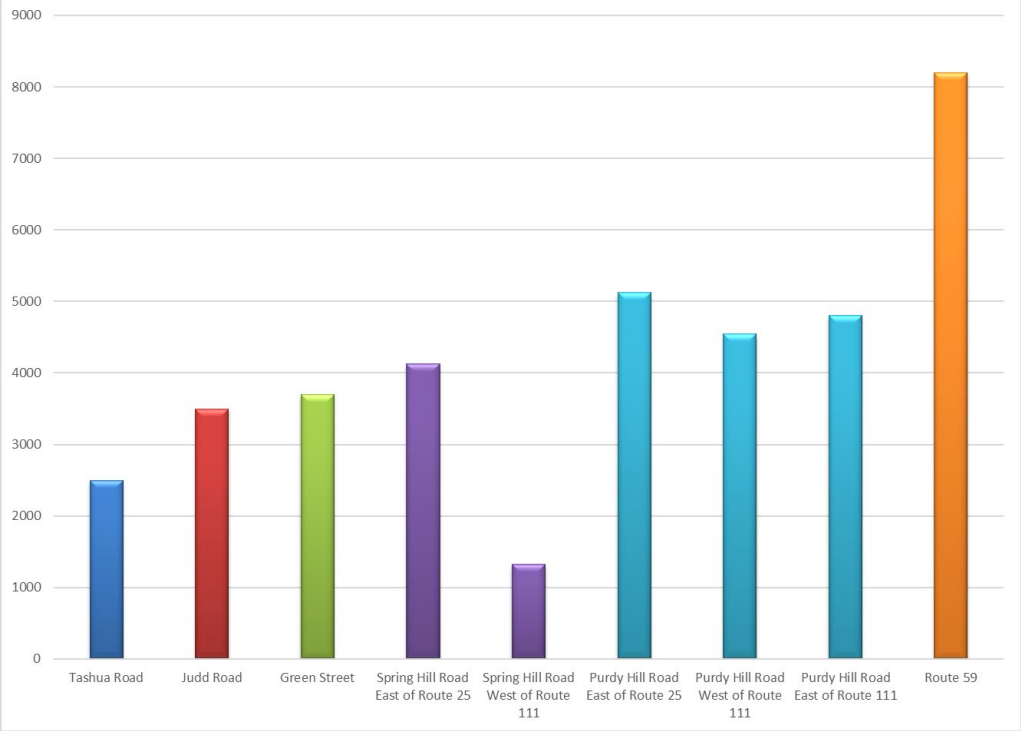
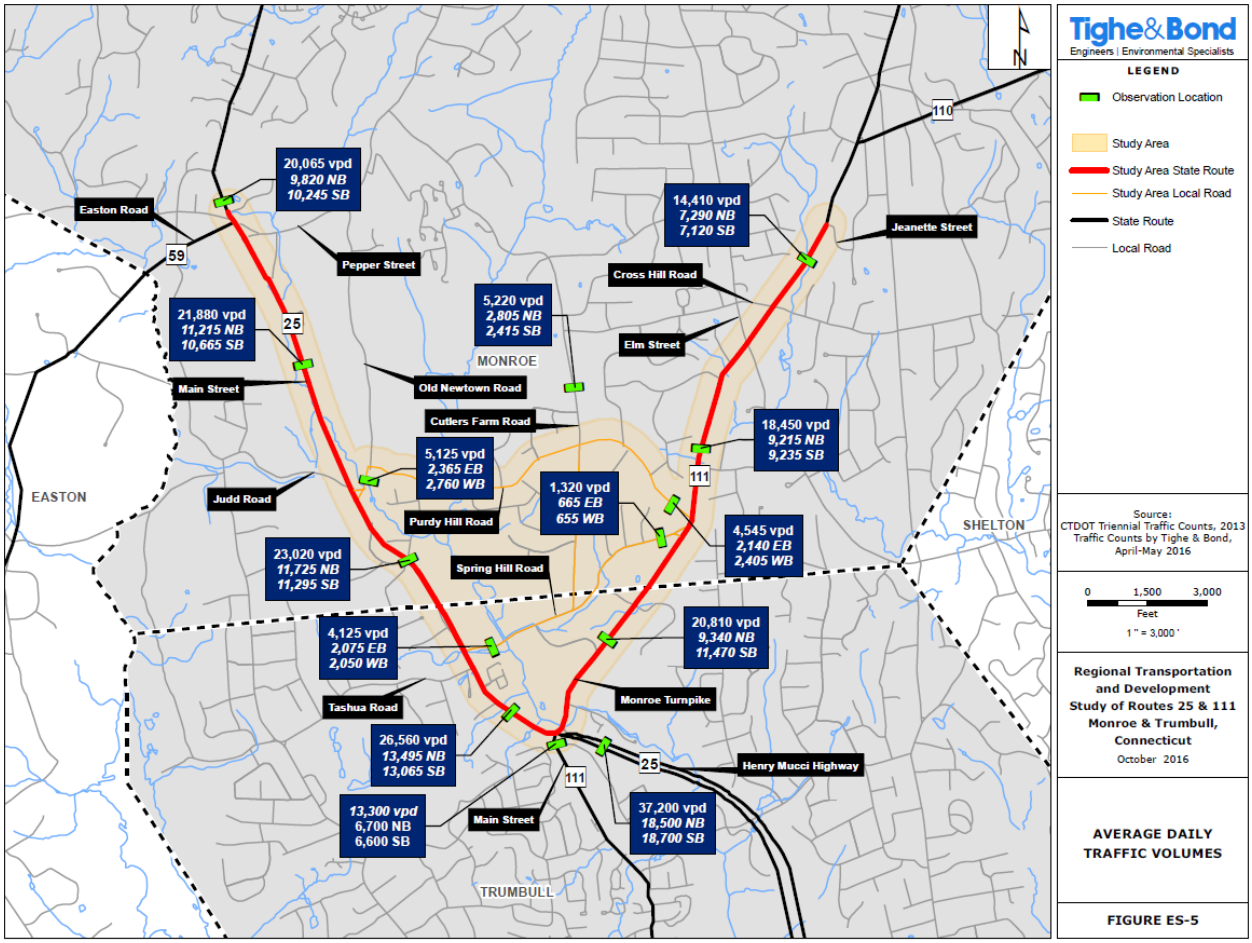


FIGURE ES-5

Average Daily Traffic Volumes

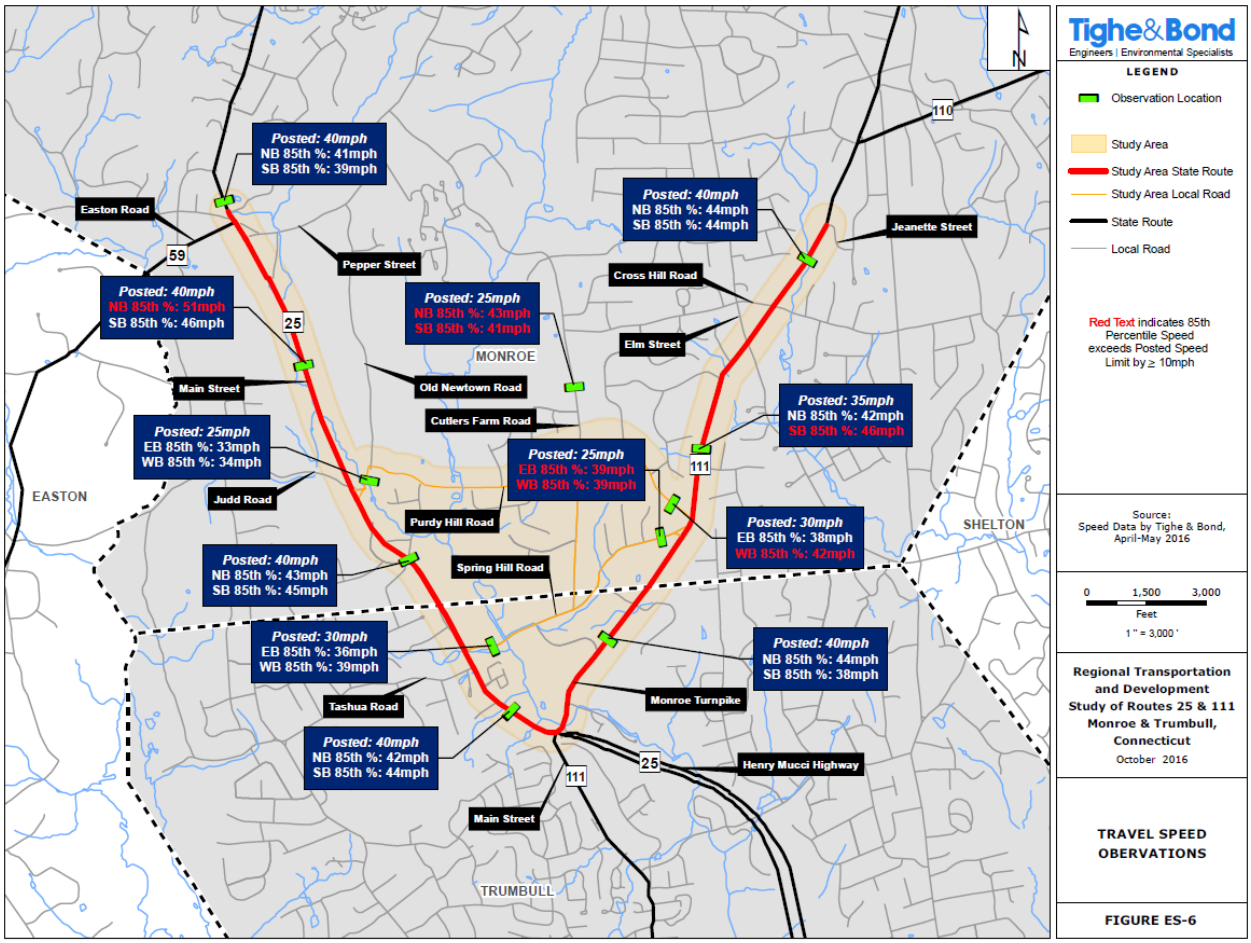


Travel Speeds

Travel speed data was collected along Routes 25 and 111 as well as on Spring Hill Road, Purdy Hill Road, and Cutler's Farm Road using Automatic Traffic Recorders (ATRs). The data was recorded during April and May 2016. Figure ES-6 summarizes the results of the speed observations along the corridors. In general, travel speeds along Routes 25 and 111 are within 5 to 10 miles per hour of the posted speed limit. The local roads experienced slightly higher operating speeds as there is less congestion and fewer curb cuts.

FIGURE ES-6

Travel Speed Observations



Traffic Operations

Traffic operations were evaluated for the study area intersections during the weekday morning, weekday afternoon, and Saturday midday peak hours. Capacity and queue analyses were conducted using Trafficware's *Synchro plus SimTraffic 9 – Traffic Signal Coordination Software,* based on the *2010 Highway Capacity Manual (HCM)* methodology.

Level of Service	**Signalized Intersection Criteria** Average Control Delay (Seconds per Vehicle)	**Unsignalized Intersection Criteria** Average Control Delay (Seconds per Vehicle)	**V/C Ratio >1.00[a]**
A	≤10	≤10	F
B	>10 and ≤20	>10 and ≤15	F
C	>20 and ≤35	>15 and ≤25	F
D	>35 and ≤55	>25 and ≤35	F
E	>55 and ≤80	>35 and ≤50	F
F	>80	>50	F

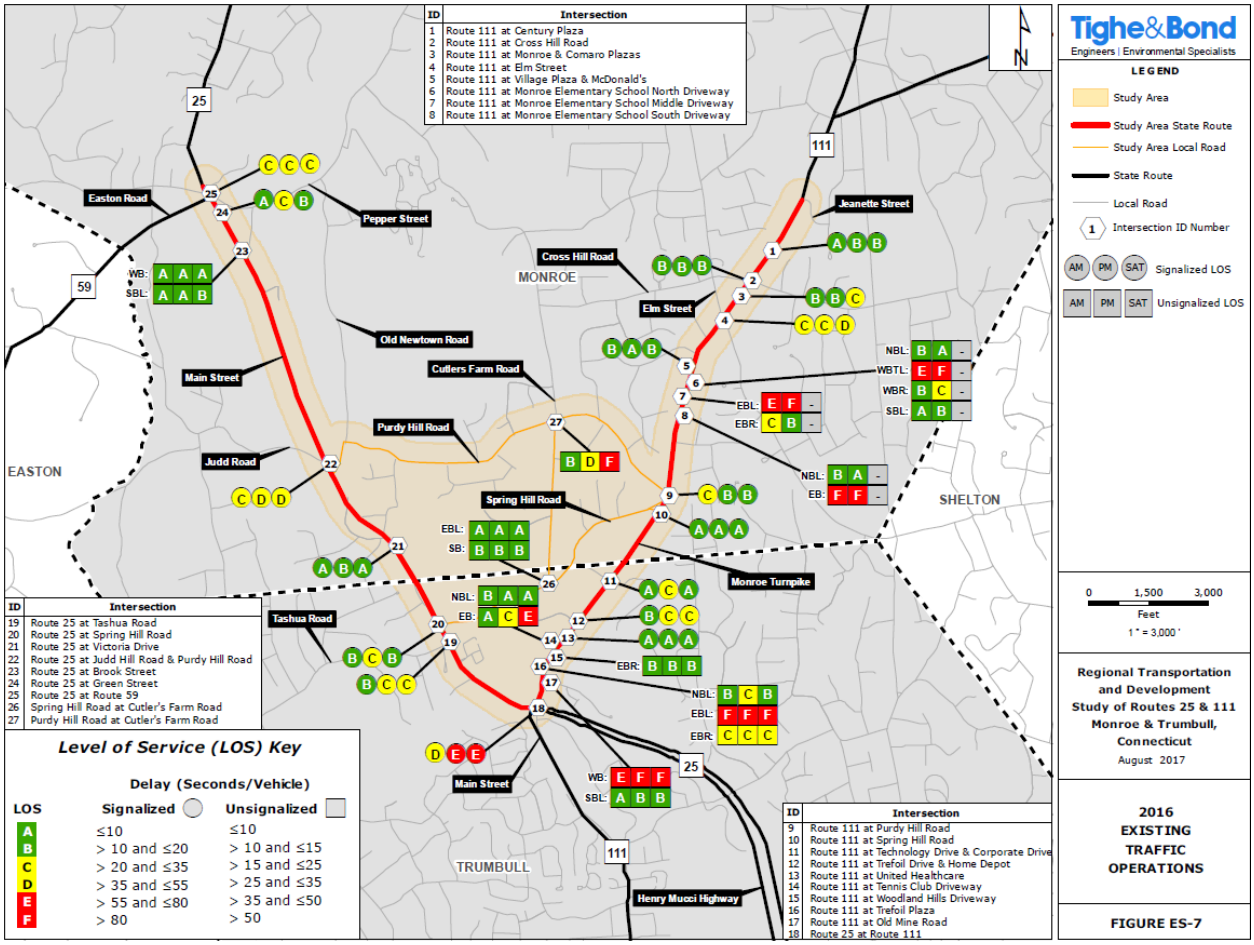
Note: [a]For approach-based and intersection-wide assessments, LOS is defined solely by control delay.

Source: *HCM2010: Highway Capacity Manual.* Washington, D.C.: Transportation Research Board, 2010. Pages 18-6 and 19-2.

In general, intersections that exhibit a LOS A or B are considered to have excellent to good operating conditions with little congestion or delay. LOS C indicates an intersection with acceptable operations. LOS D indicates an intersection that has tolerable operations with average delays approaching one minute. Intersections with LOS E and F are operating with poor or failing conditions and typically warrant a more thorough review and possible improvement to mitigate the capacity issues. Improvements can include geometric, lane use, timing modifications, or a different form of traffic control to mitigate the operational issues and reduce average delay. In the context of this planning process, during the analyses of both existing and future conditions, intersections exhibiting LOS E and F are identified for further analysis and potential improvements to mitigate poor or failing operations. Figure ES-7 shows the intersection operations in the study area in terms of LOS for the 2016 Existing Conditions.

FIGURE ES-7

2016 Existing Traffic Operations

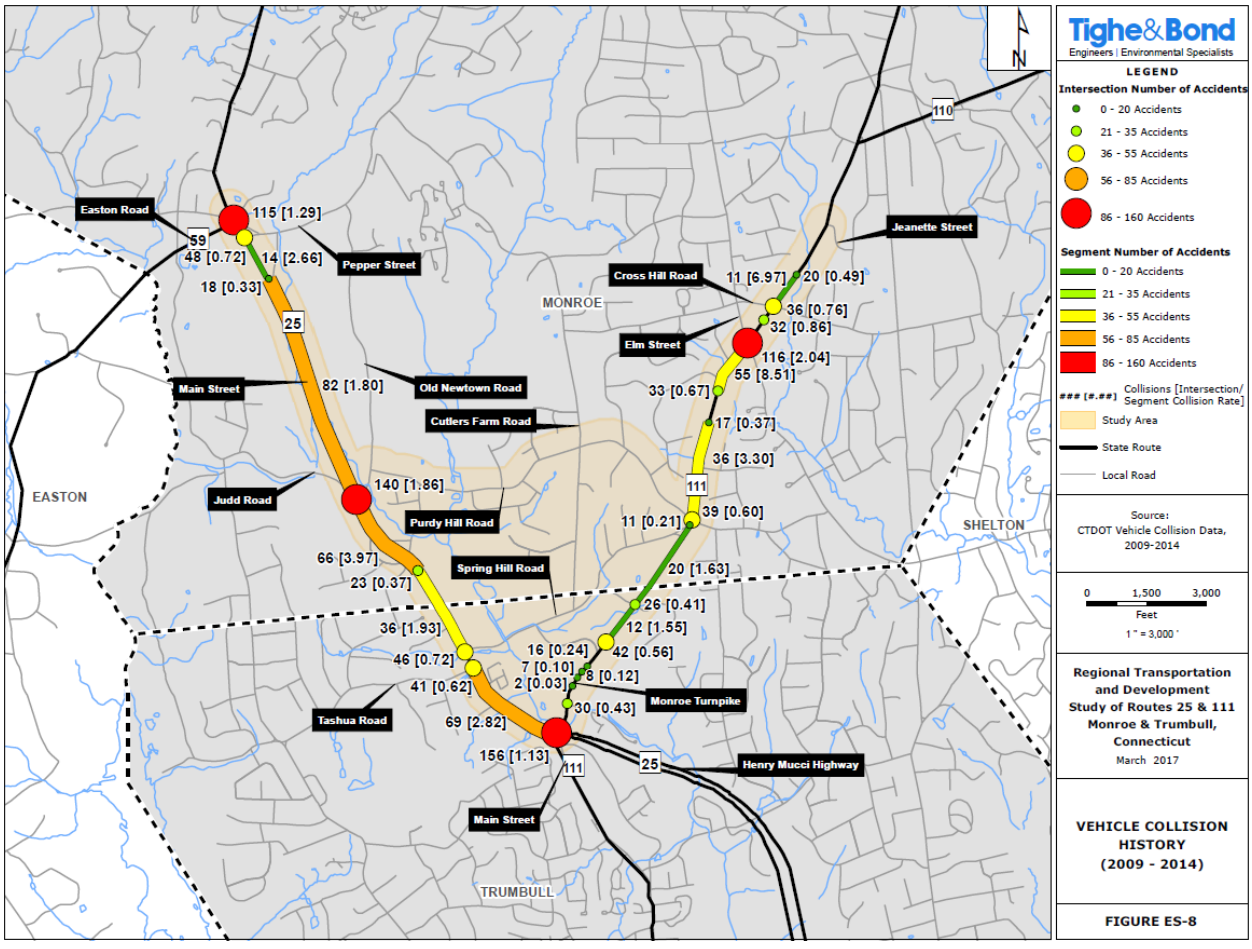


Traffic Safety

Motor vehicle collision history data for the Route 25 and 111 corridors and local roadway study intersections were collected from CTDOT and the Monroe and Trumbull Police Departments for the latest six-year period of available data between January 1, 2009 and December 31, 2014. Figure ES-8 summarizes the number of collisions and crash rate by intersection and segment recorded within the study area from 2009 through 2014. During the six-year period, 1427 total collisions were reported within the study area. Rear-end type collisions were the most common type, with 868 crashes (61%) recorded. The second most common type of collision was Turning - Intersecting Paths with 137 crashes (10%), followed by Turning – Opposite Directions with 86 crashes, Sideswipe – Same Direction with 80 crashes, and Fixed-Object with 78 crashes (6% each). The remaining types of collisions were each less than 5% of the total number of crashes. Two fatalities were recorded during the period analyzed on Route 111 with one occurring at the intersection with Route 25 due to a sideswipe collision and one occurring south of Elm Street near Northwood Road due to a head-on collision. A total of 375 crashes reported injuries of any kind, while the remaining 1050 collisions were categorized as Property Damage Only.

FIGURE ES-8

Vehicle Collision History – Study Area Summary

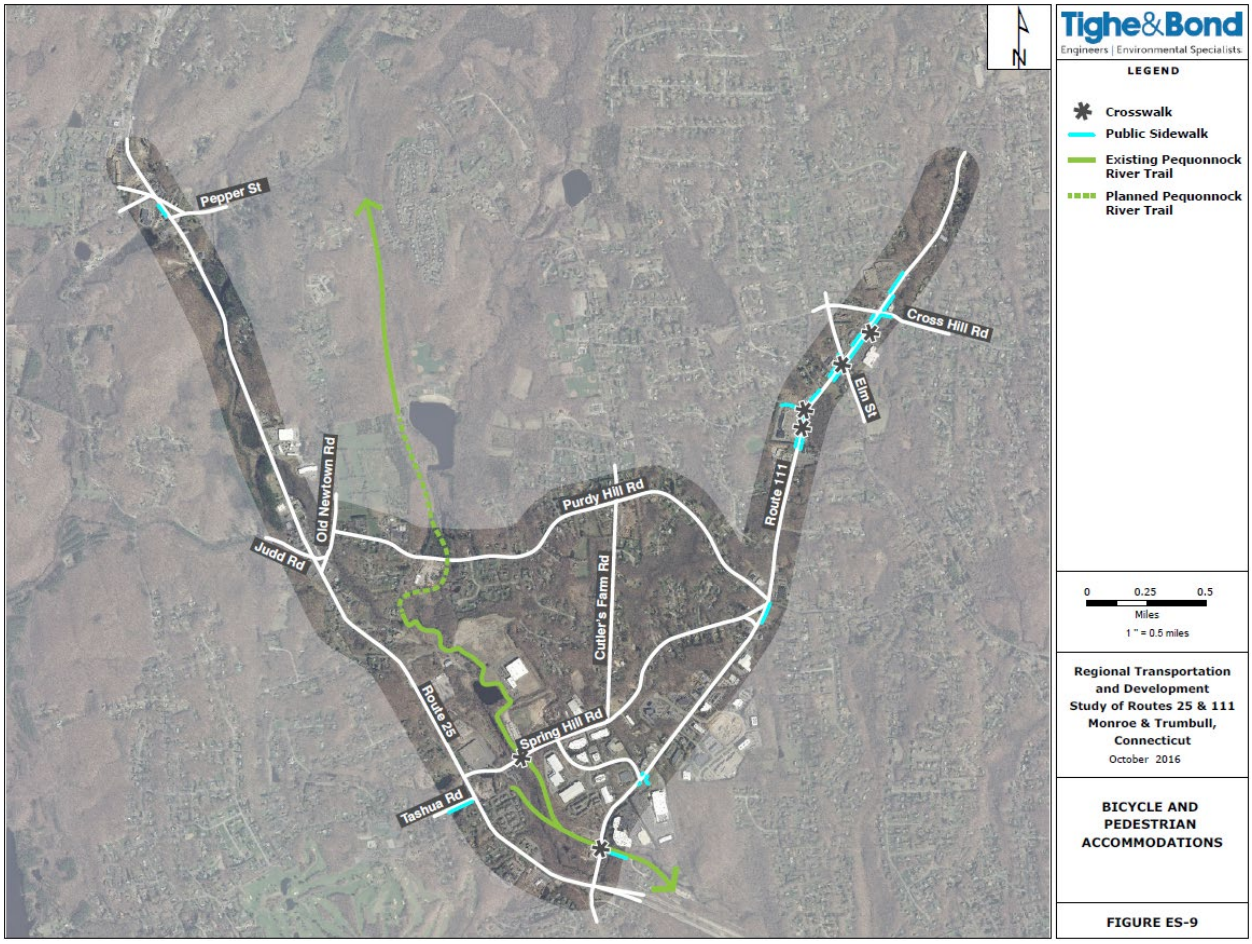


Alternative Travel Modes

The study area is typical of a low to mid-density suburban setting in that the study corridors lacked sidewalks and pedestrians were observed walking in the shoulder of the roadway or on lawns. Cyclists rode on the shoulder of the roadway as on-street bicycle facilities are not available for their use. Figure ES-9 shows the bicycle and pedestrian accommodations within the study area.

FIGURE ES-9

Bicycle and Pedestrian Accommodations



The lack of bicycle and pedestrian facilities within the study area acted to discourage non-motorized travel. Additionally, both the Route 25 and Route 111 corridors are generally hostile to pedestrians, whether they are walking along or trying to cross the corridor, due to the lack of sidewalks, crosswalks, ramps, and exclusive pedestrian phases in the traffic signal programs.

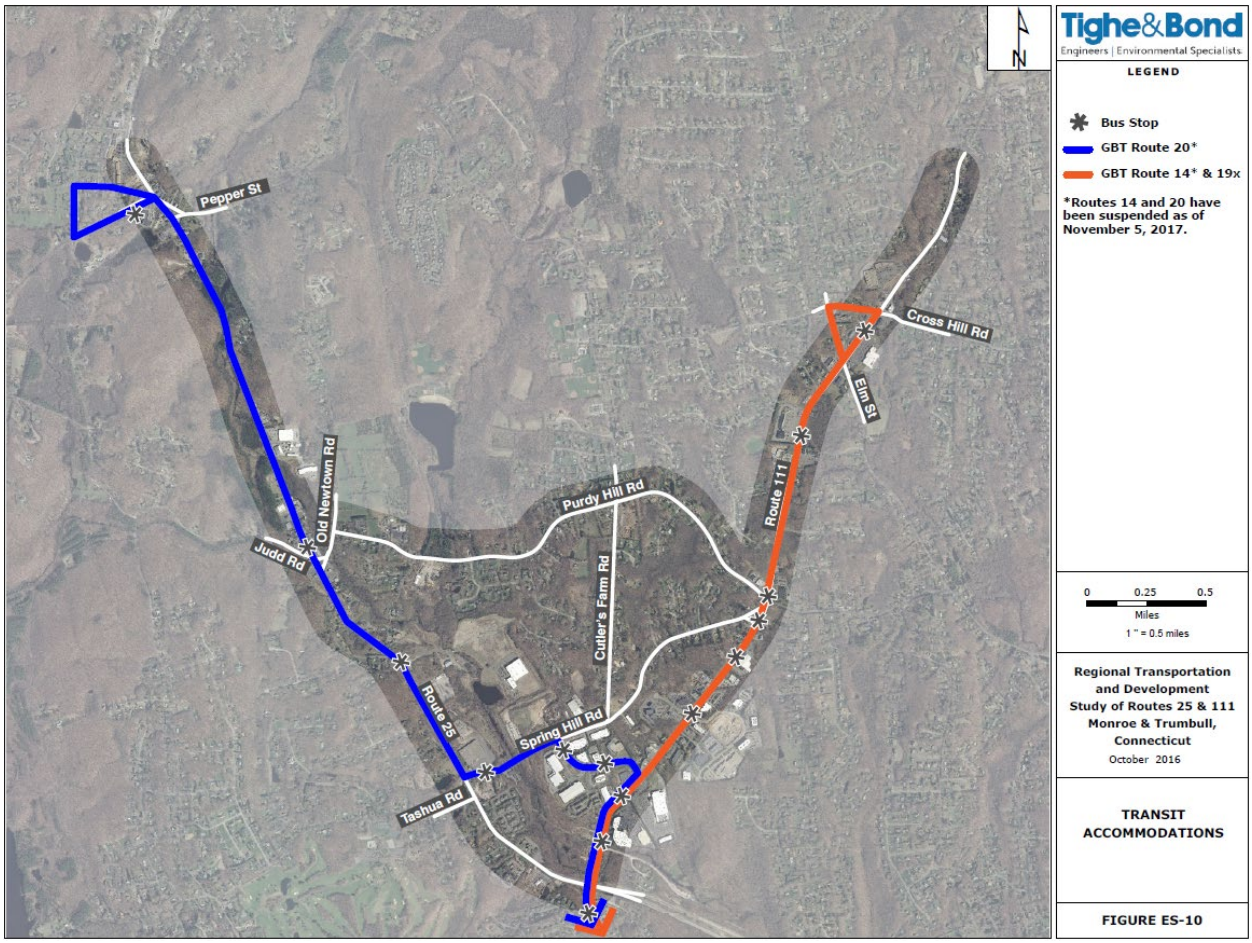
The primary bicycle or pedestrian facility within the study area is the Pequonnock River Trail, formerly known as the Housatonic Railroad Trail, "Rails to Trails." The built-out bicycle and pedestrian section of the pathway within the study area is 1.5 miles long. It extends from the Route 111 at Old Mine Road intersection in Trumbull to Maple Drive in Monroe with a spur that connects to the Regency Meadows development in Trumbull. The existing pathway extended south beyond the study area to the intersection of State Routes 127 and

734 in Trumbull Center, and is planned to extend south into Bridgeport and north to the Newtown town line. Various segments of this pathway are complete or routed on local streets.

Greater Bridgeport Transit (GBT) Routes 14, 19x, and 20 served the study area; however, service on Routes 14 and 20 was suspended as of November 5, 2017 due to funding constraints and a lack of ridership. Multiple bus stops, denoted with GBT signs, were located along each route with the distance between each stop averaging between 0.25 to 0.5 miles apart. Amenities were noticeably lacking at bus stops. No shelters or benches were observed in the study area. Most stops also lacked sidewalks and paved waiting areas. The transit accommodations are shown in Figure ES-10.

FIGURE ES-10

Transit Accommodations



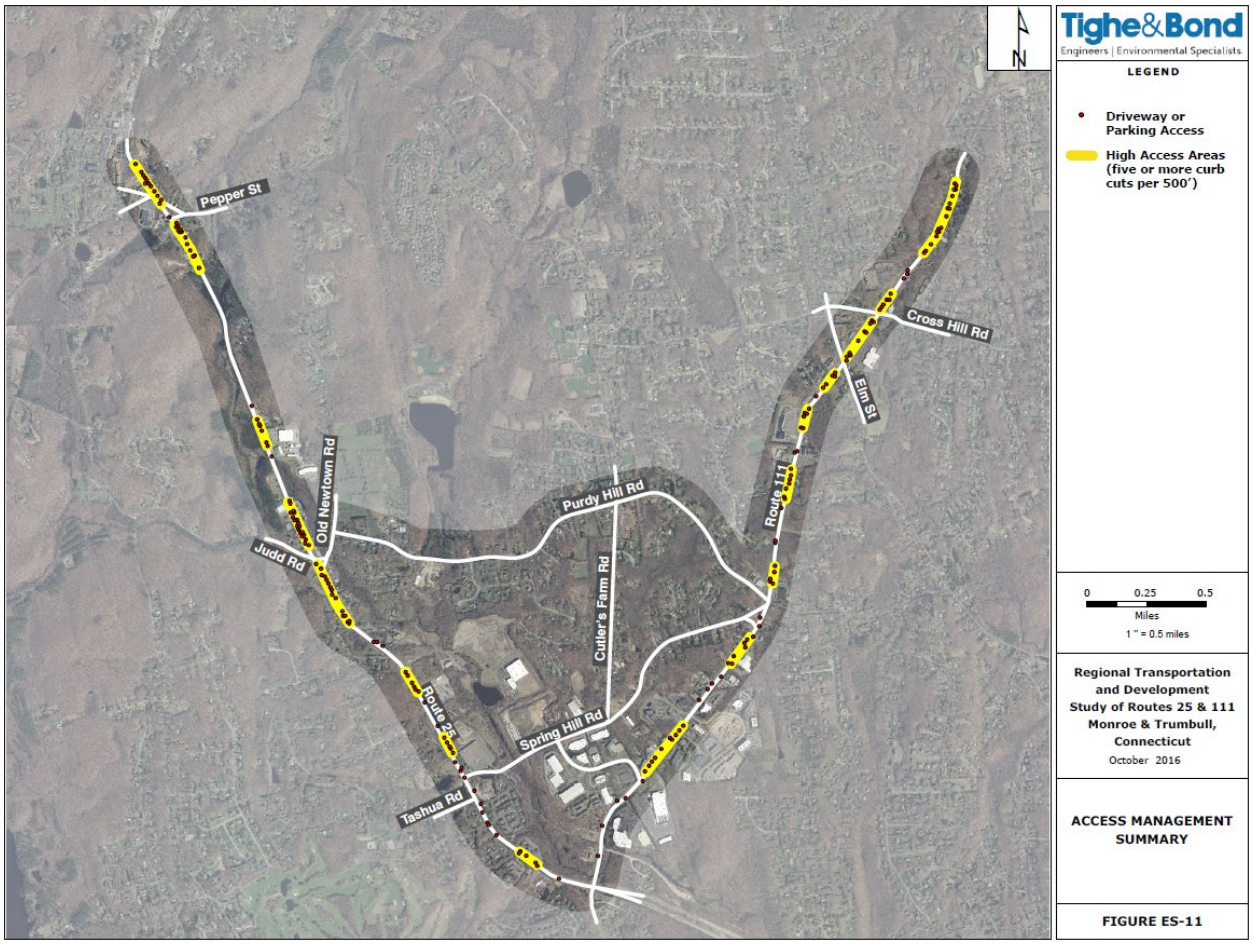
Access Management

Access management is the process of planning access to land development while simultaneously preserving the flow of traffic on the surrounding roadway system in terms of safety and capacity. Access management focuses on safety of travel and minimizing conflict points (locations where vehicles can cross paths) to maintain the smooth flow of traffic along a roadway. Maintaining smooth traffic flow can, in turn, reduce the need for roadway widening induced by growing congestion. Access design characteristics of a roadway that directly impact traffic flow and safety include the location, spacing, and design of access drives entering the roadway as well as the locations of signals, medians, and turn lanes.

The study area is characterized by a mixture of land uses including residential, institutional, office, retail, restaurant, service, and industrial. Most of the uses had direct access from Route 25 and Route 111 by way of an exclusive or shared driveway or parking areas that directly abutted either roadway. In total, there are 195 access points along the two corridors with 102 located on Route 25 and 93 located on Route 111. On average, there are 30 access points per mile of roadway. Many of these access points are clustered in groups. Within the study area, approximately 45% of Route 25 and 43% of Route 111 had a high density of access points (five or more per 500 feet). A summary of the access points along the corridors is shown in Figure ES-11.

FIGURE ES-11

Access Management Summary



Transportation System Conditions

The Study Team conducted observations of the existing roadway network to identify deficiencies or areas of concern that warranted a more detailed assessment for mitigation during later phases of the project. The following observations were recorded and are summarized in Figure ES-12:

- Arterial capacity issues occurred due to spot widening at intersections creating an inconsistent and varying roadway cross-section. Roadway width and lane geometry variations caused significant congestion and queueing along the Route 25 corridor and along Route 111, focused mainly on retail areas between Village Square and Century Plaza.

- Congested operations occurred due to normal peak traffic flows at the following locations:
    - Route 111 at Monroe Elementary school during pickup and drop off operations
    - Route 25 at St. Stephen's Church during Sunday services which are currently controlled by police officers
    - Route 25 at Spring Hill Road due to transfer station operations during peak Saturday periods

- High travel speeds existed along Route 25 and Route 111 corridors as well as on the side streets.

- High collision rates occurred at the following intersections:
    - Route 25 at Route 111
    - Route 25 at Judd Road/Purdy Hill Road
    - Route 25 at Route 59
    - Route 111 at Elm Street

- Safety concerns existed at the Pequonnock River Trail Crossing on Route 111 due to high travel speeds and congestion, particularly with the potential for increased pedestrian and bicycle traffic as the Pequonnock River Trail expands to the north and south.

- Emergency vehicle access is limited during traffic incidents as vehicles cannot bypass the incidents due to the existing narrow roadway width and lack of wider roadway shoulders.

- Skewed alignments of Crescent Place and Old Turnpike Road impacted turning movements to and from Route 25 causing safety concerns.

- Flooding issues are present on Route 25 north of Stepney Plaza due adjacent wetlands.

- Significant recent and anticipated near-term development would generate additional traffic volume within the study area and put strain on existing congested operations.

- Limited right of way is available for widening and/or improvements on Route 25 and Route 111 within the study area, including closely located parking areas for many developments, would result in impacts to private property.

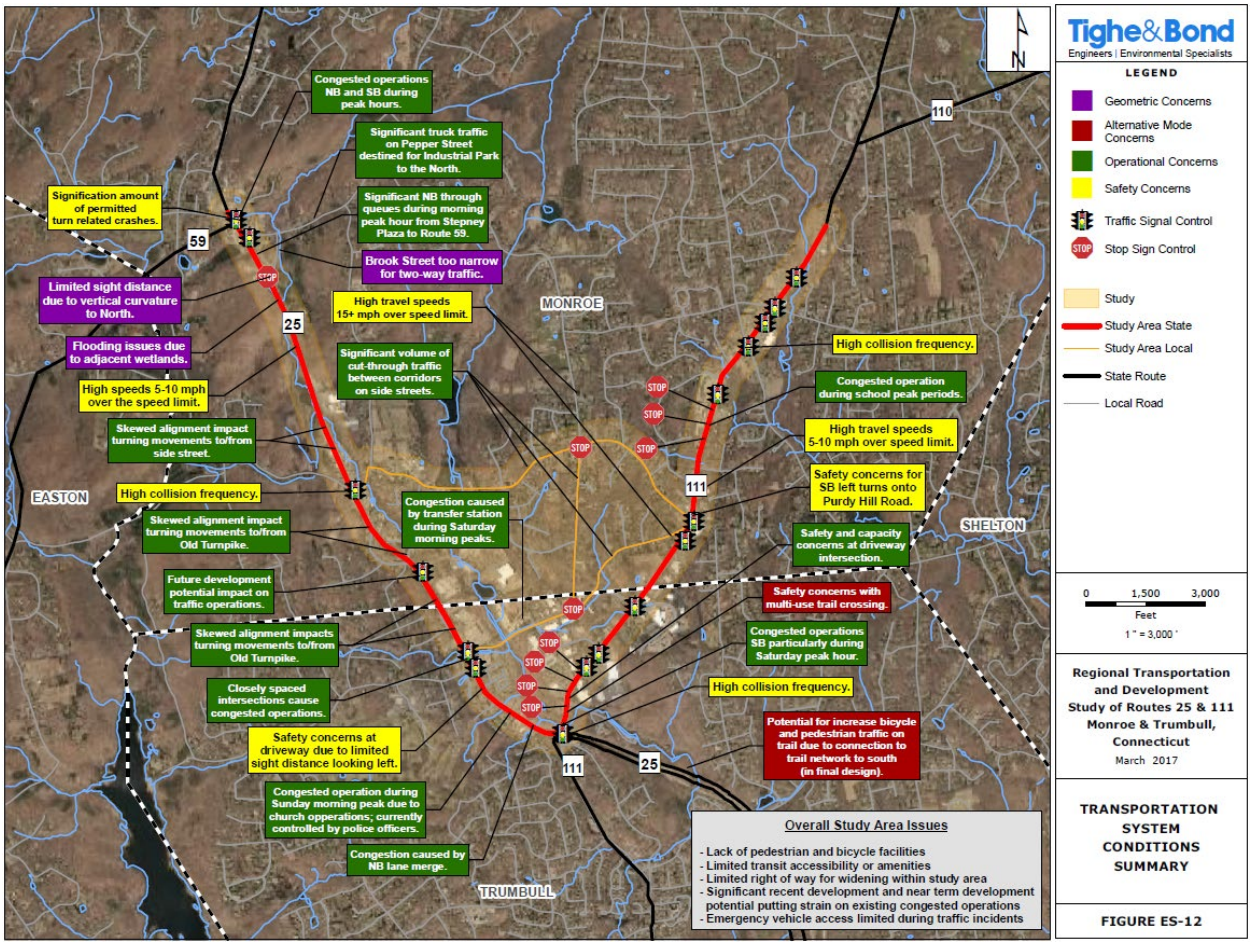
- Significant cut-through traffic utilized east-west local roadway network to avoid congestion on the Route 25 and Route 111 main lines and to shorten overall travel distances between the two major corridors.

- Limited transit usage, accessibility, and amenities existed within the study area. Transit service is only available on weekdays with limited service of 4 trips per day per GBT route.

- A lack of pedestrian and bicycle accommodations are present throughout the study area. Sidewalks are sparse, and narrow shoulders discouraged bicycling and walking.

FIGURE ES-12

Transportation System Conditions Summary



Assessment of Future Conditions

The assessment of future conditions conducts an analysis of the Route 25 and 111 study area under existing geometric and operational conditions utilizing 2040 Background volumes. Planned intersection and roadway improvements expected to be complete by the 2040 study year were incorporated into the traffic operations model. This assessment identified deterioration of operational efficiency from existing conditions and helped identify areas of concern that develop in the future under a scenario where no improvements are made to the transportation system.

The future conditions analysis includes traffic projections based on the methodology described below to expand the 2016 Existing traffic volumes to the 2040 Background traffic volumes. The Route 25 and 111 study area intersections were analyzed under two scenarios: Background and Background-Optimized conditions. The 2040 Background analysis utilized existing geometry and existing traffic signal settings to facilitate a direct comparison between existing and future conditions. The 2040 Background-Optimized analysis utilized existing geometry, but modified intersection signal timings and settings to provide the most efficient operations for future conditions. This optimization analysis determined if future travel demand could be mitigated through low-cost adjustments to signal operations, or if physical improvements are needed. These Background analyses provided the basis for generating roadway improvement plans to accommodate anticipated traffic growth for each of the corridors.

Background Traffic Forecasts

Background traffic forecasts for the study area were generated by the Connecticut Department of Transportation (CTDOT) transportation model for the region. The model utilized historical traffic volume trends, pending/approved and yet to be constructed developments, and expected near-term future development based on information provided from local municipalities to forecast future traffic volumes for the region. Comparing the 2016 Existing Traffic Volumes to the 2040 Background volumes revealed that there is significant anticipated development along the Route 25 and 111 corridors within the 20-year study horizon. Total traffic growth along Route 25 ranged from 35 to 75% and equated to approximately 1.5 to 2.9% average annual growth. Route 111 is expected to experience slightly lower growth than Route 25, with the highest overall growth south of Trefoil Drive ranging from 35 to 40%. This represented average annual growth rates of 1.5 to 1.75%. To the north, growth along Route 111 is relatively consistent at 20 to 30% with average annual growth rates of 0.9 to 1.3%.

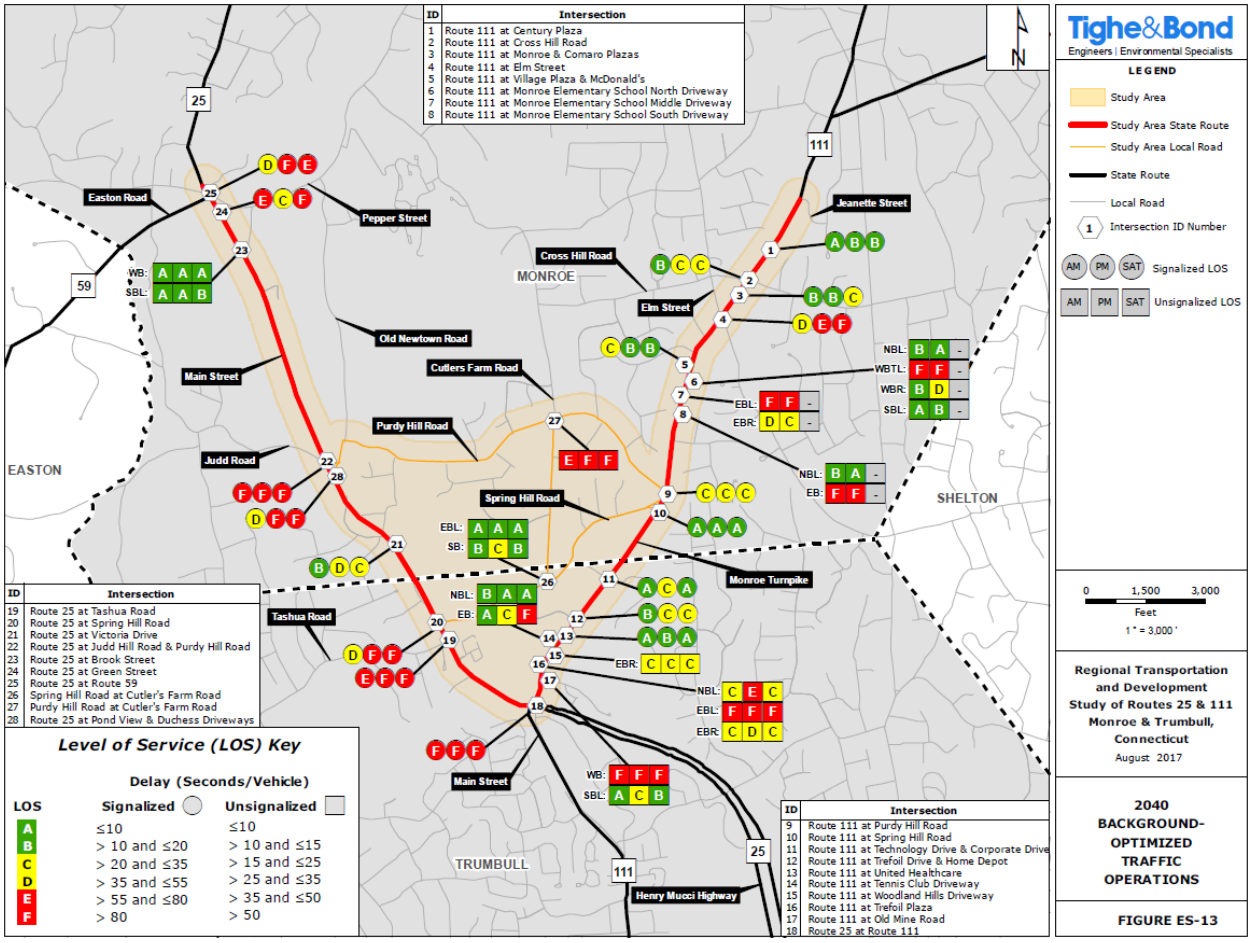
Background Traffic Operations

Traffic operations for the 2040 Background Traffic Volumes were evaluated using Trafficware's *Synchro plus SimTraffic 9 – Traffic Signal Coordination Software,* based on the *2010 Highway Capacity Manual (HCM)* methodology. Existing geometry was utilized with the exception of locations with approved planned improvements. These improvements were incorporated into the traffic model for the analysis.

Signal operations were optimized along the corridor to reflect routine timing adjustments made by CTDOT to accommodate changing traffic volumes and conditions. Figure ES-13 summarizes the expected traffic operations of the study intersections under 2040 Background-Optimized conditions in each of the peak periods.

FIGURE ES-13

2040 Background-Optimized Traffic Operations



The full report provides a detailed description of the future areas of concern related to the traffic operations results and other observed needs and deficiencies.

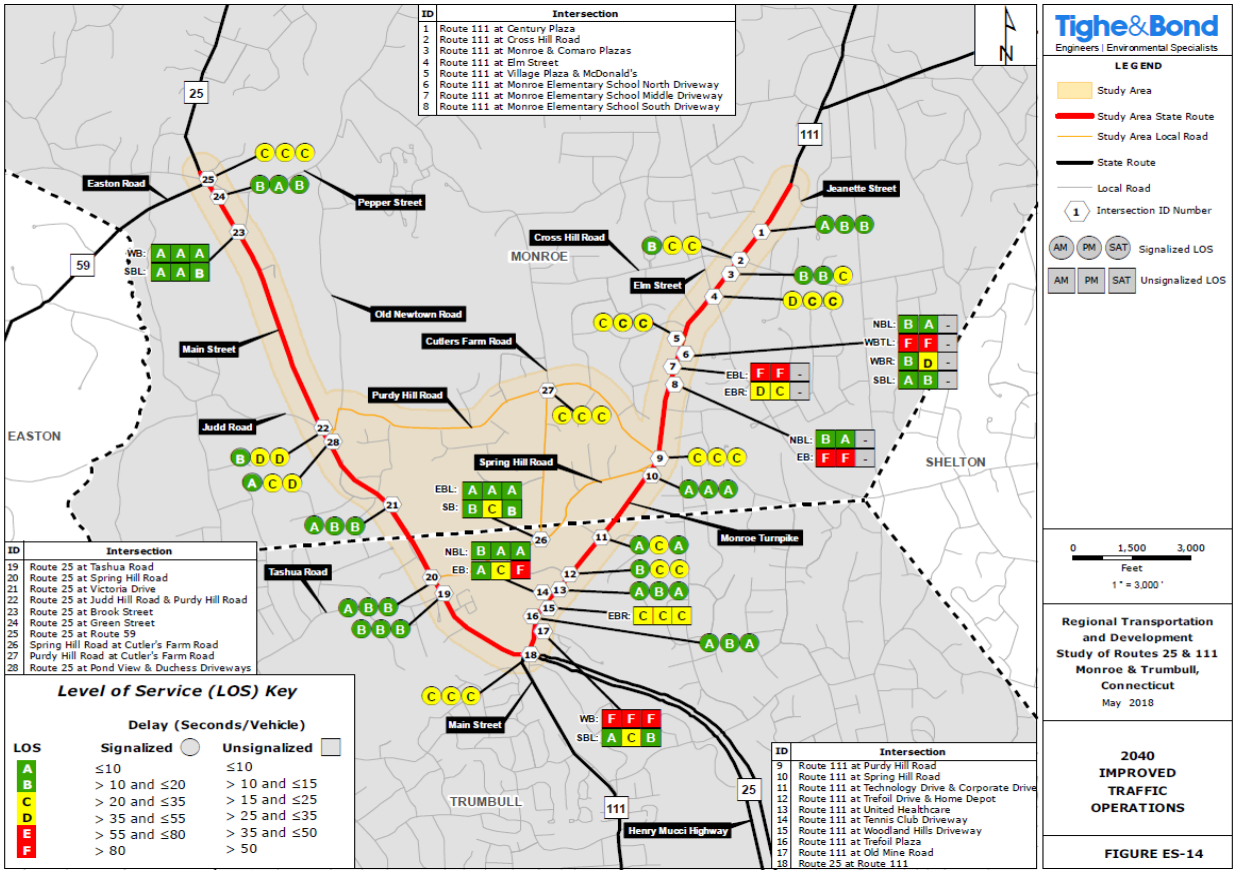
Recommendations

The recommendations address both existing issues and those resulting from the forecasted travel demand and potential development growth that is expected to occur in the Towns of Monroe and Trumbull, as well as the surrounding region, by the year 2040. The recommendations were developed cooperatively with the Technical and Community Advisory Committees, CTDOT, and METROCOG, and were refined through a public engagement process to address the goals and objectives outlined in the Study Mission Statement.

The proposed improvements on Route 25 are predominately corridor-wide operational improvements that could be implemented through a phased approach, whereas those on Route 111 and the local roadways are generally spot improvements. Additionally, comprehensive multimodal and access management concepts for the network were developed to address existing deficiencies and future transportation needs. All improvements are intended to provide mitigation for current and future areas of concern and address future traffic growth, improve safety, increase accessibility, and promote alternative modes of travel. The recommendations are presented by location from south to north along the Route 25 and 111 corridors. Although many of the recommendations addressed transportation issues related to motor vehicles, a series of alternative mode enhancement recommendations address pedestrian, transit, cyclist, and recreational usage of the transportation system. A summary of the 2040 traffic operations with the proposed improvements is shown in Figure ES-14.

FIGURE ES-14

2040 Improved Traffic Operations



Project 1 (At-Grade): Route 25 (Main Street) from Route 111 (Monroe Turnpike) to Spring Hill Road Improvements and Relocate Pequonnock River Trail Crossing (Plans 1, 3, 4, 5, & 14)

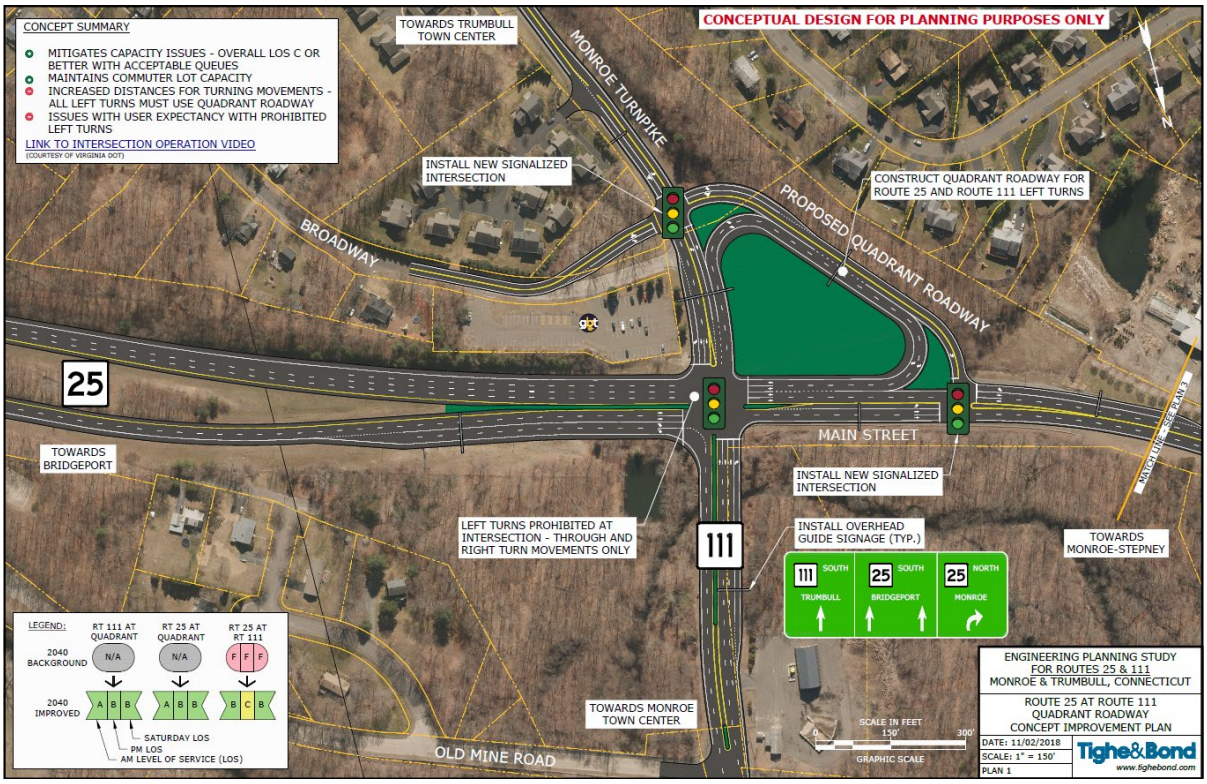
Project Goals:	Improve Route 25/111 intersection operations by increasing capacity and safety; implement Route 25 four-lane cross-section north of 25/111 intersection area; improve safety by restricting left turns along Route 25; improve trail safety by eliminating Route 111 crossing	**Project Type:**	Large
		Project Complexity:	High
		Project Priority:	Short-Term
		Project Cost:	$22 Million

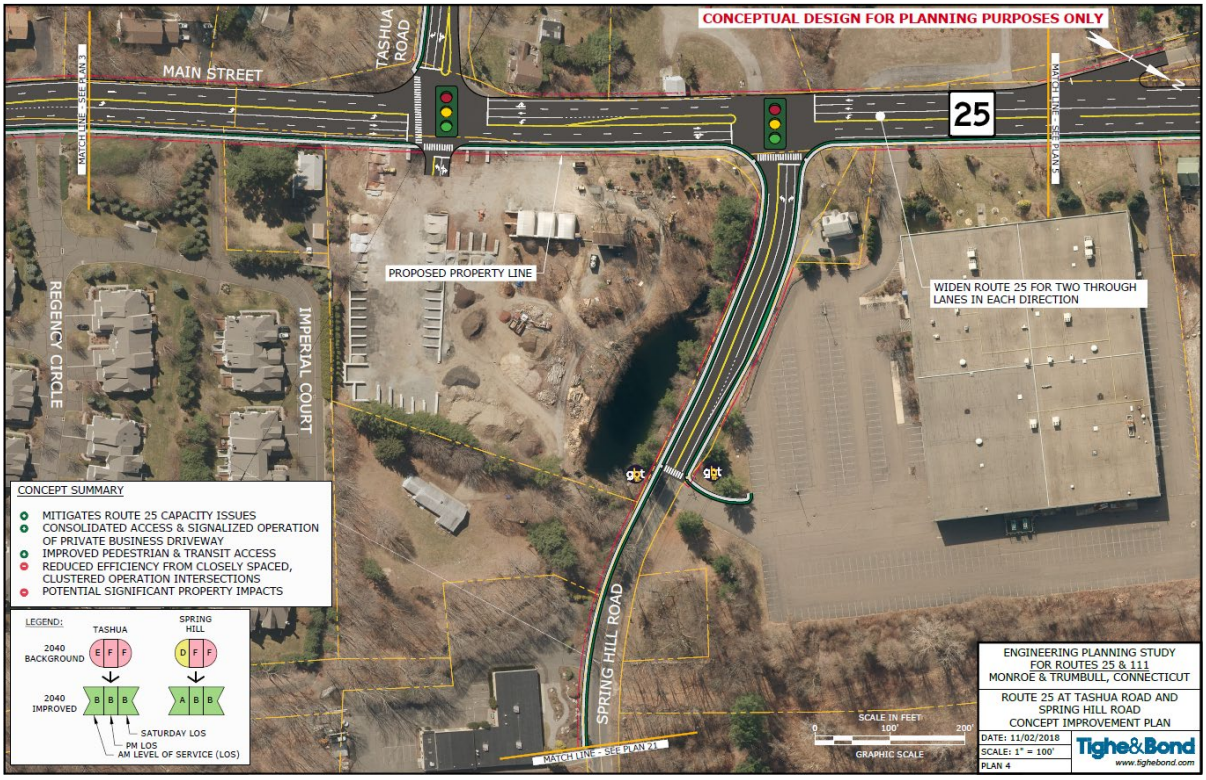
Major Project Elements:

- Construct Route 25 at Route 111 Quadrant intersection:
  - Prohibit left turns at the Route 25 and 111 intersection and widen both roadways to provide additional through capacity
  - Construct quadrant roadway southwest of the intersection to accommodate left turn movements restricted at the main intersection
  - Signalize intersections at both ends of the quadrant roadway with free flow right turns onto and off of the quadrant roadway
  - Realign Broadway across from the quadrant roadway intersection on Route 111
  - Provide overhead guide signage on all approaches to direct turning traffic
- Widen Route 25 north of Route 25 at Route 111 Intersection:
  - Widen Route 25 to four lanes (two travel lanes in each direction)
  - Remove landscaping and vegetation at Regency Meadows Driveway
  - Improve safety by installing raised median between Route 111 and Tashua Road to restrict left turns into and out of properties – provide median breaks for select left turns or U-turns as needed
  - Relocate commercial driveway directly across from Tashua Road and incorporate into traffic signal
- Relocate Pequonnock River Trail to new alignment under new Route 111 bridge
- Provide bicycle, pedestrian, and transit accommodations

Permits:

- Town roadway construction permits for construction within Town right-of-way
- CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way
- Environmental permitting requirements





Note: Project 1 requires implementation of Plan 4; however, Plan 4 can be implemented as a standalone project

Project 1 (Grade Separated): Route 25 (Main Street) from Route 111 (Monroe Turnpike) to Spring Hill Road Improvements and Relocated Pequonnock River Trail Crossing (Plans 2, 3, 4, 5, & 14)

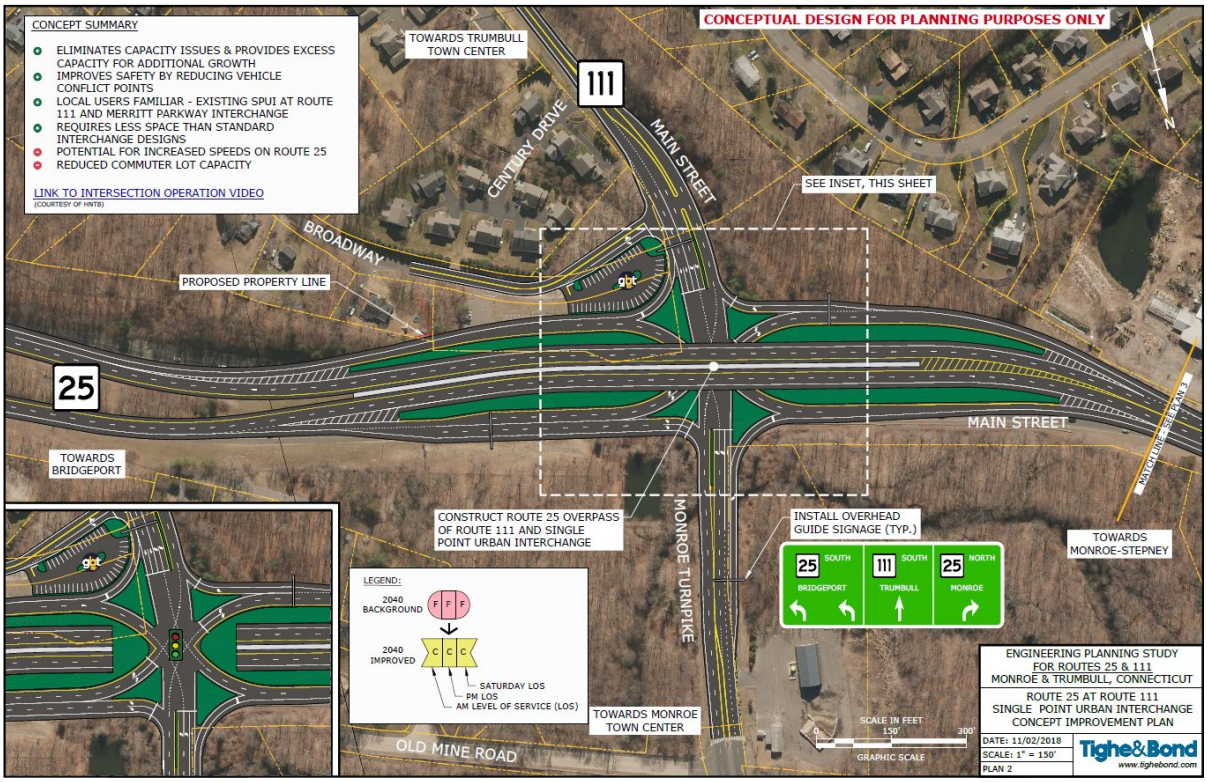
Project Goals:	Improve Route 25/111 intersection operations by increasing capacity and safety; implement Route 25 four-lane cross-section north of 25/111 intersection area; improve safety by restricting left turns along Route 25; improve trail safety by eliminating Route 111 crossing	**Project Type:**	Large
		Project Complexity:	High
		Project Priority:	Short-Term
		Project Cost:	$45 Million

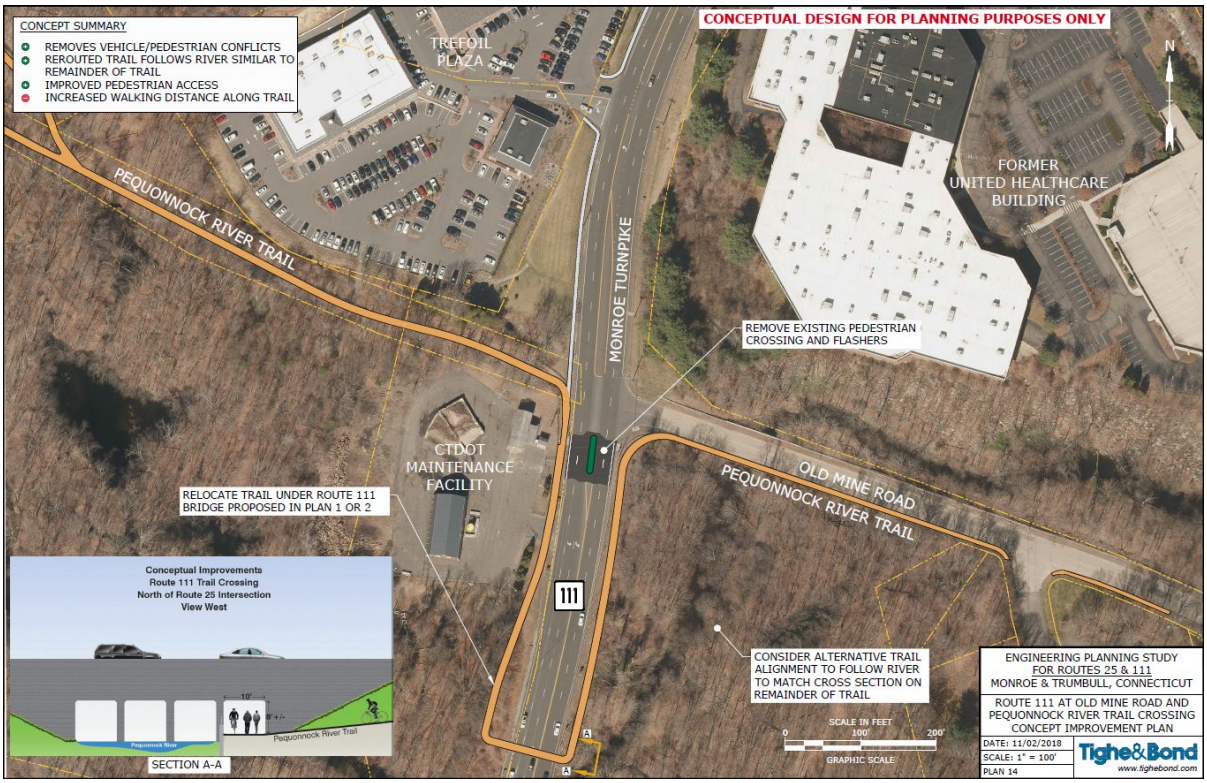
Major Project Elements:

- Construct Single Point Urban Interchange:
  - Grade separate Route 25 over Route 111
  - Create one signalized intersection to process all vehicles through interchange
  - Realign Broadway to the south
  - Reconfigure existing commuter lot
  - Widen and restripe Route 111
- North of Route 25 at Route 111 Intersection:
  - Widen Route 25 to four lanes (two travel lanes in each direction)
  - Remove landscaping and vegetation at Regency Meadows Driveway
  - Install raised median between Route 111 and Tashua Road to restrict left turns into and out of properties – provide median breaks for select left turns or U-turns as needed
  - Relocate landscaping business driveway across from Tashua Road and incorporate into signal
- Relocate Pequonnock River Trail to new alignment under new Route 111 bridge
- Provide bicycle, pedestrian, and transit accommodations

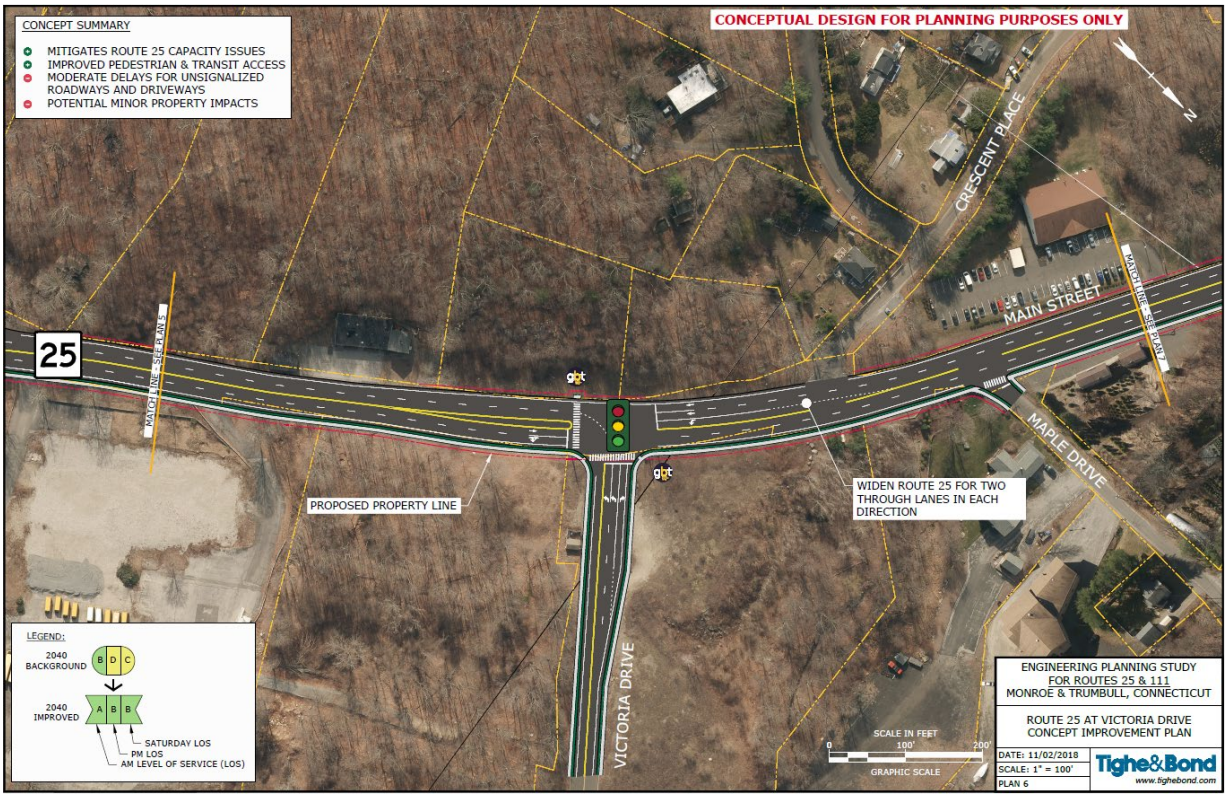
Permits:

- Town roadway construction permits for construction within Town right-of-way
- CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way
- Environmental permitting requirements


CONCEPT SUMMARY
ELIMINATES CAPACITY ISSUES & PROVIDES EXCESS CAPACITY FOR ADDITIONAL GROWTH
IMPROVES SAFETY BY REDUCING VEHICLE CONFLICT POINTS
LOCAL USERS FAMILIAR - EXISTING SPUI AT ROUTE 111 AND MERRITT PARKWAY INTERCHANGE
REQUIRES LESS SPACE THAN STANDARD INTERCHANGE DESIGNS
POTENTIAL FOR INCREASED SPEEDS ON ROUTE 25
REDUCED COMMUTER LOT CAPACITY
LINK TO INTERSECTION OPERATION VIDEO
(COURTESY OF HNTB)
CONCEPTUAL DESIGN FOR PLANNING PURPOSES ONLY
TOWARDS TRUMBULL TOWN CENTER
111
CENTURY DRIVE
MAIN STREET
SEE INSET, THIS SHEET
BROADWAY
PROPOSED PROPERTY LINE
25
MAIN STREET
TOWARDS BRIDGEPORT
CONSTRUCT ROUTE 25 OVERPASS OF ROUTE 111 AND SINGLE POINT URBAN INTERCHANGE
MONROE TURNPIKE
INSTALL OVERHEAD GUIDE SIGNAGE (TYP.)
25 SOUTH BRIDGEPORT
111 SOUTH TRUMBULL
25 NORTH MONROE
TOWARDS MONROE-STEPNEY
LEGEND:
2040 BACKGROUND F F F
2040 IMPROVED C C C
SATURDAY LOS
PM LOS
AM LEVEL OF SERVICE (LOS)
TOWARDS MONROE TOWN CENTER
OLD MINE ROAD
SCALE IN FEET
0 150' 300'
GRAPHIC SCALE
ENGINEERING PLANNING STUDY FOR ROUTES 25 & 111 MONROE & TRUMBULL, CONNECTICUT
ROUTE 25 AT ROUTE 111 SINGLE POINT URBAN INTERCHANGE CONCEPT IMPROVEMENT PLAN
DATE: 11/02/2018
SCALE: 1" = 150'
PLAN 2
Tighe&Bond
www.tighebond.com


CONCEPT SUMMARY
REMOVES VEHICLE/PEDESTRIAN CONFLICTS
REROUTED TRAIL FOLLOWS RIVER SIMILAR TO REMAINDER OF TRAIL
IMPROVED PEDESTRIAN ACCESS
INCREASED WALKING DISTANCE ALONG TRAIL
CONCEPTUAL DESIGN FOR PLANNING PURPOSES ONLY
TREFOIL PLAZA
PEQUONNOCK RIVER TRAIL
MONROE TURNPIKE
FORMER UNITED HEALTHCARE BUILDING
REMOVE EXISTING PEDESTRIAN CROSSING AND FLASHERS
CTDOT MAINTENANCE FACILITY
OLD MINE ROAD
PEQUONNOCK RIVER TRAIL
RELOCATE TRAIL UNDER ROUTE 111 BRIDGE PROPOSED IN PLAN 1 OR 2
111
Conceptual Improvements
Route 111 Trail Crossing
North of Route 25 Intersection
View West
Pequonnock River
Pequonnock River Trail
SECTION A-A
CONSIDER ALTERNATIVE TRAIL ALIGNMENT TO FOLLOW RIVER TO MATCH CROSS SECTION ON REMAINDER OF TRAIL
SCALE IN FEET
0 100' 200'
GRAPHIC SCALE
ENGINEERING PLANNING STUDY FOR ROUTES 25 & 111 MONROE & TRUMBULL, CONNECTICUT
ROUTE 111 AT OLD MINE ROAD AND PEQUONNOCK RIVER TRAIL CROSSING CONCEPT IMPROVEMENT PLAN
DATE: 11/02/2018
SCALE: 1" = 100'
PLAN 14
Tighe&Bond
www.tighebond.com

Project 2: Route 25 (Main Street) Corridor and Victoria Drive Intersection Area Improvements (Plan 6)			
Project Goals:	Improve Route 25 mainline capacity; improve intersection operations to mitigate future development and regional traffic growth; improve pedestrian mobility and access to transit	**Project Type:**	Medium
		Project Complexity:	High
		Project Priority:	Mid-Term
		Project Cost:	$2,500,000
Major Project Elements:	• Widen Route 25 to four lanes (two travel lanes in each direction) • Provide double-left turn lanes and an exclusive right turn lane out of Victoria Drive • Improve bicycle, pedestrian, and transit access, amenities, and mobility • Rights of Way actions		
Permits:	• Revised Office of the State Traffic Administration (OSTA) approval for the Victoria Drive development • Town roadway construction permits for construction within Town right-of-way • CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way		



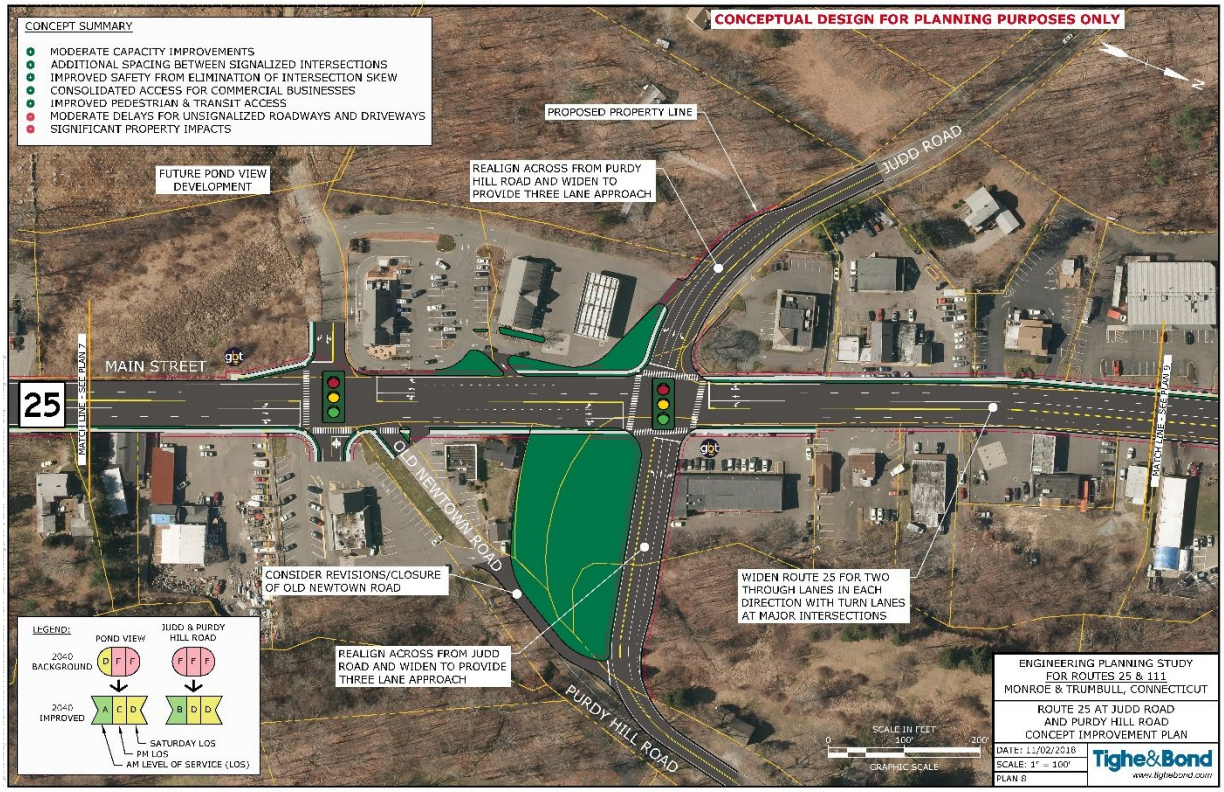
Project 3: Route 25 (Main Street) Corridor and Pond View Driveway / Judd Road & Purdy Hill Road Intersection Improvements (Plans 7, 8, & 9)			
Project Goals:	Improve Route 25 mainline capacity with four lane cross-section; improve intersection operations to mitigate future development and regional traffic growth; improve safety and intersection operational efficiency by realigning skewed intersection geometry; improve alternative mode mobility and access	**Project Type:**	Large
		Project Complexity:	High
		Project Priority:	Short-Term
		Project Cost:	$8,600,000

Major Project Elements:

- Widen Route 25 to four lanes (two travel lanes in each direction)
- Widen Judd Road and Purdy Hill Road to include exclusive right turn lanes
- Realign Judd Road and Purdy Hill Road with more conventional geometry farther north of the current intersection and consider revisions to Old Newtown Road
- Remove frontage road adjacent to the west side of Route 25 and consolidate and extend parcel driveways to Route 25
- Improve bicycle, pedestrian, and transit access, amenities, and mobility
- Significant Right of Way actions; the realignment of Purdy Hill Road would include the full taking of the commercial parcel on the northeast corner of the intersection

Permits:

- OSTA approval for the Pond View development
- Town roadway construction permits for construction within Town right-of-way
- CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way
- Environmental permitting requirements



Project 4: Route 25 (Main Street) Corridor from Brook Street to Route 59 (Easton Road) and Green Street and Route 59 Intersection Improvements (Plans 12 & 13)

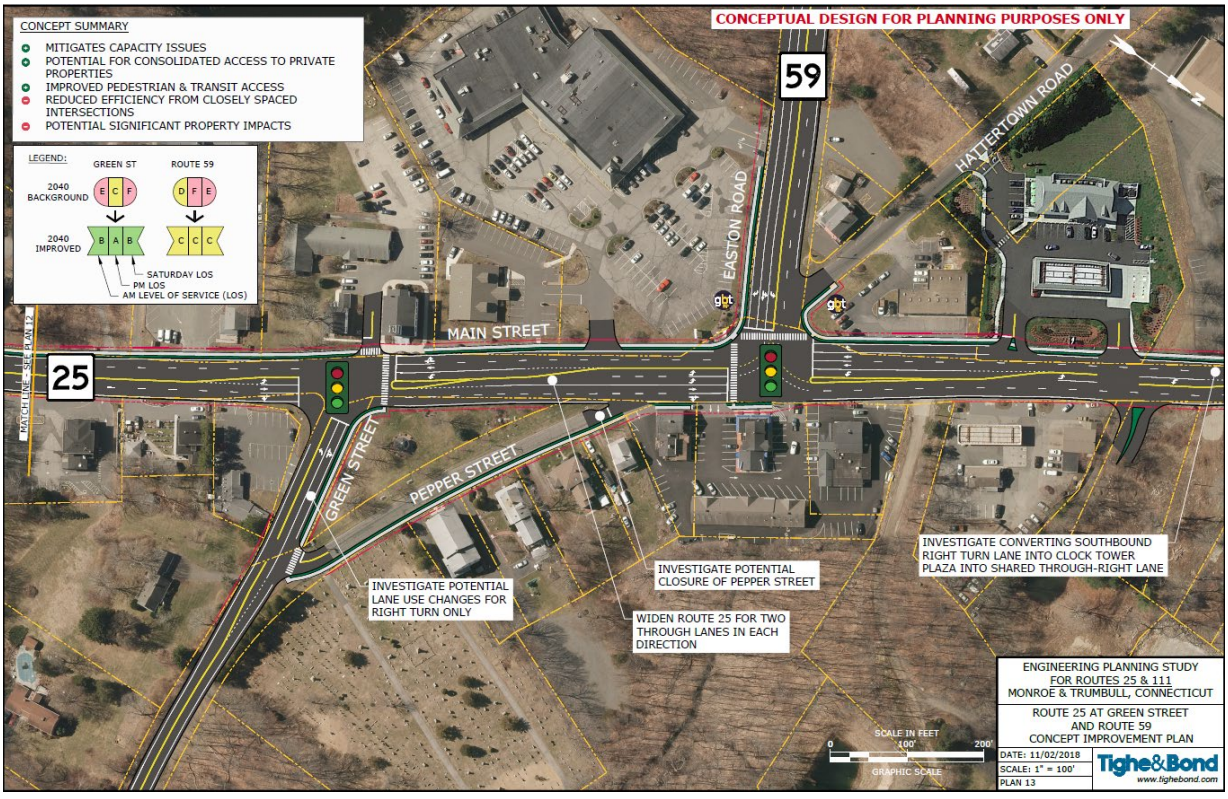
Project Goals:	Improve intersection operations by increasing capacity to mitigate congestion; continue the Route 25 four lane cross-section, and improve safety by realigning Brook Street; improve alternative mode access and mobility	**Project Type:**	Large
		Project Complexity:	High
		Project Priority:	Short-Term
		Project Cost:	$4,900,000

Major Project Elements:

- Widen Route 25 to four lanes (two travel lanes in each direction) north of Brook Street
- Provide double left turn lanes from Route 25 North onto Route 59
- Realign Brook Street to be perpendicular to Route 25 and improve intersection sight distance by regrading and clearing vegetation
- Investigate converting southbound right turn lane into Clock Tower Plaza into shared through-right lane
- Improve bicycle, pedestrian, and transit access, amenities, and mobility
- Right-of-way actions

Permits:

- Town roadway construction permits for construction within Town right-of-way
- CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way



Project 5: Route 111 (Monroe Turnpike) at Trefoil Plaza and Woodland Hills Intersection Improvements (Plan 15)

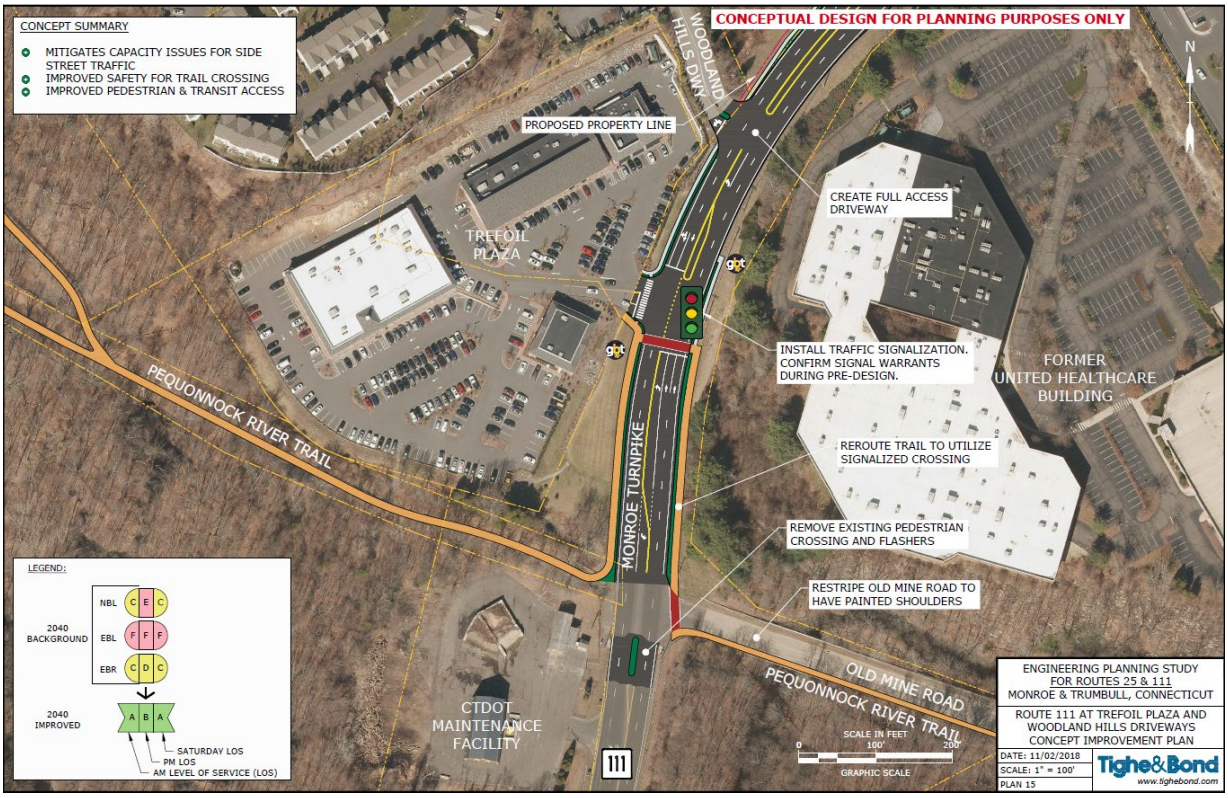
Project Goals:	Improve Trefoil Plaza driveway operations and safety through signalization; facilitate left turns into and out of Woodland Hills due to safety concerns arising from low compliance; improve trail safety; improve access and mobility for alternative travel modes	**Project Type:**	Medium
		Project Complexity:	Moderate
		Project Priority:	Short-Term
		Project Cost:	$1,500,000

Major Project Elements:

- Traffic control signalization of Trefoil Plaza driveway
- Reroute Pequonnock River Trail to intersection and provide an exclusive pedestrian phase for crossing
- Convert Woodland Hills driveway to unrestricted ingress/egress with a northbound left turn pocket on Route 111
- Restripe Old Mine Road to delineate shoulder width for bicyclists
- Improve bicycle, pedestrian, and transit access, amenities, and mobility

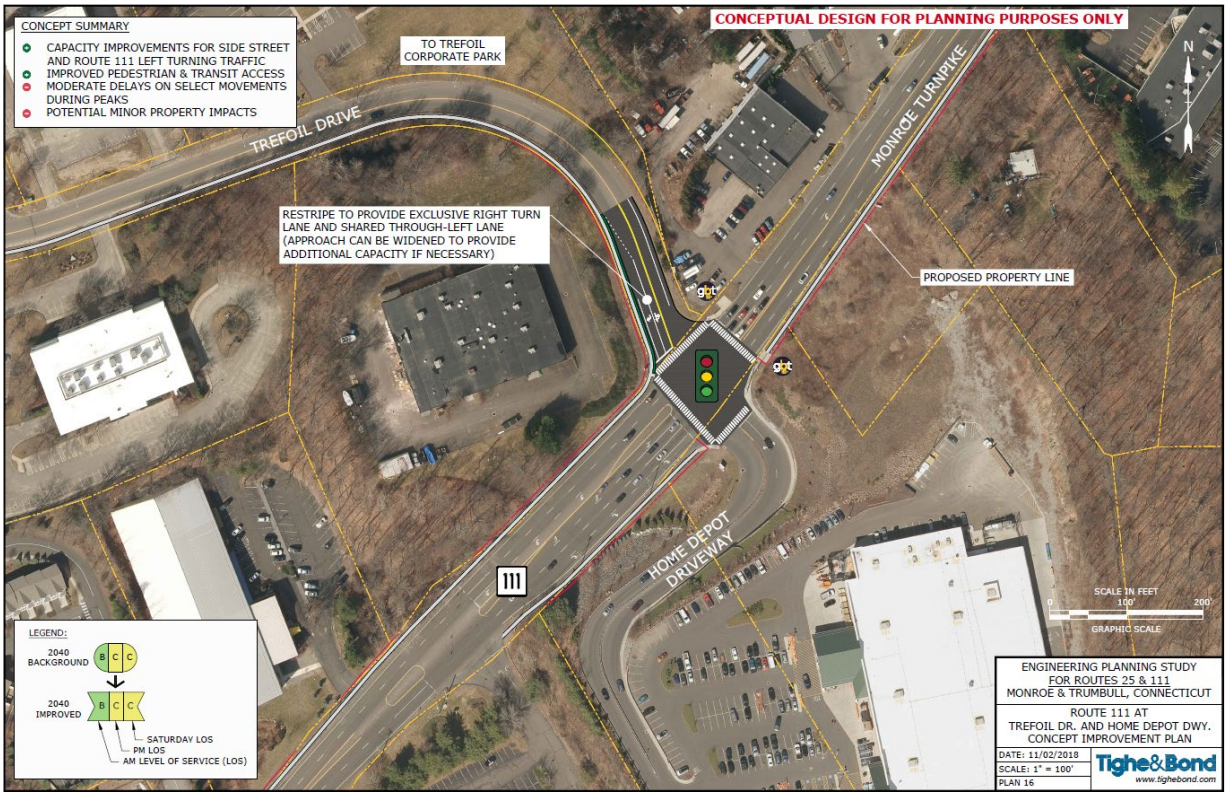
Permits:

- Revised OSTA approval for Trefoil Plaza development
- CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way
- Environmental permitting requirements



Note: The Town of Trumbull and METROCOG are currently pursuing a grant under the CTDOT Local Transportation Capital Improvement Program to fund this project.

Project 6: Route 111 (Monroe Turnpike) at Trefoil Drive Intersection Improvements (Plan 16)			
Project Goals:	Improve intersection operations and capacity by modifying lane use	**Project Type:**	Small
		Project Complexity:	Low
		Project Priority:	Long-Term
		Project Cost:	$80,000
Major Project Elements:	• Restripe Trefoil Drive to provide eastbound right turn and through-left lanes (minor widening along approach to provide additional capacity if necessary) • Improve bicycle, pedestrian, and transit access, amenities, and mobility		
Permits:	• Town roadway construction permits for construction within Town right-of-way • CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way		



Project 7: Route 111 (Monroe Turnpike) at Purdy Hill Road Intersection Improvements (Plan 17)

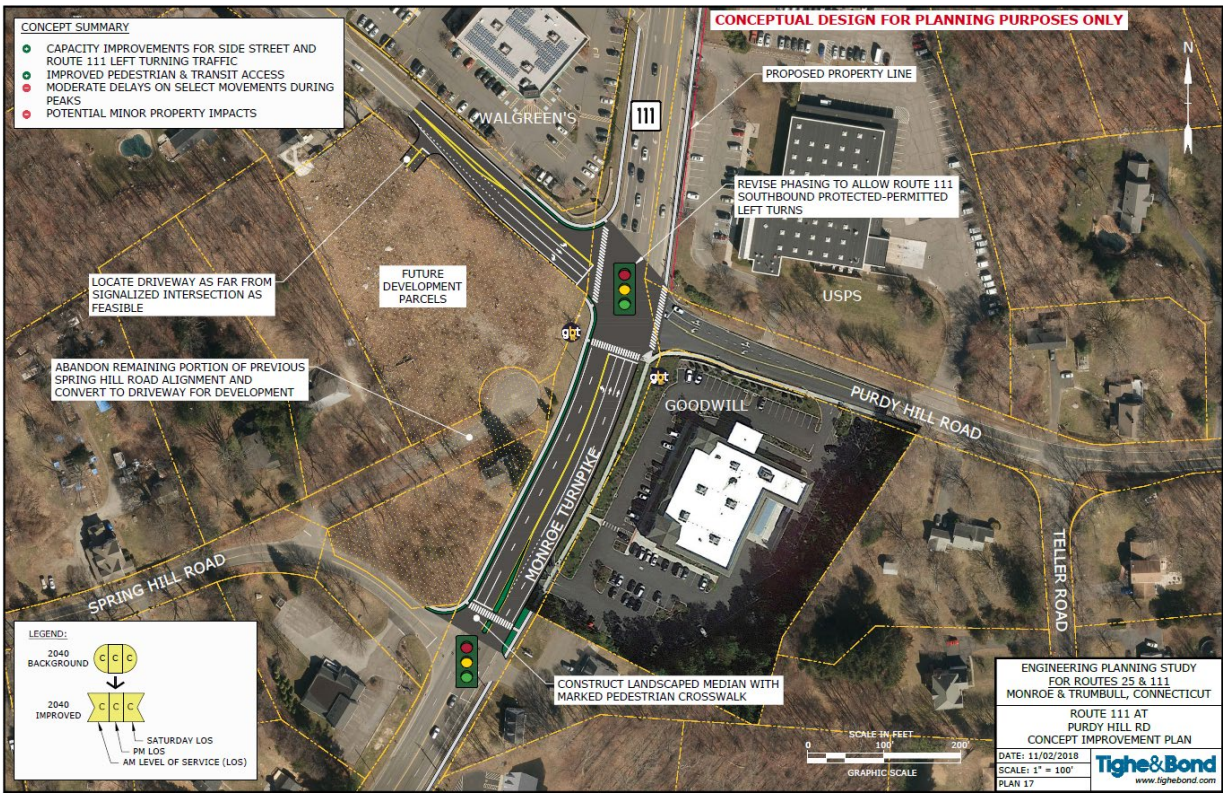
Project Goals:	Improve intersection operations by increasing side street capacity and storage length; improve safety by providing a protected left-turn phase for Route 111 South; provide improved pedestrian accommodations at Spring Hill Road	**Project Type:**	Small
		Project Complexity:	Low
		Project Priority:	Long-Term
		Project Cost:	$1,000,000

Major Project Elements:

- Provide eastbound right turn lane on Purdy Hill Road
- Lengthen westbound left turn lane on Purdy Hill Road to accommodate design queues
- Revise traffic signal phasing for protected-permitted left turns on Route 111 Southbound
- Install landscaped median with marked crosswalk on north leg of intersection of Route 111 and Spring Hill Road
- Improve bicycle, pedestrian, and transit access, amenities, and mobility

Permits:

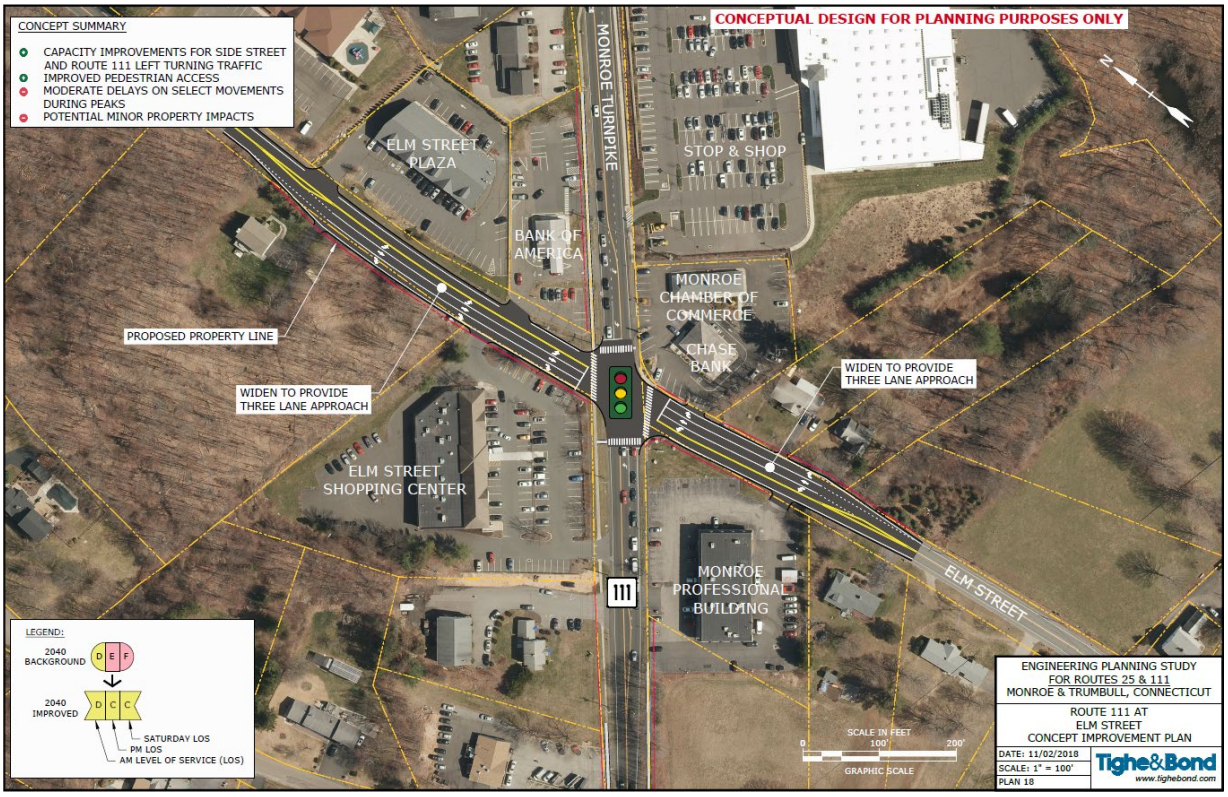
- Town roadway construction permits for construction within Town right-of-way
- CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way



Project 8: Route 111 (Monroe Turnpike) at Elm Street Intersection Improvements (Plan 18)

Project Goals:	Improve intersection operations by increasing side street capacity	**Project Type:**	Medium
		Project Complexity:	Moderate
		Project Priority:	Mid-Term
		Project Cost:	$1,350,000

Major Project Elements:	• Provide exclusive left-turn lanes on the eastbound and westbound Elm Street approaches • Improve bicycle, pedestrian, and transit access, amenities, and mobility
Permits:	• Town roadway construction permits for construction within Town right-of-way • CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way



Project 9: Purdy Hill Road at Cutler's Farm Road Intersection Improvements (Plan 19)

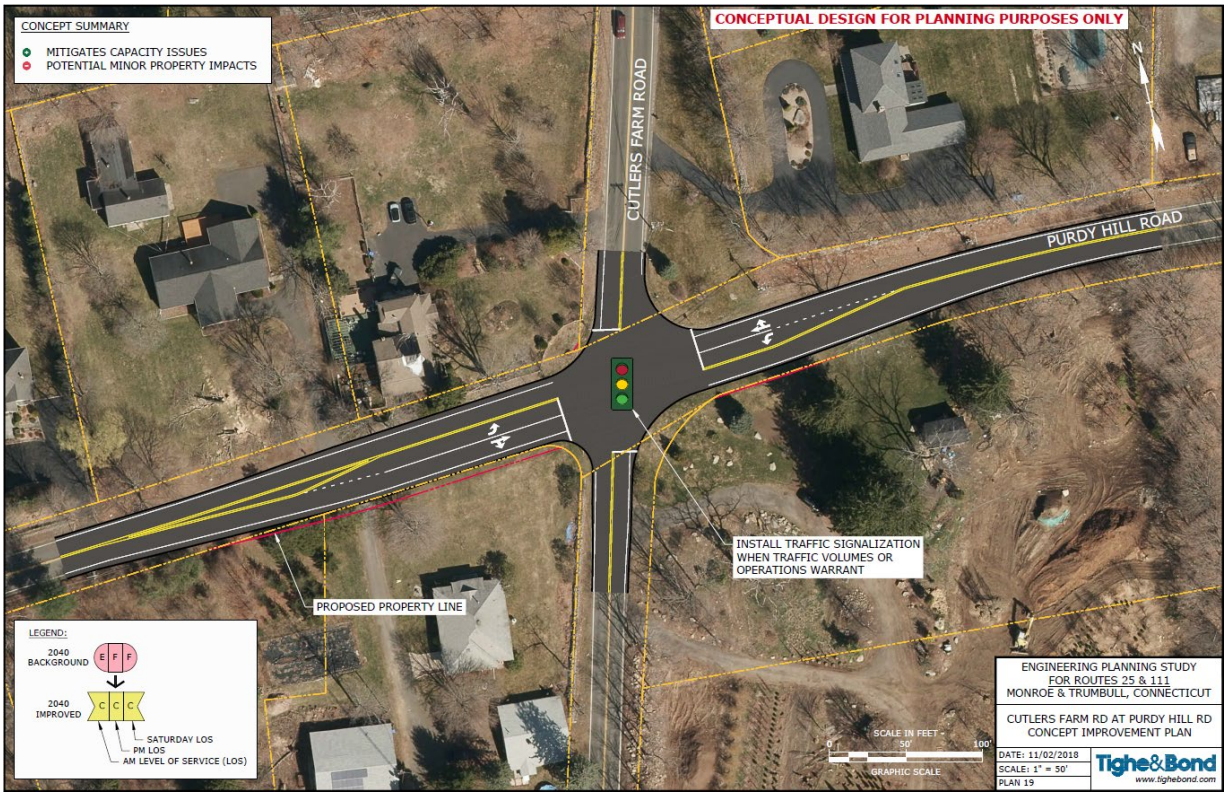
Project Goals:	Improve intersection operations through signalization	**Project Type:**	Small
		Project Complexity:	Moderate
		Project Priority:	Long-Term
		Project Cost:	$1,100,000

Major Project Elements:

- Install traffic control signal
- Provide left turn lanes on eastbound and westbound Purdy Hill Road approaches

Permits:

- Town approval and/or roadway construction permits for construction within Town right-of-way



Project 10: Spring Hill Road at Cutler's Farm Road Safety Improvements (Plan 20)			
Project Goals:	Improve intersection safety by installing a stop sign on the low visibility Spring Hill Road westbound approach	**Project Type:**	Small
		Project Complexity:	Low
		Project Priority:	Short-Term
		Project Cost:	<$5,000
Major Project Elements:	• Install stop sign and stop ahead sign on Spring Hill Road westbound approach • Install traffic from right/oncoming traffic does not stop plaques on intersection stop signs		
Permits:	• Town approval and/or roadway construction permits for construction within Town right-of-way		

Project 11: Spring Hill Road at Trumbull Transfer Station Operational Improvements (Plan 21)

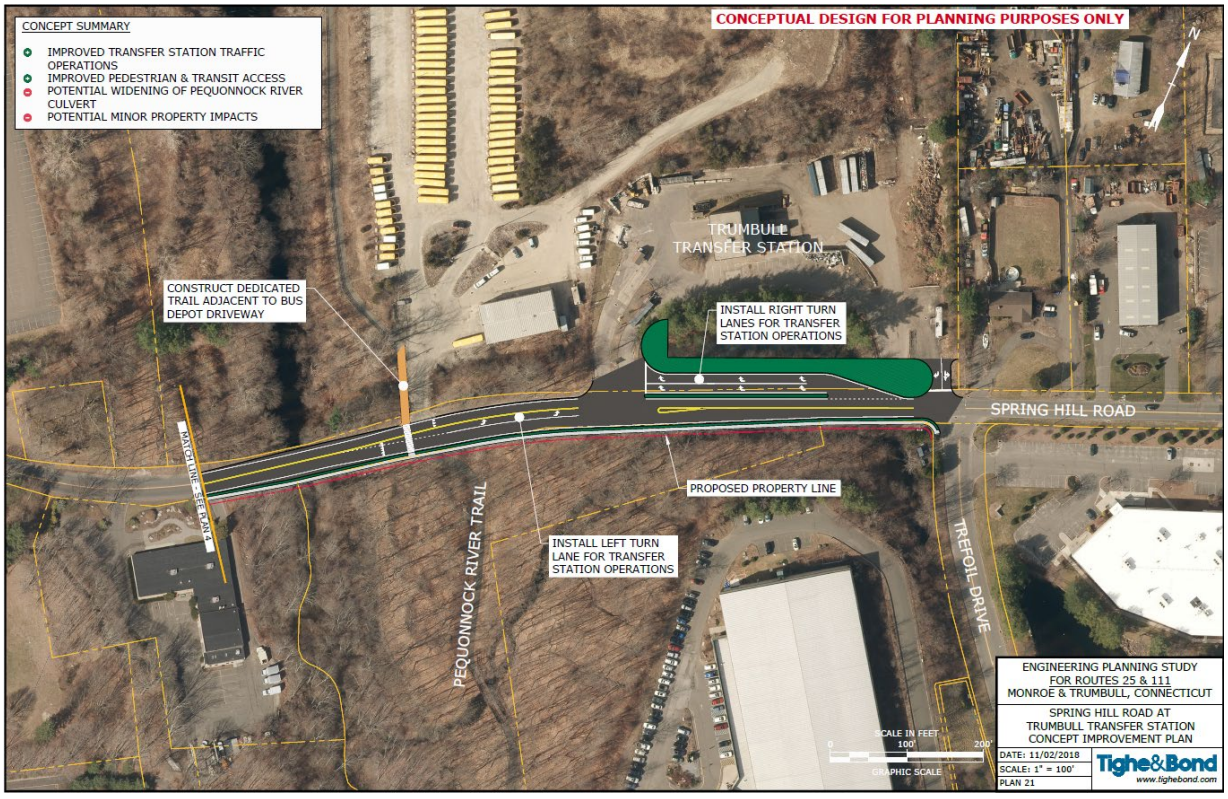
Project Goals:	Improve Transfer Station traffic operations during peak traffic conditions by providing queueing space for vehicles on Spring Hill Road; improve trail access and safety by relocating segment on the bus depot driveway	**Project Type:**	Small
		Project Complexity:	Moderate
		Project Priority:	Short-Term
		Project Cost:	$1,200,000

Major Project Elements:

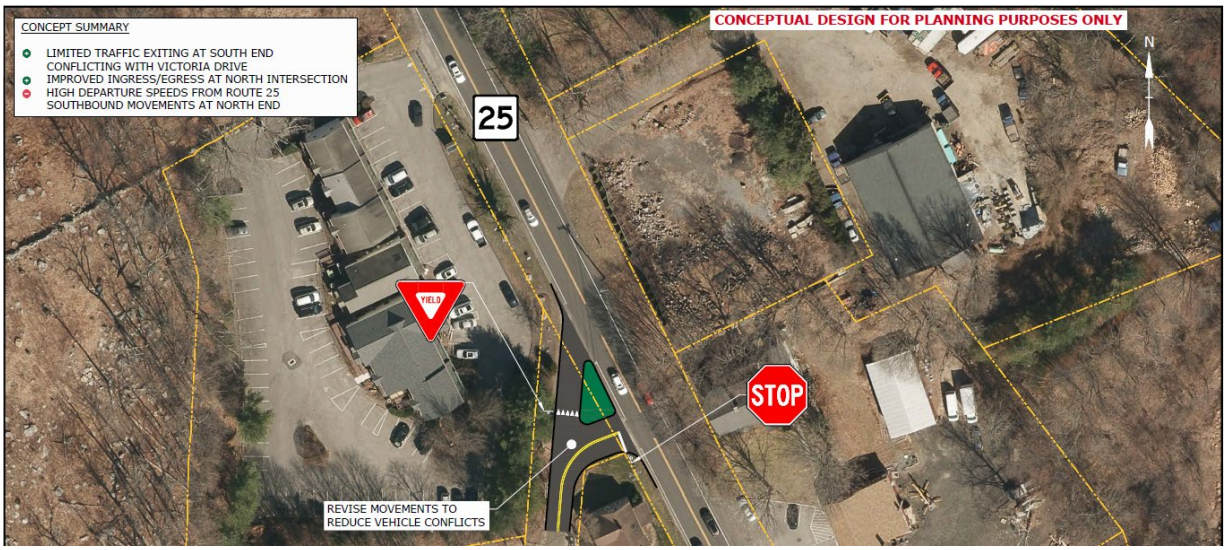
- Provide eastbound left turn lane into Transfer Station from Spring Hill Road
- Provide westbound stop controlled double right turn lanes into Transfer Station from Spring Hill Road
- Fill in existing open channel stream and wetland and replace with underground box culvert to convey the existing watercourse
- Relocate Transfer Station exit to the east across from Trefoil Drive
- Construct dedicated trail path adjacent to bus depot driveway
- Provide bicycle and pedestrian accommodations

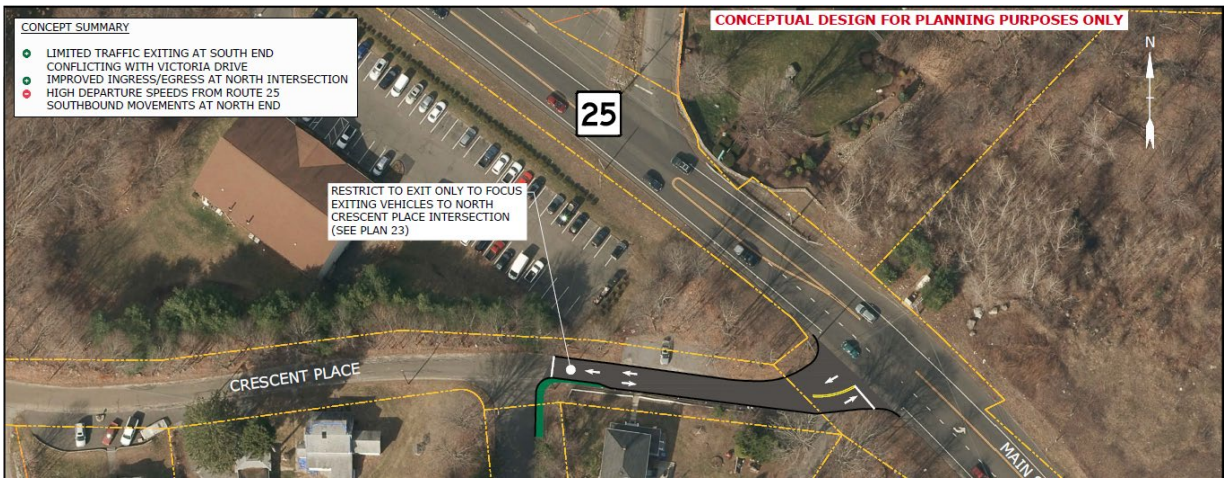
Permits:

- Town approval and/or construction permits for construction within Town right-of-way
- Environmental permitting requirements



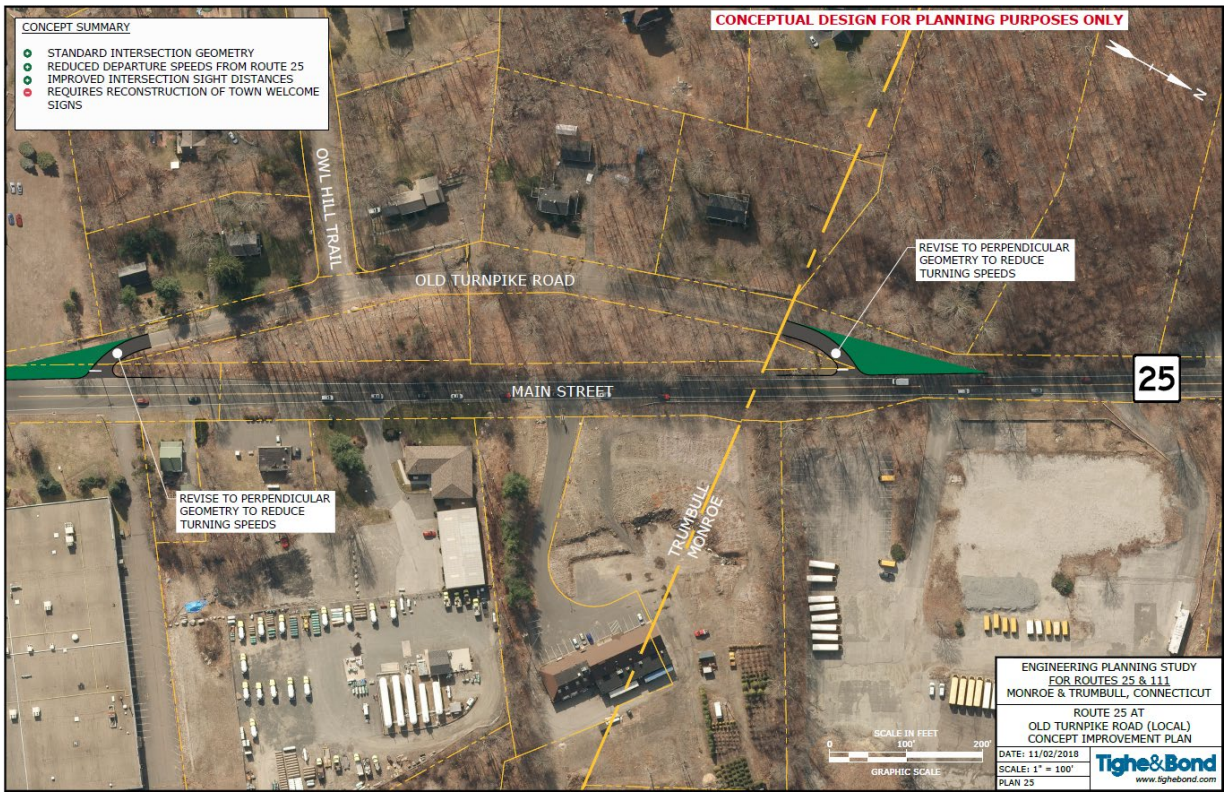
Project 12: Crescent Place at Route 25 (Main Street) Intersection Improvements (Plans 22 & 23)			
Project Goals:	Improve intersection configurations to reduce number of access points along Route 25 and improve safety and ingress/egress to Crescent Place	**Project Type:**	Small
		Project Complexity:	Low
		Project Priority:	Long-Term
		Project Cost:	$50,000
Major Project Elements:	• Restrict eastbound access to portion of Crescent Place east of Autumn Drive • Maintain full access at the Crescent Place south junction with Route 25 • Convert the northern fork of the Crescent Place north junction with Route 25 to one-way yield-controlled ingress only • Widen southern fork of intersection to allow for easier full access turns		
Permits:	• Town roadway construction permits for construction within Town right-of-way • CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way		



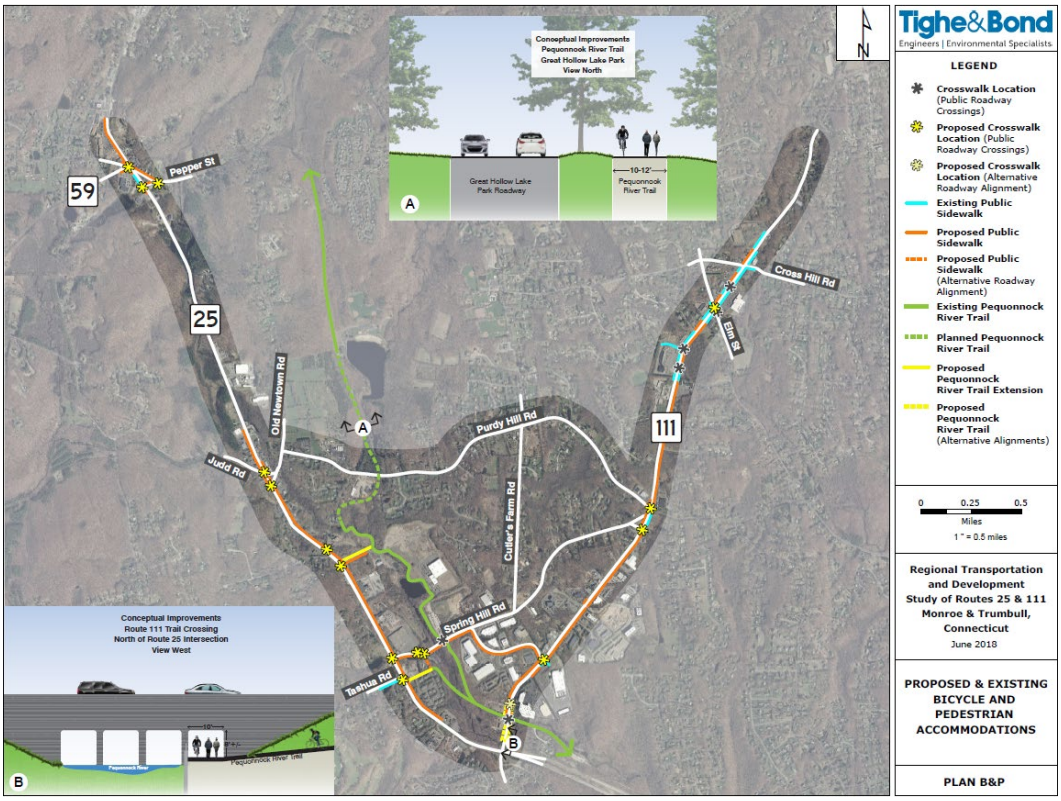


Project 13: Mill Street Operational Improvements (Plan 24)			
Project Goals:	Modify Mill Street directional operation to reduce number of access points along Route 25	**Project Type:**	Small
		Project Complexity:	Low
		Project Priority:	Long-Term
		Project Cost:	<$5,000
Major Project Elements:	• Convert Mill Street to one-way eastbound • Maintain full access to fire station		
Permits:	• Town roadway construction permits for construction within Town right-of-way • CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way		

Project 14: Old Turnpike at Route 25 (Main Street) Intersection Improvements (Plan 25)			
Project Goals:	Improve intersection configurations to improve safety and ingress/egress to Old Turnpike Road	**Project Type:**	Small
		Project Complexity:	Low
		Project Priority:	Long-Term
		Project Cost:	$200,000
Major Project Elements:	• Realign both ends of Old Turnpike Road to be perpendicular to Route 25		
Permits:	• Town roadway construction permits for construction within Town right-of-way CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way		



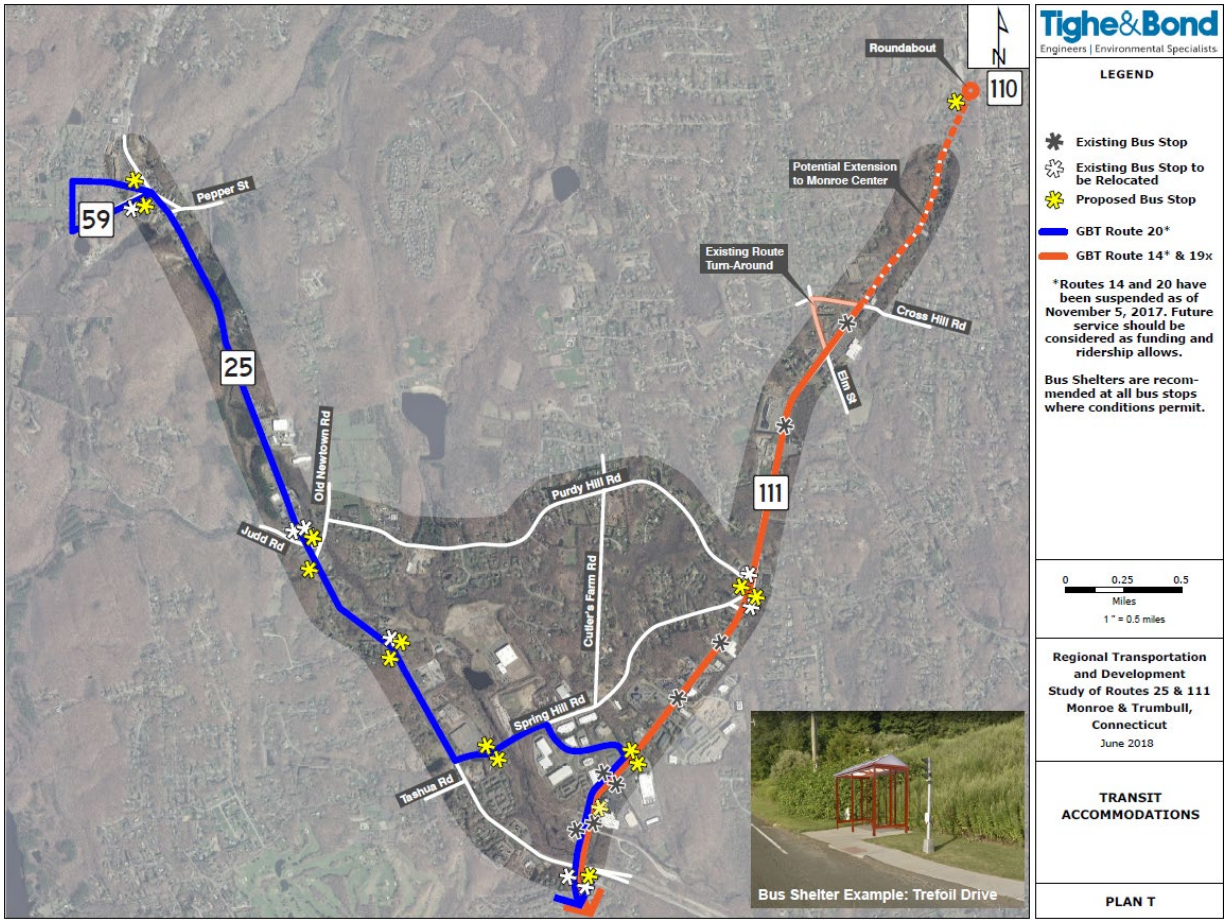
Project 15: Bicycle and Pedestrian Improvements[1] (Plan B&P)			
Project Goals:	Provide improved bicycle and pedestrian accommodations throughout the study to increase safety and promote alternative travel modes	**Project Type:**	Large
		Project Complexity:	Moderate
		Project Priority:	Short-Term
		Project Cost[2]:	See Individual Projects
Major Project Elements:	• Provide a connected sidewalk network along the Route 25 and 111 corridors • Provide painted crosswalks and sidewalk ramps at major intersections to facilitate safe crossings • Improve segments of the Pequonnock River Trail • Reroute the Route 111 trail crossing to a safer location		
Permits:	• Town roadway construction permits for construction within Town right-of-way • Encroachment permits for construction within CTDOT right-of-way		



[1]Project type, complexity, and priority pertain to completing the entirety of the pedestrian bicycle and pedestrian improvements plan under a single project. Separate projects have included bicycle, pedestrian, and transit improvements, where applicable, and have been ranked accordingly.

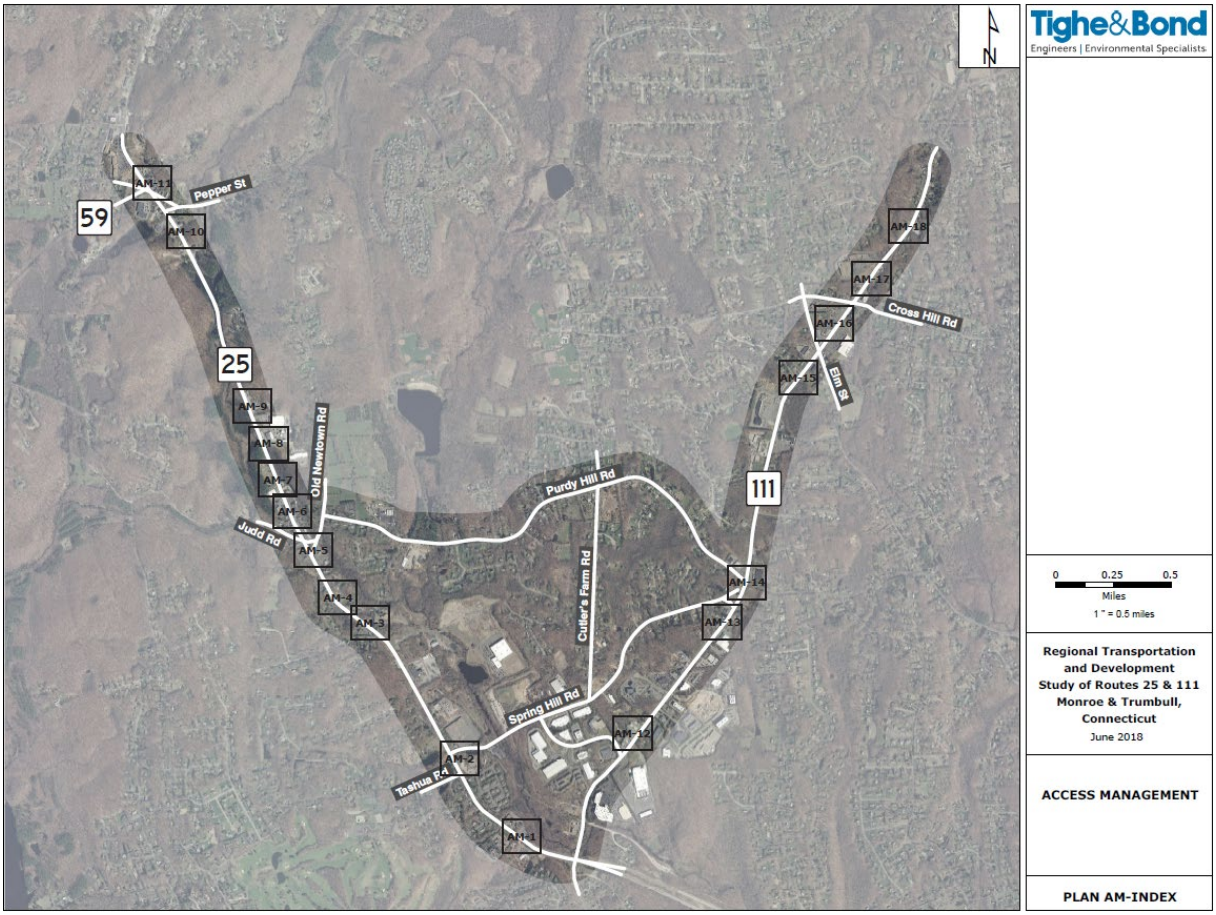
[2]Project costs included within separate, individual projects as their construction would facilitate completion of the bicycle and pedestrian improvement.

Project 16: Transit Improvements (Plan T)			
Project Goals:	Improve transit infrastructure and service to promote alternative travel modes	**Project Type:**	Small
		Project Complexity:	Low
		Project Priority:	Mid-Term
		Project Cost[1]:	$25,000 per stop location
Major Project Elements:	• Provide additional bus stop locations along GBT routes • Provide bus shelters at all bus stops • Extend GBT Routes 14 and 19x service to roundabout at Route 110 and Route 111 intersection		
Permits:	• Town roadway construction permits for construction within Town right-of-way • Encroachment permits for construction within CTDOT right-of-way		



[1]Cost includes sidewalk, landing pad, and ramps along with basic shelter amenities at bus stop locations only.

Project 17: Access Management (Plans AM-1 through AM-18)			
Project Goals:	Modify and coordinate driveway access to parcels along the corridor to minimize unnecessary curb cuts and improve safety and operations for entering and exiting traffic	**Project Type:**	Medium
		Project Complexity:	Moderate
		Project Priority:	Mid-Term
		Project Cost[1]:	N/A
Major Project Elements:	• Modify driveway ingress/egress restrictions as needed • Reduce select driveway widths • Close unnecessary driveway access to corridors • Provide interconnects between adjacent parcels when appropriate • Review and implement access management strategies into local regulations to ensure implementation during development and other regulatory activities		
Permits:	• OSTA approval for large developments • Town Planning and Zoning approvals for development • Encroachment permits for construction within CTDOT right-of-way		



[1]Project cost would be incurred by private development or public improvement project.

Implementation Plan

The implementation plan identifies and prioritizes recommended improvements that could be planned, programmed, and built as funding became available and project need realized. The implementation plan includes the overall project costs, complexity, and benefit. This section of the report provides the Towns of Monroe and Trumbull, CTDOT, and METROCOG with a menu of projects with guidance for implementation over time based on a series of qualitative and quantitative metrics.

The Transportation Improvement Program (TIP) includes 17 improvement projects that address the roadway network, transit system, and pedestrian and bicycle mobility and safety needs in the study area. The TIP recommends physical roadway improvements and identifies numerous improvements to enhance pedestrian, bicycle, and transit access to the roadway system through construction of new and improved facilities for alternative mode travelers. These alternative transportation mode recommendations are shown on the concept plans where applicable as implementation would likely occur through many separate projects as funding from various sources became available. For summary purposes, the alternative mode enhancements are shown collectively in Plans B&P and T.

The priority for each of the recommended improvement projects is based on two primary criteria: project necessity and local interest for implementation. Project necessity is based on the need to mitigate an existing deficiency within the overall transportation system. Projects are deemed to have a higher priority when they address an identified safety deficiency, accessibility, or mitigate a current mobility or operational issue. The project priority categories are defined at Short-Term, Mid-Term, or Long-Term based on the criteria described in Table ES-1.

TABLE ES-1

Summary of Project Need Priority Metrics

Project Priority	Project Characteristics
Short-Term	• Project addresses an urgent safety issue • Project is intended to address an existing operational deficiency • Project addressed a deficiency in accessibility that has been identified as a local concern
Mid-Term	• Project scope provides operational and mobility benefits that are currently an issue, but traffic operations are not poor or failing • Local stakeholders have expressed interest in implementing the improvement to enhance the transportation system
Long-Term	• Project does not address an identified safety concern • Project addresses future travel demand and traffic operations • Project may have mobility, accessibility, or multi-modal benefits

Table ES-2 summarizes the implementation plan recommendations on a project-level basis. Seven projects are identified as Short-Term priorities, four projects as Mid-Term priorities, and six projects as Long-Term priorities. The projects prioritized as Short-Term indicate that funding sources should be sought to address the existing needs and deficiencies.

TABLE ES-2

Summary of Projects in Implementation Plan

	Project Description	Project Priority	Project Complexity	Project Cost
1 (At-Grade)	Route 25 (Main Street) from Route 111 (Monroe Turnpike) to Spring Hill Road Improvements and Relocate Pequonnock River Trail Crossing	Short-Term	High	$22 Million
1 (Grade Separated)	Route 25 (Main Street) from Route 111 (Monroe Turnpike) to Spring Hill Road Improvements and Relocate Pequonnock River Trail Crossing	Short-Term	High	$45 Million
3	Route 25 (Main Street) at Pond View Driveway and Judd & Purdy Hill Road Corridor and Intersection improvements	Short-Term	High	$8.6 Million
4	Route 25 (Main Street) from Brook Street to Route 59 (Easton Road) Corridor and Intersection Improvements	Short-Term	High	$4.9 Million
5	Route 111 (Monroe Turnpike) at Trefoil Plaza and Woodland Hills Intersection Improvements	Short-Term	Moderate	$1.5 Million
10	Spring Hill Road at Cutler's Farm Road Safety Improvements	Short-Term	Low	<$5,000
11	Spring Hill Road at Trumbull Transfer Station Operational Improvements	Short-Term	Moderate	$1.2 Million
15	Bicycle and Pedestrian Improvements	Short-Term	Moderate	See Projects
2	Route 25 (Main Street) at Victoria Drive Corridor and Intersection Improvements	Mid-Term	High	$2.5 Million
8	Route 111 (Monroe Turnpike) at Elm Street Intersection Improvements	Mid-Term	Moderate	$1.35 Million
16	Transit Improvements	Mid-Term	Low	$25,000 /location
17	Access Management	Mid-Term	Moderate	N/A
6	Route 111 (Monroe Turnpike) at Trefoil Drive Intersection Improvements	Long-Term	Low	$80,000
7	Route 111 (Monroe Turnpike) at Purdy Hill Road Intersection Improvements	Long-Term	Low	$1.0 Million
9	Purdy Hill Road at Cutler's Farm Road Intersection Improvements	Long-Term	Moderate	$1.1 Million
12	Crescent Place at Route 25 (Main Street) Intersection Improvements	Long-Term	Low	$50,000
13	Mill Street Operational Improvements	Long-Term	Low	<$5,000
14	Old Turnpike at Route 25 (Main Street) Intersection Improvements	Long-Term	Low	$200,000