



MICHAEL LOMBARDO  
CHIEF OF POLICE

POLICE DEPARTMENT  
**Town of Trumbull**  
CONNECTICUT 06611

158 EDISON ROAD  
TRUMBULL, CONNECTICUT 06611

P (203) 261-3665  
F (203) 452-5162

POLICE COMMISSION

RAYMOND G. BALDWIN, JR., CHAIRMAN  
ANGELO MAGLIOCCO, VICE CHAIRMAN  
JOHN VAZZANO, SECRETARY  
LISA LABELLA, COMMISSIONER  
ALBERT ZAMARY, COMMISSIONER  
CHRIS TREFZ, COMMISSIONER

---

**AGENDA**

**Trumbull Police Commission Meeting**  
Tuesday, June 9, 2020 at 6:00 PM

Join the meeting online:

<https://zoom.us/j/99323022162?pwd=WmlrOXlhU2JSVmdUbHZLT3ZhWEk0dz09>

Webinar ID: 993 2302 2162

Password: 827755

Join by telephone: (301) 715-8592 / Webinar ID: 993 2302 2162

1. Call Meeting to Order
2. Pledge Allegiance and Moment of Silence
3. Public Comment
4. Approval of May 12, 2020 Police Commission Meeting Minutes
5. Correspondence
6. Chief's Report
  - Operation
  - Traffic
  - Personnel
  - Legal Update – Discussion on recent protest
7. Old Business
  - Discussion of 5085 Main Street – John Knuff - Hurwitz Sagarin Slossberg & Knuff, LLC
  - Trumbull Police Station Renovation Update
8. New Business
9. Adjournment

# Item 4



# Town of Trumbull

## TRUMBULL POLICE COMMISSION

158 EDISON ROAD  
TRUMBULL, CONNECTICUT 06611

P (203) 261-3665  
F (203) 452-5162

## POLICE COMMISSION

RAYMOND G. BALDWIN, JR., CHAIRMAN  
ANGELO MAGLIOCCO, VICE CHAIRMAN  
JOHN VAZZANO, SECRETARY  
LISA LABELLA, COMMISSIONER  
ALBERT ZAMARY, COMMISSIONER  
CHRIS TREFZ, COMMISSIONER

---

Trumbull Police Commission Meeting  
Trumbull Police Department  
May 12, 2020

### MINUTES

The Trumbull Police Commission meeting was called to order via virtual at 6:00 p.m.

Members present: Raymond G. Baldwin, Jr., Chairman  
Angelo Magliocco, Vice Chairman  
Lisa Labella  
Chris Trefz  
Al Zmary

Also Present: Chief Michael Lombardo  
Assistant Chief Glenn Byrnes  
Deputy Chief Leonard Scinto  
First Selectman Vicki A. Tesoro

Absent: John Vazzano

#### **Public Comment**

Opened Public Comment at 6:01 pm. There was no public comments. Public Comment was closed at 6:01 p.m.

#### **Comments from First Selectman Vicki A. Tesoro**

First Selectman Tesoro would like to thank all the First Responders, EMS, Fire and Emergency Management for keeping the community safe and healthy. Thank you again to all on behalf of the Community. First Selectman Tesoro also thanked all the other town employees how have been working diligently. First Selectman Tesoro indicated back in April the Town Council passed a Deferment Program for municipal property taxes. Board of Finance voted on the Town Budget and it now in the hands of the Town Council, they would be voting on May 21<sup>st</sup>. The Finance Department will set the Mill Rate sometime in June. She also indicated she began to open Town places within community. The town residents followed the restrictions and town guidelines and there has been great cooperation. Old Mine Park, Twin Brooks Park and Tashua Golf Course have been reopened. Recently she

added Great Oak Park and the Tennis Courts at Tashua Knolls. All these locations have been opened with restrictions and guidelines to keep the community safe. First Selectman thanks the Police and Park Rangers for assisting in monitoring the areas. Regarding the Town Governor Lamont is going to begin to reopen the state in phase approach, which will begin May 20<sup>th</sup>. The mall plans to reopen on May 20<sup>th</sup>. The mall has a detailed plan for reopening. Chief Lombardo will be involved with the discussion to assure the PD is comfortable with reopening plans and providing security as it has been done in the past. First Selectman Tesoro has formed two committees for the town to help in the process of re-opening the town. Trumbull Government Operations Recovery Committee which is in the process in preparing a detailed plan to re-open town hall and other facilities in a systematic and orderly safe manner to protect town employees and the public. The committee is doing a great job and there has been no designated time of when Town Hall will re-open. The other Committee, Long Term Recovery Committee that will be doing specifically in the phase reopening of businesses and commercial centers throughout the town. There will be another virtual Town Hall meeting on May 19<sup>th</sup> at 3 p.m. First Selectman commented that she would like to continue to enforce social distancing even with the reopening of the town.

Chairman Baldwin applauded First Selectman Tesoro and her administration on how they have all handled this and for keeping the town safe and being cautious. The participation of the resident from the town, which has been helpful. Chairman Baldwin believes the numbers are less than surrounding towns he believes it is due to the adhering to the regulations of the Governors Officer and her Office.

First Selectman thanked the Chairman but indicated that she does not do this alone; she has great people that she works with every day, town leaders and department heads. First Selectman indicated that Megan Murphy shared with her that other towns in the state are looking at Trumbull as an example as how we have kept the town running smoothly. That is credit to all of those who work for the town.

#### **Approval of the March 10, 2020 Police Commission Meeting Minutes**

Motion made to accept the Police Commission Meeting Minutes of March 10, 2020 as presented. Motion made first by Zmary, seconded by Labella. There was no further discussion. Motion passed unanimously.

#### **Chief's Report**

##### **Correspondence**

Letter from Trumbull Resident whose car was involved in a hit and run at Trumbull Center. Officer Murphy followed up on investigation and the resident was appreciate of Officers Murphy's help.

Email from Lt. Rhew of the Stratford Police Department thanking officers Bartosik and Anderson as they assisted them with their monthly training on Tactical Casualty Care.

### **Operations**

Chief Lombardo reviewed the Calls-for-Service report for the month of March and April. He reported that no tickets or summons have been issued for social distancing or trespassing. Thanks goes to the Officers and especially the Dispatchers, as they are the ones that receive the calls first and send the officers to any of the calls received. The officers are doing a great job also as they are out there 24/7 going to every call. They are given personnel protective equipment to protect themselves. As we protect them, we are also protecting their families. Chief Lombardo thanked the officers and dispatchers again. The officers have minimal contact with the public. Should anyone from the public need to be in contact with the officer they are all to wear a mask.

The Motor Vehicle Enforcement report showed the MV Warning, DUI Arrests, MV Complaints and MV Arrests. For the month of April and March, the totals have decreased as expected due to the pandemic. Thefts from MV slightly increased. Chief Lombardo reminded Trumbull residents once again to lock their vehicles, take your valuables and take your car keys.

Chief Lombardo reviewed the Criminal Incidents report for the month of March, which showed 72 cases, and for April it showed 46 cases.

Chief Lombardo reviewed the Incident Statistics Report for the month of April, which showed a total of 1892 alarms.

The Arrest Summary Report Adults showed there were 10 arrests for the month of April.

Chief Lombardo reviewed the Canine Officers Report. The report provided details of the types of calls they assisted with for April.

### **Traffic Division**

The Traffic Report showed 21 cases for the month of April Officer Siljamaki handled.

The officers have spent at different trail entries and parking areas to prevent improper and illegal parking. Tickets have been issued.

### **Detective Division Report**

Chief Lombardo reviewed the Detective Division Monthly Activity report for the month of April. The division opened one new case; one case was closed and have 20 cases still open. Chief Lombardo referenced a case on the monthly status report in which there was a vandalism shooting. There was no specific target. Due to the hard work from the officers and the Detective Division, they were able to find the person involved and get an arrest warrant. The handgun was also located.

### **Training**

Chief Lombardo reviewed the Training Report for the month of April. The report showed the type of training and the officers who attended the training and some of the classes that were canceled due to COVID-19. The report also showed the type of community policing events the officers took part of, which have been the Birthday Parades. EMS and Fire have also taken part of these parades. It has been a great success and morale booster for the families and children due to not being able to have a party.

### **Cadet Report**

Chief Lombardo reviewed the Cadet Activity Report for the month of April, there was no activity.

### **Sick/Injury Report**

Chief Lombardo reviewed the sick/injury report for the department for April. Chief Lombardo shared with the Commission that there have been several officers that have had to quarantine due to the COVID-19 exposure, but he was happy to report none of the officers tested positive. There is one officer who is on sick leave due to pre-existing conditions and there was concern of him becoming ill.

### **Budget**

Chief Lombardo reviewed the Budget Report as of April 30, 2020. The overtime account has reduced about 3.6%. Chief Lombardo believes the Department will end the year within budget for the seventh year. He does not believe special appropriation will be requested and he is very happy to report that.

### **Legal Update**

COVID-19, the Department has been keeping the officers on the field away from contact with the community for their safety and from other personnel. The goal is to keep the officers as healthy as possible since the beginning of the pandemic. The officers have been provided personal protective equipment, sanitizer for their vehicles, and sanitizer for their hands. The Police Department is cleaned every day. The building is being kept as secure as possible. The public is not entering the building for any reason. There is an interview room, which is outside the front lobby if needed. The building has become more secure than in the past. Any vendor that is entering the building to do any work has to wear a mask. Even the officers have to wear a mask when inside the building. The department continues to work closely with EMS and receives as much information from Lucy Bango. Officer Fedor is in contact with St. Vincent's Center as they provide the best method to keep our officers safe. Chief Lombardo is extremely proud of the work the officers have been doing out on the field and the Dispatchers who are the call takers for any emergency.

## **Old Business**

### **Trumbull Police Station Renovation Update**

Commissioner Labella indicated there would be a meeting on Thursday, May 14<sup>th</sup> to review invoices. The Committee met in March right before the COVID-19 shutdown. The work at the Police Station has continued.

AC Byrnes reported that the completion of the Police station renovation project is getting close. The work in the building has continued there has been no interruptions considering what is occurring.

Commissioner Labella commented that there has been conversations with neighbors on Koger Road regarding the HVAC System and the Lighting voicing their displeasure. Ms. McGannon from the First Selectman's office has been working with AC Byrnes regarding the concerns from the neighbors. Some of this might be mitigated with placing some fencing around the HVAC System. There will be other discussions on how to mitigate the concerns. There could be a delay due to the paving that will be done in the parking lot. They do not want there to be any damage to the area of the HVAC System. The neighbors are being kept informed. Commissioner Labella informed the Commission that the project is still within the budget.

Chairman Baldwin thanks Commissioner Labella and AC Byrnes for all their work on the project.

## **New Business**

### **Discussion and Consideration of July 1, 2019 Salary Increase for Chief Lombardo**

Chairman Baldwin indicated that the July 1, 2019 salary adjust was held off until the Trumbull Police Union Contract was settled and indicated it has been settled. Chairman Baldwin indicated it is his understanding the officers, Assistant Chief and Deputy Chief received a 2% salary increase. He indicated to be consistent with that agreement Chairman Baldwin would like to make a motion for a 2% salary increase be made for Chief Lombardo retroactive to July 1, 2019. Commissioner Trefz asked if 2% was the percent or if it could be different. Chairman Baldwin indicated that the Commission can decide on a different percent but he indicated that there was discussion on what the percentage should be. Chairman Baldwin indicated that at the June 9, 2020 Police Commission there would be another discussion of Chief Lombardo's July 1, 2020 salary increase.

Commissioner Labella indicated she is in support of the salary increase. Working with Chief Lombardo and the Department has been an honor. Commissioner Labella continues to be impressed with the ongoing efforts that the Chief makes not only to be accessible to the Community but also to be responsible to the community. There have been many new officers that have joined the Department, which requires a lot of managing, integration, there has been increasing diversity of the work force in many different areas that is very impressive. Commissioner Labella fully supports the salary

increase and appreciates all the hard work, dedication he shows to the Commission and to the Town of Trumbull.

Chairman Baldwin made a motion for Chief Lombardo to receive a 2% salary increase to be retroactive to July 1, 2019, seconded by Commissioner Zamary. There was no further discussion. Motion passed unanimously.

Chairman Baldwin wished all good health and wellbeing and will meet in June.

There being no further business, a motion was made by Commissioner Magliocco and seconded by Zamary to adjourn the meeting at 6:37 p.m. The motion passed unanimously.

Respectfully submitted,

Vivian Munoz  
Clerk of the Commission



SERGEANT  
PAUL COUTINHO

# POLICE DEPARTMENT TOWN OF TRUMBULL CONNECTICUT

158 EDISON ROAD  
TRUMBULL, CONNECTICUT 06611

P (203) 261-3665  
F (203) 452-1060

Deputy Chief Scinto,

In reviewing the proposed residential development of 5085 Main Street I foresee three issues that would impact the Trumbull Police Department in regards to traffic safety.

1. Allowing motorists to turn left from the northbound lanes of Main Street will result in motorists turning left in front of three lanes of oncoming traffic. This could potentially result in motorists doing so blindly to the outer lanes and cause collisions with the southbound motorists. A fair counterargument is that the same does apply in areas of White Plains Road, particularly in Trumbull Center, and Monroe Turnpike, with regards to Woodland Hills. However, I feel that the traffic volume in those areas of town are not as high as they are in the area of the Trumbull Shopping Park. To further this belief; the close proximity of this proposed development to the City of Bridgeport and Route 15 are much closer than the areas of Trumbull Center to Route 15 or 25 and Monroe Turnpike to Route 25. For this reason I foresee a backup in traffic especially during the peak rush hour times and during the high volume shopping times. To alleviate this I recommend not allowing the left turn from the northbound lanes and continuing the raised median from RT111/RT15 intersection to the intersection of RT 111/TSP entrance. The measurements mentioned above are as follows:
  1. From RT 15/RT 111 intersection to the proposed Main Street entrance (currently Whalburn Avenue) is approximately 267 feet.
  2. From the RT 111/RT 25 intersection to Woodland Hills is approximately 1308 feet.
  3. From the RT 15/RT 127 intersection to the Trumbull Center area is approximately 1 mile.
2. Currently there is a proposed exit/entrance into the development from Ring Road across from the north parking deck. The proposal shows this exit/entrance being two lanes (one in each direction) and being controlled by a sole stop sign for the exit. I believe this exit is going to be used more than proposed and that the exit should have a left and right turning lane and that it should be controlled by a traffic control light. This traffic control light could work in sequence with the proposed crosswalk and rectangular rapid flashing beacons.
3. I can see people "speeding" through the development to get around traffic on Ring Road. What thoughts do the developers have to alleviate motorists using the development as a cut through to and from the Trumbull Shopping Park? It appears that the gated access, such as the one for Avalon Gates, could work.

Respectfully submitted,

Sergeant Paul Coutinho

# Item 5



EMERGENCY MEDICAL SERVICE  
250 MIDDLEBROOKS AVENUE  
06611-3098

# TOWN OF TRUMBULL CONNECTICUT



Commission

"Treat Them at the Scene"

21 May 2020

Dear Chief Lombardo,

Trumbull EMS wishes to thank you for your incredible support during Pandemic COVID-19. Navigating this public health emergency has proven to be challenging not only for healthcare providers, but for our entire community.

Trumbull EMS is celebrating National EMS Week and this week, we are honoring our team members with a very meaningful challenge coin that celebrates their fearless and unwavering work ethic, which has been evident throughout this public health emergency.

We wanted to also share this coin with you. Your ongoing professionalism, advocacy and support for our entire community and our EMS Agency have been highlighted in the face of this emerging infectious disease environment.

Please accept this challenge coin as a token of our heartfelt gratitude for all you have done to support Trumbull EMS and the Town of Trumbull during Pandemic COVID-19. We salute our community partners and we thank you for your professionalism and your courage. We are, now and always, in this together.

With sincere thanks,

Chief Leigh Goodman  
EMS Director, Town of Trumbull

It is the mission of the Trumbull Emergency Medical Service to provide prompt and efficient pre-hospital emergency medical care and transportation to all in Trumbull who are in need.

Commission

TRUMBULL POLICE DEPARTMENT

**Town of Trumbull**

CONNECTICUT 06611



MICHAEL LOMBARDO  
CHIEF OF POLICE

158 EDISON ROAD  
TRUMBULL CONNECTICUT 06611

P (203) 261-3665  
F (203) 452-5162



**To:** Assistant Chief Byrnes

**From:** Chief Michael Lombardo, Chief of Police

**Date:** May 29, 2020

**Subject:** Annual Evaluation 2020

---

Assistant Chief Glenn Byrnes has been a member of the Trumbull Police Department since 1985. He has held his current rank since May of 2018. Prior to his current rank, as Assistant Chief, he was a Deputy Chief for most of 14 years.

Assistant Chief Byrnes duties consist of commanding the Detective Bureau, Professional Standards, Training, the Department's Budget, the facility and fleet, the Trumbull Police Substation at the Westfield Mall, the Records Division and other administrative services as directed by my office.

Assistant Chief Byrnes does an excellent job in commanding the Detective Bureau. His training and past experience as a fine investigator have served him well. He devotes time to the operations of the unit guiding a relatively new lieutenant in the overall operations of the Bureau. Included in the lieutenant's duties is being the Public Information Officer, which he is still learning, through Assistant Chief Byrnes.

The expenses that we incur throughout the year are under the general management of Assistant Chief Byrnes. He considers our needs for the future regarding spending trends and what is needed for each budget year. He does a superb job in this area of his duties. The position of assistant chief is naturally one of significant importance to any police department. Assistant Chief Byrnes not only fills the position well he performs at a very high level, always being exceptionally professional. I am confident in his abilities when I assign him to any task.

Assistant Chief Glenn Byrnes  
May 29, 2020  
Page 2

For more than three years now, we have been working from concept to almost completion of a major renovation project at police headquarters. I assigned Assistant Chief Byrnes to oversee this project and he has done so professionally, methodically and without hesitation. This was an even more difficult task for him than it normally should have been since the town did not assign anyone with construction knowledge for oversight of the project. A major deficiency of any project of this size.

When estimates were submitted for the project it was quickly learned that it was not funded appropriately from the beginning. The shortfall was more than one million dollars. Assistant Chief Byrnes went before three separate Town Boards seeking the additional funds and received unanimous approval from each. I mention this again, in this year's evaluation of Assistant Chief Byrnes, to highlight the importance of the funding approvals. If they were not approved, the project would not have occur. This would have had long-term negative effects to the operations of the Department. The Firing Range had been closed because of lead contamination and would have remained closed indefinitely. The Locker Rooms were to the point of almost deplorable to utilize and in appearance. Our Cellblock was of concern because prisoners were still secured behind exposed bars, which presented the Town with a liability issue if someone were to harm themselves, while in custody. Additionally, officers have had objects and bodily fluids thrown at them from prisoners within the cell.

The project is nearing completion and within budget. The final phase will be the replacement of the parking area and a redesign for officers and visitors parking.

I am confident that Assistant Chief Byrnes will continued to perform at the highest level of professionalism and leadership that I have come to appreciate throughout the years. He is a very critical member of my administration and I could not ask for a better second in command.

ML/vsm

Commission

TRUMBULL POLICE DEPARTMENT

**Town of Trumbull**

CONNECTICUT 06611



MICHAEL LOMBARDO  
CHIEF OF POLICE

158 EDISON ROAD  
TRUMBULL, CONNECTICUT 06611

P (203) 261-3665  
F (203) 452-5162



**To:** Deputy Chief Leonard Scinto

**From:** Chief Michael Lombardo, Chief of Police

**Date:** May 29, 2020

**Subject:** Annual Evaluation 2020

---

Deputy Chief Leonard Scinto has been a member of the Trumbull Police Department since 1984. He has held his current rank since May of 2018. Prior to his current rank, as Deputy Chief, he was a lieutenant for most of five years.

Deputy Chief Scinto's duties consists of commanding the Patrol Division and Support Services, which includes, Emergency Management, Animal Control, the Emergency Response Team, Bicycle unit, Traffic, Firearms and the Dive Team. Patrol is the largest Division of any police department and functions as the backbone of the agency delivering essential services to the community each and every day 24/7. Support Services are responsible for additional, specialized, resources to the Patrol Division, generally for field operations. Deputy Chief Scinto manages his responsibilities very well. He is always available to Patrol supervisors and commanders for consultation at all hours of the day. His prior experience and training, in Patrol, the Detective Bureau and Administration have allowed him to perform exceptionally. He is thoughtful of the needs of the people that work under him at the same time balancing the needs of the Department as a whole.

The Covid-19 pandemic has consumed most of what we do for most of three months now and there is very little relief expected in the near future. Deputy Chief Scinto is responsible for operational changes that are needed for officers in the field. He has adjusted the function of these officers keeping them safeguarded to the best of his ability. He seeks, and uses, best known practices as they become available and as they change. The pandemic is a very fluid situation, which requires the ability to make changes constantly. Deputy Chief Scinto has done this exceptionally well, implementing changes, immediately at the very beginning of the pandemic, at times, well before other public safety agencies had.

Deputy Chief Leonard Scinto

May 29, 2020

Page 2

Deputy Chief Scinto has worked through many challenges in Patrol, with newer officers initially in Field Training and now working alone, the pandemic concerns along with daily operations and essential services to the community. Our call volume, in some areas, may have diminish, however, officers are required to function in a different manner. They must social distance, wear masks, and much of what they do in the field is at a distance, if possible. He has managed these changes professionally and carefully. He has a well-rounded career, which has served him well as a deputy chief. He has the knowledge of what to expect from others and what is needed from Patrol if an investigation is forwarded to the Detective Division for follow up.

Promotions and shortages in Patrol has limited our ability to assign a second officer to the Traffic Unit. Deputy Chief Scinto was forced to work even more closely with the one Traffic officer making sure that we provide the best service that we can in this area.

Deputy Chief Scinto has been charged with keeping the Pequannock Valley, parks and school areas patrolled more than ever before. Many people are utilizing these areas for recreational activities and a greater police presence was needed. He has worked with Park Rangers and school officials assigning officers to patrol these areas on bicycle, motorcycle and ATV, and supplementing their resources with police officers. Many people have complemented on how pleased they were with our presence and assistance.

The ever changing environment was a challenge to all. However, Deputy Chief Scinto was unwavering in his ability to adjust and create as safe a working environment as he could.

Early on in the pandemic, it was obvious that Patrol officers would need to work a different schedule to be safer and have less contact with one another and the public. Like many other police departments, Deputy Chief Scinto worked with our administrative lieutenant and the scheduling sergeant to create a new work schedule for those assigned to Patrol. It has been in place now for approximately six weeks and functioning seamlessly.

Deputy Chief Scinto has been a very critical part of my administrative team. He has always given me his honest advice that turned out to be very sound. He has the respect and the pulse of the members of the Department who are subordinate to him. I have no doubt that he will continue to be one of my closet allies who will always consider what is best for the Department as a whole.

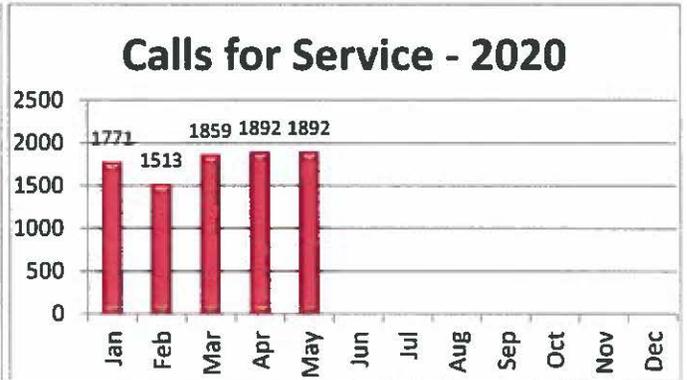
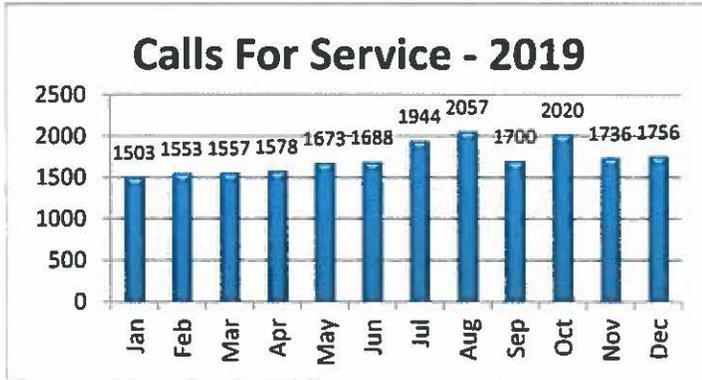
ML/vsm

# Item 6

## Trumbull Police Department 2019 Calls-For-Service

### TOTAL CALLS FOR SERVICE

Calls for Service	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2019	1503	1553	1557	1578	1673	1688	1944	2057	1700	2020	1736	1756	20,765
2020	1771	1513	1859	1892	1892								8,927



### Motor Vehicle Enforcement

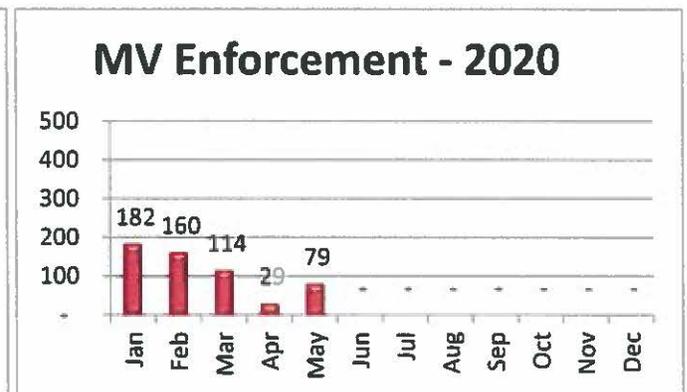
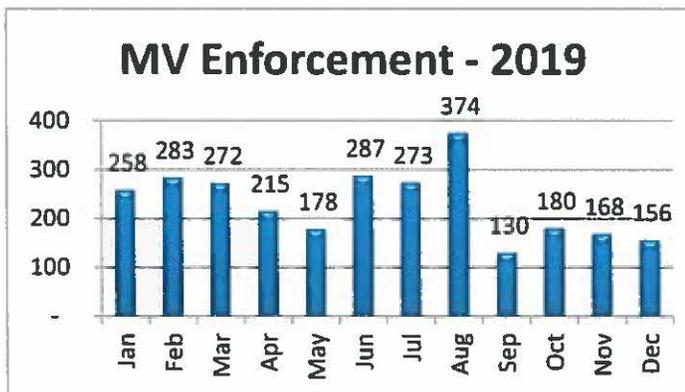
MV Enforcement	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
MV Warnings - 2019	99	137	137	78	85	137	135	125	50	110	98	67	1,258
2020	89	68	58	4	41								260

DUI Arrests - 2019	3	2	6	2	2	2	1	1	1	0	5	3	28
2020	1	0	1	3	0								5

MV Complaints - 2019	13	22	20	21	29	40	29	37	31	24	25	18	309
2020	24	18	19	20	31								112

MV Arrests - 2019	143	122	109	114	62	108	108	211	48	46	40	68	1,179
2020	68	74	36	2	7								187

MV Totals - 2019	258	283	272	215	178	287	273	374	130	180	168	156	2,774
2020	182	160	114	29	79	-	-	-	-	-	-	-	564

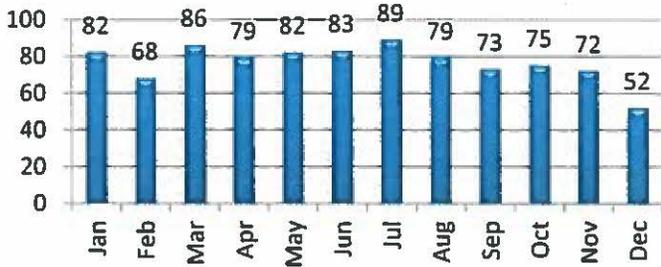


### CRIMINAL INCIDENTS

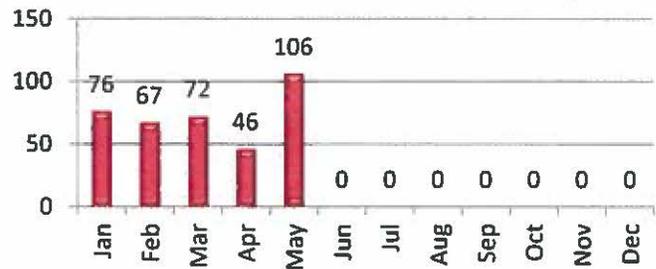
## Trumbull Police Department 2019 Calls-For-Service

Criminal Activity: Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
<b>Larceny / Shoplifting - 2019</b>	68	56	68	64	69	61	67	61	55	62	59	35	725
2020	60	59	50	24	56								249
<b>MV Theft / Attempt - 2019</b>	0	1	3	1	3	4	3	1	3	0	3	1	23
2020	1	0	3	4	3								11
<b>Burglary / Attempt - 2019</b>	3	2	1	7	5	3	4	8	6	2	3	3	47
2020	1	2	1	1	2								7
<b>Theft From MV - 2019</b>	11	9	14	7	5	15	15	9	9	11	7	13	125
2020	14	6	18	17	45								100
<b>Criminal Totals - 2019</b>	82	68	86	79	82	83	89	79	73	75	72	52	920
2020	76	67	72	46	106	0	0	0	0	0	0	0	367

### Criminal Incidents - 2019



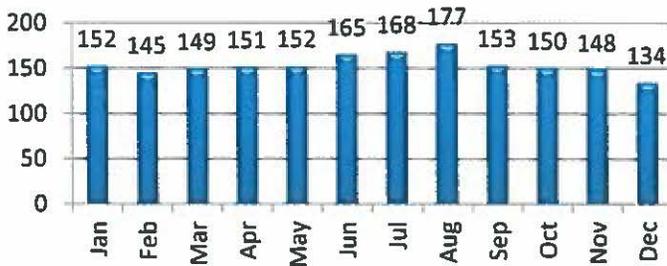
### Criminal Incidents - 2020



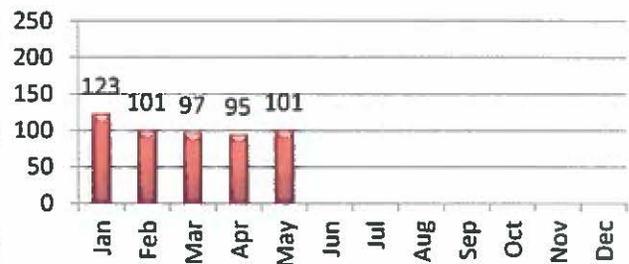
## ALARM RESPONSE SUMMARY

Total Alarms	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2019	152	145	149	151	152	165	168	177	153	150	148	134	1,844
2020	123	101	97	95	101								517

### Alarms - 2019



### Alarms - 2020



## Incident Statistics Report

05/01/2020 00:00 Thru 05/31/2020 23:59

Call Type Description	Total for Period
911 HANG UP	21
ACCIDENT - EVADING	6
ACCIDENT - MV INJ	3
ACCIDENT - MV PROP DAM	16
ACCIDENT - NO INV	2
ACCIDENT PRIVATE PROPERTY	1
ALARM - BURGLARY	23
ALARM - FALSE	68
ALARM - FIRE	14
ALARM - MEDICAL	12
ALARM - OTHER	2
ALARM - TOWN	10
ANIMAL BITE	2
ANIMAL COMPLAINT	31
ASSAULT - HANDS	1
ASSIST FD	15
ASSIST MOTORIST	11
ASSIST MOTORIST - LOCKOUT	10
ASSIST NON-RESIDENT	2
ASSIST OTHER AGENCY	20
ASSIST RESIDENT	30
BREACH OF PEACE	1
BUILDING/LOCATION CHECK	558
BURGLARY - RESIDENTIAL	2
CELL BLOCK CHECK	31
CIVIL MATTER - NO INVESTIGATION	1
COMMUNITY POLICING	300
COUNTERFEITING	1
DISPUTE - NEIGHBOR	3
DISPUTE - VERBAL	10
DOA	6
DOMESTIC - VERBAL	11
DOMESTIC - VIOL OF COURT ORD	2
DOMESTIC - VIOLENT	7
DUMPING / LITTERING COMPLAINT	1
EMPLOYEE INJURY - CIVILIAN	1
ESCORT - FUNERAL	1
ESCORT - OTHER	3
FIGHT - NO WEAPONS	1

## Incident Statistics Report

05/01/2020 00:00 Thru 05/31/2020 23:59

Call Type Description	Total for Period
FIRE - BRUSH FIRE	1
FIRE - CO ALARM	1
FIRE - HAZMAT	1
FIRE - MV	2
FIRE - SMOKE INV	4
FIRE - STRUCTURE FIRE	2
FIREWORKS	5
HARASSMENT	4
IDENTITY THEFT	4
INCIDENT UNFOUNDED	6
INJURY ON TOWN PROPERTY	1
LARCENY	7
LARCENY - FRAUD	3
LARCENY FROM MV	45
LOITERING	1
MEDICAL CALL	131
MISSING PERSON - FOUND	1
MV ARREST	7
MV COMPLAINT	31
MV DAMAGE	7
MV RECOVERED STOLEN MV	2
MV THEFT	3
MV VERBAL WARNING	39
MV WARNING	2
NOISE COMP	23
NOTIFICATION	2
OFFICER INJURY	1
OPEN DOOR/WINDOW	2
OUT OF TOWN JURISDICTION	1
OVERDOSE	3
PARKING VIOLATIONS	27
PHONE HARASSMENT	1
POLICE ADMIN / INFORMATION	23
PRISONER TRANSPORT	1
PROPERTY - LOST / FOUND	14
PUBLIC HAZARD	5
PURSUIT	3
RISK OF INJURY TO MINOR	2
ROAD JOB CAR ASSIGNMENT	22

## Incident Statistics Report

05/01/2020 00:00 Thru 05/31/2020 23:59

Call Type Description	Total for Period
ROAD/TRAFFIC HAZARD	12
SELECTIVE ENFORCEMENT	13
SEXUAL ASSAULT	1
SHOPLIFTING	1
SOLICITING COMP	1
SPEED TRAILER	5
STALKING	1
STRAY DOG	12
SUSPICIOUS ITEM	6
SUSPICIOUS MV	36
SUSPICIOUS NOISE	5
SUSPICIOUS PERSON	46
TAMPERING WITH M/V	6
THREATENING	2
TIPSOFT	2
TPAUD	5
TRESPASSING	7
UNWANTED PERSONS	8
VANDALISM - ACTIVE	8
VANDALISM - MAILBOX	3
VANDALISM TO MV	3
WEAPONS - IN M/V	1
WELFARE CHECK	21
WIRES DOWN/BURNING	6
<b>Total:</b>	<b>1891</b>

## Arrest - All Officers

05/01/2020 00:00 Thru 05/31/2020 23:59

## Officer:29 Anderson, Steven C.

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/10/2020	15:45	92349	RT 25	9999	Ruiz , Jean	
			14-223(b)**			
		92349	ENGAGING POLICE IN PURSUIT			
			21a-267(a)			
		92349	USE OF DRUG PARA EXCPT<1/2 OZ			
			14-147a			
		92349	THEFT OF PLATES/INSERTS			
			14-222			
		92349	RECKLESS DRIVING			
			53a-124			
		92349	LARCENY 3RD DEG			
			21a-279(a)(1)			
		92349	POS CON SUBST OR>1/2 OZ CANNIBIS			
			14-147(c)			
			IMPROPER USE-MARKER/LIC/RGSTR			

1 Arrest(s) for Officer 29 StevenC Anderson

## Officer:20 Carlson, Richard J

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/12/2020	12:20	92350	00004 Cambridge drive	320	Sota , James	
			29-38			
			ILL POSS WEAPON IN MTR VEHICLE			

1 Arrest(s) for Officer 20 Richard J Carlson

## Officer:55 Corbit, Matthew

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/26/2020	21:24	92353		120	Corbit , Matthew	
			53a-223*			
			VIOLATION OF PROTECTIVE ORDER			

1 Arrest(s) for Officer 55 Matthew Corbit

## Officer:22 Fedor, Timothy

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/31/2020	22:21	92356		220	Corbit , Matthew	2000
			53a-64			
		92356	RECKLESS ENDANGERMENT 2ND DEG			
			53-203			
			ILL DISCHARGE OF FIREARM			

1 Arrest(s) for Officer 22 Timothy Fedor

## Officer:91 Fortunato, Samantha

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/10/2020	20:28	91427	72 Craig Lane	420	Fortunato , Samantha	
			53a-117			
		91427	CRIMINAL MISCHIEF 3RD DEG			
			53a-182			
			DISORDERLY CONDUCT			
05/19/2020	18:20	92352	00057 CALHOUN AVE	210		0900
			53a-61			
			ASSAULT 3RD DEG			

## Arrest - All Officers

05/01/2020 00:00 Thru 05/31/2020 23:59

## Officer:91 Fortunato, Samantha

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/21/2020	18:30	66707	00055 Poplar ST 53a-181 BREACH OF PEACE 2ND DEG	220	Fortunato , Samantha	

3 Arrest(s) for Officer 91 Samantha Fortunato

## Officer:28 Frazier, Abigail

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/15/2020	00:50	87060	01203 WOODLAND HILLS DR 53a-182 DISORDERLY CONDUCT	110	Frazier , Abigail	
		87060	53a-62 THREATENING 2ND DEG			
		87060	53a-167a INTERFERE WITH OFFCR/RESISTING			

1 Arrest(s) for Officer 28 Abigail Frazier

## Officer:62 Iucci, Joseph Victor

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/01/2020	01:45	92344	00350 Edison Road 53a-125b LARCENY 6TH DEG	420	Iucci , Joseph Victor	
		92344	53a-101(a)(3) BURGLARY 1ST DEG-AT NIGHT			
05/01/2020	01:55	92343	00350 EDISON RD 53a-48/ 53a-101(a)(3) CONSPIRACY TO COMMIT/ BURGLARY 1ST DEG-AT NIGHT	420	Iucci , Joseph Victor	

2 Arrest(s) for Officer 62 Joseph Victor Iucci

## Officer:19 Kassimis, James

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/17/2020	01:36	92351	Spinning Wheel RD/ Greenbrier RD 53a-181 BREACH OF PEACE 2ND DEG	510	Kassimis , James	
		92351	53a-117 CRIMINAL MISCHIEF 3RD DEG			
05/19/2020	23:13	92353	00591 Whiteney AVE 53a-182 DISORDERLY CONDUCT	120	Kassimis , James	

2 Arrest(s) for Officer 19 James Kassimis

## Officer:75 Laaser, Derek

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/01/2020	16:31	75520	00040 LINDBERG DR 29-38 ILL POSS WEAPON IN MTR VEHICLE	430	Laaser , Derek	

1 Arrest(s) for Officer 75 Derek Laaser

## Arrest - All Officers

05/01/2020 00:00 Thru 05/31/2020 23:59

## Officer:61 Lavin, Kyle

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/29/2020	10:30	92355	Corrigan-Radgowski 53a-116 CRIMINAL MISCHIEF 2ND DEG	420	Lavin , Kyle	0500
		92355	53a-125 LARCENY 4TH DEG			
		92355	53a-101 BURGLARY 1ST DEG			

1 Arrest(s) for Officer 61 Kyle Lavin

## Officer:79 Pinzon, Eimar

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/22/2020	19:31	92354	00053 Flint Street 53a-182 DISORDERLY CONDUCT	430	Pinzon , Eimar	
		92354	53a-61 ASSAULT 3RD DEG			

1 Arrest(s) for Officer 79 Eimar Pinzon

## Officer:88 Pysz, Robert

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/05/2020	07:00	77366	Seymour PD 53a-125a LARCENY 5TH DEG	110	Van Fleet , Nicholas	0690

1 Arrest(s) for Officer 88 Robert Pysz

## Officer:39 Russell, Shane

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/02/2020	23:20	57905	414 Erwin Street 14-296aa(b1st OP MV W/HNDHLD TEL/ELC DEV/TXT	520	Russell , Shane	
		57905	14-224(b)(3) EVADE RESP-INJURY/PROP DAMAGE			

1 Arrest(s) for Officer 39 Shane Russell

## Officer:82 Sota, James

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/05/2020	14:00	91828	Stratford Police Department 53a-107 CRIMINAL TRESPASS 1ST DEG	210	Sota , James	
		91828	53a-181c STALKING 1ST DEG			

1 Arrest(s) for Officer 82 James Sota

## Officer:76 Takacs, Michael

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/04/2020	10:30	92346	00017 TAMARACK CIR 53a-182 DISORDERLY CONDUCT	520	Takacs , Michael	

## Arrest - All Officers

05/01/2020 00:00 Thru 05/31/2020 23:59

## Officer:76 Takacs, Michael

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/04/2020	10:30	92346	00017 TAMARACK CIR 53a-117 CRIMINAL MISCHIEF 3RD DEG	520	Takacs , Michael	

1 Arrest(s) for Officer 76 Michael Takacs

## Officer:89 Tantimonico, Ryan

## ARRESTS

Date	Time	Arrest-ID	Location and Charges (W = warrant)	Grid	Off2	UCR
05/05/2020	14:00	91828	Stratford Police Dept 53a-181c STALKING 1ST DEG	210	Sota , James	0900

1 Arrest(s) for Officer 89 Ryan Tantimonico

Total Number of Arrests    20



RICHARD CARLSON

POLICE DEPARTMENT  
TOWN OF TRUMBULL  
CONNECTICUT

158 EDISON ROAD  
TRUMBULL, CONNECTICUT 06611

P (203) 261-3665  
F (203) 452-5162

---

**K-9 Rico and K-9 Bane Activity Report**  
**(05/01/20 to 05/29/20)**

**K-9 Activity:**

**K-9 Rico**

Case #20-8274 K-9 Drug Detection

**K-9 Bane**

Case #20-8430 Drug Detection

**May Training:**

**K-9 Rico/Bane**

05/07/20 In Service Training

05/20/20 In Service Training

**June Training**

06/02/20 In-Service Training (Fairfield)

Second Training (TBA)



POLICE DEPARTMENT  
**Town of Trumbull**

158 Edison Road  
Trumbull, CT 06611  
(203) 261-3665 Fax (203) 452-5162

Kyle Siljamaki  
Traffic Unit

To: Patrol Supervisors – ***Please Read at Line Up***  
From: Ofc. K. Siljamaki  
Auth: DC Scinto  
Re: Traffic Issues/Complaints  
Date: June 1, 2020

**Sector 1**

Speeding Vehicles – Whitney Ave.  
Speeding Vehicles – Hurd Rd.  
Speeding Vehicles – Wauneta Rd.  
Speeding Vehicles – Madison Ave. (Tashua)

**Sector 2**

Speeding Vehicles – Lake Ave.

**Sector 3**

Speeding Vehicles – Main St. (St. Theresa)

**Sector 4**

Speeding Vehicles – Reservoir Ave.

**Sector 5**

Speeding Vehicles – Huntington Rd.  
Stop Sign Violations – Shelton Rd. / Huntington Tpke.

**\*\*Check Town Parks for crowds (Social Distancing)\*\***  
**\*\*Check areas that have detours running through them\*\***

See 38 or 74 for handheld laser unit

**Please have the Officer assigned to an enforcement detail log a case and forward a copy of the case to Traffic Division mailbox. Thank you.**



KYLE SILJAMAKI  
TRAFFIC UNIT

POLICE DEPARTMENT  
TOWN OF TRUMBULL  
CONNECTICUT

158 EDISON ROAD  
TRUMBULL, CONNECTICUT 06611

P (203) 261-3665  
F (203) 452-5162

---

**TRAFFIC COMPLAINTS / ISSUES**  
**May 2020**

**Supplemental Information**

There were 50 cases assigned to the Traffic Division during the month of May. These include but are not limited to:

- 4 MV Complaints
- 31 MV Stops
- 3 Speed Trailer Locations
- 2 Speed Sign Locations

Submitted by: Ofc. Kyle Siljamaki  
Date: June 1, 2020

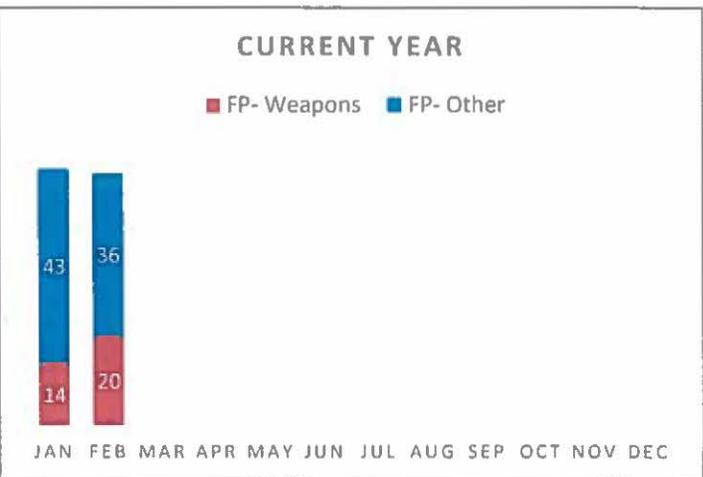
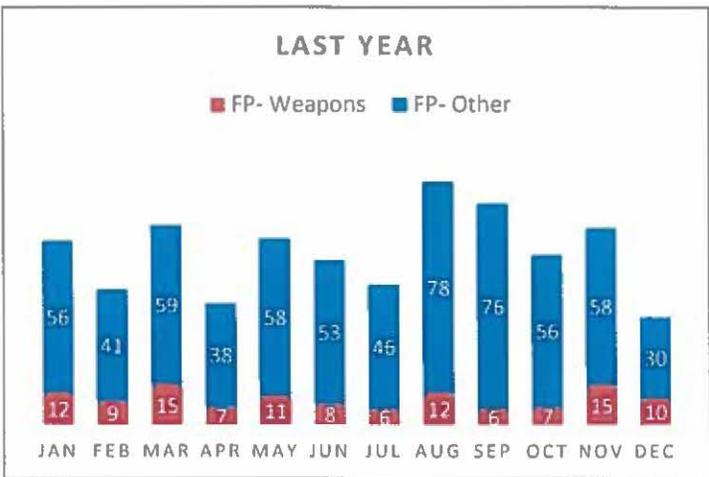
**Trumbull Police Department  
Detective Division Monthly Activity  
May 2020**

Investigations	New Cases Current Month	Cases Closed Current Month	All Open Cases
Arson			1
Assault			0
Auto Theft	1		2
Bias Crimes	1	1	0
Burglary: Residential	1		4
Burglary: Commercial			0
Counterfeiting			0
Criminal Mischief			1
Drug Investigation	1		2
Homicide/Suicide/DOA	1		4
Identity Thefts	3		4
Larceny			0
Larceny - Fraud	2		7
Larceny from MV	4		4
Missing Person			0
Robbery			0
Sexual Assault/Offenses	1		4
Threatening/Harassment			0
Other			2
<b>Totals</b>	<b>15</b>	<b>1</b>	<b>35</b>

**WARRANT ACTIVITY**

Arrest Warrant Applications	0
Arrest Warrants Served	1
Search Warrant Applications	

**FINGERPRINT CASES**





## TRUMBULL POLICE DEPARTMENT

DETECTIVE DIVISION  
158 EDISON ROAD, TRUMBULL, CT 06611  
(203) 261-3665 FAX (203) 452-3857

Brian Weir  
Lieutenant

### MONTHLY STATUS REPORT

(May 2020)

#### Investigations / Call Outs

<u>Date</u>	<u>Time</u>	<u>Location</u>	<u>Case</u>	<u>Incident Type</u>
2/19	10:44	TPD	20-2751	Assault-Hands
DCF reported to Trumbull PD of an assault between a father and son initially said to have occurred while driving through Trumbull. Investigation learned that the incident happened in Monroe, CT so Monroe PD was advised and took over the investigation. Case CLOSED on 5/11/20.				
4/25	20:31	6 Maple Ridge Rd.	20-6740	Larceny from MV
Complainant/resident learned that his unlocked MV was entered overnight, and fraudulent charges were made on their credit card(s). It was later learned that several unauthorized charges were made in several businesses. Case ACTIVE.				
4/29	16:58	8 Meadow Ridge Dr.	20-6997	ID Theft
Complainant/resident reported a fraudulent account opened in their name, a hold on their U.S. Mail delivery, and a fraudulent tie to a Meriden, CT business. Meriden PD also involved. Case ACTIVE.				
5/5	21:34	Old Stream Ln.	20-7358	Suspicious MV
Complainant/resident reported several vehicles and people in and out of the area in which the anonymous complainant suspects possible drug activity. DB was forwarded this case information to follow up on. Case ACTIVE.				
5/8	12:51	40 Lafayette Dr.	20-7527	Recovered Stolen MV
Complainant requested TPD check an address for a 2020 Jeep that had been stolen from a NJ dealership, and GPS indicated MV was there. Patrol located the stolen Jeep, which had an altered VIN. DB took over the investigation. NICB and NJSP were contacted. NICB arrived at TPD to process the Jeep. Case ACTIVE.				
5/11	14:15	2 Reiner Cir.	20-7687	Vandalism
Complainant/resident reported derogatory terms spray painted on items. DB responded, took photographs, and investigated. Neighborhood canvass and any possible video surveillance did not provide any information or leads. Case CLOSED on 5/25/2020. (See also TPD cases 20-7684 & 20-7706)				

### **Investigations / Call Outs**

5/11 18:32 42 Clarion Pl. 20-7703 Larceny from MV  
Complainant/resident didn't realize that her wallet had been taken out of her vehicle until she was notified of fraudulent charges on her bank account. It was later learned that several unauthorized charges were made. Case ACTIVE.

5/12 20:14 5771 Main St. 20-7772 Police Admin.  
Tipsoft complaint of price gouging hand sanitizer. DB notified on Friday (5/15) to investigate, and no hand sanitizer was located. Case CLOSED on 5/15/20.

\*\*\* Note: During the month of May 2020 there were *forty-five (45) unlocked motor vehicles* reported to have been entered, where thefts have occurred. In these cases, there was no damage sustained to these vehicles, and a majority of these cases no items were reported to be missing. There were also three (3) vehicles stolen, but were recovered without being assigned to the DB. Even though detectives have been working on these cases, many have not been officially assigned to a specific detective until recently. These factors account for the low number of related cases shown here. \*\*\*

### **DB Investigations Cleared by Arrest**

N/A

### **Arrest Warrants Served**

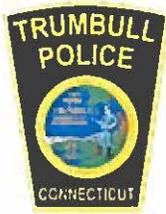
5/29 - Arrest Warrant Served - Burglary 1<sup>st</sup>, Larceny 4<sup>th</sup>, Criminal Mischief (2cts) - Carlos Ortiz, released on a PTA. (Burglary - Business - TPD case #19-20571).

### **Search Warrants Served**

5/18 - Craigslist, CGS 53a-122 Larceny 1st Degree (MV Recovered / Stolen MV TPD Case #20-7527).

5/20 - Craigslist (expanded), CGS 53a-122 Larceny 1st Degree (MV Recovered / Stolen MV TPD Case #20-7527).

5/28 - AT&T Mobility, CGS 53a-122 Larceny 1st Degree (MV Recovered / Stolen MV TPD Case #20-7527).



# TRUMBULL POLICE DEPARTMENT

## TRAINING DIVISION

158 EDISON ROAD, TRUMBULL, CT 06611  
 (203) 261-3665 x243 FAX (203) 452-3857

**Timothy Fedor**  
 Training Officer

### May 2020 Training Report

#### TRAINING

Training Course	Location	Date	Officer Assigned
EMR / EMT Recertification Credit Hours	Online	5/1/20 – 5/31/20	All Officers
Collect / NCIC Recertification Training	Online	5/1/20 5/5/20 5/1/20 5/8/20 5/10/20 5/6/20 5/6/20 5/8/20	Lt. Weir Sgt. Coppola Det. Wheeler Off. Bardos Off. Federowicz Off. Corbit Off. Frazier Off. Laaser
POSS Software Training	Online	5/5/20	All Supervisors
CJIS Training	Online	5/6/20 5/28/20	Sgt. Coppola Off. Wood
Firearms Qualification	TPD Range	5/6/20	Sgt. Florida Off. Siljamaki
Supervisor Liability	Online	5/29/20	Sgt. Pires Sgt. Harry
ERT Training	Trumbull	5/20/20 & 5/27/20	All ERT Officers

#### Classes CANCELLED due to COVID-19

Training Course	Location	Date	Officer
New England Crisis Negotiators 20 <sup>th</sup> Annual Conference	Hyannis MA	5/4/20 – 5/6/20	Sgt. Hadden Det. Lavin
EMS Instructor EXPO (Credit)	Foxwoods Resort	5/28/20 – 5/30/20	Off. Fedor

#### Community Police

Event	Date	Location
Birthday Parade	5/2/20	67 Limerick Road
Birthday Parade	5/4/20	20 Captains Walk
Birthday Parade	5/4/20	31 Hills Point Road
Birthday Parade	5/4/20	51 Pemberton Road
Birthday Parade	5/5/20	120 Greenbrier Road
TPAUD Coalition Meeting	5/6/20	Online
Birthday Parade	5/6/20	60 Craig Lane
Birthday Parade	5/6/20	10 Solar Ridge Road
Birthday Parade	5/6/20	69 old Church Hill Road
Birthday Parade	5/8/20	9 Southgate Road
Birthday Parade	5/8/20	164 Church Hill Road

Birthday Parade	5/8/20	37 Louis Street
Birthday Parade	5/9/20	77 Dogwood Lane
Birthday Parade	5/9/20	50 Cranbury Drive
Birthday Parade	5/9/20	5 red Fox Lane
Birthday Parade	5/10/20	230 Tashua Road
Birthday Parade	5/10/20	11 Pioneer Trail
Birthday Parade	5/11/20	16 Ruth Street
Birthday Parade	5/11/20	64 MacArthur Road
Birthday Parade	5/11/20	93 Highridge Road
Birthday Parade	5/11/20	30 Partridge Lane
Birthday Parade	5/11/20	60 Rocku Hill Road
Birthday Parade	5/12/20	11 Ranglely Drive
Birthday Parade	5/12/20	64 Surrey Lane
Birthday Parade	5/12/20	36 Doe Hollow Drive
Birthday Parade	5/12/20	50 MacArthur Road
Birthday Parade	5/13/20	84 Sunnycrest Road
Birthday Parade	5/14/20	50 Hilltop Drive
Birthday Parade	5/15/20	20 Finchwood Drive
Birthday Parade	5/15/20	78 Hurd Road
Birthday Parade	5/16/20	93 Old Dike Road
Birthday Parade	5/16/20	82 Bonnie View Drive
Birthday Parade	5/16/20	500 Churchill Road
Birthday Parade	5/16/20	77 Columbine Drive
Birthday Parade	5/16/20	60 Limerick Road
Birthday Parade	5/16/20	759 White Plains Road
Birthday Parade	5/17/20	70 Stoneleigh Road
Birthday Parade	5/17/20	5700 Main Street
Birthday Parade	5/18/20	196 Sterling Road
Birthday Parade	5/18/20	64 Aspen Lane
Birthday Parade	5/18/20	110 Columbine Drive
Birthday Parade	5/18/20	14 Lynwood Drive
Birthday Parade	5/18/20	40 Colonial Drive
Birthday Parade	5/18/20	51 Marathon Road
Birthday Parade	5/18/20	7 Deepdene Drive
Birthday Parade	5/19/20	23 Hyde Terr
Birthday Parade	5/19/20	57 Surrey Lane
Birthday Parade	5/19/20	16 Great Brook Road
Birthday Parade	5/19/20	29 Gwendolyn Drive
Birthday Parade	5/19/20	15 George Street
Birthday Parade	5/20/20	6 Rocky Ridge Road
Birthday Parade	5/20/20	147 Stowe Place
Birthday Parade	5/20/20	11 Teeter Rock Road
Birthday Parade	5/20/20	60 Dogwood Lane
Birthday Parade	5/20/20	82 Tashua Road
Birthday Parade	5/20/20	27 Doe Hollow Road
Staff Appreciation Parade	5/22/20	21 Maefair Court



## TRUMBULL POLICE DEPARTMENT

**POLICE CADET POST # 659**

158 EDISON ROAD, TRUMBULL, CT 06611  
(203) 452-3849 FAX (203) 452-3857



**May 2020**

<b>Event</b>	<b>Location</b>	<b>Date</b>	<b>Advisor</b>
Zoom Meeting – Rank	Online	5/5/20	Off. Fedor
Zoom Meeting – All Cadets	Online	5/12/20	Off. Fedor
Flag Detail for Deceased Veterans	Gates of Heaven Cemetery	5/19/20	Lt. Weir Off. Fedor

## Trumbull Police Department Monthly Sick Report May 2020

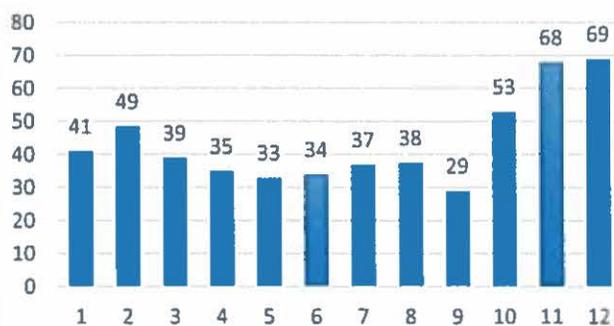
### Personnel Sick Time

2019	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
Sick	41	49	39	35	33	34	37	38	29	53	68	69	524
Job Injury	0	0	0	0	0	0	0	1	0	0	0	0	1
Light Duty	11	0	0	0	0	0	0	3	2	3	0	0	19
<b>Total</b>	<b>52</b>	<b>49</b>	<b>39</b>	<b>35</b>	<b>33</b>	<b>34</b>	<b>37</b>	<b>42</b>	<b>31</b>	<b>56</b>	<b>68</b>	<b>69</b>	<b>544</b>

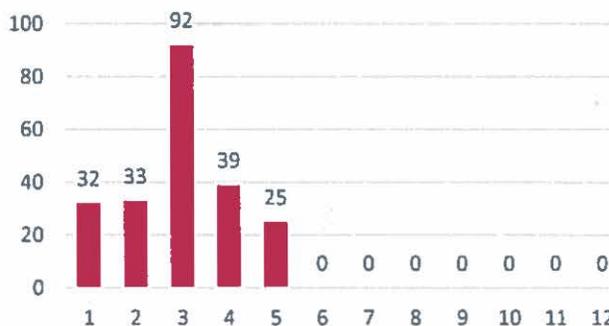
2020	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
Sick	32	33	92	39	25								221
Job Injury	0	0	0	0	0								0
Light Duty	0	0	0	0	0								0
<b>Total</b>	<b>32</b>	<b>33</b>	<b>92</b>	<b>39</b>	<b>25</b>	<b>0</b>	<b>221</b>						

Sick Time Totals	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2019	41	49	39	35	33	34	37	38	29	53	68	69	524
2020	32	33	92	39	25	0	0	0	0	0	0	0	221
<b>Average Per Officer - 2020</b>	<b>0.4</b>	<b>0.4</b>	<b>1.2</b>	<b>0.5</b>	<b>0.3</b>	<b>0.0</b>	<b>2.9</b>						

### Sick Time - 2019



### Sick Time - 2020



Police Department  
FY 2020, Budget Status YTD

Account	Description	Approved	*Rev	Paid YTD		Avail YTD	
501101	Salaries- Full time	7,296,784		6,681,147	92%	615,637	8%
501102	Salaries- Part time	52,991		43,481	82%	9,510	18%
501103	Salaries- Seasonal / Temp	0		0		0	
501104	Salaries- Weekend	52,041		27,913	54%	24,128	46%
501105	Salaries- Overtime	726,600		674,502	93%	52,098	7%
501106	Longevity	17,825		17,158	96%	667	4%
501109	College Incentive	25,800		0	0%	25,800	100%
501112	Shift Differential	59,650		50,007	84%	9,643	16%
501113	Holiday	349,700		319,188	91%	30,512	9%
501114	Training	160,000		109,075	68%	50,925	32%
501887	Uniform Cleaning	18,000		15,278	85%	2,722	15%
501888	Uniform Allowance	58,000		52,857	91%	5,143	9%
522202	Services & Fees, Professional	0		0		0	
522203	Ancillary	19,000		5,834	31%	13,166	69%
534401	Office Supplies	15,000		13,045	87%	1,955	13%
534402	Program Supplies	41,000		24,461	60%	16,539	40%
534403	Materials and Supplies, Cleaning	6,250		4,364	70%	1,886	30%
545503	Public Relations	2,000		1,414	71%	586	29%
556601	Professional Development, Tuition Reimb	10,000		2,000	20%	8,000	80%
556602	Professional Development, Organizations	2,750		2,995	109%	-245	-9%
556603	Professional Development, In-Service	40,000		39,673	99%	327	1%
556604	Professional Development, Publications	300		82	27%	218	73%
567702	Vehicle Repair	40,000		40,051	100%	-51	0%
567704	Transportation, Expense Account	13,250		8,867	67%	4,383	33%
578801	Service Contracts	133,795		121,078	90%	12,717	10%
578802	Equipment, Building	0		0		0	
578803	Maintenance, Program Related	6,000		5,351	89%	649	11%
578804	Maintenance, Refuse Removal	2,379		2,310	97%	69	3%
581888	Capitol Outlay	160,430		152,074	95%	8,356	5%
589901	Rentals	28,800		20,820	72%	7,980	28%
590011	Utility, Heat	8,134		10,420	128%	-2,286	-28%
590012	Utility, Electricity	66,000		60,214	91%	5,786	9%
590013	Utility, Water	3,463		2,100	61%	1,363	39%
590014	Utility, Telephones	15,000		12,607	84%	2,393	16%
590015	Utility, Traffic Lights	11,792		10,123	86%	1,669	14%

Total	9,442,734	8,530,489	90%	912,245	10%
-------	-----------	-----------	-----	---------	-----

As of: 6/4/2020

Week Number = 48

Progress Perc. = 92%

Weeks Remain = 4

Remain Perc = 8%

# **Item 7**

## **Discussion of 5085 Main Street**

Given by John Knuff - Hurwitz  
Sagarin Slossberg & Knuff, LLC





**5085 MAIN STREET**  
**SPECIAL PERMIT/SITE PLAN**  
**JUNE 9, 2020**

*Employee owned. Client driven.*



# Meet the Traffic Team



**MICHAEL SHEPLEY, PE, PTOE**

## ***TRAFFIC ENGINEERING***

Over 10 years of experience  
in Traffic Engineering

Prepared parking and  
queue analysis for Westfield  
Mall



**FRED GREENBERG, PE**

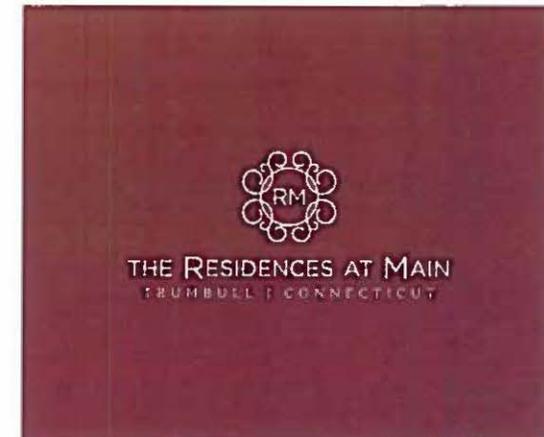
## ***TRAFFIC ENGINEERING***

Over 40 years of experience  
in Traffic Engineering

Prepared parking and  
queue analysis for Westfield  
Mall

# Project Understanding

- 5085 Main Street
- In between the Westfield Trumbull Mall and Main Street
- 260-Unit Residential Development



# Data Collection

## DATA COLLECTION

- Traffic Counts at 3 intersections
- AM/PM/Sat Shopping Peak Hours in October 2019



## FIELD INVENTORY

- Photographic inventory
- Verify roadway geometry & lane arrangements



## ADDITIONAL DATA

- Historical 24 Traffic counts
- Decline from 28,600 vpd (2004) to 25,200 vpd (2013)

# Traffic Operations Analysis

- Projected existing counts to horizon year (2022)
- Included volumes from any proposed developments to get “background” traffic. No projects were identified.
- **ITE Trip Generation Manual 10<sup>th</sup> Edition** Generated trips were distributed to the roadway network to produce build analysis

# Traffic Operations Analysis

## 5085 Main Street, Trumbull Residential Trip Generation Estimate

10/15/2019

Land Use	ITE Land Use Code	Size (units)	ADT	Trips								
				AM Commuter Peak Hr			PM Commuter Peak Hr			Sat Peak Hour		
				Total	In	Out	Total	In	Out	Total	In	Out
Multifamily	221- Multifamily (Mid Rise) <sup>1</sup>	260	1415	87	22	65	111	68	43	102	50	52

Ref: ITE Trip Generation, 10th Edition

1 - Defined as 3-10 stories

# Traffic Operations Analysis

## ROADWAY ADEQUACY

- Synchro Version 10
- Level of Service (LOS)
  - Highway Capacity Manual Criteria
  - Calculates Delay
  - Assigns Letter Grade A-F



# Traffic Operations Analysis

**Table 4-Peak Hour Traffic Operations Summary-Weekday AM**

	Background	Build
<b>Route 15 (Merritt Parkway) at Main Street<sup>1</sup></b>	<b>C (29" delay)</b>	<b>C (29" delay)</b>
Main Street (SR 731) NB Left (250')	D/36"/0.45/285	D/38"/0.52/345
Main Street (SR 731) NB Through	C/31"/0.25/105	C/32"/0.26/110
Main Street (SR 731) NB Right <sup>2</sup> (75')	A/1"/0.27/25	A/1"/0.29/25
Main Street (Route 111) SB Left (325')	E/55"/0.88/680	E/58"/0.88/680
Main Street (Route 111) SB Through	D/44"/0.70/325	D/45"/0.71/330
Main Street (Route 111) SB Right <sup>2</sup> (325')	A/1"/0.23/25	A/1"/0.23/25
Route 15 NB off ramp Left (200'+225')	C/34"/0.26/95	C/35"/0.26/95
Route 15 NB off ramp Right (200'+225')	C/32"/0.20/105	C/32"/0.22/110
Route 15 SB off ramp Left (410')	D/41"/0.67/230	D/41"/0.67/230
Route 15 SB off ramp Right (200'+200')	C/32"/0.17/90	C/32"/0.17/90
<b>Main Street (SR 731) at Mall Main Driveway<sup>1</sup></b>	<b>A (10" delay)</b>	<b>B (11" delay)</b>
Main Street (SR 731) NB Left (400')	C/24"/0.37/80	C/25"/0.40/80
Main Street (SR 731) NB Through	A/5"/0.31/75	A/6"/0.35/80
Main Street (SR 731) SB Through	B/16"/0.46/120	B/17"/0.50/125
Main Street (SR 731) SB Right <sup>2</sup>	A/1"/0.17/25	A/1"/0.17/25
Mall Driveway Left	C/21"/0.18/40	C/23"/0.32/55
Mall Driveway Right	A/7"/0.13/30	A/7"/0.12/35
<b>Mall Main Driveway at Ring Road<sup>1</sup></b>	<b>A (7" delay)</b>	<b>A (8" delay)</b>
Mall Main Driveway Left	B/10"/0.16/30	B/11"/0.20/35
Mall Main Driveway Right <sup>2</sup>	A/3"/0.20/25	A/3"/0.22/25
Ring Road NB Through	B/11"/0.02/25	B/12"/0.02/25
Ring Road NB Right <sup>2</sup>	A/5"/0.16/25	A/5"/0.17/25
Ring Road SB Left	B/11"/0.11/30	B/12"/0.15/35
Ring Road SB Left/Through	B/11"/0.11/30	B/12"/0.15/35
<b>Main Street (SR 731) at Site Driveway #1</b>		
Main Street (SR 731) NB Left <sup>3</sup>	-	B/13"/0.01/25
Site Driveway Right <sup>3</sup>	-	B/12"/0.01/25
<b>Mall Main Driveway and Site Driveway #2</b>		
Site Driveway Right <sup>3</sup>	-	B/11"/0.05/25

Notes: X/0.0/00 - Level of Service/Delay in seconds/veh./V/C ratio/95% Q length in feet

# Traffic Operations Analysis

**Table 5-Peak Hour Traffic Operations Summary – Weekday PM**

	Background	Bulld
<b>Route 15 (Merritt Parkway) at Main Street<sup>1</sup></b>	<b>D (36" delay)</b>	<b>D (39" delay)</b>
Main Street (SR 731) NB Left (250')	D/54"/0.70/285	E/55"/0.72/320
Main Street (SR 731) NB Through	C/32"/0.37/195	C/33"/0.37/195
Main Street (SR 731) NB Right <sup>2</sup> (75')	A/1"/0.44/25	A/1"/0.45/25
Main Street (Route 111) SB Left (325')	D/51"/0.63/240	D/49"/0.60/240
Main Street (Route 111) SB Through	D/48"/0.79/550	D/47"/0.78/565
Main Street (Route 111) SB Right <sup>2</sup> (325')	A/1"/0.09/25	A/1"/0.09/25
Route 15 NB off ramp Left (200'+225')	D/37"/0.50/245	D/39"/0.52/245
Route 15 NB off ramp Right (200'+225')	D/46"/0.59/180	D/47"/0.62/200
Route 15 SB off ramp Left (410')	E/55"/0.92/585	E/68"/0.99/615
Route 15 SB off ramp Right (200'+200')	D/47"/0.62/190	D/46"/0.59/190
<b>Main Street (SR 731) at Mall Main Driveway<sup>1</sup></b>	<b>C (20" delay)</b>	<b>C (21" delay)</b>
Main Street (SR 731) NB Left (400')	D/44"/0.81/315	D/46"/0.82/330
Main Street (SR 731) NB Through	A/9"/0.32/130	A/9"/0.33/135
Main Street (SR 731) SB Through	C/34"/0.77/275	D/35"/0.78/285
Main Street (SR 731) SB Right <sup>2</sup>	A/1"/0.50/25	A/1"/0.50/25
Mall Driveway Left	C/33"/0.75/200	C/33"/0.77/215
Mall Driveway Right	A/9"/0.36/120	A/9"/0.36/120
<b>Mall Main Driveway at Ring Road<sup>1</sup></b>	<b>B (13" delay)</b>	<b>B (14" delay)</b>
Mall Main Driveway Left	B/18"/0.52/125	B/19"/0.53/130
Mall Main Driveway Right <sup>2</sup>	A/3"/0.50/35	A/3"/0.50/35
Ring Road NB Through	C/21"/0.14/40	C/22"/0.14/40
Ring Road NB Right <sup>2</sup>	A/9"/0.66/65	A/9"/0.66/65
Ring Road SB Left	C/22"/0.58/200	C/23"/0.59/225
Ring Road SB Left/Through	C/22"/0.57/195	C/22"/0.58/210
<b>Main Street (SR 731) at Site Driveway #1</b>		
Main Street (SR 731) NB Left <sup>3</sup>	-	C/23"/0.02/25
Site Driveway Right <sup>3</sup>	-	C/18"/0.01/25
<b>Mall Main Driveway and Site Driveway #2</b>		
Site Driveway Right <sup>3</sup>	-	B/15"/0.05/25

Notes: X/0.0/00 - Level of Service/Delay in seconds/veh./V/C ratio/95% Q length in feet

# Traffic Operations Analysis

**Table 6-Peak Hour Traffic Operations Summary – Saturday Mid-Day**

	Background	Build
<b>Route 15 (Merritt Parkway) at Main Street<sup>1</sup></b>	<b>C (34" delay)</b>	<b>D (36" delay)</b>
Main Street (SR 731) NB Left (250')	D/51"/0.73/420	D/54"/0.77/465
Main Street (SR 731) NB Through	C/34"/0.34/155	C/34"/0.34/155
Main Street (SR 731) NB Right <sup>2</sup> (75')	A/1"/0.43/25	A/1"/0.44/25
Main Street (Route 111) SB Left (325')	D/45"/0.55/285	D/45"/0.54/285
Main Street (Route 111) SB Through	E/56"/0.85/485	E/56"/0.84/495
Main Street (Route 111) SB Right <sup>2</sup> (325')	A/1"/0.09/25	A/1"/0.09/25
Route 15 NB off ramp Left (200'+225')	D/36"/0.43/210	D/37"/0.44/210
Route 15 NB off ramp Right (200'+225')	D/40"/0.44/170	D/40"/0.46/185
Route 15 SB off ramp Left (410')	D/49"/0.86/525	D/54"/0.90/545
Route 15 SB off ramp Right (200'+200')	D/37"/0.18/80	D/37"/0.17/80
<b>Main Street (SR 731) at Mall Main Driveway<sup>1</sup></b>	<b>B (18" delay)</b>	<b>B (19" delay)</b>
Main Street (SR 731) NB Left (400')	D/43"/0.77/270	D/45"/0.79/285
Main Street (SR 731) NB Through	A/10"/0.30/120	B/10"/0.30/125
Main Street (SR 731) SB Through	C/30"/0.61/195	C/31"/0.63/205
Main Street (SR 731) SB Right <sup>2</sup>	A/1"/0.53/25	A/1"/0.54/25
Mall Driveway Left	C/31"/0.76/225	C/31"/0.77/245
Mall Driveway Right	A/8"/0.35/110	A/8"/0.35/110
<b>Mall Main Driveway at Ring Road<sup>1</sup></b>	<b>B (14" delay)</b>	<b>B (15" delay)</b>
Mall Main Driveway Left	B/19"/0.54/130	B/19"/0.55/135
Mall Main Driveway Right <sup>2</sup>	A/3"/0.51/35	A/3"/0.50/35
Ring Road NB Through	C/22"/0.18/45	C/23"/0.19/50
Ring Road NB Right <sup>2</sup>	A/10"/0.69/65	A/10"/0.69/70
Ring Road SB Left	C/23"/0.58/245	C/24"/0.61/270
Ring Road SB Left/Through	C/23"/0.59/245	C/24"/0.61/275
<b>Main Street (SR 731) at Site Driveway #1</b>		
Main Street (SR 731) NB Left <sup>3</sup>	-	C/20"/0.01/25
Site Driveway Right <sup>3</sup>	-	C/16"/0.01/25
<b>Mall Main Driveway and Site Driveway #2</b>		
Site Driveway Right <sup>3</sup>	-	B/15"/0.07/25

Notes: X/0.0/00 - Level of Service/Delay in seconds/veh./V/C ratio/95% Q length in feet

# Traffic Operations Analysis

- Work with mall to install RRFBs (Rectangular Rapid Flashing Beacon) on Mall Ring Road for pedestrian crossing.
- Prohibit left turns from the Site Drive along Main Street (SR 731)
- Add Stop Bars and Lines to Site Driveways
- Determine school bus stops with Trumbull Board of Education coordination
- Submit to OSTA



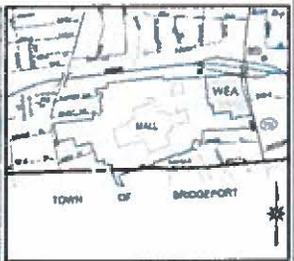
SIGN NO.	CD-201 05, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	LEGEND
A	21-0502	STOP
B	21-0503	YIELD
C	21-0504	NO LEFT TURN
D	21-1002	NO PARKING
E	21-0502	STOP
F	21-0503	YIELD
G	21-0504	NO LEFT TURN
H	21-1002	NO PARKING
I	21-1003	NO PARKING
J	21-1004	NO PARKING
K	21-1005	NO PARKING
L	21-1006	NO PARKING
M	21-1007	NO PARKING
N	21-1008	NO PARKING
O	21-1009	NO PARKING
P	21-1010	NO PARKING
Q	21-1011	NO PARKING
R	21-1012	NO PARKING
S	21-1013	NO PARKING
T	21-1014	NO PARKING
U	21-1015	NO PARKING
V	21-1016	NO PARKING
W	21-1017	NO PARKING
X	21-1018	NO PARKING
Y	21-1019	NO PARKING
Z	21-1020	NO PARKING

LAND USE	Proposed RESPONSIBLE AREA		
	Residential	Commercial	Public
RESIDENTIAL	15	200	404
COMMERCIAL	15	200	404
PUBLIC	15	200	404

NOTE: UNDEVELOPED SIGNS TO BE INSTALLED IN PIPE BOLLARDS PER DETAILS. ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE TO THE LATEST BUILDING CODE.



NOT FOR CONSTRUCTION FOR PERMITTING PURPOSES ONLY



LOCATION MAP  
SP-10-2024



100 Riverside Parkway  
Bridgeport, CT 06606  
Tel: 203.336.1100



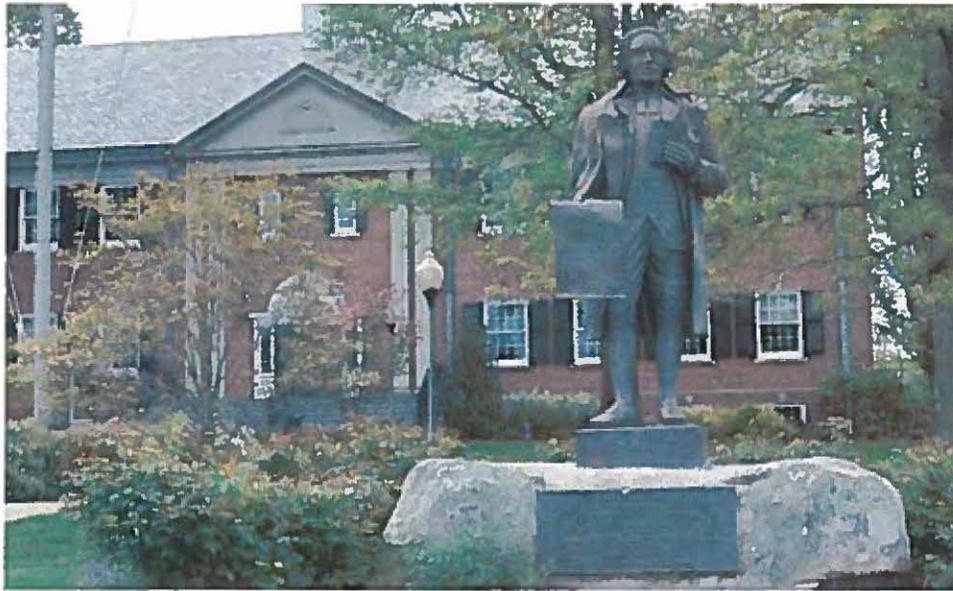
ROSS FOUTRES  
PROJECT MANAGER

THE RESIDENCES AT MAIN  
K & K DEVELOPERS, INC.  
5085 MAIN STREET  
TRUMBULL, CONNECTICUT

TRAFFIC  
SITE PLAN

SP-1





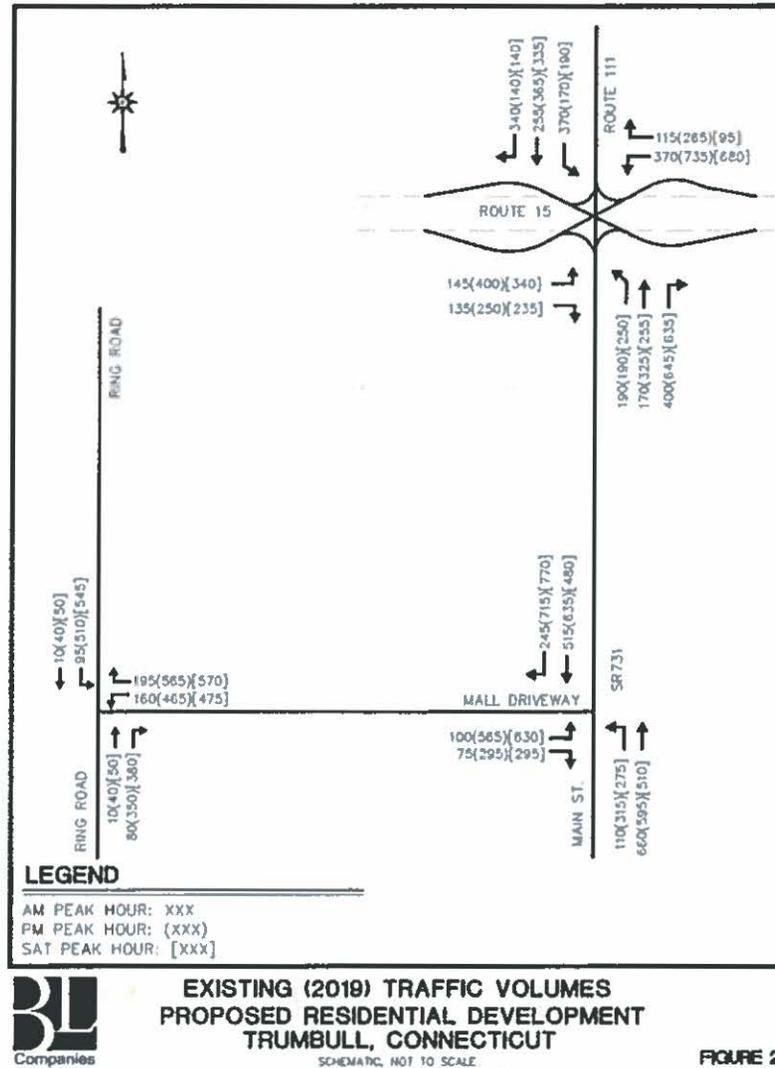
Thank You! | Questions?

*Employee owned. Client driven.*

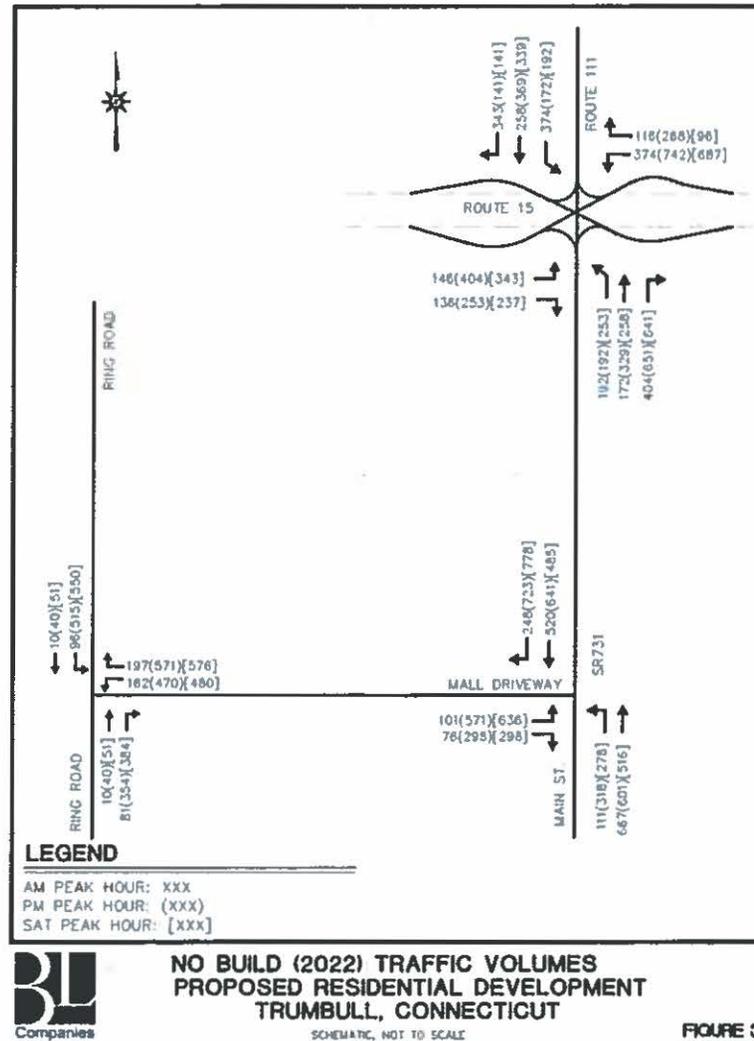
Connecticut | Maryland | Massachusetts | New Jersey | New York | North Carolina | Ohio | Pennsylvania | Rhode Island | Texas



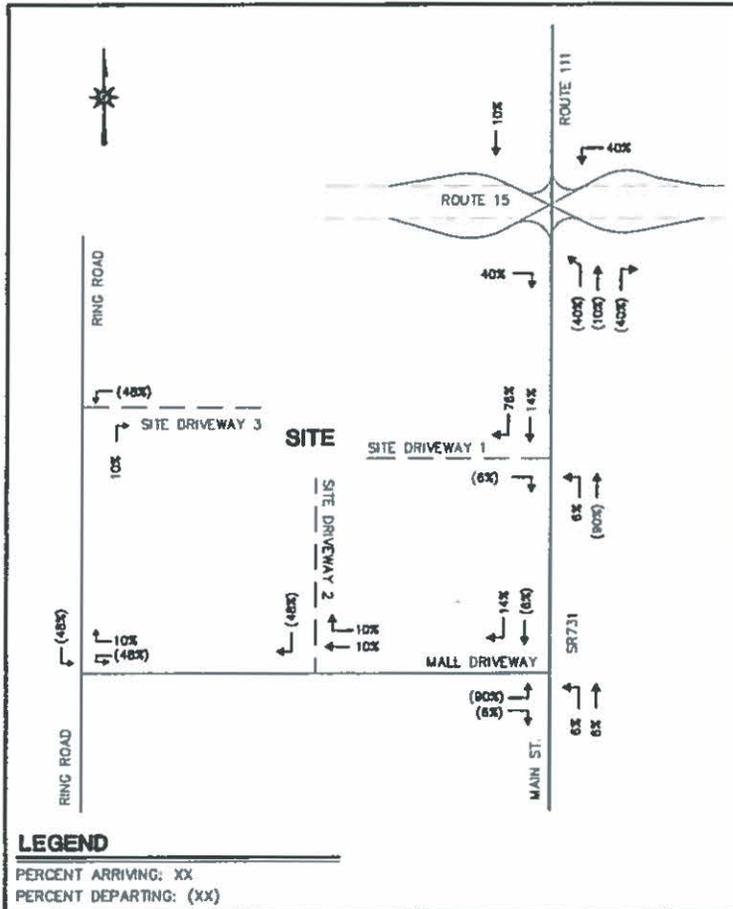
# 2019 Existing Traffic Volumes



# 2022 No Build Traffic Volumes



# Trip Distribution and Site Generated Traffic

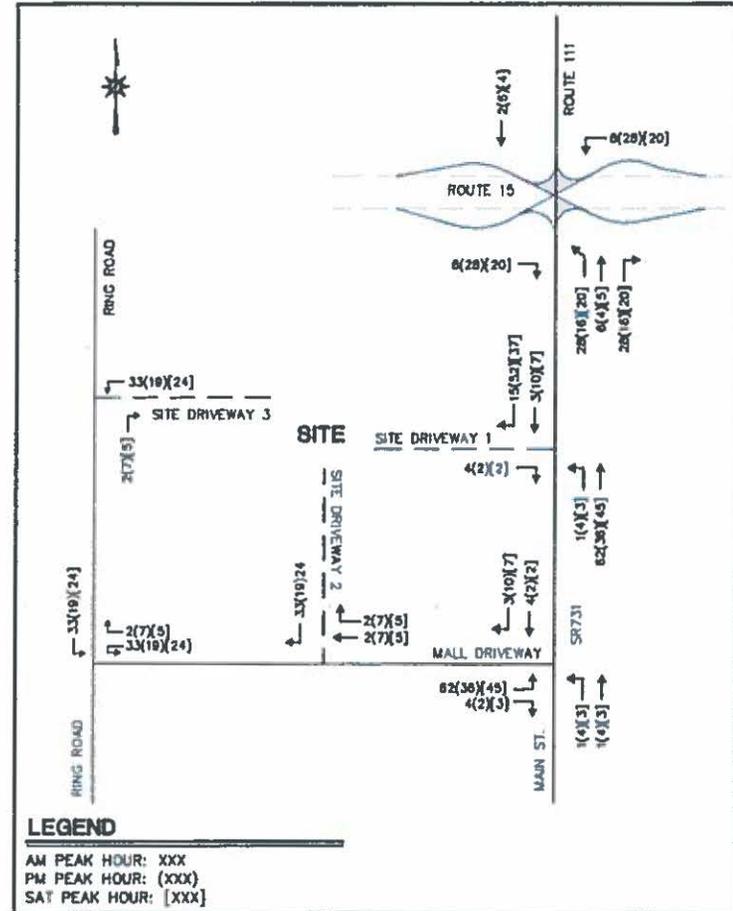


**TRIP DISTRIBUTION**  
**PROPOSED RESIDENTIAL DEVELOPMENT**  
**TRUMBULL, CONNECTICUT**

SCHEMATIC, NOT TO SCALE

**FIGURE 4**

CAD FILE: TR12180015-3



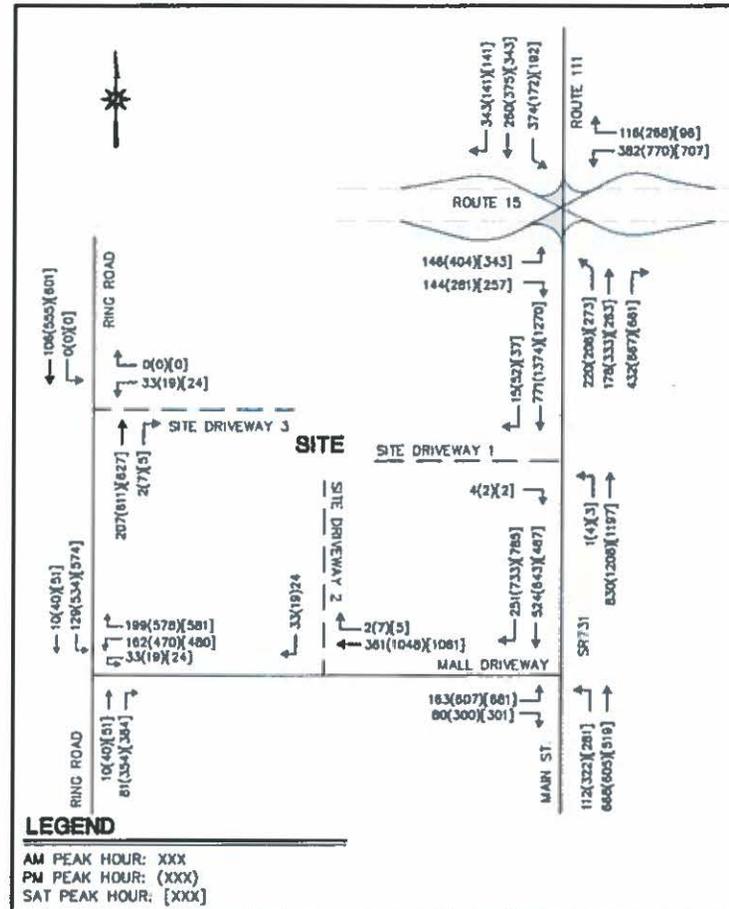
**NEW SITE GENERATED TRAFFIC**  
**PROPOSED RESIDENTIAL DEVELOPMENT**  
**TRUMBULL, CONNECTICUT**

SCHEMATIC, NOT TO SCALE

**FIGURE 5**

CAD FILE: TR12180015-3

# 2022 Build Traffic Volumes



**BL Companies**

**BUILD (2022) TRAFFIC VOLUMES  
 PROPOSED RESIDENTIAL DEVELOPMENT  
 TRUMBULL, CONNECTICUT**

SCHEMATIC, NOT TO SCALE

**FIGURE 6**



Prepared for:  
K&K Developers  
Short Hills, NJ

## **TRAFFIC STUDY**

### **Proposed Residential Development**

5085 Main Street  
Trumbull, CT

PREPARED BY:  
BL Companies  
355 Research Parkway  
Meriden, CT 06450



## CONTENTS

<b>EXECUTIVE SUMMARY</b>	<b>i</b>
<b>I. INTRODUCTION</b>	<b>1</b>
<b>II. EXISTING CONDITIONS</b>	<b>3</b>
Access Network	3
Intersection Characteristics	4
Crash Data Review	6
Existing Traffic Volumes	6
<b>III. PROJECTED TRAFFIC CONDITIONS</b>	<b>8</b>
Background Traffic Volumes	8
Trip Generation	10
Trip Distribution	11
Assigned Site Generated Traffic	11
Build Traffic Volumes	11
<b>IV. ROADWAY ADEQUACY</b>	<b>15</b>
Signalized Intersections	15
Unsignalized Intersections	16
<b>V. CONCLUSIONS AND RECOMMENDATIONS</b>	<b>21</b>

**ILLUSTRATIONS**

FIGURE 1 - LOCATION MAP .....2  
FIGURE 2 - EXISTING (2019) TRAFFIC VOLUMES .....7  
FIGURE 3 - BACKGROUND (2022) TRAFFIC VOLUMES .....9  
FIGURE 4 - TRIP DISTRIBUTION.....12  
FIGURE 5 - SITE GENERATED TRAFFIC VOLUMES .....13  
FIGURE 6 - BUILD (2022) TRAFFIC VOLUMES .....14

**TABLES**

TABLE 1-TRIP GENERATION.....10  
TABLE 2 SIGNALIZED INTERSECTION – LEVELS OF SERVICE.....16  
TABLE 3 UNSIGNALIZED INTERSECTION – LEVELS OF SERVICE .....17  
TABLE 4-PEAK HOUR TRAFFIC OPERATIONS SUMMARY-WEEKDAY AM .....18  
TABLE 5-PEAK HOUR TRAFFIC OPERATIONS SUMMARY – WEEKDAY PM .....19  
TABLE 6-PEAK HOUR TRAFFIC OPERATIONS SUMMARY – SATURDAY MID-DAY.....20

**APPENDIX**

CAPACITY ANALYSES

## EXECUTIVE SUMMARY

This traffic study was prepared for a 260-unit multi-family residential development on a parcel located along SR 731 (Main Street) in Trumbull, CT. The site was formerly a single-family residential neighborhood. The development is proposed to have three driveways, one partial access driveway on SR 731 (Main Street), one full access driveway on the Ring Road, the internal roadway around the mall, and one partial access driveway on the Main Mall driveway connecting the Ring Road to SR 731 (Main Street).

The study investigated the potential traffic impacts associated with the development during the weekday morning, evening and Saturday mid-day peak periods. This investigation included a field reconnaissance, traffic counting, and research of pertinent planning and traffic data available from Connecticut Department of Transportation (CTDOT).

The number of trips expected generated by the development proposal was estimated using ITE Trip Generation Manual 10<sup>th</sup> Edition. It is projected that the proposed residential development will generate approximately 1415 daily trips, 90 trips in the AM peak hour, 110 trips in the PM peak hour, and 100 trips in the Saturday mid-day peak hour.

Intersection capacity analyses were prepared using the methodology described in the Highway Capacity Manual (HCM), published by the Transportation Research Board (TRB) for the background no-build and future build traffic volume scenarios to simulate the traffic impact of the development on the adjacent roadway network. The signalized intersections were analyzed in terms of vehicle capacity and motorist delay. The unsignalized intersections were evaluated in terms of average side street delay, as well as the capacity of the roadway approach.

This study found that there will be no significant impacts on the existing roadway network from the proposed residential development with little perceptible change in traffic operations.

The following is recommended to enhance traffic operations and safety:

In conjunction with the residential project:

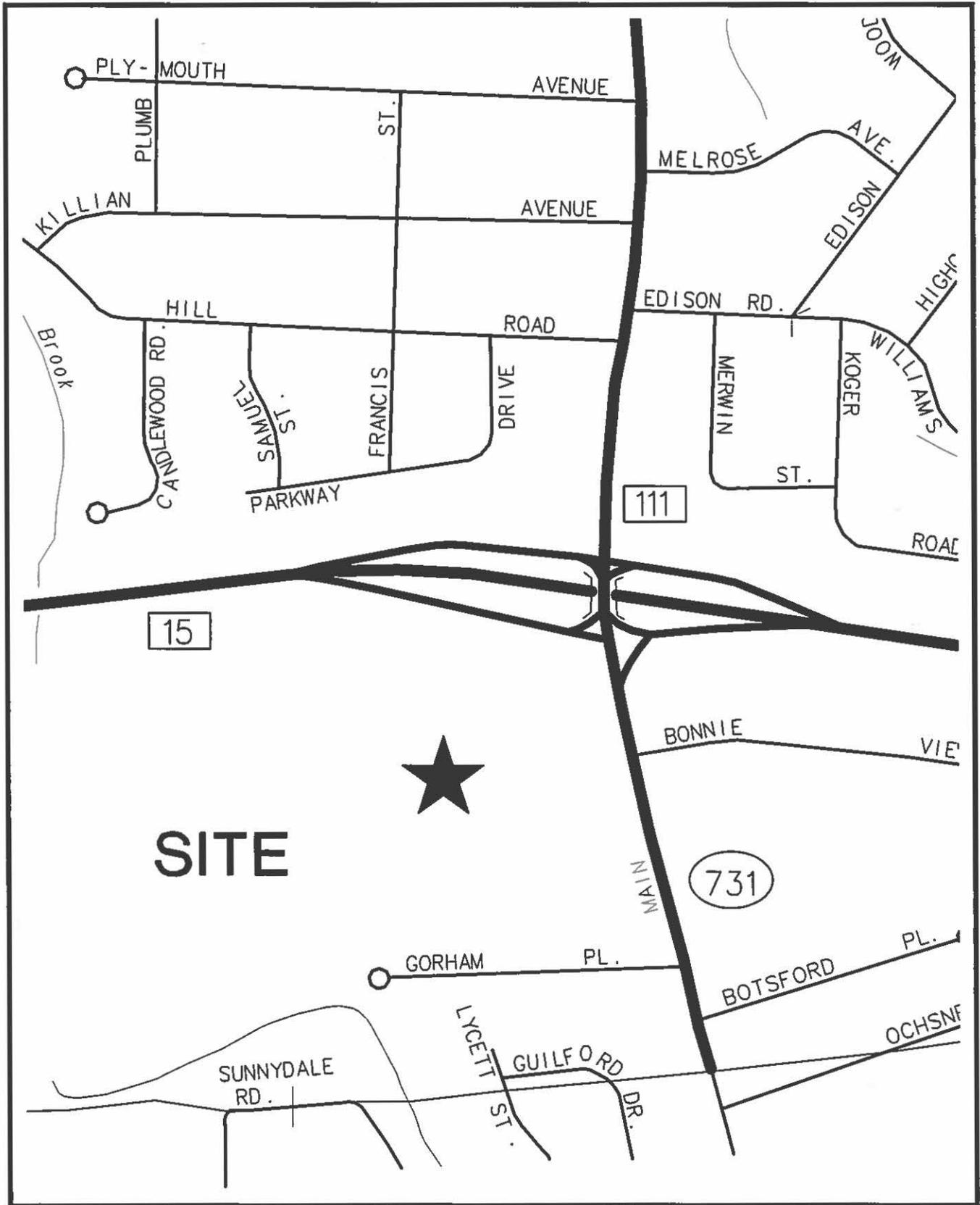
- Provide painted white stop line and double yellow centerline, along with a 36 inch "Stop" sign (R1-1) for the site driveway intersections. Insure that landscaping does not obstruct the sightlines.
- Prohibit left turns from the site driveway onto SR 731 (Main Street). Allow left turns into the site from a left turn lane created by modifying the SR 731 (Main Street) pavement markings.
- Work with the Mall owner to provide rectangular rapid flashing beacons (RRFB) at proposed pedestrian crossing on the Ring Road. Eliminate the existing crossing at the overflow parking lot, which is sight distance deficient.
- Consult with the Trumbull Board of Education to determine school bus stop locations if a substantial number of school aged children is anticipated.
- Submit the project to the Office of State Traffic Administration (OSTA) for review as a major traffic generator.

## I. INTRODUCTION

This traffic study was prepared for a 260-unit multi-family residential development located adjacent to the Westfield Trumbull Mall. The development site is approximately 10.4-acres, located on the western side of SR 731 (Main Street), between the Mall and the Merritt Parkway (Route 15). See **Figure 1** for a location map. The site, essentially an outparcel of the Mall, is bordered by Route 15 (Merritt Parkway) on the north, Main Street (SR 731) on the east, and the Mall on the other sides. The focus of this study was to evaluate the traffic flows and operating conditions on the roadways and intersections projected to be used by those traveling to and from the proposed residential development and to quantify the potential traffic impacts on these roadways and intersections.

The site was formally a single-family residential neighborhood with two public roads, since abandoned, intersecting SR 731 (Main Street), Whalburn Avenue and Stuart Place, and is currently vacant with no buildings. The residential development is proposed to have three curb cuts: one on SR 731 (Main Street) with left turns out prohibited, one full access driveway on the Mall Ring Road, the internal roadway around the Mall, and one driveway on the Mall Main driveway with right in, right out access only.

The study investigated the potential traffic impacts associated with the multi-family residential development during the weekday morning commuter peak period, evening commuter peak period and Saturday mid-day peak period.



**SITE LOCATION  
PROPOSED RESIDENTIAL DEVELOPMENT  
TRUMBULL, CONNECTICUT**

SCHMATIC, NOT TO SCALE

FIGURE 1

## II. EXISTING CONDITIONS

An investigation of the existing traffic conditions on the adjacent roadway network formed the basis for assessing any traffic issues associated with the proposed development. This investigation included a field reconnaissance, traffic counting, and research of pertinent planning and traffic data available with the Connecticut Department of Transportation.

### Access Network

Primary regional access to the site consists of the Merritt Parkway (Route 15) and Route 111/SR 731 (Main Street). Some limited secondary access is available along Madison Avenue at the rear of the Mall, not likely to be used extensively by the residential site.

**Merritt Parkway (Route 15)** – is a State maintained, divided, limited access parkway that begins in Greenwich and runs through the state, eventually called the Wilbur Cross Parkway, until it reaches the City of Meriden. It is a 4-lane facility near the site. The speed limit near the site is 55 miles per hour and the average daily traffic volume is approximately 76,900 vehicles south of the Route 111 (Main Street) interchange and 84,200 to the north. The “single point urban interchange” with Route 111/SR 731 (Main Street) services nearly 30,000 daily trips, about 60% to/from the north.

**Main Street (Route 111/SR 731)** – is a State owned, multi-lane, arterial in Trumbull that becomes a City Street just to the south in Bridgeport. Main Street is designated Route 111 north of the Merritt Parkway and SR 731 between the Merritt Parkway and the City of Bridgeport line. Main Street is relatively straight and flat with a sidewalk along the west side and sporadic illumination. The speed limit is 35 miles per hour. Average daily traffic data volumes are 25,200 between the Route 15 interchange and the Mall, and 21,100 to the south.

**Mall Ring Road**– is a private road that, as the name suggests, runs along the periphery of the Mall, connecting the parking lots with the Mall entrances. It varies from 2 to 5 lanes in width. It is signalized at its intersection with the Main Mall Driveway and has “Stop” control at its intersection with the secondary Mall access road to Madison Avenue, the transit hub, and the garage entrance near Target.

**Mall Main Driveway-** is a private, 900'± long, 6-lane divided facility connecting the Mall Ring road with Main Street (SR 731). The Mall Main driveway is relatively straight, on a downgrade travelling west, and signalized at both ends. It is illuminated and there is a sidewalk along the southerly side.

**Public Transit -** Greater Bridgeport Transit (GBT) runs several scheduled bus routes to/from the Mall. The Coastal link (CL) runs between the Mall and Norwalk, while Routes #3, #4, #6 and #8 run between the mall and downtown Bridgeport. There is a transit hub along the northern side of the Mall, adjacent to the ring road.

### **Intersection Characteristics**

Five key intersections were reviewed in this study to determine if they would be impacted by the expected site traffic volumes. They are as follows:

#### **Route 111/SR 731 (Main Street) at Route 15 (Merritt Parkway) ramps**

This is a signalized "single point urban interchange" where Main Street (Route 111/SR 731) intersects the Route 15 (Merritt Parkway) ramps. Each Merritt Parkway off ramp has four travel lanes, two left turn and two right turn lanes at the intersection. Each Merritt Parkway on ramp has an entry lane for left turns and a channelized right turn entry. The Main Street northbound (SR 731) approach has a left turn lane, two through lanes, and a channelized right turn only lane. The Main Street southbound (Route 111) approach has a left turn lane, a through lane, and a channelized right turn only lane. The traffic signal is not coordinated with any others and operates with 4 phases: Main Street left turns/ramp right turns; Main Street through traffic; ramp left turns; and a pedestrian phase to cross Main street north of Route 15 and part of the SB on ramp.

#### **Main Street (SR 731) at Mall Main Drive**

This signalized "T" intersection is the primary access to the Mall. There are three travel lanes southbound, two through lanes and a free flow right turn only lane. There are three travel lanes northbound, two through lanes and a left turn only lane. The Main Mall drive has three entry lanes and three exit lanes (2 left and 1 right) separated by a median to better control traffic flow. The traffic signal is not coordinated with any others and operates

with 3 phases: Main Street protected left turn/Mall drive right turn; Main Street through traffic; and Main Mall Drive traffic.

#### **Main Street (SR 731) at Proposed Site Drive**

This is a proposed partial access intersection, to be located at the the former Whalburn Avenue, about 550 feet north of the Mall Main drive, and 275 feet south of the Route 15 NB off ramp. A left turn lane would be created on Main Street by pavement marking modifications to allow left turns into the residential site. There are five travel lanes on the Main Street (SR 731) at this location, three southbound and two northbound, and left turns out of the residential site would be prohibited.

#### **Mall Main Drive at Ring Road**

This is a signalized "T" intersection. There are four travel lanes approaching on the Main Mall Drive, two left turn lanes and two free-flow channelized right turn only lanes. There are two travel lanes northbound on the Ring Road, a through lane and a free-flow channelized right turn only lane. The southbound Ring Road approach has two lanes (left and left/through). The traffic signal is not coordinated with any others and operates with 3 phases: Ring Road southbound; Ring Road northbound; and Mall Main Drive traffic. Vehicles from the proposed site driveway on the mall main drive will make U-Turns to access Main Street (SR 731). It is noted that a SU-30 vehicle cannot make a U-Turn at this intersection and would need to exit the site via site driveways on Ring Road or Main Street (SR 731).

#### **Mall Main Drive at Proposed Site Drive**

This is a proposed partial access intersection, to be located about 400 feet west of Main Street. It would include right in, right out access from the residential site leaving the Mall Main Drive median intact. There are six travel lanes on the Main Mall Drive, three in each direction.

#### **Ring Road at Proposed Site Drive**

This sixth location, not specifically analyzed, is a proposed full access intersection, to be located about 430 feet north of Mall Main Drive. There are five travel lanes on the Ring Road, three northbound and two southbound at this location.

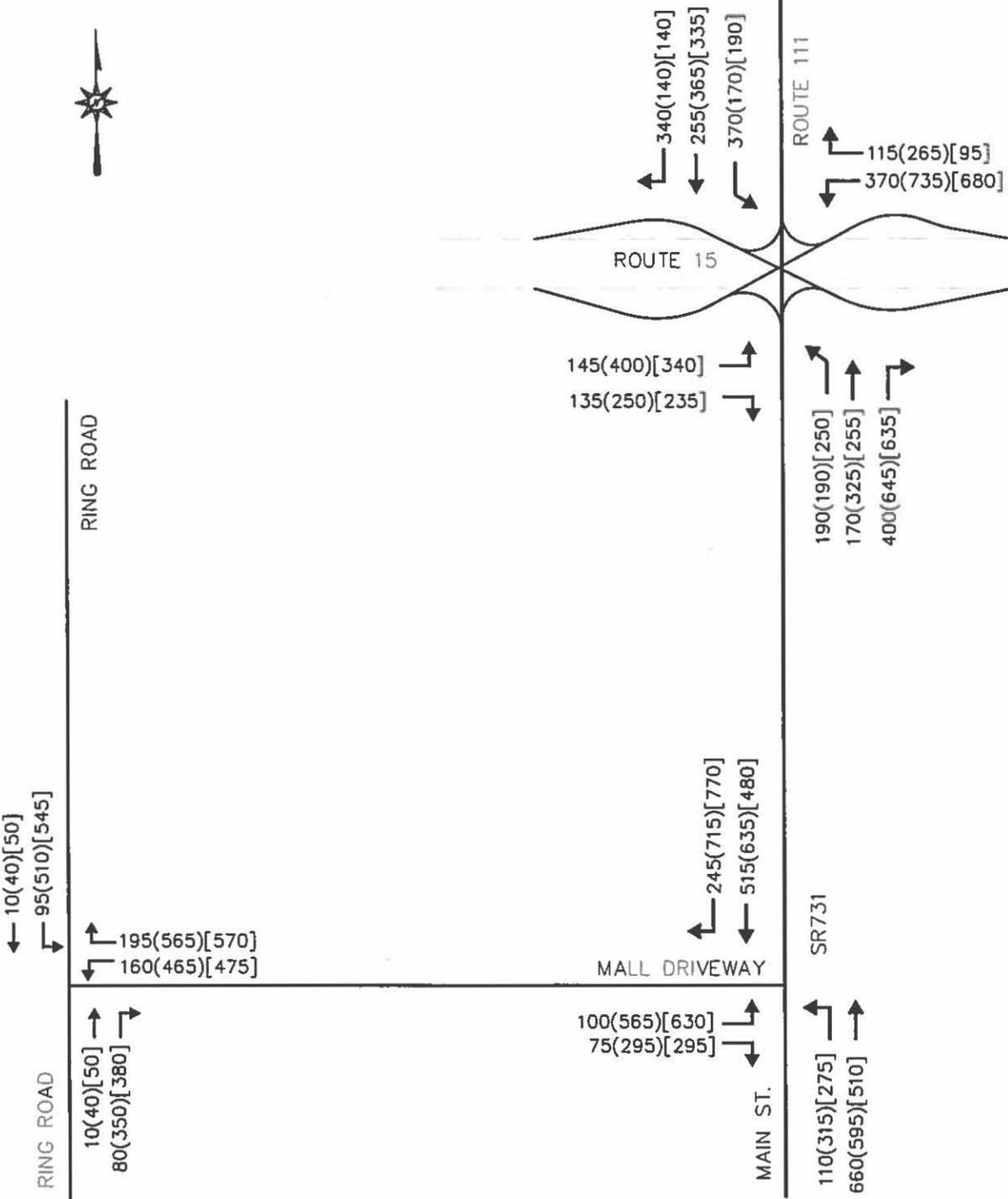
### **Crash Data Review**

Crash data for the most recent three-year period July 2016 - June 2019 was obtained from the Connecticut Crash Data Repository for the study area intersections. While crash data has limited usefulness in the preparation of traffic impact studies, it is typically requested by regulatory agencies and included here for information. The data was separated into three areas: the Main Street/Route 15 interchange; the Main Street/Mall driveway intersection; and the Mall Main Drive, including the internal signalized intersection.

Eight-four (84) crashes were reported at the Route 15 interchange, the most common crash type was 57 rear end, about 67% of the total. The Main Street intersection with the Mall driveway saw 46 crashes, primarily rear end (20) and angle (14). Finally, the Mall Main drive and the internal signalized intersection was the scene of 17 crashes, including 9 sideswipe and 5 angle type.

### **Existing Traffic Volumes**

Turning movement traffic counts were conducted during the weekday morning, evening commuter peak period, and the Saturday mid-day peak period, in October of 2019 at the study intersections. The current peak hour traffic volumes for the intersections are illustrated in **Figure 2**.



**LEGEND**

AM PEAK HOUR: XXX  
 PM PEAK HOUR: (XXX)  
 SAT PEAK HOUR: [XXX]



**EXISTING (2019) TRAFFIC VOLUMES  
 PROPOSED RESIDENTIAL DEVELOPMENT  
 TRUMBULL, CONNECTICUT**

SCHMATIC, NOT TO SCALE

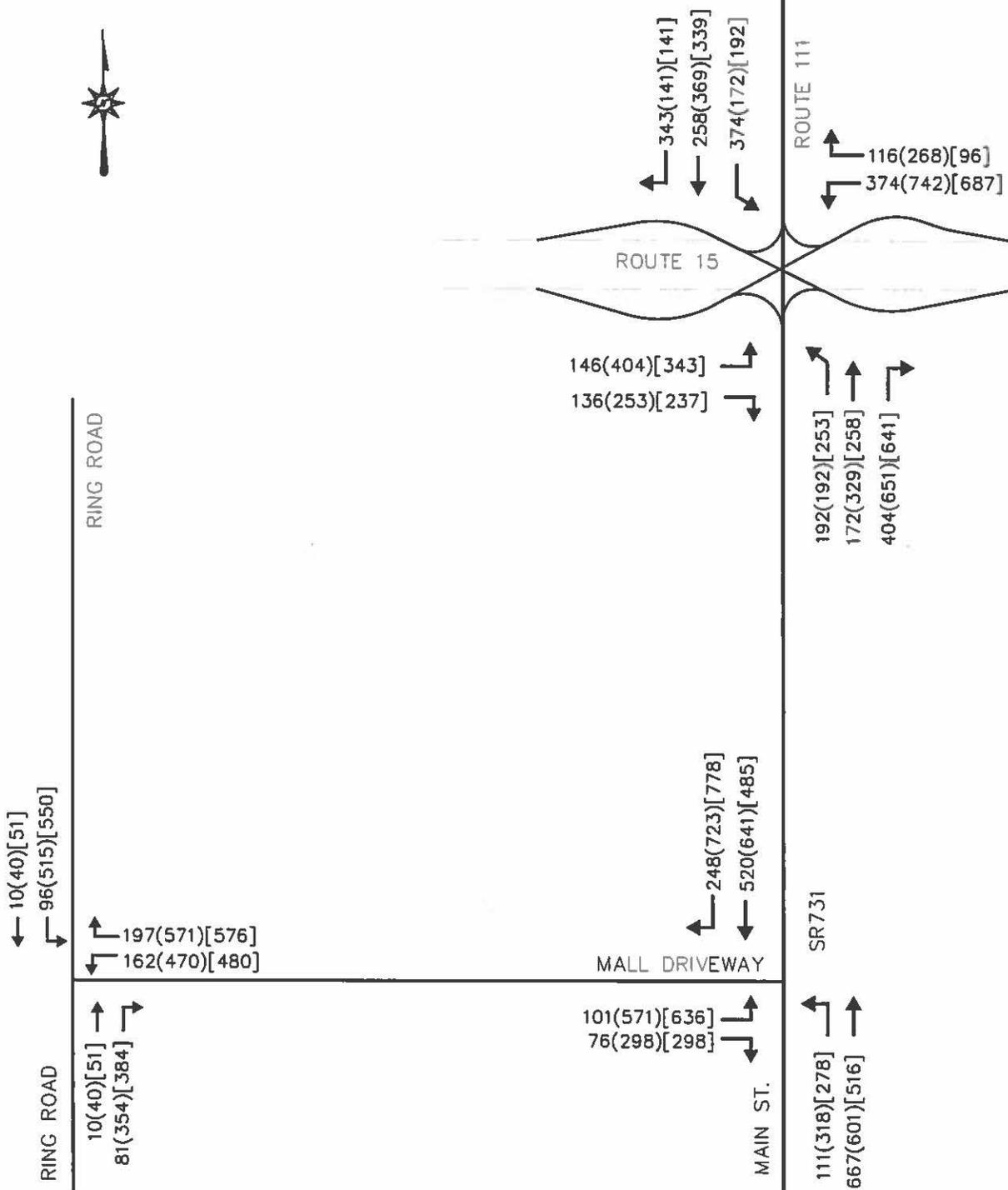
**FIGURE 2**

### III. PROJECTED TRAFFIC CONDITIONS

Peak hour traffic volumes for the development were estimated, assigned to the roadway network, and superimposed onto background traffic volumes projected to the year 2022. This methodology provides a year of completion estimate for the analysis.

#### Background Traffic Volumes

A normal growth component was added to the existing peak hour through traffic volumes to estimate the year of project completion (2022) background traffic volumes. The background increase was based on a growth rate of 0.5 percent per year. Note that CTDOT counts on SR 731 (Main Street) over the last four cycles indicate the daily traffic volumes have continuously dropped, from about 28,600 in 2004 to 25,200 in 2013, suggesting negative growth. In addition, resources from the CTDOT Office of the State Traffic Administration (OSTA) were consulted regarding any approved proposed major traffic generators; there are no proposed or pending sites in the immediate area. The resulting peak hour background traffic volumes are depicted in **Figure 3**.



**LEGEND**

AM PEAK HOUR: XXX  
 PM PEAK HOUR: (XXX)  
 SAT PEAK HOUR: [XXX]



**NO BUILD (2022) TRAFFIC VOLUMES  
 PROPOSED RESIDENTIAL DEVELOPMENT  
 TRUMBULL, CONNECTICUT**

SCHEMATIC, NOT TO SCALE

**FIGURE 3**

**Trip Generation**

The anticipated traffic volumes generated were projected based upon data provided by the *ITE Trip Generation Manual, 10<sup>th</sup> Edition*. This widely used reference manual provided trip generation rates for various land used based on actual traffic count data collected at similar sites. The following table shows projected trip generation for multifamily housing mid-rise (Land Use Code 221) using the number of units.

Table 1 illustrates the trip generation for the proposed development. It is projected that the development will generate approximately 1415 trips daily, 90 trips in the AM peak hour, 110 trips in the PM peak hour, and 100 trips in the Saturday mid-day peak hour.

**Table 1-Trip Generation**

Land Use	Size (units)	Daily	Trips								
			AM Peak Hr.			PM Peak Hr.			SAT Peak Hr.		
			In	Out	Total	In	Out	Total	In	Out	Total
Multi-Family <sup>1</sup>	260	1415	20	70	90	70	40	110	50	50	100
Ref: ITE Trip Generation, 10 <sup>th</sup> Edition: Land Use Code 221- multi-family residential, mid-rise											

### **Trip Distribution**

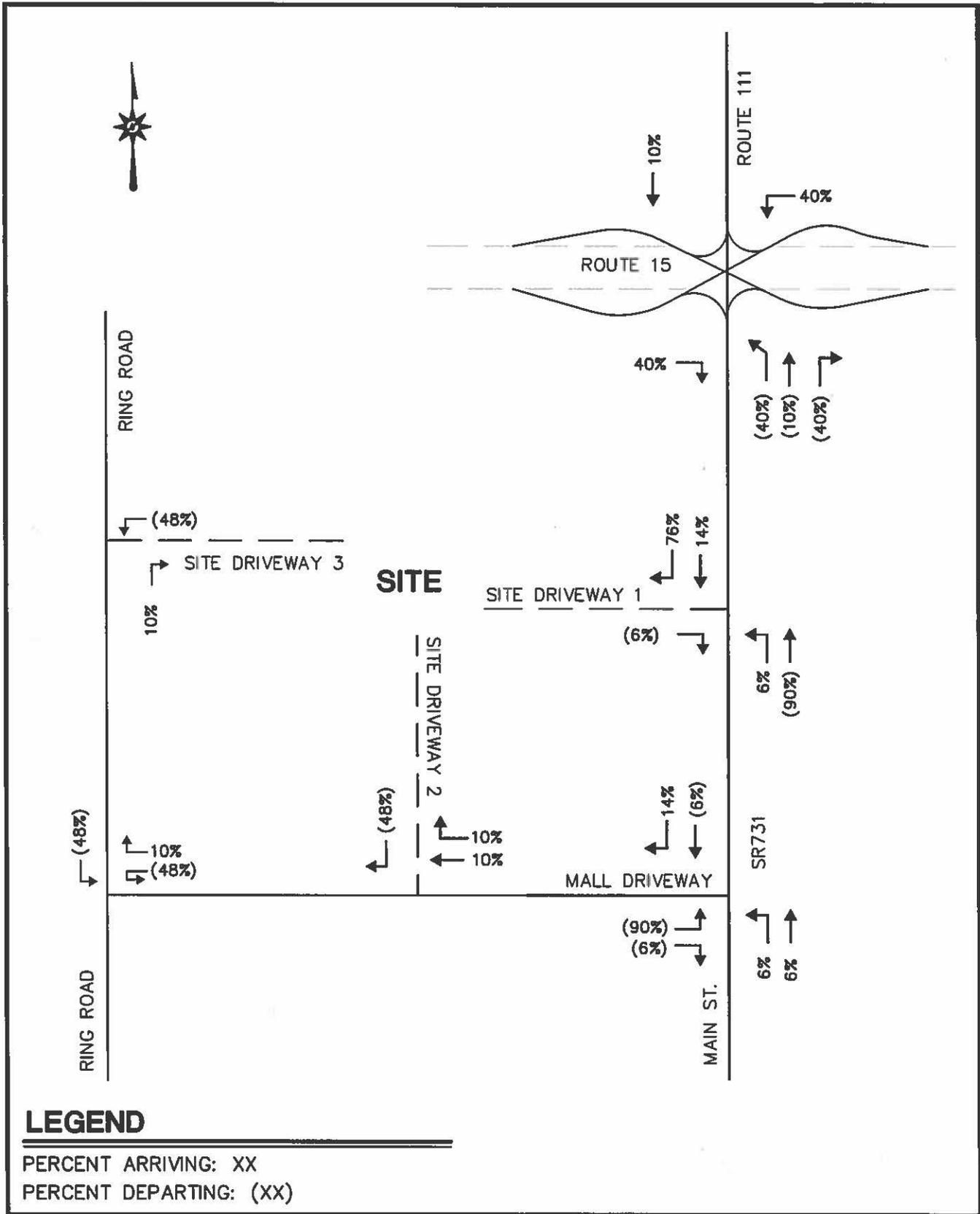
The directional distribution of traffic is typically a function of population densities, employment opportunities, existing travel patterns near to the site, and the efficiency and limitations of the existing roadway system. The distribution of the anticipated traffic volumes was based on journey to work data and is shown in **Figure 4**.

### **Assigned Site Generated Traffic**

The generated trips were assigned to the street network based on the distribution. **Figure 5** show the site generated peak hour traffic assigned to the nearby roadway network for the respective peak periods.

### **Build Traffic Volumes**

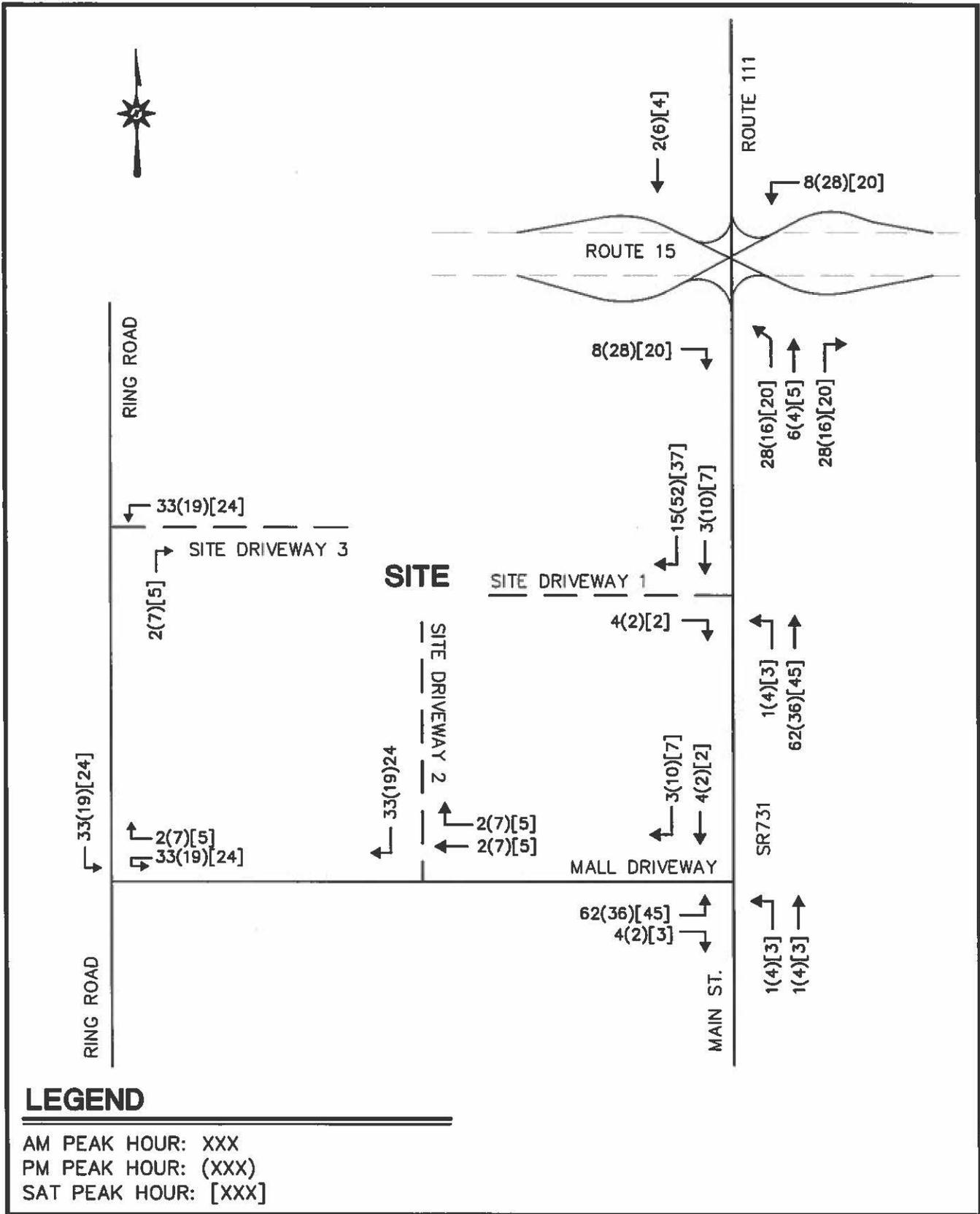
The projected traffic volumes generated by the development were superimposed onto the background traffic volumes to establish the build traffic volumes, as depicted in **Figure 6**.



**TRIP DISTRIBUTION  
 PROPOSED RESIDENTIAL DEVELOPMENT  
 TRUMBULL, CONNECTICUT**

SCHMATIC, NOT TO SCALE

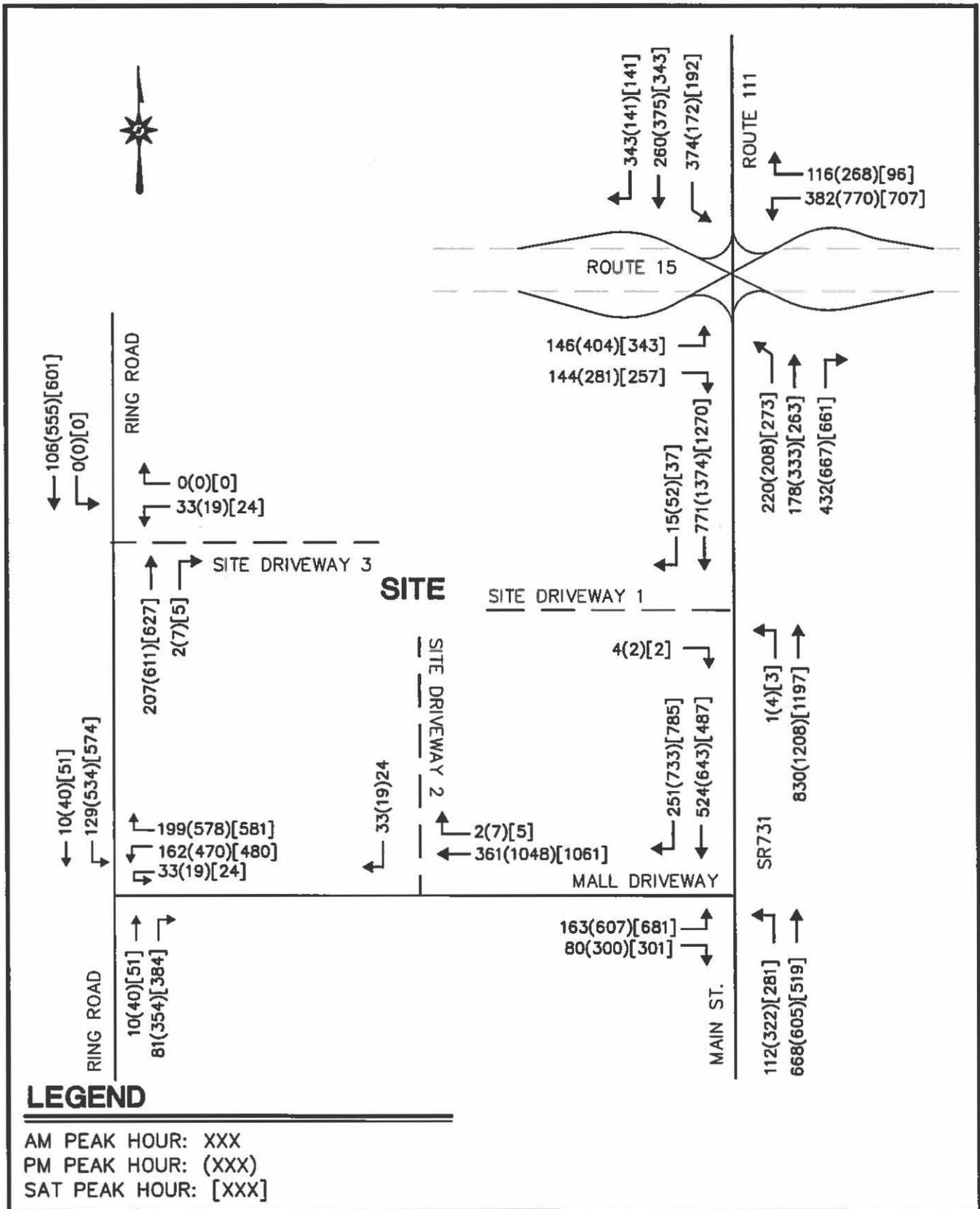
**FIGURE 4**



**NEW SITE GENERATED TRAFFIC  
 PROPOSED RESIDENTIAL DEVELOPMENT  
 TRUMBULL, CONNECTICUT**

SCHEMATIC, NOT TO SCALE

**FIGURE 5**



**BUILD (2022) TRAFFIC VOLUMES  
 PROPOSED RESIDENTIAL DEVELOPMENT  
 TRUMBULL, CONNECTICUT**

SCHMATIC, NOT TO SCALE

**FIGURE 6**

## IV. ROADWAY ADEQUACY

The intersection capacity analyses were prepared using the methodology described in the Highway Capacity Manual (HCM), published by the Transportation Research Board (TRB) for the background no-build and future build traffic volume scenarios to simulate the traffic impact of the proposed residential development on the adjacent roadway network. As documented in the HCM, intersection performance is influenced by several factors, including: traffic demand; lane configurations; lane widths; turning restrictions; roadway grades; and signal phasing. The existing physical roadway characteristics and signal phasing and timing settings were determined by observing conditions in the field and reviewing the current traffic control signal plans and timing information provided by the Connecticut Department of Transportation.

Synchro™ software was used to model the study intersections based on the parameters mentioned above. The Synchro software is widely utilized by the traffic engineering industry and is consistent with the procedures in the HCM.

### Signalized Intersections

Signalized intersections are analyzed in terms of vehicle capacity and motorist delay. Capacity is the maximum rate of vehicle flow through an intersection given typical operating conditions. The number of vehicles traveling through an intersection is divided by the capacity of the intersection to determine an overall volume to capacity ratio ( $v/c$ ). A  $v/c$  value under 1.00 indicates that the number of vehicles traveling through an intersection is less than capacity.

As stated in the HCM, level of service for signalized intersections is defined in terms of control delay. Control delay measures the increase in delay a motorist experiences while encountering a traffic control signal. These factors include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. This delay is measured per vehicle for a 15-minute analysis period and is associated with the levels of service, which are summarized in **Table 2** below:

**Table 2  
Signalized Intersection – Levels of Service**

<u>Level of Service</u>	<u>Control Delay</u> (seconds per vehicle)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Level of service A represents the optimum level where most motorists arrive at the subject intersection during the green phase and thus experience virtually no delay. Conversely, level of service F indicates that motorists are delayed over 80 seconds while traveling through the intersection and can often imply a complete breakdown of that location. Level of service D is generally considered the limit of acceptable motorist delay.

**Unsignalized Intersections**

Unsignalized intersections are generally evaluated in terms of average side street delay, as well as the capacity of the roadway approach. This analysis is based on the random arrival of vehicles and the associated gaps generated by this random arrival within the traffic stream. There is no overall level of service for unsignalized intersections. The relationship between levels of service and average side street delay are summarized in **Table 3** below:

**Table 3**  
**Unsignalized Intersection – Levels of Service**

<u>Level of Service</u>	<u>Control Delay</u> (seconds per vehicle)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

It should be noted that unsignalized levels of service do not correspond to those for signalized intersections, nor do they constitute warrants for the installation of traffic control signals. It is also recognized that the methodology is overly conservative and that computations can indicate operations at poor levels of service (E or F) with even very low side street volumes, although they often function without serious problems in the real world.

Tables 4, 5 and 6 show the AM, PM and Saturday peak hour levels of service (LOS), volume to capacity (V/C) ratios, average delays, and 95% queue lengths at the subject intersections for the background and build volume scenarios.

**Table 4-Peak Hour Traffic Operations Summary-Weekday AM**

	<b>Background</b>	<b>Build</b>
<b>Route 15 (Merritt Parkway) at Main Street<sup>1</sup></b>	<b>C (29" delay)</b>	<b>C (29" delay)</b>
Main Street (SR 731) NB Left (250')	D/36"/0.45/285	D/38"/0.52/345
Main Street (SR 731) NB Through	C/31"/0.25/105	C/32"/0.26/110
Main Street (SR 731) NB Right <sup>2</sup> (75')	A/1"/0.27/25	A/1"/0.29/25
Main Street (Route 111) SB Left (325')	E/55"/0.88/680	E/56"/0.88/680
Main Street (Route 111) SB Through	D/44"/0.70/325	D/45"/0.71/330
Main Street (Route 111) SB Right <sup>2</sup> (325')	A/1"/0.23/25	A/1"/0.23/25
Route 15 NB off ramp Left (200'+225')	C/34"/0.26/95	C/35"/0.26/95
Route 15 NB off ramp Right (200'+225')	C/32"/0.20/105	C/32"/0.22/110
Route 15 SB off ramp Left (410')	D/41"/0.67/230	D/41"/0.67/230
Route 15 SB off ramp Right (200'+200')	C/32"/0.17/90	C/32"/0.17/90
<b>Main Street (SR 731) at Mall Main Driveway<sup>1</sup></b>	<b>A (10" delay)</b>	<b>B (11" delay)</b>
Main Street (SR 731) NB Left (400')	C/24"/0.37/80	C/25"/0.40/80
Main Street (SR 731) NB Through	A/5"/0.31/75	A/6"/0.35/80
Main Street (SR 731) SB Through	B/16"/0.46/120	B/17"/0.50/125
Main Street (SR 731) SB Right <sup>2</sup>	A/1"/0.17/25	A/1"/0.17/25
Mall Driveway Left	C/21"/0.18/40	C/23"/0.32/55
Mall Driveway Right	A/7"/0.13/30	A/7"/0.12/35
<b>Mall Main Driveway at Ring Road<sup>1</sup></b>	<b>A (7" delay)</b>	<b>A (8" delay)</b>
Mall Main Driveway Left	B/10"/0.16/30	B/11"/0.20/35
Mall Main Driveway Right <sup>2</sup>	A/3"/0.20/25	A/3"/0.22/25
Ring Road NB Through	B/11"/0.02/25	B/12"/0.02/25
Ring Road NB Right <sup>2</sup>	A/5"/0.16/25	A/5"/0.17/25
Ring Road SB Left	B/11"/0.11/30	B/12"/0.15/35
Ring Road SB Left/Through	B/11"/0.11/30	B/12"/0.15/35
<b>Main Street (SR 731) at Site Driveway #1</b>		
Main Street (SR 731) NB Left <sup>3</sup>	-	B/13"/0.01/25
Site Driveway Right <sup>3</sup>	-	B/12"/0.01/25
<b>Mall Main Driveway and Site Driveway #2</b>		
Site Driveway Right <sup>3</sup>	-	B/11"/0.05/25

Notes: X/0.0/00 - Level of Service/Delay in seconds/veh./V/C ratio/95% Q length in feet

<sup>1</sup> - Signalized intersection

<sup>2</sup> - Channelized free-flow

<sup>3</sup> - Unsignalized movement

**Table 5-Peak Hour Traffic Operations Summary – Weekday PM**

	<b>Background</b>	<b>Build</b>
<b>Route 15 (Merritt Parkway) at Main Street<sup>1</sup></b>	<b>D (36" delay)</b>	<b>D (39" delay)</b>
Main Street (SR 731) NB Left (250')	D/54"/0.70/285	E/55"/0.72/320
Main Street (SR 731) NB Through	C/32"/0.37/195	C/33"/0.37/195
Main Street (SR 731) NB Right <sup>2</sup> (75')	A/1"/0.44/25	A/1"/0.45/25
Main Street (Route 111) SB Left (325')	D/51"/0.63/240	D/49"/0.60/240
Main Street (Route 111) SB Through	D/48"/0.79/550	D/47"/0.78/565
Main Street (Route 111) SB Right <sup>2</sup> (325')	A/1"/0.09/25	A/1"/0.09/25
Route 15 NB off ramp Left (200'+225')	D/37"/0.50/245	D/39"/0.52/245
Route 15 NB off ramp Right (200'+225')	D/46"/0.59/180	D/47"/0.62/200
Route 15 SB off ramp Left (410')	E/55"/0.92/585	E/68"/0.99/615
Route 15 SB off ramp Right (200'+200')	D/47"/0.62/190	D/46"/0.59/190
<b>Main Street (SR 731) at Mall Main Driveway<sup>1</sup></b>	<b>C (20" delay)</b>	<b>C (21" delay)</b>
Main Street (SR 731) NB Left (400')	D/44"/0.81/315	D/46"/0.82/330
Main Street (SR 731) NB Through	A/9"/0.32/130	A/9"/0.33/135
Main Street (SR 731) SB Through	C/34"/0.77/275	D/35"/0.78/285
Main Street (SR 731) SB Right <sup>2</sup>	A/1"/0.50/25	A/1"/0.50/25
Mall Driveway Left	C/33"/0.75/200	C/33"/0.77/215
Mall Driveway Right	A/9"/0.36/120	A/9"/0.36/120
<b>Mall Main Driveway at Ring Road<sup>1</sup></b>	<b>B (13" delay)</b>	<b>B (14" delay)</b>
Mall Main Driveway Left	B/18"/0.52/125	B/19"/0.53/130
Mall Main Driveway Right <sup>2</sup>	A/3"/0.50/35	A/3"/0.50/35
Ring Road NB Through	C/21"/0.14/40	C/22"/0.14/40
Ring Road NB Right <sup>2</sup>	A/9"/0.66/65	A/9"/0.66/65
Ring Road SB Left	C/22"/0.58/200	C/23"/0.59/225
Ring Road SB Left/Through	C/22"/0.57/195	C/22"/0.58/210
<b>Main Street (SR 731) at Site Driveway #1</b>		
Main Street (SR 731) NB Left <sup>3</sup>	-	C/23"/0.02/25
Site Driveway Right <sup>3</sup>	-	C/18"/0.01/25
<b>Mall Main Driveway and Site Driveway #2</b>		
Site Driveway Right <sup>3</sup>	-	B/15"/0.05/25

Notes: X/0.0/00 - Level of Service/Delay in seconds/veh./V/C ratio/95% Q length in feet

<sup>1</sup> - Signalized intersection

<sup>2</sup> - Channelized free-flow

<sup>3</sup> - Unsignalized movement

**Table 6-Peak Hour Traffic Operations Summary – Saturday Mid-Day**

	<b>Background</b>	<b>Build</b>
<b>Route 15 (Merritt Parkway) at Main Street<sup>1</sup></b>	<b>C (34" delay)</b>	<b>D (36" delay)</b>
Main Street (SR 731) NB Left (250')	D/51"/0.73/420	D/54"/0.77/465
Main Street (SR 731) NB Through	C/34"/0.34/155	C/34"/0.34/155
Main Street (SR 731) NB Right <sup>2</sup> (75')	A/1"/0.43/25	A/1"/0.44/25
Main Street (Route 111) SB Left (325')	D/45"/0.55/285	D/45"/0.54/285
Main Street (Route 111) SB Through	E/56"/0.85/485	E/56"/0.84/495
Main Street (Route 111) SB Right <sup>2</sup> (325')	A/1"/0.09/25	A/1"/0.09/25
Route 15 NB off ramp Left (200'+225')	D/36"/0.43/210	D/37"/0.44/210
Route 15 NB off ramp Right (200'+225')	D/40"/0.44/170	D/40"/0.46/185
Route 15 SB off ramp Left (410')	D/49"/0.86/525	D/54"/0.90/545
Route 15 SB off ramp Right (200'+200')	D/37"/0.18/80	D/37"/0.17/80
<b>Main Street (SR 731) at Mall Main Driveway<sup>1</sup></b>	<b>B (18" delay)</b>	<b>B (19" delay)</b>
Main Street (SR 731) NB Left (400')	D/43"/0.77/270	D/45"/0.79/285
Main Street (SR 731) NB Through	A/10"/0.30/120	B/10"/0.30/125
Main Street (SR 731) SB Through	C/30"/0.61/195	C/31"/0.63/205
Main Street (SR 731) SB Right <sup>2</sup>	A/1"/0.53/25	A/1"/0.54/25
Mall Driveway Left	C/31"/0.76/225	C/31"/0.77/245
Mall Driveway Right	A/8"/0.35/110	A/8"/0.35/110
<b>Mall Main Driveway at Ring Road<sup>1</sup></b>	<b>B (14" delay)</b>	<b>B (15" delay)</b>
Mall Main Driveway Left	B/19"/0.54/130	B/19"/0.55/135
Mall Main Driveway Right <sup>2</sup>	A/3"/0.51/35	A/3"/0.50/35
Ring Road NB Through	C/22"/0.18/45	C/23"/0.19/50
Ring Road NB Right <sup>2</sup>	A/10"/0.69/65	A/10"/0.69/70
Ring Road SB Left	C/23"/0.58/245	C/24"/0.61/270
Ring Road SB Left/Through	C/23"/0.59/245	C/24"/0.61/275
<b>Main Street (SR 731) at Site Driveway #1</b>		
Main Street (SR 731) NB Left <sup>3</sup>	-	C/20"/0.01/25
Site Driveway Right <sup>3</sup>	-	C/16"/0.01/25
<b>Mall Main Driveway and Site Driveway #2</b>		
Site Driveway Right <sup>3</sup>	-	B/15"/0.07/25

Notes: X/0.0/00 - Level of Service/Delay in seconds/veh./V/C ratio/95% Q length in feet

<sup>1</sup> - Signalized intersection

<sup>2</sup> - Channelized free-flow

<sup>3</sup> - Unsignalized movement

## V. CONCLUSIONS AND RECOMMENDATIONS

This study investigated the traffic operational changes associated with the proposed residential development during the weekday morning, evening and Saturday mid-day peak traffic periods. It is projected that the proposed development will generate approximately 1415 daily trips, 90 trips in the weekday AM peak hour, 110 trips in the weekday PM peak hour, and 100 trips in the Saturday mid-day peak hour.

All development projects have some traffic impact, ranging from minimal to severe. From an operational perspective, the adjacent roadway network should see no measurable negative impacts from the trips generated. There are a few traffic movements that deserve further review. During the weekday afternoon peak period, the Main Street northbound left turn onto Route 15 southbound shows the level of service changing from "D" under background conditions, to "E" under build conditions. This is more of an academic change than an operational one as the average delay, which determines the level of service, increases by less than 1 second per vehicle, from 54" to 55", resulting in the level of service going from "D" to "E". During the same time period, the delay for the Route 15 SB off ramp left turn is projected to increase from 55" to 68". A minor traffic signal timing change could restore the delay to near the background condition if conditions warrant.

The following is recommended to enhance traffic operations and safety:

In conjunction with the residential project:

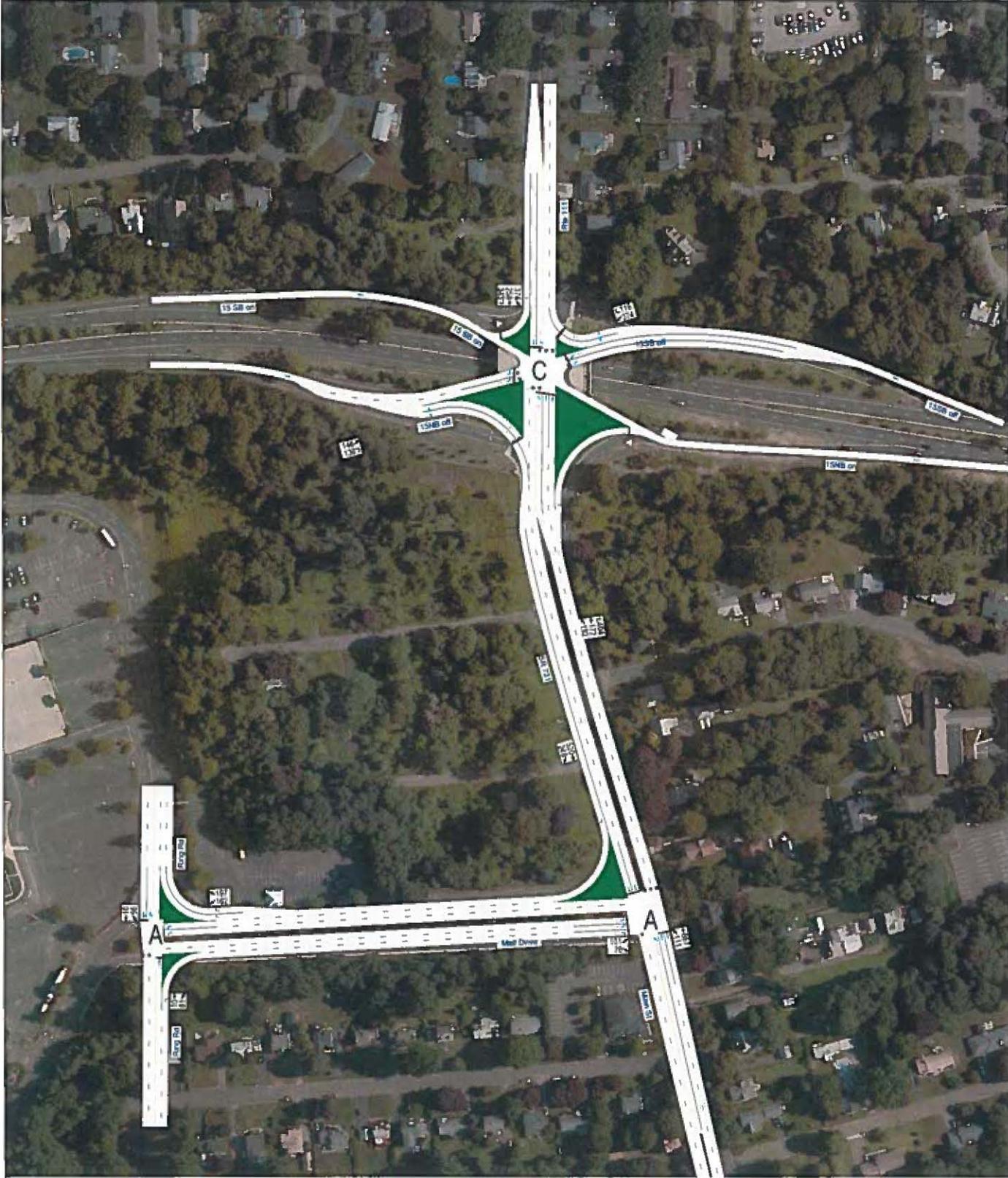
- Provide painted white stop line and double yellow centerline, along with a 36 inch "Stop" sign (R1-1) for the site driveway intersections. Insure that landscaping does not obstruct the sightlines.
- Prohibit left turns from the site driveway onto SR 731 (Main Street). Allow left turns into the site from a left turn lane created by modifying the SR 731 (Main Street) pavement markings.
- Work with the Mall owner to provide rectangular rapid flashing beacons (RRFB) at proposed pedestrian crossing on the Ring Road. Eliminate the existing crossing at the overflow parking lot, which is sight distance deficient.
- Consult with the Trumbull Board of Education to determine school bus stop locations if a substantial number of school aged children is anticipated.

- Submit the project to the Office of State Traffic Administration (OSTA) for review as a major traffic generator.

# **APPENDIX**

Map - Proposed Residential  
Levels of Service

No Build  
Timing Plan: AM



bing ©2014 Microsoft Corporation AND ©2013 Nokia

BL Companies

\\blcompanies.com\dfs\proj\JOBS18\04\1800513\TRAF\SYNCHRO\T-1800513-NOBUILD-AM.syn

Lanes, Volumes, Timings  
 20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off

No Build  
 Timing Plan: AM



Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	ØB
Lane Configurations	↖↖	↖↖	↖↖	↖↖	↖	↗↗	↖	↖	↗	↖	
Traffic Volume (vph)	146	136	374	116	192	172	404	374	258	343	
Future Volume (vph)	146	136	374	116	192	172	404	374	258	343	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)						0%			0%		
Storage Length (ft)	0		400		225			325			
Storage Lanes	2		2		1			1			
Taper Length (ft)	25		150		75			150			
Lane Util. Factor	0.97	0.88	0.97	0.88	1.00	0.95	1.00	1.00	1.00	1.00	
Frt		0.850		0.850			0.850			0.850	
Flt Protected	0.950		0.950		0.950			0.950			
Satd. Flow (prot)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Flt Permitted	0.950		0.950		0.950			0.950			
Satd. Flow (perm)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Right Turn on Red		No		No			Yes			Yes	
Satd. Flow (RTOR)							439			373	
Link Speed (mph)						40			40		
Link Distance (ft)						1045			532		
Travel Time (s)						17.8			9.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%	
Adj. Flow (vph)	159	148	407	126	209	187	439	407	280	373	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	159	148	407	126	209	187	439	407	280	373	
Turn Type	Prot	Prot	Prot	Perm	Prot	NA	Free	Prot	NA	Free	
Protected Phases	4	1	4		1	2		1	2		3
Permitted Phases				1			Free			Free	
Detector Phase	4	1	4	1	1	2		1	2		
Switch Phase											
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0	15.0		9.0	15.0		1.0
Minimum Split (s)	18.0	16.0	18.0	16.0	16.0	25.0		16.0	25.0		33.0
Total Split (s)	33.0	28.0	33.0	28.0	28.0	39.0		28.0	39.0		33.0
Total Split (%)	24.8%	21.1%	24.8%	21.1%	21.1%	29.3%		21.1%	29.3%		25%
Maximum Green (s)	24.0	21.0	24.0	21.0	21.0	30.0		21.0	30.0		31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0		2.0
All-Red Time (s)	6.0	4.0	6.0	4.0	4.0	5.0		4.0	5.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)	9.0	7.0	9.0	7.0	7.0	9.0		7.0	9.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	5.0		3.0	5.0		0.2
Recall Mode	None	None	None	None	None	Min		None	Min		None
Walk Time (s)											12.0
Flash Dont Walk (s)											19.0
Pedestrian Calls (#/hr)											1
Act Effct Green (s)	15.2	22.2	15.2	22.2	22.2	18.5	86.6	22.2	18.5	86.6	
Actuated g/C Ratio	0.18	0.26	0.18	0.26	0.26	0.21	1.00	0.26	0.21	1.00	
v/c Ratio	0.26	0.20	0.67	0.17	0.45	0.25	0.27	0.88	0.70	0.23	
Control Delay	34.4	31.6	40.8	31.6	36.0	31.4	0.4	55.2	44.2	0.3	

Lanes, Volumes, Timings  
 20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off

No Build  
 Timing Plan: AM



Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.4	31.6	40.8	31.6	36.0	31.4	0.4	55.2	44.2	0.3	
LOS	C	C	D	C	D	C	A	E	D	A	
Approach Delay						16.3			33.0		
Approach LOS						B			C		
Queue Length 50th (ft)	32	29	90	25	79	38	0	175	124	0	
Queue Length 95th (ft)	94	103	226	89	#282	105	0	#680	323	0	
Internal Link Dist (ft)						965			452		
Turn Bay Length (ft)		175	400	100	225		220	325		325	
Base Capacity (vph)	1019	724	1019	724	462	1294	1615	462	681	1615	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.20	0.40	0.17	0.45	0.14	0.27	0.88	0.41	0.23	

**Intersection Summary:**  
 Area Type: Other  
 Cycle Length: 133  
 Actuated Cycle Length: 86.6  
 Natural Cycle: 105  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.88  
 Intersection Signal Delay: 29.0      Intersection LOS: C  
 Intersection Capacity Utilization Err%      ICU Level of Service: H  
 Analysis Period (min): 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off



Lanes, Volumes, Timings  
28: Main St/SR 731 & Mall Drive

No Build  
Timing Plan: AM



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↗↗	↗	↖	↕↕	↕↕	↖
Traffic Volume (vph)	101	76	111	667	520	248
Future Volume (vph)	101	76	111	667	520	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	0	0	375			700
Storage Lanes	2	1	1			1
Taper Length (ft)	8		8			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Fr <sub>t</sub>		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3319	1531	1711	3421	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3319	1531	1711	3421	3539	1583
Right Turn on Red		Yes				No
Satd. Flow (RTOR)		35				
Link Speed (mph)	30			40	40	
Link Distance (ft)	922			664	1045	
Travel Time (s)	21.0			11.3	17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	83	121	725	565	270
Shared Lane Traffic (%)						
Lane Group Flow (vph)	110	83	121	725	565	270
Turn Type	Prot	pt+ov	Prot	NA	NA	Free
Protected Phases	4	14	1	12	2	
Permitted Phases						Free
Detector Phase	4	4	1	2	2	
Switch Phase						
Minimum Initial (s)	9.0		9.0		15.0	
Minimum Split (s)	21.0		15.0		21.0	
Total Split (s)	37.0		27.0		26.0	
Total Split (%)	41.1%		30.0%		28.9%	
Maximum Green (s)	31.0		21.0		20.0	
Yellow Time (s)	4.0		4.0		4.0	
All-Red Time (s)	2.0		2.0		2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.0		6.0		6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		5.0	
Recall Mode	None		Min		Min	
Act Effect Green (s)	9.3	21.0	9.8	35.2	17.6	50.9
Actuated g/C Ratio	0.18	0.41	0.19	0.69	0.35	1.00
v/c Ratio	0.18	0.13	0.37	0.31	0.46	0.17
Control Delay	21.3	6.6	24.0	5.0	15.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.3	6.6	24.0	5.0	15.5	0.2
LOS	C	A	C	A	B	A
Approach Delay	15.0			7.7	10.6	

Lanes, Volumes, Timings  
 28: Main St/SR 731 & Mall Drive

No Build  
 Timing Plan: AM



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	B			A		
Queue Length 50th (ft)	15	8	34	50	73	0
Queue Length 95th (ft)	36	29	78	74	119	0
Internal Link Dist (ft)	842		584		965	
Turn Bay Length (ft)	375			700		
Base Capacity (vph)	2081	973	726	2456	1431	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.09	0.17	0.30	0.39	0.17

**Intersection Summary**

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 50.9

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 9.8

Intersection LOS: A

Intersection Capacity Utilization 44.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 28: Main St/SR 731 & Mall Drive



Lanes, Volumes, Timings  
30: Ring Rd & Mall Drive

No Build  
Timing Plan: AM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙↘	↙↘	↑	↗	↘↙	↗
Traffic Volume (vph)	162	197	10	81	96	10
Future Volume (vph)	162	197	10	81	96	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	150		0	0	
Storage Lanes	2	1		1	1	
Taper Length (ft)	8				8	
Lane Util. Factor	0.97	0.88	1.00	1.00	0.95	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	0.961
Satd. Flow (prot)	3433	2787	1863	1583	1681	1701
Flt Permitted	0.950				0.950	0.961
Satd. Flow (perm)	3433	2787	1863	1583	1681	1701
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		214		88		
Link Speed (mph)	30		30			30
Link Distance (ft)	922		359			275
Travel Time (s)	21.0		8.2			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	176	214	11	88	104	11
Shared Lane Traffic (%)					45%	
Lane Group Flow (vph)	176	214	11	88	57	58
Turn Type	Prot	Perm	NA	Perm	Split	NA
Protected Phases	3		2		1	1
Permitted Phases		3		2		
Detector Phase	3	3	2	2	1	1
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0	20.0	20.0	11.0	11.0
Total Split (s)	34.0	34.0	34.0	34.0	22.0	22.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	24.4%	24.4%
Maximum Green (s)	30.0	30.0	30.0	30.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	8.6	8.6	8.3	8.3	8.4	8.4
Actuated g/C Ratio	0.32	0.32	0.31	0.31	0.32	0.32
v/c Ratio	0.16	0.20	0.02	0.16	0.11	0.11
Control Delay	10.1	3.0	11.3	4.7	11.2	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	3.0	11.3	4.7	11.2	11.2

Lanes, Volumes, Timings  
30: Ring Rd & Mall Drive

No Build  
Timing Plan: AM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	B	A	B	A	B	B
Approach Delay	6.2		5.5			11.2
Approach LOS	A		A			B
Queue Length 50th (ft)	13	0	2	0	8	8
Queue Length 95th (ft)	29	16	9	21	28	28
Internal Link Dist (ft)	842		279			195
Turn Bay Length (ft)		150				
Base Capacity (vph)	3179	2597	1725	1472	1203	1217
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.08	0.01	0.06	0.05	0.05

Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	26.6
Natural Cycle:	55
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.20
Intersection Signal Delay:	7.1
Intersection LOS:	A
Intersection Capacity Utilization:	22.1%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 30: Ring Rd & Mall Drive





Lanes, Volumes, Timings  
5: Ring Rd & Site Driveway #3

Build  
Timing Plan: AM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	38	0	207	2	0	106
Future Volume (vph)	33	0	207	2	0	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	0.95	0.95
Friction	0.999					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	5080	0	0	3589
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	5080	0	0	3589
Link Speed (mph)	30	30		30		
Link Distance (ft)	249	571		155		
Travel Time (s)	5.7	13.0		3.5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	0	225	2	0	115
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	0	227	0	0	115
Sign Control	Stop	Free		Free		

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 14.0% ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑↑			↑↑
Traffic Vol, veh/h	33	0	207	2	0	106
Future Vol, veh/h	33	0	207	2	0	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	0	225	2	0	115

Major/Minor	Minor1	Major1	Major2	Major3	Major4
Conflicting Flow All	284	114	0	0	227
Stage 1	226	-	-	-	-
Stage 2	58	-	-	-	-
Critical Hdwy	6.29	7.14	-	-	5.34
Critical Hdwy Stg 1	6.64	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.67	3.92	-	-	3.12
Pot Cap-1 Maneuver	688	779	-	-	908
Stage 1	724	-	-	-	-
Stage 2	919	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	688	779	-	-	908
Mov Cap-2 Maneuver	688	-	-	-	-
Stage 1	724	-	-	-	-
Stage 2	919	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	688	908
HCM Lane V/C Ratio	-	-	0.052	-
HCM Control Delay (s)	-	-	10.5	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Lanes, Volumes, Timings  
 11: Mall Drive & Site Driveway #2

Build  
 Timing Plan: AM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↑
Traffic Volume (vph)	0	243	361	2	0	33
Future Volume (vph)	0	243	361	2	0	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt			0.999			0.865
Flt Protected						
Satd. Flow (prot)	0	5085	5080	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	5085	5080	0	0	1611
Link Speed (mph)		30	30		30	
Link Distance (ft)		454	468		203	
Travel Time (s)		10.3	10.6		4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	264	392	2	0	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	264	394	0	0	36
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	17.0%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑↑↑		↑↑↑			↑
Traffic Vol, veh/h	0	248	361	2	0	33
Future Vol, veh/h	0	243	361	2	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh-in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	264	392	2	0	36

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	197
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	690
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	690
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	690
HCM Lane V/C Ratio	-	-	-	0.052
HCM Control Delay (s)	-	-	-	10.5
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.2

Lanes, Volumes, Timings  
12: SR 731 & Site Driveway #1

Build  
Timing Plan: AM



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↖	↑↑	↑↑↔	
Traffic Volume (vph)	0	4	1	830	771	15
Future Volume (vph)	0	4	1	830	771	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	50			0
Storage Lanes	0	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.91	0.91
Frt		0.865			0.997	
Flt Protected			0.950			
Satd. Flow (prot)	0	1611	1770	3539	5070	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	1611	1770	3539	5070	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	303			585	157	
Travel Time (s)	6.9			10.0	2.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	4	1	902	838	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	4	1	902	854	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.3% ICU Level of Service A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↘	↕	↕	↕
Traffic Vol, veh/h	0	4	1	830	771	15
Future Vol, veh/h	0	4	1	830	771	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	1	902	838	16

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	427	854	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	5.34	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	0	492	460	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	492	460	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	460	-	492	-	-
HCM Lane V/C Ratio	0.002	-	0.009	-	-
HCM Control Delay (s)	12.8	-	12.4	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lanes, Volumes, Timings

20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off

Build  
Timing Plan: AM



Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	ØB
Lane Configurations	↖↗	↖↗	↖↗	↖↗	↖	↕	↖	↖	↕	↖	
Traffic Volume (vph)	146	144	382	116	220	178	432	374	260	343	
Future Volume (vph)	146	144	382	116	220	178	432	374	260	343	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)						0%			0%		
Storage Length (ft)	0		400		225			325			
Storage Lanes	2		2		1			1			
Taper Length (ft)	25		150		75			150			
Lane Util. Factor	0.97	0.88	0.97	0.88	1.00	0.95	1.00	1.00	1.00	1.00	
Frt		0.850		0.850			0.850			0.850	
Flt Protected	0.950		0.950		0.950			0.950			
Satd. Flow (prot)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Flt Permitted	0.950		0.950		0.950			0.950			
Satd. Flow (perm)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Right Turn on Red		No		No			Yes			Yes	
Satd. Flow (RTOR)							470			373	
Link Speed (mph)						40			40		
Link Distance (ft)						304			532		
Travel Time (s)						5.2			9.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%	
Adj. Flow (vph)	159	157	415	126	239	193	470	407	283	373	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	159	157	415	126	239	193	470	407	283	373	
Turn Type	Prot	Prot	Prot	Perm	Prot	NA	Free	Prot	NA	Free	
Protected Phases	4	1	4		1	2		1	2		3
Permitted Phases				1			Free			Free	
Detector Phase	4	1	4	1	1	2		1	2		
Switch Phase											
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0	15.0		9.0	15.0		1.0
Minimum Split (s)	18.0	16.0	18.0	16.0	16.0	25.0		16.0	25.0		33.0
Total Split (s)	33.0	28.0	33.0	28.0	28.0	39.0		28.0	39.0		33.0
Total Split (%)	24.8%	21.1%	24.8%	21.1%	21.1%	29.3%		21.1%	29.3%		25%
Maximum Green (s)	24.0	21.0	24.0	21.0	21.0	30.0		21.0	30.0		31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0		2.0
All-Red Time (s)	6.0	4.0	6.0	4.0	4.0	5.0		4.0	5.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)	9.0	7.0	9.0	7.0	7.0	9.0		7.0	9.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	5.0		3.0	5.0		0.2
Recall Mode	None	None	None	None	None	Min		None	Min		None
Walk Time (s)											12.0
Flash Dont Walk (s)											19.0
Pedestrian Calls (#/hr)											1
Act Effct Green (s)	15.4	22.1	15.4	22.1	22.1	18.5	86.8	22.1	18.5	86.8	
Actuated g/C Ratio	0.18	0.25	0.18	0.25	0.25	0.21	1.00	0.25	0.21	1.00	
w/c Ratio	0.26	0.22	0.67	0.17	0.52	0.26	0.29	0.88	0.71	0.23	
Control Delay	34.4	31.8	40.9	31.7	37.2	31.5	0.5	55.8	44.7	0.3	

Lanes, Volumes, Timings

20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off

Build

Timing Plan: AM



Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.4	31.8	40.9	31.7	37.2	31.5	0.5	55.8	44.7	0.3	
LOS	C	C	D	C	D	C	A	E	D	A	
Approach Delay						16.8			33.4		
Approach LOS						B			C		
Queue Length 50th (ft)	32	31	92	25	92	40	0	177	126	0	
Queue Length 95th (ft)	94	108	230	89	#343	108	0	#680	326	0	
Internal Link Dist (ft)						224			452		
Turn Bay/Length (ft)		175	400	100	225		220	325		325	
Base Capacity (vph)	1016	721	1016	721	460	1289	1615	460	679	1615	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.22	0.41	0.17	0.52	0.15	0.29	0.88	0.42	0.23	

Intersection Summary

Area Type: Other  
 Cycle Length: 133  
 Actuated Cycle Length: 86.8  
 Natural Cycle: 115  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.88  
 Intersection Signal Delay: 29.1  
 Intersection LOS: C  
 Intersection Capacity Utilization Err%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity; queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off



Lanes, Volumes, Timings  
28: Main St/SR 731 & Mall Drive

Build  
Timing Plan: AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	 			 	 	
Traffic Volume (vph)	163	80	112	668	524	251
Future Volume (vph)	163	80	112	668	524	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	0	0	375			0
Storage Lanes	2	1	1			1
Taper Length (ft)	8		8			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3319	1531	1711	3421	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3319	1531	1711	3421	3539	1583
Right Turn on Red		Yes				No
Satd. Flow (RTOR)		34				
Link Speed (mph)	30			40	40	
Link Distance (ft)	468			664	585	
Travel Time (s)	10.6			11.3	10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	87	122	726	570	273
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	87	122	726	570	273
Turn Type	Prot	pt+ov	Prot	NA	NA	Free
Protected Phases	4	14	1	12	2	
Permitted Phases						Free
Detector Phase	4	4	1	2	2	
Switch Phase						
Minimum Initial (s)	9.0		9.0		15.0	
Minimum Split (s)	21.0		15.0		21.0	
Total Split (s)	37.0		27.0		26.0	
Total Split (%)	41.1%		30.0%		28.9%	
Maximum Green (s)	31.0		21.0		20.0	
Yellow Time (s)	4.0		4.0		4.0	
All-Red Time (s)	2.0		2.0		2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.0		6.0		6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		5.0	
Recall Mode	None		Min		Min	
Act Effct Green (s)	9.1	24.7	9.6	33.1	17.5	54.3
Actuated g/C Ratio	0.17	0.45	0.18	0.61	0.32	1.00
v/c Ratio	0.32	0.12	0.40	0.35	0.50	0.17
Control Delay	22.5	6.8	25.0	5.7	16.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.5	6.8	25.0	5.7	16.6	0.2
LOS	C	A	C	A	B	A
Approach Delay	17.3			8.5	11.3	

Lanes, Volumes, Timings  
28: Main St/SR 731 & Mall Drive

Build  
Timing Plan: AM



Age Group:	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	B			A B		
Queue Length 50th (ft)	26	9	35	50	74	0
Queue Length 95th (ft)	54	31	80	76	123	0
Internal Link Dist (ft)	388			584	505	
Turn Bay Length (ft)	375					
Base Capacity (vph)	1901	891	663	2248	1307	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.10	0.18	0.32	0.44	0.17

**Intersection Summary**  
 Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 54.3  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.50  
 Intersection Signal Delay: 10.9  
 Intersection LOS: B  
 Intersection Capacity Utilization 44.5%  
 ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 28: Main St/SR 731 & Mall Drive



Lanes, Volumes, Timings  
30: Ring Rd & Mall Drive

Build  
Timing Plan: AM



Lane Group	WBL	WBL	WBR	NBT	NRB	SBL	SBT
Lane Configurations		LT	LT	TH	TH	RT	RT
Traffic Volume (vph)	33	162	199	10	81	129	10
Future Volume (vph)	33	162	199	10	81	129	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0	
Storage Lanes		2	1		1	1	
Taper Length (ft)		8			8		
Lane Util. Factor	0.95	0.97	0.88	1.00	1.00	0.95	0.95
Frnt			0.850		0.850		
Flt Protected		0.950				0.950	0.959
Satd. Flow (prot)	0	3433	2787	1863	1583	1681	1697
Flt Permitted		0.950				0.950	0.959
Satd. Flow (perm)	0	3433	2787	1863	1583	1681	1697
Right Turn on Red			Yes		Yes		
Satd. Flow (RTOR)			216		88		
Link Speed (mph)		30		30			30
Link Distance (ft)		454		359			571
Travel Time (s)		10.3		8.2			13.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	176	216	11	88	140	11
Shared Lane Traffic (%)						46%	
Lane Group Flow (vph)	0	212	216	11	88	76	75
Turn Type	Prot	Prot	Perm	NA	Perm	Split	NA
Protected Phases	3	3		2		1	1
Permitted Phases			3		2		
Detector Phase	3	3	3	2	2	1	1
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	11.0	11.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	22.0	22.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	37.8%	24.4%	24.4%
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag				Lag	Lag	Lead	Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None						
Act Effct Green (s)		8.6	8.6	8.1	8.1	8.4	8.4
Actuated g/C Ratio		0.30	0.30	0.29	0.29	0.30	0.30
v/c Ratio		0.20	0.22	0.02	0.17	0.15	0.15
Control Delay		10.7	3.1	11.9	5.0	11.9	11.9
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		10.7	3.1	11.9	5.0	11.9	11.9
LOS		B	A	B	A	B	B
Approach Delay		6.9		5.8			11.9
Approach LOS		A		A			B

Lanes, Volumes, Timings  
30: Ring Rd & Mall Drive

Build  
Timing Plan: AM



Lane Group	WBL	WBR	NBL	NBR	SBL	SBT
Queue Length 50th (ft)	15	0	2	0	11	11
Queue Length 95th (ft)	35	17	10	22	35	35
Internal Link Dist (ft)	374		279			491
Turn Bay Length (ft)		150				
Base Capacity (vph)	3129	2559	1698	1450	1188	1199
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.08	0.04	0.06	0.06	0.06

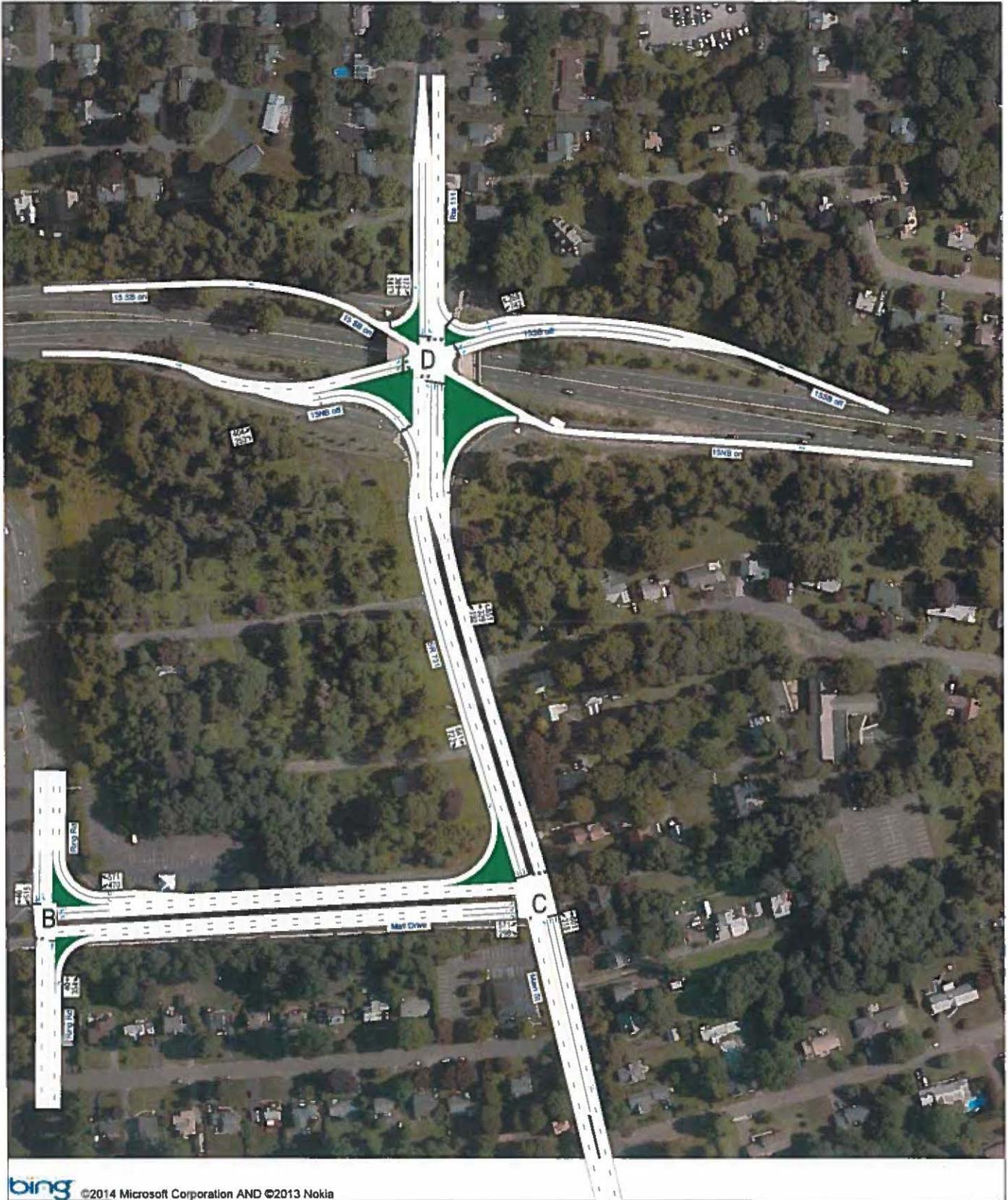
Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	28.4
Natural Cycle:	55
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.22
Intersection Signal Delay:	7.8
Intersection LOS:	A
Intersection Capacity Utilization:	23.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 30: Ring Rd & Mall Drive



Map - Proposed Residential  
Levels of Service

No Build  
Timing Plan: PM



bing ©2014 Microsoft Corporation AND ©2013 Nokia

BL Companies

\\blcompanies.com\dfs\proj\JOBS18\04\1800513\TRAFISYNCHROIT-1800513-NOBUILD-PM.syn

Lanes, Volumes, Timings

20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off

No Build  
Timing Plan: PM



Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	ØB
Lane Configurations	↖↗	↖↗	↖↗	↖↗	↖	↕	↖	↖	↖	↖	↖
Traffic Volume (vph)	404	253	742	268	192	329	651	172	369	141	
Future Volume (vph)	404	253	742	268	192	329	651	172	369	141	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)						0%			0%		
Storage Length (ft)	0		400		225			325			
Storage Lanes	2		2		1			1			
Taper Length (ft)	25		150		75			150			
Lane Util. Factor	0.97	0.88	0.97	0.88	1.00	0.95	1.00	1.00	1.00	1.00	
Fr <sub>t</sub>		0.850		0.850			0.850			0.850	
Fit Protected	0.950		0.950		0.950			0.950			
Satd. Flow (prot)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Fit Permitted	0.950		0.950		0.950			0.950			
Satd. Flow (perm)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Right Turn on Red		No		No			Yes			Yes	
Satd. Flow (RTOR)							708			197	
Link Speed (mph)						40			40		
Link Distance (ft)						1045			532		
Travel Time (s)						17.8			9.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%	
Adj. Flow (vph)	439	275	807	291	209	358	708	187	401	153	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	439	275	807	291	209	358	708	187	401	153	
Turn Type	Prot	Prot	Prot	Perm	Prot	NA	Free	Prot	NA	Free	
Protected Phases	4	1	4		1	2		1	2		3
Permitted Phases				1			Free			Free	
Detector Phase	4	1	4	1	1	2		1	2		
Switch Phase											
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0	15.0		9.0	15.0		1.0
Minimum Split (s)	18.0	16.0	18.0	16.0	16.0	25.0		16.0	25.0		33.0
Total Split (s)	33.0	28.0	33.0	28.0	28.0	39.0		28.0	39.0		33.0
Total Split (%)	24.8%	21.1%	24.8%	21.1%	21.1%	29.3%		21.1%	29.3%		25%
Maximum Green (s)	24.0	21.0	24.0	21.0	21.0	30.0		21.0	30.0		31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0		2.0
All-Red Time (s)	6.0	4.0	6.0	4.0	4.0	5.0		4.0	5.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)	9.0	7.0	9.0	7.0	7.0	9.0		7.0	9.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	5.0		3.0	5.0		0.2
Recall Mode	None	None	None	None	None	Min		None	Min		None
Walk Time (s)											12.0
Flash Dont Walk (s)											19.0
Pedestrian Calls (#/hr)											1
Act Effct Green (s)	24.7	16.4	24.7	16.4	16.4	26.9	98.7	16.4	26.9	98.7	
Actuated g/C Ratio	0.25	0.17	0.25	0.17	0.17	0.27	1.00	0.17	0.27	1.00	
v/c Ratio	0.50	0.59	0.92	0.62	0.70	0.37	0.44	0.63	0.79	0.09	
Control Delay	37.4	45.6	55.2	46.5	54.3	32.4	0.9	50.7	47.6	0.1	

Lanes, Volumes, Timings  
 20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off

No Build  
 Timing Plan: PM



Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	45.6	55.2	46.5	54.3	32.4	0.9	50.7	47.6	0.1	
LOS	D	D	E	D	D	C	A	D	D	A	
Approach Delay						18.5			38.6		
Approach LOS						B			D		
Queue Length 50th (ft)	115	86	243	92	118	87	0	104	213	0	
Queue Length 95th (ft)	243	180	#582	190	#282	191	0	238	#547	0	
Internal Link Dist (ft)						965			452		
Turn Bay Length (ft)		175	400	100	225		220	325		325	
Base Capacity (vph)	873	620	873	620	396	1109	1615	396	583	1615	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.50	0.44	0.92	0.47	0.53	0.32	0.44	0.47	0.69	0.09	

**Intersection Summary:**  
 Area Type: Other  
 Cycle Length: 133  
 Actuated Cycle Length: 98.7  
 Natural Cycle: 125  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay: 36.4      Intersection LOS: D  
 Intersection Capacity Utilization Err%      ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



Lanes, Volumes, Timings  
28: Main St/SR 731 & Mall Drive

No Build  
Timing Plan: PM



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↖	↖	↕↕	↕↕	↖
Traffic Volume (vph)	571	298	318	601	641	723
Future Volume (vph)	571	298	318	601	641	723
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	0	0	375			700
Storage Lanes	2	1	1			1
Taper Length (ft)	8		8			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Fr		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3319	1531	1711	3421	3539	1588
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3319	1531	1711	3421	3539	1588
Right Turn on Red		Yes				No
Satd. Flow (RTOR)		15				
Link Speed (mph)	30			40	40	
Link Distance (ft)	922			664	1045	
Travel Time (s)	21.0			11.3	17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	621	324	346	653	697	786
Shared Lane Traffic (%)						
Lane Group Flow (vph)	621	324	346	653	697	786
Turn Type	Prot	pt+ov	Prot	NA	NA	Free
Protected Phases	4	14	1	12	2	
Permitted Phases						Free
Detector Phase	4	4	1	2	2	
Switch Phase						
Minimum Initial (s)	9.0		9.0		15.0	
Minimum Split (s)	21.0		15.0		21.0	
Total Split (s)	37.0		27.0		26.0	
Total Split (%)	41.1%		30.0%		28.9%	
Maximum Green (s)	31.0		21.0		20.0	
Yellow Time (s)	4.0		4.0		4.0	
All-Red Time (s)	2.0		2.0		2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.0		6.0		6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		5.0	
Recall Mode	None		Min		Min	
Act Effct Green (s)	18.6	43.4	18.7	43.9	19.1	74.7
Actuated g/C Ratio	0.25	0.58	0.25	0.59	0.26	1.00
v/c Ratio	0.75	0.36	0.81	0.32	0.77	0.50
Control Delay	32.6	9.1	43.8	8.9	34.1	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	9.1	43.8	8.9	34.1	1.1
LOS	C	A	D	A	C	A
Approach Delay	24.5			21.0	16.6	



Lanes, Volumes, Timings  
30: Ring Rd & Mall Drive

No Build  
Timing Plan: PM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙↘	↗↘	↑	↗	↙	↘
Traffic Volume (vph)	470	571	40	354	515	40
Future Volume (vph)	470	571	40	354	515	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	150		0	0	
Storage Lanes	2	1		1	1	
Taper Length (ft)	8				8	
Lane Util. Factor	0.97	0.88	1.00	1.00	0.95	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	0.959
Satd. Flow (prot)	3433	2787	1863	1583	1681	1697
Flt Permitted	0.950				0.950	0.959
Satd. Flow (perm)	3433	2787	1863	1583	1681	1697
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		621		385		
Link Speed (mph)	30		30		30	
Link Distance (ft)	922		359		275	
Travel Time (s)	21.0		8.2		6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	511	621	43	385	560	43
Shared Lane Traffic (%)					46%	
Lane Group Flow (vph)	511	621	43	385	302	301
Turn Type	Prot	Perm	NA	Perm	Split	NA
Protected Phases	3		2		1	1
Permitted Phases		3		2		
Detector Phase	3	3	2	2	1	1
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0	20.0	20.0	11.0	11.0
Total Split (s)	34.0	34.0	34.0	34.0	22.0	22.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	24.4%	24.4%
Maximum Green (s)	30.0	30.0	30.0	30.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	14.9	14.9	8.6	8.6	16.0	16.0
Actuated g/C Ratio	0.29	0.29	0.17	0.17	0.31	0.31
v/c Ratio	0.52	0.50	0.14	0.66	0.58	0.57
Control Delay	18.0	3.2	21.4	9.1	22.1	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	3.2	21.4	9.1	22.1	21.7

Lanes, Volumes, Timings  
30: Ring Rd & Mall Drive

No Build  
Timing Plan: PM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	B	A	C	A	C	C
Approach Delay	9.9		10.3			21.9
Approach LOS	A		B			C
Queue Length 50th (ft)	64	0	11	0	73	73
Queue Length 95th (ft)	122	34	37	68	#196	193
Internal Link Dist (ft)	842		279			195
Turn Bay Length (ft)		150				
Base Capacity (vph)	2038	1906	1106	1096	598	604
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.33	0.04	0.35	0.51	0.50

**Intersection Summary**  
 Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 51.8  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 13.3      Intersection LOS: B  
 Intersection Capacity Utilization 43.9%      ICU Level of Service A  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 30: Ring Rd & Mall Drive





Lanes, Volumes, Timings  
5: Ring Rd & Site Driveway #3

Build  
Timing Plan: PM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑↑			↑↑
Traffic Volume (vph)	19	0	611	7	0	555
Future Volume (vph)	19	0	611	7	0	555
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	0.95	0.95
Flt			0.998			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	5075	0	0	3589
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	5075	0	0	3589
Link Speed (mph)	30		30			30
Link Distance (ft)	249		515			155
Travel Time (s)	5.7		11.7			3.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	0	664	8	0	603
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	672	0	0	603
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.3%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑↑			↑↑
Traffic Vol, veh/h	19	0	611	7	0	555
Future Vol, veh/h	19	0	611	7	0	555
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	0	664	8	0	603

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	970	336	0	0	672	0
Stage 1	668	-	-	-	-	-
Stage 2	302	-	-	-	-	-
Critical Hdwy	6.29	7.14	-	-	5.34	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.67	3.92	-	-	3.12	-
Pot Cap-1 Maneuver	284	563	-	-	562	-
Stage 1	395	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Platoon blocked, %						
Mov Cap-1 Maneuver	284	563	-	-	562	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	395	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	284	562
HCM Lane V/C Ratio	-	-	0.073	-
HCM Control Delay (s)	-	-	18.7	0
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Lanes, Volumes, Timings  
 11: Mall Drive & Site Driveway #2

Build  
 Timing Plan: PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↑
Traffic Volume (vph)	0	907	1048	7	0	19
Future Volume (vph)	0	907	1048	7	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt			0.999			0.865
Flt Protected						
Satd. Flow (prot)	0	5085	5080	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	5085	5080	0	0	1611
Link Speed (mph)		30	30		30	
Link Distance (ft)		454	468		203	
Travel Time (s)		10.3	10.6		4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	986	1139	8	0	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	986	1147	0	0	21
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.4%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑↑↑		↑↑↑			↑
Traffic Vol, veh/h	0	907	1048	7	0	19
Future Vol, veh/h	0	907	1048	7	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	986	1139	8	0	21

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	574
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	396
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	396
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	396
HCM Lane V/C Ratio	-	-	-	0.052
HCM Control Delay, (s)	-	-	-	14.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.2

Lanes, Volumes, Timings  
12: SR 731 & Site Driveway #1

Build  
Timing Plan: PM



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↖	↕	↕	
Traffic Volume (vph)	0	2	4	1208	1374	52
Future Volume (vph)	0	2	4	1208	1374	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	50			0
Storage Lanes	0	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	0.91	0.91	0.91	0.91
Frt		0.865			0.994	
Flt Protected			0.950			
Satd. Flow (prot)	0	1611	1610	3390	5055	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	1611	1610	3390	5055	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	303			585	157	
Travel Time (s)	6.9			10.0	2.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2	4	1313	1493	57
Shared Lane Traffic (%)			10%			
Lane Group Flow (vph)	0	2	4	1313	1560	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.7%
	ICU Level of Service A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↘	↔↔	↕↕	
Traffic Vol, veh/h	0	2	4	1208	1374	52
Future Vol, veh/h	0	2	4	1208	1374	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2	4	1313	1493	57

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	775	1550	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	5.34	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	0	292	210	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	292	210	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.4	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	210	-	292	-	-
HCM Lane V/C Ratio	0.021	-	0.007	-	-
HCM Control Delay (s)	22.5	0.2	17.4	-	-
HCM Lane LOS	C	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Lanes, Volumes, Timings

20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off

Build

Timing Plan: PM



Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	ØB
Lane Configurations	↖↗	↖↗	↖↗	↖↗	↖	↕	↖	↖	↕	↖	
Traffic Volume (vph)	404	281	770	268	208	333	667	172	375	141	
Future Volume (vph)	404	281	770	268	208	333	667	172	375	141	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)						0%			0%		
Storage Length (ft)	0		400		225			325			
Storage Lanes	2		2		1			1			
Taper Length (ft)	25		150		75			150			
Lane Util. Factor	0.97	0.88	0.97	0.88	1.00	0.95	1.00	1.00	1.00	1.00	
Frt		0.850		0.850			0.850			0.850	
Flt Protected	0.950		0.950		0.950			0.950			
Satd. Flow (prot)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Flt Permitted	0.950		0.950		0.950			0.950			
Satd. Flow (perm)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Right Turn on Red		No		No			Yes			Yes	
Satd. Flow (RTOR)							725			197	
Link Speed (mph)						40			40		
Link Distance (ft)						304			532		
Travel Time (s)						5.2			9.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%	
Adj. Flow (vph)	439	305	837	291	226	362	725	187	408	153	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	439	305	837	291	226	362	725	187	408	153	
Turn Type	Prot	Prot	Prot	Perm	Prot	NA	Free	Prot	NA	Free	
Protected Phases	4	1	4		1	2		1	2		3
Permitted Phases				1			Free			Free	
Detector Phase	4	1	4	1	1	2		1	2		
Switch Phase											
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0	15.0		9.0	15.0		1.0
Minimum Split (s)	18.0	16.0	18.0	16.0	16.0	25.0		16.0	25.0		33.0
Total Split (s)	33.0	28.0	33.0	28.0	28.0	39.0		28.0	39.0		33.0
Total Split (%)	24.8%	21.1%	24.8%	21.1%	21.1%	29.3%		21.1%	29.3%		25%
Maximum Green (s)	24.0	21.0	24.0	21.0	21.0	30.0		21.0	30.0		31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0		2.0
All-Red Time (s)	6.0	4.0	6.0	4.0	4.0	5.0		4.0	5.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)	9.0	7.0	9.0	7.0	7.0	9.0		7.0	9.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	5.0		3.0	5.0		0.2
Recall Mode	None	None	None	None	None	Min		None	Min		None
Walk Time (s)											12.0
Flash Dont Walk (s)											19.0
Pedestrian Calls (#/hr)											1
Act Effct Green (s)	24.6	17.6	24.6	17.6	17.6	28.2	101.1	17.6	28.2	101.1	
Actuated g/C Ratio	0.24	0.17	0.24	0.17	0.17	0.28	1.00	0.17	0.28	1.00	
v/c Ratio	0.52	0.62	0.99	0.59	0.72	0.37	0.45	0.60	0.78	0.09	
Control Delay	38.6	46.5	67.9	45.7	55.1	32.6	0.9	49.3	47.4	0.1	

Lanes, Volumes, Timings  
 20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off

Build  
 Timing Plan: PM



Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	ØB
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	38.6	46.5	67.9	45.7	55.1	32.6	0.9	49.3	47.4	0.1	
LOS	D	D	E	D	E	C	A	D	D	A	
Approach Delay						19.0			38.2		
Approach LOS						B			D		
Queue Length 50th (ft)	120	98	264	93	131	90	0	105	223	0	
Queue Length 95th (ft)	243	200	#612	190	#318	193	0	238	#561	0	
Internal Link Dist (ft)						224			452		
Turn Bay Length (ft)		175	400	100	225		220	325		325	
Base Capacity (vph)	848	601	848	601	384	1076	1615	384	566	1615	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.52	0.51	0.99	0.48	0.59	0.34	0.45	0.49	0.72	0.09	

Intersection Summary

Area Type: Other  
 Cycle Length: 133  
 Actuated Cycle Length: 101.1  
 Natural Cycle: 135  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.99  
 Intersection Signal Delay: 39.4  
 Intersection LOS: D  
 Intersection Capacity Utilization Err%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off



Lanes, Volumes, Timings  
28: Main St/SR 731 & Mall Drive

Build  
Timing Plan: PM



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↗	↖	↕↕	↕↕	↗
Traffic Volume (vph)	607	300	322	605	643	733
Future Volume (vph)	607	300	322	605	643	733
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	0	0	375			0
Storage Lanes	2	1	1			1
Taper Length (ft)	8		8			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Fr <sub>t</sub>		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3319	1531	1711	3421	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3319	1531	1711	3421	3539	1583
Right Turn on Red		Yes				No
Satd. Flow (RTOR)		15				
Link Speed (mph)	30			40	40	
Link Distance (ft)	468			664	585	
Travel Time (s)	10.6			11.3	10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	660	326	350	658	699	797
Shared Lane Traffic (%)						
Lane Group Flow (vph)	660	326	350	658	699	797
Turn Type	Prot	pt+ov	Prot	NA	NA	Free
Protected Phases	4	14	1	12	2	
Permitted Phases						Free
Detector Phase	4	4	1	2	2	
Switch Phase						
Minimum Initial (s)	9.0		9.0		15.0	
Minimum Split (s)	21.0		15.0		21.0	
Total Split (s)	37.0		27.0		26.0	
Total Split (%)	41.1%		30.0%		28.9%	
Maximum Green (s)	31.0		21.0		20.0	
Yellow Time (s)	4.0		4.0		4.0	
All-Red Time (s)	2.0		2.0		2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.0		6.0		6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		5.0	
Recall Mode	None		Min		Min	
Act Effct Green (s)	19.8	44.8	19.0	44.3	19.2	76.2
Actuated g/C Ratio	0.26	0.59	0.25	0.58	0.25	1.00
v/c Ratio	0.77	0.36	0.82	0.33	0.78	0.50
Control Delay	32.9	8.9	45.7	9.4	35.4	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.9	8.9	45.7	9.4	35.4	1.1
LOS	C	A	D	A	D	A
Approach Delay	25.0			22.0	17.2	

Lanes, Volumes, Timings  
 28: Main St/SR 731 & Mall Drive

Build  
 Timing Plan: PM



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C		C		B	
Queue Length 50th (ft)	156	71	158	76	167	0
Queue Length 95th (ft)	213	116	#326	134	#282	0
Internal Link Dist (ft)	388		584		505	
Turn Bay Length (ft)	375					
Base Capacity (vph)	1370	899	478	2037	942	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.36	0.73	0.32	0.74	0.50

**Intersection Summary**  
 Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 76.2  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.82  
 Intersection Signal Delay: 20.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 67.9%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 28: Main St/SR 731 & Mall Drive



Lanes, Volumes, Timings  
30: Ring Rd & Mall Drive

Build  
Timing Plan: PM



Lane Group	WBL	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		RT	RT	↑	↑	↑	↑
Traffic Volume (vph)	19	470	578	40	354	534	40
Future Volume (vph)	19	470	578	40	354	534	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0	
Storage Lanes		2	1		1	1	
Taper Length (ft)		8				8	
Lane Util. Factor	0.95	0.97	0.88	1.00	1.00	0.95	0.95
Fr			0.850		0.850		
Flt Protected		0.950				0.950	0.959
Satd. Flow (prot)	0	3433	2787	1863	1583	1681	1697
Flt Permitted		0.950				0.950	0.959
Satd. Flow (perm)	0	3433	2787	1863	1583	1681	1697
Right Turn on Red			Yes		Yes		
Satd. Flow (RTOR)			628		385		
Link Speed (mph)		30		30			30
Link Distance (ft)		454		359			515
Travel Time (s)		10.3		8.2			11.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	511	628	43	385	580	43
Shared Lane Traffic (%)						46%	
Lane Group Flow (vph)	0	532	628	43	385	313	310
Turn Type	Prot	Prot	Perm	NA	Perm	Split	NA
Protected Phases	3	3		2		1	1
Permitted Phases			3		2		
Detector Phase	3	3	3	2	2	1	1
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	11.0	11.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	22.0	22.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	37.8%	24.4%	24.4%
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag				Lag	Lag	Lead	Lead
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None						
Act Effct Green (s)		15.5	15.5	8.6	8.6	16.9	16.9
Actuated g/C Ratio		0.29	0.29	0.16	0.16	0.32	0.32
v/c Ratio		0.53	0.50	0.14	0.66	0.59	0.58
Control Delay		18.4	3.2	21.8	9.3	22.6	22.2
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		18.4	3.2	21.8	9.3	22.6	22.2
LOS		B	A	C	A	C	C
Approach Delay		10.2		10.5			22.4
Approach LOS		B		B			C

Lanes, Volumes, Timings  
30: Ring Rd & Mall Drive

Build  
Timing Plan: PM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)	69	0	12	0	77	76
Queue Length 95th (ft)	127	34	37	63	#225	#209
Internal Link Dist (ft)	374		279			435
Turn Bay Length (ft)		150				
Base Capacity (vph)	1974	1869	1071	1074	580	585
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.34	0.04	0.36	0.54	0.53

**Intersection Summary**

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 53.2

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 13.7      Intersection LOS: B

Intersection Capacity Utilization 44.4%      ICU Level of Service A

Analysis Period (min) 15

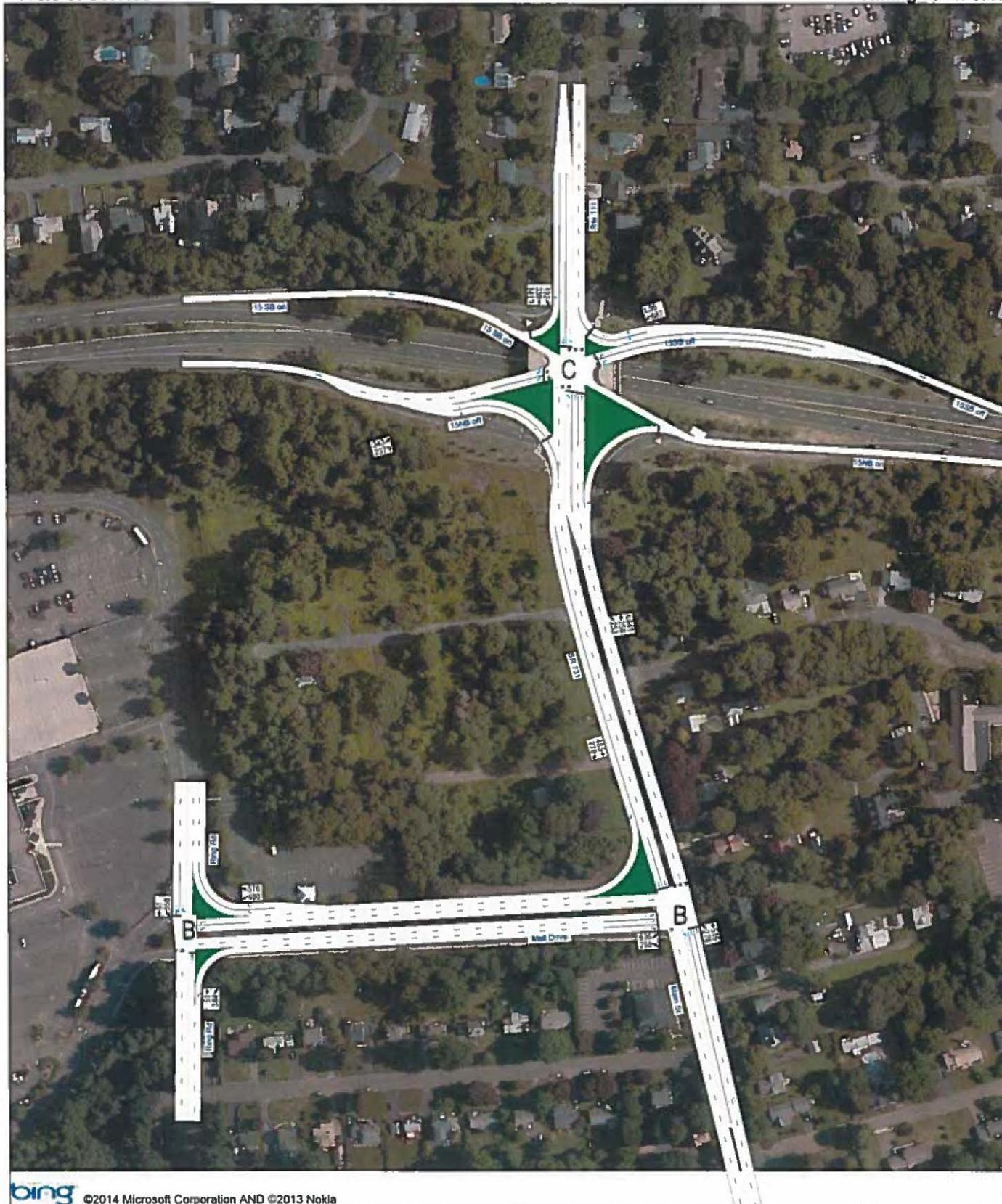
# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Splits and Phases: 30: Ring Rd & Mall Drive



Map - Proposed Residential  
Levels of Service

No Build  
Timing Plan: SAT



bing ©2014 Microsoft Corporation AND ©2013 Nokia

BL Companies

\\blcompanies.com\dfs\proj\JOBS18\04\1800513\TRAF\SYNCHRO\T-1800513-NOBUILD-SAT.syn

Lanes, Volumes, Timings

20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off

No Build

Timing Plan: SAT



Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	ØB
Lane Configurations	↖↗	↖↗	↖↗	↖↗	↖	↕	↖	↖	↕	↖	
Traffic Volume (vph)	343	237	687	96	253	258	641	192	339	141	
Future Volume (vph)	343	237	687	96	253	258	641	192	339	141	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)						0%			0%		
Storage Length (ft)	0		400		225			325			
Storage Lanes	2		2		1			1			
Taper Length (ft)	25		150		75			150			
Lane Util. Factor	0.97	0.88	0.97	0.88	1.00	0.95	1.00	1.00	1.00	1.00	
Frt		0.850		0.850			0.850			0.850	
Flt Protected	0.950		0.950		0.950			0.950			
Satd. Flow (prot)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Flt Permitted	0.950		0.950		0.950			0.950			
Satd. Flow (perm)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Right Turn on Red		No		No			Yes			Yes	
Satd. Flow (RTOR)							697			197	
Link Speed (mph)						40			40		
Link Distance (ft)						1045			532		
Travel Time (s)						17.8			9.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%	
Adj. Flow (vph)	373	258	747	104	275	280	697	209	368	153	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	373	258	747	104	275	280	697	209	368	153	
Turn Type	Prot	Prot	Prot	Perm	Prot	NA	Free	Prot	NA	Free	
Protected Phases	4	1	4		1	2		1	2		3
Permitted Phases				1			Free			Free	
Detector Phase	4	1	4	1	1	2		1	2		
Switch Phase											
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0	15.0		9.0	15.0		1.0
Minimum Split (s)	18.0	16.0	18.0	16.0	16.0	25.0		16.0	25.0		33.0
Total Split (s)	33.0	28.0	33.0	28.0	28.0	39.0		28.0	39.0		33.0
Total Split (%)	24.8%	21.1%	24.8%	21.1%	21.1%	29.3%		21.1%	29.3%		25%
Maximum Green (s)	24.0	21.0	24.0	21.0	21.0	30.0		21.0	30.0		31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0		2.0
All-Red Time (s)	6.0	4.0	6.0	4.0	4.0	5.0		4.0	5.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)	9.0	7.0	9.0	7.0	7.0	9.0		7.0	9.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	5.0		3.0	5.0		0.2
Recall Mode	None	None	None	None	None	Min		None	Min		None
Walk Time (s)											12.0
Flash Dont Walk (s)											19.0
Pedestrian Calls (#/hr)											1
Act Effct Green (s)	24.7	20.8	24.7	20.8	20.8	23.1	99.2	20.8	23.1	99.2	
Actuated g/C Ratio	0.25	0.21	0.25	0.21	0.21	0.23	1.00	0.21	0.23	1.00	
v/c Ratio	0.43	0.44	0.86	0.18	0.73	0.34	0.43	0.55	0.85	0.09	
Control Delay	36.3	39.8	48.9	37.2	51.4	34.2	0.8	44.7	56.3	0.1	



Lanes, Volumes, Timings  
28: Main St/SR 731 & Mall Drive

No Build  
Timing Plan: SAT



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↖	↖	↖	↕↕	↕↕	↖
Traffic Volume (vph)	636	298	278	516	485	778
Future Volume (vph)	636	298	278	516	485	778
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	0	0	375			700
Storage Lanes	2	1	1			1
Taper Length (ft)	8		8			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.860
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3319	1531	1711	3421	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3319	1531	1711	3421	3539	1583
Right Turn on Red		Yes				No
Satd. Flow (RTOR)		45				
Link Speed (mph)	30			40	40	
Link Distance (ft)	922			664	1045	
Travel Time (s)	21.0			11.3	17.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	691	324	302	561	527	846
Shared Lane Traffic (%)						
Lane Group Flow (vph)	691	324	302	561	527	846
Turn Type	Prot	pt+ov	Prot	NA	NA	Free
Protected Phases	4	14	1	12	2	
Permitted Phases						Free
Detector Phase	4	4	1	2	2	
Switch Phase						
Minimum Initial (s)	9.0		9.0		15.0	
Minimum Split (s)	21.0		15.0		21.0	
Total Split (s)	37.0		27.0		26.0	
Total Split (%)	41.1%		30.0%		28.9%	
Maximum Green (s)	31.0		21.0		20.0	
Yellow Time (s)	4.0		4.0		4.0	
All-Red Time (s)	2.0		2.0		2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.0		6.0		6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		5.0	
Recall Mode	None		Min		Min	
Act Effct Green (s)	20.2	43.1	16.7	40.7	17.8	73.2
Actuated g/C Ratio	0.28	0.59	0.23	0.56	0.24	1.00
v/c Ratio	0.76	0.35	0.77	0.30	0.61	0.53
Control Delay	30.6	7.6	42.5	9.7	29.8	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	7.6	42.5	9.7	29.8	1.3
LOS	C	A	D	A	C	A
Approach Delay	23.2			21.2	12.2	

Lanes, Volumes, Timings  
 28: Main St/SR 731 & Mall Drive

No Build  
 Timing Plan: SAT



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C		C		B	
Queue Length 50th (ft)	152	58	132	67	117	0
Queue Length 95th (ft)	224	106	#268	116	198	0
Internal Link Dist (ft)	842		584		965	
Turn Bay Length (ft)	375			700		
Base Capacity (vph)	1445	920	504	2031	994	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.35	0.60	0.28	0.53	0.53

**Intersection Summary:**  
 Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 73.2  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 18.0  
 Intersection LOS: B  
 Intersection Capacity Utilization 62.0%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 28: Main St/SR 731 & Mall Drive



Lanes, Volumes, Timings  
30: Ring Rd & Mall Drive

No Build  
Timing Plan: SAT

						
Lane Group	WBL	WBR	NTT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	480	576	51	384	550	51
Future Volume (vph)	480	576	51	384	550	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	150		0	0	
Storage Lanes	2	1		1	1	
Taper Length (ft)	8				8	
Lane Util. Factor	0.97	0.88	1.00	1.00	0.95	0.95
Frnt		0.850		0.850		
Flt Protected	0.950				0.950	0.960
Satd. Flow (prot)	3433	2787	1863	1583	1681	1699
Flt Permitted	0.950				0.950	0.960
Satd. Flow (perm)	3433	2787	1863	1583	1681	1699
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		626		417		
Link Speed (mph)	30		30			30
Link Distance (ft)	922		359			275
Travel Time (s)	21.0		8.2			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	522	626	55	417	598	55
Shared Lane Traffic (%)					46%	
Lane Group Flow (vph)	522	626	55	417	323	380
Turn Type	Prot	Perm	NA	Perm	Split	NA
Protected Phases	3		2		1	1
Permitted Phases		3		2		
Detector Phase	3	3	2	2	1	1
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0	20.0	20.0	11.0	11.0
Total Split (s)	34.0	34.0	34.0	34.0	22.0	22.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	24.4%	24.4%
Maximum Green (s)	30.0	30.0	30.0	30.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0		
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	15.4	15.4	8.8	8.8	17.9	17.9
Actuated g/C Ratio	0.28	0.28	0.16	0.16	0.33	0.33
y/c Ratio	0.54	0.51	0.18	0.69	0.58	0.59
Control Delay	18.9	3.3	22.2	9.5	22.7	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	3.3	22.2	9.5	22.7	22.9

Lanes, Volumes, Timings  
30: Ring Rd & Mall Drive

No Build  
Timing Plan: SAT



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
LOS	B	A	C	A	C	C
Approach Delay	10.4		11.0			22.8
Approach LOS	B		B			C
Queue Length 50th (ft)	68	0	15	0	81	83
Queue Length 95th (ft)	126	34	45	65	#241	#245
Internal Link Dist (ft)	842		279			195
Turn Bay Length (ft)		150				
Base Capacity (vph)	1931	1841	1048	1073	567	573
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.34	0.05	0.39	0.57	0.58

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 54.2  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.69  
 Intersection Signal Delay: 14.1  
 Intersection LOS: B  
 Intersection Capacity Utilization: 47.0%  
 ICU Level of Service: A  
 Analysis Period (min): 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 30: Ring Rd & Mall Drive





Lanes, Volumes, Timings  
5: Ring Rd & Site Driveway #3

Build  
Timing Plan: SAT



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑↑			↑↑
Traffic Volume (vph)	24	0	627	5	0	601
Future Volume (vph)	24	0	627	5	0	601
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	0.91	0.95	0.95
Fit	0.999					
Fit Protected	0.950					
Satd. Flow (prot)	1770	0	5080	0	0	3539
Fit Permitted	0.950					
Satd. Flow (perm)	1770	0	5080	0	0	3539
Link Speed (mph)	30		30		30	
Link Distance (ft)	249		515		155	
Travel Time (s)	5.7		11.7		3.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	0	682	5	0	653
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	0	687	0	0	653
Sign Control	Stop		Free		Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.6%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑↑			↑↑
Traffic Vol, veh/h	24	0	627	5	0	601
Future Vol, veh/h	24	0	627	5	0	601
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	0	682	5	0	653

Major/Minor	Minor1	Major1	Major2	Major3	Major4
Conflicting Flow All	1012	344	0	0	687
Stage 1	685	-	-	-	-
Stage 2	327	-	-	-	-
Critical Hdwy	6.29	7.14	-	-	5.34
Critical Hdwy Stg 1	6.64	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.67	3.92	-	-	3.12
Pot Cap-1 Maneuver	268	557	-	-	553
Stage 1	385	-	-	-	-
Stage 2	679	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	268	557	-	-	553
Mov Cap-2 Maneuver	268	-	-	-	-
Stage 1	385	-	-	-	-
Stage 2	679	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	268	553
HCM Lane V/C Ratio	-	-	0.097	-
HCM Control Delay (s)	-	-	19.9	0
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Lanes, Volumes, Timings  
11: Mall Drive & Site Driveway #2

Build  
Timing Plan: SAT



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↑
Traffic Volume (vph)	0	982	1061	5	0	24
Future Volume (vph)	0	982	1061	5	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Fr <sub>t</sub>			0.999			0.865
Flt Protected						
Satd. Flow (prot)	0	5085	5080	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	5085	5080	0	0	1611
Link Speed (mph)		30	30		30	
Link Distance (ft)		454	468		203	
Travel Time (s)		10.3	10.6		4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1067	1153	5	0	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1067	1158	0	0	26
Sign Control		Free	Free		Stop	
Intersection Summary:						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	30.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑↑↑		↑↑↑			↑
Traffic Vol, veh/h	0	982	1061	5	0	24
Future Vol, veh/h	0	982	1061	5	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1067	1153	5	0	26

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	579
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	393
Stage 1	0	-	-	0	-
Stage 2	0	-	-	0	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	393
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.8
HCM LOS			B

Minor Lane/Majr Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	393
HCM Lane V/C Ratio	-	-	-	0.066
HCM Control Delay (s)	-	-	-	14.8
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.2

Lanes, Volumes, Timings  
12: SR 731 & Site Driveway #1

Build  
Timing Plan: SAT



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗	↖	↑↑	↑↑↑	
Traffic Volume (vph)	0	2	3	1197	1270	37
Future Volume (vph)	0	2	3	1197	1270	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	50			0
Storage Lanes	0	1	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.91	0.91
Fr		0.865			0.996	
Flt Protected			0.950			
Satd. Flow (prot)	0	1611	1770	3539	5065	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	1611	1770	3539	5065	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	303			585	157	
Travel Time (s)	6.9			10.0	2.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2	3	1301	1380	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2	3	1301	1420	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.4%
	ICU Level of Service A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↑	↑	↑↑	↑↑↑	
Traffic Vol, veh/h	0	2	3	1197	1270	37
Future Vol, veh/h	0	2	3	1197	1270	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	-	0	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2	3	1301	1380	40

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	-	710	1420	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	5.34	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	3.12	-	-
Pot Cap-1 Maneuver	0	323	244	-	-
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	323	244	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	244	-	323	-	-
HCM Lane V/C Ratio	0.013	-	0.007	-	-
HCM Control Delay,(s)	20	-	16.2	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lanes, Volumes, Timings

Build

20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off

Timing Plan: SAT



Lane Group	EBL	EBR2	WBL	WBR2	NBL	NBT	NBR2	SBL	SBT	SBR2	Ø8
Lane Configurations	↖↖	↗↗	↖↖	↗↗	↖	↕	↗	↖	↕	↗	
Traffic Volume (vph)	343	257	707	96	273	263	661	192	343	141	
Future Volume (vph)	343	257	707	96	273	263	661	192	343	141	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)						0%			0%		
Storage Length (ft)	0		400		225			325			
Storage Lanes	2		2		1			1			
Taper Length (ft)	25		150		75			150			
Lane Util. Factor	0.97	0.88	0.97	0.88	1.00	0.95	1.00	1.00	1.00	1.00	
Frt		0.850		0.850			0.850			0.850	
Flt Protected	0.950		0.950		0.950			0.950			
Satd. Flow (prot)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Flt Permitted	0.950		0.950		0.950			0.950			
Satd. Flow (perm)	3484	2828	3484	2828	1805	3539	1615	1805	1863	1615	
Right Turn on Red		No		No			Yes			Yes	
Satd. Flow (RTOR)							718			197	
Link Speed (mph)						40			40		
Link Distance (ft)						304			532		
Travel Time (s)						5.2			9.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%	
Adj. Flow (vph)	373	279	768	104	297	286	718	209	373	153	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	373	279	768	104	297	286	718	209	373	153	
Turn Type	Prot	Prot	Prot	Perm	Prot	NA	Free	Prot	NA	Free	
Protected Phases	4	1	4		1	2		1	2		3
Permitted Phases				1			Free				Free
Detector Phase	4	1	4	1	1	2		1	2		
Switch Phase											
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0	15.0		9.0	15.0		1.0
Minimum Split (s)	18.0	16.0	18.0	16.0	16.0	25.0		16.0	25.0		33.0
Total Split (s)	33.0	28.0	33.0	28.0	28.0	39.0		28.0	39.0		33.0
Total Split (%)	24.8%	21.1%	24.8%	21.1%	21.1%	29.3%		21.1%	29.3%		25%
Maximum Green (s)	24.0	21.0	24.0	21.0	21.0	30.0		21.0	30.0		31.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	4.0		3.0	4.0		2.0
All-Red Time (s)	6.0	4.0	6.0	4.0	4.0	5.0		4.0	5.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)	9.0	7.0	9.0	7.0	7.0	9.0		7.0	9.0		
Lead/Lag											
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	5.0		3.0	5.0		0.2
Recall Mode	None	None	None	None	None	Min		None	Min		None
Walk Time (s)											12.0
Flash Dont Walk (s)											19.0
Pedestrian Calls (#/hr)											1
Act Effct Green (s)	24.6	21.5	24.6	21.5	21.5	23.8	100.5	21.5	23.8	100.5	
Actuated g/C Ratio	0.24	0.21	0.24	0.21	0.21	0.24	1.00	0.21	0.24	1.00	
v/c Ratio	0.44	0.46	0.90	0.17	0.77	0.34	0.44	0.54	0.84	0.09	
Control Delay	36.8	40.4	53.2	37.4	54.0	34.2	0.9	44.6	55.7	0.1	

Lanes, Volumes, Timings

Build

20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off

Timing Plan: SAT



Lane Group	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	36.8	40.4	53.2	37.4	54.0	34.2	0.9	44.6	55.7	0.1		
LOS	D	D	D	D	D	C	A	D	E	A		
Approach Delay							20.3					41.0
Approach LOS							C					D
Queue Length 50th (ft)	97	82	229	28	168	72	0	112	207	0		
Queue Length 95th (ft)	207	183	#545	78	#462	154	0	#282	#491	0		
Internal Link Dist (ft)							224					452
Turn Bay Length (ft)			175	400	100	225			220	325		
Base Capacity (vph)	851	604	851	604	386	1081	1615	386	569	1615		
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.44	0.46	0.90	0.17	0.77	0.26	0.44	0.54	0.66	0.09		

Intersection Summary

Area Type: Other  
 Cycle Length: 133  
 Actuated Cycle Length: 100.5  
 Natural Cycle: 135  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 35.5  
 Intersection LOS: D  
 Intersection Capacity Utilization Err%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 20: SR 731/Rte 111 & 15NB on/15 SB on & 15NB off/15SB off



Lanes, Volumes, Timings  
28: Main St/SR 731 & Mall Drive

Build  
Timing Plan: SAT



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	681	301	281	519	487	785
Future Volume (vph)	681	301	281	519	487	785
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	0	0	37.5			0
Storage Lanes	2	1	1			1
Taper Length (ft)	8		8			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3319	1531	1711	3421	3539	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3319	1531	1711	3421	3539	1583
Right Turn on Red		Yes				No
Satd. Flow (RTOR)		44				
Link Speed (mph)	30			40	40	
Link Distance (ft)	468			664	585	
Travel Time (s)	10.6			11.3	10.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	740	327	305	564	529	853
Shared Lane Traffic (%)						
Lane Group Flow (vph)	740	327	305	564	529	853
Turn Type	Prot	pt+ov	Prot	NA	NA	Free
Protected Phases	4	14	1	12	2	
Permitted Phases						Free
Detector Phase	4	4	1	2	2	
Switch Phase						
Minimum Initial (s)	9.0		9.0		15.0	
Minimum Split (s)	21.0		15.0		21.0	
Total Split (s)	37.0		27.0		26.0	
Total Split (%)	41.1%		30.0%		28.9%	
Maximum Green (s)	31.0		21.0		20.0	
Yellow Time (s)	4.0		4.0		4.0	
All-Red Time (s)	2.0		2.0		2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	
Total Lost Time (s)	6.0		6.0		6.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		5.0	
Recall Mode	None		Min		Min	
Act Effct Green (s)	21.7	44.9	17.0	41.0	17.8	75.1
Actuated g/C Ratio	0.29	0.60	0.23	0.55	0.24	1.00
v/c Ratio	0.77	0.35	0.79	0.30	0.63	0.54
Control Delay	30.8	7.5	44.6	10.4	31.2	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	7.5	44.6	10.4	31.2	1.3
LOS	C	A	D	B	C	A
Approach Delay	23.7			22.4	12.8	

Lanes, Volumes, Timings  
 28: Main St/SR 731 & Mall Drive

Build  
 Timing Plan: SAT



Approach Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C		C		B	
Queue Length 50th (ft)	169	59	138	71	122	0
Queue Length 95th (ft)	241	106	#285	125	201	0
Internal Link Dist (ft)	388		584		505	
Turn Bay Length (ft)	375					
Base Capacity (vph)	1409	936	492	1994	969	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.35	0.62	0.28	0.55	0.54

**Intersection Summary**  
 Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 75.1  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.79  
 Intersection Signal Delay: 18.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 63.5%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 28: Main St/SR 731 & Mall Drive



Lanes, Volumes, Timings  
30: Ring Rd & Mall Drive

Build  
Timing Plan: SAT



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	480	581	51	384	574
Future Volume (vph)	24	480	581	51	384	574
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		2	1		1	1
Taper Length (ft)		8			8	
Lane Util. Factor	0.95	0.97	0.88	1.00	1.00	0.95
Frt			0.850		0.850	
Flt Protected		0.950			0.950	0.960
Satd. Flow (prot)	0	3433	2787	1863	1583	1681
Flt Permitted		0.950			0.950	0.960
Satd. Flow (perm)	0	3433	2787	1863	1583	1681
Right Turn on Red			Yes		Yes	
Satd. Flow (RTOR)			632		417	
Link Speed (mph)		30		30		30
Link Distance (ft)		454		359		515
Travel Time (s)		10.3		8.2		11.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	522	632	55	417	624
Shared Lane Traffic (%)					46%	
Lane Group Flow (vph)	0	548	632	55	417	337
Turn Type	Prot	Prot	Perm	NA	Perm	Split
Protected Phases	3	3		2		1
Permitted Phases			3		2	
Detector Phase	3	3	3	2	2	1
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	11.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	22.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	37.8%	24.4%
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.0	4.0	4.0	4.0	4.0
Lead/Lag				Lag	Lag	Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Act Effct Green (s)		16.0	16.0	8.8	8.8	18.3
Actuated g/C Ratio		0.29	0.29	0.16	0.16	0.33
v/c Ratio		0.55	0.50	0.19	0.69	0.61
Control Delay		19.0	3.2	22.6	9.6	24.2
Queue Delay		0.0	0.0	0.0	0.0	0.0
Total Delay		19.0	3.2	22.6	9.6	24.2
LOS		B	A	C	A	C
Approach Delay		10.5		11.1		24.2
Approach LOS		B		B		C

Lanes, Volumes, Timings  
30: Ring Rd & Mall Drive

Build  
Timing Plan: SAT



Lane Group	WBL	WBL	WBR	NBT	NBR	SBL	SRT
Queue Length 50th (ft)		72	0	15	0	86	87
Queue Length 95th (ft)		134	34	46	66	#267	#271
Internal Link Dist (ft)		374		279			435
Turn Bay Length (ft)			150				
Base Capacity (vph)		1892	1820	1027	1059	555	562
Starvation Cap Reductn		0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0
Reduced v/c Ratio		0.29	0.35	0.05	0.39	0.61	0.61

**Intersection Summary**  
 Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 55.3  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.69  
 Intersection Signal Delay: 14.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 47.7%  
 ICU Level of Service A  
 Analysis Period (min): 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 30: Ring Rd & Mall Drive



# **Item 7**

## **Trumbull Police Station Renovation Update**

**Given by Chief Lombardo,  
Commissioner Lisa Labella and  
Assistant Chief Glenn Byrnes**