Section 3
Assessment of Future Conditions

The assessment of future conditions in the Study Area is conducted to develop a forecast of potential traffic growth and volumes that will travel on the study area roadways and measure the impacts in the future design year. Based on the traffic projections, an traffic operations analysis is conducted to identify the effects of the traffic growth and provide the basis for the development of transportation improvement alternatives to mitigate the impacts within the Study Area.

The Route 3 Traffic and Development Study conducted a review of potential land use changes in the study area that could contribute to local traffic growth and CRCOG, using a travel demand model maintained by CRCOG, forecast regional traffic volumes to the 2030 Design Year and provided specific traffic for the morning and afternoon peak hours in the study area. The forecast 2030 traffic volumes were used in traffic analyses that determined how the existing transportation network would function under 2030 traffic loading. These analyses provide the framework for the identification of areas of future operational concerns in the Study Area and advise State, regional, and local leaders and stakeholders of expected issues that may arise over the study time horizon.

3.1 Potential Future Development

The consultant team used several steps to identify parcels within the study area that have potential for future retail, commercial or industrial development. Using aerial photographs and parcel maps, the team surveyed the study area and recorded vacant and underutilized parcels. The team also met with the Town Planner and Town Economic Development Director to identify parcels for which development plans have been submitted or discussed. Interviews were conducted with key businesses and property owners within the Study Area to identify additional plans for future development, particularly for parcels that already housed some buildings, but had substantial land available for additional development. The findings from the site analysis and interviews were compiled in a database that included parcel map and lot number, address, acreage, and zoning.

A listing of all vacant parcels within the study area was developed based on the Town's CAMA database. There are 72 parcels comprising 459 acres of vacant land in the Study Area, including one 75 acre parcel of municipal parkland. A total of 51% (235 acres) of the vacant land is zoned R20, while 28% (127 acres) is zoned Office Park, 13% (61 acres) Business Park, and 5% (22 acres) Commercial.[6] [7] Table 3-1 summarizes the total vacant land (acres) in the Study Area.

[6] Note that the land use designation may not always reflect the zoning. In some cases, the land use designation reflects the ownership of the parcel. For example, one parcel zoned R20 but designated as commercial vacant is owned by Rose Cemetery. Several parcels owned by public utilities and with a land use designation of public utility are located within the R20 zone. The single parcel designated as residential vacant is a vacant parcel within a subdivision. Most vacant residential land is designated raw acreage.

TABLE 3-1

Study Area Vacant Land (Acres) by Land Use Designation and Zoning District

Land Use Designation	Zoning District					Total
	BP	C	OP	R20	Unspecified	
Commercial Land	0	13	81	4	0	98
Industrial Vacant	32	0	0	0	0	32
Municipal Park	0	0	0	75	0.9	76
Municipal Vacant	0	4	0	1	0	4
Open Space	0	0	0	8	12	20
Public Utility	0	6	24	12	0	42
Raw Acreage	0	0	4	36	0	40
State Hwy Taking	0	0	0	28	0	28
State Vacant	0	0	9	21	0	30
Tillable	29	0	10	42	0	81
Vacant Residential	0	0	0	1	0	1
Woodland	0	0	0	8	0	8
Total	**61**	**22**	**127**	**235**	**13**	**459**
Percent of Total	**13%**	**5%**	**28%**	**51%**	**3%**	**100%**

Source: Rocky Hill CAMA Database; Tighe & Bond; Rocky Hill Assessor's Office; Susan Jones Moses and Associates

The inventory of potential development parcels was screened to eliminate the majority of parcels zoned for residential use, parcels that have significant natural resources coverage, parcels used for highway takings, parcels with utility easements, and parcels that are too small to accommodate commercial development as per the zoning code. Thirty five parcels were eliminated, and the remaining thirty seven parcels were compared to the parcel database developed based on site work and interviews. Parcels identified as potential commercial development sites through the analysis of vacant parcels that were not identified through the site analysis and interviews were added to the database of potential development parcels.

Figure 3-1 shows the location of all parcels that have been evaluated for potential future commercial/industrial development within the Rocky Hill portion of the study area. Table 3-2 shows the number of parcels and acreage by zoning district for the potential development parcels.

[7] One notable parcel not listed as vacant is L022 Brook Street (Parcel ID 17-331), located immediately east of the Burris property. This 86.15 acre parcel is zoned R20 and currently owned by Gardner Nurseries. Its land use designation is Industrial because of 2,660 square foot building on the property that is used for offices for the farming operation. The future use of this parcel will be important to residents to the east, as well as to the levels of traffic on Brook Street.

TABLE 3-2

Total Land with Potential for Commercial/Industrial Development by Zoning District

Zoning	Parcels	Acreage
OP	23	292
BP	15	129
COMM	13	30
R-20	5	110
Total	**56**	**561**

Source: Town of Rocky Hill CAMA Database; SJM and Associates

Conversely, several parcels were determined not likely to develop into commercial or industrial sites over the next 20 years. These parcels are also identified on Figure 3-1.

Currently, there are 292 acres of vacant or underutilized land that is zoned Office Park (OP) within the Rocky Hill portion of the Study Area. In addition, there are 129 acres of land zoned Business Park (BP) within the Rocky Hill study area that have some potential for development or redevelopment. The OP and BP land includes 92 acres on three parcels of land held by Burris Logistics, Henkel, and Sysco, which are partially developed but retain some development expansion potential. There are 30 acres of commercially zoned land primarily along Route 3 that are vacant, or which currently are occupied by single family homes surrounded by commercial uses. These single family homes could well convert to office or retail uses over the next twenty years. Only five parcels zoned R-20 were included as potential sites for future commercial/industrial development, one is the site of the new State Lab. This site was under development at the time of the assessment. Three are small single family lots. The final R-20 site is the 86.2 acre site on Brook Street that abuts the Burris property to the west. While the Town has expressed interest in retaining this site for residential use, it is included as a potential development site for further review because of neighborhood concern.

OP zoning allows research and development and light assembly, and BP zoning allows manufacturing, assembly, and warehousing and distribution. Much of the developable land zoned OP is within existing office parks such as Corporate Ridge and Corporate Place. These parcels will likely develop with office uses. The BP parcels are located along the south side of Brook Street and on either side of Route 3 south of I-91. Burris Logistics has approved plans to expand by 248,075 square feet at some time in the future.[8] Sysco has capacity within its existing facility to double its operations, and plans to expand by no more than 60,000 square feet (including additional freezer space) in the foreseeable future.[9] According to the Economic Development Director for the Town of Rocky Hill, the primary site for future industrial development within the Town is on two parcels of OP zoned land south of Belamose Avenue (and the existing industrial park) to the Cromwell town line totaling 114 acres. These are outside the Study Area, but are

[8] John Harrington, General Manager, Burris – January 4, 2011 interview

[9] Bob McMaken, President and Jeff Sault, VP of Operations – Sysco CT – January 5, 2011 interview

included in the database and on the map because vehicles accessing these parcels might utilize study area roadways.

The Town of Cromwell is completing plans for a 96 acre industrial park just south of the Cromwell-Rocky Hill town line on the west side of Route 3. At build-out, the park is expected to have an estimated 210,000 square feet of flex, distribution, and warehouse space. At the time of the initial analysis the Town of Cromwell expected the park to be under development within five years. However, through the course of the study development, Town of Rocky Hill staff have noted that plans for the development of the industrial park have stalled due to local approval and agreements with abutting property owners. While these issues may delay the development of the office park, the potential for this development to occur within the study horizon still exists. Cromwell also has several hundred acres of industrially-zoned land east of Route 3 and south of the Rocky Hill town line. According to Town of Cromwell officials, this land has development constraints, including wetlands, endangered species, other natural resources and potential contamination. Because of these constraints, this land will likely be built out over time as an office park similar in character to Corporate Ridge. The land is currently in private ownership and much of it is farmed. There are no immediate plans for any development on this land. However, in total, the Town of Cromwell plans to add 1.3 million square feet of office/flex space over the next twenty years, including at both the proposed industrial park and on the land east of Route 3. Development in Cromwell, as well as the twenty year build-out potential of vacant and underutilized land within the Rocky Hill portion of the study area will be evaluated as part of Task 3.

3.2 2030 Traffic Volume Forecasts

In support of the Future Condition Assessment, future traffic volumes were forecast for the 2030 Design Year. The traffic projections consider both the anticipated changes in land use and development in the Study Area, and the expected expansion of regional trips that traverse the study area. The growth in the regional trips is driven by factors including population growth, new development, land use expansion, increases in overall development density, and employment growth.

Independent methodologies were utilized to forecast two scenarios for 2030 Design Year Traffic volumes. The 2030 Future Traffic Volumes were estimated using CRCOG's regional transportation model, based on employment data inputs from the State Labor Department and US Census Bureau. A second set of future traffic volumes, the 2030 Alternate Traffic Volumes, were also developed using CRCOG's regional transportation model, but this time the traffic projections were based on employment inputs developed from an independent study of Rocky Hill and Connecticut's North Central Labor Market Area development trends and forecasts. Both sets of volumes were reviewed by ConnDOT with the **determination that the 2030 Future traffic volumes are approved for use in identifying the transportation needs and deficiencies**, and ultimately serve as the basis of the planned improvements in the Study Area and described in this report. A summary of the 2030 Alternate Traffic Volumes appear in the Future Condition Technical Memorandum that was published during the conduct of the study and available from the Town or CRCOG. For comparison purposes, weekday traffic volumes along Cromwell Avenue (Route 3) under the 2030 Future projections are projected to expand by 21% to 33% during the morning peak hour and 22% to 34% during the afternoon peak hour. The 2030 Alternate Traffic Volumes are forecast to be modestly higher than the 2030 Future Traffic Volumes along Cromwell Avenue (Route 3), with growth rates along Cromwell Avenue ranging from 34% to 44% during the

morning peak hour and between 33% and 46% during the afternoon peak hour. Traffic volumes along Main Street and Brook Street (between Henkel Way and Cromwell Avenue) are anticipated to grow by larger percentages, however will not approach the volumes that the heavier traveled stretches of Cromwell Avenue and West Street currently experience. A comparison of the two future traffic volume scenarios relative to the 2010 existing traffic volumes is presented in Table 3-3. However, going forward only the 2030 Future traffic volumes were used to develop recommendations to mitigate the anticipated effect of the travel demand increases.

TABLE 3-3

Morning Peak Hour Traffic Growth Summary

	Morning Peak Hour Volume (Vehicles)			Projected Traffic Growth (%)	
Location	**2010 Existing**	**2030 Future**	**2030 Alternate**	**2030 Future**	**2030 Alternate**
Cromwell Ave (Rte 3)					
South of Brook Street	1,322	1,760	1,900	33.1%	43.7%
South of West St	1,806	2,200	2,440	21.8%	35.1%
South of Elm St	1,462	1,910	1,980	30.6%	35.4%
South of New Britain Avenue	1,493	1,980	2,100	32.6%	40.6%
North of New Britain Avenue	733	980	1,020	33.7%	39.2%
West of New Britain Avenue	972	1,260	1,300	29.6%	33.7%
West Street (Rte 411)					
East of Cromwell Avenue	2,046	2,375	2,500	16.1%	22.2%
Between I-91 Ramps	2,148	2,550	2,625	18.7%	22.2%
East of I-91 NB Ramps	2,220	2,710	2,710	22.1%	22.1%
East of Gilbert Road	821	875	875	6.6%	6.6%
West of Main Street	543	575	575	5.9%	5.9%
Brook Street					
East of Cromwell Avenue	624	1,050	1,075	68.3%	72.3%
West of Henkel Way	486	900	950	85.2%	95.4%
Main Street (Rte 99)					
North of West Street	941	1,300	1,375	38.1%	46.1%

TABLE 3-4

Afternoon Peak Hour Traffic Growth Summary

Location	Afternoon Peak Hour Volume (Vehicles)			Projected Traffic Growth (%)	
	2010 Existing	2030 Future	2030 Alternate	2030 Future	2030 Alternate
Cromwell Ave (Rte 3)					
South of Brook Street	1,585	2,075	2,250	30.9%	42.0%
South of West St	2,279	2,790	3,075	22.4%	34.9%
South of Elm St	2,040	2,665	2,770	30.6%	35.8%
South of New Britain Avenue	1,946	2,575	2,850	32.3%	46.4%
North of New Britain Avenue	896	1,200	1,270	33.9%	41.7%
West of New Britain Avenue	1,414	1,820	1,875	28.7%	32.6%
West Street (Rte 411)					
East of Cromwell Avenue	2,359	2,720	2,875	15.3%	21.8%
Between I-91 Ramps	2,354	2,760	2,850	17.2%	21.1%
East of I-91 NB Ramps	2,265	2,699	2,725	19.2%	20.3%
East of Gilbert Road	911	963	970	5.7%	6.5%
West of Main Street	699	720	715	3.0%	2.3%
Brook Street					
East of Cromwell Avenue	599	1,025	1,050	71.1%	75.3%
West of Henkel Way	574	1,083	1,120	88.7%	95.1%
Main Street (Rte 99)					
North of West Street	1,287	1,791	1,900	39.1%	47.6%

Figure 3-2 and Figure 3-3 illustrate the historical average daily traffic volumes along Cromwell Avenue and West Street and indicate the “straight-line” forecast rate of growth from 2010 to 2030 based on the 2030 Future Traffic Volumes. Average Daily Traffic volumes along Cromwell Avenue are estimated to range from between 16,000 vehicles per day at the Cromwell-Rocky Hill Town Line to approximately 28,000 vehicles per day south of West Street, indicative of the volume of commuter traffic on Cromwell Avenue travelling to the Interstate 91 interchange on West Street, before decreasing to 22,000 vehicles per day at New Britain Avenue. Traffic volumes along West Street are estimated to continue to grow in the interchange area, with 25,000 vehicles per day to 28,000 vehicles per day forecast for the interchange area. The segment of West Street to the east of Corporate Ridge is forecast to experience minimal traffic volume growth between 2010 and 2030. Figures 3-4 and 3-5 illustrate the weekday morning and afternoon peak hour intersection turning movement volumes for the 2030 Future condition. In addition, Figures 3-6 and 3-7 summarize the projected traffic volumes under an alternative scenario where a new local roadway connection is provided between West Street and Elm Street. This scope of this recommendation is described in Section 4 of this report.

FIGURE 3-2

Cromwell Avenue Historical and Forecast Average Daily Traffic (2030 Future Traffic Volumes)

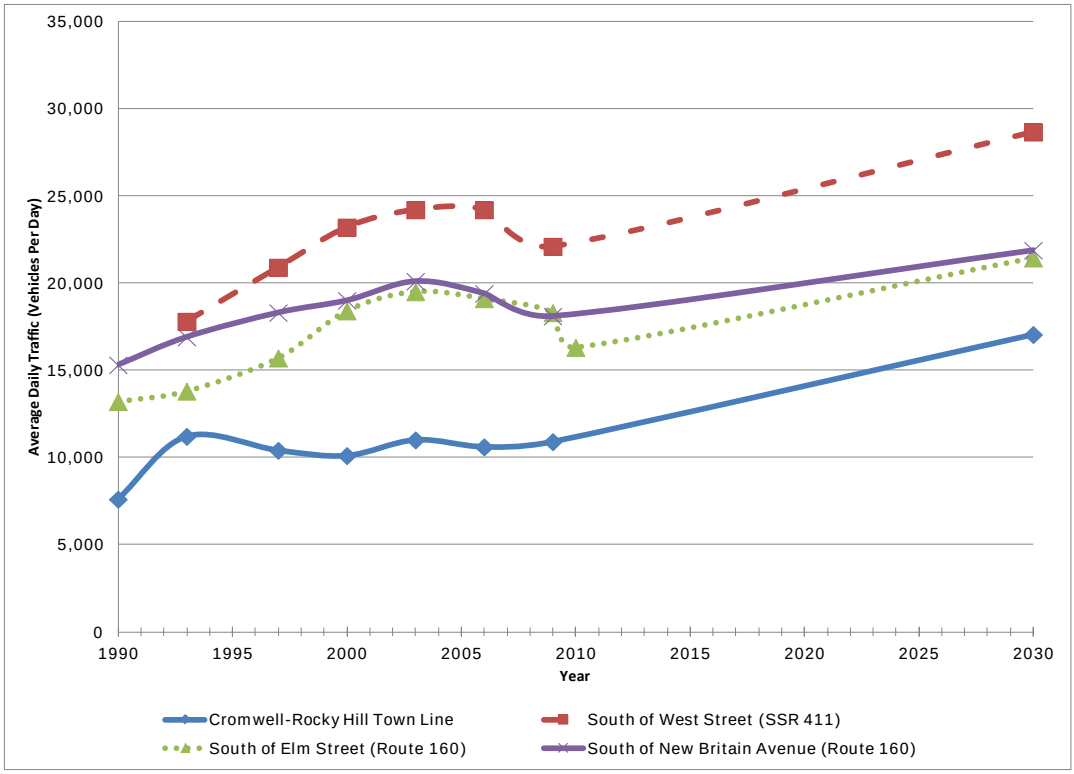
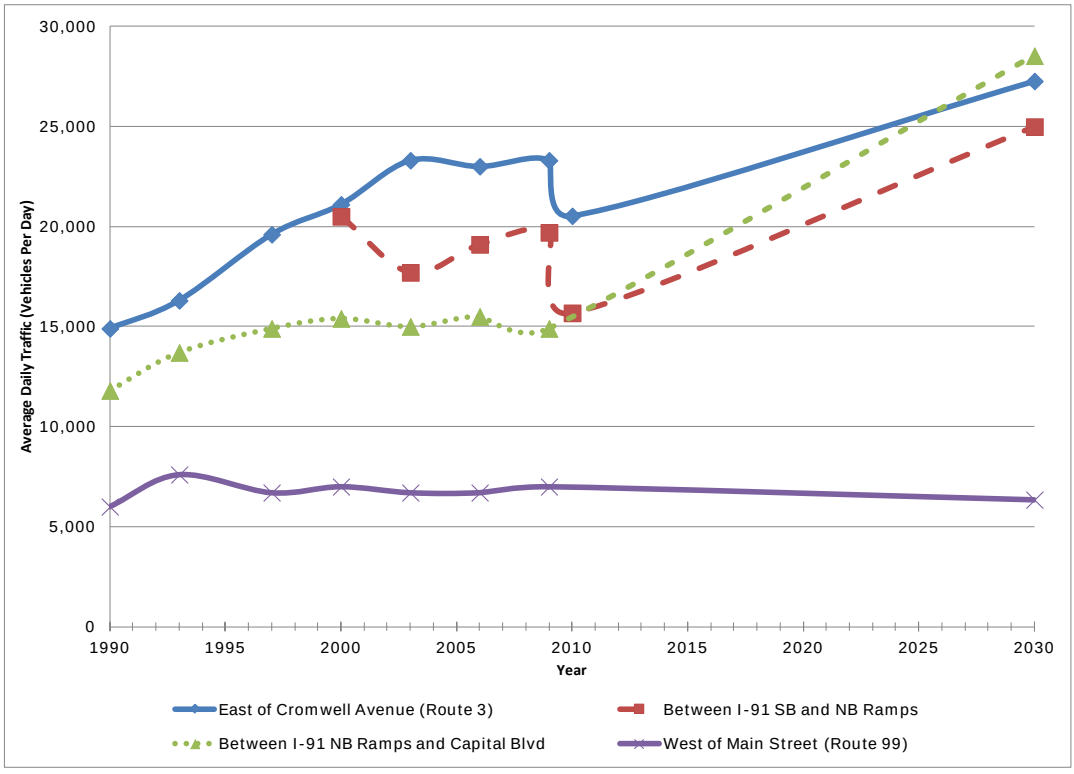


FIGURE 3-3

West Street Historical and Forecast Average Daily Traffic (2030 Future Traffic Volumes)



3.3 Future Traffic Analysis

The traffic operations analyses of 2030 Design Year traffic volumes are based on future traffic projection developed by CRCOG utilizing the CRCOG travel demand model. The following sections summarize the traffic analysis methodology and anticipated future traffic conditions for the existing transportation network under 2030 Future traffic volumes for the Study Area roadways and intersections. A detailed description of the analysis results is available separately in the Future Conditions Technical Memorandum.

3.3.1 Traffic Analysis Methodology

Future traffic operations during the morning and afternoon peak hours were analyzed to measure the effect of the projected traffic growth on the Study Area roadway network under the no-build condition. Traffic operations in terms of capacity and vehicle queuing at the sixteen study intersections were determined based on the premise that no improvements or changes were implemented between the 2010 Existing Condition and 2030 Design Year, i.e. an analysis of 2030 projected traffic volumes with existing roadway geometry, signal timing, and signal phasing. The capacity and queue analyses were computed using Trafficware's *Synchro plus SimTraffic 7 – Traffic Signal Coordination Software,* based on the *2000 Highway Capacity Manual* methodology.

The Highway Capacity Manual describes an intersection's qualitative operational condition by Level of Service (LOS). LOS is defined in the Highway Capacity Manual using grades A through F and is based on the average amount of delay experienced by a vehicle at an intersection. 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 per vehicle. Intersections with Levels of Service E and F operate with poor or failing conditions and typically warrant a more thorough review and possible improvement to mitigate the poor operating conditions.

In addition to Level of Service, queuing is another critical factor that needs to be considered when conducting an analysis of intersection operations. A vehicle queuing analysis is used to determine the length of the line of vehicles that are stopped on an approach to an intersection waiting to pass through. The determination of queue lengths for each approach movement is used to determine turn lane storage requirements, indicates when traffic in exclusive turn lanes may extend beyond available storage and block adjacent lanes, and can identify situations where traffic waiting to move through an intersection backs up to an extent where traffic operations at up-stream intersections are impacted. The analyses of the Study Area intersections reviewed the 95th percentile queue lengths, which are indicative of the queue length (in vehicles) that has only a 5-percent probability of being exceeded during the analysis time period. The 95th percentile queue length is a useful metric in determining the appropriate length of turn pockets. The results of the queuing analysis were one of the factors used to identify areas of concern and provide the basis for improvements. The results of the analyses are described in the following section.

3.3.2 2030 Future Traffic Operations

The morning and afternoon peak hour traffic volumes were analyzed under the 2030 Future Traffic Volumes and 2030 Alternate Traffic Volumes. The results of the capacity analyses are summarized in Table 3-5 through 3-7 including the 2010 Existing and 2030 Future Traffic Volume projections during the morning and afternoon peak hours. The tables describe intersection operations in terms of LOS and average vehicle delay (seconds per vehicle). Figure 3-8 illustrates the morning and afternoon overall intersection Level of Service for each of the study intersections under the 2010 Existing, 2030 Future Volumes. Intersections operating at an LOS A or B, indicating good to excellent operating conditions during a peak period are noted in green, intersections operating at LOS C or D are noted in yellow, and intersections operating at LOS E or F, considered poor to failing operations, are noted in red.

TABLE 3-5

Cromwell Avenue Peak Hour Traffic Operations Summary (2010 Existing vs. 2030 Future)

Morning Peak Hour Summary				
	2010 Existing Condition		2030 Future Condition	
Study Intersection	LOS	Avg. Delay (sec/veh)	LOS	Avg. Delay (sec/veh)
Cromwell Avenue at New Britain Avenue	C	31.0	F	113.1
Cromwell Avenue at Elm Street	B	18.8	D	51.5
Cromwell Avenue at France Street	C	25.3	A	5.9
Cromwell Avenue at West Street	D	41.3	E	65.2
Cromwell Avenue at West Side Market	A	3.2	A	4.2
Cromwell Avenue at Cold Spring Road	C	21.6	D	40.8
Cromwell Avenue at Brook Street	A	7.4	B	14.5
Cromwell Avenue at Inwood Road	A	4.6	A	5.9
Afternoon Peak Hour Summary				
	2010 Existing Condition		2030 Future Condition	
	LOS	Avg. Delay (sec/veh)	LOS	Avg. Delay (sec/veh)
Cromwell Avenue at New Britain Avenue	C	26.7	F	118.3
Cromwell Avenue at Elm Street	D	47.4	F	107.4
Cromwell Avenue at France Street	B	18.6	D	36.5
Cromwell Avenue at West Street	D	39.2	D	54.5
Cromwell Avenue at West Side Market	A	6.8	A	7.6
Cromwell Avenue at Cold Spring Road	B	11.9	D	38.2
Cromwell Avenue at Brook Street	B	15.2	D	35.1
Cromwell Avenue at Inwood Road	B	16.6	C	25.8

Under the 2030 Future scenario, intersection operations deteriorate from the 2010 Existing condition because of the higher projected traffic volumes. Some of the signalized intersections will operate at overall LOS E or F during the peak hours, with significant delays at the critical approaches. The queue length at the critical movements will also be lengthened. The most impacted intersections include the Route 160 intersections (New Britain Avenue and Elm Street) at Route 3 (Cromwell Avenue), the West Street and Route 3 intersection, the I-91 Ramps (both northbound and southbound) intersections, the West Street and Capitol Boulevard intersection, and the West Street and Main Street (Route 99) intersection. Other intersections will also operate at reduced LOS of C and D during the peak hours. Under the 2030 Alternate Traffic Volume scenario, the operating condition would further deteriorate with increased traffic demand.

TABLE 3-6

West Street Peak Hour Traffic Operations Summary (2010 Existing vs. 2030 Future)

Morning Peak Hour Summary				
	2010 Existing Condition		2030 Future Condition	
Study Intersection	LOS	Avg. Delay (sec/veh)	LOS	Avg. Delay (sec/veh)
West Street at Corporate Place	A	4.5	A	5.3
West Street at I-91 Southbound Ramps	C	26.0	E	56.4
West Street at I-91 Northbound Ramps	C	27.6	E	61.2
West Street at Capital Boulevard	B	11.2	E	71.2
West Street at Gilbert Avenue	A	8.7	A	9.8
West Street at ConnDOT / VA Facility	A	4.2	A	4.9
West Street at Main Street	C	26.6	D	40.6
Afternoon Peak Hour Summary				
	2010 Existing Condition		2030 Future Condition	
	LOS	Avg. Delay (sec/veh)	LOS	Avg. Delay (sec/veh)
West Street at Corporate Place	B	10.8	B	13.5
West Street at I-91 Southbound Ramps	C	30.4	E	70.6
West Street at I-91 Northbound Ramps	B	14.4	B	16.8
West Street at Capital Boulevard	C	25.3	E	62.0
West Street at Gilbert Avenue	A	7.3	A	7.8
West Street at ConnDOT / VA Facility	A	6.8	A	7.7
West Street at Main Street	E	67.1	F	155.1

TABLE 3-7
Brook Street Intersections Morning Peak Hour Traffic Operations Summary

Morning Peak Hour					
		2010 Existing		2030 Future	
Street	Lane Use	LOS	Avg. Delay (sec/veh)	LOS	Avg. Delay (sec/veh)
Brook St	<EBT	A	5.8	A	7.4
Brook St	WBT>	A	0.0	A	0.0
Henkel Way	SBL	B	14.6	E	35.3
Henkel Way	SBR	B	10.5	C	17.4
Afternoon Peak Hour					
		2010 Existing		2030 Future	
Street	Lane Use	LOS	Avg. Delay (sec/veh)	LOS	Avg. Delay (sec/veh)
Brook St	<EBT	A	4.0	A	5.3
Brook St	WBT>	A	0.0	A	0.0
Henkel Way	SBL	C	16.7	F	179.9
Henkel Way	SBR	B	10.6	C	18.7

3.3.3 Future Areas of Concern

The following intersections will operate at a Level of Service E or F under the 2030 Future projected traffic volumes and warrant a review to identify measures to mitigate the effect of the forecast travel demand in the Study Area:

Cromwell Avenue (Route 3) at West Street (SSR 411)

- Intersection operates at LOS E during the morning peak hour.
- The southbound left turn volume and the westbound volumes (all movements) exceed the single southbound left turn lane, and the three westbound travel lanes capacities.
- The West Street intersection traffic control signal operates with the France Street signal in a cluster configuration, this operational configuration further reduces the intersection capacity. In addition, the signal runs as an isolated intersection without coordination with the Cromwell Avenue nor West Street corridor systems. The long cycle length further exacerbates the delay and queue lengths at this location, which are currently especially problematic on the southbound approach where queued vehicles routinely block egress from France Street, including access to the southbound left turn lane by France Street traffic.

Cromwell Avenue (Route 3) at France Street

- Intersection operates at LOS E during the morning peak hour.
- The higher volume France Street eastbound right turn traffic is regularly blocked by the eastbound left or through traffic on the single lane approach.
- The intersection operates with the West Street intersection as a cluster configuration, this setup reduces the intersection capacity. In addition, the signal runs as an isolated intersection without coordination with neither Cromwell Avenue nor West Street Corridor. The long cycle length further exacerbates the delay and queue lengths at this location.

Cromwell Avenue (Route 3) at Elm Street (Route 160)

- Intersection operates at LOS F during the afternoon peak hour.
- Westbound lane configuration provides an exclusive left turn lane, a shared through/left turn lane, and a right turn lane; the lane configuration relegates the eastbound and westbound movements to operate under split-phasing configuration, reducing the overall intersection capacity.
- Southbound left turn can only proceed during the protected phase causing additional delays for that movement.

Cromwell Avenue (Route 3) at New Britain Avenue (Route 160)

- Intersection operates at LOS F during both the morning and afternoon peak hours
- Eastbound right turn lane is short and its usage is blocked by the through and/or left turn traffic reducing the intersection capacity.
- Northbound left turn volumes exceed the single northbound left turn lane capacity.

West Street (SSR 411) at I-91 Southbound Ramps

- Intersection operates at LOS E during both the morning and afternoon peak hours
- During the morning peak hour, the intersection suffers long delay and queue due to the heavy eastbound through traffic orientated towards the I-91 northbound ramps, and the heavy southbound left turn traffic towards Capitol Boulevard. Long queues are expected on the approaches.
- During the afternoon peak hour, the intersection suffers long delay and queues due to the heavy eastbound through traffic towards the I-91 Northbound ramps, and the heavy westbound left turn traffic onto I-91 Southbound. Long queues are expected on the approaches.

West Street (SSR 411) at I-91 Northbound Ramps

- Intersection operates at LOS E during the morning peak hour.
- The intersection suffers long delay and queue due to the heavy eastbound through traffic and the heavy northbound right turn traffic towards Capitol Boulevard.

West Street (SSR 411) at Capital Boulevard

- Intersection operates at LOS E during both the morning and afternoon peak hours
- During the morning peak hour, the eastbound right turn traffic arriving at Capital Boulevard from the I-91 Interchange is significant and the volume exceeds the channelized free right turn lane capacity.
- During the afternoon peak hour, the northbound left turn departing Corporate Ridge traffic heading towards the I-91 Interchange is significant and exceeds the overall approach capacity during the peak hour.

West Street (SSR 411) at Main Street (Route 99)

- Intersection operates at LOS F during the afternoon peak hour.
- The offset West Street westerly leg and Forest Street easterly leg restricts the signal to operate the eastbound and westbound approaches on two separate phases, reducing the intersection efficiency.
- The heavy northbound and southbound through traffic on Main Street restrict the volume of traffic that is able to turn left onto the side streets.

Brook Street at Henkel Way

- Intersection operates at LOS E during the afternoon peak hour.
- The two-way stop sign control operation, where Henkel Way heading south is operating under stop sign control, and experiences long delays during the afternoon peak hour. The increase in delay is directly attributable to the significant increase in projected traffic volumes on the western portion of Brook Street under the 2030 Design Year traffic volumes, which reduces the number of available gaps for turning vehicles leaving Henkel Way.