



TRAFFIC IMPACT STUDY

Proposed Mixed-Use Development
371 Franklin Avenue
Township of Nutley
Essex County, New Jersey

Prepared For:
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INTRODUCTION

This Traffic Impact Study was prepared to investigate the potential impacts of the proposed mixed-use development on the adjacent roadway network. The subject property is located along the southbound side of Franklin Avenue between Chestnut Street and Adams Street in the Township of Nutley, Essex County, New Jersey. The site location is shown on appended **Figure I**.

The subject property is designated as Block 4602, Lots 20 and 24 as depicted on the Township of Nutley Tax Map. Lot 20 has approximately 156 feet of frontage along Franklin Avenue and Lot 24 has approximately 60 feet of frontage along Chestnut Street. The existing Lot 20 is occupied by a Valley Bank with three (3) drive-through lanes and vacant office space on the second and third floors. The existing Lot 24 is an additional parking area located along Chestnut Street. Under the proposed development program, the first floor of the existing structure on Lot 20 would repurposed with a 2,055-square-foot coffee shop with one (1) drive-through window and a 2,970-square-foot Valley Bank with one (1) drive-through teller window and one (1) drive-through ATM lane, and the second and third floors would be reoccupied with 8,925 square feet of office space. Lot 24 would remain as is. Access to Lot 20 is presently provided via one (1) ingress-only driveway along Franklin Avenue and one (1) egress-only driveway along Franklin Avenue and is proposed to remain as is, with geometric modifications to the egress driveway to narrow the curb cut along Franklin Avenue. Access to Lot 24 would continue to be provided via one (1) full-movement driveway along Chestnut Street.

METHODOLOGY

Stonefield Engineering & Design, LLC has prepared this Traffic Impact Study in accordance with the recommended guidelines and practices outlined by the Institute of Transportation Engineers (ITE) within Transportation Impact Analyses for Site Development. A detailed field investigation was performed to assess the existing conditions of the adjacent roadway network. A data collection effort was completed to identify the existing traffic volumes at the study intersections to serve as a base for the traffic analyses. Capacity analysis, a procedure used to estimate the traffic-carrying ability of roadway facilities over a range of defined operating conditions, was performed using the Highway Capacity Manual, 6th Edition (HCM) and Synchro 10 Software for all study conditions to assess the roadway operations.

For an unsignalized intersection, Level of Service (LOS) A indicates operations with delay of less than 10 seconds per vehicle, while LOS F describes operations with delay in excess of 50 seconds per vehicle. For a signalized intersection, LOS A indicates operations with delay of less than 10 seconds per vehicle, while LOS F describes operations with delay in excess of 80 seconds per vehicle. The Technical Appendix contains the

Highway Capacity Analysis Detail Sheets for the study intersections analyzed in this assessment. The traffic signal timing utilized within the signalized analysis is based on timing directives provided by Essex County.

2020 EXISTING CONDITION

2020 EXISTING ROADWAY CONDITIONS

The proposed mixed-use development is located along the southbound side of Franklin Avenue between Chestnut Street and Adams Street in the Township of Nutley, Essex County, New Jersey. The subject property is designated as Block 4602, Lot 20 and 24 as depicted on the Township of Nutley Tax Map. Lot 20 has approximately 156 feet of frontage along Franklin Avenue and Lot 24 has approximately 60 feet of frontage along Chestnut Street. Land uses in the area are a mix of commercial, residential, and educational uses.

Franklin Avenue (County Route 645) is classified as an Urban Minor Arterial roadway with a general north-south orientation and is under the jurisdiction of Essex County. Along the site frontage, the roadway provides one (1) lane of travel in each direction and has a posted speed limit of 25 mph. Curb and sidewalk are provided along both sides of the roadway, shoulders are not provided, and on-street metered parking is available along both sides of the roadway with a 60-minute limit from 8:00 a.m. to 6:00 p.m. weekdays and Saturdays. Franklin Avenue provides north-south mobility within the Township of Nutley and surrounding municipalities for a mix of commercial, residential, and educational uses along its length.

Chestnut Street is a local roadway with general east-west orientation and is under the jurisdiction of the Township of Nutley. In the vicinity of the site, the roadway provides one (1) lane of travel in each direction. Curb and sidewalk are provided along both sides of the roadway, shoulders are not provided, and on-street metered parking is available along both sides of the roadway to the east of its intersection with Franklin Avenue and along the southerly side of the roadway to the west of the intersection. Chestnut Street provides east-west mobility within the Township of Nutley with a mix of uses along its length.

Franklin Avenue and Chestnut Street intersect to form a four (4)-leg intersection controlled by a two (2)-phase traffic signal operating on a 70-second fixed background cycle. The eastbound and westbound approaches of Chestnut Street each provide one (1) shared left-turn/through/right-turn lane. The northbound and southbound approaches of Franklin Avenue each provide one (1) shared left-turn/through/right-turn lane. Crosswalks and pedestrian signals are provided across all legs of the intersection.

2020 EXISTING TRAFFIC VOLUMES

Manual turning movement counts were collected during the typical weekday morning, weekday midday, school dismissal, weekday evening, and Saturday midday time periods to evaluate existing traffic conditions and

identify the specific hours when traffic activity on the adjacent roadways is at a maximum and could be potentially impacted by the development of the site. Turning movement counts were collected at the following intersections:

- ◆ Franklin Avenue & Chestnut Street
- ◆ Franklin Avenue & egress-only site driveway/U.S. Postal Service driveway
- ◆ Franklin Avenue & ingress-only site driveway

Specifically, manual turning movement counts were conducted on the following dates and during the following times:

- ◆ Tuesday, July 23, 2019, from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 7:00 p.m.
- ◆ Saturday, July 20, 2019, from 11:00 a.m. to 2:00 p.m.

The study time periods were chosen as they are representative of the peak periods of both the adjacent roadway network and the proposed development.

The site is located along Franklin Avenue approximately 0.2 miles north of John H. Walker Middle School and Nutley High School. The traffic volumes collected during July 2019 were done when school was not in session and as such, a 50% adjustment factor was applied to all movements traveling along the school frontage along Franklin Avenue during the weekday peak hours to account for school traffic.

Supplemental turning movement counts were conducted while schools were in session and at additional time periods to understand the traffic volumes throughout the course of a full day. Additionally, pedestrian counts were performed while school was in session to understand their impact on vehicle turning maneuvers and the number of pedestrians throughout the course of a full day. Specifically, vehicle and pedestrian counts were conducted at each of the study locations on Thursday, February 13, 2020 from 7:00 a.m. to 9:00 a.m., from 10:30 a.m. to 12:30 p.m., and from 2:30 p.m. to 6:30 p.m.

The traffic volume data was collected and analyzed to identify the design peak hour in accordance with HCM and ITE guidelines. Based on the review of the count data the weekday morning peak hour occurred from 7:45 a.m. to 8:45 a.m.; the weekday midday peak hour occurred from 11:15 a.m. to 12:15 p.m.; the weekday school dismissal peak hour occurred from 3:30 p.m. to 4:30 p.m.; the weekday evening peak hour occurred from 4:30 p.m. to 5:30 p.m.; and the Saturday midday peak hour occurred from 11:00 a.m. to 12:00 p.m.

A comparison of the July 2019 count data and the February 2020 count data was conducted to understand the difference in traffic volumes between the count periods. **Table 1** and **Table 2** summarize the comparison between the July 2019 count data, the July 2019 factored count data, and the February 2020 count data at the

intersection of Franklin Avenue and Chestnut Street during the weekday morning and weekday evening peak hours, respectively.

TABLE 1 – WEEKDAY MORNING COUNT DATA COMPARISON

Count Date	Eastbound Approach	Westbound Approach	Northbound Approach	Southbound Approach	Overall
July 23, 2019	177	203	316	281	977
July 23, 2019 (50% Increase of School Traffic)	192	225	475	390	1,282
February 13, 2020	237	230	361	315	1,143

TABLE 2 – WEEKDAY EVENING COUNT DATA COMPARISON

Count Date	Eastbound Approach	Westbound Approach	Northbound Approach	Southbound Approach	Overall
July 23, 2019	164	318	441	589	1,512
July 23, 2019 (50% Increase of School Traffic)	173	359	663	812	2,007
February 13, 2020	199	323	427	615	1,564

The February 13, 2020 count volumes were utilized in analysis as these volumes are similar to or higher than the standalone July 23, 2019 volumes and are representative of typical conditions and turning movements in the vicinity when school is in session.

The 2019 Saturday midday peak hour volumes were grown to the current year to generate the 2020 Existing Condition traffic volume data. In accordance with industry guidelines, the 2019 traffic volumes along the study roadway were increased by 2.00% annually for one (1) year. The 2.00% background growth rate was obtained from the New Jersey Department of Transportation (NJDOT) Annual Background Growth Rate Table. The Technical Appendix contains a summary of the turning movement count data. The 2020 Existing weekday morning, weekday midday, school dismissal, weekday evening, and Saturday midday peak-hour volumes are summarized on appended **Figure 2**.

2020 EXISTING LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was conducted for the 2020 Existing Condition during the weekday morning, weekday midday, school dismissal, weekday evening, and Saturday midday peak hours at the study intersection and existing site driveways. The Level of Service and Volume/Capacity Analysis considers the impact of pedestrian traffic as part of the vehicular delay and capacity calculations. Under the existing

condition, the signalized intersection of Franklin Avenue and Chestnut Street is calculated to operate at overall Level of Service B during each of the peak hours studied.

Based on field observations, queuing at the southbound approach at the intersection of Franklin Avenue and Chestnut Street would intermittently block the proposed driveway location along Franklin Avenue during each of the peak hours studied. Further, it is noted the queues at this approach are influenced by the downstream intersection of Franklin Avenue, Church Street, and the Nutley High School driveway. Franklin Avenue, Church Street, and the Nutley High School driveway intersect to form an unsignalized four (4)-leg intersection with the eastbound approach of Church Street operating under stop control and the Nutley High School driveway providing one (1) lane of one-way eastbound travel.

The turning movements at the unsignalized intersection of Franklin Avenue, egress-only site driveway, and U.S. Postal Service driveway are calculated to operate at Level of Service B or better during the weekday morning peak hour and Level of Service C or better during the remaining peak hours studied. The turning movements at the unsignalized intersection of Franklin Avenue and the ingress-only site driveway are calculated to operate at Level of Service A during each of the peak hours studied.

2021 NO-BUILD CONDITION

BACKGROUND GROWTH

The 2020 Existing Condition traffic volume data was grown to a future horizon year of 2021, which is a conservative estimate for when the proposed mixed-use development is expected to be fully occupied. In accordance with industry guidelines, the existing traffic volumes at the study intersections were increased by 2.00% annually for one (1) year. The 2.00% background growth rate was obtained from the NJDOT Annual Background Growth Rate Table.

OTHER PLANNED DEVELOPMENT PROJECTS

To evaluate the future traffic conditions, it is important to consider the potential site-generated traffic of other projects that could influence the traffic volume at the study intersections. Other planned development projects include those that are either in the entitlement process or have recently been approved for building permits in proximity to the proposed development. Based on research within the Township of Nutley's Planning Board's agendas and minutes dating back to the previous issuance of this report, there are no planned development projects within the area of the subject site. As such, the application of the background growth rate would be adequate to account for background traffic growth.

2021 NO-BUILD TRAFFIC VOLUMES

The background growth rate was applied to the 2020 Existing Traffic Volumes to calculate the 2021 No-Build Traffic Volumes for the weekday morning, weekday midday, school dismissal, weekday evening, and Saturday midday peak hours. These volumes are summarized on appended **Figure 3**.

2021 NO-BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the 2021 No-Build Condition during the weekday morning, weekday midday, school dismissal, weekday evening, and Saturday midday peak hours at the study intersection and existing site driveways. The signalized intersection of Franklin Avenue and Chestnut Street is calculated to operate generally consistently with the findings of the Existing Condition during each of the peak hours studied. The turning movements at the unsignalized intersection of Franklin Avenue, egress-only site driveway, and U.S. Postal Service driveway are calculated to operate generally consistently with the findings of the Existing Condition during each of the peak hours studied. The turning movements at the unsignalized intersection of Franklin Avenue and the ingress-only site driveway are calculated to operate generally consistently with the findings in the Existing Condition during each of the peak hours studied.

2021 BUILD CONDITION

The site-generated traffic volume of the proposed mixed-use development was estimated to identify the potential impacts of the project. For the purpose of this analysis, a complete project “build out” is assumed within one (1) year of the preparation of this study.

TRIP GENERATION

Trip generation projections for the proposed mixed-use development were prepared utilizing existing traffic count data and the ITE's Trip Generation Manual, 10th Edition. The as-counted site generated trips associated with the existing Valley Bank were utilized for the 2,970-square-foot Valley Bank in the proposed development. Trip generation rates associated with Land Use 937 “Coffee/Donut Shop with Drive-Through Window” and Land Use 710 “General Office Building” were cited for the 2,055-square-foot coffee shop and the 8,925 square feet of office space, respectively. It is noted that ITE does not provide data for the weekday midday and school dismissal peak periods for its land uses, as such the “AM Generator” and “PM Generator” peak hour trip generation projections were utilized for the weekday midday and school dismissal peak hours, respectively. **Table 3** provides the weekday morning, weekday midday, school dismissal, weekday evening, and Saturday midday peak hour trip generation volumes associated with the proposed development.

TABLE 3 – PROPOSED TRIP GENERATION

Land Use	Weekday Morning Peak Hour			Weekday Midday Peak Hour			School Dismissal Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
2,970 SF Drive-In Bank <i>Existing Trips (As-Counted)</i>	8	6	14	12	19	31	14	25	39
8,925 SF General Office Building <i>ITE Land Use 710</i>	9	1	10	11	2	13	2	11	13
2,055 SF Coffee/Donut Shop <i>ITE Land Use 937</i>	93	90	183	98	103	201	39	38	77
Total	110	97	207	121	124	245	55	74	129

Land Use	Weekday Evening Peak Hour			Saturday Midday Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
2,970 SF Drive-In Bank <i>Existing Trips (As-Counted)</i>	8	16	24	34	22	56
8,925 SF General Office Building <i>ITE Land Use 710</i>	2	8	10	3	2	5
2,055 SF Coffee/Donut Shop <i>ITE Land Use 937</i>	45	44	89	90	90	180
Total	55	68	123	127	114	241

As stated within Chapter 10 of ITE's Trip Generation Handbook, 3rd Edition, there are instances when the total number of trips generated by a site is different from the amount of new traffic added to the street system by the generator. Coffee shops are specifically located on or adjacent to busy streets to attract motorists already on the roadway. Therefore, the proposed coffee shop associated with the proposed development would be expected to attract a portion of its trips from the traffic passing the site on the way from an origin to an ultimate destination. These trips do not add new traffic to the adjacent roadway system and are referred to as pass-by trips.

Based upon approved NJDOT pass-by rates for Land Use 937 "Coffee/Donut Shop with Drive-Through Window," 63% of the site-generated traffic during the weekday morning peak hour, 66% of site-generated traffic during the weekday evening peak hour, and 50% of site-generated traffic during the Saturday midday peak hour is comprised of pass-by traffic. It is noted that the Trip Generation Handbook does not provide pass-by rates for its land uses during the weekday midday and school dismissal peak periods. However, it is logical that an interaction comparable to the weekday morning and weekday evening peak period would occur

during the weekday midday and school dismissal peak periods, respectively. As such, the weekday morning and weekday evening pass-by rate has been utilized for the weekday midday and school dismissal peak periods, respectively. **Table 4** shows the additional site generated traffic for the proposed development in terms of newly generated traffic and pass-by traffic.

TABLE 4 – PROPOSED TRIP GENERATION – NEW & PASS-BY TRIPS

Land Use	Weekday Morning Peak Hour			Weekday Midday Peak Hour			School Dismissal Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
As-Counted Bank Trips	8	6	14	12	19	31	14	25	39
General Office Trips	9	1	10	11	2	13	2	11	13
Coffee Shop “New” Trips	36	33	69	36	41	77	14	13	27
Coffee Shop “Pass-By” Trips	57	57	114	62	62	124	25	25	50
Total	110	97	207	121	124	245	55	74	129

Land Use	Weekday Evening Peak Hour			Saturday Midday Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
As-Counted Bank Trips	8	16	24	34	22	56
General Office Trips	2	8	10	3	2	5
Coffee Shop “New” Trips	16	15	31	45	45	90
Coffee Shop “Pass-By” Trips	29	29	58	45	45	90
Total	55	68	123	127	114	241

At the site driveways the calculated number of pass-by trips is shown as a negative number, as the vehicles are temporarily diverted from the through travel stream into and out of the site access point.

The proposed development is expected to generate 95 “new” trips during the critical Saturday midday peak hour. Based on Transportation Impact Analysis for Site Development published by ITE, a trip increase of less than 100 vehicle trips would likely not change the level of service of the adjacent roadway system or appreciably increase the volume-to-capacity ratio of an intersection approach. As such, the proposed development is not anticipated to significantly impact the operations of the adjacent roadway network.

TRIP ASSIGNMENT/DISTRIBUTION

The trips generated by the proposed development were distributed according to the existing travel patterns along the roadways and the access management plan of the site. The “New” Site-Generated Traffic Volumes are illustrated on **Figure 4** and the “Pass-By” Site-Generated Traffic Volumes expected to access the site are depicted on **Figure 5**.

2021 BUILD TRAFFIC VOLUMES

The site-generated trips were added to the 2021 No-Build Traffic Volumes to calculate the 2021 Build Traffic Volumes and are shown on appended **Figure 6**.

2021 BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the 2021 Build Condition during the weekday morning, weekday midday, school dismissal, weekday evening, and Saturday midday peak hours at the study intersection and proposed site driveways. Appended **Table AI** compares the Existing, No-Build, and Build Conditions Level of Service and delay values.

The signalized intersection of Franklin Avenue and Chestnut Street is calculated to operate generally consistently with the findings of the No-Build Condition at acceptable Level of Service B during each of the peak hours studied. Regarding queuing at the intersection, the proposed development is calculated to add approximately one (1) vehicle every two (2) signal cycles to the southbound approach of Franklin Avenue during the critical Saturday midday peak hour and as such, would not significantly increase the queueing at this approach.

The turning movements at the unsignalized intersection of Franklin Avenue, egress-only site driveway, and U.S. Postal Service driveway are calculated to operate at acceptable Level of Service C or better during the weekday morning, weekday midday, and weekday evening peak hours and acceptable Level of Service D or better during the school dismissal and Saturday midday peak hours. The turning movements at the unsignalized intersection of Franklin Avenue and the ingress-only site driveway are calculated to operate generally consistently with the findings in the No-Build Condition at acceptable Level of Service A during each of the peak hours studied.

The turning movements at the unsignalized intersection of Chestnut Street and the parking lot driveway are calculated to operate at acceptable Level of Service B or better during each of the peak hours studied.

2021 BUILD CONDITION GAP ANALYSIS

To determine the number of gaps in traffic for vehicles to complete left-turn maneuvers from the proposed site driveway and the U.S. Postal Service driveway onto Franklin Avenue, vehicular gaps in the northbound and southbound directions were recorded during the critical peak hours. Based on field observations, queueing and capacity analysis results, the critical peak hours are the school dismissal and weekday evening peak hours and as such, gaps along Franklin Avenue were recorded on Thursday, February 13, 2020 from 3:30 p.m. to 5:30 p.m.

The data was analyzed using minimum gap acceptance rates as specified within the HCM. An available gap, or critical headway, represents the minimum time interval between oncoming vehicles that a motorist will accept to execute a turning movement. The critical headway times utilized in the analysis are specified within HCM for completing a left-turn on a two (2)-lane roadway (across one (1) lane of oncoming traffic). Specifically, the base critical headway required for a single vehicle to complete a left-turn is 7.1 seconds, the minimum follow-up headway required for additional vehicles to complete a left-turn is 3.5 seconds per additional vehicle.

The total number and duration of gaps in Franklin Avenue traffic were evaluated in terms of the minimum gap acceptance and follow-up times. **Table 5** provides a comparison of the total capacity of the left-turn movements and the total projected left-turn traffic volume at the proposed site driveway and U.S. Postal Service driveway approaches during the critical peak hours. The gap data collected at proposed site driveway and U.S. Postal Service driveway locations is provided within the Technical Appendix.

TABLE 5 – SITE DRIVEWAY/U.S. POSTAL – LEFT-TURN VOLUME vs. CAPACITY

Time Period	Movement	Total Available Gaps (Vehicles)	Total Left-Turn Volume (Vehicles)
School Dismissal	Left-Turn from Site Driveway	182	30
	Left-Turn from U.S. Postal		10
Weekday Evening	Left-Turn from Site Driveway	150	29
	Left-Turn from U.S. Postal		12

As shown in Table 5, there is a sufficient number of available gaps along Franklin Avenue to accommodate the projected left-turn volume from the proposed site driveway and U.S. Postal Service driveway approaches along Franklin Avenue during the school dismissal and weekday evening peak hours.

SITE CIRCULATION/PARKING SUPPLY

A review was conducted of the proposed mixed-use development using the Site Plan prepared by our office, last revised May 08, 2020. In completing this review, particular attention was focused on the site access, circulation, and parking supply.

Access to Lot 20 is proposed to remain as is via one (1) ingress-only driveway along Franklin Avenue and one (1) egress-only driveway along Franklin Avenue, with modifications to the egress-only driveway to reduce the effective width. Under existing conditions, the existing egress-only driveway is approximately 46 feet wide. Under the proposed development program, the egress-only driveway would be reduced to an effective width of approximately 24 feet. The narrower driveway dimensions would improve pedestrian safety and circulation by reducing the crossing distance by approximately 48% and would reduce the number of vehicles which could queue at the stop bar simultaneously. The narrower driveway dimensions would channelize the vehicles to the center of the curb cut and would provide sufficient visibility for motorists to see pedestrians along the

sidewalk network as vehicles approach the stop bar. The vehicles approaching the stop bar would be coming from the drive-through windows and the bypass lane and would be operating at slow speeds near the pedestrian crossing of the egress driveway.

Access to Lot 24 is proposed to remain as is via one (1) full-movement driveway along Chestnut Street. Right-angle parking spaces would be located along the northerly side of the lot and parallel parking spaces would be located along the southerly side of the lot.

The three (3)-story mixed-use building is located on easterly portion of the property along Franklin Avenue. The ground floor would consist of a 2,055-square-foot coffee shop and a 2,970-square-foot Valley Bank and the second and third floors would consist of 8,925 square feet of office space. The parking areas are located on the westerly and southerly portions of the site. Circulation throughout the property would be facilitated via one-way drive aisles with a minimum width of 15 feet and two-way drive aisles with a minimum width of 31 feet. The proposed coffee shop drive-through lane would be 12 feet wide and provide stacking for eight (8) vehicles without blocking internal drive aisles or parking spaces. The proposed bank drive-through lanes would be eight (8) feet wide and provide stacking for four (4) vehicles each without blocking internal drive aisles or parking spaces. The trash enclosure would be located in the southwesterly corner of Lot 20.

Regarding the parking requirements for the proposed development, the Township of Nutley Ordinance requires one (1) parking space per 200 square feet of retail space, one (1) space per 300 square feet of bank space, and one (1) space per 300 square feet of office space. For the proposed mixed-use development consisting of a 2,055-square-foot coffee shop, 2,970-square-foot Valley Bank, and 8,925 square feet of office space, this equates to 51 required spaces. Lot 20 would provide 54 total parking spaces on-site, inclusive of three (3) ADA accessible parking spaces, which meets the parking requirement and would be sufficient to support this project's parking demand. In addition to the on-site parking supply, 17 additional parking spaces would be provided on Lot 24 located an approximately 2-minute-walk from the subject site for a total parking supply of 69 spaces. The spaces would be nine (9) feet wide by 18 feet deep in accordance with industry standards.

The parking supply was evaluated with respect to data published within the ITE's Parking Generation, 5th Edition, for Land Use 937 "Coffee/Donut Shop with Drive-Through Window," Land Use 710 "General Office Building," and Land Use 912 "Drive-In Bank." The average parking demand rate during the peak weekday morning period for Land Use 937 "Coffee/Donut Shop with Drive-Through Window" is 5.22 vehicles per 1,000 square feet, for Land Use 710 "General Office Building" is 2.39 vehicles per 1,000 square feet, and for Land Use 912 "Drive-In Bank" is 3.72 vehicles per 1,000 square feet. For the mixed-use development consisting of a 2,055-square-foot coffee shop, 2,970-square-foot Valley Bank, and 8,925 square feet of office space, this

equates to 45 parking spaces. As such, the proposed parking supply of 52 on-site spaces would be sufficient to support the parking demand of the site.

Regarding the queueing supply for the drive-in bank, based on observations performed by Stonefield at similar drive-up ATM locations and banks, transactions at ATMs average approximately two (2) minutes in duration, as compared to over four (4) minutes at typical teller-operated transactions, resulting in a capacity of approximately 30 transactions per hour per ATM lane and approximately 15 transactions per hour per teller-operated lane. Therefore, there is sufficient capacity to accommodate the anticipated 28 total transactions throughout the critical peak hour. It is noted not all the trips made to and from the bank would utilize the drive-up lanes. As such, the proposed stacking space of four (4) vehicles each lane would be sufficient to accommodate the ATM and teller queue without impacting on-site drive aisles or parking.

Regarding the queueing supply for the coffee shop, based on observations performed by Stonefield at similar coffee shops with drive-through service the average time a drive-through customer spends between placing their order and picking up their order is 208 seconds. As there are five (5) vehicle positions between the ordering station and the pick-up window, on average customer can be served every 42 seconds. Therefore, the coffee shop drive through can process approximately 86 vehicles per hour, without significant queuing. The maximum number of vehicles accessing the site during the busiest hour is 101 vehicles (of which some will be in-store customers). As such, the proposed stacking space for eight (8) vehicles would be sufficient to accommodate the coffee shop queue without impacting on-site drive aisles or parking.

CONCLUSIONS

This report was prepared to examine the potential impacts of the proposed mixed-use development on the adjacent roadway network. The analysis findings, which have been based on industry-standard guidelines and turning movement and pedestrian counts collected while school was in session, indicate that the proposed development would not have a significant impact on the traffic operations of the adjacent roadway network. The proposed development would not add a significant amount of traffic to the southbound approach of the signalized intersection of Franklin Avenue and Chestnut Street and there are sufficient gaps in traffic along Franklin Avenue to facilitate turning movements from the site driveway and U.S. Postal Office driveway to Franklin Avenue. The site driveways and on-site layout have been designed to provide for effective access to and from the subject property. The modified width of the egress driveway would reduce the crossing distance for pedestrians at the egress driveway and would channelized vehicles to the center of the curb cut to provide sufficient visibility for motorists to see pedestrians. Based on the Township of Nutley Ordinance and ITE published parking rates the parking supply would be sufficient to support this project. The stacking space for

the drive through lanes would be sufficient to accommodate the queueing of each use based on observations performed by Stonefield on similar sites.

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the drive through lanes would be sufficient to accommodate the queueing of each use based on observations performed by Stonefield on similar sites.

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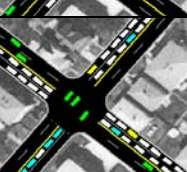
TECHNICAL APPENDIX

LEVEL OF SERVICE/AVERAGE CONTROL DELAY CRITERIA

LEVEL OF SERVICE /AVERAGE CONTROL DELAY CRITERIA

The ability of a roadway to effectively accommodate traffic demand is determined through an assessment of the volume-to-capacity ratio, delay and Level of Service of the lane group and/or intersection. The volume-to-capacity ratio is the ratio of traffic flow rate to capacity for a given transportation facility. As defined within the Highway Capacity Manual, 6th Edition (HCM), intersection delay is the total additional travel time experienced by drivers, passengers, or pedestrians as a result of control measures and interaction with other users of the facility, divided by the volume departing from the corresponding cross section of the facility. Level of service is a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience.

For an unsignalized intersection, LOS A indicates operations with delay less than 10 seconds per vehicle, while LOS F describes operations with delay in excess of 50 seconds per vehicle. For a signalized intersection, LOS A indicates operations with delay less than 10 seconds per vehicle and LOS F denotes operations with delay in excess of 80 seconds per vehicle.

	Level Of Service (LOS)	Signalized Delay Range (average control delay in sec/veh)	Unsignalized Delay Range (average control delay in sec/veh)
	A	≤ 10	≤ 10
	B	> 10 and ≤ 20	> 10 and ≤ 15
	C	> 20 and ≤ 35	> 15 and ≤ 25
	D	> 35 and ≤ 55	> 25 and ≤ 35
	E	> 55 and ≤ 80	> 35 and ≤ 50
	F	> 80	> 50

Source: Highway Capacity Manual, 6th Edition

STONEFIELD

Table A1: Comparative Level of Service (Delay) Table

Franklin Avenue, Essex County, New Jersey
X (n) = Level of Service (seconds of delay)

Intersection	Lane Group	Weekday Morning Peak Hour			Weekday Midday Peak Hour			School Dismissal Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
		2020 Existing Condition	2021 No-Build Condition	2021 Build Condition	2020 Existing Condition	2021 No-Build Condition	2021 Build Condition	2020 Existing Condition	2021 No-Build Condition	2021 Build Condition	2020 Existing Condition	2021 No-Build Condition	2021 Build Condition	2020 Existing Condition	2021 No-Build Condition	2021 Build Condition
Franklin Avenue (NS) & Chestnut Street (EW)	EB Left/Through/Right	C (25.5)	C (25.6)	C (25.9)	C (25.2)	C (25.2)	C (25.7)	C (24.0)	C (23.9)	C (23.9)	C (23.6)	C (23.4)	C (23.4)	C (25.3)	C (25.2)	C (25.1)
	WB Left/Through/Right	C (26.1)	C (26.3)	C (26.8)	C (27.8)	C (27.7)	C (27.7)	C (28.1)	C (28.3)	C (28.4)	C (28.3)	C (28.5)	C (28.7)	C (28.0)	C (28.0)	C (27.9)
	NB Left/Through/Right	A (7.6)	A (7.7)	A (8.0)	A (5.9)	A (6.1)	A (6.3)	A (7.6)	A (7.8)	A (7.9)	A (7.7)	A (8.0)	A (8.1)	A (6.7)	A (6.9)	A (7.3)
	SB Left/Through/Right	A (7.3)	A (7.4)	A (7.8)	A (6.4)	A (6.6)	A (7.0)	A (9.6)	B (10.0)	B (10.4)	A (9.9)	B (10.3)	B (10.7)	A (7.6)	A (7.9)	A (8.5)
Franklin Avenue (NS) & Egress-Only Driveway/U.S. Postal Service Driveway (EW)	Overall	B (14.9)	B (15.1)	B (15.4)	B (12.8)	B (12.9)	B (13.1)	B (14.5)	B (14.8)	B (15.0)	B (14.9)	B (15.1)	B (15.3)	B (13.1)	B (13.3)	B (13.6)
	EB Left/Through/Right	B (12.6)	B (12.8)	C (16.6)	C (18.8)	C (19.3)	C (23.1)	C (20.2)	C (20.7)	D (27.1)	C (20.6)	C (21.1)	C (24.0)	C (17.0)	C (17.4)	D (29.5)
	WB Left/Through/Right	B (13.0)	B (13.1)	B (13.8)	C (16.1)	C (16.3)	C (17.8)	C (20.6)	C (21.2)	C (22.3)	C (22.5)	C (23.2)	C (24.5)	C (20.0)	C (20.4)	C (22.6)
	SB Left/Through	A (8.2)	A (8.2)	A (8.3)	A (8.4)	A (8.4)	A (8.5)	A (8.7)	A (8.7)	A (8.7)	A (8.5)	A (8.5)	A (8.5)	A (8.8)	A (8.8)	A (8.9)
Franklin Avenue (N) & Ingress-Only Driveway Parking Lot Driveway (S) & Chestnut Street (EW)	NB Left/Through	A (8.0)	A (8.1)	A (8.3)	A (8.4)	A (8.5)	A (8.7)	A (8.9)	A (9.0)	A (9.1)	A (8.8)	A (8.9)	A (9.0)	A (8.7)	A (8.7)	A (9.0)
	EB Left/Through			A (7.7)			A (7.6)			A (9.0)			A (9.0)			A (7.6)
	SB Left/Through			B (12.4)			B (10.8)			B (11.9)			B (12.0)			B (11.0)

TURNING MOVEMENT COUNT DATA

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Chestnut Street (E/W)
and Franklin Avenue (N/S)
Nutley, Essex County, New Jersey
Tuesday, July 23, 2019

File Name : S-19134.01
Site Code : 00019134
Start Date : 7/23/2019
Page No : 1

Groups Printed- Auto - HV - B/SB

	Chestnut Street Eastbound					Chestnut Street Westbound					Franklin Avenue Northbound					Franklin Avenue Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
07:00 AM	3	17	6	0	26	5	12	9	0	26	1	38	8	0	47	3	32	0	0	35	134
07:15 AM	1	21	3	0	25	10	16	12	0	38	0	51	6	0	57	5	29	0	0	34	154
07:30 AM	5	25	4	0	34	4	13	12	1	30	2	66	12	0	80	5	37	1	0	43	187
07:45 AM	9	33	1	0	43	8	23	10	0	41	0	48	8	0	56	13	47	6	0	66	206
Total	18	96	14	0	128	27	64	43	1	135	3	203	34	0	240	26	145	7	0	178	681
08:00 AM	6	23	5	0	34	4	13	13	1	31	3	45	7	0	55	9	44	4	0	57	177
08:15 AM	9	21	3	0	33	12	20	18	0	50	5	71	12	0	88	10	53	7	1	71	242
08:30 AM	10	39	10	0	59	13	22	23	0	58	3	72	12	0	87	11	58	8	1	78	282
08:45 AM	12	28	11	0	51	14	30	20	0	64	3	73	10	0	86	9	62	4	0	75	276
Total	37	111	29	0	177	43	85	74	1	203	14	261	41	0	316	39	217	23	2	281	977
*** BREAK ***																					
04:00 PM	9	32	5	0	46	17	46	13	0	76	7	104	15	0	126	19	113	8	0	140	388
04:15 PM	7	32	3	0	42	19	28	11	0	58	9	99	24	0	132	13	98	14	0	125	357
04:30 PM	8	31	5	0	44	19	30	24	0	73	8	78	18	1	105	15	87	10	1	113	335
04:45 PM	14	30	2	0	46	18	37	27	0	82	6	91	14	0	111	30	103	18	0	151	390
Total	38	125	15	0	178	73	141	75	0	289	30	372	71	1	474	77	401	50	1	529	1470
05:00 PM	17	24	3	0	44	19	43	22	0	84	5	99	17	0	121	19	120	15	0	154	403
05:15 PM	10	14	4	0	28	24	36	28	0	88	10	83	14	0	107	15	114	15	0	144	367
05:30 PM	11	27	8	0	46	20	24	20	0	64	8	80	14	0	102	22	109	9	0	140	352
05:45 PM	7	19	4	0	30	19	27	25	0	71	7	91	11	0	109	20	120	17	0	157	367
Total	45	84	19	0	148	82	130	95	0	307	30	353	56	0	439	76	463	56	0	595	1489
06:00 PM	5	25	3	0	33	17	36	17	0	70	5	70	15	0	90	21	116	13	0	150	343
06:15 PM	6	24	6	0	36	13	25	20	0	58	6	86	9	0	101	13	114	9	1	137	332
06:30 PM	9	20	6	0	35	17	23	10	0	50	4	80	12	0	96	19	97	16	0	132	313
06:45 PM	11	27	5	0	43	11	24	10	0	45	5	88	9	0	102	20	83	12	1	116	306
Total	31	96	20	0	147	58	108	57	0	223	20	324	45	0	389	73	410	50	2	535	1294
Grand Total	169	512	97	0	778	283	528	344	2	1157	97	1513	247	1	1858	291	1636	186	5	2118	5911
Apprch %	21.7	65.8	12.5	0		24.5	45.6	29.7	0.2		5.2	81.4	13.3	0.1		13.7	77.2	8.8	0.2		
Total %	2.9	8.7	1.6	0	13.2	4.8	8.9	5.8	0	19.6	1.6	25.6	4.2	0	31.4	4.9	27.7	3.1	0.1	35.8	
Auto	169	509	97	0	775	282	528	342	2	1154	97	1480	247	1	1825	290	1608	186	5	2089	5843
% Auto	100	99.4	100	0	99.6	99.6	100	99.4	100	99.7	100	97.8	100	100	98.2	99.7	98.3	100	100	98.6	98.8
HV	0	3	0	0	3	1	0	2	0	3	0	13	0	0	13	1	5	0	0	6	25
% HV	0	0.6	0	0	0.4	0.4	0	0.6	0	0.3	0	0.9	0	0	0.7	0.3	0.3	0	0	0.3	0.4
B/SB	0	0	0	0	0	0	0	0	0	0	0	20	0	0	20	0	23	0	0	23	43
% B/SB	0	0	0	0	0	0	0	0	0	0	0	1.3	0	0	1.1	0	1.4	0	0	1.1	0.7

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Chestnut Street (E/W)

and Franklin Avenue (N/S)

Nutley, Essex County, New Jersey

Tuesday, July 23, 2019

File Name : S-19134.01

Site Code : 00019134

Start Date : 7/23/2019

Page No : 2

	Chestnut Street Eastbound					Chestnut Street Westbound					Franklin Avenue Northbound					Franklin Avenue Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	6	23	5	0	34	4	13	13	1	31	3	45	7	0	55	9	44	4	0	57	177
08:15 AM	9	21	3	0	33	12	20	18	0	50	5	71	12	0	88	10	53	7	1	71	242
08:30 AM	10	39	10	0	59	13	22	23	0	58	3	72	12	0	87	11	58	8	1	78	282
08:45 AM	12	28	11	0	51	14	30	20	0	64	3	73	10	0	86	9	62	4	0	75	276
Total Volume	37	111	29	0	177	43	85	74	1	203	14	261	41	0	316	39	217	23	2	281	977
% App. Total	20.9	62.7	16.4	0		21.2	41.9	36.5	0.5		4.4	82.6	13	0		13.9	77.2	8.2	0.7		
PHF	.771	.712	.659	.000	.750	.768	.708	.804	.250	.793	.700	.894	.854	.000	.898	.886	.875	.719	.500	.901	.866
Auto	37	111	29	0	177	42	85	73	1	201	14	250	41	0	305	39	209	23	2	273	956
% Auto	100	100	100	0	100	97.7	100	98.6	100	99.0	100	95.8	100	0	96.5	100	96.3	100	100	97.2	97.9
HV	0	0	0	0	0	1	0	1	0	2	0	9	0	0	9	0	3	0	0	3	14
% HV	0	0	0	0	0	2.3	0	1.4	0	1.0	0	3.4	0	0	2.8	0	1.4	0	0	1.1	1.4
B/SB	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	5	0	0	5	7
% B/SB	0	0	0	0	0	0	0	0	0	0	0	0.8	0	0	0.6	0	2.3	0	0	1.8	0.7
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	14	30	2	0	46	18	37	27	0	82	6	91	14	0	111	30	103	18	0	151	390
05:00 PM	17	24	3	0	44	19	43	22	0	84	5	99	17	0	121	19	120	15	0	154	403
05:15 PM	10	14	4	0	28	24	36	28	0	88	10	83	14	0	107	15	114	15	0	144	367
05:30 PM	11	27	8	0	46	20	24	20	0	64	8	80	14	0	102	22	109	9	0	140	352
Total Volume	52	95	17	0	164	81	140	97	0	318	29	353	59	0	441	86	446	57	0	589	1512
% App. Total	31.7	57.9	10.4	0		25.5	44	30.5	0		6.6	80	13.4	0		14.6	75.7	9.7	0		
PHF	.765	.792	.531	.000	.891	.844	.814	.866	.000	.903	.725	.891	.868	.000	.911	.717	.929	.792	.000	.956	.938
Auto	52	94	17	0	163	81	140	97	0	318	29	350	59	0	438	86	440	57	0	583	1502
% Auto	100	98.9	100	0	99.4	100	100	100	0	100	100	99.2	100	0	99.3	100	98.7	100	0	99.0	99.3
HV	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	3
% HV	0	1.1	0	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0.3	0.2
B/SB	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	4	0	0	4	7
% B/SB	0	0	0	0	0	0	0	0	0	0	0	0.8	0	0	0.7	0	0.9	0	0	0.7	0.5

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Egree-Only Site Driveway/U.S. Postal Service Driveway (E/W)
and Franklin Avenue (N/S)
Nutley, Essex County, New Jersey
Tuesday, July 23, 2019

File Name : S-I9134.02
Site Code : 00019134
Start Date : 7/24/2019
Page No : 1

Groups Printed- Auto - HV - B/SB

	Egress-Only Site Driveway Eastbound					U.S. Postal Service Driveway Westbound					Franklin Avenue Northbound					Franklin Avenue Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	2	0	2	0	0	1	0	1	0	0	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	0	0	2	4
Total	0	0	0	0	0	0	0	4	0	4	1	0	3	0	4	2	0	0	0	2	10
08:00 AM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	1	0	0	0	1	3
08:15 AM	1	0	0	0	1	1	0	1	0	2	4	0	5	0	9	1	0	1	0	2	14
08:30 AM	0	0	0	0	0	1	0	1	0	2	0	0	1	0	1	1	0	0	0	1	4
08:45 AM	0	0	1	0	1	1	0	0	0	1	2	0	0	0	2	1	0	0	0	1	5
Total	1	0	1	0	2	3	0	3	0	6	7	0	6	0	13	4	0	1	0	5	26
*** BREAK ***																					
04:00 PM	0	0	5	0	5	2	0	6	0	8	1	0	4	0	5	3	0	1	0	4	22
04:15 PM	1	0	0	0	1	4	0	7	0	11	0	0	4	0	4	3	0	1	0	4	20
04:30 PM	0	0	2	0	2	3	0	4	0	7	2	0	5	0	7	2	0	1	0	3	19
04:45 PM	2	0	3	0	5	3	0	4	0	7	4	0	3	0	7	2	0	1	0	3	22
Total	3	0	10	0	13	12	0	21	0	33	7	0	16	0	23	10	0	4	0	14	83
05:00 PM	2	0	3	0	5	1	0	1	0	2	2	0	1	0	3	1	0	2	0	3	13
05:15 PM	2	0	2	0	4	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	6
05:30 PM	2	0	1	0	3	1	0	0	0	1	2	0	0	0	2	0	0	0	0	0	6
05:45 PM	0	0	1	0	1	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	4
Total	6	0	7	0	13	4	0	1	0	5	6	0	1	0	7	1	0	3	0	4	29
06:00 PM	0	0	2	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
06:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	3
06:30 PM	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
06:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	4	0	4	2	0	0	0	2	1	0	0	0	1	2	0	0	0	2	9
Grand Total	10	0	22	0	32	21	0	29	0	50	22	0	26	0	48	19	0	8	0	27	157
Apprch %	31.2	0	68.8	0		42	0	58	0		45.8	0	54.2	0		70.4	0	29.6	0		
Total %	6.4	0	14	0	20.4	13.4	0	18.5	0	31.8	14	0	16.6	0	30.6	12.1	0	5.1	0	17.2	
Auto	10	0	22	0	32	21	0	29	0	50	22	0	26	0	48	19	0	8	0	27	157
% Auto	100	0	100	0	100	100	0	100	0	100	100	0	100	0	100	100	0	100	0	100	100
HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Egree-Only Site Driveway/U.S. Postal Service Driveway (E/W)
and Franklin Avenue (N/S)
Nutley, Essex County, New Jersey
Tuesday, July 23, 2019

File Name : S-I9134.02
Site Code : 00019134
Start Date : 7/24/2019
Page No : 2

	Egress-Only Site Driveway Eastbound					U.S. Postal Service Driveway Westbound					Franklin Avenue Northbound					Franklin Avenue Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 08:00 AM

08:00 AM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	1	0	0	0	1	3
08:15 AM	1	0	0	0	1	1	0	1	0	2	4	0	5	0	9	1	0	1	0	2	14
08:30 AM	0	0	0	0	0	1	0	1	0	2	0	0	1	0	1	1	0	0	0	1	4
08:45 AM	0	0	1	0	1	1	0	0	0	1	2	0	0	0	2	1	0	0	0	1	5
Total Volume	1	0	1	0	2	3	0	3	0	6	7	0	6	0	13	4	0	1	0	5	26
% App. Total	50	0	50	0		50	0	50	0		53.8	0	46.2	0		80	0	20	0		
PHF	.250	.000	.250	.000	.500	.750	.000	.750	.000	.750	.438	.000	.300	.000	.361	1.00	.000	.250	.000	.625	.464
Auto	1	0	1	0	2	3	0	3	0	6	7	0	6	0	13	4	0	1	0	5	26
% Auto	100	0	100	0	100	100	0	100	0	100	100	0	100	0	100	100	0	100	0	100	100
HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Analysis From 04:45 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:45 PM

04:45 PM	2	0	3	0	5	3	0	4	0	7	4	0	3	0	7	2	0	1	0	3	22
05:00 PM	2	0	3	0	5	1	0	1	0	2	2	0	1	0	3	1	0	2	0	3	13
05:15 PM	2	0	2	0	4	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	6
05:30 PM	2	0	1	0	3	1	0	0	0	1	2	0	0	0	2	0	0	0	0	0	6
Total Volume	8	0	9	0	17	5	0	5	0	10	9	0	4	0	13	3	0	4	0	7	47
% App. Total	47.1	0	52.9	0		50	0	50	0		69.2	0	30.8	0		42.9	0	57.1	0		
PHF	1.00	.000	.750	.000	.850	.417	.000	.313	.000	.357	.563	.000	.333	.000	.464	.375	.000	.500	.000	.583	.534
Auto	8	0	9	0	17	5	0	5	0	10	9	0	4	0	13	3	0	4	0	7	47
% Auto	100	0	100	0	100	100	0	100	0	100	100	0	100	0	100	100	0	100	0	100	100
HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Chestnut Street (E/W)
and Franklin Avenue (N/S)
Nutley, Essex County, New Jersey
Thursday, February 13, 2020

File Name : S-19134.01_FEB_2020
Site Code : 00019134
Start Date : 2/13/2020
Page No : 1

Groups Printed- Auto - HV - B/SB

	Chestnut Street Eastbound					Chestnut Street Westbound					Franklin Avenue Northbound					Franklin Avenue Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
07:00 AM	1	32	8	0	41	9	17	4	0	30	2	50	4	0	56	4	39	2	0	45	172
07:15 AM	3	30	19	0	52	15	11	12	0	38	4	56	18	0	78	9	32	6	0	47	215
07:30 AM	7	29	12	0	48	16	11	13	0	40	2	60	13	0	75	10	46	5	1	62	225
07:45 AM	9	49	16	0	74	27	15	12	0	54	14	64	18	0	96	24	72	15	0	111	335
Total	20	140	55	0	215	67	54	41	0	162	22	230	53	0	305	47	189	28	1	265	947
08:00 AM	10	37	18	0	65	20	36	7	0	63	14	76	29	0	119	16	51	12	0	79	326
08:15 AM	14	17	4	0	35	10	29	24	0	63	3	56	10	0	69	8	43	5	0	56	223
08:30 AM	18	36	8	1	63	16	20	14	0	50	2	65	10	0	77	11	53	5	0	69	259
08:45 AM	7	33	4	0	44	11	16	20	0	47	3	72	9	0	84	9	65	8	0	82	257
Total	49	123	34	1	207	57	101	65	0	223	22	269	58	0	349	44	212	30	0	286	1065
*** BREAK ***																					
10:30 AM	9	19	7	0	35	20	10	15	0	45	3	81	13	0	97	9	75	14	0	98	275
10:45 AM	18	13	3	0	34	10	23	24	0	57	3	76	10	0	89	14	92	13	0	119	299
Total	27	32	10	0	69	30	33	39	0	102	6	157	23	0	186	23	167	27	0	217	574
11:00 AM	11	19	4	0	34	12	24	26	0	62	3	84	10	0	97	17	61	15	0	93	286
11:15 AM	8	20	6	0	34	21	18	20	0	59	3	62	15	0	80	17	91	16	0	124	297
11:30 AM	9	23	4	0	36	17	19	15	0	51	2	86	16	0	104	13	63	10	0	86	277
11:45 AM	11	29	10	0	50	11	26	19	0	56	2	80	19	0	101	13	81	12	0	106	313
Total	39	91	24	0	154	61	87	80	0	228	10	312	60	0	382	60	296	53	0	409	1173
12:00 PM	13	13	7	0	33	21	22	24	0	67	5	79	10	0	94	11	96	14	0	121	315
12:15 PM	8	10	4	0	22	11	16	22	0	49	6	77	11	0	94	12	75	10	0	97	262
*** BREAK ***																					
Total	21	23	11	0	55	32	38	46	0	116	11	156	21	0	188	23	171	24	0	218	577
*** BREAK ***																					
02:30 PM	9	26	8	0	43	22	25	20	0	67	7	58	12	0	77	11	91	18	0	120	307
02:45 PM	14	27	8	0	49	11	31	13	0	55	7	62	13	0	82	27	56	17	0	100	286
Total	23	53	16	0	92	33	56	33	0	122	14	120	25	0	159	38	147	35	0	220	593
03:00 PM	15	33	4	0	52	11	42	21	0	74	11	94	27	0	132	20	81	31	0	132	390
03:15 PM	16	20	6	0	42	15	27	35	0	77	6	92	21	0	119	17	90	19	0	126	364
03:30 PM	13	43	6	0	62	18	36	28	0	82	5	72	12	0	89	16	102	17	0	135	368
03:45 PM	10	29	7	0	46	17	29	24	0	70	7	97	16	0	120	30	90	18	0	138	374
Total	54	125	23	0	202	61	134	108	0	303	29	355	76	0	460	83	363	85	0	531	1496
04:00 PM	19	20	3	0	42	24	42	20	0	86	7	100	10	0	117	28	112	19	0	159	404
04:15 PM	12	25	4	0	41	18	37	13	0	68	6	96	10	0	112	18	111	21	0	150	371
04:30 PM	17	27	4	0	48	24	27	28	0	79	5	73	15	1	94	18	123	15	0	156	377
04:45 PM	17	20	11	0	48	20	33	20	0	73	3	95	14	0	112	19	122	23	0	164	397
Total	65	92	22	0	179	86	139	81	0	306	21	364	49	1	435	83	468	78	0	629	1549

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Chestnut Street (E/W)
and Franklin Avenue (N/S)
Nutley, Essex County, New Jersey
Thursday, February 13, 2020

File Name : S-19134.01_FEB_2020
Site Code : 00019134
Start Date : 2/13/2020
Page No : 2

Groups Printed- Auto - HV - B/SB

	Chestnut Street Eastbound					Chestnut Street Westbound					Franklin Avenue Northbound					Franklin Avenue Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
05:00 PM	15	37	8	0	60	21	36	23	0	80	7	84	14	1	106	19	121	19	0	159	405
05:15 PM	9	24	10	0	43	35	42	14	0	91	9	86	20	0	115	15	105	16	0	136	385
05:30 PM	16	34	7	0	57	18	26	20	0	64	3	75	15	0	93	18	95	24	0	137	351
05:45 PM	7	28	8	0	43	18	43	28	0	89	7	91	20	0	118	20	101	16	0	137	387
Total	47	123	33	0	203	92	147	85	0	324	26	336	69	1	432	72	422	75	0	569	1528
06:00 PM	11	17	5	0	33	24	26	21	0	71	7	81	23	0	111	9	104	21	0	134	349
06:15 PM	12	19	6	0	37	18	31	13	0	62	7	80	17	0	104	27	108	15	0	150	353
Grand Total	368	838	239	1	1446	561	846	612	0	2019	175	2460	474	2	3111	509	2647	471	1	3628	10204
Apprch %	25.4	58	16.5	0.1		27.8	41.9	30.3	0		5.6	79.1	15.2	0.1		14	73	13	0		
Total %	3.6	8.2	2.3	0	14.2	5.5	8.3	6	0	19.8	1.7	24.1	4.6	0	30.5	5	25.9	4.6	0	35.6	
Auto	368	835	237	1	1441	560	844	610	0	2014	175	2424	470	2	3071	508	2607	471	1	3587	10113
% Auto	100	99.6	99.2	100	99.7	99.8	99.8	99.7	0	99.8	100	98.5	99.2	100	98.7	99.8	98.5	100	100	98.9	99.1
HV	0	2	1	0	3	0	1	1	0	2	0	9	2	0	11	0	10	0	0	10	26
% HV	0	0.2	0.4	0	0.2	0	0.1	0.2	0	0.1	0	0.4	0.4	0	0.4	0	0.4	0	0	0.3	0.3
B/SB	0	1	1	0	2	1	1	1	0	3	0	27	2	0	29	1	30	0	0	31	65
% B/SB	0	0.1	0.4	0	0.1	0.2	0.1	0.2	0	0.1	0	1.1	0.4	0	0.9	0.2	1.1	0	0	0.9	0.6

	Chestnut Street Eastbound					Chestnut Street Westbound					Franklin Avenue Northbound					Franklin Avenue Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	9	49	16	0	74	27	15	12	0	54	14	64	18	0	96	24	72	15	0	111	335
08:00 AM	10	37	18	0	65	20	36	7	0	63	14	76	29	0	119	16	51	12	0	79	326
08:15 AM	14	17	4	0	35	10	29	24	0	63	3	56	10	0	69	8	43	5	0	56	223
08:30 AM	18	36	8	1	63	16	20	14	0	50	2	65	10	0	77	11	53	5	0	69	259
Total Volume	51	139	46	1	237	73	100	57	0	230	33	261	67	0	361	59	219	37	0	315	1143
% App. Total	21.5	58.6	19.4	0.4		31.7	43.5	24.8	0		9.1	72.3	18.6	0		18.7	69.5	11.7	0		
PHF	.708	.709	.639	.250	.801	.676	.694	.594	.000	.913	.589	.859	.578	.000	.758	.615	.760	.617	.000	.709	.853
Auto	51	139	45	1	236	73	99	56	0	228	33	258	67	0	358	59	212	37	0	308	1130
% Auto	100	100	97.8	100	99.6	100	99.0	98.2	0	99.1	100	98.9	100	0	99.2	100	96.8	100	0	97.8	98.9
HV	0	0	1	0	1	0	1	1	0	2	0	1	0	0	1	0	2	0	0	2	6
% HV	0	0	2.2	0	0.4	0	1.0	1.8	0	0.9	0	0.4	0	0	0.3	0	0.9	0	0	0.6	0.5
B/SB	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	5	0	0	5	7
% B/SB	0	0	0	0	0	0	0	0	0	0	0	0.8	0	0	0.6	0	2.3	0	0	1.6	0.6

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Chestnut Street (E/W)
and Franklin Avenue (N/S)
Nutley, Essex County, New Jersey
Thursday, February 13, 2020

File Name : S-19134.01_FEB_2020
Site Code : 00019134
Start Date : 2/13/2020
Page No : 3

	Chestnut Street Eastbound					Chestnut Street Westbound					Franklin Avenue Northbound					Franklin Avenue Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 10:30 AM to 01:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	8	20	6	0	34	21	18	20	0	59	3	62	15	0	80	17	91	16	0	124	297
11:30 AM	9	23	4	0	36	17	19	15	0	51	2	86	16	0	104	13	63	10	0	86	277
11:45 AM	11	29	10	0	50	11	26	19	0	56	2	80	19	0	101	13	81	12	0	106	313
12:00 PM	13	13	7	0	33	21	22	24	0	67	5	79	10	0	94	11	96	14	0	121	315
Total Volume	41	85	27	0	153	70	85	78	0	233	12	307	60	0	379	54	331	52	0	437	1202
% App. Total	26.8	55.6	17.6	0		30	36.5	33.5	0		3.2	81	15.8	0		12.4	75.7	11.9	0		
PHF	.788	.733	.675	.000	.765	.833	.817	.813	.000	.869	.600	.892	.789	.000	.911	.794	.862	.813	.000	.881	.954
Auto	41	85	27	0	153	70	84	78	0	232	12	304	60	0	376	54	327	52	0	433	1194
% Auto	100	100	100	0	100	100	98.8	100	0	99.6	100	99.0	100	0	99.2	100	98.8	100	0	99.1	99.3
HV	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	3
% HV	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0.3	0	0.6	0	0	0.5	0.2
B/SB	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	0	2	0	0	2	5
% B/SB	0	0	0	0	0	0	1.2	0	0	0.4	0	0.7	0	0	0.5	0	0.6	0	0	0.5	0.4

Peak Hour Analysis From 02:30 PM to 04:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:30 PM

03:30 PM	13	43	6	0	62	18	36	28	0	82	5	72	12	0	89	16	102	17	0	135	368
03:45 PM	10	29	7	0	46	17	29	24	0	70	7	97	16	0	120	30	90	18	0	138	374
04:00 PM	19	20	3	0	42	24	42	20	0	86	7	100	10	0	117	28	112	19	0	159	404
04:15 PM	12	25	4	0	41	18	37	13	0	68	6	96	10	0	112	18	111	21	0	150	371
Total Volume	54	117	20	0	191	77	144	85	0	306	25	365	48	0	438	92	415	75	0	582	1517
% App. Total	28.3	61.3	10.5	0		25.2	47.1	27.8	0		5.7	83.3	11	0		15.8	71.3	12.9	0		
PHF	.711	.680	.714	.000	.770	.802	.857	.759	.000	.890	.893	.913	.750	.000	.913	.767	.926	.893	.000	.915	.939
Auto	54	117	19	0	190	77	144	85	0	306	25	361	48	0	434	92	410	75	0	577	1507
% Auto	100	100	95.0	0	99.5	100	100	100	0	100	100	98.9	100	0	99.1	100	98.8	100	0	99.1	99.3
HV	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	3
% HV	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0.2	0	0.5	0	0	0.3	0.2
B/SB	0	0	1	0	1	0	0	0	0	0	0	3	0	0	3	0	3	0	0	3	7
% B/SB	0	0	5.0	0	0.5	0	0	0	0	0	0	0.8	0	0	0.7	0	0.7	0	0	0.5	0.5

Peak Hour Analysis From 04:30 PM to 06:00 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:30 PM

04:30 PM	17	27	4	0	48	24	27	28	0	79	5	73	15	1	94	18	123	15	0	156	377
04:45 PM	17	20	11	0	48	20	33	20	0	73	3	95	14	0	112	19	122	23	0	164	397
05:00 PM	15	37	8	0	60	21	36	23	0	80	7	84	14	1	106	19	121	19	0	159	405
05:15 PM	9	24	10	0	43	35	42	14	0	91	9	86	20	0	115	15	105	16	0	136	385
Total Volume	58	108	33	0	199	100	138	85	0	323	24	338	63	2	427	71	471	73	0	615	1564
% App. Total	29.1	54.3	16.6	0		31	42.7	26.3	0		5.6	79.2	14.8	0.5		11.5	76.6	11.9	0		
PHF	.853	.730	.750	.000	.829	.714	.821	.759	.000	.887	.667	.889	.788	.500	.928	.934	.957	.793	.000	.938	.965
Auto	58	107	33	0	198	100	138	85	0	323	24	334	63	2	423	71	467	73	0	611	1555
% Auto	100	99.1	100	0	99.5	100	100	100	0	100	100	98.8	100	100	99.1	100	99.2	100	0	99.3	99.4
HV	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% HV	0	0.9	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
B/SB	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	4	0	0	4	8
% B/SB	0	0	0	0	0	0	0	0	0	0	0	1.2	0	0	0.9	0	0.8	0	0	0.7	0.5

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Egress-Only Site Driveway/U.S. Postal Service Driveway (E/W) and Franklin Avenue (N/S)

Nutley, Essex County, New Jersey

Thursday, February 13, 2020

File Name : S-19134.02_FEB_2020 - no thrus

Site Code : 00019134

Start Date : 2/13/2020

Page No : 1

Groups Printed- Auto - HV - B/SB

	Egress-Only Site Driveway Eastbound				U.S. Postal Service Driveway Westbound				Franklin Avenue Northbound				Franklin Avenue Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
*** BREAK ***																	
07:45 AM	0	0	1	1	0	0	3	3	0	0	2	2	1	0	1	2	8
Total	0	0	1	1	0	0	3	3	0	0	4	4	1	0	1	2	10
08:00 AM	1	0	1	2	0	0	2	2	1	0	2	3	5	0	2	7	14
08:15 AM	1	0	0	1	1	0	3	4	0	0	3	3	1	0	1	2	10
08:30 AM	0	0	2	2	3	0	1	4	3	0	6	9	0	0	0	0	15
08:45 AM	0	0	0	0	4	0	3	7	1	0	6	7	3	0	1	4	18
Total	2	0	3	5	8	0	9	17	5	0	17	22	9	0	4	13	57
*** BREAK ***																	
10:30 AM	1	0	4	5	5	0	2	7	3	0	6	9	0	0	4	4	25
10:45 AM	2	0	5	7	1	0	6	7	1	0	6	7	1	0	1	2	23
Total	3	0	9	12	6	0	8	14	4	0	12	16	1	0	5	6	48
11:00 AM	2	0	4	6	2	0	0	2	6	0	2	8	1	0	2	3	19
11:15 AM	4	0	3	7	1	0	2	3	2	0	4	6	1	0	1	2	18
11:30 AM	4	0	1	5	1	0	7	8	1	0	3	4	2	0	1	3	20
11:45 AM	3	0	1	4	3	0	1	4	2	0	6	8	0	0	1	1	17
Total	13	0	9	22	7	0	10	17	11	0	15	26	4	0	5	9	74
12:00 PM	2	0	1	3	4	0	4	8	3	0	7	10	2	0	1	3	24
12:15 PM	1	0	2	3	2	0	2	4	0	0	2	2	2	0	0	2	11
*** BREAK ***																	
Total	3	0	3	6	6	0	6	12	3	0	9	12	4	0	1	5	35
*** BREAK ***																	
02:30 PM	3	0	2	5	1	0	1	2	2	0	2	4	1	0	0	1	12
02:45 PM	3	0	0	3	1	0	2	3	1	0	4	5	1	0	1	2	13
Total	6	0	2	8	2	0	3	5	3	0	6	9	2	0	1	3	25
03:00 PM	1	0	4	5	1	0	1	2	1	0	5	6	1	0	0	1	14
03:15 PM	0	0	0	0	1	0	6	7	0	0	5	5	3	0	3	6	18
03:30 PM	2	0	3	5	5	0	2	7	1	0	4	5	4	0	2	6	23
03:45 PM	4	0	5	9	1	0	8	9	3	0	4	7	2	0	2	4	29
Total	7	0	12	19	8	0	17	25	5	0	18	23	10	0	7	17	84
04:00 PM	3	0	4	7	1	0	4	5	1	0	5	6	4	0	3	7	25
04:15 PM	0	0	4	4	3	0	3	6	0	0	4	4	4	0	2	6	20
04:30 PM	0	0	2	2	4	0	5	9	0	0	4	4	3	0	2	5	20
04:45 PM	3	0	1	4	3	0	2	5	1	0	3	4	5	0	0	5	18
Total	6	0	11	17	11	0	14	25	2	0	16	18	16	0	7	23	83

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Egress-Only Site Driveway/U.S. Postal Service Driveway (E/W) and Franklin Avenue (N/S)

Nutley, Essex County, New Jersey

Thursday, February 13, 2020

File Name : S-19134.02_FEB_2020 - no thrus

Site Code : 00019134

Start Date : 2/13/2020

Page No : 2

Groups Printed- Auto - HV - B/SB

	Egress-Only Site Driveway Eastbound				U.S. Postal Service Driveway Westbound				Franklin Avenue Northbound				Franklin Avenue Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
05:00 PM	5	0	3	8	4	0	1	5	0	0	0	0	0	0	3	3	16
05:15 PM	0	0	2	2	1	0	0	1	1	0	0	1	1	0	1	2	6
05:30 PM	1	0	2	3	3	0	1	4	0	0	0	0	1	0	2	3	10
05:45 PM	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	2
Total	6	0	8	14	9	0	2	11	1	0	0	1	2	0	6	8	34
06:00 PM	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	1	2
06:15 PM	0	0	0	0	0	0	2	2	0	0	0	0	1	0	0	1	3
Grand Total	46	0	58	104	57	0	75	132	34	0	97	131	51	0	37	88	455
Apprch %	44.2	0	55.8		43.2	0	56.8		26	0	74		58	0	42		
Total %	10.1	0	12.7	22.9	12.5	0	16.5	29	7.5	0	21.3	28.8	11.2	0	8.1	19.3	
Auto	46	0	58	104	57	0	75	132	34	0	97	131	51	0	37	88	455
% Auto	100	0	100	100	100	0	100	100	100	0	100	100	100	0	100	100	100
HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Egress-Only Site Driveway Eastbound				U.S. Postal Service Driveway Westbound				Franklin Avenue Northbound				Franklin Avenue Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	1	1	0	0	3	3	0	0	2	2	1	0	1	2	8
08:00 AM	1	0	1	2	0	0	2	2	1	0	2	3	5	0	2	7	14
08:15 AM	1	0	0	1	1	0	3	4	0	0	3	3	1	0	1	2	10
08:30 AM	0	0	2	2	3	0	1	4	3	0	6	9	0	0	0	0	15
Total Volume	2	0	4	6	4	0	9	13	4	0	13	17	7	0	4	11	47
% App. Total	33.3	0	66.7		30.8	0	69.2		23.5	0	76.5		63.6	0	36.4		
PHF	.500	.000	.500	.750	.333	.000	.750	.813	.333	.000	.542	.472	.350	.000	.500	.393	.783
Auto	2	0	4	6	4	0	9	13	4	0	13	17	7	0	4	11	47
% Auto	100	0	100	100	100	0	100	100	100	0	100	100	100	0	100	100	100
HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Egress-Only Site Driveway/U.S. Postal Service Driveway (E/W) and Franklin Avenue (N/S)

Nutley, Essex County, New Jersey

Thursday, February 13, 2020

File Name : S-19134.02_FEB_2020 - no thrus

Site Code : 00019134

Start Date : 2/13/2020

Page No : 3

	Egress-Only Site Driveway Eastbound				U.S. Postal Service Driveway Westbound				Franklin Avenue Northbound				Franklin Avenue Southbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:15 AM to 12:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:15 AM																	
11:15 AM	4	0	3	7	1	0	2	3	2	0	4	6	1	0	1	2	18
11:30 AM	4	0	1	5	1	0	7	8	1	0	3	4	2	0	1	3	20
11:45 AM	3	0	1	4	3	0	1	4	2	0	6	8	0	0	1	1	17
12:00 PM	2	0	1	3	4	0	4	8	3	0	7	10	2	0	1	3	24
Total Volume	13	0	6	19	9	0	14	23	8	0	20	28	5	0	4	9	79
% App. Total	68.4	0	31.6		39.1	0	60.9		28.6	0	71.4		55.6	0	44.4		
PHF	.813	.000	.500	.679	.563	.000	.500	.719	.667	.000	.714	.700	.625	.000	1.00	.750	.823
Auto	13	0	6	19	9	0	14	23	8	0	20	28	5	0	4	9	79
% Auto	100	0	100	100	100	0	100	100	100	0	100	100	100	0	100	100	100
HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Analysis From 03:30 PM to 04:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:30 PM

03:30 PM	2	0	3	5	5	0	2	7	1	0	4	5	4	0	2	6	23
03:45 PM	4	0	5	9	1	0	8	9	3	0	4	7	2	0	2	4	29
04:00 PM	3	0	4	7	1	0	4	5	1	0	5	6	4	0	3	7	25
04:15 PM	0	0	4	4	3	0	3	6	0	0	4	4	4	0	2	6	20
Total Volume	9	0	16	25	10	0	17	27	5	0	17	22	14	0	9	23	97
% App. Total	36	0	64		37	0	63		22.7	0	77.3		60.9	0	39.1		
PHF	.563	.000	.800	.694	.500	.000	.531	.750	.417	.000	.850	.786	.875	.000	.750	.821	.836
Auto	9	0	16	25	10	0	17	27	5	0	17	22	14	0	9	23	97
% Auto	100	0	100	100	100	0	100	100	100	0	100	100	100	0	100	100	100
HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:30 PM

04:30 PM	0	0	2	2	4	0	5	9	0	0	4	4	3	0	2	5	20
04:45 PM	3	0	1	4	3	0	2	5	1	0	3	4	5	0	0	5	18
05:00 PM	5	0	3	8	4	0	1	5	0	0	0	0	0	0	3	3	16
05:15 PM	0	0	2	2	1	0	0	1	1	0	0	1	1	0	1	2	6
Total Volume	8	0	8	16	12	0	8	20	2	0	7	9	9	0	6	15	60
% App. Total	50	0	50		60	0	40		22.2	0	77.8		60	0	40		
PHF	.400	.000	.667	.500	.750	.000	.400	.556	.500	.000	.438	.563	.450	.000	.500	.750	.750
Auto	8	0	8	16	12	0	8	20	2	0	7	9	9	0	6	15	60
% Auto	100	0	100	100	100	0	100	100	100	0	100	100	100	0	100	100	100
HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Chestnut Street (E/W)
and Franklin Avenue (N/S)
Nutley, Essex County, New Jersey
Saturday, July 20, 2019

File Name : S-19134.01_SAT
Site Code : 00019134
Start Date : 7/20/2019
Page No : 1

Groups Printed- Auto - HV - B/SB

	Chestnut Street Eastbound					Chestnut Street Westbound					Franklin Avenue Northbound					Franklin Avenue Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
11:00 AM	15	31	4	0	50	17	11	20	0	48	4	104	7	1	116	15	103	14	0	132	346
11:15 AM	16	10	4	1	31	20	14	36	0	70	6	99	18	1	124	18	93	16	1	128	353
11:30 AM	20	17	6	0	43	14	29	26	0	69	4	99	11	0	114	17	109	17	0	143	369
11:45 AM	14	20	6	0	40	25	24	23	0	72	5	87	11	0	103	16	97	18	0	131	346
Total	65	78	20	1	164	76	78	105	0	259	19	389	47	2	457	66	402	65	1	534	1414
12:00 PM	9	12	2	0	23	22	23	32	0	77	6	105	13	0	124	13	95	13	0	121	345
12:15 PM	17	19	8	1	45	19	33	16	0	68	5	84	11	1	101	17	104	15	0	136	350
12:30 PM	16	25	6	0	47	17	24	27	0	68	4	88	16	0	108	20	91	15	0	126	349
12:45 PM	14	15	8	0	37	15	24	27	0	66	2	84	10	0	96	11	104	14	0	129	328
Total	56	71	24	1	152	73	104	102	0	279	17	361	50	1	429	61	394	57	0	512	1372
01:00 PM	16	15	9	0	40	20	23	20	0	63	1	104	12	0	117	18	121	21	0	160	380
01:15 PM	13	18	5	0	36	16	25	19	0	60	5	90	16	0	111	12	99	18	0	129	336
01:30 PM	13	16	8	0	37	12	18	20	0	50	4	87	11	0	102	15	92	14	0	121	310
01:45 PM	13	15	2	0	30	12	25	18	0	55	3	94	16	0	113	22	93	15	0	130	328
Total	55	64	24	0	143	60	91	77	0	228	13	375	55	0	443	67	405	68	0	540	1354
Grand Total	176	213	68	2	459	209	273	284	0	766	49	1125	152	3	1329	194	1201	190	1	1586	4140
Apprch %	38.3	46.4	14.8	0.4		27.3	35.6	37.1	0		3.7	84.7	11.4	0.2		12.2	75.7	12	0.1		
Total %	4.3	5.1	1.6	0	11.1	5	6.6	6.9	0	18.5	1.2	27.2	3.7	0.1	32.1	4.7	29	4.6	0	38.3	
Auto	176	212	68	2	458	209	272	284	0	765	49	1117	151	3	1320	194	1191	190	1	1576	4119
% Auto	100	99.5	100	100	99.8	100	99.6	100	0	99.9	100	99.3	99.3	100	99.3	100	99.2	100	100	99.4	99.5
HV	0	1	0	0	1	0	1	0	0	1	0	2	1	0	3	0	4	0	0	4	9
% HV	0	0.5	0	0	0.2	0	0.4	0	0	0.1	0	0.2	0.7	0	0.2	0	0.3	0	0	0.3	0.2
B/SB	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	0	6	0	0	6	12
% B/SB	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0.5	0	0.5	0	0	0.4	0.3

	Chestnut Street Eastbound					Chestnut Street Westbound					Franklin Avenue Northbound					Franklin Avenue Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	15	31	4	0	50	17	11	20	0	48	4	104	7	1	116	15	103	14	0	132	346
11:15 AM	16	10	4	1	31	20	14	36	0	70	6	99	18	1	124	18	93	16	1	128	353
11:30 AM	20	17	6	0	43	14	29	26	0	69	4	99	11	0	114	17	109	17	0	143	369
11:45 AM	14	20	6	0	40	25	24	23	0	72	5	87	11	0	103	16	97	18	0	131	346
Total Volume	65	78	20	1	164	76	78	105	0	259	19	389	47	2	457	66	402	65	1	534	1414
% App. Total	39.6	47.6	12.2	0.6		29.3	30.1	40.5	0		4.2	85.1	10.3	0.4		12.4	75.3	12.2	0.2		
PHF	.813	.629	.833	.250	.820	.760	.672	.729	.000	.899	.792	.935	.653	.500	.921	.917	.922	.903	.250	.934	.958
Auto	65	78	20	1	164	76	78	105	0	259	19	387	46	2	454	66	398	65	1	530	1407
% Auto	100	100	100	100	100	100	100	100	0	100	100	99.5	97.9	100	99.3	100	99.0	100	100	99.3	99.5
HV	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	0	2	3
% HV	0	0	0	0	0	0	0	0	0	0	0	0	2.1	0	0.2	0	0.5	0	0	0.4	0.2
B/SB	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	2	0	0	2	4
% B/SB	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0.4	0	0.5	0	0	0.4	0.3

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Egress-Only Site Driveway/U.S. Postal Service Driveway (E/W)
and Franklin Avenue (N/S)
Nutley, Essex County, New Jersey
Saturday, July 20, 2019

File Name : S-19134.02_SAT
Site Code : 00019134
Start Date : 7/20/2019
Page No : 1

Groups Printed- Auto - HV - B/SB

	Egress-Only Site Driveway Eastbound					U.S. Postal Service Driveway Westbound					Franklin Avenue Northbound					Franklin Avenue Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
11:00 AM	3	0	4	0	7	3	0	4	0	7	7	0	2	0	9	1	0	4	0	5	28
11:15 AM	2	0	2	0	4	1	0	8	0	9	6	0	9	0	15	1	0	2	0	3	31
11:30 AM	1	0	5	0	6	3	0	7	0	10	6	0	6	0	12	2	0	4	0	6	34
11:45 AM	0	0	5	0	5	5	0	3	0	8	5	0	4	0	9	2	0	0	0	2	24
Total	6	0	16	0	22	12	0	22	0	34	24	0	21	0	45	6	0	10	0	16	117
12:00 PM	0	0	1	0	1	1	0	5	0	6	1	0	8	0	9	1	0	0	0	1	17
12:15 PM	1	0	1	0	2	4	0	5	0	9	0	0	5	0	5	3	0	2	0	5	21
12:30 PM	1	0	2	0	3	2	0	3	0	5	1	0	4	0	5	1	0	0	0	1	14
12:45 PM	2	0	0	0	2	1	0	1	0	2	0	0	4	0	4	0	0	0	0	0	8
Total	4	0	4	0	8	8	0	14	0	22	2	0	21	0	23	5	0	2	0	7	60
01:00 PM	2	0	1	0	3	4	0	7	0	11	3	0	9	0	12	1	0	1	0	2	28
01:15 PM	0	0	1	0	1	1	0	2	0	3	1	0	5	0	6	1	0	0	0	1	11
01:30 PM	0	0	0	0	0	4	0	4	0	8	2	0	0	0	2	1	0	0	0	1	11
01:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	2
Total	2	0	2	0	4	10	0	13	0	23	6	0	15	0	21	3	0	1	0	4	52
Grand Total	12	0	22	0	34	30	0	49	0	79	32	0	57	0	89	14	0	13	0	27	229
Apprch %	35.3	0	64.7	0		38	0	62	0		36	0	64	0		51.9	0	48.1	0		
Total %	5.2	0	9.6	0	14.8	13.1	0	21.4	0	34.5	14	0	24.9	0	38.9	6.1	0	5.7	0	11.8	
Auto	12	0	22	0	34	30	0	49	0	79	32	0	57	0	89	14	0	13	0	27	229
% Auto	100	0	100	0	100	100	0	100	0	100	100	0	100	0	100	100	0	100	0	100	100
HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Egress-Only Site Driveway Eastbound					U.S. Postal Service Driveway Westbound					Franklin Avenue Northbound					Franklin Avenue Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total

Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 11:00 AM

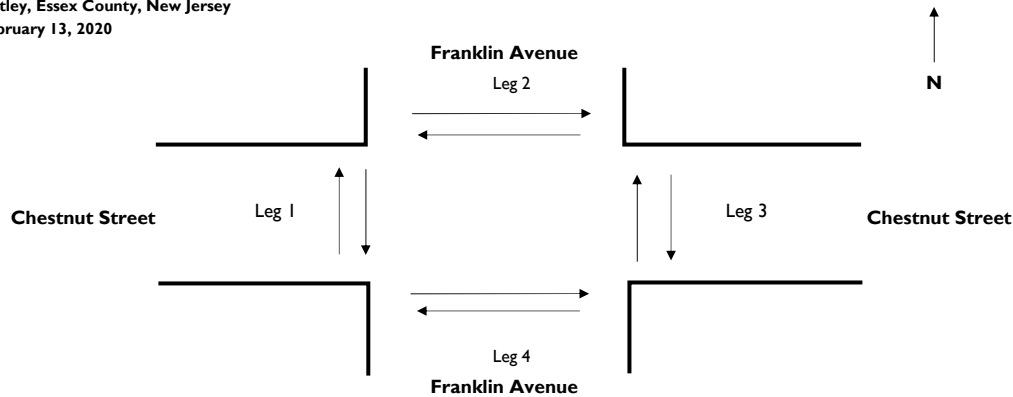
11:00 AM	3	0	4	0	7	3	0	4	0	7	7	0	2	0	9	1	0	4	0	5	28
11:15 AM	2	0	2	0	4	1	0	8	0	9	6	0	9	0	15	1	0	2	0	3	31
11:30 AM	1	0	5	0	6	3	0	7	0	10	6	0	6	0	12	2	0	4	0	6	34
11:45 AM	0	0	5	0	5	5	0	3	0	8	5	0	4	0	9	2	0	0	0	2	24
Total Volume	6	0	16	0	22	12	0	22	0	34	24	0	21	0	45	6	0	10	0	16	117
% App. Total	27.3	0	72.7	0		35.3	0	64.7	0		53.3	0	46.7	0		37.5	0	62.5	0		
PHF	.500	.000	.800	.000	.786	.600	.000	.688	.000	.850	.857	.000	.583	.000	.750	.750	.000	.625	.000	.667	.860
Auto	6	0	16	0	22	12	0	22	0	34	24	0	21	0	45	6	0	10	0	16	117
% Auto	100	0	100	0	100	100	0	100	0	100	100	0	100	0	100	100	0	100	0	100	100
HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% B/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PEDESTRIAN COUNT DATA

STONEFIELD

Pedestrian Count Data

Township of Nutley, Essex County, New Jersey
Wednesday, February 13, 2020

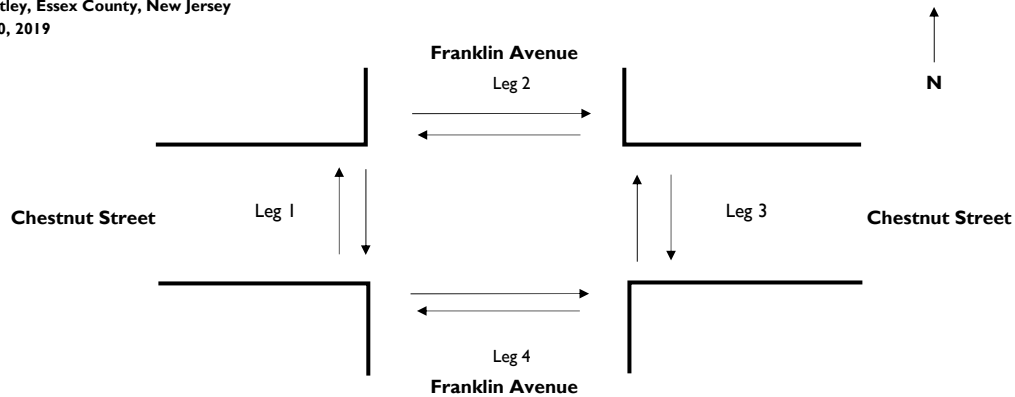


	Leg 1		Leg 2		Leg 3		Leg 4	
Time	North	South	East	West	North	South	East	West
7:00 AM	2	0	0	0	0	0	0	0
7:15 AM	1	1	0	0	0	0	0	0
7:30 AM	2	5	0	3	0	1	3	4
7:45 AM	1	15	0	1	0	9	10	22
8:00 AM	2	15	4	10	2	2	3	13
8:15 AM	2	0	1	2	2	0	2	0
8:30 AM	1	3	0	1	1	0	0	0
8:45 AM	2	0	4	0	0	2	1	0
10:30 AM	2	1	1	0	0	2	1	1
10:45 AM	1	1	0	0	0	0	0	0
11:00 AM	29	1	0	8	8	0	0	23
11:15 AM	1	18	2	0	2	1	3	0
11:30 AM	3	22	0	0	0	6	4	3
11:45 AM	0	4	0	1	1	1	1	0
12:00 PM	1	1	0	1	2	1	3	0
12:15 PM	0	0	0	1	3	0	3	0
12:30 PM	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	2	1	0	0
2:45 PM	35	4	5	0	2	0	37	0
3:00 PM	13	5	0	1	16	3	17	8
3:15 PM	2	3	0	1	0	1	1	3
3:30 PM	5	3	3	2	4	0	1	0
3:45 PM	1	2	5	0	4	1	2	0
4:00 PM	4	4	0	2	3	0	1	1
4:15 PM	0	4	1	1	1	1	1	0
4:30 PM	1	0	0	0	4	2	1	2
4:45 PM	4	2	0	0	3	1	1	5
5:00 PM	1	3	1	1	2	1	3	1
5:15 PM	3	3	0	4	1	1	1	1
5:30 PM	6	2	2	1	1	3	1	1
5:45 PM	0	4	2	0	0	1	0	1
6:00 PM	2	2	1	5	2	0	2	2
6:15 PM	0	0	2	3	0	5	1	1

STONEFIELD

Pedestrian Count Data

Township of Nutley, Essex County, New Jersey
Saturday, July 20, 2019

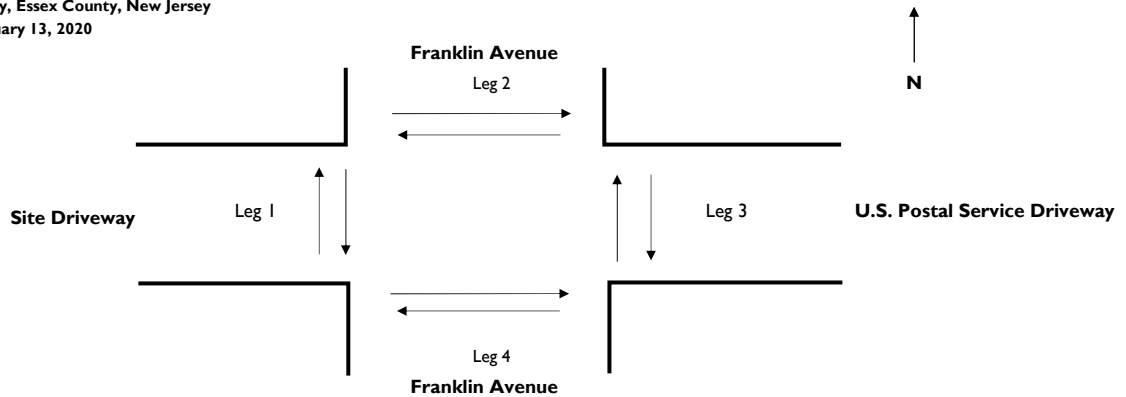


	Leg 1		Leg 2		Leg 3		Leg 4	
Time	North	South	East	West	North	South	East	West
11:00 AM	1	0	0	0	2	2	0	0
11:15 AM	2	1	2	0	5	2	1	2
11:30 AM	1	1	1	0	0	4	2	0
11:45 AM	2	2	1	4	0	0	1	0
12:00 PM	1	3	0	0	0	0	1	0
12:15 PM	4	1	1	0	2	0	0	1
12:30 PM	5	0	0	3	2	3	1	1
12:45 PM	1	4	2	1	0	0	0	0
1:00 PM	3	2	0	0	2	2	2	0
1:15 PM	3	2	3	1	1	0	0	0
1:30 PM	1	0	2	2	0	3	0	0
1:45 PM	1	0	0	0	0	0	1	1

STONEFIELD

Pedestrian Count Data

Township of Nutley, Essex County, New Jersey
Wednesday, February 13, 2020



	Leg 1		Leg 2		Leg 3		Leg 4	
Time	North	South	East	West	North	South	East	West
7:00 AM	0	0	0	0	2	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	3	5	0	0	0	0	0	0
7:45 AM	0	7	0	0	3	4	0	0
8:00 AM	0	4	0	0	1	0	0	0
8:15 AM	0	0	0	0	1	1	0	0
8:30 AM	1	0	0	0	2	0	0	0
8:45 AM	1	2	0	0	1	1	2	0
10:30 AM	3	3	0	0	0	0	0	0
10:45 AM	0	1	0	0	1	0	0	0
11:00 AM	13	3	1	1	3	2	0	2
11:15 AM	4	3	1	0	4	1	1	2
11:30 AM	7	12	0	0	3	9	0	0
11:45 AM	3	5	2	0	1	1	2	0
12:00 PM	2	3	2	1	2	2	1	1
12:15 PM	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	1	1	1	0
2:45 PM	20	5	0	0	12	1	0	0
3:00 PM	13	5	1	1	12	13	0	2
3:15 PM	9	3	1	0	6	4	1	1
3:30 PM	6	0	0	0	4	0	0	0
3:45 PM	5	1	0	0	3	5	0	0
4:00 PM	4	1	0	0	3	6	0	0
4:15 PM	3	0	0	0	4	3	0	0
4:30 PM	3	0	0	0	3	4	1	0
4:45 PM	3	0	0	0	2	2	0	0
5:00 PM	1	0	0	0	2	5	0	0
5:15 PM	3	0	1	0	1	0	0	0
5:30 PM	2	0	0	0	0	4	0	0
5:45 PM	2	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	1	1	0	0
6:15 PM	1	0	0	0	0	0	0	0

GAP ANALYSIS SUMMARY TABLE

TIME	AVAILABLE GAPS (SECONDS)							28.1+
	0 - 7.09	7.1 - 10.59	10.6 - 14.09	14.1 - 17.59	17.6 - 21.09	21.1 - 24.59	24.6 - 28.09	
3:30 PM	66	4	1	0	0	0	2	0
3:35 PM	49	7	4	0	2	0	0	0
3:40 PM	58	5	4	1	0	0	0	0
3:45 PM	66	7	1	1	0	0	0	0
3:50 PM	58	6	4	1	0	0	1	0
3:55 PM	68	6	0	1	1	0	0	0
4:00 PM	75	2	1	1	0	0	0	0
4:05 PM	69	8	0	1	0	0	0	0
4:10 PM	73	5	2	1	0	0	0	0
4:15 PM	67	5	2	1	0	1	0	0
4:20 PM	66	7	3	0	0	0	0	0
4:25 PM	62	5	2	1	0	1	0	0
Total Gaps								
3:30 PM-4:30 PM Peak	777	67	24	9	3	2	3	0
Vehicles/Gap	0	1	2	3	4	5	6	7
Vehicle Capacity (3:30 PM-4:30 PM Peak)		67	48	27	12	10	18	0
Total Capacity (Vehicles):								182

Gap Required For:

- 1 Vehicle: 7.1 seconds
- 2 Vehicles: 10.6 seconds
- 3 Vehicles: 14.1 seconds
- 4 Vehicles: 17.6 seconds
- 5 Vehicles: 21.1 seconds
- 6 Vehicles: 24.6 seconds
- 7 Vehicles: 28.1 seconds

Base Critical Gap: 7.1 seconds
Follow-Up Gap: 3.5 seconds

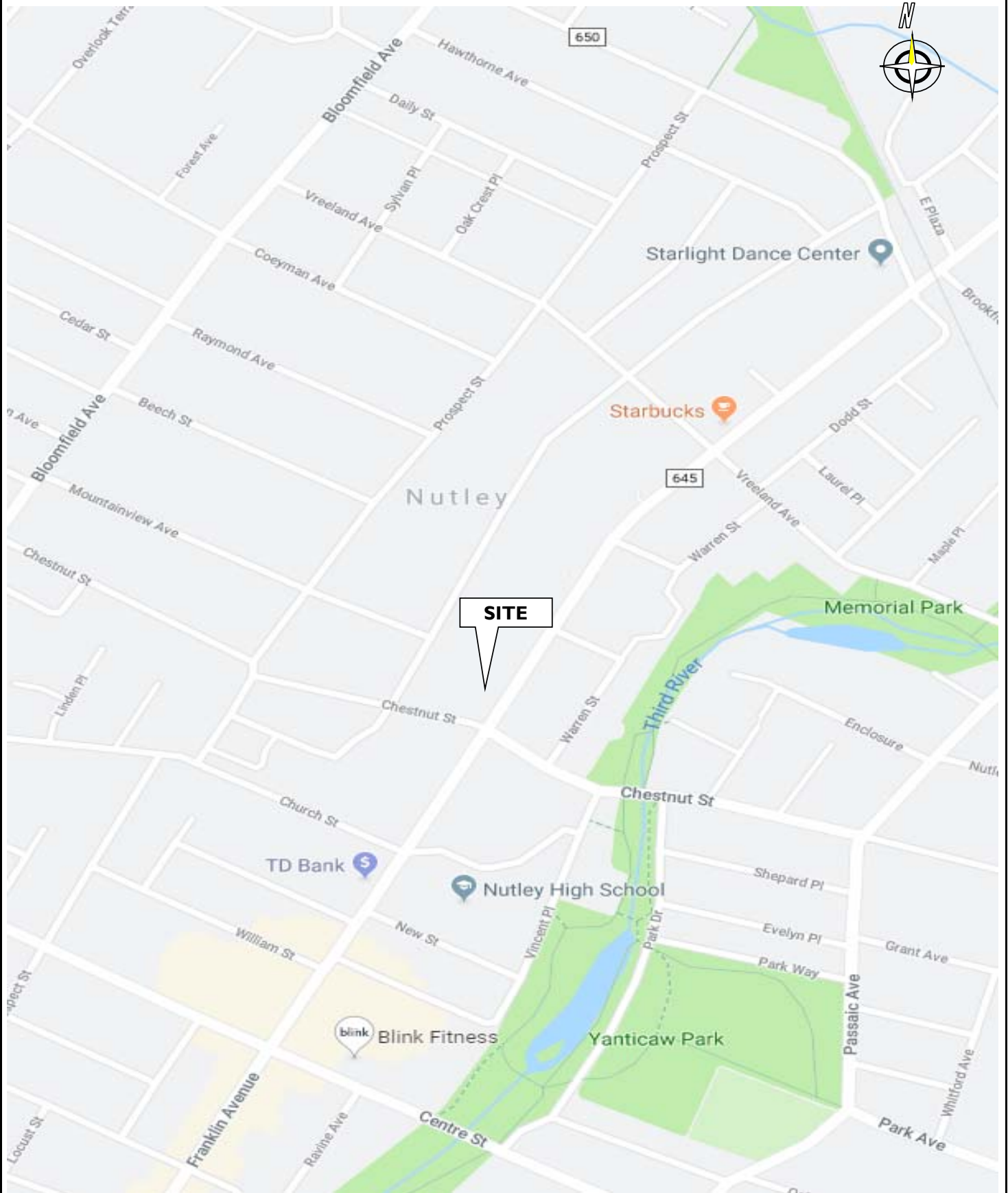
TIME	AVAILABLE GAPS (SECONDS)										
	0 - 7.09	7.1 - 10.59	10.6 - 14.09	14.1 - 17.59	17.6 - 21.09	21.1 - 24.59	24.6 - 28.09	28.1 +			
4:30 PM	66	5	4	0	1	0	0	0			
4:35 PM	67	7	2	0	0	0	0	0			
4:40 PM	86	2	2	0	0	0	0	0			
4:45 PM	74	5	1	0	1	0	0	0			
4:50 PM	78	7	0	0	0	0	0	0			
4:55 PM	83	4	1	1	0	0	0	0			
5:00 PM	67	8	0	0	1	0	0	0			
5:05 PM	72	8	1	0	0	0	0	0			
5:10 PM	60	7	1	1	0	0	1	0			
5:15 PM	75	4	2	0	0	0	0	0			
5:20 PM	64	4	3	0	0	1	0	0			
5:25 PM	41	8	2	1	1	0	0	1			
Total Gaps											
4:30 PM-5:30 PM Peak	833	69	19	3	4	1	1	1			
Vehicles/Gap	0	1	2	3	4	5	6	7			
Vehicular Capacity (4:30 PM-5:30 PM Peak)		69	38	9	16	5	6	7			
								Total Capacity (Vehicles):	150		

Gap Required For:

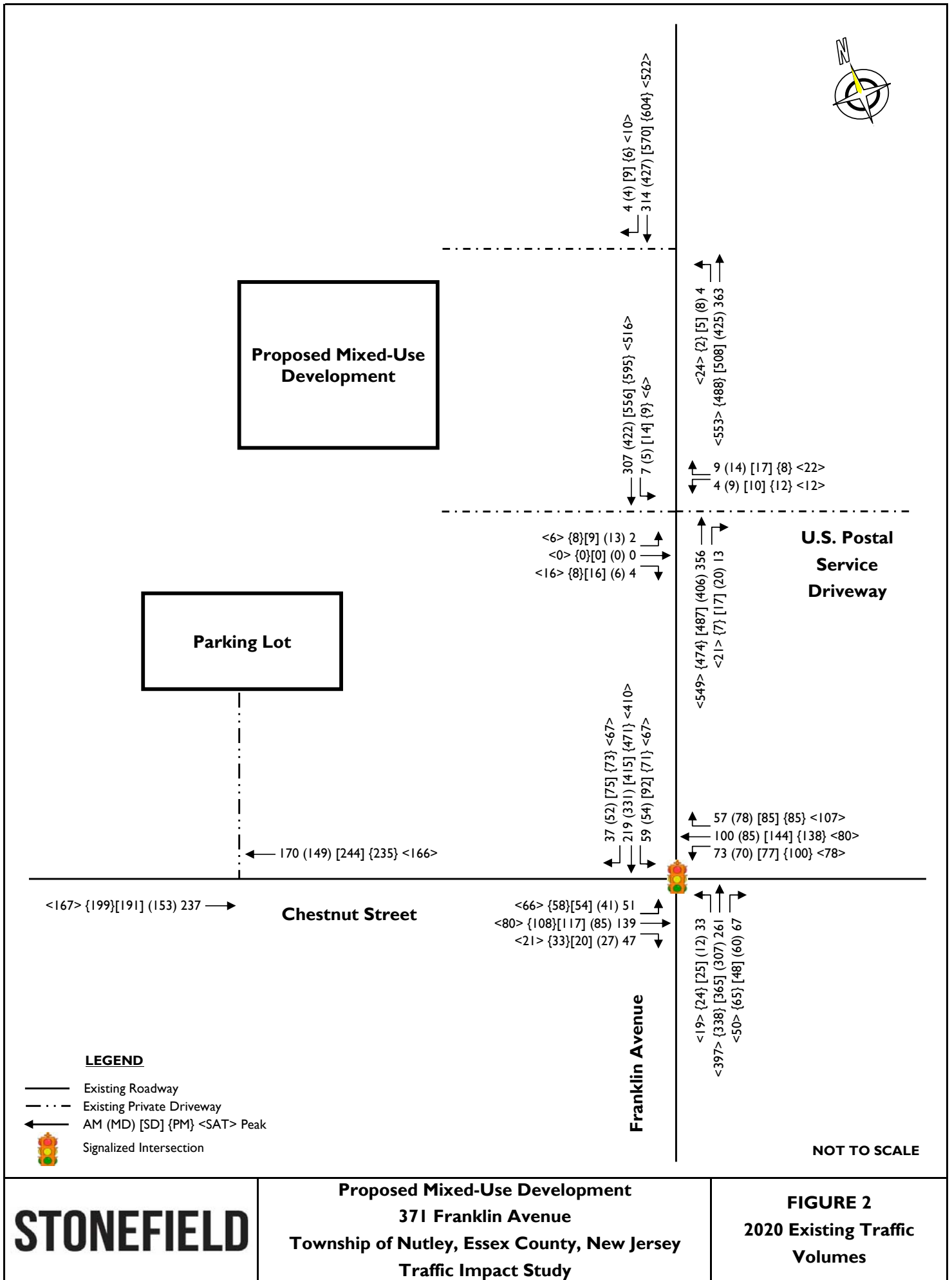
- 1 Vehicle: 7.1 seconds
- 2 Vehicles: 10.6 seconds
- 3 Vehicles: 14.1 seconds
- 4 Vehicles: 17.6 seconds
- 5 Vehicles: 21.1 seconds
- 6 Vehicles: 24.6 seconds
- 7 Vehicles: 28.1 seconds

Base Critical Gap: 7.1 seconds
Follow-Up Gap: 3.5 seconds

FIGURES



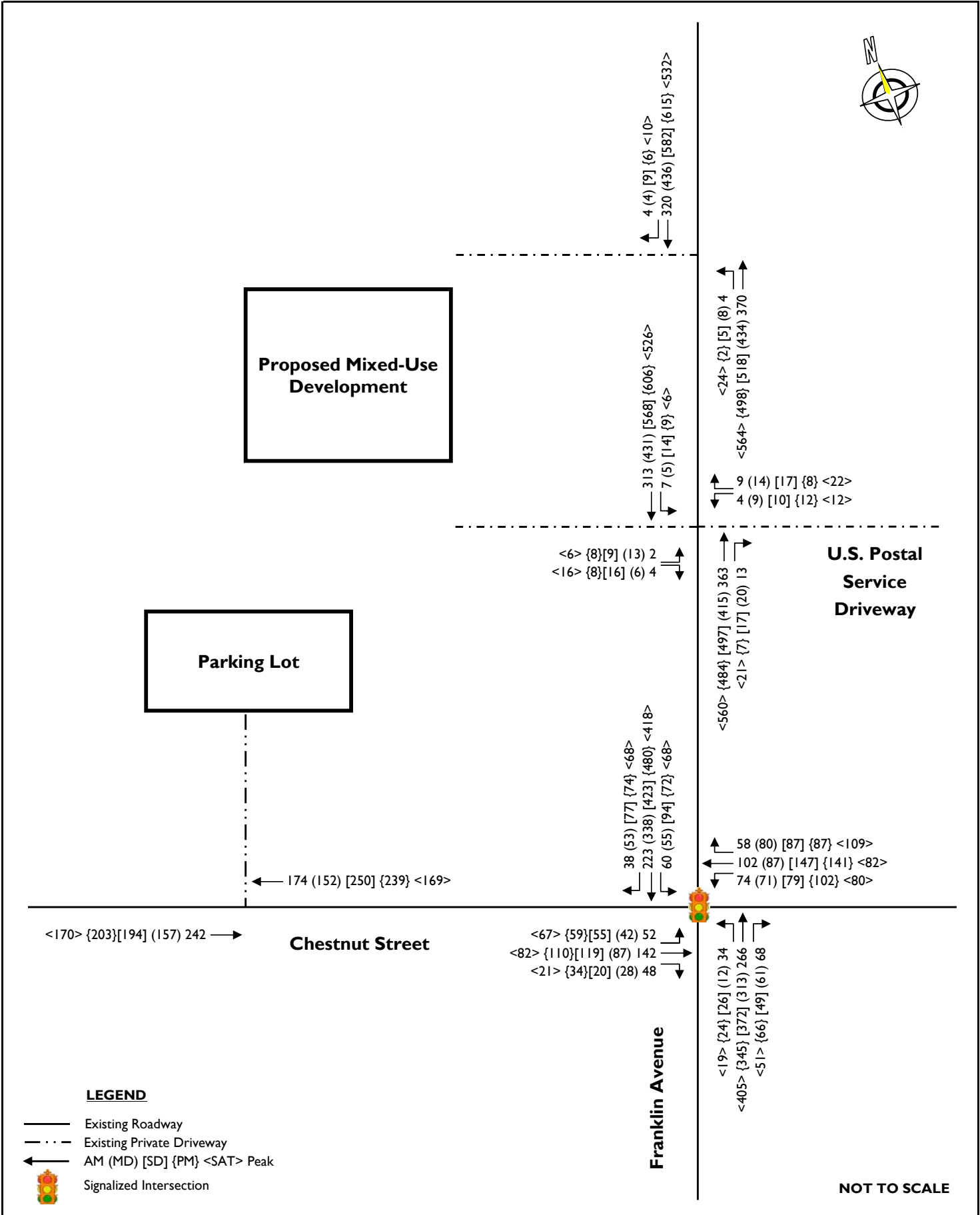
STONEFIELD	Proposed Mixed-Use Development 371 Franklin Avenue Township of Nutley, Essex County, New Jersey Traffic Impact Study	FIGURE I Site Location Map
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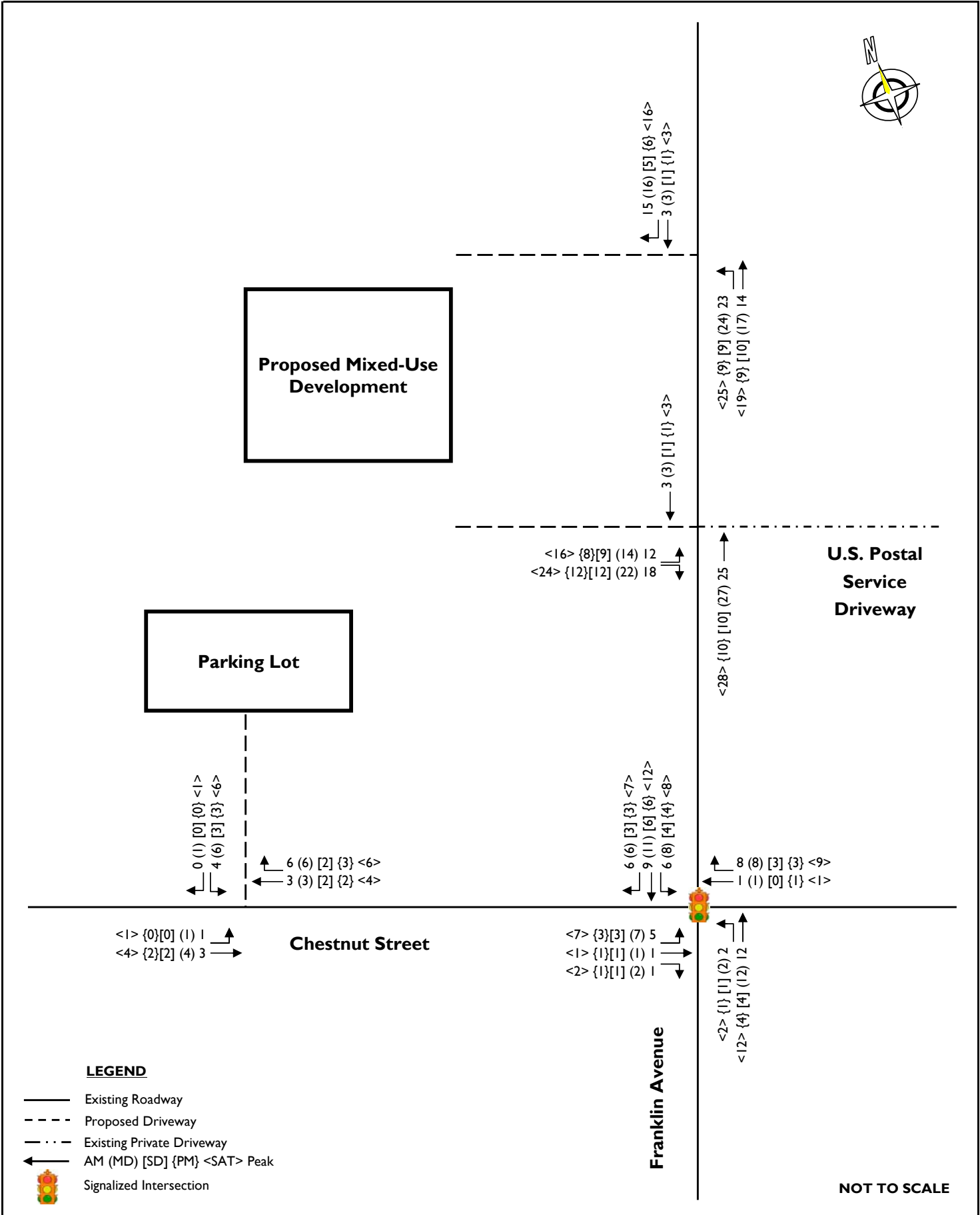
STONEFIELD

Proposed Mixed-Use Development
371 Franklin Avenue
Township of Nutley, Essex County, New Jersey
Traffic Impact Study

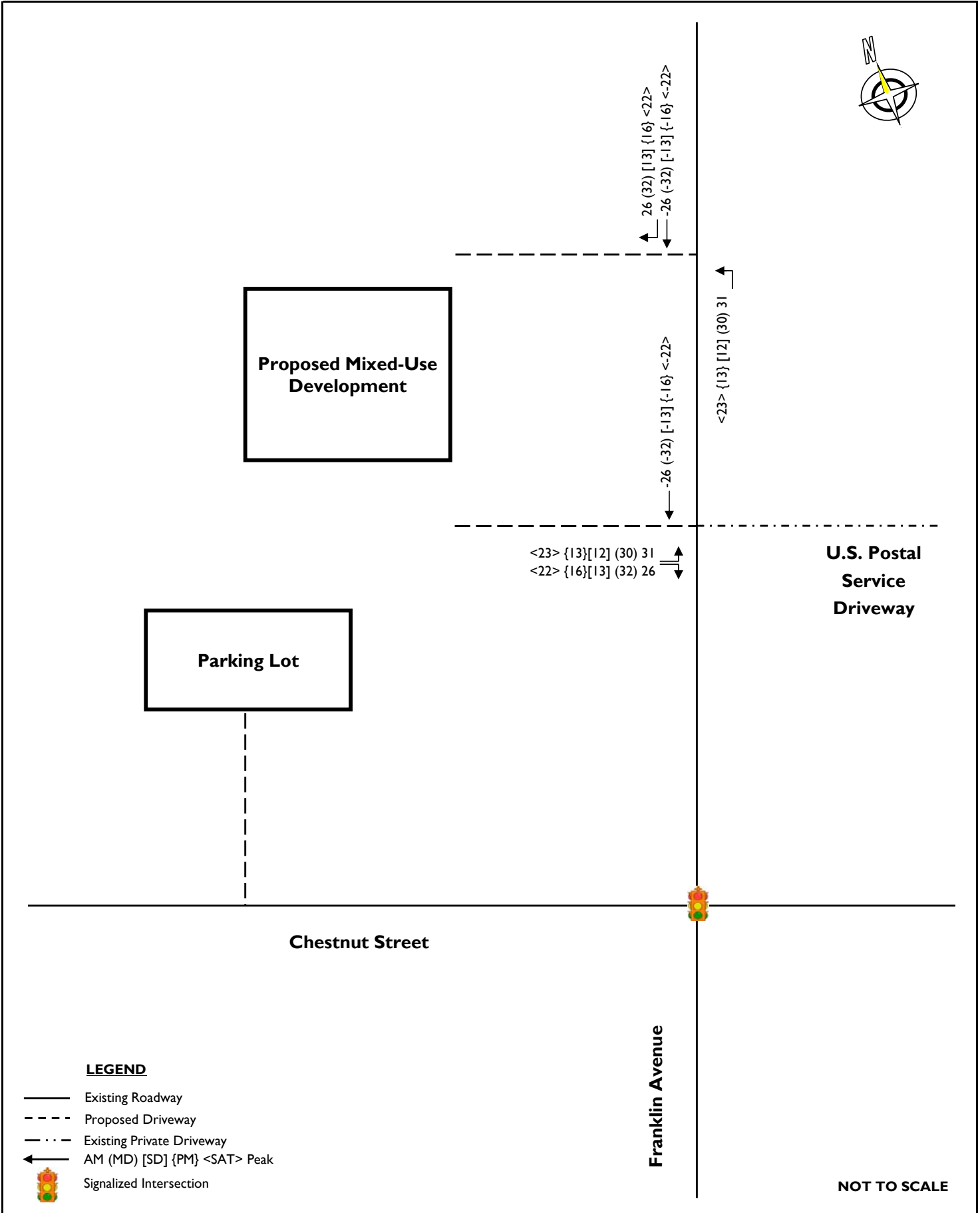
FIGURE 2
2020 Existing Traffic
Volumes



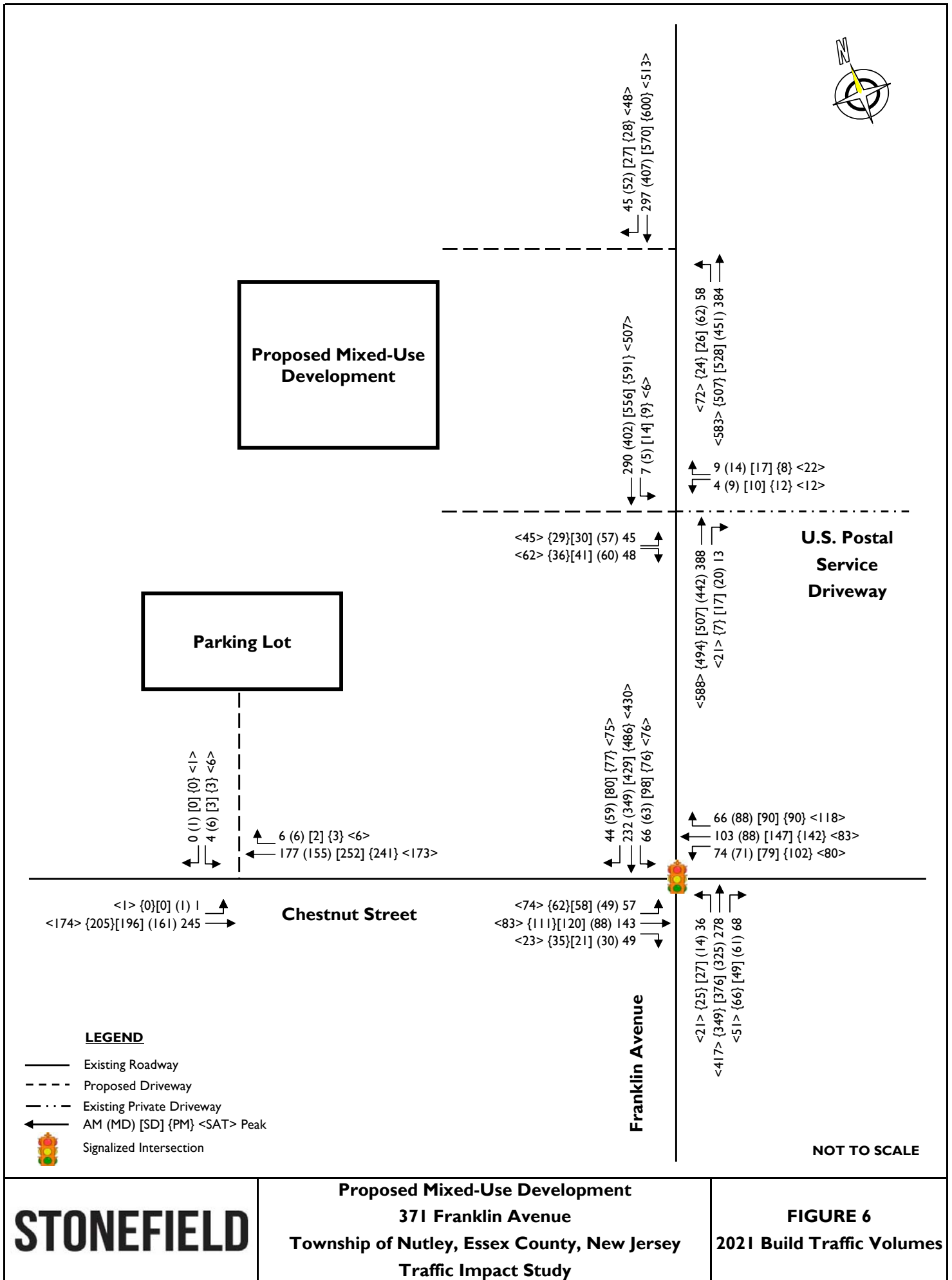
STONEFIELD	Proposed Mixed-Use Development 371 Franklin Avenue Township of Nutley, Essex County, New Jersey Traffic Impact Study	FIGURE 3 2021 No-Build Traffic Volumes
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STONEFIELD	Proposed Mixed-Use Development 371 Franklin Avenue Township of Nutley, Essex County, New Jersey Traffic Impact Study	FIGURE 4 "New" Site-Generated Traffic Volumes
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STONEFIELD	Proposed Mixed-Use Development 371 Franklin Avenue Township of Nutley, Essex County, New Jersey Traffic Impact Study	FIGURE 5 "Pass-By" Site-Generated Traffic Volumes
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CAPACITY ANALYSIS DETAIL SHEETS

HCM 6th Signalized Intersection Summary

1: Franklin Avenue & Chestnut Street

2020 Existing Condition
Weekday Morning Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	51	139	47	73	100	57	33	261	67	59	219	37
Future Volume (veh/h)	51	139	47	73	100	57	33	261	67	59	219	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.95		0.90	0.95		0.90	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1856	1856	1856
Adj Flow Rate, veh/h	60	164	55	86	118	67	39	307	79	69	258	44
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	3	3	3
Cap, veh/h	123	257	78	157	181	89	114	821	201	204	733	118
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	255	1081	328	377	761	374	93	1325	324	231	1183	190
Grp Volume(v), veh/h	279	0	0	271	0	0	425	0	0	371	0	0
Grp Sat Flow(s),veh/h/ln	1664	0	0	1512	0	0	1743	0	0	1605	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.4	0.0	0.0	11.4	0.0	0.0	8.2	0.0	0.0	6.9	0.0	0.0
Prop In Lane	0.22		0.20	0.32		0.25	0.09		0.19	0.19		0.12
Lane Grp Cap(c), veh/h	458	0	0	427	0	0	1136	0	0	1055	0	0
V/C Ratio(X)	0.61	0.00	0.00	0.63	0.00	0.00	0.37	0.00	0.00	0.35	0.00	0.00
Avail Cap(c_a), veh/h	579	0	0	538	0	0	1136	0	0	1055	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.2	0.0	0.0	24.5	0.0	0.0	6.6	0.0	0.0	6.4	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	1.6	0.0	0.0	0.9	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.6	0.0	0.0	7.5	0.0	0.0	5.3	0.0	0.0	4.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.5	0.0	0.0	26.1	0.0	0.0	7.6	0.0	0.0	7.3	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		279			271			425			371	
Approach Delay, s/veh		25.5			26.1			7.6			7.3	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.4		21.6		48.4		21.6				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		38.0		22.0		38.0		22.0				
Max Q Clear Time (g_c+I1), s		10.2		12.4		8.9		13.4				
Green Ext Time (p_c), s		5.8		1.2		5.2		1.1				
Intersection Summary												
HCM 6th Ctrl Delay				14.9								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	4	4	0	9	0	356	13	7	307	0
Future Vol, veh/h	2	0	4	4	0	9	0	356	13	7	307	0
Conflicting Peds, #/hr	6	0	6	6	0	6	0	0	6	6	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	3	0
Mvmt Flow	2	0	5	5	0	10	0	409	15	8	353	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	797	799	359	801	792	429	-	0	0	430	0	0
Stage 1	369	369	-	423	423	-	-	-	-	-	-	-
Stage 2	428	430	-	378	369	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	307	321	690	305	324	630	0	-	-	1140	-	0
Stage 1	655	624	-	613	591	-	0	-	-	-	-	0
Stage 2	609	587	-	648	624	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	298	316	686	297	319	623	-	-	-	1133	-	-
Mov Cap-2 Maneuver	298	316	-	297	319	-	-	-	-	-	-	-
Stage 1	655	618	-	613	587	-	-	-	-	-	-	-
Stage 2	595	583	-	634	618	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	13	0	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1	SBL	SBT
Capacity (veh/h)	-	-	478 466	1133	-
HCM Lane V/C Ratio	-	-	0.014 0.032	0.007	-
HCM Control Delay (s)	-	-	12.6 13	8.2	0
HCM Lane LOS	-	-	B B	A A	
HCM 95th %tile Q(veh)	-	-	0 0.1	0	-

HCM 6th TWSC
3: Franklin Avenue & Ingress-Only Site Driveway

2020 Existing Condition
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	4	363	314	4
Future Vol, veh/h	0	0	4	363	314	4
Conflicting Peds, #/hr	0	0	6	0	0	6
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	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	1	3	0
Mvmt Flow	0	0	5	417	361	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	797	370	372	0	-	0
Stage 1	370	-	-	-	-	-
Stage 2	427	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	358	680	1198	-	-	-
Stage 1	703	-	-	-	-	-
Stage 2	662	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	352	676	1191	-	-	-
Mov Cap-2 Maneuver	352	-	-	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	658	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1191	-	-	-	-	
HCM Lane V/C Ratio	0.004	-	-	-	-	
HCM Control Delay (s)	8	0	0	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM 6th Signalized Intersection Summary

1: Franklin Avenue & Chestnut Street

2020 Existing Condition
Weekday Midday Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	85	27	70	85	78	12	307	60	54	331	52
Future Volume (veh/h)	41	85	27	70	85	78	12	307	60	54	331	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.98		0.96	0.98		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	43	89	28	74	89	82	13	323	63	57	348	55
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	1	1	1
Cap, veh/h	126	222	60	145	139	109	66	985	187	153	893	134
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.66	0.66	0.66	0.66	0.66	0.66
Sat Flow, veh/h	306	1115	301	391	699	549	20	1497	284	145	1357	204
Grp Volume(v), veh/h	160	0	0	245	0	0	399	0	0	460	0	0
Grp Sat Flow(s),veh/h/ln	1722	0	0	1639	0	0	1801	0	0	1706	0	0
Q Serve(g_s), s	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.4	0.0	0.0	9.5	0.0	0.0	6.7	0.0	0.0	8.0	0.0	0.0
Prop In Lane	0.27		0.17	0.30		0.33	0.03		0.16	0.12		0.12
Lane Grp Cap(c), veh/h	408	0	0	393	0	0	1239	0	0	1181	0	0
V/C Ratio(X)	0.39	0.00	0.00	0.62	0.00	0.00	0.32	0.00	0.00	0.39	0.00	0.00
Avail Cap(c_a), veh/h	592	0	0	570	0	0	1239	0	0	1181	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.6	0.0	0.0	26.1	0.0	0.0	5.2	0.0	0.0	5.5	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	1.6	0.0	0.0	0.7	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.2	0.0	0.0	7.0	0.0	0.0	4.1	0.0	0.0	5.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.2	0.0	0.0	27.8	0.0	0.0	5.9	0.0	0.0	6.4	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h	160			245			399			460		
Approach Delay, s/veh	25.2			27.8			5.9			6.4		
Approach LOS	C			C			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	51.1			18.9			51.1			18.9		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	38.0			22.0			38.0			22.0		
Max Q Clear Time (g_c+I1), s	8.7			7.4			10.0			11.5		
Green Ext Time (p_c), s	5.4			0.7			6.5			1.1		
Intersection Summary												
HCM 6th Ctrl Delay	12.8											
HCM 6th LOS	B											

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	0	6	9	0	14	0	406	20	5	422	0
Future Vol, veh/h	13	0	6	9	0	14	0	406	20	5	422	0
Conflicting Peds, #/hr	19	0	20	16	0	17	0	0	16	17	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	14	0	7	10	0	15	0	446	22	5	464	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	958	959	484	972	948	493	-	0	0	485	0	0
Stage 1	474	474	-	474	474	-	-	-	-	-	-	-
Stage 2	484	485	-	498	474	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	239	259	587	234	263	580	0	-	-	1088	-	0
Stage 1	575	561	-	575	561	-	0	-	-	-	-	0
Stage 2	568	555	-	558	561	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	227	253	576	222	257	560	-	-	-	1070	-	-
Mov Cap-2 Maneuver	227	253	-	222	257	-	-	-	-	-	-	-
Stage 1	575	558	-	575	552	-	-	-	-	-	-	-
Stage 2	542	546	-	538	558	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	18.8		16.1		0		0.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1	SBL	SBT
Capacity (veh/h)	-	-	281 351	1070	-
HCM Lane V/C Ratio	-	-	0.074 0.072	0.005	-
HCM Control Delay (s)	-	-	18.8 16.1	8.4	0
HCM Lane LOS	-	-	C C	A	A
HCM 95th %tile Q(veh)	-	-	0.2 0.2	0	-

HCM 6th TWSC
3: Franklin Avenue & Ingress-Only Site Driveway

2020 Existing Condition
Weekday Midday Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	8	425	427	4
Future Vol, veh/h	0	0	8	425	427	4
Conflicting Peds, #/hr	0	0	19	0	0	20
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	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	0	9	467	469	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	976	491	493	0	-	0
Stage 1	491	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	281	582	1081	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	623	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	268	571	1060	-	-	-
Mov Cap-2 Maneuver	268	-	-	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1060	-	-	-	-	
HCM Lane V/C Ratio	0.008	-	-	-	-	
HCM Control Delay (s)	8.4	0	0	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM 6th Signalized Intersection Summary

1: Franklin Avenue & Chestnut Street

2020 Existing Condition
School Dismissal Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	54	117	20	77	144	85	25	365	48	92	415	75
Future Volume (veh/h)	54	117	20	77	144	85	25	365	48	92	415	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.98		0.97	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	57	124	21	82	153	90	27	388	51	98	441	80
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	138	264	39	143	205	109	85	967	123	181	777	133
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	313	1140	169	341	885	469	48	1546	196	194	1242	213
Grp Volume(v), veh/h	202	0	0	325	0	0	466	0	0	619	0	0
Grp Sat Flow(s),veh/h/ln	1621	0	0	1695	0	0	1790	0	0	1649	0	0
Q Serve(g_s), s	0.0	0.0	0.0	5.4	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0
Cycle Q Clear(g_c), s	7.1	0.0	0.0	12.5	0.0	0.0	8.9	0.0	0.0	14.1	0.0	0.0
Prop In Lane	0.28		0.10	0.25		0.28	0.06		0.11	0.16		0.13
Lane Grp Cap(c), veh/h	441	0	0	457	0	0	1174	0	0	1092	0	0
V/C Ratio(X)	0.46	0.00	0.00	0.71	0.00	0.00	0.40	0.00	0.00	0.57	0.00	0.00
Avail Cap(c_a), veh/h	571	0	0	589	0	0	1174	0	0	1092	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.3	0.0	0.0	25.3	0.0	0.0	6.6	0.0	0.0	7.4	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	2.8	0.0	0.0	1.0	0.0	0.0	2.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.2	0.0	0.0	9.0	0.0	0.0	5.8	0.0	0.0	8.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	0.0	0.0	28.1	0.0	0.0	7.6	0.0	0.0	9.6	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		202			325			466			619	
Approach Delay, s/veh		24.0			28.1			7.6			9.6	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.8		21.2		48.8		21.2				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		38.0		22.0		38.0		22.0				
Max Q Clear Time (g_c+I1), s		10.9		9.1		16.1		14.5				
Green Ext Time (p_c), s		6.4		0.9		8.5		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				14.5								
HCM 6th LOS				B								

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	0	16	10	0	17	0	487	17	14	556	0
Future Vol, veh/h	9	0	16	10	0	17	0	487	17	14	556	0
Conflicting Peds, #/hr	20	0	20	14	0	14	0	0	14	14	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	10	0	18	11	0	19	0	535	19	15	611	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1215	1209	631	1229	1200	579	-	0	0	568	0	0
Stage 1	641	641	-	559	559	-	-	-	-	-	-	-
Stage 2	574	568	-	670	641	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	160	184	485	156	187	519	0	-	-	1014	-	0
Stage 1	466	473	-	517	514	-	0	-	-	-	-	0
Stage 2	507	510	-	450	473	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	148	177	476	143	180	502	-	-	-	1000	-	-
Mov Cap-2 Maneuver	148	177	-	143	180	-	-	-	-	-	-	-
Stage 1	466	462	-	517	507	-	-	-	-	-	-	-
Stage 2	479	503	-	415	462	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	20.2		20.6		0		0.2	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1	SBL	SBT
Capacity (veh/h)	-	-	265 260 1000	-	-
HCM Lane V/C Ratio	-	-	0.104 0.114 0.015	-	-
HCM Control Delay (s)	-	-	20.2 20.6 8.7	0	0
HCM Lane LOS	-	-	C C A A		
HCM 95th %tile Q(veh)	-	-	0.3 0.4 0	-	-

HCM 6th TWSC
3: Franklin Avenue & Ingress-Only Site Driveway

2020 Existing Condition
School Dismissal Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	5	508	570	9
Future Vol, veh/h	0	0	5	508	570	9
Conflicting Peds, #/hr	0	0	20	0	0	20
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	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	0	5	558	626	10

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1219	651	656	0	-	0
Stage 1	651	-	-	-	-	-
Stage 2	568	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	201	472	941	-	-	-
Stage 1	523	-	-	-	-	-
Stage 2	571	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	192	463	923	-	-	-
Mov Cap-2 Maneuver	192	-	-	-	-	-
Stage 1	509	-	-	-	-	-
Stage 2	560	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	923	-	-	-	-
HCM Lane V/C Ratio	0.006	-	-	-	-
HCM Control Delay (s)	8.9	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 6th Signalized Intersection Summary

1: Franklin Avenue & Chestnut Street

2020 Existing Condition
Weekday Evening Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	58	108	33	100	138	85	24	338	65	71	471	73
Future Volume (veh/h)	58	108	33	100	138	85	24	338	65	71	471	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.98		0.97	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	60	111	34	103	142	88	25	348	67	73	486	75
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	1	1	1
Cap, veh/h	143	240	63	170	188	104	82	901	167	141	851	125
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	320	1000	262	427	781	434	46	1461	271	135	1380	203
Grp Volume(v), veh/h	205	0	0	333	0	0	440	0	0	634	0	0
Grp Sat Flow(s),veh/h/ln	1582	0	0	1643	0	0	1777	0	0	1719	0	0
Q Serve(g_s), s	0.0	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0
Cycle Q Clear(g_c), s	7.3	0.0	0.0	13.3	0.0	0.0	8.5	0.0	0.0	14.3	0.0	0.0
Prop In Lane	0.29		0.17	0.31		0.26	0.06		0.15	0.12		0.12
Lane Grp Cap(c), veh/h	447	0	0	462	0	0	1150	0	0	1117	0	0
V/C Ratio(X)	0.46	0.00	0.00	0.72	0.00	0.00	0.38	0.00	0.00	0.57	0.00	0.00
Avail Cap(c_a), veh/h	561	0	0	577	0	0	1150	0	0	1117	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.8	0.0	0.0	25.0	0.0	0.0	6.8	0.0	0.0	7.8	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	3.3	0.0	0.0	1.0	0.0	0.0	2.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.2	0.0	0.0	9.3	0.0	0.0	5.5	0.0	0.0	9.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	0.0	0.0	28.3	0.0	0.0	7.7	0.0	0.0	9.9	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		205			333			440			634	
Approach Delay, s/veh		23.6			28.3			7.7			9.9	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.2		21.8		48.2		21.8				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		38.0		22.0		38.0		22.0				
Max Q Clear Time (g_c+I1), s		10.5		9.3		16.3		15.3				
Green Ext Time (p_c), s		6.1		1.0		8.6		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				14.9								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	0	8	12	0	8	0	474	7	9	595	0
Future Vol, veh/h	8	0	8	12	0	8	0	474	7	9	595	0
Conflicting Peds, #/hr	5	0	5	10	0	9	0	0	10	9	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	8	0	8	13	0	8	0	499	7	9	626	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1160	1160	636	1171	1157	522	-	0	0	516	0	0
Stage 1	644	644	-	513	513	-	-	-	-	-	-	-
Stage 2	516	516	-	658	644	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	174	197	481	171	198	559	0	-	-	1060	-	0
Stage 1	465	471	-	548	539	-	0	-	-	-	-	0
Stage 2	546	538	-	457	471	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	168	192	476	163	193	549	-	-	-	1050	-	-
Mov Cap-2 Maneuver	168	192	-	163	193	-	-	-	-	-	-	-
Stage 1	465	465	-	548	534	-	-	-	-	-	-	-
Stage 2	533	533	-	439	465	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	20.6		22.5		0		0.1					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBT		NBR		EBLn1WBLn1		SBL		SBT			
Capacity (veh/h)	-		-		248		227		1050		-	
HCM Lane V/C Ratio	-		-		0.068		0.093		0.009		-	
HCM Control Delay (s)	-		-		20.6		22.5		8.5		0	
HCM Lane LOS	-		-		C		C		A		A	
HCM 95th %tile Q(veh)	-		-		0.2		0.3		0		-	

HCM 6th TWSC
3: Franklin Avenue & Ingress-Only Site Driveway

2020 Existing Condition
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	2	488	604	6
Future Vol, veh/h	0	0	2	488	604	6
Conflicting Peds, #/hr	0	0	5	0	0	5
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	0	2	514	636	6
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1162	644	647	0	-	0
Stage 1	644	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	218	476	948	-	-	-
Stage 1	527	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	215	474	943	-	-	-
Mov Cap-2 Maneuver	215	-	-	-	-	-
Stage 1	523	-	-	-	-	-
Stage 2	599	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	943	-	-	-	-	
HCM Lane V/C Ratio	0.002	-	-	-	-	
HCM Control Delay (s)	8.8	0	0	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM 6th Signalized Intersection Summary

1: Franklin Avenue & Chestnut Street

2020 Existing Condition
Saturday Midday Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	66	80	21	78	80	107	19	397	50	67	410	67
Future Volume (veh/h)	66	80	21	78	80	107	19	397	50	67	410	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	69	83	22	81	83	111	20	414	52	70	427	70
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	167	183	40	149	123	139	74	1035	126	150	877	137
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	462	888	195	400	598	675	31	1589	194	142	1346	210
Grp Volume(v), veh/h	174	0	0	275	0	0	486	0	0	567	0	0
Grp Sat Flow(s),veh/h/ln	1545	0	0	1672	0	0	1814	0	0	1698	0	0
Q Serve(g_s), s	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.7	0.0	0.0	10.6	0.0	0.0	8.7	0.0	0.0	10.9	0.0	0.0
Prop In Lane	0.40		0.13	0.29		0.40	0.04		0.11	0.12		0.12
Lane Grp Cap(c), veh/h	390	0	0	411	0	0	1235	0	0	1164	0	0
V/C Ratio(X)	0.45	0.00	0.00	0.67	0.00	0.00	0.39	0.00	0.00	0.49	0.00	0.00
Avail Cap(c_a), veh/h	554	0	0	580	0	0	1235	0	0	1164	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.5	0.0	0.0	26.1	0.0	0.0	5.8	0.0	0.0	6.1	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	1.9	0.0	0.0	0.9	0.0	0.0	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.6	0.0	0.0	7.8	0.0	0.0	5.5	0.0	0.0	6.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	0.0	0.0	28.0	0.0	0.0	6.7	0.0	0.0	7.6	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		174			275			486			567	
Approach Delay, s/veh		25.3			28.0			6.7			7.6	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.6		19.4		50.6		19.4				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		38.0		22.0		38.0		22.0				
Max Q Clear Time (g_c+I1), s		10.7		8.7		12.9		12.6				
Green Ext Time (p_c), s		6.8		0.8		8.1		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				13.1								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	16	12	0	22	0	549	21	6	516	0
Future Vol, veh/h	6	0	16	12	0	22	0	549	21	6	516	0
Conflicting Peds, #/hr	10	0	10	16	0	16	0	0	16	16	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	6	0	17	13	0	23	0	578	22	6	543	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1172	1171	559	1185	1160	621	-	0	0	616	0	0
Stage 1	555	555	-	605	605	-	-	-	-	-	-	-
Stage 2	617	616	-	580	555	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	171	194	532	167	197	491	0	-	-	974	-	0
Stage 1	520	516	-	488	491	-	0	-	-	-	-	0
Stage 2	481	485	-	504	516	-	0	-	-	-	-	0
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	159	189	524	156	192	476	-	-	-	959	-	-
Mov Cap-2 Maneuver	159	189	-	156	192	-	-	-	-	-	-	-
Stage 1	520	511	-	488	484	-	-	-	-	-	-	-
Stage 2	451	478	-	476	511	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	17		20		0		0.1					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBT		NBR		EBLn1WBLn1		SBL		SBT			
Capacity (veh/h)	-		-		322		276		959			
HCM Lane V/C Ratio	-		-		0.072		0.13		0.007			
HCM Control Delay (s)	-		-		17		20		8.8			
HCM Lane LOS	-		-		C		C		A			
HCM 95th %tile Q(veh)	-		-		0.2		0.4		0			

HCM 6th TWSC
3: Franklin Avenue & Ingress-Only Site Driveway

2020 Existing Condition
Saturday Middy Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	24	553	522	10
Future Vol, veh/h	0	0	24	553	522	10
Conflicting Peds, #/hr	0	0	10	0	0	10
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	0	25	582	549	11

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1197	565	570	0	-	0
Stage 1	565	-	-	-	-	-
Stage 2	632	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	207	528	1013	-	-	-
Stage 1	573	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	195	523	1003	-	-	-
Mov Cap-2 Maneuver	195	-	-	-	-	-
Stage 1	546	-	-	-	-	-
Stage 2	529	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1003	-	-	-	-
HCM Lane V/C Ratio	0.025	-	-	-	-
HCM Control Delay (s)	8.7	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-

HCM 6th Signalized Intersection Summary

1: Franklin Avenue & Chestnut Street

2021 No-Build Condition
Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	52	142	48	74	102	58	34	266	68	60	223	38
Future Volume (veh/h)	52	142	48	74	102	58	34	266	68	60	223	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.95		0.90	0.95		0.90	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1856	1856	1856
Adj Flow Rate, veh/h	61	167	56	87	120	68	40	313	80	71	262	45
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	3	3	3
Cap, veh/h	123	258	78	157	181	89	114	819	199	205	727	118
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	254	1076	327	374	757	372	94	1326	322	233	1176	190
Grp Volume(v), veh/h	284	0	0	275	0	0	433	0	0	378	0	0
Grp Sat Flow(s),veh/h/ln	1657	0	0	1503	0	0	1742	0	0	1600	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.7	0.0	0.0	11.7	0.0	0.0	8.4	0.0	0.0	7.1	0.0	0.0
Prop In Lane	0.21		0.20	0.32		0.25	0.09		0.18	0.19		0.12
Lane Grp Cap(c), veh/h	459	0	0	427	0	0	1132	0	0	1049	0	0
V/C Ratio(X)	0.62	0.00	0.00	0.64	0.00	0.00	0.38	0.00	0.00	0.36	0.00	0.00
Avail Cap(c_a), veh/h	578	0	0	536	0	0	1132	0	0	1049	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.2	0.0	0.0	24.5	0.0	0.0	6.7	0.0	0.0	6.5	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.0	1.8	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.7	0.0	0.0	7.7	0.0	0.0	5.4	0.0	0.0	4.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.6	0.0	0.0	26.3	0.0	0.0	7.7	0.0	0.0	7.4	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		284			275			433			378	
Approach Delay, s/veh		25.6			26.3			7.7			7.4	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.2		21.8		48.2		21.8				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		38.0		22.0		38.0		22.0				
Max Q Clear Time (g_c+I1), s		10.4		12.7		9.1		13.7				
Green Ext Time (p_c), s		6.0		1.2		5.3		1.1				
Intersection Summary												
HCM 6th Ctrl Delay				15.1								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	4	4	0	9	0	363	13	7	313	0
Future Vol, veh/h	2	0	4	4	0	9	0	363	13	7	313	0
Conflicting Peds, #/hr	6	0	6	6	0	6	0	0	6	6	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	3	0
Mvmt Flow	2	0	5	5	0	10	0	417	15	8	360	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	812	814	366	816	807	437	-	0	0	438	0	0
Stage 1	376	376	-	431	431	-	-	-	-	-	-	-
Stage 2	436	438	-	385	376	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	300	315	684	298	317	624	0	-	-	1133	-	0
Stage 1	649	620	-	607	586	-	0	-	-	-	-	0
Stage 2	603	582	-	642	620	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	291	310	680	291	312	617	-	-	-	1127	-	-
Mov Cap-2 Maneuver	291	310	-	291	312	-	-	-	-	-	-	-
Stage 1	649	614	-	607	582	-	-	-	-	-	-	-
Stage 2	590	579	-	628	614	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.8		13.1		0		0.2					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBT		NBR EBLn1WBLn1		SBL SBT							
Capacity (veh/h)	-		470 459 1127		-							
HCM Lane V/C Ratio	-		0.015 0.033 0.007		-							
HCM Control Delay (s)	-		12.8 13.1 8.2		0							
HCM Lane LOS	-		B B A A									
HCM 95th %tile Q(veh)	-		0 0.1 0		-							

HCM 6th TWSC
3: Franklin Avenue & Ingress-Only Site Driveway

2021 No-Build Condition
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	4	370	320	4
Future Vol, veh/h	0	0	4	370	320	4
Conflicting Peds, #/hr	0	0	6	0	0	6
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	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	1	3	0
Mvmt Flow	0	0	5	425	368	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	812	377	379	0	-	0
Stage 1	377	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	351	674	1191	-	-	-
Stage 1	698	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	345	670	1184	-	-	-
Mov Cap-2 Maneuver	345	-	-	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1184	-	-	-	-	
HCM Lane V/C Ratio	0.004	-	-	-	-	
HCM Control Delay (s)	8.1	0	0	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM 6th Signalized Intersection Summary

1: Franklin Avenue & Chestnut Street

2021 No-Build Condition
Weekday Midday Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	87	28	71	87	80	12	313	61	55	338	53
Future Volume (veh/h)	42	87	28	71	87	80	12	313	61	55	338	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.98		0.97	0.98		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	44	92	29	75	92	84	13	329	64	58	356	56
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	1	1	1
Cap, veh/h	126	224	61	145	142	111	66	982	186	152	891	133
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.66	0.66	0.66	0.66	0.66	0.66
Sat Flow, veh/h	303	1111	302	389	704	550	20	1498	284	144	1359	203
Grp Volume(v), veh/h	165	0	0	251	0	0	406	0	0	470	0	0
Grp Sat Flow(s),veh/h/ln	1716	0	0	1642	0	0	1801	0	0	1706	0	0
Q Serve(g_s), s	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.6	0.0	0.0	9.8	0.0	0.0	6.9	0.0	0.0	8.3	0.0	0.0
Prop In Lane	0.27		0.18	0.30		0.33	0.03		0.16	0.12		0.12
Lane Grp Cap(c), veh/h	411	0	0	398	0	0	1234	0	0	1176	0	0
V/C Ratio(X)	0.40	0.00	0.00	0.63	0.00	0.00	0.33	0.00	0.00	0.40	0.00	0.00
Avail Cap(c_a), veh/h	591	0	0	571	0	0	1234	0	0	1176	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.5	0.0	0.0	26.1	0.0	0.0	5.3	0.0	0.0	5.6	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	1.7	0.0	0.0	0.7	0.0	0.0	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.3	0.0	0.0	7.1	0.0	0.0	4.2	0.0	0.0	5.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.2	0.0	0.0	27.7	0.0	0.0	6.1	0.0	0.0	6.6	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		165			251			406			470	
Approach Delay, s/veh		25.2			27.7			6.1			6.6	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.9		19.1		50.9		19.1				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		38.0		22.0		38.0		22.0				
Max Q Clear Time (g_c+I1), s		8.9		7.6		10.3		11.8				
Green Ext Time (p_c), s		5.5		0.8		6.7		1.1				
Intersection Summary												
HCM 6th Ctrl Delay				12.9								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	0	6	9	0	14	0	415	20	5	431	0
Future Vol, veh/h	13	0	6	9	0	14	0	415	20	5	431	0
Conflicting Peds, #/hr	19	0	20	16	0	17	0	0	16	17	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	14	0	7	10	0	15	0	456	22	5	474	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	978	979	494	992	968	503	-	0	0	495	0	0
Stage 1	484	484	-	484	484	-	-	-	-	-	-	-
Stage 2	494	495	-	508	484	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	232	252	579	227	256	573	0	-	-	1079	-	0
Stage 1	568	555	-	568	555	-	0	-	-	-	-	0
Stage 2	561	549	-	551	555	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	220	246	568	216	250	554	-	-	-	1062	-	-
Mov Cap-2 Maneuver	220	246	-	216	250	-	-	-	-	-	-	-
Stage 1	568	552	-	568	546	-	-	-	-	-	-	-
Stage 2	536	540	-	531	552	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	19.3		16.3		0		0.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1	SBL	SBT
Capacity (veh/h)	-	-	273 344	1062	-
HCM Lane V/C Ratio	-	-	0.076 0.073	0.005	-
HCM Control Delay (s)	-	-	19.3 16.3	8.4	0
HCM Lane LOS	-	-	C C	A	A
HCM 95th %tile Q(veh)	-	-	0.2 0.2	0	-

HCM 6th TWSC
3: Franklin Avenue & Ingress-Only Site Driveway

2021 No-Build Condition
Weekday Midday Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	8	434	436	4
Future Vol, veh/h	0	0	8	434	436	4
Conflicting Peds, #/hr	0	0	19	0	0	20
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	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	0	9	477	479	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	996	501	503	0	-	0
Stage 1	501	-	-	-	-	-
Stage 2	495	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	273	574	1072	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	260	563	1052	-	-	-
Mov Cap-2 Maneuver	260	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1052	-	-	-	-	
HCM Lane V/C Ratio	0.008	-	-	-	-	
HCM Control Delay (s)	8.5	0	0	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM 6th Signalized Intersection Summary

1: Franklin Avenue & Chestnut Street

2021 No-Build Condition
School Dismissal Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	119	20	79	147	87	26	372	49	94	423	77
Future Volume (veh/h)	55	119	20	79	147	87	26	372	49	94	423	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.98		0.97	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	59	127	21	84	156	93	28	396	52	100	450	82
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	140	266	38	145	207	111	85	959	121	181	769	133
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	314	1128	163	341	877	472	50	1542	195	195	1237	213
Grp Volume(v), veh/h	207	0	0	333	0	0	476	0	0	632	0	0
Grp Sat Flow(s),veh/h/ln	1605	0	0	1690	0	0	1787	0	0	1646	0	0
Q Serve(g_s), s	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0
Cycle Q Clear(g_c), s	7.4	0.0	0.0	12.9	0.0	0.0	9.2	0.0	0.0	15.0	0.0	0.0
Prop In Lane	0.29		0.10	0.25		0.28	0.06		0.11	0.16		0.13
Lane Grp Cap(c), veh/h	444	0	0	463	0	0	1165	0	0	1082	0	0
V/C Ratio(X)	0.47	0.00	0.00	0.72	0.00	0.00	0.41	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	567	0	0	588	0	0	1165	0	0	1082	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.1	0.0	0.0	25.2	0.0	0.0	6.8	0.0	0.0	7.7	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	3.1	0.0	0.0	1.1	0.0	0.0	2.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.3	0.0	0.0	9.2	0.0	0.0	6.0	0.0	0.0	8.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	0.0	0.0	28.3	0.0	0.0	7.8	0.0	0.0	10.0	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	B	A	A
Approach Vol, veh/h		207			333			476			632	
Approach Delay, s/veh		23.9			28.3			7.8			10.0	
Approach LOS		C			C			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.5		21.5		48.5		21.5				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		38.0		22.0		38.0		22.0				
Max Q Clear Time (g_c+I1), s		11.2		9.4		17.0		14.9				
Green Ext Time (p_c), s		6.6		1.0		8.6		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				14.8								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	9	0	16	10	0	17	0	497	17	14	568	0
Future Vol, veh/h	9	0	16	10	0	17	0	497	17	14	568	0
Conflicting Peds, #/hr	20	0	20	17	0	14	0	0	14	14	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	10	0	18	11	0	19	0	546	19	15	624	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1239	1233	644	1253	1224	590	-	0	0	579	0	0
Stage 1	654	654	-	570	570	-	-	-	-	-	-	-
Stage 2	585	579	-	683	654	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	154	178	476	150	181	511	0	-	-	1005	-	0
Stage 1	459	466	-	510	509	-	0	-	-	-	-	0
Stage 2	501	504	-	442	466	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	143	172	467	137	174	495	-	-	-	992	-	-
Mov Cap-2 Maneuver	143	172	-	137	174	-	-	-	-	-	-	-
Stage 1	459	455	-	510	502	-	-	-	-	-	-	-
Stage 2	473	497	-	408	455	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.7	21.2	0	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1	SBL	SBT
Capacity (veh/h)	-	-	257 252	992	-
HCM Lane V/C Ratio	-	-	0.107 0.118	0.016	-
HCM Control Delay (s)	-	-	20.7 21.2	8.7	0
HCM Lane LOS	-	-	C C	A	A
HCM 95th %tile Q(veh)	-	-	0.4 0.4	0	-

HCM 6th TWSC
3: Franklin Avenue & Ingress-Only Site Driveway

2021 No-Build Condition
School Dismissal Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	5	518	582	9
Future Vol, veh/h	0	0	5	518	582	9
Conflicting Peds, #/hr	0	0	20	0	0	20
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	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	0	5	569	640	10

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1244	665	670	0	-	0
Stage 1	665	-	-	-	-	-
Stage 2	579	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	194	464	930	-	-	-
Stage 1	515	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	185	455	912	-	-	-
Mov Cap-2 Maneuver	185	-	-	-	-	-
Stage 1	501	-	-	-	-	-
Stage 2	553	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	912	-	-	-	-
HCM Lane V/C Ratio	0.006	-	-	-	-
HCM Control Delay (s)	9	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 6th Signalized Intersection Summary

1: Franklin Avenue & Chestnut Street

2021 No-Build Condition
Weekday Evening Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	110	34	102	141	87	24	345	66	72	480	74
Future Volume (veh/h)	59	110	34	102	141	87	24	345	66	72	480	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.98		0.97	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	61	113	35	105	145	90	25	356	68	74	495	76
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	1	1	1
Cap, veh/h	144	242	64	171	190	106	82	897	165	140	845	124
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.61	0.61	0.61	0.61	0.61	0.61
Sat Flow, veh/h	317	992	263	426	778	433	45	1464	269	135	1379	202
Grp Volume(v), veh/h	209	0	0	340	0	0	449	0	0	645	0	0
Grp Sat Flow(s),veh/h/ln	1573	0	0	1637	0	0	1777	0	0	1717	0	0
Q Serve(g_s), s	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0
Cycle Q Clear(g_c), s	7.5	0.0	0.0	13.6	0.0	0.0	8.8	0.0	0.0	14.9	0.0	0.0
Prop In Lane	0.29		0.17	0.31		0.26	0.06		0.15	0.11		0.12
Lane Grp Cap(c), veh/h	451	0	0	467	0	0	1144	0	0	1110	0	0
V/C Ratio(X)	0.46	0.00	0.00	0.73	0.00	0.00	0.39	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	558	0	0	576	0	0	1144	0	0	1110	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.7	0.0	0.0	24.9	0.0	0.0	6.9	0.0	0.0	8.1	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	3.6	0.0	0.0	1.0	0.0	0.0	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.3	0.0	0.0	9.5	0.0	0.0	5.8	0.0	0.0	9.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.4	0.0	0.0	28.5	0.0	0.0	8.0	0.0	0.0	10.3	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	B	A	A
Approach Vol, veh/h		209			340			449			645	
Approach Delay, s/veh		23.4			28.5			8.0			10.3	
Approach LOS		C			C			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.9		22.1		47.9		22.1				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		38.0		22.0		38.0		22.0				
Max Q Clear Time (g_c+I1), s		10.8		9.5		16.9		15.6				
Green Ext Time (p_c), s		6.2		1.0		8.6		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				15.1								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	0	8	12	0	8	0	484	7	9	606	0
Future Vol, veh/h	8	0	8	12	0	8	0	484	7	9	606	0
Conflicting Peds, #/hr	5	0	5	10	0	9	0	0	10	9	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	8	0	8	13	0	8	0	509	7	9	638	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1182	1182	648	1193	1179	532	-	0	0	526	0	0
Stage 1	656	656	-	523	523	-	-	-	-	-	-	-
Stage 2	526	526	-	670	656	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	168	191	474	165	192	551	0	-	-	1051	-	0
Stage 1	458	465	-	541	534	-	0	-	-	-	-	0
Stage 2	539	532	-	450	465	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	162	187	469	157	188	541	-	-	-	1041	-	-
Mov Cap-2 Maneuver	162	187	-	157	188	-	-	-	-	-	-	-
Stage 1	458	459	-	541	529	-	-	-	-	-	-	-
Stage 2	526	527	-	432	459	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	21.1		23.2		0		0.1					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBT		NBR EBLn1WBLn1		SBL SBT							
Capacity (veh/h)	-		241 219		1041		-					
HCM Lane V/C Ratio	-		0.07 0.096		0.009		-					
HCM Control Delay (s)	-		21.1 23.2		8.5		0					
HCM Lane LOS	-		C C		A A							
HCM 95th %tile Q(veh)	-		0.2 0.3		0		-					

HCM 6th TWSC
3: Franklin Avenue & Ingress-Only Site Driveway

2021 No-Build Condition
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	2	498	615	6
Future Vol, veh/h	0	0	2	498	615	6
Conflicting Peds, #/hr	0	0	5	0	0	5
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	0	2	524	647	6
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1183	655	658	0	-	0
Stage 1	655	-	-	-	-	-
Stage 2	528	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	211	470	939	-	-	-
Stage 1	521	-	-	-	-	-
Stage 2	596	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	208	468	935	-	-	-
Mov Cap-2 Maneuver	208	-	-	-	-	-
Stage 1	517	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	935	-	-	-	-	
HCM Lane V/C Ratio	0.002	-	-	-	-	
HCM Control Delay (s)	8.9	0	0	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM 6th Signalized Intersection Summary

1: Franklin Avenue & Chestnut Street

2021 No-Build Condition
Saturday Midday Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	82	21	80	82	109	19	405	51	68	418	68
Future Volume (veh/h)	67	82	21	80	82	109	19	405	51	68	418	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	70	85	22	83	85	114	20	422	53	71	435	71
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	168	186	40	150	125	142	73	1029	126	149	872	135
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	457	885	191	400	594	674	30	1590	194	141	1347	209
Grp Volume(v), veh/h	177	0	0	282	0	0	495	0	0	577	0	0
Grp Sat Flow(s),veh/h/ln	1533	0	0	1668	0	0	1814	0	0	1697	0	0
Q Serve(g_s), s	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.8	0.0	0.0	10.9	0.0	0.0	9.0	0.0	0.0	11.3	0.0	0.0
Prop In Lane	0.40		0.12	0.29		0.40	0.04		0.11	0.12		0.12
Lane Grp Cap(c), veh/h	393	0	0	417	0	0	1228	0	0	1156	0	0
V/C Ratio(X)	0.45	0.00	0.00	0.68	0.00	0.00	0.40	0.00	0.00	0.50	0.00	0.00
Avail Cap(c_a), veh/h	551	0	0	579	0	0	1228	0	0	1156	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.3	0.0	0.0	26.0	0.0	0.0	5.9	0.0	0.0	6.3	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	1.9	0.0	0.0	1.0	0.0	0.0	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.7	0.0	0.0	8.0	0.0	0.0	5.7	0.0	0.0	7.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.2	0.0	0.0	28.0	0.0	0.0	6.9	0.0	0.0	7.9	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h	177			282			495			577		
Approach Delay, s/veh	25.2			28.0			6.9			7.9		
Approach LOS	C			C			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	50.3			19.7			50.3			19.7		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	38.0			22.0			38.0			22.0		
Max Q Clear Time (g_c+I1), s	11.0			8.8			13.3			12.9		
Green Ext Time (p_c), s	6.9			0.8			8.2			1.2		
Intersection Summary												
HCM 6th Ctrl Delay	13.3											
HCM 6th LOS	B											

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	16	12	0	22	0	560	21	6	526	0
Future Vol, veh/h	6	0	16	12	0	22	0	560	21	6	526	0
Conflicting Peds, #/hr	10	0	10	16	0	16	0	0	16	16	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	6	0	17	13	0	23	0	589	22	6	554	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1194	1193	570	1207	1182	632	-	0	0	627	0	0
Stage 1	566	566	-	616	616	-	-	-	-	-	-	-
Stage 2	628	627	-	591	566	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	165	188	525	162	191	484	0	-	-	965	-	0
Stage 1	513	511	-	481	485	-	0	-	-	-	-	0
Stage 2	474	479	-	497	511	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	153	183	517	151	186	469	-	-	-	950	-	-
Mov Cap-2 Maneuver	153	183	-	151	186	-	-	-	-	-	-	-
Stage 1	513	506	-	481	478	-	-	-	-	-	-	-
Stage 2	444	472	-	469	506	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.4		20.4		0		0.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1	SBL	SBT
Capacity (veh/h)	-	-	314 269	950	-
HCM Lane V/C Ratio	-	-	0.074 0.133	0.007	-
HCM Control Delay (s)	-	-	17.4 20.4	8.8	0
HCM Lane LOS	-	-	C C	A	A
HCM 95th %tile Q(veh)	-	-	0.2 0.5	0	-

HCM 6th TWSC
3: Franklin Avenue & Ingress-Only Site Driveway

2021 No-Build Condition
Saturday Midday Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	24	564	532	10
Future Vol, veh/h	0	0	24	564	532	10
Conflicting Peds, #/hr	0	0	10	0	0	10
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	0	25	594	560	11
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1220	576	581	0	-	0
Stage 1	576	-	-	-	-	-
Stage 2	644	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	201	521	1003	-	-	-
Stage 1	566	-	-	-	-	-
Stage 2	527	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	190	516	993	-	-	-
Mov Cap-2 Maneuver	190	-	-	-	-	-
Stage 1	539	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	993	-	-	-	-	
HCM Lane V/C Ratio	0.025	-	-	-	-	
HCM Control Delay (s)	8.7	0	0	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	-	-	-	

HCM 6th Signalized Intersection Summary

1: Franklin Avenue & Chestnut Street

2021 Build Condition
Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	143	49	74	103	66	36	278	68	66	232	44
Future Volume (veh/h)	57	143	49	74	103	66	36	278	68	66	232	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.95		0.90	0.95		0.90	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1856	1856	1856
Adj Flow Rate, veh/h	67	168	58	87	121	78	42	327	80	78	273	52
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	3	3	3
Cap, veh/h	129	250	78	154	177	99	115	819	190	209	702	126
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.61	0.61	0.61	0.61	0.61	0.61
Sat Flow, veh/h	270	1029	321	356	728	407	96	1335	310	241	1144	205
Grp Volume(v), veh/h	293	0	0	286	0	0	449	0	0	403	0	0
Grp Sat Flow(s),veh/h/ln	1620	0	0	1491	0	0	1740	0	0	1590	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.5	0.0	0.0	12.4	0.0	0.0	8.9	0.0	0.0	7.8	0.0	0.0
Prop In Lane	0.23		0.20	0.30		0.27	0.09		0.18	0.19		0.13
Lane Grp Cap(c), veh/h	457	0	0	430	0	0	1125	0	0	1037	0	0
V/C Ratio(X)	0.64	0.00	0.00	0.67	0.00	0.00	0.40	0.00	0.00	0.39	0.00	0.00
Avail Cap(c_a), veh/h	569	0	0	533	0	0	1125	0	0	1037	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.2	0.0	0.0	24.5	0.0	0.0	6.9	0.0	0.0	6.7	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	2.2	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.0	0.0	0.0	8.0	0.0	0.0	5.8	0.0	0.0	5.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.9	0.0	0.0	26.8	0.0	0.0	8.0	0.0	0.0	7.8	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		293			286			449			403	
Approach Delay, s/veh		25.9			26.8			8.0			7.8	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.0		22.0		48.0		22.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		38.0		22.0		38.0		22.0				
Max Q Clear Time (g_c+I1), s		10.9		13.5		9.8		14.4				
Green Ext Time (p_c), s		6.2		1.2		5.7		1.1				
Intersection Summary												
HCM 6th Ctrl Delay				15.4								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	0	48	4	0	9	0	388	13	7	290	0
Future Vol, veh/h	45	0	48	4	0	9	0	388	13	7	290	0
Conflicting Peds, #/hr	6	0	6	6	0	6	0	0	6	6	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	3	0
Mvmt Flow	52	0	55	5	0	10	0	446	15	8	333	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	814	816	339	843	809	466	-	0	0	467	0	0
Stage 1	349	349	-	460	460	-	-	-	-	-	-	-
Stage 2	465	467	-	383	349	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	299	314	708	286	317	601	0	-	-	1105	-	0
Stage 1	671	637	-	585	569	-	0	-	-	-	-	0
Stage 2	581	565	-	644	637	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	290	309	704	259	312	594	-	-	-	1099	-	-
Mov Cap-2 Maneuver	290	309	-	259	312	-	-	-	-	-	-	-
Stage 1	671	631	-	585	566	-	-	-	-	-	-	-
Stage 2	568	562	-	585	631	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	16.6		13.8		0		0.2					
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBT		NBR EBLn1WBLn1		SBL SBT							
Capacity (veh/h)	-		416 425 1099		-							
HCM Lane V/C Ratio	-		0.257 0.035 0.007		-							
HCM Control Delay (s)	-		16.6 13.8 8.3		0							
HCM Lane LOS	-		C B A		A							
HCM 95th %tile Q(veh)	-		1 0.1 0		-							

HCM 6th TWSC
3: Franklin Avenue & Ingress-Only Site Driveway

2021 Build Condition
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	58	384	297	45
Future Vol, veh/h	0	0	58	384	297	45
Conflicting Peds, #/hr	0	0	6	0	0	6
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	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	1	3	0
Mvmt Flow	0	0	67	441	341	52
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	948	373	399	0	-	0
Stage 1	373	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	292	678	1171	-	-	-
Stage 1	701	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	267	674	1164	-	-	-
Mov Cap-2 Maneuver	267	-	-	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	1.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1164	-	-	-	-	
HCM Lane V/C Ratio	0.057	-	-	-	-	
HCM Control Delay (s)	8.3	0	0	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	-	-	-	

HCM 6th TWSC
4: Chestnut Street & Parking Lot Driveway

2021 Build Condition
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	245	177	6	4	0
Future Vol, veh/h	1	245	177	6	4	0
Conflicting Peds, #/hr	19	0	0	19	19	19
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	1	285	206	7	5	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	232	0	-	0	535	248
Stage 1	-	-	-	-	229	-
Stage 2	-	-	-	-	306	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1348	-	-	-	510	796
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	751	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1324	-	-	-	491	767
Mov Cap-2 Maneuver	-	-	-	-	491	-
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	737	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		12.4		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1324	-	-	-	491	
HCM Lane V/C Ratio	0.001	-	-	-	0.009	
HCM Control Delay (s)	7.7	0	-	-	12.4	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 6th Signalized Intersection Summary

1: Franklin Avenue & Chestnut Street

2021 Build Condition
Weekday Midday Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	88	30	71	88	88	14	325	61	63	349	59
Future Volume (veh/h)	49	88	30	71	88	88	14	325	61	63	349	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.98		0.97	0.98		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	52	93	32	75	93	93	15	342	64	66	367	62
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	1	1	1
Cap, veh/h	136	211	62	143	141	121	68	979	178	161	859	138
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	340	1029	302	376	687	588	23	1503	274	158	1318	211
Grp Volume(v), veh/h	177	0	0	261	0	0	421	0	0	495	0	0
Grp Sat Flow(s),veh/h/ln	1671	0	0	1651	0	0	1800	0	0	1687	0	0
Q Serve(g_s), s	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.2	0.0	0.0	10.1	0.0	0.0	7.3	0.0	0.0	9.0	0.0	0.0
Prop In Lane	0.29		0.18	0.29		0.36	0.04		0.15	0.13		0.13
Lane Grp Cap(c), veh/h	410	0	0	405	0	0	1226	0	0	1158	0	0
V/C Ratio(X)	0.43	0.00	0.00	0.64	0.00	0.00	0.34	0.00	0.00	0.43	0.00	0.00
Avail Cap(c_a), veh/h	580	0	0	573	0	0	1226	0	0	1158	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.5	0.0	0.0	26.0	0.0	0.0	5.5	0.0	0.0	5.8	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	1.7	0.0	0.0	0.8	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.7	0.0	0.0	7.4	0.0	0.0	4.5	0.0	0.0	5.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.2	0.0	0.0	27.7	0.0	0.0	6.3	0.0	0.0	7.0	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		177			261			421			495	
Approach Delay, s/veh		25.2			27.7			6.3			7.0	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.6		19.4		50.6		19.4				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		38.0		22.0		38.0		22.0				
Max Q Clear Time (g_c+I1), s		9.3		8.2		11.0		12.1				
Green Ext Time (p_c), s		5.8		0.8		7.1		1.1				
Intersection Summary												
HCM 6th Ctrl Delay				13.1								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	57	0	60	9	0	14	0	442	20	5	402	0
Future Vol, veh/h	57	0	60	9	0	14	0	442	20	5	402	0
Conflicting Peds, #/hr	19	0	20	16	0	17	0	0	16	17	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	63	0	66	10	0	15	0	486	22	5	442	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	976	977	462	1019	966	533	-	0	0	525	0	0
Stage 1	452	452	-	514	514	-	-	-	-	-	-	-
Stage 2	524	525	-	505	452	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	232	253	604	217	257	551	0	-	-	1052	-	0
Stage 1	591	574	-	547	539	-	0	-	-	-	-	0
Stage 2	540	533	-	553	574	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	220	247	592	185	251	532	-	-	-	1035	-	-
Mov Cap-2 Maneuver	220	247	-	185	251	-	-	-	-	-	-	-
Stage 1	591	571	-	547	530	-	-	-	-	-	-	-
Stage 2	515	524	-	479	571	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	23.1		17.8		0		0.1					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBT		NBR EBLn1WBLn1		SBL SBT							
Capacity (veh/h)	-		325 307 1035		-							
HCM Lane V/C Ratio	-		0.396 0.082 0.005		-							
HCM Control Delay (s)	-		23.1 17.8 8.5		0							
HCM Lane LOS	-		C C A A									
HCM 95th %tile Q(veh)	-		1.8 0.3 0		-							

HCM 6th TWSC
3: Franklin Avenue & Ingress-Only Site Driveway

2021 Build Condition
Weekday Midday Peak Hour

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	62	451	407	52
Future Vol, veh/h	0	0	62	451	407	52
Conflicting Peds, #/hr	0	0	19	0	0	20
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	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	0	68	496	447	57
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1128	496	524	0	-	0
Stage 1	496	-	-	-	-	-
Stage 2	632	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	228	578	1053	-	-	-
Stage 1	616	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	200	567	1033	-	-	-
Mov Cap-2 Maneuver	200	-	-	-	-	-
Stage 1	549	-	-	-	-	-
Stage 2	524	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	1.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1033	-	-	-	-	
HCM Lane V/C Ratio	0.066	-	-	-	-	
HCM Control Delay (s)	8.7	0	0	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	-	-	-	

HCM 6th TWSC
4: Chestnut Street & Parking Lot Driveway

2021 Build Condition
Weekday Midday Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	161	155	6	6	1
Future Vol, veh/h	1	161	155	6	6	1
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	1	192	185	7	7	1
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	197	0	-	0	393	199
Stage 1	-	-	-	-	194	-
Stage 2	-	-	-	-	199	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1388	-	-	-	615	847
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	839	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1381	-	-	-	608	839
Mov Cap-2 Maneuver	-	-	-	-	608	-
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	835	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		10.8		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1381	-	-	-	633	
HCM Lane V/C Ratio	0.001	-	-	-	0.013	
HCM Control Delay (s)	7.6	0	-	-	10.8	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 6th Signalized Intersection Summary

1: Franklin Avenue & Chestnut Street

2021 Build Condition
School Dismissal Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	58	120	21	79	147	90	27	376	49	98	429	80
Future Volume (veh/h)	58	120	21	79	147	90	27	376	49	98	429	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.98		0.97	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	62	128	22	84	156	96	29	400	52	104	456	85
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	143	261	39	144	206	114	87	954	120	184	757	134
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	322	1098	164	336	868	482	52	1540	193	200	1222	216
Grp Volume(v), veh/h	212	0	0	336	0	0	481	0	0	645	0	0
Grp Sat Flow(s),veh/h/ln	1585	0	0	1686	0	0	1785	0	0	1638	0	0
Q Serve(g_s), s	0.0	0.0	0.0	5.4	0.0	0.0	0.0	0.0	0.0	6.4	0.0	0.0
Cycle Q Clear(g_c), s	7.7	0.0	0.0	13.0	0.0	0.0	9.4	0.0	0.0	15.8	0.0	0.0
Prop In Lane	0.29		0.10	0.25		0.29	0.06		0.11	0.16		0.13
Lane Grp Cap(c), veh/h	443	0	0	465	0	0	1160	0	0	1075	0	0
V/C Ratio(X)	0.48	0.00	0.00	0.72	0.00	0.00	0.41	0.00	0.00	0.60	0.00	0.00
Avail Cap(c_a), veh/h	563	0	0	587	0	0	1160	0	0	1075	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.1	0.0	0.0	25.1	0.0	0.0	6.8	0.0	0.0	7.9	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	3.3	0.0	0.0	1.1	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.5	0.0	0.0	9.3	0.0	0.0	6.2	0.0	0.0	9.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	0.0	0.0	28.4	0.0	0.0	7.9	0.0	0.0	10.4	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	B	A	A
Approach Vol, veh/h		212			336			481			645	
Approach Delay, s/veh		23.9			28.4			7.9			10.4	
Approach LOS		C			C			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.4		21.6		48.4		21.6				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		38.0		22.0		38.0		22.0				
Max Q Clear Time (g_c+I1), s		11.4		9.7		17.8		15.0				
Green Ext Time (p_c), s		6.7		1.0		8.6		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				15.0								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	30	0	41	10	0	17	0	507	17	14	556	0
Future Vol, veh/h	30	0	41	10	0	17	0	507	17	14	556	0
Conflicting Peds, #/hr	20	0	20	14	0	14	0	0	14	14	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	33	0	45	11	0	19	0	557	19	15	611	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1237	1231	631	1265	1222	601	-	0	0	590	0	0
Stage 1	641	641	-	581	581	-	-	-	-	-	-	-
Stage 2	596	590	-	684	641	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	154	179	485	147	181	504	0	-	-	995	-	0
Stage 1	466	473	-	503	503	-	0	-	-	-	-	0
Stage 2	494	498	-	442	473	-	0	-	-	-	-	0
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	143	173	476	127	174	488	-	-	-	982	-	-
Mov Cap-2 Maneuver	143	173	-	127	174	-	-	-	-	-	-	-
Stage 1	466	462	-	503	496	-	-	-	-	-	-	-
Stage 2	466	492	-	384	462	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	27.1		22.3		0		0.2					
HCM LOS	D		C									
Minor Lane/Major Mvmt	NBT		NBR		EBLn1WBLn1		SBL	SBT				
Capacity (veh/h)	-		-		240		238	982				
HCM Lane V/C Ratio	-		-		0.325		0.125	0.016				
HCM Control Delay (s)	-		-		27.1		22.3	8.7				
HCM Lane LOS	-		-		D		C	A				
HCM 95th %tile Q(veh)	-		-		1.4		0.4	0				

HCM 6th TWSC
3: Franklin Avenue & Ingress-Only Site Driveway

2021 Build Condition
School Dismissal Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	26	528	570	27
Future Vol, veh/h	0	0	26	528	570	27
Conflicting Peds, #/hr	0	0	20	0	0	20
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	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	0	29	580	626	30
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1299	661	676	0	-	0
Stage 1	661	-	-	-	-	-
Stage 2	638	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	180	466	925	-	-	-
Stage 1	517	-	-	-	-	-
Stage 2	530	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	165	457	907	-	-	-
Mov Cap-2 Maneuver	165	-	-	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	520	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	907	-	-	-	-	
HCM Lane V/C Ratio	0.032	-	-	-	-	
HCM Control Delay (s)	9.1	0	0	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	-	-	-	

HCM 6th TWSC
4: Chestnut Street & Parking Lot Driveway

2021 Build Condition
School Dismissal Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	196	252	2	3	0
Future Vol, veh/h	0	196	252	2	3	0
Conflicting Peds, #/hr	12	0	0	12	12	12
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	0	206	265	2	3	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	279	0	-	0	496	290
Stage 1	-	-	-	-	278	-
Stage 2	-	-	-	-	218	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1295	-	-	-	537	754
Stage 1	-	-	-	-	774	-
Stage 2	-	-	-	-	823	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1280	-	-	-	525	737
Mov Cap-2 Maneuver	-	-	-	-	525	-
Stage 1	-	-	-	-	765	-
Stage 2	-	-	-	-	814	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		11.9		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1280	-	-	-	525	
HCM Lane V/C Ratio	-	-	-	-	0.006	
HCM Control Delay (s)	0	-	-	-	11.9	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile O(veh)	0	-	-	-	0	

HCM 6th Signalized Intersection Summary

1: Franklin Avenue & Chestnut Street

2021 Build Condition
Weekday Evening Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	111	35	102	142	90	25	349	66	76	486	77
Future Volume (veh/h)	62	111	35	102	142	90	25	349	66	76	486	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.98		0.97	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	64	114	36	105	146	93	26	360	68	78	501	79
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	0	0	0	1	1	1	1	1	1
Cap, veh/h	147	239	64	171	190	109	83	893	162	144	832	125
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.61	0.61	0.61	0.61	0.61	0.61
Sat Flow, veh/h	325	967	261	419	772	441	47	1462	266	141	1363	205
Grp Volume(v), veh/h	214	0	0	344	0	0	454	0	0	658	0	0
Grp Sat Flow(s),veh/h/ln	1554	0	0	1633	0	0	1775	0	0	1709	0	0
Q Serve(g_s), s	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0
Cycle Q Clear(g_c), s	7.8	0.0	0.0	13.9	0.0	0.0	9.0	0.0	0.0	15.7	0.0	0.0
Prop In Lane	0.30		0.17	0.31		0.27	0.06		0.15	0.12		0.12
Lane Grp Cap(c), veh/h	450	0	0	470	0	0	1138	0	0	1101	0	0
V/C Ratio(X)	0.48	0.00	0.00	0.73	0.00	0.00	0.40	0.00	0.00	0.60	0.00	0.00
Avail Cap(c_a), veh/h	553	0	0	575	0	0	1138	0	0	1101	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.6	0.0	0.0	24.9	0.0	0.0	7.1	0.0	0.0	8.3	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	3.8	0.0	0.0	1.0	0.0	0.0	2.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.5	0.0	0.0	9.6	0.0	0.0	5.9	0.0	0.0	9.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.4	0.0	0.0	28.7	0.0	0.0	8.1	0.0	0.0	10.7	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	B	A	A
Approach Vol, veh/h	214			344			454			658		
Approach Delay, s/veh	23.4			28.7			8.1			10.7		
Approach LOS	C			C			A			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	47.7			22.3			47.7			22.3		
Change Period (Y+Rc), s	5.0			5.0			5.0			5.0		
Max Green Setting (Gmax), s	38.0			22.0			38.0			22.0		
Max Q Clear Time (g_c+I1), s	11.0			9.8			17.7			15.9		
Green Ext Time (p_c), s	6.3			1.0			8.7			1.1		
Intersection Summary												
HCM 6th Ctrl Delay	15.3											
HCM 6th LOS	B											

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	0	36	12	0	8	0	494	7	9	591	0
Future Vol, veh/h	29	0	36	12	0	8	0	494	7	9	591	0
Conflicting Peds, #/hr	5	0	5	10	0	9	0	0	10	9	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	31	0	38	13	0	8	0	520	7	9	622	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1177	1177	632	1203	1174	543	-	0	0	537	0	0
Stage 1	640	640	-	534	534	-	-	-	-	-	-	-
Stage 2	537	537	-	669	640	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	169	193	484	163	193	544	0	-	-	1041	-	0
Stage 1	467	473	-	534	528	-	0	-	-	-	-	0
Stage 2	532	526	-	450	473	-	0	-	-	-	-	0
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	163	189	479	146	189	534	-	-	-	1031	-	-
Mov Cap-2 Maneuver	163	189	-	146	189	-	-	-	-	-	-	-
Stage 1	467	467	-	534	523	-	-	-	-	-	-	-
Stage 2	519	521	-	405	467	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	24		24.5		0		0.1					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBT		NBR		EBLn1WBLn1		SBL		SBT			
Capacity (veh/h)	-		-		257		206		1031			
HCM Lane V/C Ratio	-		-		0.266		0.102		0.009			
HCM Control Delay (s)	-		-		24		24.5		8.5			
HCM Lane LOS	-		-		C		C		A			
HCM 95th %tile Q(veh)	-		-		1		0.3		0			

HCM 6th TWSC
3: Franklin Avenue & Ingress-Only Site Driveway

2021 Build Condition
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	24	507	600	28
Future Vol, veh/h	0	0	24	507	600	28
Conflicting Peds, #/hr	0	0	5	0	0	5
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	0	25	534	632	29
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1236	652	666	0	-	0
Stage 1	652	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	196	471	933	-	-	-
Stage 1	522	-	-	-	-	-
Stage 2	561	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	187	469	929	-	-	-
Mov Cap-2 Maneuver	187	-	-	-	-	-
Stage 1	500	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	929	-	-	-	-	
HCM Lane V/C Ratio	0.027	-	-	-	-	
HCM Control Delay (s)	9	0	0	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	-	-	-	

HCM 6th TWSC
4: Chestnut Street & Parking Lot Driveway

2021 Build Condition
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	205	241	3	3	0
Future Vol, veh/h	0	205	241	3	3	0
Conflicting Peds, #/hr	6	0	0	6	6	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	0	230	271	3	3	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	280	0	-	0	515	285
Stage 1	-	-	-	-	279	-
Stage 2	-	-	-	-	236	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1294	-	-	-	523	759
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	808	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1287	-	-	-	517	750
Mov Cap-2 Maneuver	-	-	-	-	517	-
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	803	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		12		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1287	-	-	-	517	
HCM Lane V/C Ratio	-	-	-	-	0.007	
HCM Control Delay (s)	0	-	-	-	12	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 6th Signalized Intersection Summary

1: Franklin Avenue & Chestnut Street

2021 Build Condition
Saturday Midday Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	83	23	80	83	118	21	417	51	76	430	75
Future Volume (veh/h)	74	83	23	80	83	118	21	417	51	76	430	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	77	86	24	83	86	123	22	434	53	79	448	78
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	174	178	41	149	125	151	75	1018	121	156	841	139
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	470	824	191	382	579	700	34	1588	188	152	1311	217
Grp Volume(v), veh/h	187	0	0	292	0	0	509	0	0	605	0	0
Grp Sat Flow(s),veh/h/ln	1485	0	0	1661	0	0	1810	0	0	1680	0	0
Q Serve(g_s), s	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.6	0.0	0.0	11.4	0.0	0.0	9.5	0.0	0.0	12.3	0.0	0.0
Prop In Lane	0.41		0.13	0.28		0.42	0.04		0.10	0.13		0.13
Lane Grp Cap(c), veh/h	393	0	0	425	0	0	1214	0	0	1136	0	0
V/C Ratio(X)	0.48	0.00	0.00	0.69	0.00	0.00	0.42	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	540	0	0	578	0	0	1214	0	0	1136	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.2	0.0	0.0	25.9	0.0	0.0	6.2	0.0	0.0	6.7	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	2.1	0.0	0.0	1.1	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.0	0.0	0.0	8.2	0.0	0.0	6.1	0.0	0.0	7.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	0.0	0.0	27.9	0.0	0.0	7.3	0.0	0.0	8.5	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		187			292			509			605	
Approach Delay, s/veh		25.1			27.9			7.3			8.5	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		49.9		20.1		49.9		20.1				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		38.0		22.0		38.0		22.0				
Max Q Clear Time (g_c+I1), s		11.5		9.6		14.3		13.4				
Green Ext Time (p_c), s		7.1		0.9		8.6		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				13.6								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	0	62	12	0	22	0	588	21	6	507	0
Future Vol, veh/h	45	0	62	12	0	22	0	588	21	6	507	0
Conflicting Peds, #/hr	10	0	10	16	0	16	0	0	16	16	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	47	0	65	13	0	23	0	619	22	6	534	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1204	1203	550	1241	1192	662	-	0	0	657	0	0
Stage 1	546	546	-	646	646	-	-	-	-	-	-	-
Stage 2	658	657	-	595	546	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	162	186	539	153	189	465	0	-	-	940	-	0
Stage 1	526	521	-	464	470	-	0	-	-	-	-	0
Stage 2	457	465	-	494	521	-	0	-	-	-	-	0
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	150	182	531	129	184	451	-	-	-	926	-	-
Mov Cap-2 Maneuver	150	182	-	129	184	-	-	-	-	-	-	-
Stage 1	526	516	-	464	463	-	-	-	-	-	-	-
Stage 2	427	458	-	423	516	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	29.5		22.6		0		0.1					
HCM LOS	D		C									
Minor Lane/Major Mvmt	NBT		NBR		EBLn1WBLn1		SBL	SBT				
Capacity (veh/h)	-		-		257 240		926	-				
HCM Lane V/C Ratio	-		-		0.438 0.149		0.007	-				
HCM Control Delay (s)	-		-		29.5 22.6		8.9	0				
HCM Lane LOS	-		-		D C		A	A				
HCM 95th %tile Q(veh)	-		-		2.1 0.5		0	-				

HCM 6th TWSC
3: Franklin Avenue & Ingress-Only Site Driveway

2021 Build Condition
Saturday Midday Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	72	583	513	48
Future Vol, veh/h	0	0	72	583	513	48
Conflicting Peds, #/hr	0	0	10	0	0	10
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	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	0	76	614	540	51

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1342	576	601	0	-	0
Stage 1	576	-	-	-	-	-
Stage 2	766	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	169	521	986	-	-	-
Stage 1	566	-	-	-	-	-
Stage 2	462	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	146	516	977	-	-	-
Mov Cap-2 Maneuver	146	-	-	-	-	-
Stage 1	494	-	-	-	-	-
Stage 2	457	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	977	-	-	-	-
HCM Lane V/C Ratio	0.078	-	-	-	-
HCM Control Delay (s)	9	0	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-	-

HCM 6th TWSC
4: Chestnut Street & Parking Lot Driveway

2021 Build Condition
Saturday Midday Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	174	173	6	6	1
Future Vol, veh/h	1	174	173	6	6	1
Conflicting Peds, #/hr	8	0	0	8	8	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	198	197	7	7	1
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	212	0	-	0	417	217
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	208	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1370	-	-	-	596	828
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	832	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1360	-	-	-	586	815
Mov Cap-2 Maneuver	-	-	-	-	586	-
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	825	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		11		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1360	-	-	-	611	
HCM Lane V/C Ratio	0.001	-	-	-	0.013	
HCM Control Delay (s)	7.6	0	-	-	11	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0	

TRAFFIC SIGNAL TIMING DIRECTIVE

INTERSECTION NAME:	FRANKLIN AVENUE AND CHESTNUT STREET TOWNSHIP OF NUTLEY							INSTALLED:		CONTROLLER TYPE:			
INTERVAL	#	1	2	3	4	5	6	7	8	FLASH TIME:			
MODE/RECALL	0		PED RECALL							CYCLE = 70 SECS			
MIN. GREEN	1		5		8					PHASE 2: FRANKLIN AVE			
WALK	2		28		7					PHASE 4: CHESTNUT ST			
PED. CLR.	3		10		11								
VEH. EXT.	4		5.0		3.0								
MAX I	5		38		22								
MAX II	6		-		-								
AMBER	7		3.0		3.0								
ALL RED	8		2.0		2.0								

DIRECTIVE NUMBER: 228

