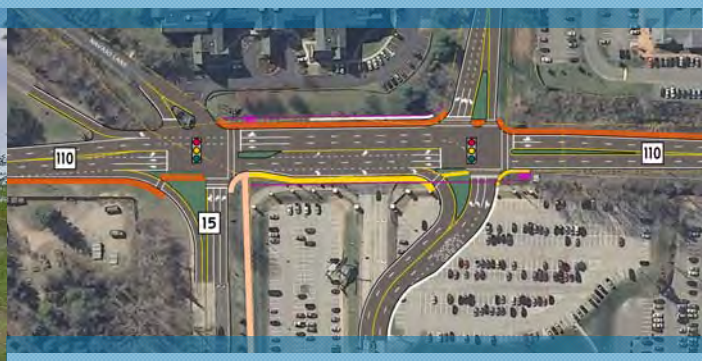


METROCOG
Connecticut Metropolitan Council of Governments

TOWN OF STRATFORD · CONNECTICUT · SEAL · SETTLED 1639

Tighe&Bond

Route 110 Engineering Planning Study
Stratford, CT

Final Study Report – Executive Summary

Prepared For:

Connecticut Metropolitan Council of Governments
and
Town of Stratford

Stratford, CT

April 3, 2017

Executive Summary

Introduction

The Route 110 Engineering Planning Study (Study) was conducted on behalf of the Town of Stratford (Town) by the Connecticut Metropolitan Council of Governments (METROCOG). The project was funded by the Federal Highway Administration (FHWA) through the Connecticut Department of Transportation (CTDOT) and METROCOG with matching funding by the Town of Stratford. METROCOG serves the Town of Stratford, a member Town of the Greater Bridgeport and Valley Metropolitan Planning Organization (GBVMPO).

The purpose of the Study was to develop a comprehensive transportation improvement plan for the Route 110 corridor in the study area and provide a planning document for the Town, METROCOG, and State to guide the implementation of transportation system improvements to meet local and regional transportation needs and deficiencies while accommodating future land use and economic development goals.

The goals and objectives of the Study were identified by the Route 110 Technical Advisory Committee (TAC) and Route 110 Community Advisory Committee (CAC). The TAC was comprised of Town of Stratford, METROCOG, Greater Bridgeport Transit, and CTDOT staff. The CAC was comprised of major corridor stakeholders along with representation from Town staff and METROCOG. The Study goals and objectives were identified at the onset of the Study and included the following:

Goals and Objectives

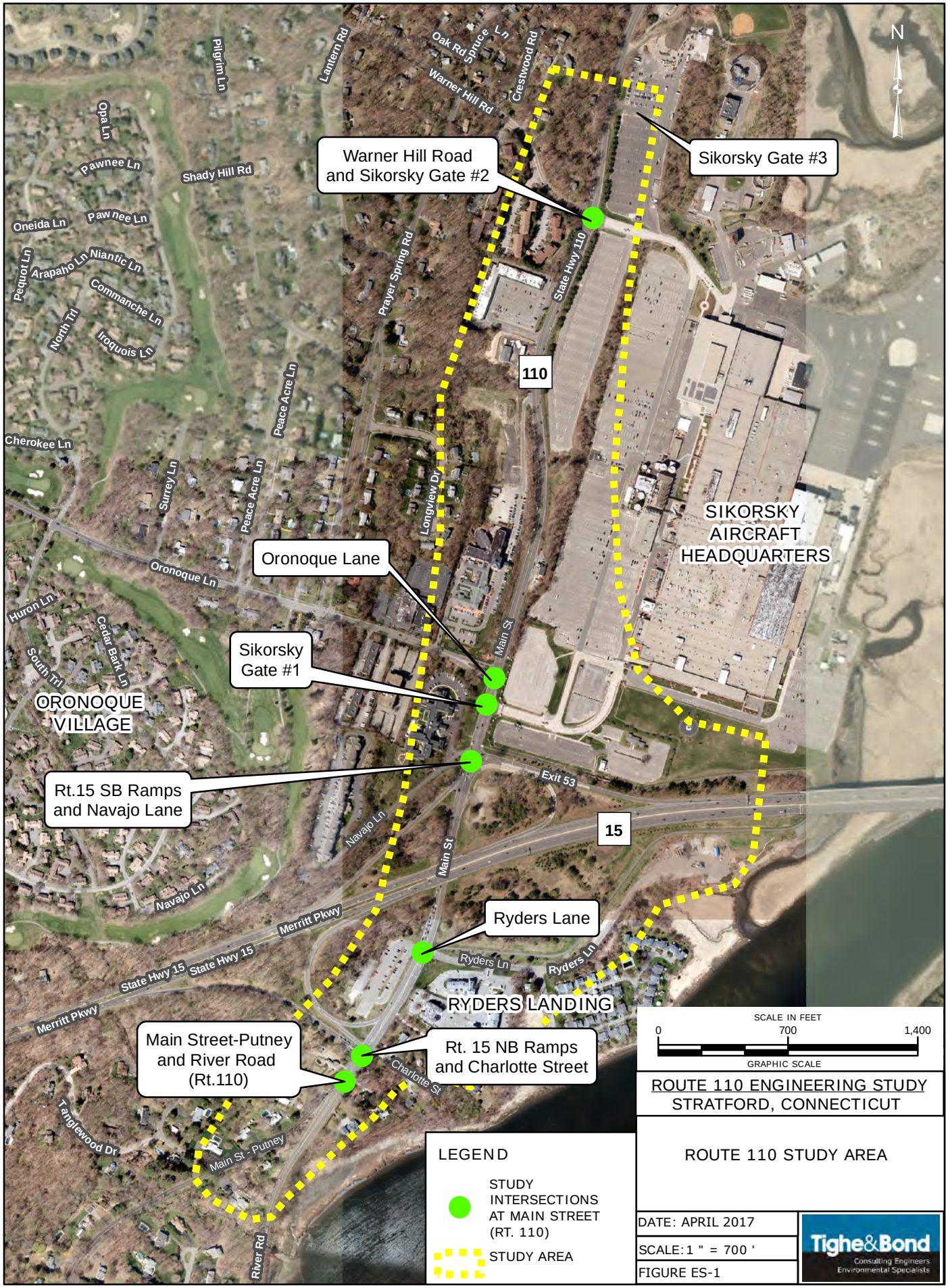
- Develop cost effective transportation system solutions that improve operations to mitigate poor capacity and congestion while accommodating future land use expansion along Main Street and in the region.

- Improve transportation system opportunities and mobility for alternative travel modes including sidewalk and bicycle infrastructure, exclusive pedestrian signalization at intersections, and improved transit amenities to provide a complete transportation system.

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

Study Area

The study area included the segment of Route 110 in the Town of Stratford directly adjacent to Route 15 (Merritt Parkway/Wilbur Cross Parkway) and Sikorsky Aircraft. The study area begins just south of the intersection of River Road (Route 110) with Main Street - Putney and extends north for approximately one mile to 500 feet north of the intersection of Main Street (Route 110) at Warner Hill Road. The study area included segments of the side streets and commercial driveways approaching the corridor. The study area included several intersections along Route 110 that were analyzed. These locations are shown in Figure ES-1.



Tighe & Bond, Inc. J:\G\G0648 GBRC-Route 110 Study\Drawing\GIS\GBRCR110_FIGURE1-1_20141104.mxd

11/5/2014

Public Involvement

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

- Obtain input from the Public on study area issues, concerns, and help identify and frame the study goals and objectives
- Advise the Public of the study findings
- Educate the Study Team with local knowledge
- Involve stakeholders and the public in the development and refinement of recommendations that fit the vision and character of the Town
- Facilitate reviews by Town Council, Boards and Commissions, Businesses, and Residents, leading to a Final Improvement Plan that can be endorsed by the Town and Region to help guide future transportation system improvements and enhancements

Project Committees

Technical Advisory Committee (TAC) and Community Advisory Committee (CAC)

This committee provided consistent input and oversight throughout the study process. The committee was comprised of Town Staff, METROCOG Staff, Greater Bridgeport Transit (GBT) Staff and CTDOT Staff. The Community Advisory Committee (CAC) is comprised of project stakeholders directly impacted by operations in the study area. The CAC includes members from Sikorsky Aircraft, area businesses, and other key stakeholders that live and/or operate a business in the study area.

Summary of Outreach Activities

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

Project Kickoff Meeting:	August 14, 2014
TAC Kickoff Meeting:	November 12, 2014
CAC Kickoff Meeting:	November 19, 2014
Stakeholder Interview with Sikorsky Aircraft:	January 28, 2015
Stakeholder Interview with Ryders Landing:	January 12, 2015
TAC Existing/Future Conditions and Alternatives Meeting:	October 15, 2015
CAC Existing/Future Conditions and Alternatives Meeting:	November 18, 2015
TAC Final Report Review Meeting:	November 30, 2016
CAC Final Report Review Meeting:	November 30, 2016
Public Information Meeting:	December 8, 2016

Assessment of Existing Conditions

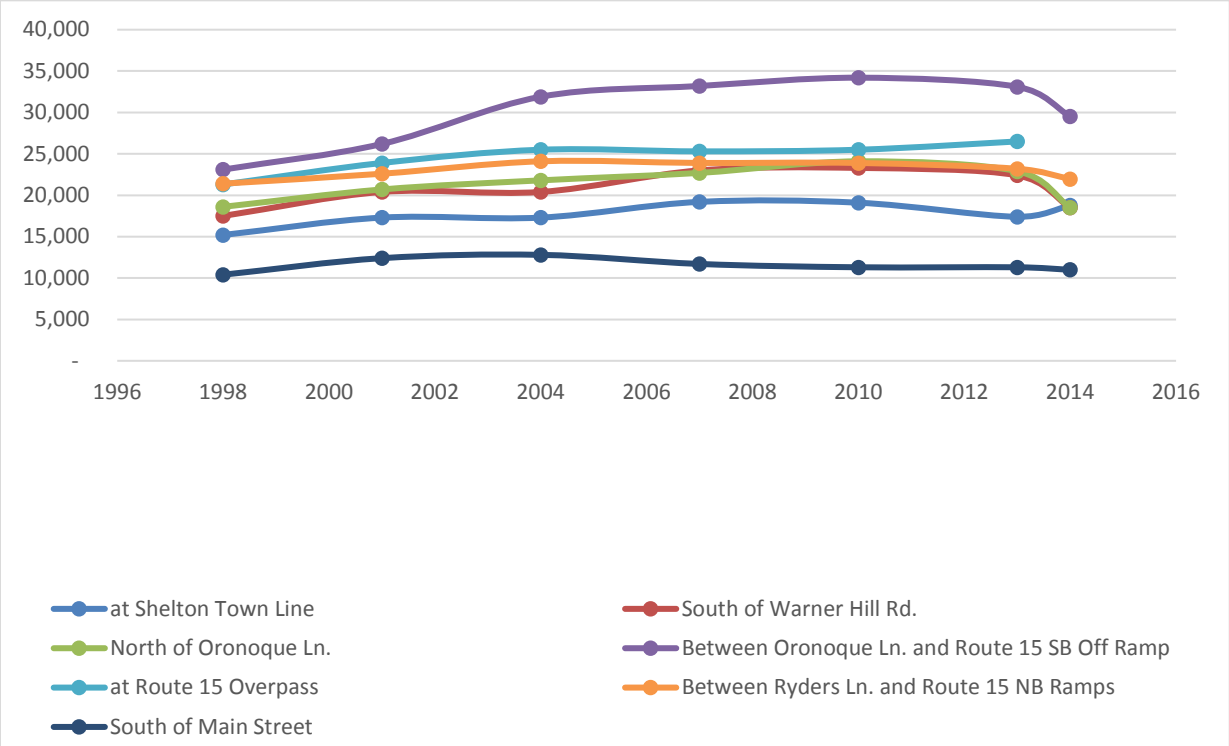
The assessment of existing conditions included an extensive data collection process to establish the current condition of the transportation system in the study area. The purpose of the existing condition assessment was to identify existing needs and deficiencies and begin the process of identifying opportunities for improvements to the transportation system in the study area. This section describes the assessment of the study area transportation system as it exists in 2014.

Traffic Volumes

Available historical traffic volume data was obtained from the CTDOT during the Data Collection task. In addition, several traffic counts were conducted, supplementing the available data. A review of the historic average daily traffic volume data published by CTDOT indicates daily traffic volumes along Route 110 peaked in the mid-2000's, and have slightly declined since, coincident with the economic recession during the latter half of the decade. Figure ES-2 shows the change in average daily traffic at multiple locations along Route 110 in the study area.

FIGURE ES-2

Route 110 Historical Average Daily Traffic



Travel Speeds

Travel speed data was collected along Route 110 in conjunction with the Automatic Traffic Recorder (ATR) traffic counts. Speed data was collected in September 2014. Table ES-1 summarizes the results of the speed observations along the corridors. In general, travel speeds along Route 110 were within 5 to 10 miles per hour of the posted speed limit. The northern end of the study area experienced slightly higher operating speeds as there is less congestion and less curb cuts.

TABLE ES-1

Travel Speed Observations (MPH)

Location	Posted Limit	Average Speed		85th Percentile Speed	
		NB/EB	SB/WB	NB/EB	SB/WB
Route 110 (Main Street)					
South of Shelton Town Line	40	41	46	46	51
North of Warner Hill Road	40	46	42	52	47
North of Oronoque Lane	40	40	32	46	43
North of Merritt Pky NB Ramps	40	31	22	36	26
South of Main Street	45	27	40	37	45
Warner Hill Road					
West of Route 110	25	28	27	33	31
Oronoque Lane					
West of Route 110	30	21	23	25	26
Ryders Lane					
East of Route 110	NP	16	17	20	21
Main Street					
West of Route 110	30	18	33	26	38

NP: No Posted Speed Limit

Traffic Operations

Traffic operations were evaluated for the seven signalized intersections along the Route 110 corridor during the morning, afternoon Sikorsky Shift Change, and afternoon peak hours. The analyses were conducted using Trafficware's *Synchro plus SimTraffic 8 – Traffic Signal Coordination Software,* based on the *2010 Highway Capacity Manual (HCM)* methodology.

Average Control Delay (Seconds per Vehicle)	Level of Service[a]	
	v/c Ratio ≤1.00	v/c Ratio >1.00
≤10	A	F
>10 to 20	B	F
>20 to 35	C	F
>35 to 55	D	F
>55 to 80	E	F
>80	F	F

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

Source: *HCM2010: Highway Capacity Manual.* Washington, D.C.: Transportation Research Board, 2010. Exhibit 18-4, Pg. 18-6.

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 different form of traffic control to mitigate the operational issues and reduce average delay. In the context of this planning process, during the analysis of both existing and future conditions, intersections exhibiting LOS E and F were identified for further analysis and potential improvements to mitigate poor or failing operations. Table ES-2 summarize the intersection operations in terms of average delay per vehicle and LOS along Route 110 for the 2014 Existing Conditions.

TABLE ES-2

Route 110 Intersection Operational Summary – 2014 Existing Conditions

	Morning Peak Hour		Sikorsky Shift Change Peak Hour		Afternoon Peak Hour	
Study Intersection	**LOS**	**Avg. Delay (s/veh)**	**LOS**	**Avg. Delay (s/veh)**	**LOS**	**Avg. Delay (s/veh)**
Warner Hill Road and Sikorsky Gate #2	D	45.0	C	32.9	D	35.9
Oronoque Lane	D	45.6	C	33.0	D	50.1
Sikorsky Gate #1	D	35.4	E	73.1	D	42.8
Merritt Parkway SB Ramps and Navajo Lane	D	46.8	C	27.6	F	81.2
Ryders Lane and Commuter Parking Lot Drive	A	3.5	B	11.6	B	12.1
Merritt Parkway NB Ramps and Charlotte Street	C	33.6	F	96.6	F	178.3
Main Street – Putney	C	20.4	B	14.1	C	21.9

Traffic Safety

Motor vehicle collision history data were collected from CTDOT and the Town for the latest six-year period of available data, between January 1, 2007 and December 31, 2012. Table ES-3 summarizes the number of collisions recorded along the Route 110 corridor within the study area from 2007 through 2012. During the six-year period, 479 collisions were reported. Rear-end type collisions were the most common type accounting for almost half of the total with 234 crashes (49%) recorded; the second most common type of collision was Turning - Intersecting Paths with 62 crashes (13%), followed by Turning – Opposite Directions with 60 crashes (13%), and Sideswipe – Same Direction with 59 crashes (12%). The remaining types of collisions were each less than 4% of the total number of crashes. No fatalities were recorded in any of the collisions along the Route 110 corridor. A total of 27 crashes reported significant injuries with the remaining 452 collisions categorized as Property Damage Only.

TABLE ES-3

Route 110 Collisions – Study Area Summary

	Number of Collisions							% of Total
Intersection/Location	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**Total**	**Collisions**
Oronoque Lane*	16	25	23	17	13	23	**117**	**25%**
Warner Hill Road/Sikorsky Gate #2*	15	12	23	15	22	20	**107**	**22%**
Merritt Parkway NB Ramps/Charlotte Street*	3	11	7	6	11	11	**49**	**10%**
Merritt Parkway SB Exit/Navajo Lane*	13	5	6	4	10	3	**41**	**9%**
Sikorsky Gate #1*	2	6	7	5	12	3	**35**	**7%**
Oronoque Shopping Plaza Driveway	8	8	5	2	5	5	**33**	**7%**
Ryders Lane/Commuter Lot Drive*	4	6	8	5	3	0	**26**	**5%**
Sunoco Gas Station Drives	3	4	3	1	4	1	**16**	**3%**
Merritt Parkway SB On-Ramp from Route 110 SB	3	5	3	0	1	0	**12**	**3%**
Main Street – Putney*	3	2	3	1	2	0	**11**	**2%**
Near Merritt Parkway Underpass	1	3	2	2	2	1	**11**	**2%**
Sikorsky Gate #3	3	1	1	0	3	1	**9**	**2%**
Mobil Gas Station Drives	2	0	3	0	0	0	**5**	**1%**
7003 Main Street Driveway	0	1	1	0	0	1	**3**	**1%**
Pine Tree Trail	1	0	0	1	1	0	**3**	**1%**
7579 Main Street Driveway	0	0	0	1	0	0	**1**	**<1%**
Total	**77**	**89**	**95**	**60**	**89**	**69**	**479**	**100%**

* Study Area Intersection

Transportation System Conditions

The Study Team conducted observations of the existing roadway network to identify deficiencies or areas of concern that warrant a more detailed assessment for mitigation. The following observations were recorded:

- Vehicles approaching the Main Street - Putney intersection from the south along River Road use the painted median as a left turn lane to Main Street - Putney
- The northbound left turn movement from River Road to Main Street - Putney is very difficult for larger vehicles due to the sharp turn and acute angle of the intersection
- The intersection alignment of Main Street - Putney with Route 110 restricts the ability for vehicles to turn right onto Route 110 southbound
- The cluster operation of the Main Street - Putney and Merritt Parkway Northbound Ramps causes long clearance times and interrupts progression through this section of the Route 110 corridor
- Statewide collision data indicates that the Route 110 intersections with Oronoque Lane and Warner Hill Road/Sikorsky Gate #2 should be evaluated to improve safety
- Warner Hill Road and Oronoque Lane have significant steep downgrades of 12% and 15%, respectively, as they approach Route 110 from the west
- Vehicular travel speeds along the Route 110 corridor are 5 - 10 miles per hour higher than the posted speed limit (See Section 2.5 – Travel Speeds and Figure 2-12 for more information)
- The closely spaced signalized intersection at Oronoque Lane, Sikorsky Gate #1, and Merritt Parkway Southbound Ramps/Navajo Lane disrupt coordination along the Route 110 corridor with vehicles commonly blocking the intersections reducing the capacity of Route 110 and causes significant queuing on Oronoque Lane, Sikorsky Gate #1 and the Merritt Parkway Southbound Off-Ramp during the peak hours
- The significant amount of traffic destined for the Merritt Parkway results in poor lane utilization through most of the study area with vehicles remaining in right and left lanes to avoid getting stuck in the wrong lane at the desired turn. This causes significant queuing southbound in the afternoon peak hours extending north from Ryders Lane well past the intersection of Oronoque Lane
- The corridor lacks pedestrian facilities along the entire length with very limited sidewalks and includes signage to prevent pedestrian crossing at the Merritt Parkway Interchange Northbound Ramp. Only the Ryders Lane/Commuter Parking Lot Driveway intersection provides an exclusive pedestrian crossing phase
- Limited shoulders of 1 to 1.5 feet are present along the entire corridor significantly limiting the ability of bicyclists to share the roadway with vehicles
- GBT bus stops are marked with signage at the Merritt Parkway Southbound Ramp/Navajo Lane and Ryders Lane/Commuter Lot Driveway intersection, but lack any other accommodations with riders standing in grassed areas and within drainage swales

Assessment of Future Conditions

The assessment of future conditions conducts an analysis of the Route 110 study area under existing geometric and operational conditions utilizing 2034 Background and 2034 Future Traffic volumes. This process identified deterioration of operational efficiency from existing conditions helping to determine areas of concern that develop in the future.

The future conditions analysis included traffic projections based on the methodology described below to expand the 2014 Existing Traffic volumes to the 2034 Background Traffic volumes. The Route 110 study area intersections were analyzed under two scenarios, a background condition and optimization scenario. The 2034 Background analysis utilized existing geometry and existing traffic signal settings to facilitate a direct correlation between existing and future conditions. The 2034 Background Optimized analysis utilized existing geometry, but modified intersection signal operations to provide the most efficient signalized intersection operations based on future traffic, including adjustments to traffic signal timings and settings.

Background Traffic Growth

Utilizing historical traffic volume trends exhibited by the corridor between 1998 and 2013, the 2014 collected ADT data, and the 2014 Existing Traffic Volumes, 2034 Background Traffic Volumes were developed for the study area. The methodology utilized to develop the background volumes was based on historical volume trends and recognition of the regional influence on traffic volumes along Route 110. The historical trends indicate very limited growth over the surveyed time-period, with an average of 1.2% annual growth over the 15 year period from 1998 through 2013. Based on a review of the historical trends for Route 110, the 2014 Existing Traffic Volumes have been expanded at a rate of 0.25% per year, compounded annually. This growth rate results in a total growth of just over 5% in traffic volumes from 2014 to 2034.

Future Traffic Forecast

Based on the expected types of land use and development, future development generated traffic volumes for the three potential development sites were estimated. The trip generation estimate was based on data published in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition, 2012. The Development Generated Traffic during the Sikorsky mid-afternoon peak period for each development was conservatively estimated at 20% of the peak generation, in recognition of the lower overall traffic volumes on the roadway system during the Sikorsky shift change mid-afternoon time period. The Development Generated Traffic for each development site are summarized in Table ES-4. In total, the potential sites result in approximately 336 additional trips in the morning peak hour, 140 trips in the Sikorsky Shift Change peak and 702 trips in the afternoon peak hour.

TABLE ES-4

Development Generated Traffic for Potential Development Parcels in Route 110 Study Area

Area	Estimated Development	Morning			Sikorsky Shift Change			Afternoon		
		In	Out	Total	In	Out	Total	In	Out	Total
1	20,000 sf Commercial PAD	49	41	90	22	21	43	109	108	217
2	175,000 sf Mixed Use	69	72	141	33	31	64	163	157	320
3	175,000 sf Medical/Hospitality	68	37	105	15	18	33	73	92	165
	Totals	**186**	**150**	**336**	**70**	**70**	**140**	**345**	**357**	**702**

Future Traffic Operations

Traffic operations for the 2034 Future Traffic Volumes were evaluated using Trafficware's Synchro plus SimTraffic 8 – Traffic Signal Coordination Software, based on the 2010 Highway Capacity Manual methodology. Existing condition geometry was utilized with the exception of the addition of the new driveway opposite Main Street – Putney. The new driveway was set to operate during the same phase as Main Street – Putney.

Signal operations were optimized along the corridor, as would be the case when the additional development comes online. Table ES-5 summarizes the expected traffic operations of the Route 110 corridor under 2034 Future conditions in each of the peak periods.

TABLE ES-5

Route 110 Intersection Operational Summary – 2034 Future Conditions

Study Intersection	Morning Peak Hour		Sikorsky Shift Change Peak Hour		Afternoon Peak Hour	
	LOS	Avg. Delay (s/veh)	LOS	Avg. Delay (s/veh)	LOS	Avg. Delay (s/veh)
Warner Hill Road and Sikorsky Gate #2	D	36.0	C	30.8	D	45.0
Oronoque Lane	D	47.7	D	44.9	D	48.7
Sikorsky Gate #1	A	7.3	D	38.2	D	41.5
Merritt Parkway SB Ramps and Navajo Lane	C	33.2	C	29.3	E	67.9
Ryders Lane and Commuter Parking Lot Drive	A	3.2	A	6.1	A	7.2
Merritt Parkway NB Ramps and Charlotte Street	E	67.2	F	103.2	F	176.4
Main Street – Putney	C	24.7	B	17.1	D	50.4

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.

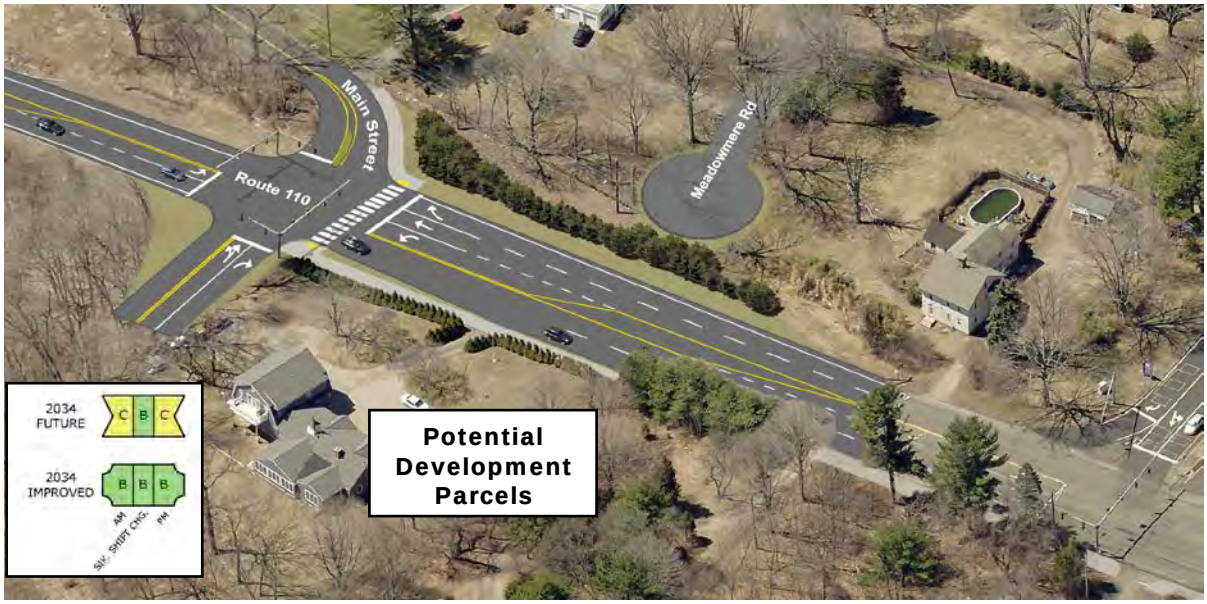
Recommendations

The recommendations address both existing needs and deficiencies and those resulting from the forecasted travel demand and potential development growth that is expected to occur in the Town of Stratford and the region by the year 2034. The recommendations were developed cooperatively with the Technical and Community Advisory Committees, CTDOT and METROCOG and were refined through a public input process, to address the goals and objectives outlined in the Study Mission Statement.

The proposed improvements are generally spot improvements meant to mitigate current and future conditions for the areas of concern. In some areas, more extensive physical improvements are necessary to address existing deficiencies along with the future transportation needs. The recommendations are presented by location, from the south to the north along the Route 110 corridor. The spot improvements to the transportation system will address future traffic growth, improve safety, increase accessibility, and promote alternative modes of travel. Although many of the recommendations address transportation issues related to motor vehicles, a series of alternative mode enhancement recommendations were developed to address pedestrian, transit, cyclist, and recreational usage of the transportation system.

Concept A: Main Street – Putney Intersection

Concept A improves traffic operations, intersection geometry, safety, and alternative travel mode mobility at the intersection of Route 110 (River Road / Main Street) with Main Street – Putney. The existing Main Street – Putney alignment intersects Route 110 at a skewed angle approximately 215 feet south of the Merritt Parkway northbound ramps. The skewed geometry results in difficult turning movement and/or high speeds maneuvers to and from Route 110.



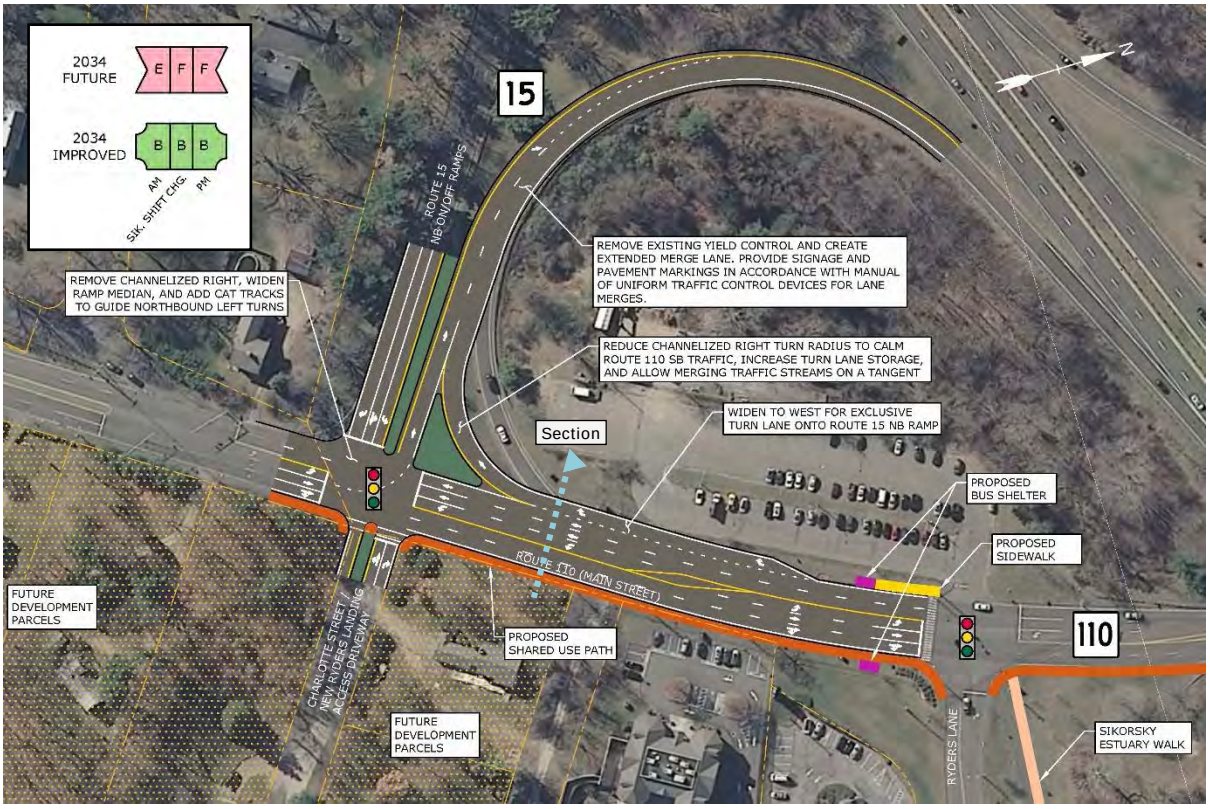
Concept A proposes the following primary physical improvements:

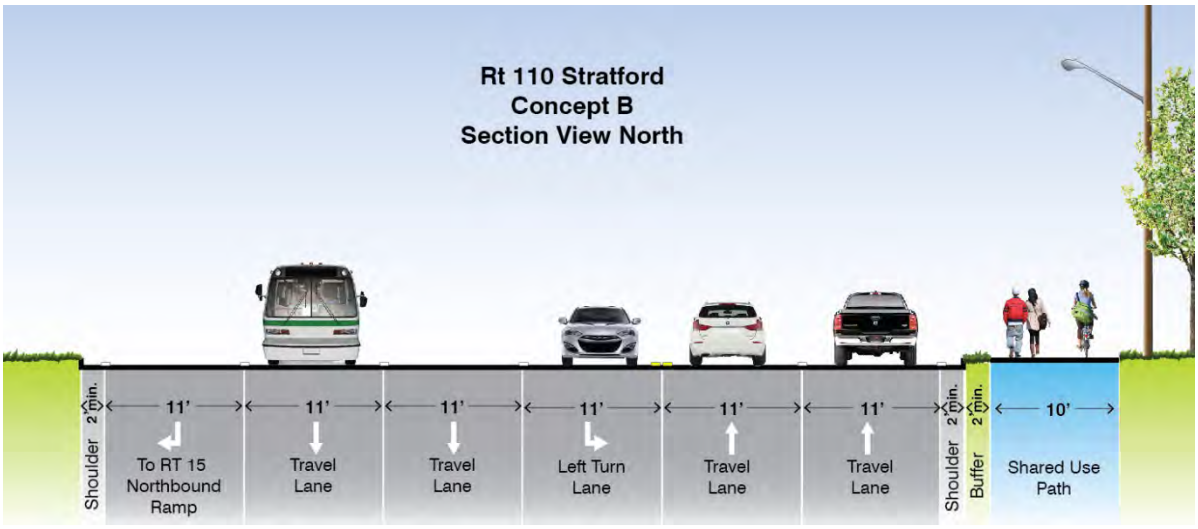
- Realign Main Street – Putney to the south at a perpendicular intersection with Route 110, approximately 500 feet south of the Merritt Parkway northbound ramps.
- Facilitate future development on the east side of Route 110 by defining a preferred driveway location opposite the realigned Main Street – Putney approach.
- Utilize existing roadway width to provide a northbound exclusive left turn lane to remove left turning vehicles from Route 110 northbound traffic stream.
- Convert the north access of Meadowmere Road to a cul-de-sac.
- Provide a shared use path along the east side of Route 110, south of the Merritt Parkway northbound ramps crossing to the west side of Route 110 at the realigned Main Street – Putney intersection.
- The concept includes a minor taking of private property to facilitate the realignment of Main Street – Putney to the south of the current intersection.

Concept B: Route 15 Northbound Ramps Intersection

Concept B improves traffic operations as well as alternative travel mode access and mobility at the intersection of Route 110 with the Merritt Parkway northbound ramps and Charlotte Street. The concept also accommodates potential future development parcels identified opposite the Merritt Parkway ramps on the east side of Route 110. The preferred concept proposes the following primary physical improvements:

- Widen the Merritt Parkway northbound entrance ramp to provide an extended merge area on the ramp to eliminate the existing yield condition for Route 110 southbound traffic and allow additional time for Route 110 traffic to merge on the ramp into a single lane before merging with Merritt Parkway northbound traffic.
- Widen Route 110 to the west and install a southbound exclusive right turn.
- Eliminate the small, right turn channelizing island on the Merritt Parkway northbound exit ramp
- Provide a shared use path along the east side of Route 110 to improve bicycle/pedestrian accessibility. See Concept G for more information on the alternative travel mode opportunities.
- Improve bus stops with shelter amenities on both sides of Route 110 and connect to shared use path with additional in-fill sidewalk.


2034 FUTURE
E F F
2034 IMPROVED
B B B
AM
SIK. SHIFT CHG.
PM
15
ROUTE 15 NB ON/OFF RAMPS
REMOVE CHANNELIZED RIGHT, WIDEN RAMP MEDIAN, AND ADD CAT TRACKS TO GUIDE NORTHBOUND LEFT TURNS
REMOVE EXISTING YIELD CONTROL AND CREATE EXTENDED MERGE LANE. PROVIDE SIGNAGE AND PAVEMENT MARKINGS IN ACCORDANCE WITH MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR LANE MERGES.
REDUCE CHANNELIZED RIGHT TURN RADIUS TO CALM ROUTE 110 SB TRAFFIC, INCREASE TURN LANE STORAGE, AND ALLOW MERGING TRAFFIC STREAMS ON A TANGENT
WIDEN TO WEST FOR EXCLUSIVE TURN LANE ONTO ROUTE 15 NB RAMP
Section
PROPOSED BUS SHELTER
PROPOSED SIDEWALK
ROUTE 110 (MAIN STREET)
FUTURE DEVELOPMENT PARCELS
CHARLOTTE STREET NEW RYDERS LANDING ACCESS DRIVEWAY
PROPOSED SHARED USE PATH
FUTURE DEVELOPMENT PARCELS
110
RYDERS LANE
SIKORSKY ESTUARY WALK
N


Rt 110 Stratford
Concept B
Section View North
Shoulder 2' min.
11'
To RT 15 Northbound Ramp
11'
Travel Lane
11'
Travel Lane
11'
Left Turn Lane
11'
Travel Lane
11'
Travel Lane
Shoulder 2' min.
Buffer 2' min.
10'
Shared Use Path

Concept C: Sikorsky Gate #1 Area – Realignment

Concept C mitigates the existing poor traffic operations, improves safety, facilitates better access to transit and provides mobility for bicyclists and pedestrians in the Sikorsky Gate #1 area. This concept also includes the intersections with Route 110 at the Merritt Parkway southbound ramps / Navajo Lane, and Oronoque Lane. The three closely spaced intersections cause congestion throughout the weekday peak hours resulting in the most congested portion of the corridor. Concept C proposes the following physical improvements to improve traffic operations, safety and mobility:

- Relocate the Sikorsky Gate #1 driveway opposite Oronoque Lane and develop a new site driveway for Sikorsky Aircraft while maintaining the no left turn restriction for southbound Route 110 and prohibiting access from Oronoque Lane.

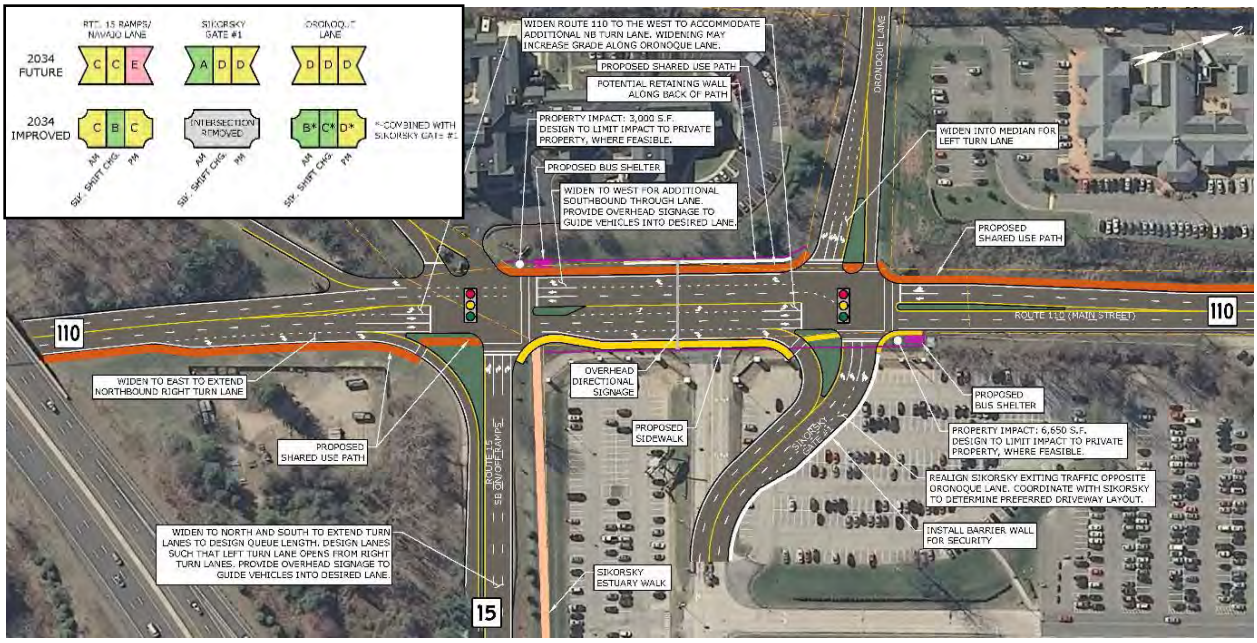
- Widen Route 110 to the west to install a northbound left turn lane between Navajo Lane and Oronoque Lane and a southbound through-right turn lane starting just south of Oronoque Lane and ending in an exclusive right turn lane onto the Merritt Parkway southbound entrance ramp.

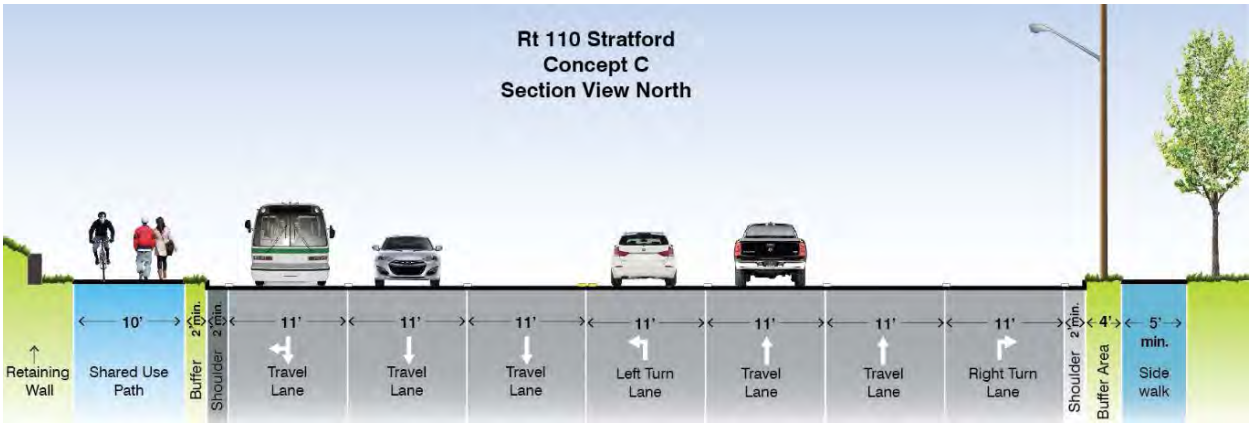
- Increase storage for turn lanes on Merritt Parkway southbound off ramp and on Route 110 northbound on ramp to Merritt Parkway southbound to design queue lengths.

- Provide a shared use path along the east side of Route 110, south of the Merritt Parkway southbound ramp and along the west side of Route 110 north of the ramp to improve bicycle/pedestrian accessibility.

- Provide new bus stops with shelter amenities on both sides of Route 110 and connect to a shared use path with additional sidewalk.

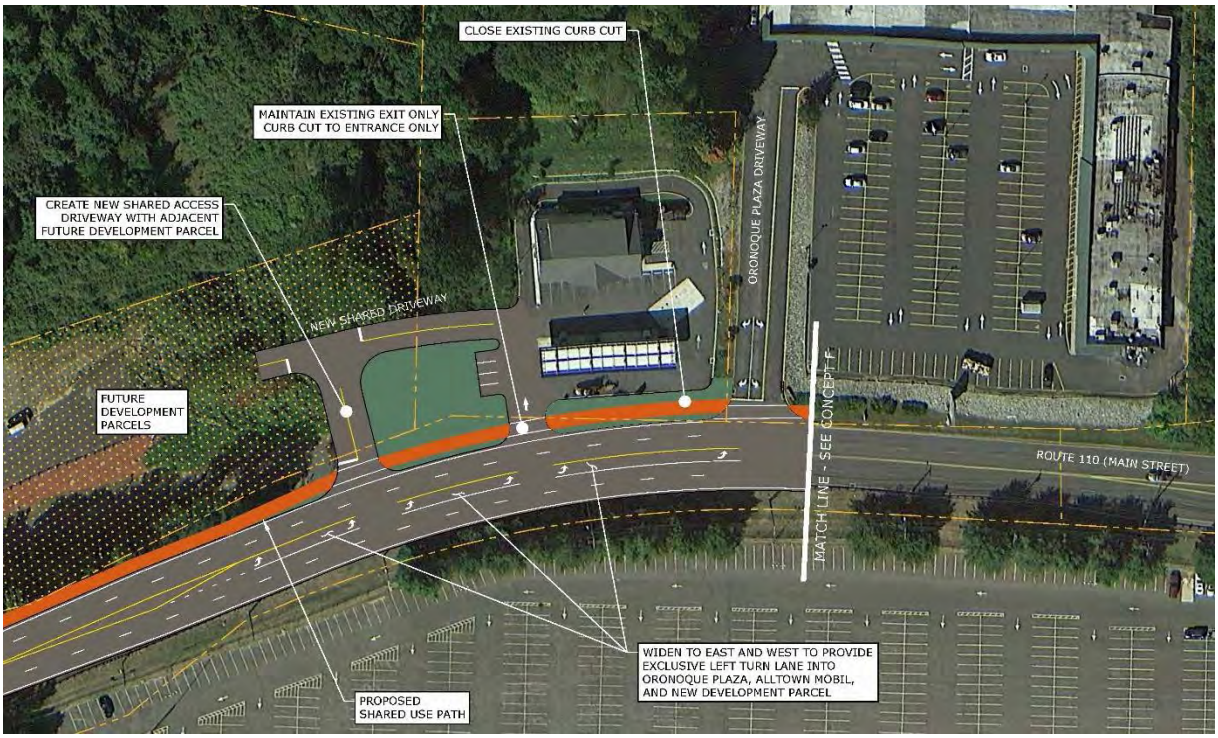
As shown in the illustration below, the concept results in acceptable LOS B through LOS D operation during the peak hours analyzed with the 2034 future traffic volumes. The Concept C cross section shows the new Route 110 lane configuration with the additional northbound left turn lane and southbound through lane between the intersections.





Concept E: Alltown-Mobil / Oronoque Plaza Area

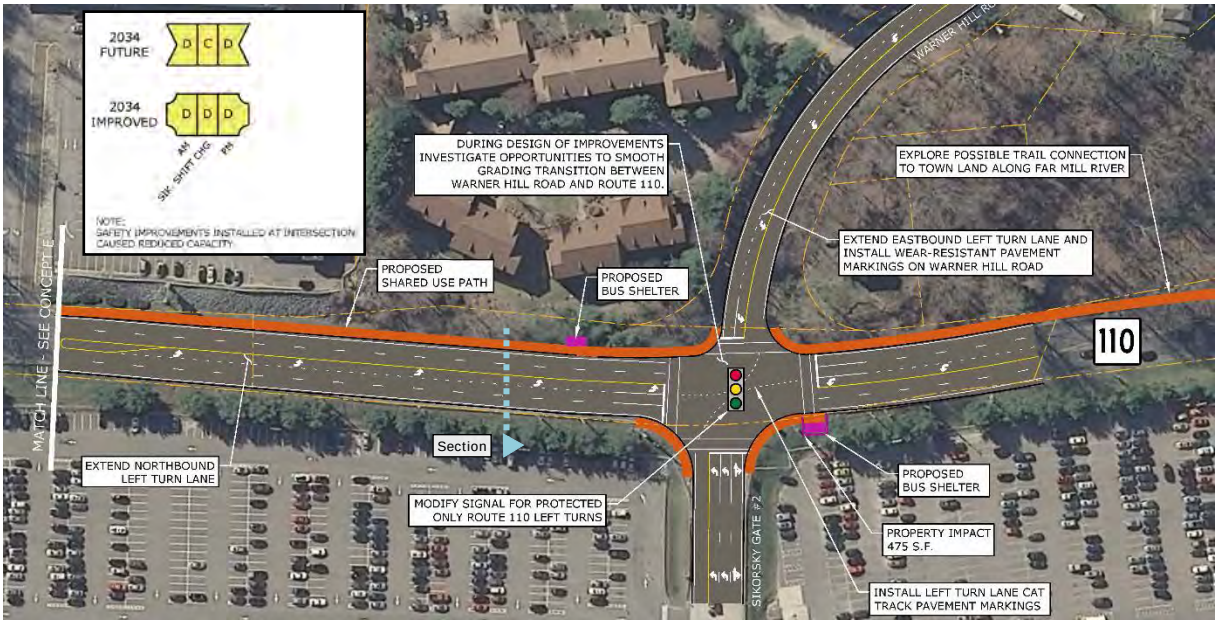
Concept E focuses on perceived safety concerns in the Alltown-Mobil and Oronoque Plaza area. Concept E recommends adjusting access to the Alltown-Mobil site if future development was to occur in this area and adding a left turn lane into both the gas station and Oronoque Plaza to remove left turning vehicles from the through traffic stream.

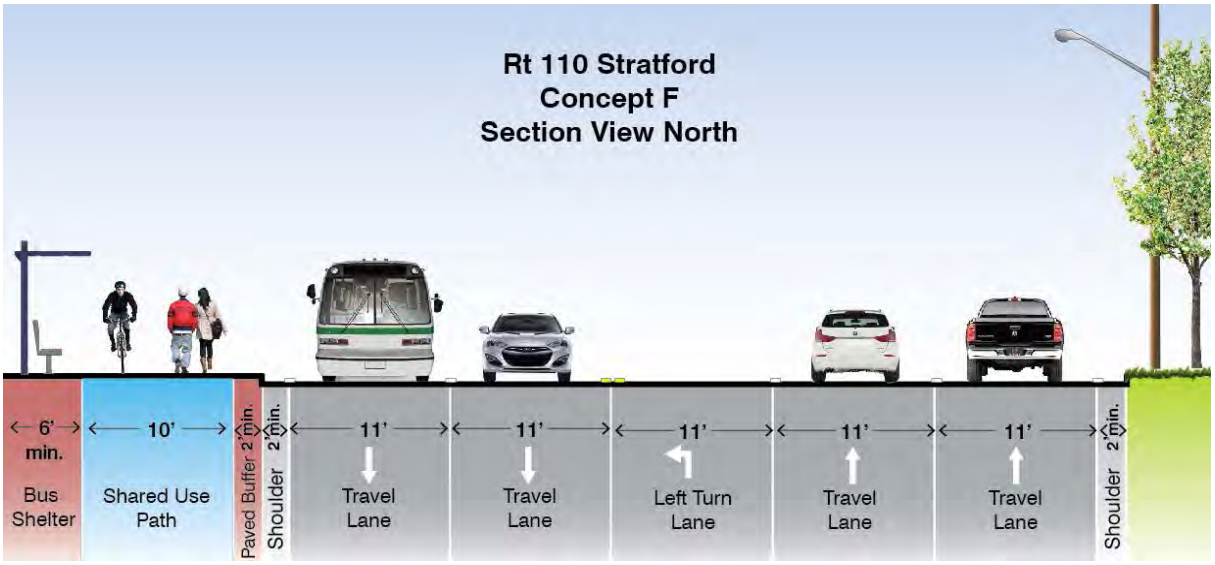


Concept F: Warner Hill Road & Sikorsky Gate #2 Intersection

Concept F proposes operational modifications to the Route 110 intersection with Warner Hill Road and Sikorsky Gate #2 to mitigate safety issues at this intersection. A review of the traffic accident data revealed a significant accident history, particularly for vehicles making permitted left turns from Route 110 onto Warner Hill Road and into Sikorsky Gate #2. Concept F proposes to eliminate the permitted left turns from Route 110 to Sikorsky Gate #2 driveway and Warner Hill Road, replacing them with a protected only left turn signal phase.

The proposed shared use path extends through this intersection from the south along the west side of Route 110. The path includes the provision of new transit shelters on either side of Route 110 to improve access to bus service for Sikorsky Aircraft. The Town of Stratford owns land to the north of the study area along the Far Mill River and the shared use path should connect to this public recreational area.

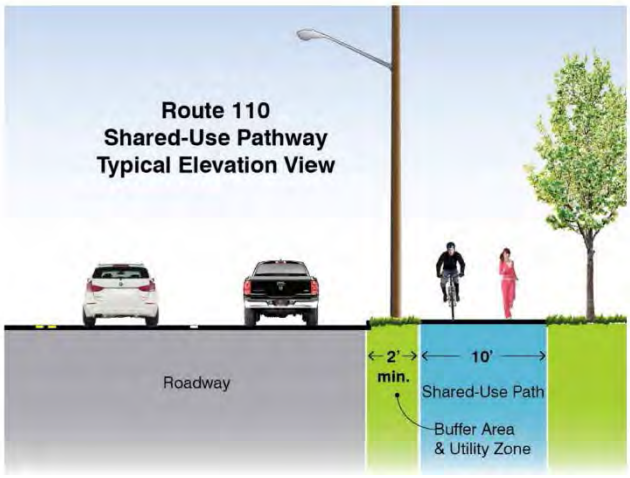

2034 FUTURE
D C D
2034 IMPROVED
D D D
AM SHIFT CHG PM
NOTE:
SAFETY IMPROVEMENTS INSTALLED AT INTERSECTION CAUSED REDUCED CAPACITY
MATCH LINE - SEE CONCEPT E
DURING DESIGN OF IMPROVEMENTS INVESTIGATE OPPORTUNITIES TO SMOOTH GRADING TRANSITION BETWEEN WARNER HILL ROAD AND ROUTE 110.
EXPLORE POSSIBLE TRAIL CONNECTION TO TOWN LAND ALONG FAR MILL RIVER
EXTEND EASTBOUND LEFT TURN LANE AND INSTALL WEAR-RESISTANT PAVEMENT MARKINGS ON WARNER HILL ROAD
PROPOSED SHARED USE PATH
PROPOSED BUS SHELTER
110
Section
EXTEND NORTHBOUND LEFT TURN LANE
MODIFY SIGNAL FOR PROTECTED ONLY ROUTE 110 LEFT TURNS
SIKORSKY GATE #2
PROPOSED BUS SHELTER
PROPERTY IMPACT 475 S.F.
INSTALL LEFT TURN LANE CAT TRACK PAVEMENT MARKINGS


Rt 110 Stratford
Concept F
Section View North
6' min.
Bus Shelter
10'
Shared Use Path
Paved Buffer 2' min.
Shoulder 2' min.
11'
Travel Lane
11'
Travel Lane
11'
Left Turn Lane
11'
Travel Lane
11'
Travel Lane
Shoulder 2' min.

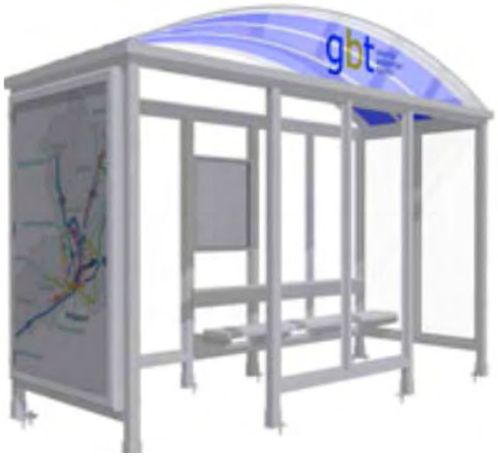
Concept G: Pedestrian, Bicyclist and Transit Accommodations

Concept G defines the pedestrian, bicycle and transit facility improvements along the Route 110 corridor. The existing conditions assessment identified a lack of non-motorized and alternative travel mode facilities and amenities. Furthermore, public input from the Technical and Community Advisory Committees meetings affirmed that improving alternative travel mode facilities and amenities were an important objective. The corridor users want better non-motorized access, mobility and safety. The Town of Stratford is focused on improving these facilities, increasing transit usage, and providing more extensive and interconnected bicycle and pedestrian facilities.

Based on the corridor review, the advisory committee input, and discussions with Greater Bridgeport Transit, it is recommended that a shared use path along the entire corridor be constructed from the Main Street – Putney intersection through the Warner Hill Road/Sikorsky Gate #2 intersection. The off-road path would be 10 feet wide to accommodate two-way bicycle and pedestrian traffic. The path would connect to the existing Sikorsky Estuary walk, which travels in a 0.80 mile u-shaped loop under the Sikorsky Memorial Bridge to the east between Ryders Lane and the Merritt Parkway southbound exit ramp. To facilitate more efficient access along the Route 110 corridor, it is recommended that a tunnel (rendering below) be installed carrying the shared use path under the Merritt Parkway along the east side of Route 110 through the existing bridge abutment of the bridge carrying the Merritt Parkway over Route 110.



For transit amenities, sidewalks are proposed to connect portions of the shared use path with new transit shelters at the three existing GBT transit stops at Ryders Lane, the Sikorsky Gate #1 area and the Sikorsky Gate #2 and Warner Hill intersection. GBT provided guidance that bus stop locations should be located immediately adjacent to through travel lanes and downstream of intersections whenever possible. The rendering of the new transit shelters being installed by Greater Bridgeport Transit is shown.



Courtesy of Susan Rubinsky Marketing

Implementation Plan

The implementation plan identifies and prioritizes recommended improvements that can be planned, programmed, and built within the 20 year study horizon. The implementation plan includes the overall project costs, complexity, and benefit. This section of the report seeks to provide the Town of Stratford, CTDOT, and METROCOG a menu of projects with guidance for implementation over time, based on a series of qualitative and quantitative metrics.

The Transportation Improvement Program includes 9 improvement projects that address the roadway network, transit system, and pedestrian and bicycle needs in the study area. Specifically, the Study recommends physical roadway improvements at 6 locations along the corridor and identifies numerous improvements to enhance transit, pedestrian and bicycle access to the roadway system through construction of new and improved facilities for alternative mode travelers. For summary purposes, these alternative transportation mode recommendations are grouped as one combined project for each mode, however the Study recognizes that implementation of the improvements will likely occur as the result of many separate projects as funding from various sources becomes available.

The priority for each of the recommended improvement projects has been established based on two primary criteria: project need and local interest to implement the recommended improvements. Project need is based on the urgency 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, address accessibility, or mitigate a current mobility or operational issue. The project priority categories are defined at Short-Term, Mid-Term, and Long-Term based on the criteria described in Table ES-6.

TABLE ES-6

Summary of Project Need Priority Metrics

Project Priority	Project Characteristics
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
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 improvement to enhance transportation system.
Short-Term	• Project addresses an urgent safety issue • Project intended to address existing operational deficiency • Project addressed a deficiency in accessibility that has been identified as a local concern

Table ES-7 summarizes the implementation plan recommendations on a project-level basis. A review of the implementation plan indicates that there are 5 projects that have been identified as Short-Term priorities, 2 projects that that have been identified as Mid-Term priorities, and 2 projects that have been identified as Long-Term priorities.

Table ES-7

Summary of Projects in Implementation Plan

	Project Description	Project Priority	Project Complexity	Project Cost
C	Sikorsky Gate #1 Intersection Realignment Improvements	Short-Term	High	$6,000,000
F	Route 110 (Main Street) at Sikorsky Gate #2 and Warner Hill Road Intersection Improvements	Short-Term	Low	$400,000
B	Route 110 (Main Street) at Route 15 Northbound Ramps Intersection Improvements	Short-Term	Moderate	$1,475,000
G3	Transit Accommodation Improvements	Short-Term	Low	None
G1	Pedestrian and Bike Accommodations Improvements (Shared Use Path)	Mid-Term	Moderate	$1,470,000
A	Route 110 (Main Street / River Road) at Main Street – Putney Intersection Improvements	Mid-Term	Moderate	$1,425,000
G2	Pedestrian and Bike Accommodations Improvements (Merritt Parkway Overpass Tunnel)	Long-Term	High	$3,250,000
E	Alltown Mobil / Oronoque Plaza Area Improvements	Long-Term	Low	$415,000