



Tighe&Bond

Route 4 Transportation Safety &
Improvements Study
Farmington, Connecticut

Final Report – Executive Summary

Prepared for:
**Capitol Region Council of
Governments and
Town of Farmington**

May 2020

Executive Summary

Introduction

The Route 4 Transportation Safety and Improvements Study (Study) was conducted by the Capitol Region Council of Governments (CRCOG) along with the Town of Farmington (Town). CRCOG was awarded funding to manage this Study for the Town under the Connecticut's Local Transportation Capital Improvement Program (LOTICIP), which is administered by the Connecticut Department of Transportation (CTDOT).

The purpose of the Study was to develop a comprehensive transportation safety and improvement plan for Route 4 and the roadways surrounding the University of Connecticut (UConn) Health Farmington campus within the study area, and provide a planning document for the Town, CRCOG, 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 Study Advisory Committee which includes representatives from CTDOT, CRCOG, Town, UConn Health Farmington, UConn Storrs, and local business owners. 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

- Assess existing and future traffic safety and operations and evaluate existing transportation improvement plans
- Improve travel safety and mitigate traffic congestion. Identify opportunities to develop multi-modal transportation options and increase the mode share of alternative transportation solutions for commuters
- Review existing and potential future land uses and projects around the UConn Health campus and assess the effect on the transportation system
- Recommend appropriate access for planned and future developments around the UConn Health campus
- Adhere to smart growth principles and identify sustainable solutions
- Develop a strategy for a safe and efficient multi-modal transportation system consisting of implementable planning-level projects capable of obtaining funding from currently available programs

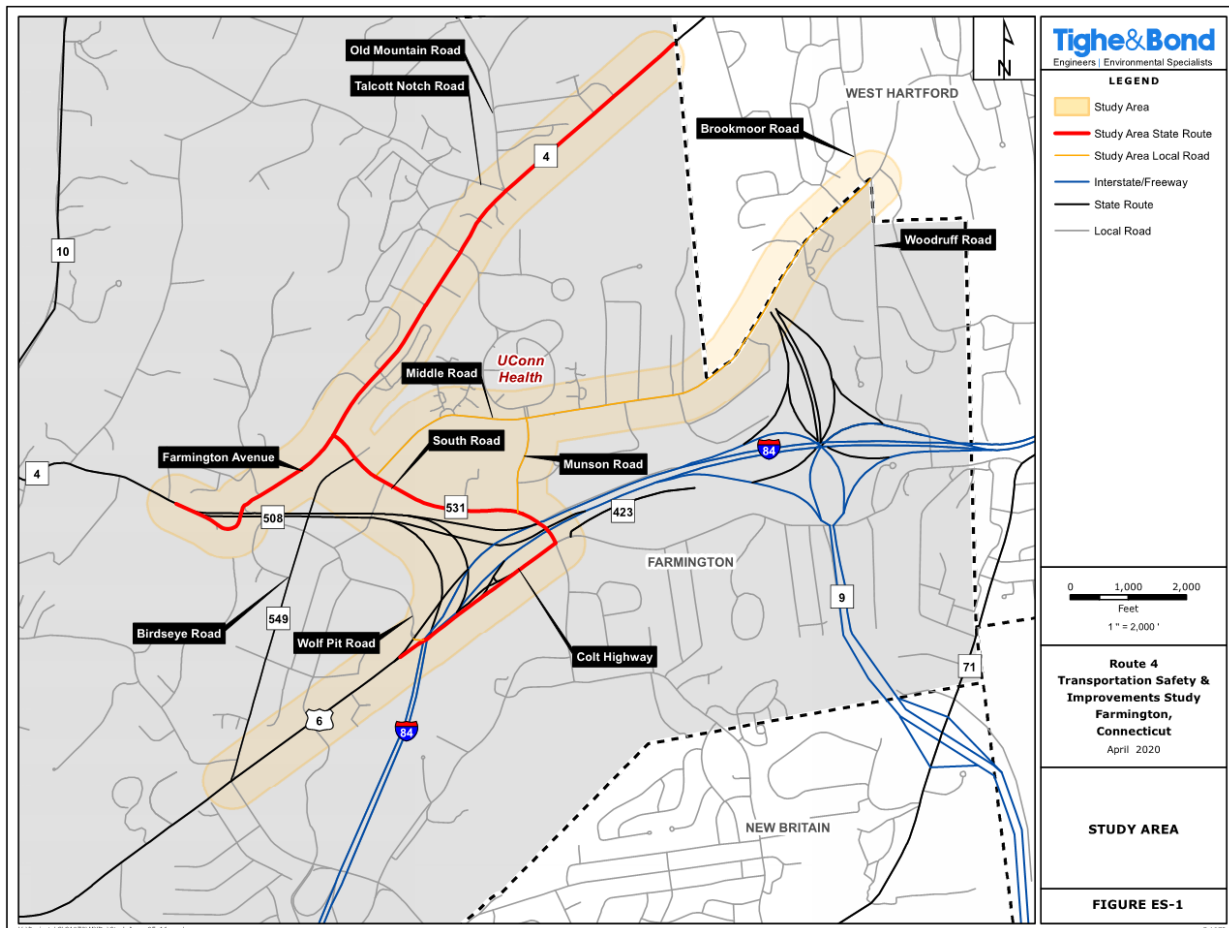
Study Area

The study area includes Route 4 and the roadways surrounding UCONN Health campus in the eastern portion of Farmington including Interstate Ramps, State Highways, and local roads. The study area and the study area roadways are illustrated on ES-1. The main study area roadways include:

- Route 4 (Farmington Avenue) from the intersection with Route 508 (Farmington Avenue Connector) to the West Hartford town line
- Colt Highway from the intersection with SR 549 (Birdseye Road) and Fienemann Road to where it terminates at its intersection with South Road
- South Road from the intersection with Route 4 (Farmington Avenue) to the intersection with Colt Highway
- Portions of SR 549 (Birdseye Road), at the intersections with South Road and Colt Highway
- Middle Road, beginning at South Road to its transition to Tunxis Road as it enters West Hartford
- Munson Road, between Middle Road and South Road
- Other local roads at intersections with the study area roadways

FIGURE ES-1

Study Area



Public Involvement

Community involvement and public outreach were important initiatives of this study process. A variety of techniques and methods were used to inform the public of study findings and to obtain feedback from project stakeholders throughout the study process. The Study Team executed the Public Involvement Program in cooperation with the State and Local agencies. The goals of the outreach program were to:

- Obtaining 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 of the study findings
- Educating the Study Team with local knowledge
- Involving stakeholders and the public in the development and refinement of recommendations that fit the character and future vision of the Town
- Facilitate review by the Town Council, Town Boards and Commissions, businesses and residents leading to an Improvement Plan that can be endorsed by the Town of Farmington to help guide future transportation improvement programming

Study Advisory Committee (SAC)

The SAC provided consistent input and oversight throughout the study process. The committee was composed of representatives from CTDOT, CRCOG, Town, UCONN Health Farmington, UCONN Storrs, and local business owners. SAC 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.

Summary of Outreach Activities

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

Advisory Committee Meeting 1	May 4, 2016
Advisory Committee Meeting 2	November 16, 2016
Public Information Meeting 1 (UCONN Health Center)	December 14, 2016
UCONN Health Center Pop-Up Meeting	January 4, 2017
Advisory Committee Meeting 3	June 12, 2017
Advisory Committee Meeting 4	October 26, 2017
CTDOT Concepts Review Meeting	February 22, 2018
CRCOG Concepts Review Meeting	May 3, 2018
Advisory Committee Meeting 5	May 14, 2018
Public Information Meeting 2 (Farmington Community Center)	September 26, 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 Route 4 and other study area roadways 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 4 (Farmington Avenue) Historical Average Daily Traffic

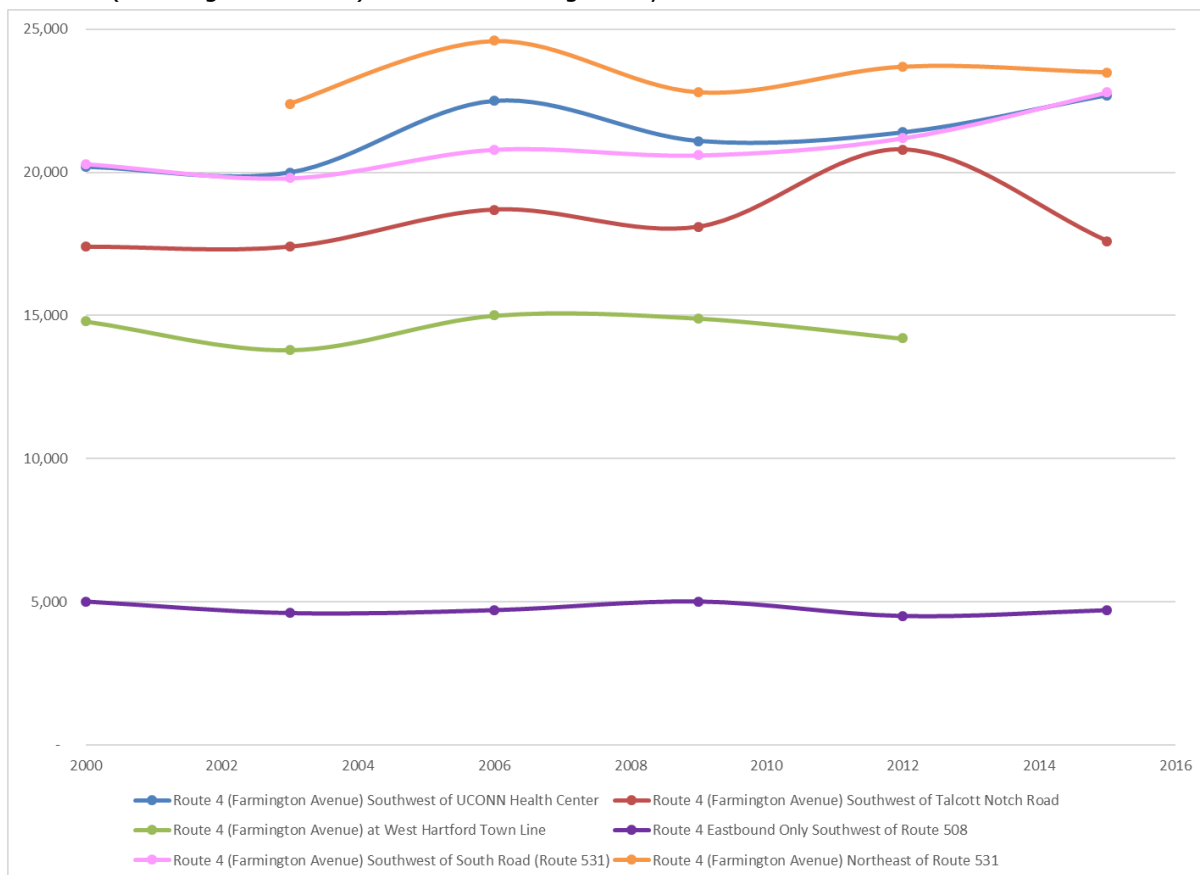
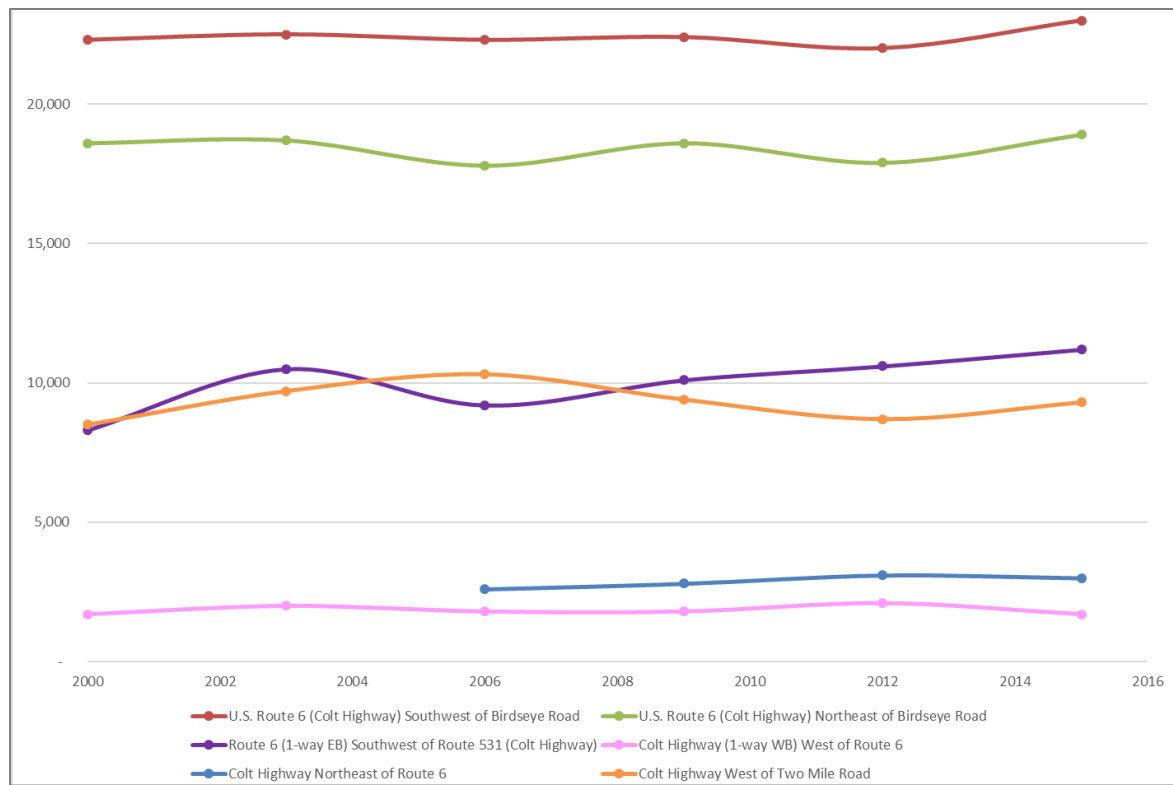


FIGURE ES-3

Colt Highway Historical Average Daily Traffic

**FIGURE ES-4**

South Road Historical Average Daily Traffic

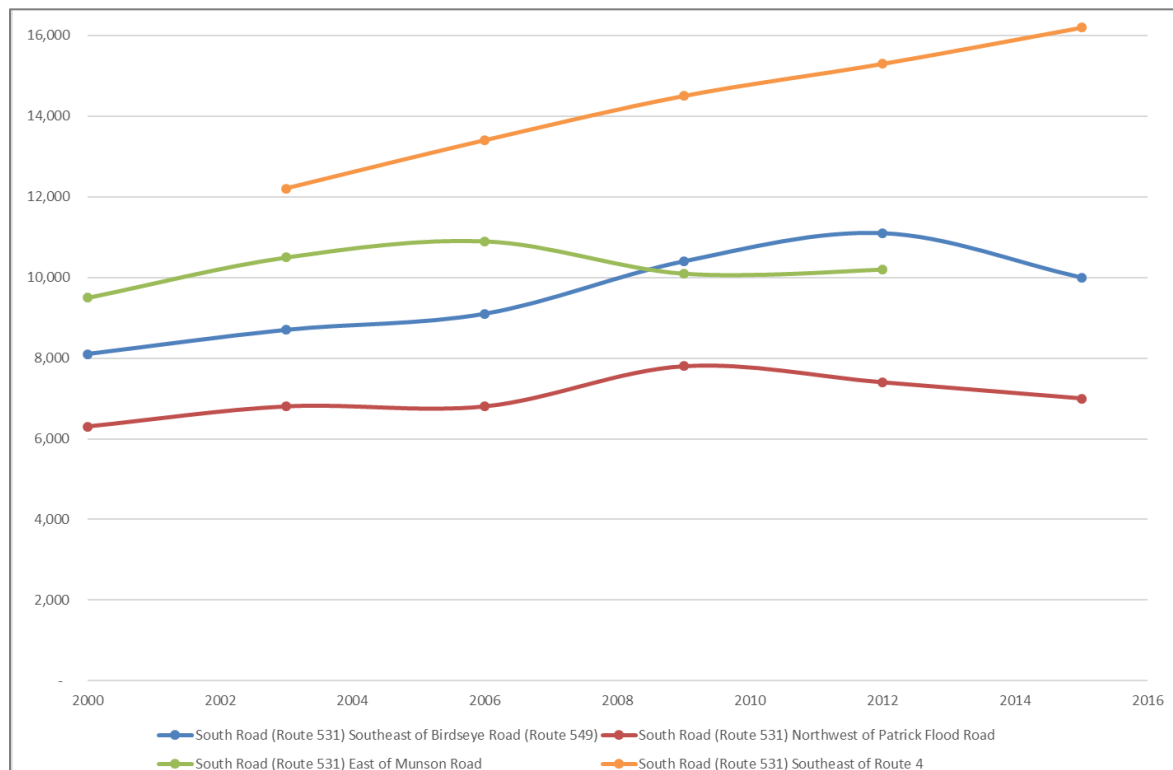
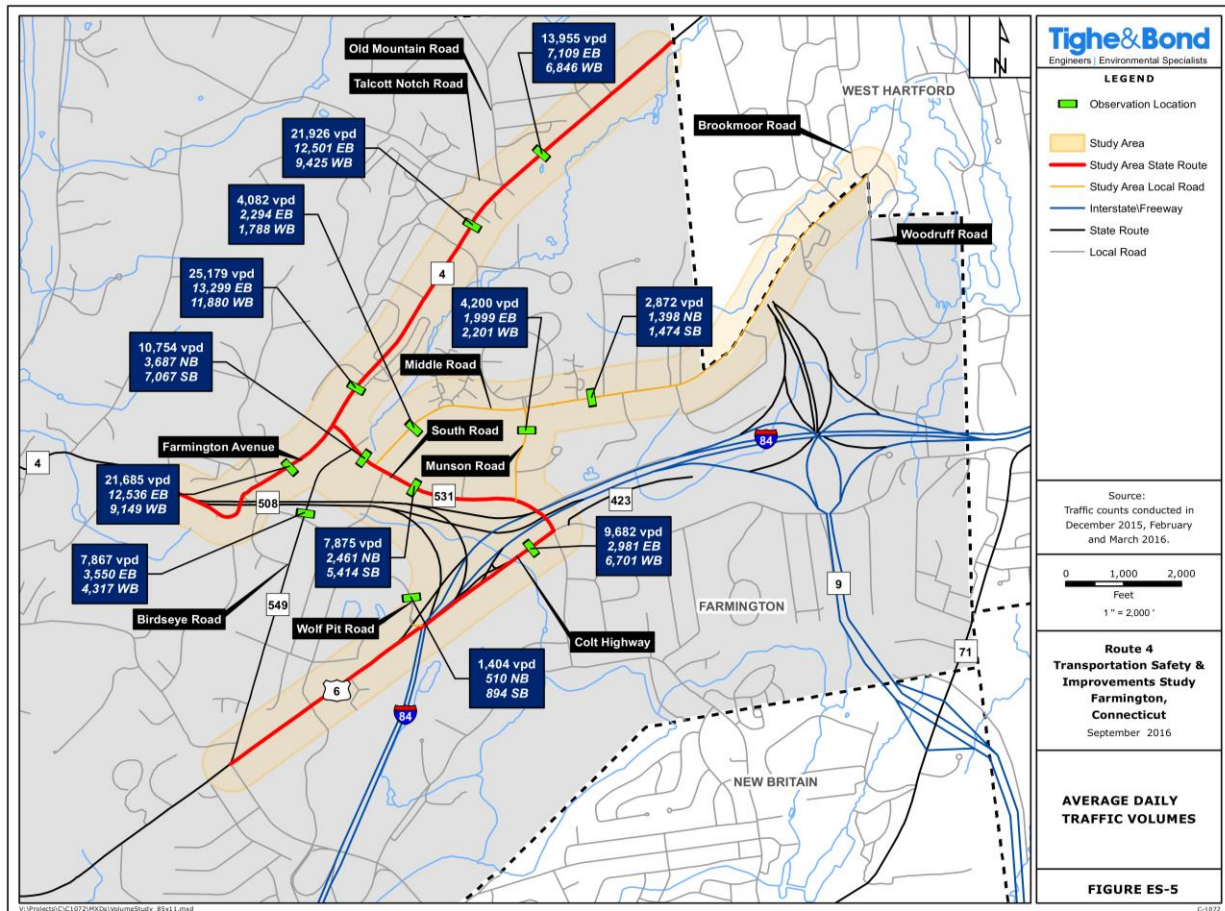


FIGURE ES-5

Average Daily Traffic Volumes

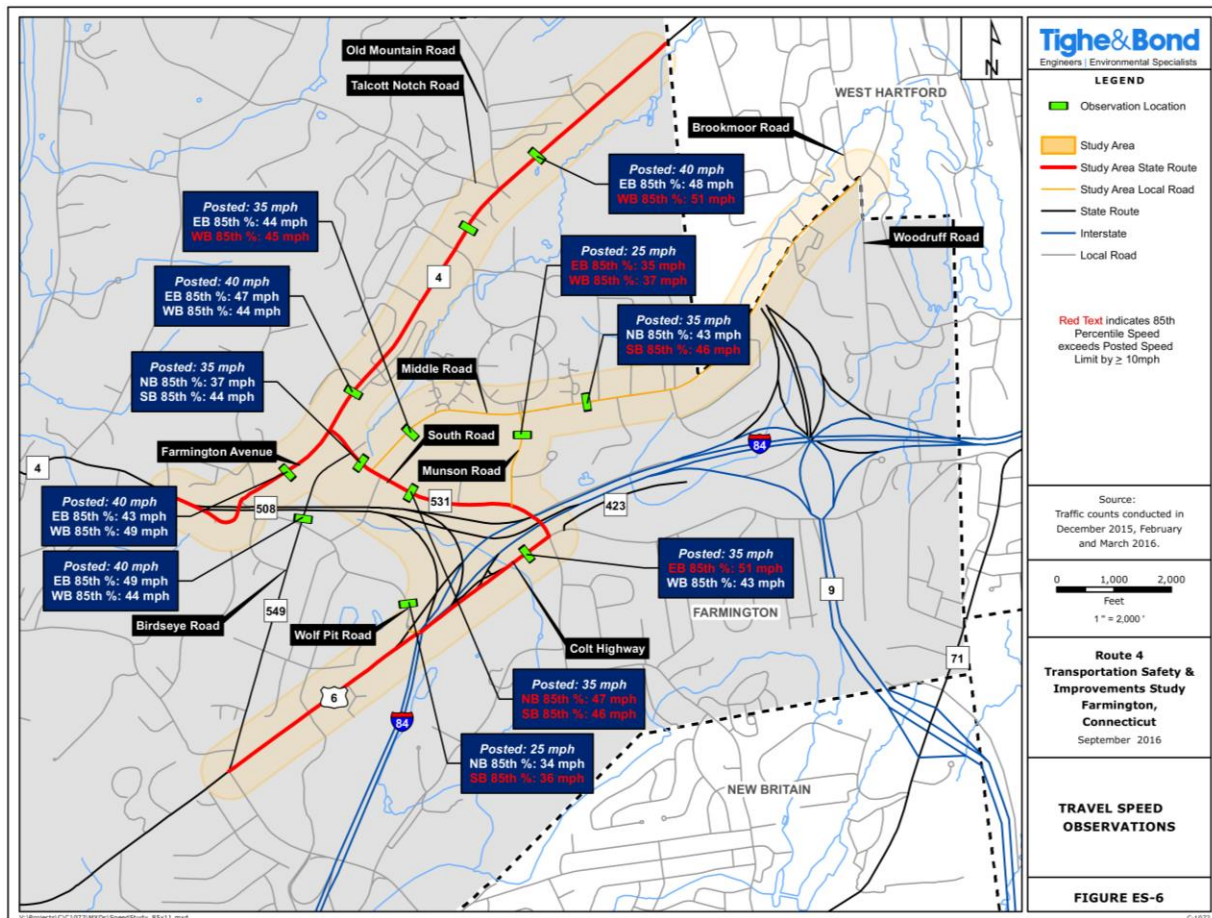


Travel Speeds

Travel speed data was collected along Route 4 and other study area roadways during the data collection task concurrently with the Automatic Traffic Recorder (ATR) volume counts in December 2015. Figure ES-6 summarizes the results of the speed observations along the study roadways. In general, travel speeds along Route 4 and other study area roadways exceed within 3 to 12 miles per hour of the posted speed limit.

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	Unsignalized Intersection Criteria	V/C Ratio >1.00 ^a
	Average Control Delay (Seconds per Vehicle)	Average Control Delay (Seconds per Vehicle)	
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

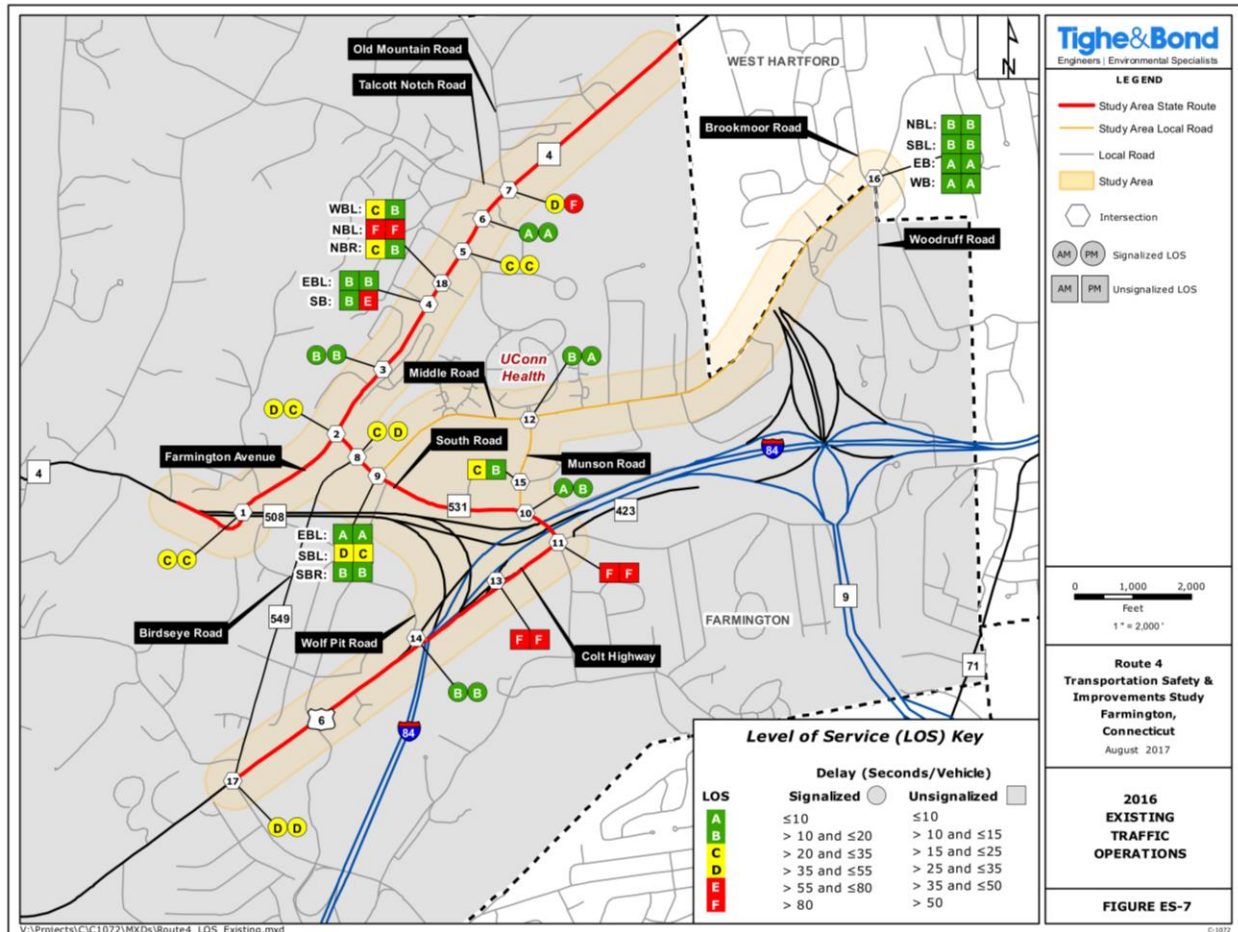
Note: ^aFor approach-based and intersection-wide assessments, LOS is defined solely by control delay.

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

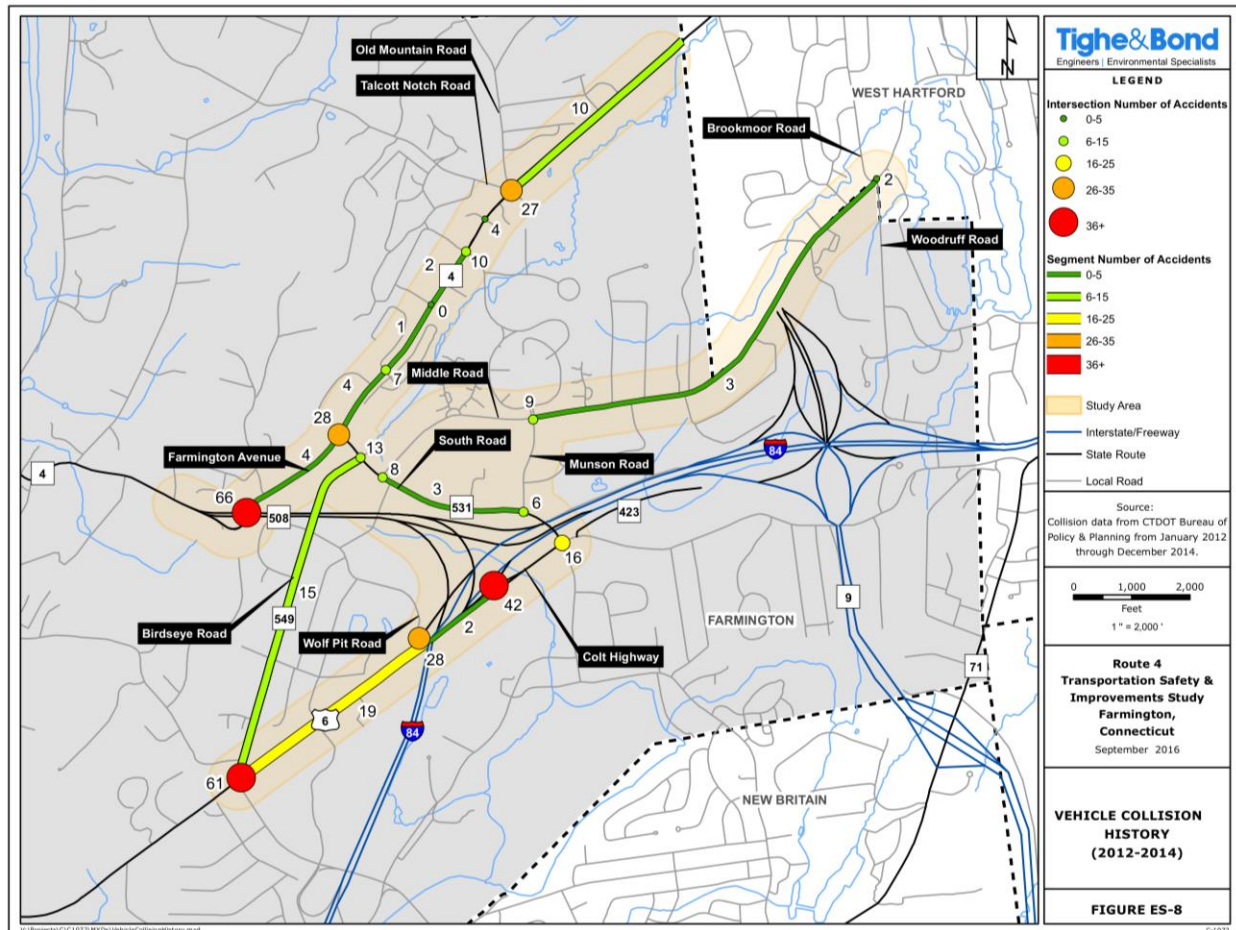


Traffic Safety

Motor vehicle collision history data for the study area roadways were collected from CTDOT for the time period between January 1, 2012 and December 31, 2014. Figure ES-8 summarizes the number of collisions and crash rate by intersection and segment recorded within the study area for the time period analyzed. During the three-year period, 390 total collisions were reported within the study area. Rear-end type collisions were the most common type, with 203 crashes (52%) recorded. The second most common type of collision was Fixed-Object with 51 crashes (13%), followed by Sideswipe – Same Direction with 40 crashes (10%), Turning – Intersecting Paths with 29 crashes (8%), and Angle with 25 crashes (7%). The remaining types of collisions were each less than 5% of the total number of crashes. One fatality was recorded during the period analyzed within the study area. A total of 86 crashes reported injuries of any kind, while the remaining 303 collisions were categorized as Property Damage Only.

FIGURE ES-8

Vehicle Collision History – Study Area Summary



Alternative Travel Modes

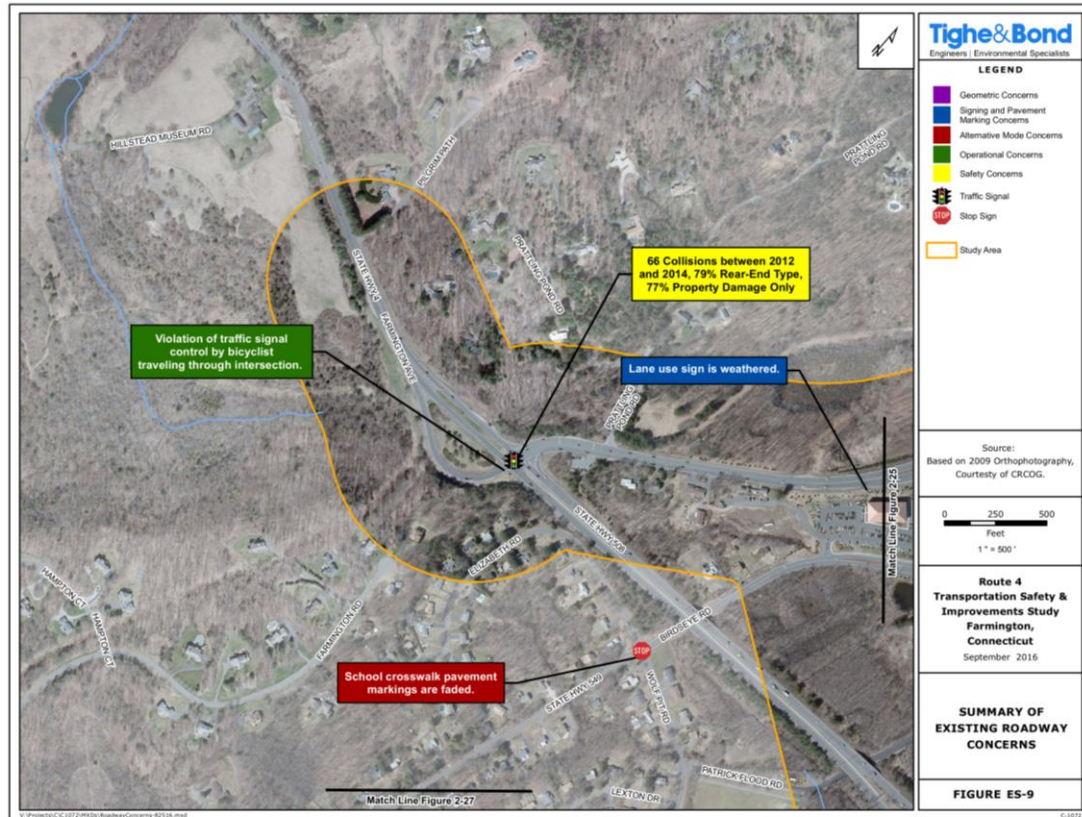
The study area is typical of a low to moderate density suburban setting. Sidewalks are disconnected or lacking with pedestrians walking in the shoulder of the roadway or on lawns creating worn paths. Cyclists ride in the shoulder of the roadway as on-street bicycle facilities are not available for their use. The lack of bicycle and pedestrian facilities within the study area acts to discourage, rather than encourage non-motorized travel. There are many transit stops along the corridors without accessibility to sidewalks or crosswalks which provide a safer access for pedestrians. Additionally, there is only one bus shelter along the study area roadways.

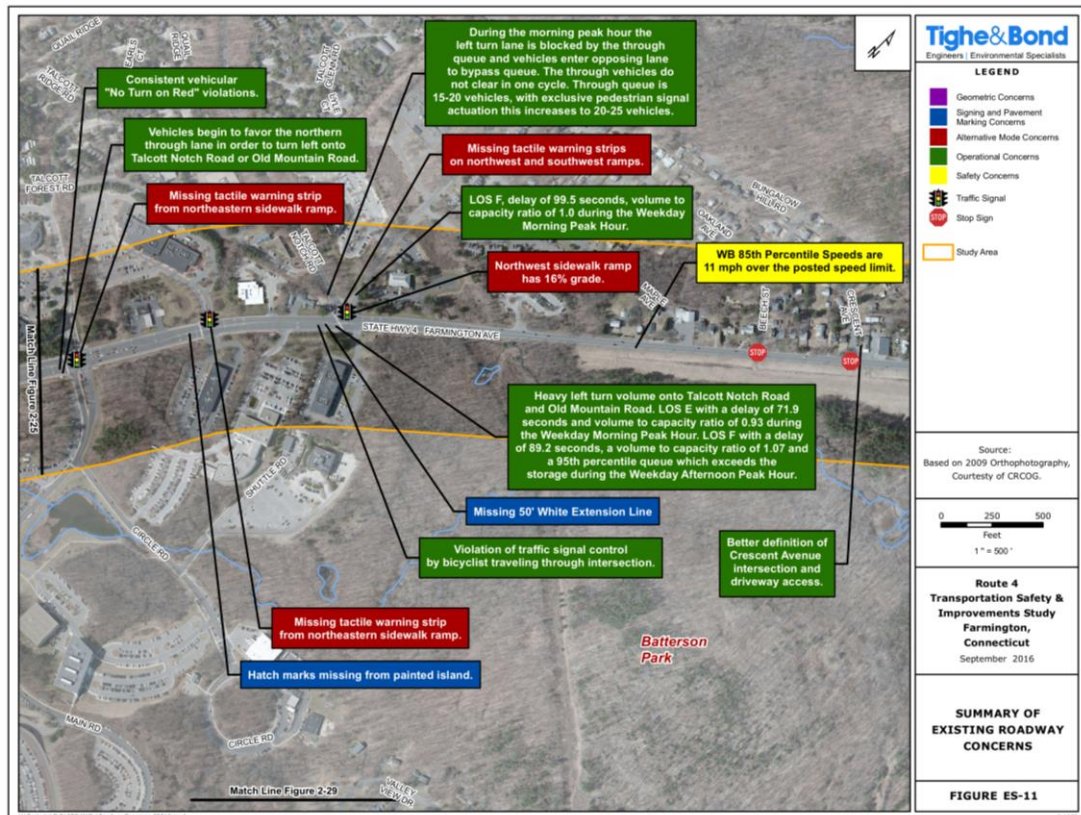
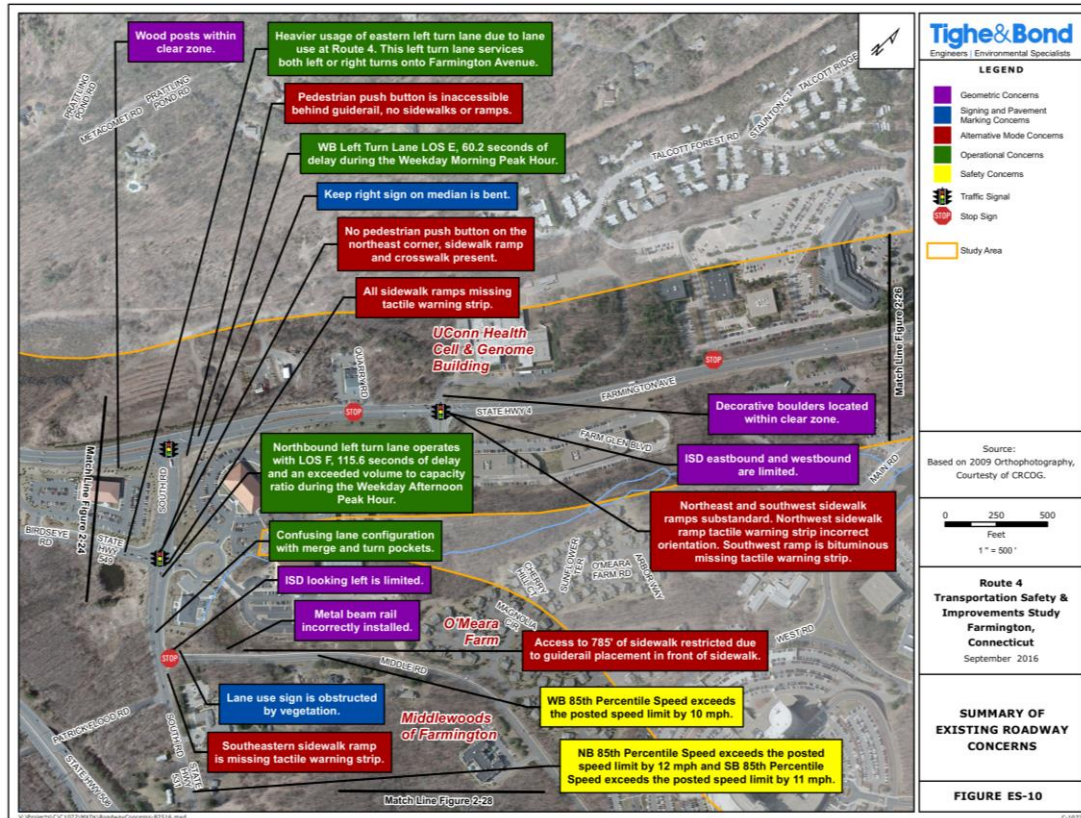
Transportation System Conditions

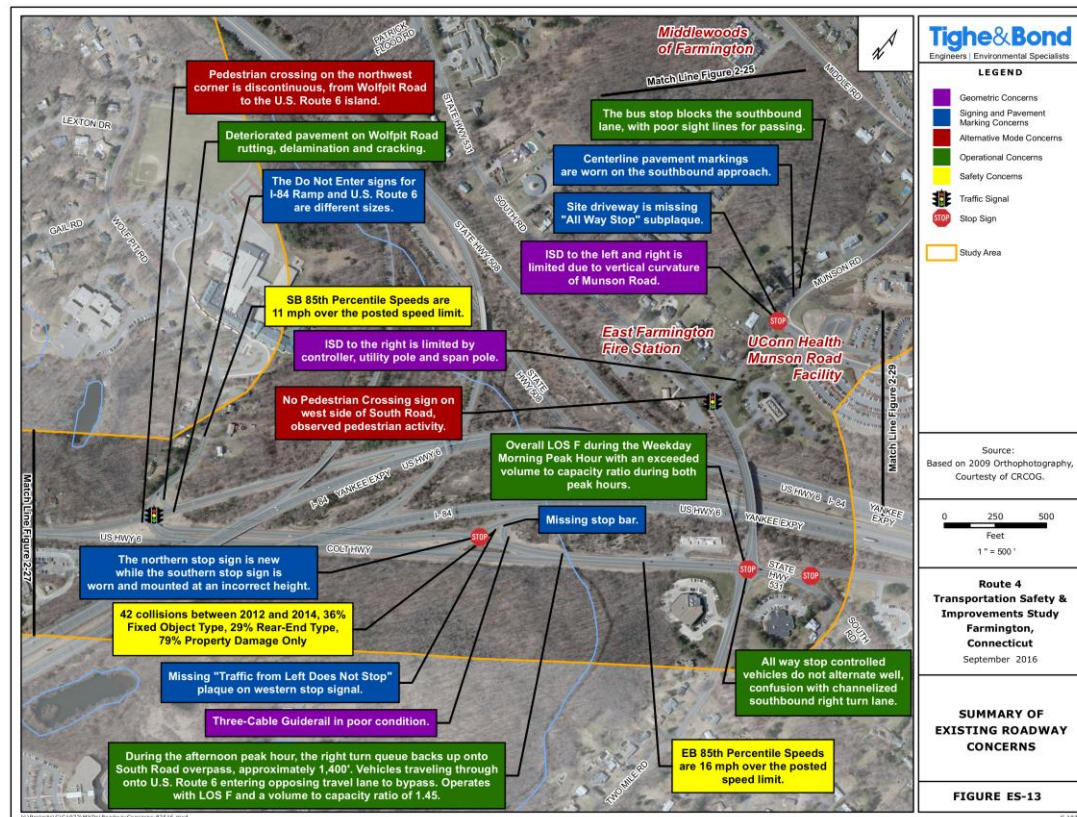
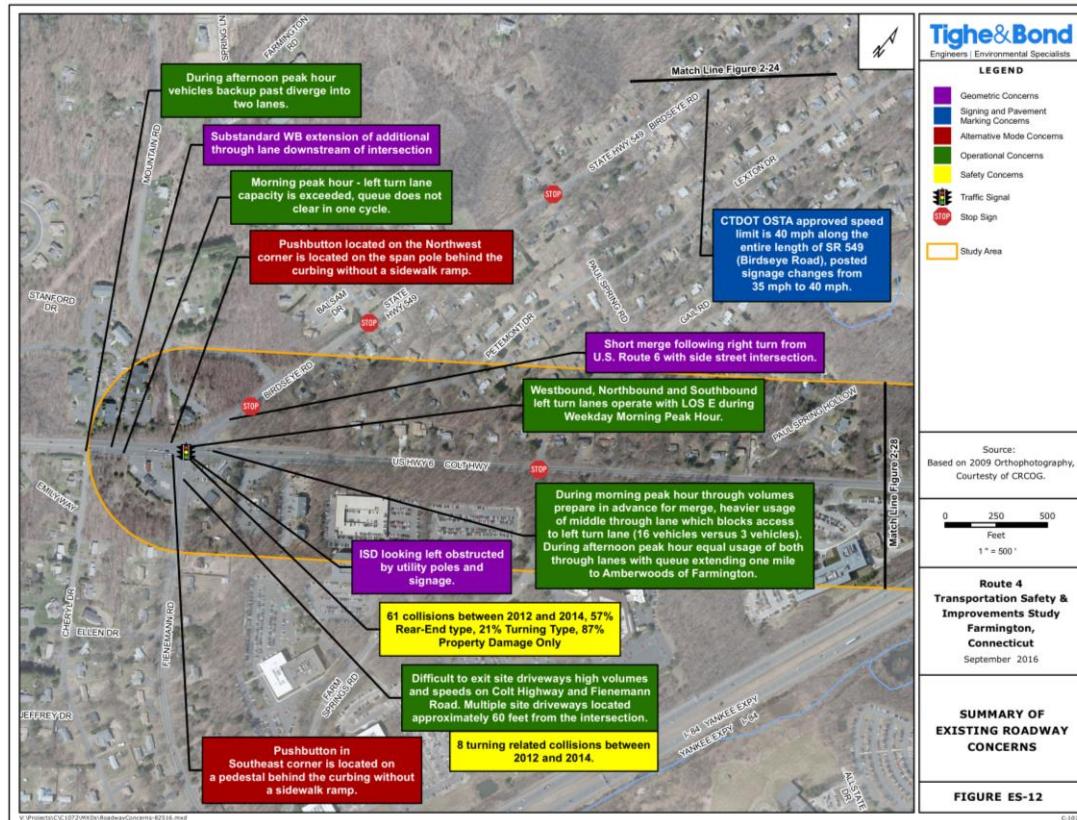
The Study Team conducted observations of the existing roadway network to identify deficiencies or areas of concern that warranted a more detailed assessment for mitigation during later phases of the project. Additionally, the team conducted operational and safety analyses for the study area evaluating the speed and collision data and conducting an operational assessment of roadway operations by completing a capacity and queue analysis. The existing safety and operational concerns are illustrated on Figures ES-9 through ES-15:

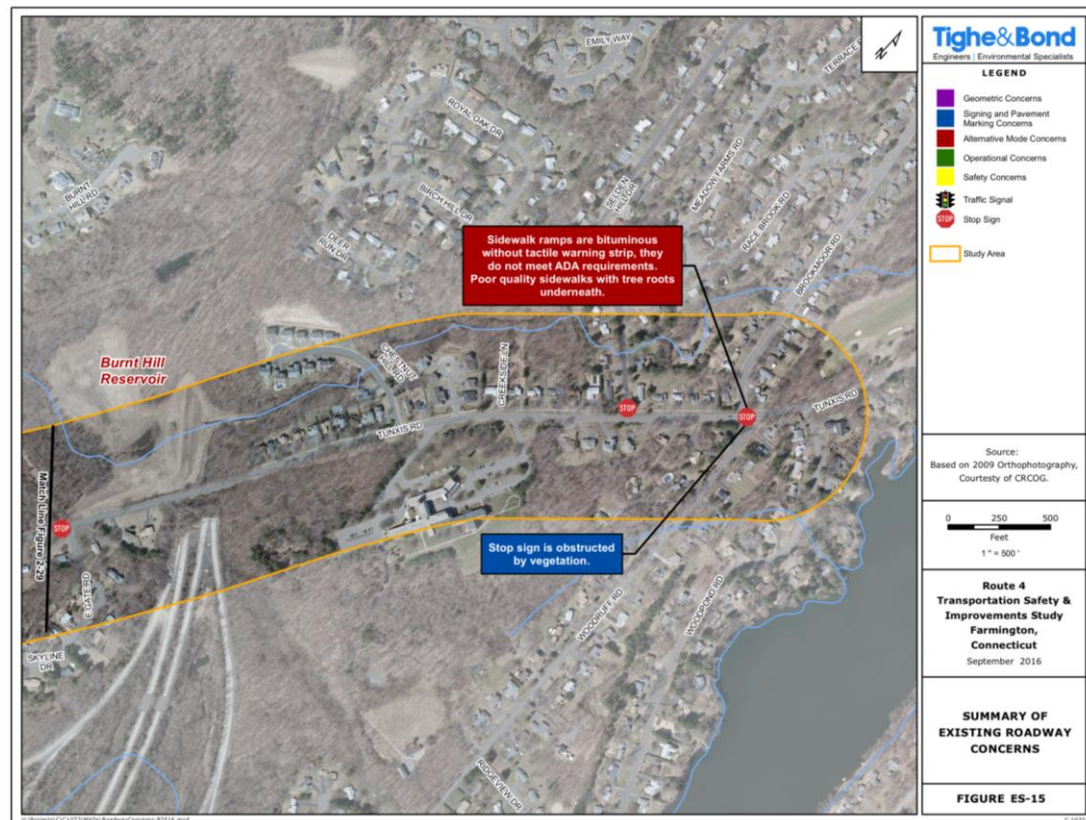
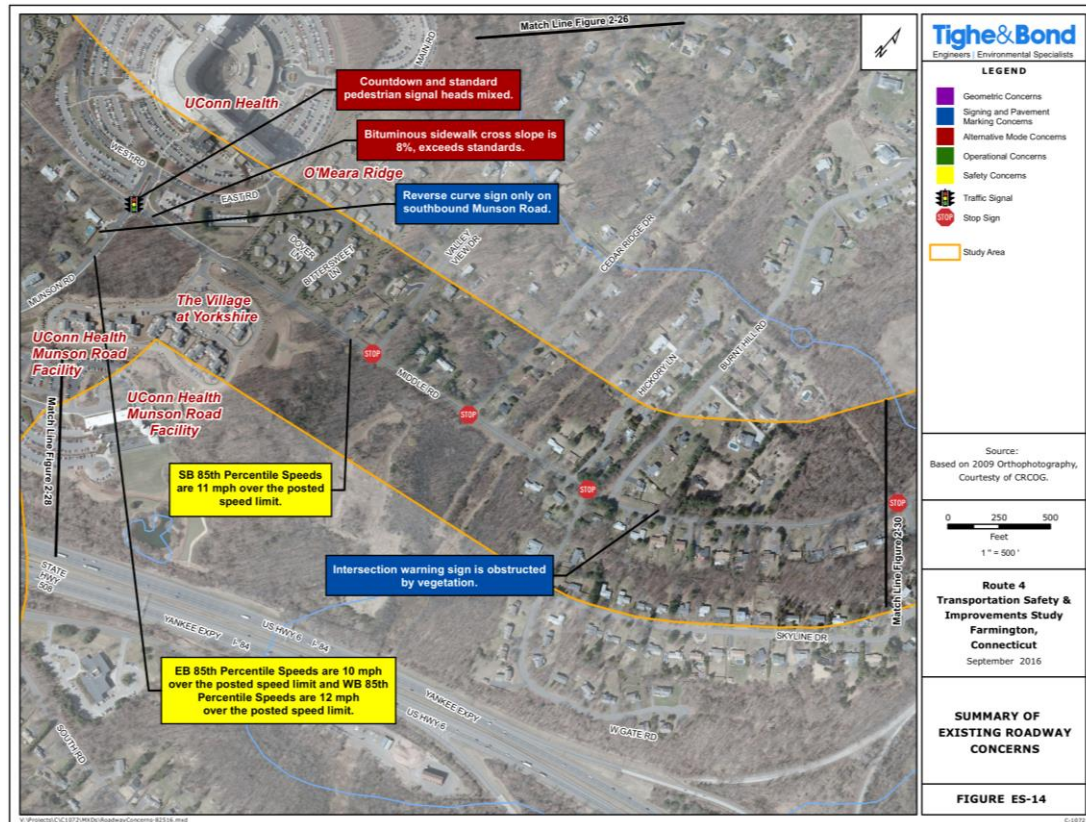
FIGURES ES-9 – ES-15

Transportation System Conditions Summary









Assessment of Future Conditions

The assessment of future conditions conducts an analysis of Route 4 and other study area roadways under existing geometric and operational conditions utilizing 2040 Future volumes. 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 Future traffic volumes. The Route 4 and other study area intersections were analyzed under two scenarios: 2040 Future and 2040 Future-Optimized conditions. The 2040 Future analysis utilized existing geometry and existing traffic signal settings to facilitate a direct comparison between existing and future conditions. The 2040 Future-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 Future conditions analyses provided the basis for generating roadway improvement plans to accommodate anticipated traffic growth for each of the corridors.

Future Traffic Forecasts

Future traffic forecasts for the study area were generated by the Capitol Region Council of Government's (CRCOG's) regional travel demand model, based on socioeconomic data inputs from the State Labor Department, US Census Bureau, and other sources. The traffic projections consider both the anticipated changes in land use and development, and are driven by factors including population growth, new development, land use expansion, increases in overall development density, and employment growth. Comparing the 2016 Existing traffic volumes to the 2040 Future traffic volumes revealed that there is significant continued development and overall traffic growth surrounding UCONN Health Farmington within the 20-year study horizon. Total traffic growth within the study ranges from 6.9 to 137.8%, equating to an almost 7% average annual growth in some areas.

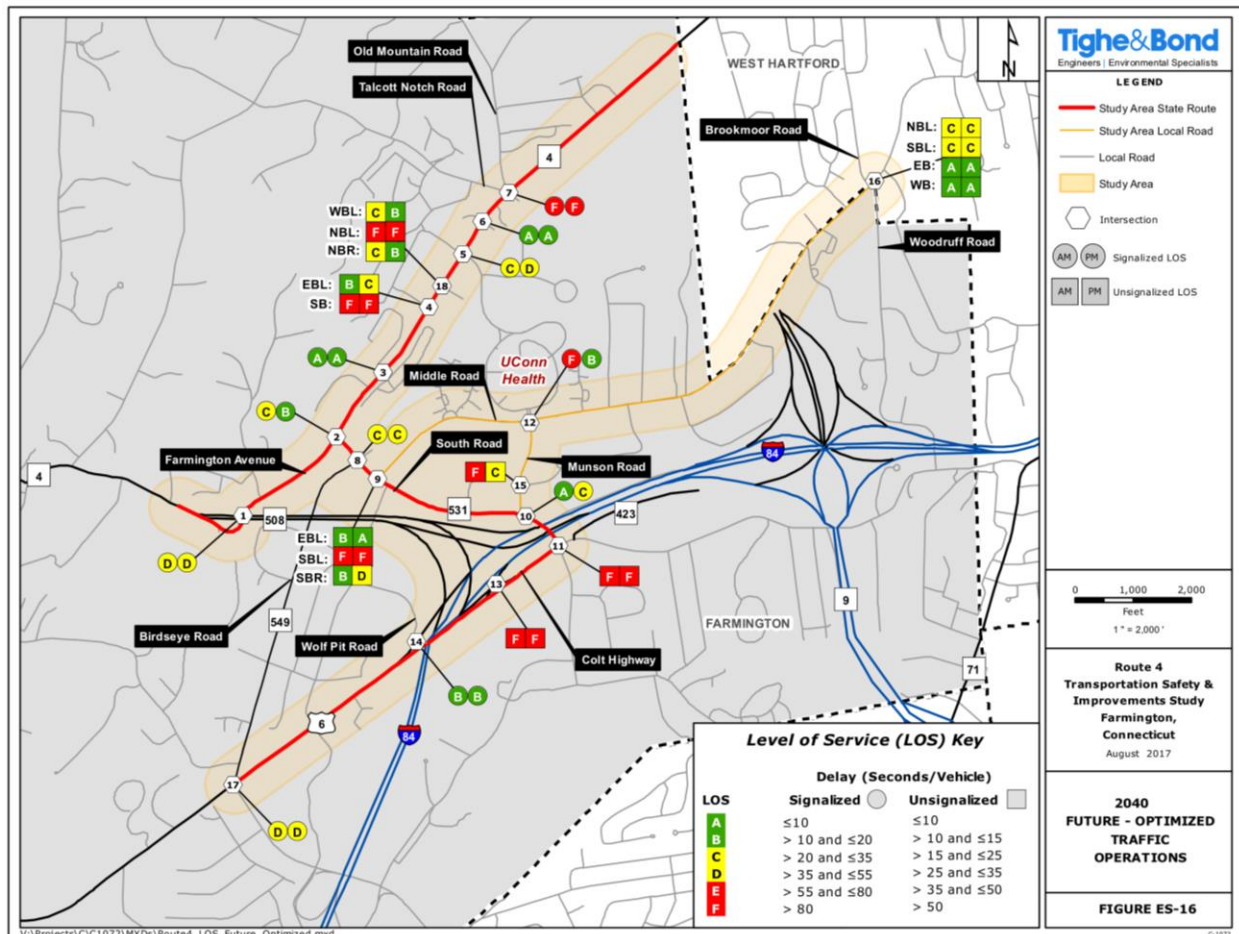
Future Traffic Operations

Traffic operations for the 2040 Future traffic volumes were evaluated using Trafficware's *Synchro plus SimTraffic 9 – Traffic Signal Coordination Software*, based on the *2010 Highway Capacity Manual (HCM)* methodology. The existing geometry and traffic signal settings were utilized in the traffic model for the analysis.

Signal operations were optimized for the study area intersections to reflect routine timing adjustments made by CTDOT to accommodate changing traffic volumes and conditions. Figure ES-16 summarizes the expected traffic operations of the study intersections under 2040 Future-Optimized conditions in each of the peak periods.

FIGURE ES-16

2040 Future-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.

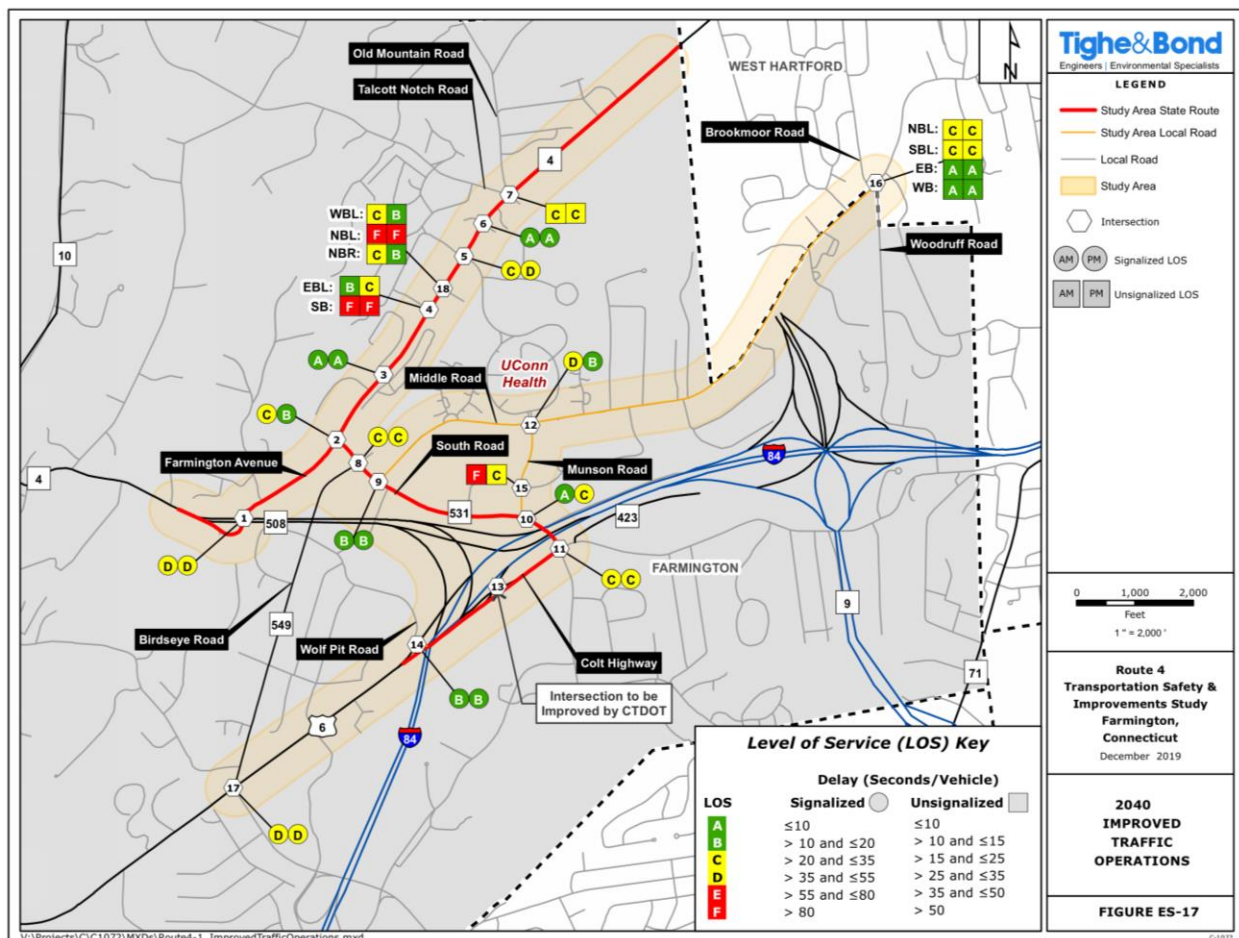
Recommendations

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 Town of Farmington and the surrounding region by the year 2040. The recommendations were developed cooperatively with the Study Advisory Committees, CTDOT, and CROCOG, and were refined through a public engagement process to address the goals and objectives outlined in the Study Mission Statement.

The proposed improvements are intended to mitigate current and future conditions for the areas of concern identified in the assessment of existing and future conditions. The improvements to the transportation system aim to mitigate the effects of future traffic growth, improve safety, increase multi-modal accessibility, and promote alternative modes of travel. Although many of the individual recommendations address transportation issues related to motor vehicles, a series of alternative mode enhancement recommendations were developed to address pedestrian, cyclist, transit, and commuter facilities usage of the transportation system. Additionally, each of the "spot" improvements were reviewed for alternative travel mode enhancements and where appropriate provide improvements to the transportation system for all users. A summary of the 2040 traffic operations with the proposed improvements is shown in Figure ES-17.

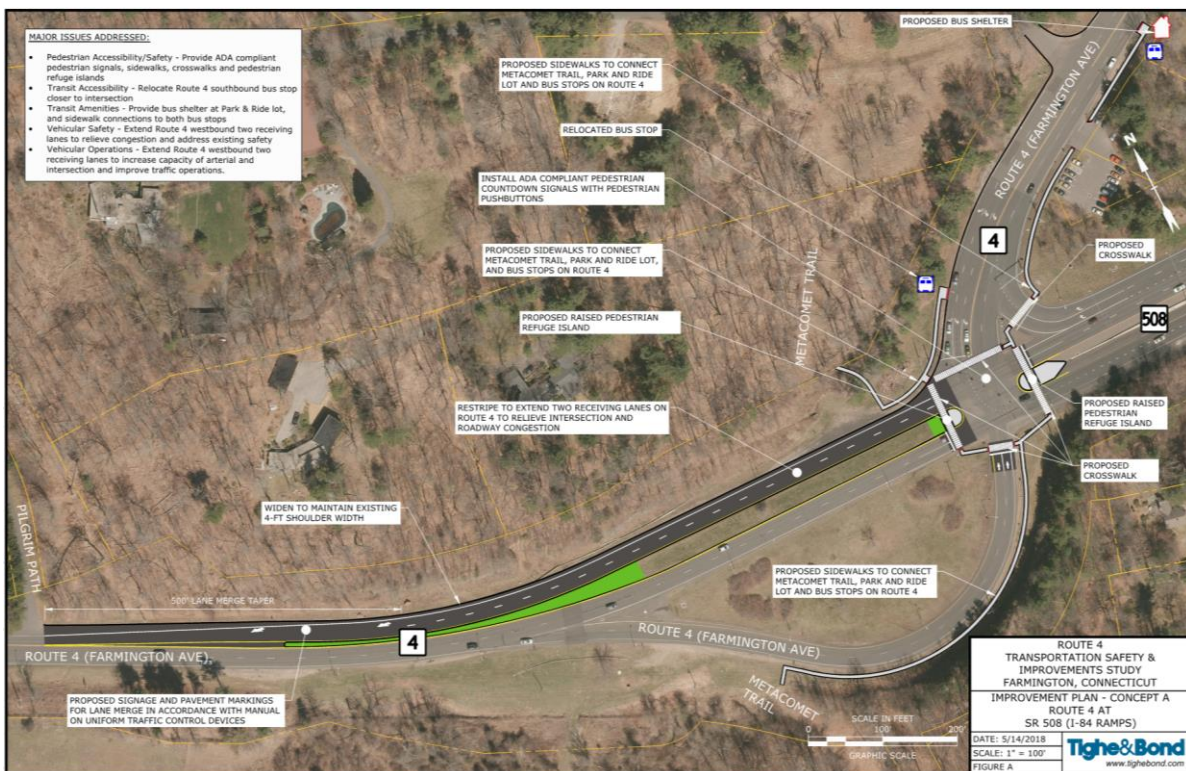
FIGURE ES-17

2040 Improved Traffic Operations



Project 1: Route 4 at SR 508 (I-84 Ramps) Intersection Improvements (Concept A)

Project Goals:	Improve intersection operations; improve safety; improve alternative mode mobility and access	Project Type:	Small
		Project Complexity:	Low
		Project Priority:	Short-Term
		Project Cost:	\$1,500,000
Major Project Elements:	<ul style="list-style-type: none"> Widen Route 4 to provide two 900-foot long westbound receiving lanes and maintain existing shoulder width Provide a 300-foot merge lane Install ADA compliant pedestrian signals and push buttons; install crosswalks across each leg; provide a pedestrian refuge island in the median on Route 4 and SR 508, respectively; pedestrians cross Route 4/ SR 508 in two separate signal cycles by waiting in the refuge island between cycles Provide a continuous sidewalk network to connect the park and ride commuter lot, bus stops, and Metacomet Trail Relocate Route 4 bus stop closer to the intersection; provide bus shelter amenities 		
	Permits: <ul style="list-style-type: none"> CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way; Local Traffic Authority and OSTA approvals for traffic control signal modifications 		



Project 2: Route 4 at Talcott Notch Road and Old Mountain Road Intersection Improvements – Old Mountain Road Realignment (Concept B-1)

Project Goals:	Improve safety and intersection operations; improve alternative mode access and mobility	Project Type:	Large
		Project Complexity:	High
		Project Priority:	Short-Term
		Project Cost:	\$5,175,000

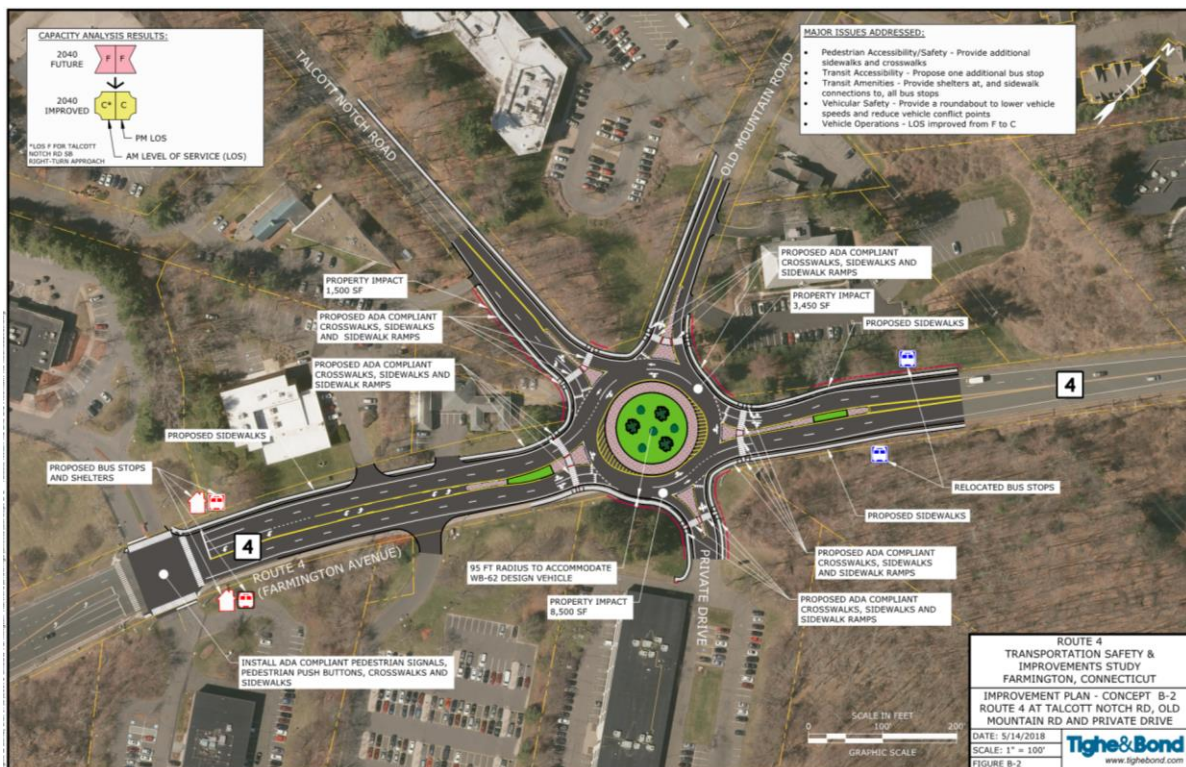
- Major Project Elements:**
- Widen and realign Talcott Notch Road to provide three southbound through lanes and two northbound through lanes at realigned Old Mountain Road intersection; provide dual left-turn lanes, a shared through/right-turn lane, and a right-turn lane on Talcott Notch Road southbound approach to Route 4
 - Realign Old Mountain Road to form a T-intersection at Talcott Notch Road;
 - Install a new traffic signal at proposed Old Mountain Road/Talcott Notch Road intersection and provide cluster operation with the upgraded traffic signal at Route 4/Talcott Notch Road intersection on the same traffic signal controller
 - Widen to provide a second left-turn lane on Route 4 eastbound approach and an exclusive right-turn lane on Route 4 westbound approach; provide/extend all storage pockets to meet design queues
 - Improve pedestrian and transit access, amenities, and mobility
 - Significant right-of-way impacts and acquisition actions needed

- Permits:**
- Town roadway construction permits for construction within Town right-of-way
 - CTDOT approval and/or encroachment permit; Local Traffic Authority and OSTA traffic signal permit
 - Environmental permitting requirements



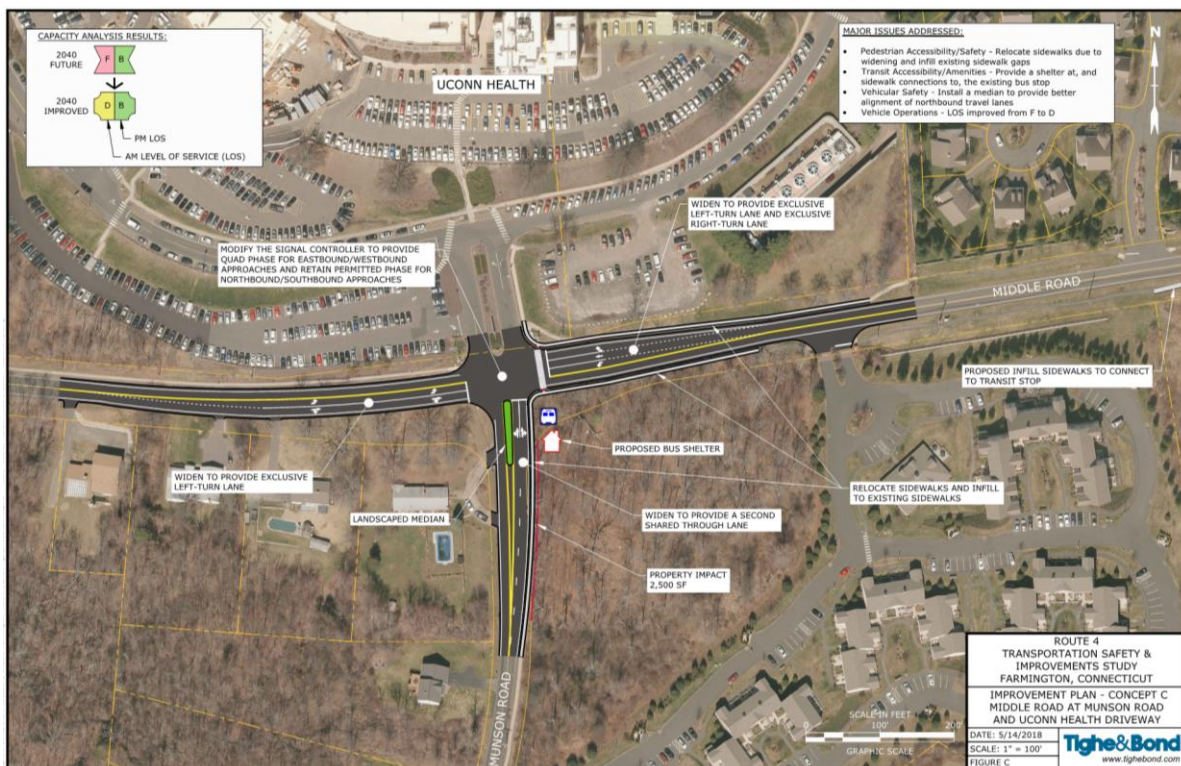
Project 3: Route 4 at Talcott Notch Road and Old Mountain Road Intersection Improvements – Five-Leg Modern Roundabout (Concept B-2)

Project Goals:	Improve vehicular traffic flow and operations; reduce travel speeds and improve safety; improve access and mobility for alternative travel modes	Project Type:	Large
		Project Complexity:	High
		Project Priority:	Short-Term
		Project Cost:	\$4,170,000
Major Project Elements:	<ul style="list-style-type: none"> • Replace existing signalized intersection with a multi-lane modern roundabout • Provide an inscribed circle diameter of 190 feet for WB-62 design vehicle • Provide a right-turn bypass lane with a mountable median island on Talcott Notch Road southbound approach • Provide 150-foot or longer splitter island on Route 4 approaches to reduce speeds • Improve pedestrian and transit access, amenities, and mobility with sidewalks and transit amenities • Significant right-of-way actions required 		
Permits:	<ul style="list-style-type: none"> • 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 		



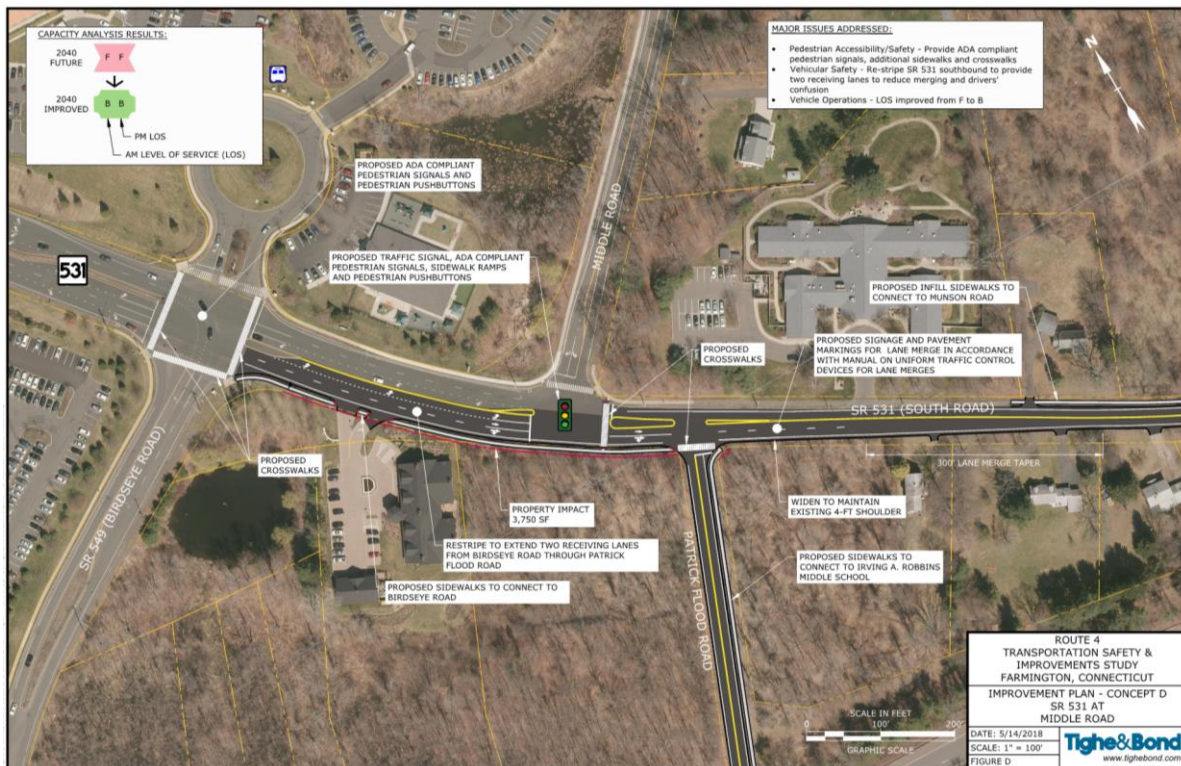
Project 4: Middle Road at Munson Road Intersection Improvements (Concept C)

Project Goals:	Improve potential intersection operational deficiency based on projected future traffic volumes; improve access and mobility for alternative travel modes	Project Type:	Medium
		Project Complexity:	Moderate
		Project Priority:	Long-Term
		Project Cost:	\$1,430,000
Major Project Elements:	<ul style="list-style-type: none"> Widen Middle Road eastbound approach to provide an exclusive left-turn lane Widen Middle Road westbound approach to provide an exclusive left-turn lane and an exclusive right-turn lane Widen Munson Road northbound approach to provide a second shared through lane Modify signal controller to provide Quad phasing for Middle Road approaches Provide sufficient storage pockets to meet design queues Provide a shared use path along the south side of Middle Road and connect to the proposed transit stop approximately one mile east of the intersection Improve pedestrian and transit access, amenities, and mobility 		
Permits:	<ul style="list-style-type: none"> Town roadway construction permits for construction within Town right-of-way 		



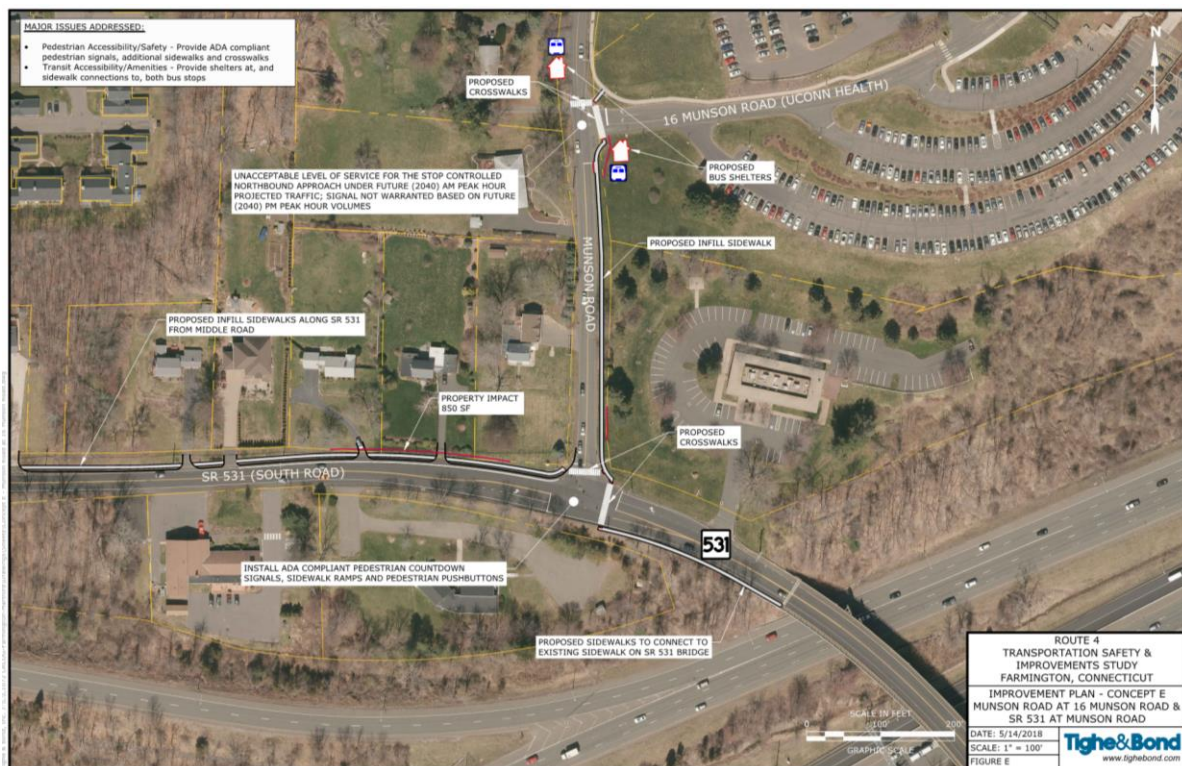
Project 5: SR 531 (South Road) at Middle Road Intersection Improvements (Concept D)

Project Goals:	Improve intersection operations by installing a traffic signal; improve safety by restriping SR 531 southbound approach; provide improved pedestrian accommodations at Middle Road	Project Type:	Medium
		Project Complexity:	Moderate
		Project Priority:	Mid-Term
		Project Cost:	\$1,190,000
Major Project Elements:	<ul style="list-style-type: none"> • Install a traffic signal • Restripe SR 531 southbound approach to provide two receiving lanes from Birdseye Road to Patrick Flood Road to reduce merging and confusion • Provide a 300-foot merge lane following the southbound receiving lanes • Install pedestrian signals, push buttons, crosswalks, sidewalks, and ramps • Improve transit access, amenities, and mobility 		
Permits:	<ul style="list-style-type: none"> • Town roadway construction permits for construction within Town right-of-way • CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way 		



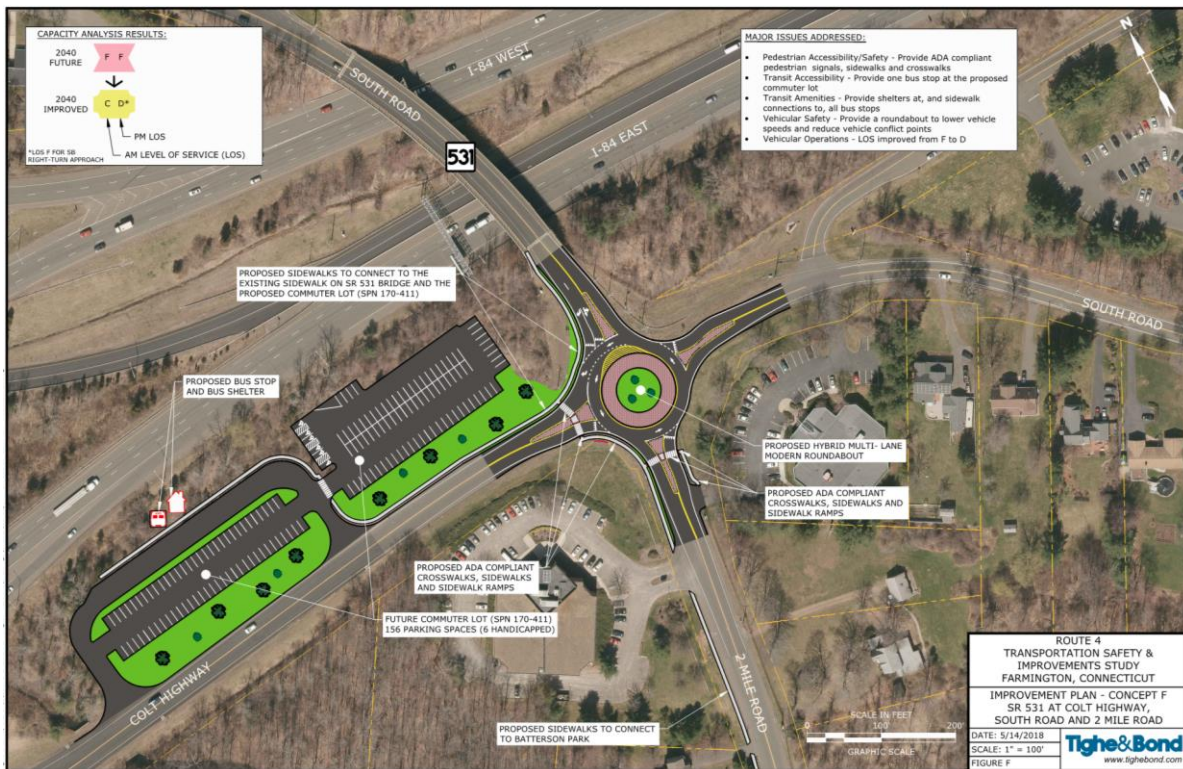
Project 6: Munson Road at SR 531 and 16 Munson Road Intersection Area Improvements (Concept E)

Project Goals:	Improve mobility of alternative travel modes in the area	Project Type:	Small
		Project Complexity:	Low
		Project Priority:	Mid-Term
		Project Cost:	\$840,000
Major Project Elements:	<ul style="list-style-type: none"> • Install pedestrian signals, push buttons, crosswalks, sidewalks, and ramps at the intersection of Munson Road at SR 531 • Infill existing sidewalk gaps along SR 531 • Install sidewalks along Munson Road • Install crosswalks at the north and east legs of the intersection of Munson Road and 16 Munson Road • Improve pedestrian and transit access, amenities, and mobility 		
Permits:	<ul style="list-style-type: none"> • 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: SR 531 at Colt Highway Intersection Improvements – Modern Roundabout (Concept F) ⁽¹⁾

Project Goals:	Improve intersection operations; improve access to alternative travel modes	Project Type:	Medium
		Project Complexity:	Moderate
		Project Priority:	Short-Term
		Project Cost ⁽²⁾:	\$1,520,400
Major Project Elements:	<ul style="list-style-type: none"> Install single-lane modern roundabout with southbound right-turn bypass Install ADA compliant crosswalks, sidewalks, and sidewalk ramps Provide park and ride commuter lot as part of separate state project (SPN 170-411), and provide new bus stop with shelter amenities 		
	Permits: <ul style="list-style-type: none"> Town roadway construction permits for construction within Town right-of-way CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way 		

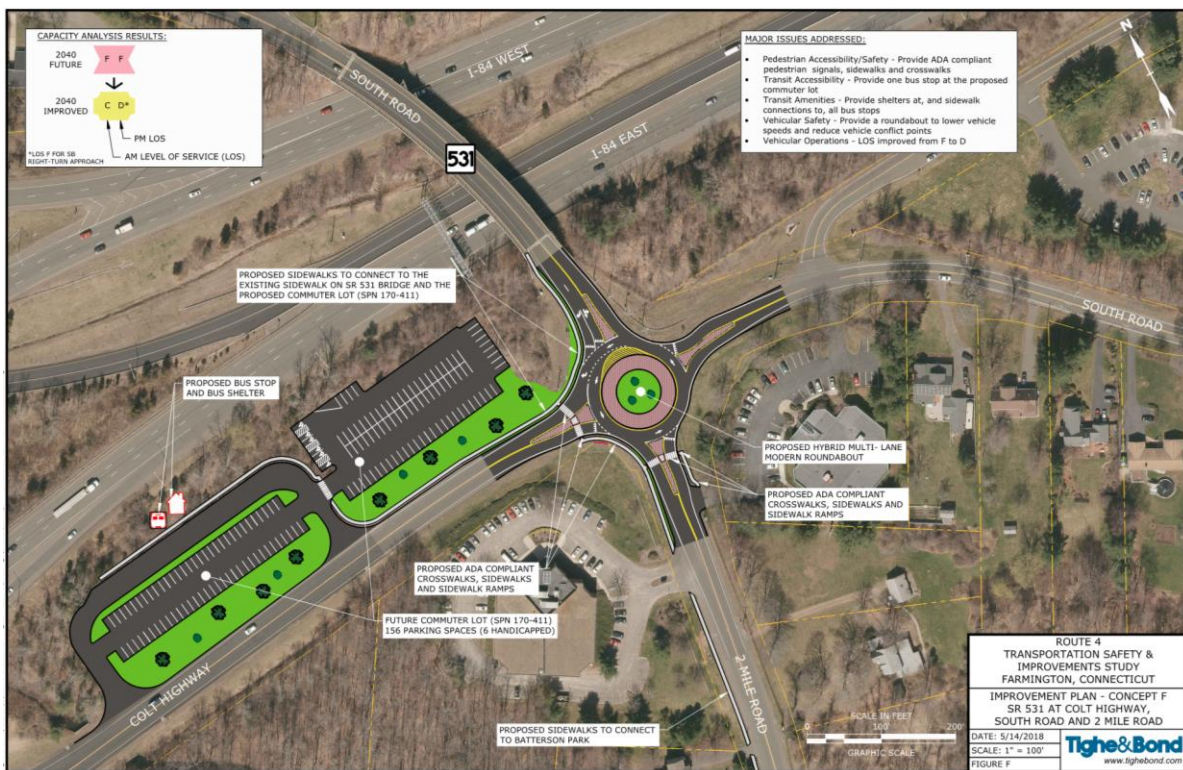


(1) This project has been advanced by the Town of Farmington and funded under the Local Transportation Capital Improvement Program (LOTICIP)

(2) Based on February 2020 LOTICIP Cost Estimate

Project 8: Colt Highway Commuter Parking Lot West of SR 531 (South Road) ⁽¹⁾

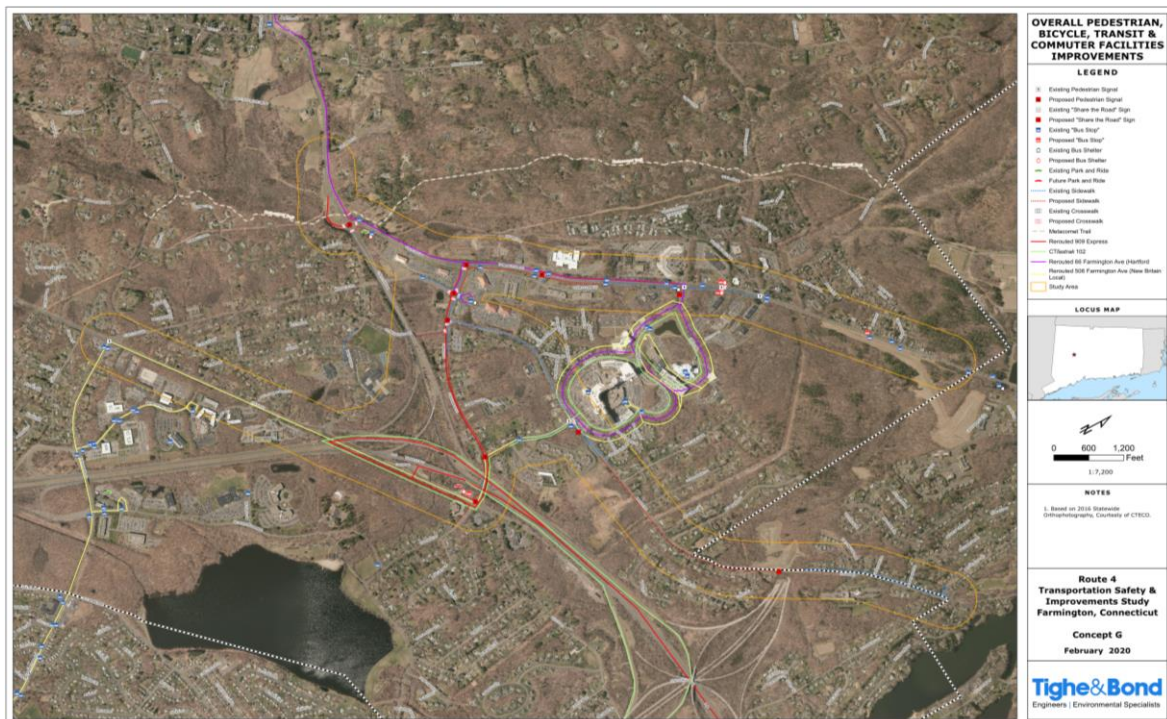
Project Goals:	Improve local and regional transit service through a new commuter parking facility with transit stops	Project Type:	Large
		Project Complexity:	High
		Project Priority:	Mid-Term
		Project Cost:	\$1,000,000
Major Project Elements:	<ul style="list-style-type: none"> Build the commuter parking lot and transit stop within the CTDOT I-84 right-of-way Reroute CT Transit 909 Express with a bus stop at the commuter parking lot connecting I-84 and UCONN Health Center via Colt Highway and Munson Road Maintain CTfastrak 102 with a bus stop at the commuter parking lot on Colt Highway, connecting I-84 to UCONN Health Center via Colt Highway and Munson Road Bus stops will be equipped with shelter amenities 		
Permits:	<ul style="list-style-type: none"> CTDOT approval and/or encroachment permit for construction within CTDOT right-of-way Encroachment permits for construction within CTDOT right-of-way 		



(1) CTDOT Project No. 170-411

Project 9: Pedestrian, Bicycle, and Transit Improvements (Concept G)

Project Goals:	Provide improved bicycle and pedestrian accommodations and transit infrastructure and service throughout the study area to increase safety and promote alternative travel modes	Project Type ⁽¹⁾:	Large
		Project Complexity ⁽¹⁾:	Moderate
		Project Priority ⁽¹⁾:	Short-Term
		Project Cost ⁽²⁾:	Varies
Major Project Elements:	<ul style="list-style-type: none"> • Provide a connected sidewalk network along Route 4, SR 531, Middle Road, and Munson Road • Provide painted crosswalks and sidewalk ramps at major intersections to facilitate safe crossings • Install pedestrian signals and ADA ramps at major signalized intersections • Reroute CT Fastrak 121 to serve the proposed commuter lot along Colt Highway, Middle Road, and the UCONN Health Campus • Reroute CT Transit 902 Express / 909 Express to serve the proposed commuter lot along Colt Highway, Middle Road, Munson Road, Colt Highway, SR 531, and Route 4 south of SR 531 • Reroute CT Transit 66 Farmington Avenue (Hartford Local) and CT Transit 506 Farmington Avenue (New Britain Local) to serve the entire segment of Route 4 in the study area as well as UCONN Health Campus • Provide bus shelters at all bus stops 		
Permits:	<ul style="list-style-type: none"> • Town roadway construction permits for construction within Town right-of-way • Encroachment permits for construction within CTDOT right-of-way 		



(1) Based on completing all pedestrian bicycle and pedestrian improvements under a single project. Individual projects contain alternative mode improvements reflected in this recommendation.

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

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 Town of Farmington, CTDOT, and CRCOG 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 9 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.

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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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. Six projects are identified as Short-Term priorities, one project as Mid-Term priority, and one project as Long-Term priority. 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

Concept	Project Description	Project Priority	Project Complexity	Project Cost
A	Route 4 at SR 508 (I-84 Ramps)	Short-Term	Low	\$1.5 million
B-1	Route 4 at Talcott Notch Road and Old Mountain Road – Old Mountain Road Realignment	Short-Term	High	\$5.2 million
B-2	Route 4 at Talcott Notch Road and Old Mountain Road – Five-Leg Modern Roundabout	Short-Term	High	\$4.2 million
E	Munson Road at SR 531 and 16 Munson Road	Short-Term	Low	\$840,000
F	SR 531 at Colt Highway Roundabout	Short-Term	Moderate	\$1.5 million
G	Overall Pedestrian, Bicycle, Transit and Commuter Facilities Improvements	Short-Term	Moderate	N/A
D	South Road (SR 531) at Middle Road	Mid-Term	Moderate	\$2.0 million
F	Colt Highway Commuter Parking Lot West of SR 531 (South Road)	Mid-Term	High	\$1.0 million
C	Middle Road at Munson Road	Long-Term	Moderate	\$1.4 million