Traffic Impact Study

Webster Elementary School Expansion

El Paso County, Colorado

PCD File No. PPR-22-009

Prepared for:

Widefield School District #3

Kimley»Horn

T R A F F I C I M P A C T S T U D Y

Traffic Engineer's Statement

The attached traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.

Jeffrey R. Planck

Jeffrey R. Planck, P.E., PE #53006

May 20, 2022
Date

Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

Mr. Dave Gish
Widefield School District #3
1820 Main Street
Colorado Springs, CO 80911

10/18/2022
Date

Webster Elementary School Expansion

PCD File No. PPR-22-009

El Paso County, Colorado

Prepared for
Widefield School District #3
1820 Main Street
Colorado Springs, Colorado 80911

Prepared by
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May 2022

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1.0 EXECUTIVE SUMMARY

Webster Elementary School is proposing an expansion to the existing school located on the southwest corner of the Jersey Lane and Quebec Street intersection in El Paso County, Colorado. Webster Elementary School is planning to expand the existing school and re-configure the parking lots along Syracuse Street while increasing the potential enrollment by 332 students for a potential maximum capacity of 850 students. The existing student enrollment is 518 students, and the future capacity accounts for an increase of approximately 64 percent. It should be noted the existing school has a capacity of 600 students, so it is not currently maximizing the potential enrollment for the existing school. For analysis purposes, it was assumed that the Webster Elementary School Expansion will be completed in the next year; therefore, analysis was conducted for the 2022 school year. However, the buildout year is not critical as the studied intersections are in a fully built out area and future traffic growth is not expected along the local streets other than the expansion of the school; therefore, only a buildout scenario was evaluated in this traffic study. Within the last five years, the new storage facility that was recently constructed to the south likely had a traffic study performed. However, since this facility was completed and open at the time the traffic counts were collected for this study, the storage facility traffic volumes were already on the street network and are provided within the existing count data.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study in accordance with El Paso County standards and requirements:

- Jersey Lane and Syracuse Street (Intersection #1)
- Jersey Lane and Bickley Street (#2)
- Jersey Lane and Quebec Street (#3)
- Jersey Lane Faculty Exit (Existing Condition Only) (#4)
- Jersey Lane East Access (Bus Entrance Only) (#5)
- Syracuse Street North Access (Student Drop-off/Pick-up Exit) (#6)
- Syracuse Street South Access (Student Drop-off Pick-up Entrance) (#7)
- Quebec Street Access (Bus Exit Only) (#8)
- Syracuse Street Faculty Entrance (Existing Condition Only) (#9)

Webster Elementary School currently primarily serves the neighborhoods surrounding the school; therefore, limited regional access is currently provided from Interstate 25 (I-25), US-85, and Mesa Ridge Parkway (SH-16). Primary access is provided by Fontaine Boulevard, Fountain Mesa Road, and Syracuse Street while direct access is provided by Jersey Lane, Syracuse Street and Quebec Street.

Webster Elementary School Expansion is expected to generate a net increase of approximately 754 weekday daily trips, with 249 of these trips occurring during the school's morning peak hour and 150 of these trips occurring during the school's afternoon peak hour.

Based on the analysis presented in this report, Kimley-Horn believes the Webster Elementary School expansion project will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following conclusions and recommendations:

- With the expansion of the school, the drop-off and pick-up parking lot along Syracuse Street will expand to the north and the south while the faculty parking lot located on the southeast corner of the Jersey Lane and Syracuse Street intersection will be removed. The expansion of the drop-off and pick-up parking lot will provide additional parking for the faculty/staff and account for the increase in drop-off/pick-up with the proposed increase in students. The entrance to the parking lot is proposed to be moved and align with Fay Drive. The circulation will remain the same with vehicles entering at the south access through the parking lot and exiting to the north.

- The movements at all studied intersections and accesses currently operate acceptably and are expected to continue to operate acceptably with LOS B or better during the peak hours with the school expansion. Therefore, no modifications to the existing lane configurations and control are recommended at the study area key intersections. The existing street network is expected to accommodate the increase in school traffic. However, to further identify the exiting only accesses and to restrict entering movements, R5-1 "Do Not Enter" signs could be installed at the approaches of the Syracuse Street North Access (#6) and the access along Quebec Street (#8). Likewise, to further identify the entrance only accesses and to restrict exiting movements, R6-1 "One Way" signs could be installed at the entering approaches of the Jersey Lane East Access (#5) and the relocated Syracuse Street South Access (#7).

Lastly, R1-1 “Stop” signs could be installed on the exiting approaches of the Syracuse Street North Access (#6) and the Quebec Street Access (#8).

- To mitigate existing conditions and future enrollment capacity of 850 students, the following improvements may be considered by the school:
  - Provide additional school personnel to direct parents with the student drop-off and pick-up circulation. This would potentially allow for additional vehicles to enter the drop-off/pick-up zone to minimize drivers from using other means of drop-off/pick-up in the public right-of-way (ROW) of the adjacent streets.
  - The school could encourage more pedestrian and bicycle traffic and discourage vehicular traffic to reduce the number of vehicle trips to and from the school. Programs could be developed to incentivize reducing single family vehicle trips such as carpooling, bicycle and pedestrian usage. In addition, providing sufficient, convenient, and safe bicycle storage could encourage more bicycle usage.

- Any onsite or offsite improvements will be incorporated into the Civil Drawings and conform to standards of the El Paso County and the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

<u>Deviations Required</u>

- A deviation will be provided requesting approval for an inbound only access along Syracuse Street for the future access aligning with Fay Drive. The entrance only access along Syracuse Street will be located approximately 215 feet north of James Madison Charter Academy Access. According to El Paso County ECM section 2.2.5.D, spacing along an urban residential collector roadway shall be spaced 330 feet to a local roadway. Therefore, a deviation will need to be provided requesting for this proposed access to remain at the proposed location. The south access along Syracuse Street (aligning with Fay Drive) is expected to operate acceptably, has appropriate sight distances, and is an entrance only access. Further, the character of this roadway in this segment aligns more to a local street and not a collector street as it has driveways and houses fronting along Syracuse Street surrounding this location.

2.0 INTRODUCTION

Kimley-Horn and Associates, Inc. has prepared this report to document the results of a Traffic Impact Study for the proposed school expansion at the existing Webster Elementary School located on the southwest corner of the Jersey Lane and Quebec Street intersection in El Paso County, Colorado. A vicinity map illustrating Webster Elementary School location is shown in **Figure 1**. Webster Elementary School is planning to expand the existing school and re-configure the parking lots along Syracuse Street while increasing the potential enrollment by 332 students for a potential maximum capacity of 850 students. A conceptual site plan is attached in **Appendix G**. The existing student enrollment is 518 students, and the future capacity accounts for an increase of approximately 64 percent. It should be noted the existing school has a capacity of 600 students, so it is not currently maximizing the potential enrollment for the existing school. For analysis purposes, it was assumed that the Webster Elementary School Expansion will be completed in the next year; therefore, analysis was conducted for the 2022 school year. However, the buildout year is not critical as the studied intersections are in a fully built out area and future traffic growth is not expected along the local streets other than the expansion of the school; therefore, only a buildout scenario was evaluated in this traffic study.

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Webster Elementary School currently primarily serves the neighborhoods surrounding the school; therefore, limited regional access is currently provided from Interstate 25 (I-25), US-85, and Mesa Ridge Parkway (SH-16). Primary access is provided by Fontaine Boulevard, Fountain Mesa Road, and Syracuse Street while direct access is provided by Jersey Lane, Syracuse Street and Quebec Street.

It is believed the only development to be built within the past 5 years near the vicinity of the site is the Blue Sky Self Storage, directly south of the school. A traffic study was performed prior to the self-storage opening. Since the self-storage facility was open when the traffic counts were performed, the development traffic is included in the existing traffic counts.

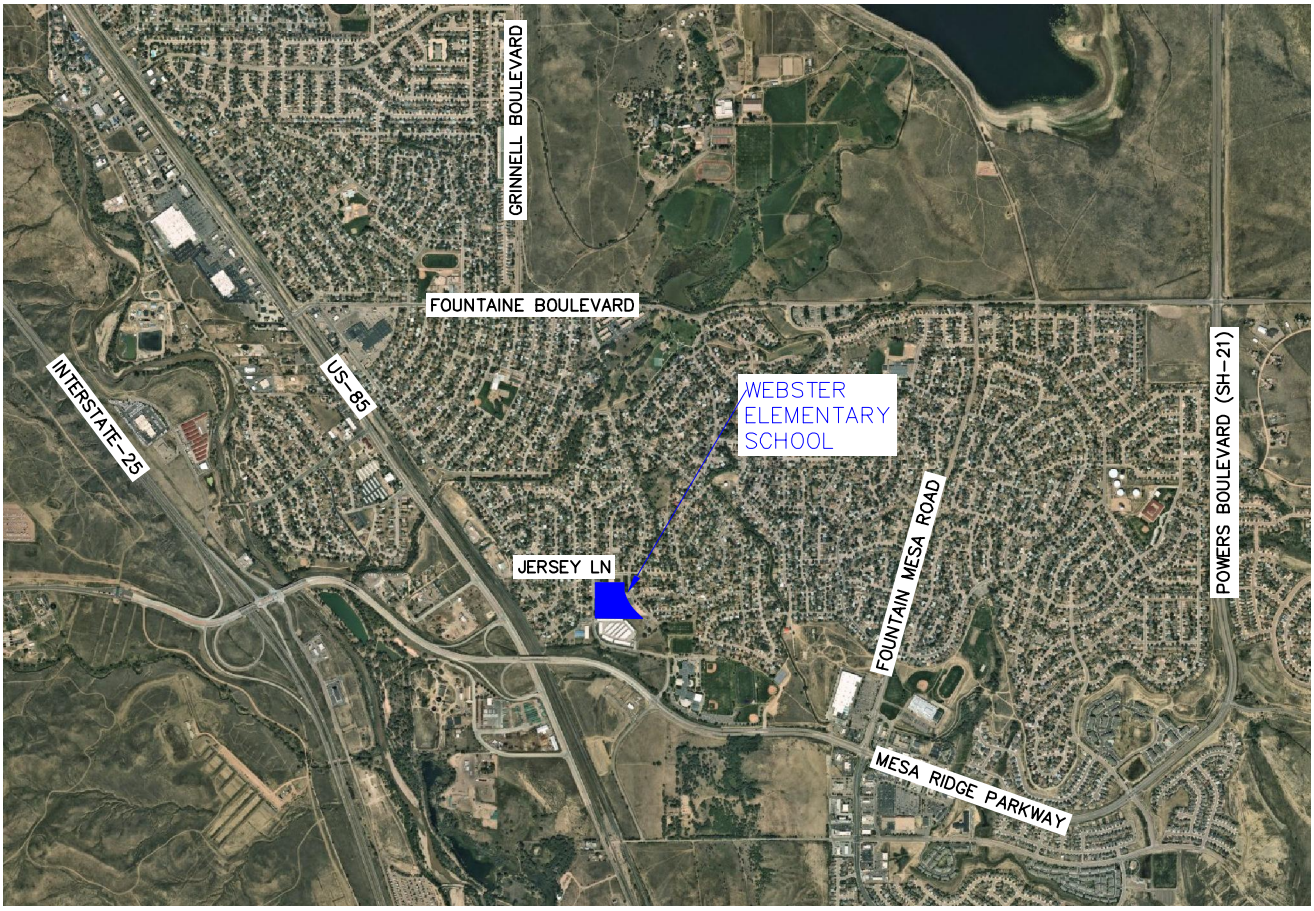


FIGURE 1
WEBSTER ELEMENTARY SCHOOL
EL PASO COUNTY, COLORADO
VICINITY MAP

3.0 EXISTING AND FUTURE CONDITIONS

3.1 Existing Study Area

The existing site contains Webster Elementary School while single family residential homes are in the immediate surrounding area. A storage facility is located to the south of the site while James Madison Charter Academy is located southwest of the site. Santa Fe Avenue (US-85) is located in the extended area to the west while Mesa Ridge Parkway is located in the extended area to the south.

3.2 Existing and Future Roadway Network

Jersey Lane extends in the east-west direction as a two-lane roadway and has a posted speed limit of 20 miles per hour (mph) near the school.

Fay Drive extends in the east-west direction as a two-lane roadway when intersecting with Syracuse Street but bends to be a north-south street when intersecting with Jersey Lane. The roadway does not provide a posted speed limit, but the neighborhood characteristics would assume 20 mph.

Syracuse Street, Bickley Street, and Quebec Street extend northbound and southbound and provide one through lane in each direction. The posted speed limits are 20 mph near the school and increases to 25 mph at the posted “End School Zone” signs.

The unsignalized intersection of Jersey Lane and Syracuse Street (#1) operates with stop control on all four approaches. In addition, all four approaches provide a single lane shared with all movements. An aerial photo of the existing intersection configuration is below (north is up - typical).

Jersey Lane & Syracuse Street (#1)

The signalized ‘T’-intersection of Jersey Lane and Bickley Street (#2) operates with permissive only phasing on all three approaches with signal control intended for pedestrian crossings. All three approaches provide a single lane shared with all movements. An aerial photo of the existing intersection configuration is below.

Jersey Lane & Bickley Street (#2)

The unsignalized intersection of Jersey Lane and Quebec Street (#3) operates with stop control on all four approaches. In addition, all four approaches provide a single lane shared with all movements. An aerial photo of the existing intersection configuration is below.

Jersey Lane & Quebec Street (#3)

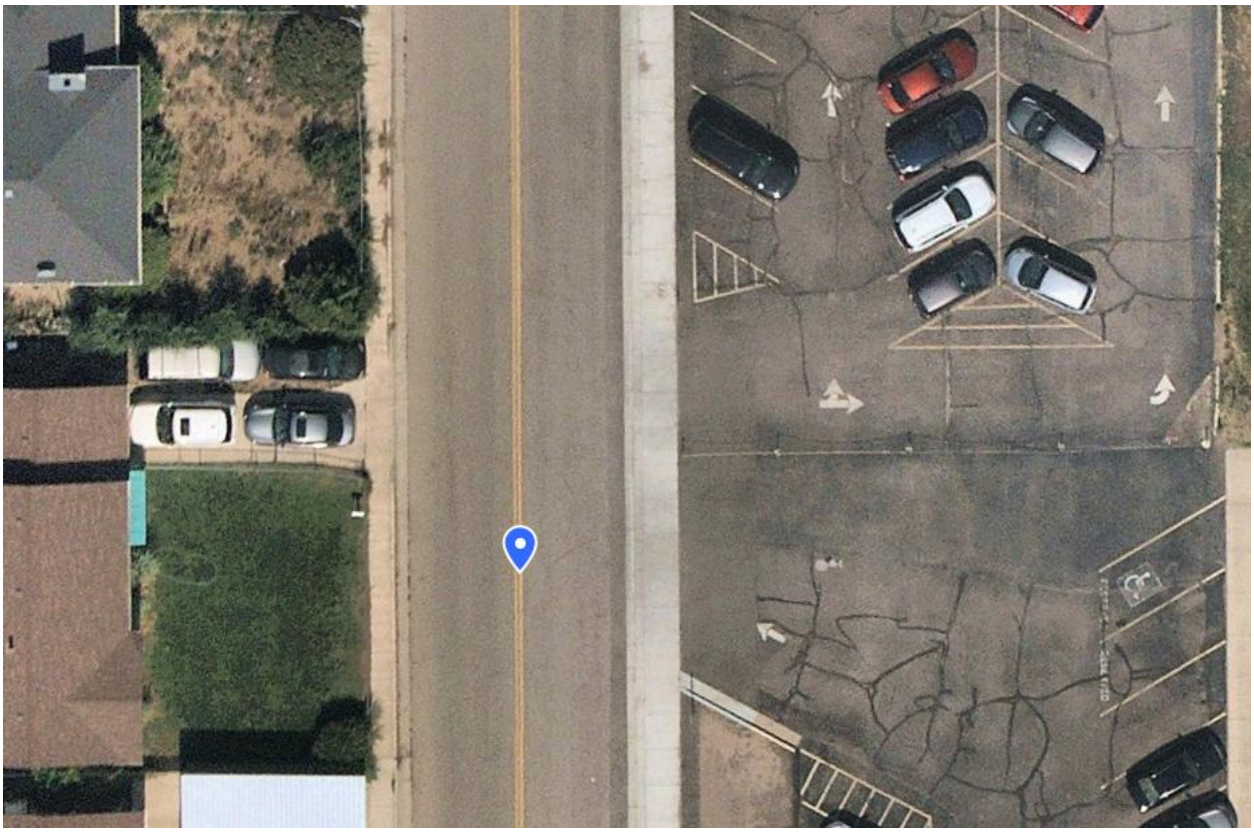
The unsignalized ‘T’-intersection of the Jersey Lane Faculty Exit (#4) operates with assumed stop control on the northbound exiting approach of the West Access. A stop sign is not present on the northbound exiting approach of this access intersection. This access allows exiting movements only and is intended only for faculty use. The exiting northbound approach of this access intersection provides a single shared lane for left and right turning movements. The faculty parking lot and accesses are proposed to be removed with the expansion of the school. An aerial photo of the existing intersection configuration is below.

Jersey Lane Faculty Exit (Existing Condition Only) (#4)

The unsignalized ‘T’-intersection of the Jersey Lane East Access (#5) operates as an inbound-only uncontrolled access. Therefore, stop control is not present at this intersection. This access is intended for school buses only and is signed accordingly with “School Buses Only” on the southbound entering approach. The eastbound approach of this access intersection provides a shared through/right turn lane while the westbound approach provides a shared left turn/through lane. An aerial photo of the existing intersection configuration is below.

Jersey Lane East Access (Bus Entrance) (#5)

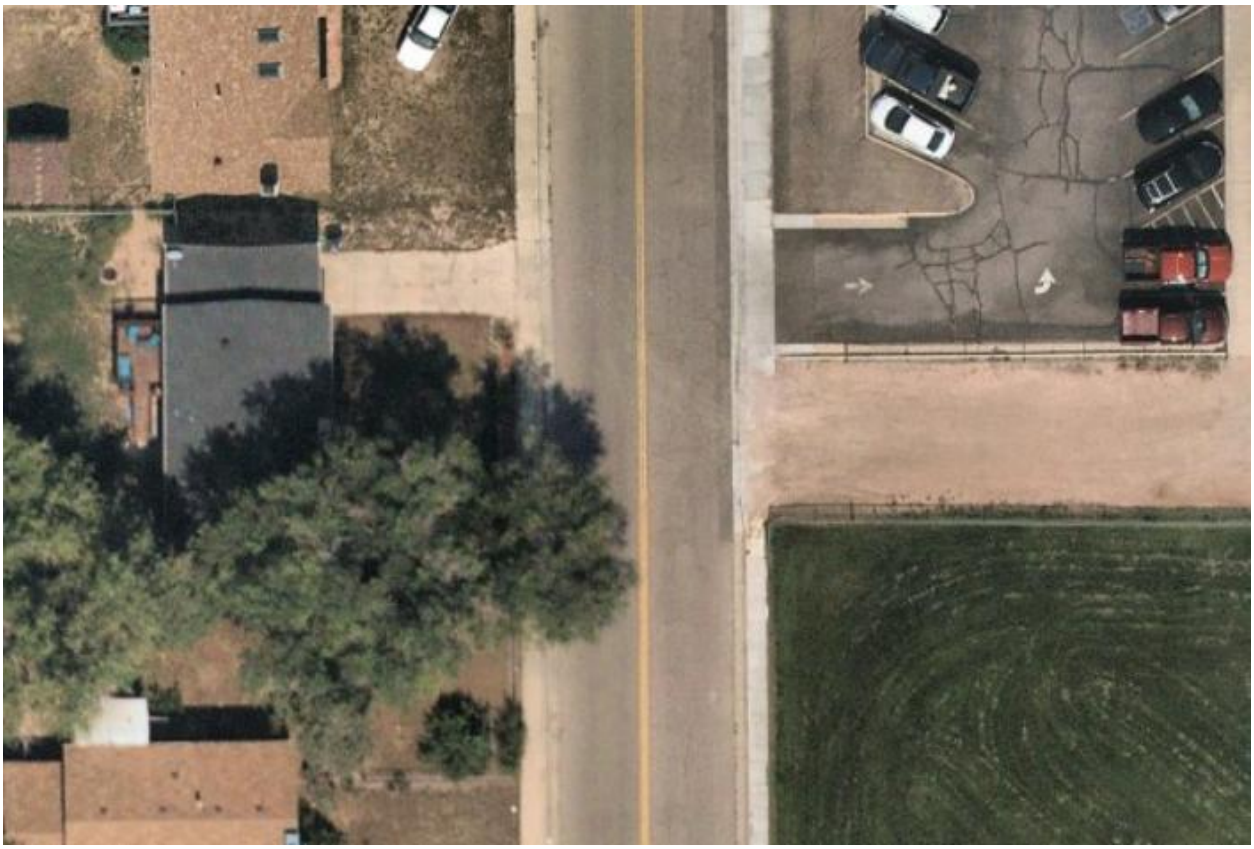
The unsignalized ‘T’-intersection of the Syracuse Street North Access (#6) operates with assumed stop control on the westbound exiting approach of the North Access. A stop sign is not present on the westbound exiting approach of this access intersection. The Faculty Entrance Access (#9) and North Access (#6) along Syracuse Street is divided with a chain to separate the faculty and student pick-up/drop-off parking lots. This access allows exiting movements only and is primarily intended for student drop-off/pick-up use during the peak student drop-off and pick-ups times. Faculty parking and use is also provided at this access but primarily occurs outside of the peak student drop-off and pick-ups times. The exiting west approach of this access intersection provides a single shared lane for left and right turning movements. It should be noted that this access is proposed to be reconfigured and located approximately 50 feet north of the current alignment. An aerial photo of the existing intersection configuration is below.



Syracuse Street North Access (Existing Student Drop-off/Pick-up Exit) (#6)

The unsignalized ‘T’-intersection of the Syracuse Street South Access (#7) operates as an inbound-only uncontrolled access. Therefore, stop control is not present at this intersection. The South Access is primarily intended for student drop-off/pick-up use during the peak student drop-off and pick-ups times. Faculty parking and use is also provided at this access but primarily occurs outside of the peak student drop-off and pick-ups times. The northbound approach of this access provides a shared through/right turn lane while the southbound approach includes a shared left turn/through lane. Of note, a small additional dirt lot is located directly south of this access and several parents were observed using this lot for additional pick-up and drop-offs. An aerial photo of the existing intersection configuration is below.

With the expansion of the school, this drop-off/pick-up area and lot will extend to the south. The entrance will align with Fay Drive, and it is proposed that this access will provide the same circulation patterns as existing with drop-off/pick-up entering from the south and exiting to the north.

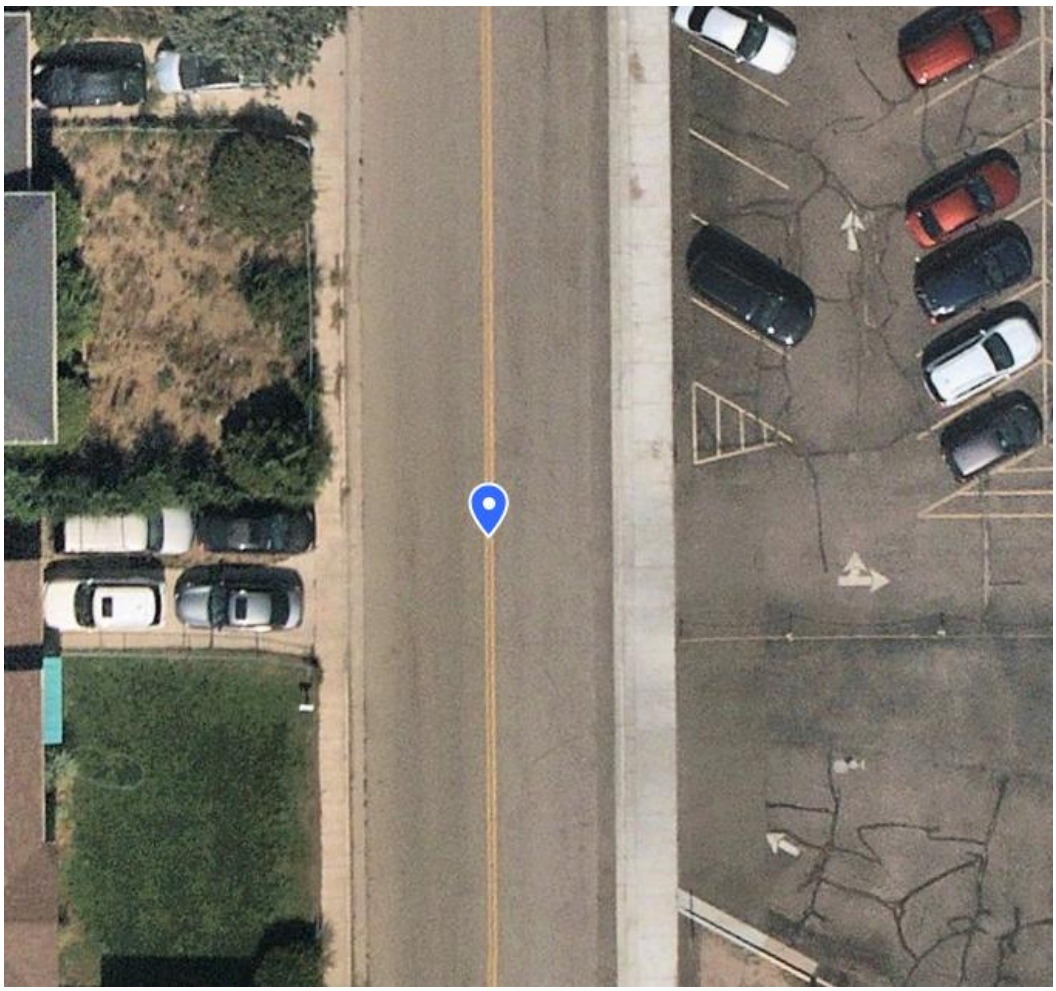


Syracuse Street South Access (Existing Student Drop-off/Pick-up Entrance) (#7)

The unsignalized ‘T’-intersection of the Quebec Street Access (#8) operates with assumed stop control on the eastbound exiting approach this access. A stop sign is not present on the eastbound exiting approach of this access intersection. The access is designated for school buses only and is intended for outbound-only bus traffic. The exiting eastbound approach of this access intersection provides a single lane shared between the left and right movements. An aerial photo of the existing intersection configuration is below.

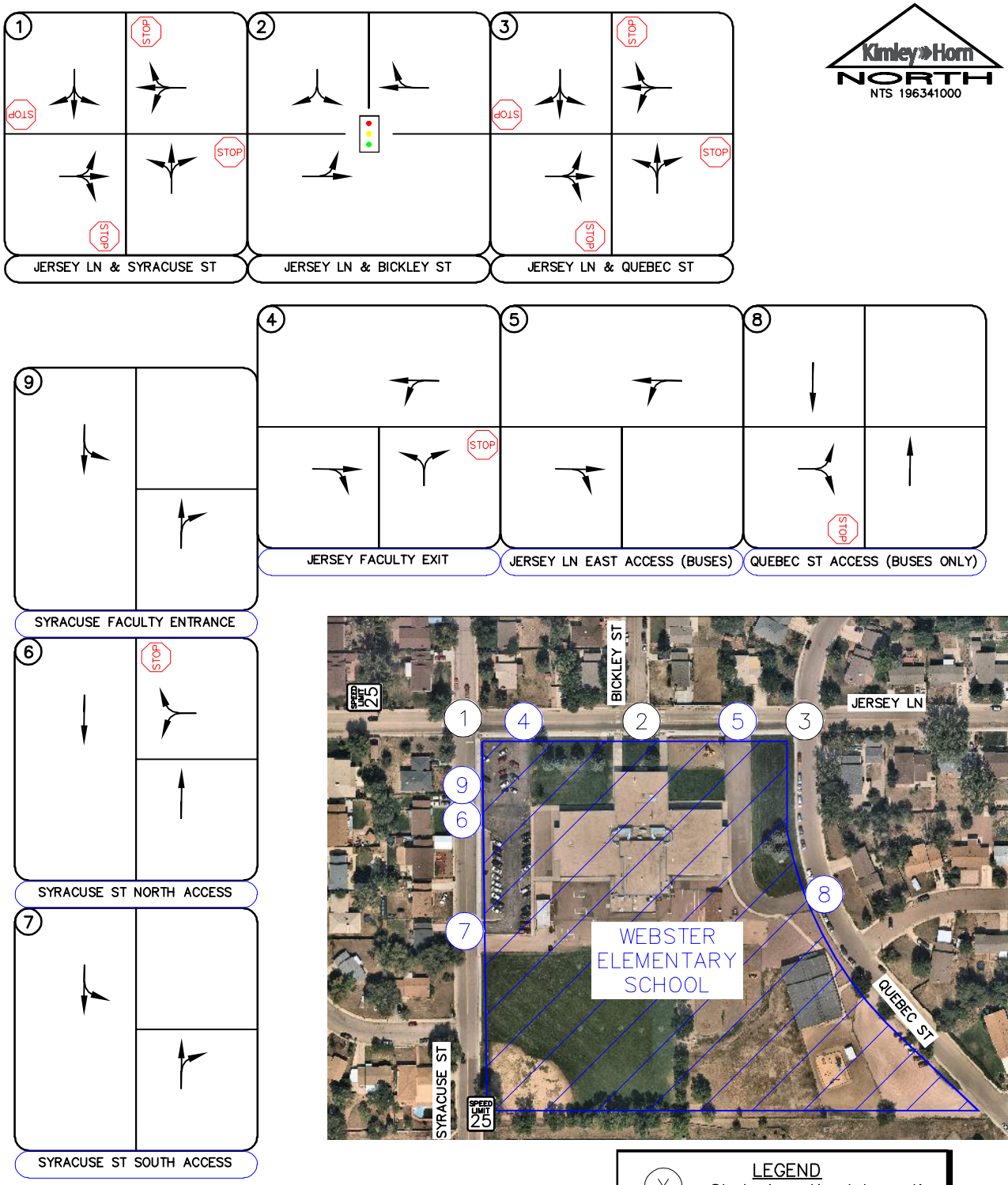
Quebec Street Access (Bus Exit Only) (#8)

The unsignalized ‘T’-intersection of the Syracuse Street Faculty Entrance (#9) operates as an inbound-only uncontrolled access. Therefore, stop control is not present at this intersection. The North Access is intended inbound-only faculty traffic. The Faculty Entrance (#9) and North Access (#6) along Syracuse Street is divided with a chain to separate the faculty and student pick-up/drop-off parking lots. The northbound approach of this access provides a shared through/right turn lane while the southbound approach includes a shared left turn/through lane. Of note, vehicle traffic was not observed entering this access during the peak hours of the school traffic. The faculty parking lot and accesses are proposed to be removed with the expansion of the school. An aerial photo of the existing intersection configuration is below.



Syracuse Street Faculty Entrance (Existing Conditions Only) (#9)

The intersection lane configuration and control for the study area intersections are shown in **Figure 2**.



Kimley»Horn NORTH
NTS 196341000

FIGURE 2
WEBSTER ELEMENTARY SCHOOL
EL PASO COUNTY, COLORADO
EXISTING GEOMETRY AND CONTROL

Kimley»Horn

3.3 Existing Traffic Volumes

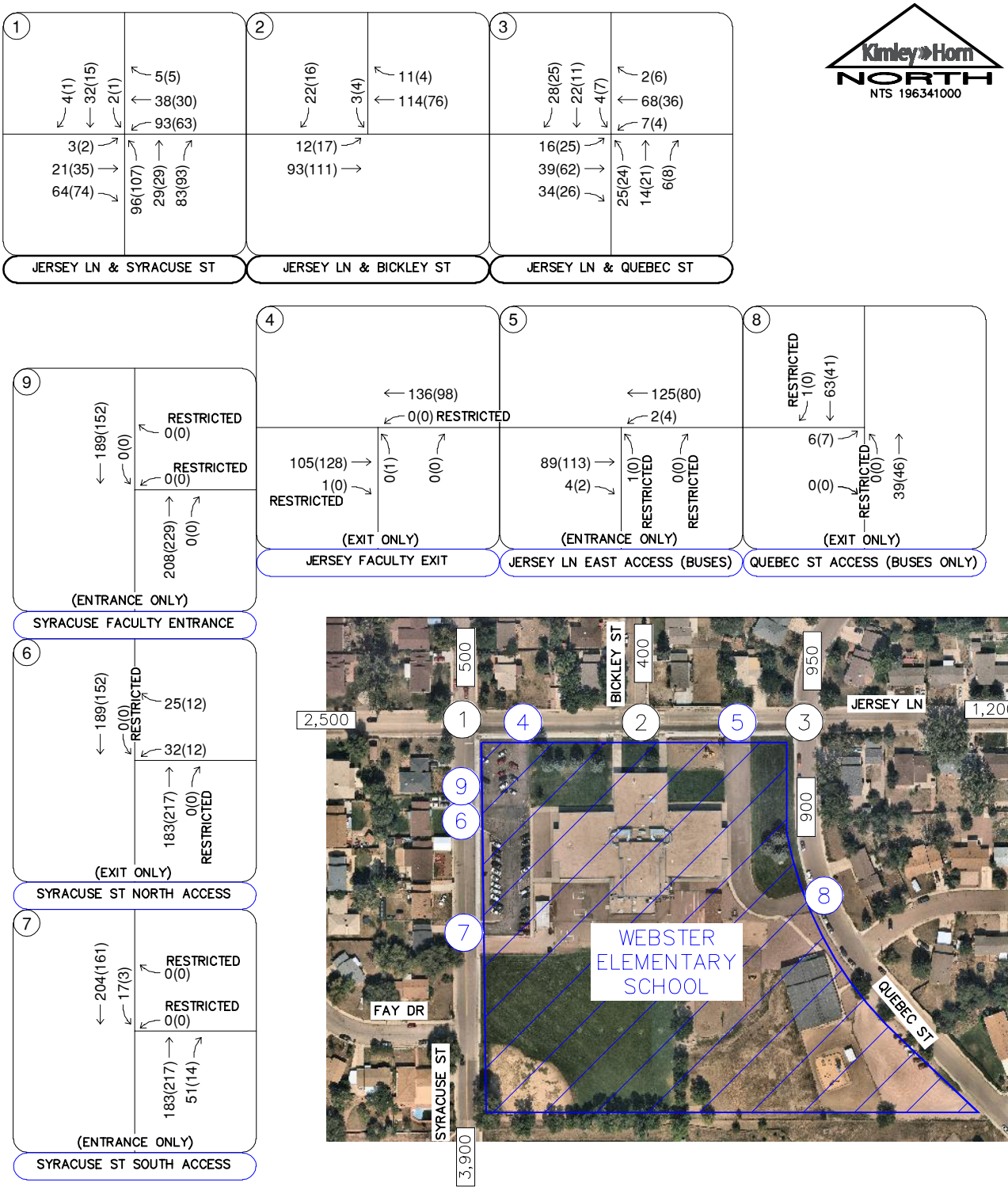
Existing vehicle turning movement counts and pedestrian counts were conducted at the study intersections on Thursday, December 2, 2021 during the school's morning and afternoon peak hours. The school's bell schedule signals a start at 8:00 AM and ending at 2:40 PM. Therefore, the counts were conducted during the morning and afternoon peak hours of the school traffic in 15-minute intervals from 7:15 AM to 8:15 AM and 2:15 PM to 3:15 PM on this count date.

The in and out volumes at the school's driveways were counted during the school's morning and afternoon peak hours also. The through volumes at the driveways along Syracuse Street, Jersey Lane, and Quebec Street were balanced based on the in and out movements at the adjacent intersections. The average daily traffic volumes were calculated based on the estimation that the afternoon peak hour of generator is 10 percent of the daily traffic volume.

The existing intersection vehicle traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix A**. Likewise, existing pedestrian counts are shown in **Figure 4**.

3.4 Unspecified Development Traffic Growth

The Webster Elementary School Expansion is planned to have a potential increased enrollment from 518 students to a capacity of 850 students for the 2022-2023 school year. It should be noted that the future capacity of the school is not expected to occur in the first year; however, the full capacity of students was utilized to provide a conservative analysis. Of note, the buildout year is not critical as the studied intersections are in a fully built out area and future traffic growth is not expected along the local streets other than the expansion of the school; therefore, future volumes at the studied intersections consist of existing plus net increase of school traffic. Of note, possible expansions of nearby James Madison Charter School or Mesa Ridge High School are not known at this time.



All Intersection Counts Collected On:
Thursday, December 2, 2021
7:15 to 8:15AM (2:15 to 3:15PM)

LEGEND

- (X) Study Area Key Intersection
- (X) School Accesses
- XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume

FIGURE 3
WEBSTER ELEMENTARY SCHOOL
EL PASO COUNTY, COLORADO
2021 EXISTING TRAFFIC VOLUMES

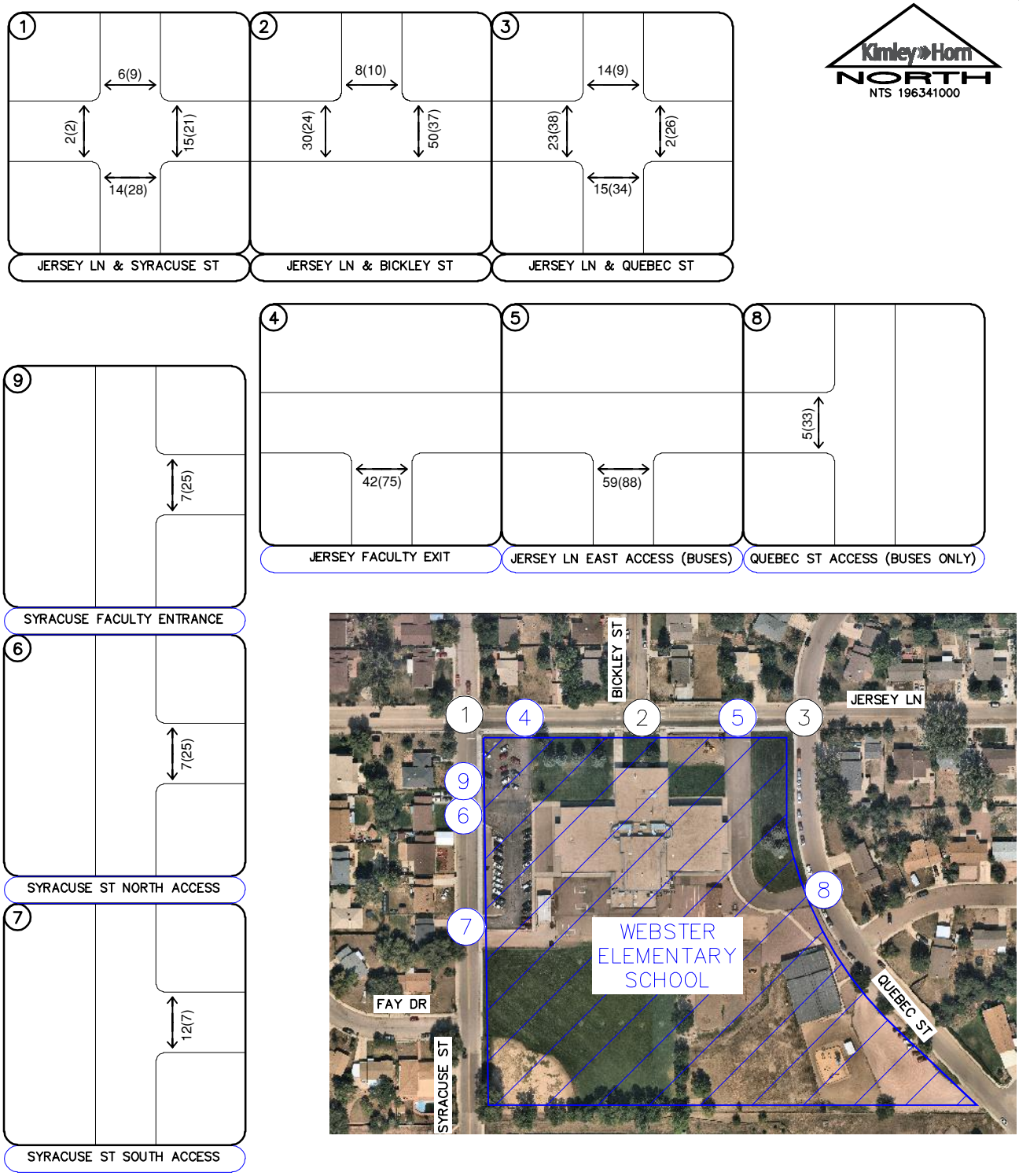


FIGURE 4
WEBSTER ELEMENTARY SCHOOL
EL PASO COUNTY, COLORADO
2021 EXISTING PEDESTRIAN VOLUMES

4.0 PROJECT TRAFFIC CHARACTERISTICS

4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*[1] published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. The ITE Trip Generation Report fitted curve equations that applies to Elementary School (ITE Land Use Code 520) was used to determine the increase in trips from the existing 518 students to future capacity of 850 students. For this study, Kimley-Horn used the current conditions at the school driveways to predict future driveway trips associated with the expansion of the elementary school. The existing school has a current enrollment of 518 students and is proposed to increase to a maximum capacity of 850 students. This equates to an increase of approximately 64 percent which was applied to the existing entering and exiting driveway counts to predict future entering and exiting driveway volumes.

When the traffic counts were collected, observations and video footage showed parents dropping-off and picking-up students in the right-of-way of Syracuse Street, Jersey Lane, Bickley Street, and Quebec Street. Of note, Quebec Street does not provide access to the external street network, and it is believed the majority of traffic volumes on the south leg of the Jersey Lane and Quebec Street intersection are vehicles parking in the public ROW for student pick-up and drop-off. From the volumes into and out of Quebec Street from Jersey Lane, 90 percent of the traffic was assumed to be associated with student pick-up and drop-off.

Based on ITE trip generation, the 850-student enrollment increases trip generation by 64 percent or a factor of 1.64 when compared to the existing 518 student enrollment. The existing traffic volumes along Quebec Street (south of Jersey Lane) were also increased by 64 percent to account for future student drop-off and pick-up volumes in the ROW of Quebec Street. Therefore, the remaining school traffic (beyond driveway volumes and Quebec Street ROW) is still using the

[1] Institute of Transportation Engineers, *Trip Generation Manual*, Eleventh Edition, Washington DC, 2021.

ROW of Syracuse Street, Jersey Lane, and Bickley Street. As such, traffic volumes were also added to the surrounding street network and are based on a proportionate share of the increase of enrollment to 850 students from the existing 518 students.

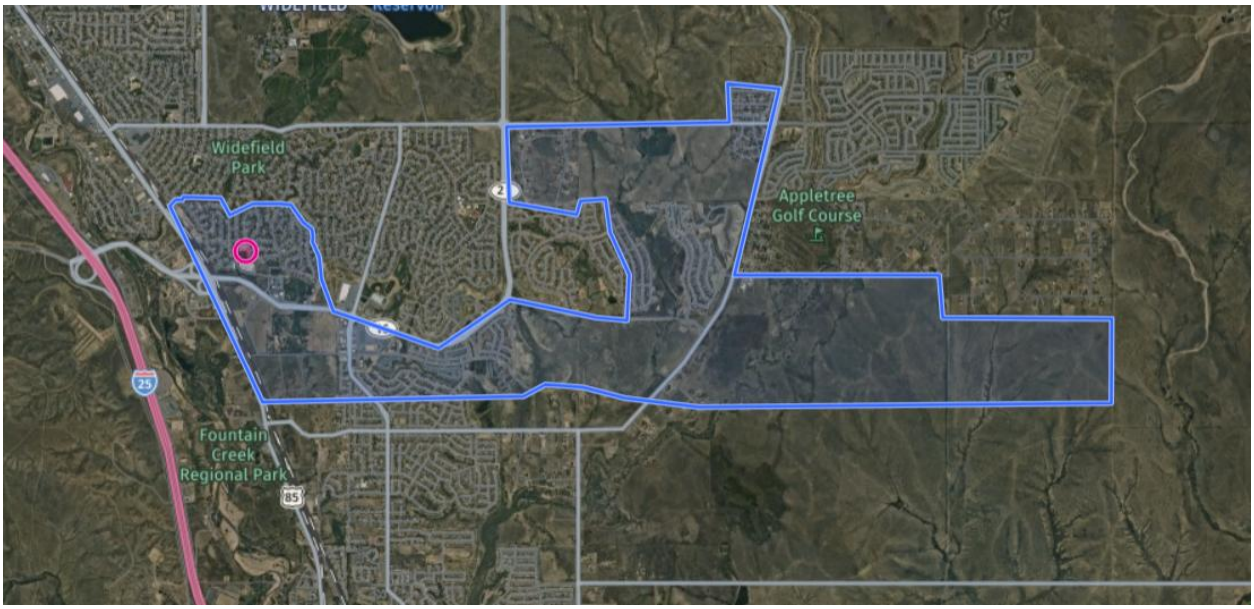
The Webster Elementary School expansion is expected to generate a net increase of approximately 754 weekday daily trips, with 249 of these trips occurring during the school's morning peak hour and 150 of these trips occurring during the school's afternoon peak hour. Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual, 11th Edition – Volume 1: User's Guide and Handbook*, 2021. **Table 1** summarizes the estimated trip generation for the Webster Elementary School Expansion. The trip generation worksheets are included in **Appendix B**. In addition, an hourly distribution table in 15-minute intervals is included in **Appendix C.**

Table 1 – Webster Elementary School Expansion Traffic Generation

Land Use and Size	Weekday Vehicle Trips						
	Daily	School AM Peak Hour			School PM Peak Hour		
		In	Out	Total	In	Out	Total
ITE Trip Generation							
(A) Elementary School (ITE 520) – Existing 518 Students	1,176	210	179	389	107	126	233
(B) Elementary School (ITE 520) – Future 850 Students	1,930	345	293	638	176	207	383
(C) Increase in ITE Trips	754	135	114	249	69	81	150
Site Specific Data – Existing 518 Students							
(D) Existing Counts Driveway Counts 518 Students		76	64	140	23	32	55
(E) Existing ROW Counts along Quebec St		57	41	98	37	48	85
School Expansion – 850 Students							
(F) Future Driveway Volumes *(F = D*1.64)*		125	105	230	38	52	90
(G) Future Quebec ROW Volumes *(G = E*1.64)*		93	67	160	60	79	139

4.2 Trip Distribution

Webster Elementary School serves the neighboring residential neighborhood to the north, south, and east of the site. As shown in the aerial clip below with the school's zoning boundary, most the school's attendance zone east of Powers Boulevard and south of Mesa Ridge Parkway is undeveloped land. The trip distribution is based on the existing driveway counts and the future residential developments that will be zoned for Webster Elementary School. A majority of the homes are within the two-mile radius. However, future residential development to the east will bring in the extra bus proposed with the school's expansion. Accounting for the existing school zone map, the school's trip distribution at the intersections in the study area is illustrated in **Figure 5.**

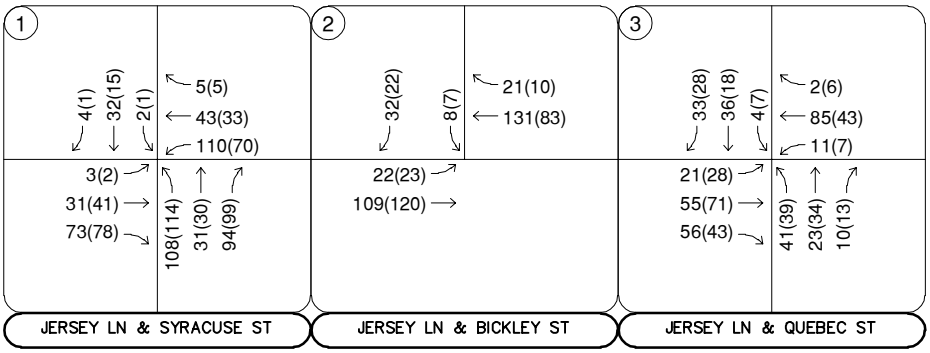


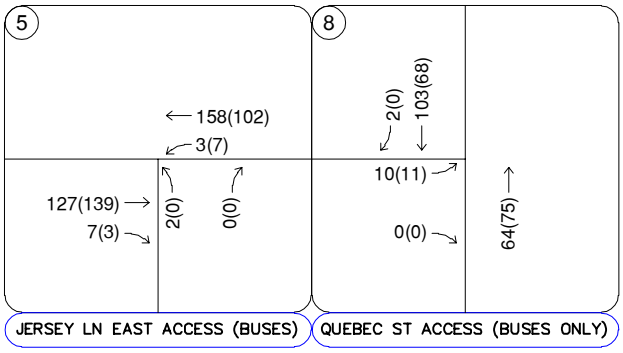
Webster Elementary School Boundary Map
(https://colorado.hometownlocator.com/schools/profiles,n,webster%20elementary%20school,z,80911,t,pb,i,1021068.cfm)

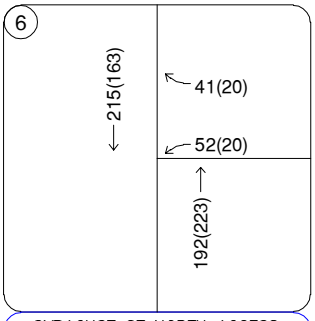
4.3 Total (Background Plus Project) Traffic

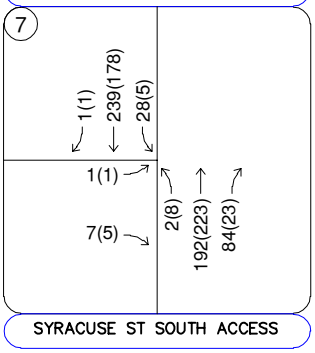
The remaining site generated traffic volumes associated with the Webster Elementary School expansion were added to the existing traffic volumes to represent estimated traffic conditions for a maximum enrollment of 850 students. These total vehicle traffic volumes for the study area are illustrated for the opening 2022 year in **Figures 6** while the total pedestrian volumes accounting for the school expansion are shown in **Figure 7**.

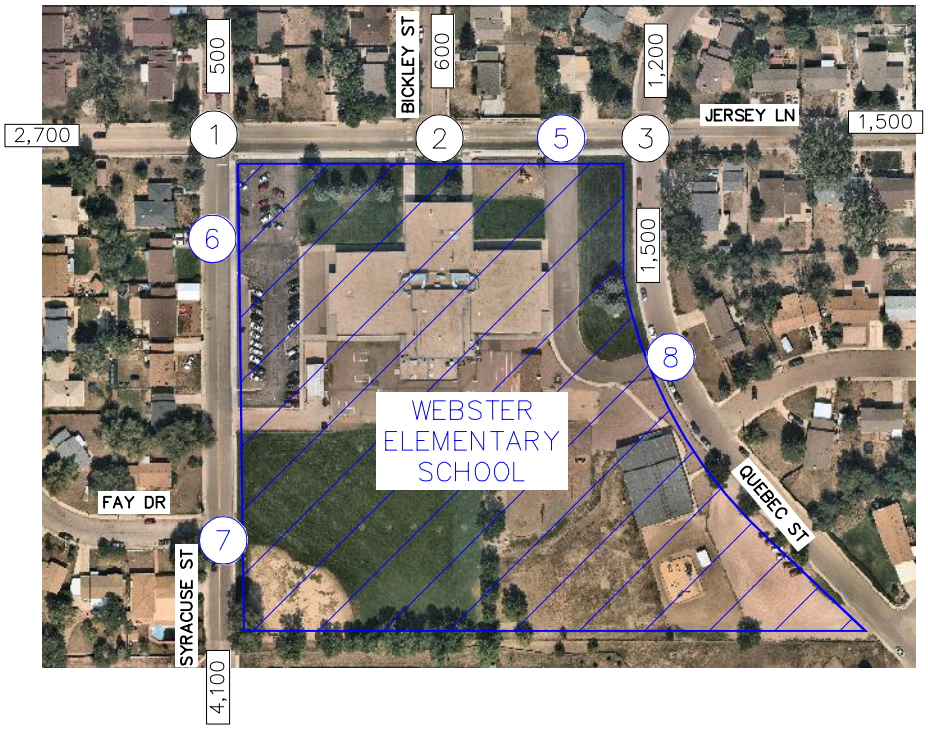
FIGURE 5
WEBSTER ELEMENTARY SCHOOL
EL PASO COUNTY, COLORADO
TRIP DISTRIBUTION







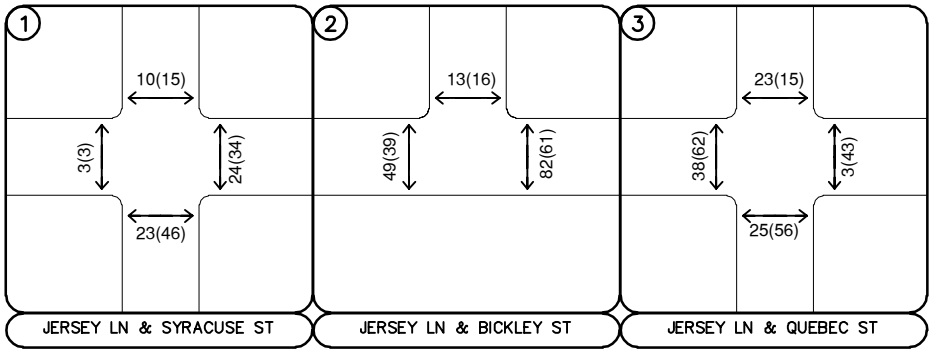




LEGEND

(X)	Study Area Key Intersection
(X)	School Accesses
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 6
WEBSTER ELEMENTARY SCHOOL
EL PASO COUNTY, COLORADO
2022 TOTAL TRAFFIC VOLUMES



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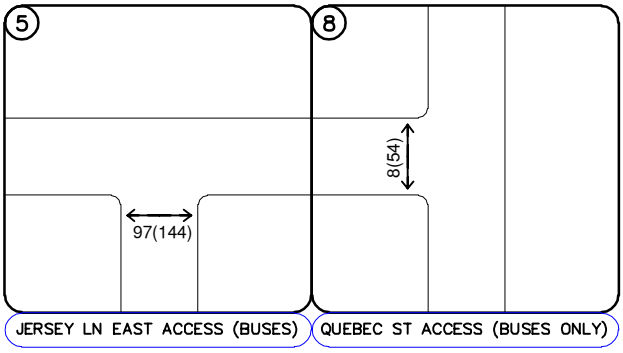
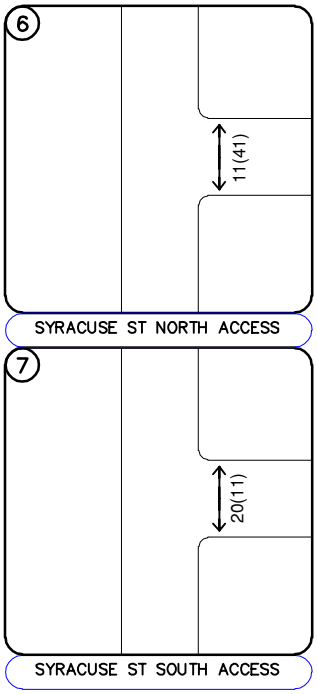
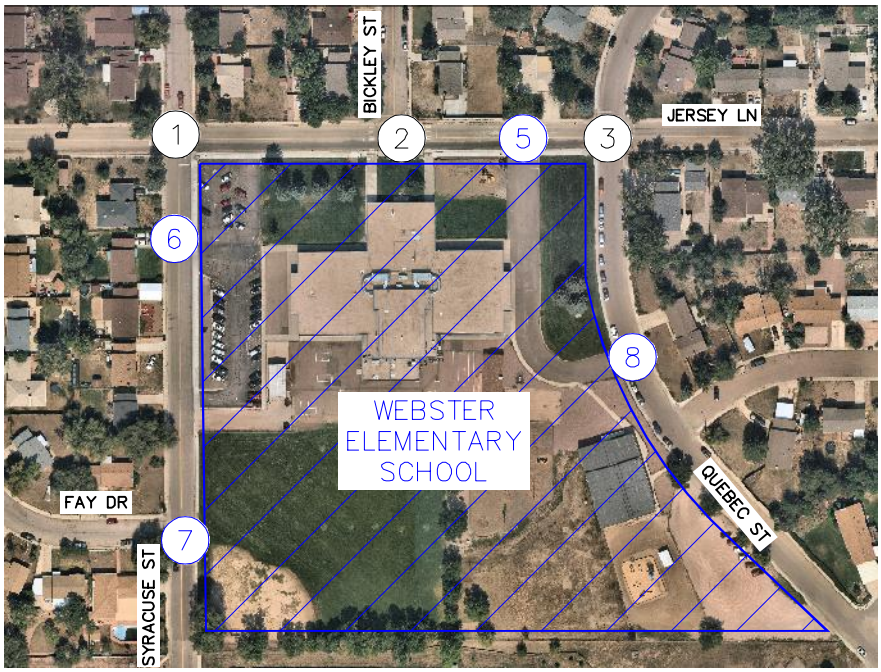






LEGEND

X — Study Area Key Intersection

X — School Accesses

XX(XX) — Weekday AM(PM) Peak Hour Pedestrian Volumes

FIGURE 7
WEBSTER ELEMENTARY SCHOOL
EL PASO COUNTY, COLORADO
2022 TOTAL PEDESTRIAN VOLUMES

Kimley»Horn

5.0 TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2022 development horizon at the identified key intersections. The acknowledged source for determining overall capacity is the current edition of the *Highway Capacity Manual (HCM)*[2].

5.1 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). For intersections and roadways in this study area, standard traffic engineering practice recommends overall intersection LOS D and movement/approach LOS E as the minimum desirable thresholds for acceptable operations. **Table 2** shows the definition of level of service for signalized and unsignalized intersections.

Table 2 – Level of Service Definitions

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (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

Definitions provided from the Highway Capacity Manual, Sixth Edition, Transportation Research Board, 2016.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. Under the unsignalized analysis, the LOS for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the intersection as a whole. LOS for signalized, roundabout, and all-way stop controlled intersections are defined for each approach and for the overall intersection.

[2] Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

5.2 Key Intersection Operational Analysis

Calculations for the operational level of service at the key intersections for the study area are provided in **Appendix D**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 2.** Existing peak hour factors were utilized in the existing and 2022 horizon analysis years. Synchro traffic analysis software was used to analyze the signalized, and unsignalized key intersections for HCM level of service. **Table 3** provides the level of service operational results of all the study intersections.

Table 3 – Existing and Future LOS Results

Intersection	Movement	Control	2021 Existing		2022 Total	
			AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)	AM Peak Hour LOS (Delay	PM Peak Hour LOS (Delay
Jersey Lane & Syracuse Street (#1)	**Overall**		**9.1 A**	**10.6 B**	**9.6 A**	**11.1 B**
	Eastbound Approach	STOP	8.1 A	9.2 A	8.5 A	9.5 A
	Westbound Approach	STOP	9.3 A	9.8 A	9.8 A	10.2 B
	Northbound Approach	STOP	9.6 A	11.7 B	10.2 B	12.5 B
	Southbound Approach	STOP	8.2 A	8.5 A	8.4 A	8.7 A
Jersey Lane & Bickley Street (#2)	**Signal (Overall)**		6.3 A	6.2 A	6.4 A	6.2 A
Jersey Lane & Quebec Street (#3)	**Overall**		**8.0 A**	**8.4 A**	**8.7 A**	**9.3 A**
	Eastbound Approach	STOP	8.0 A	8.8 A	8.8 A	9.8 A
	Westbound Approach	STOP	8.1 A	8.1 A	8.8 A	8.6 A
	Northbound Approach	STOP	8.0 A	8.4 A	8.8 A	9.3 A
	Southbound Approach	STOP	7.7 A	7.9 A	8.4 A	8.4 A
Jersey Lane Faculty Exit (#4)	**Northbound Approach**	STOP	0.0 A	10.7 B	Removed with School Expansion	
Jersey Lane East Access (#5) – (Inbound Bus Access)	**Westbound Left**		0.2 A	0.4 A	0.2 A	0.6 A
Syracuse Street North Access (#6) (Student drop-off/pick-up Exit)	**Westbound Approach**	STOP	12.5 B	11.9 B	14.3 B	12.4 B
Syracuse Street South Access (#7) (Student drop-off/pick-up entrance)	**Southbound Left**		1.0 A	0.2 A	Relocated	

Intersection	Movement	Control	2021 Existing		2022 Total	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
			LOS (Delay)	LOS (Delay)	LOS (Delay	LOS (Delay
Syracuse Street South Access (#7) (Student drop-off/pick-up entrance) – Proposed to align with Fay Drive	**Northbound Left**		Associated with School Expansion in 2022		8.1 A	7.9 A
	Eastbound Approach	STOP			11.3 B	10.6 B
	Southbound Left				8.3 A	8.1 A
Quebec Street Access (#8) – (Outbound Bus Access)	**Eastbound Approach**	STOP	9.7 A	9.5 A	10.6 B	10.3 B
Syracuse Street Faculty Entrance (#9)	**Southbound Left**		No Observed Vehicles		Removed with School Expansion	

Green = LOS A-C, Yellow = LOS D (Not Experienced), Orange = LOS E (Not Experienced), Red = LOS F (Not Experienced)

As shown in **Table 3**, the movements at all of the studied intersections and accesses currently operate acceptably and are expected to continue to operate acceptably with LOS B or better during the peak hours with the school expansion.

As shown in the table, the Faculty Accesses (Intersections #4 and #9) will be removed when the school is expanded and the parking lot along Syracuse Street is re-configured. In addition, the south entrance along Syracuse Street is proposed to align with Fay Drive when the drop-off/pick-up parking lot expands to the south.

Therefore, no modifications to the existing lane configurations and control are recommended at the study area key intersections. The existing street network is expected to be able to accommodate the increase in school traffic. However, to further identify the exiting only accesses and to restrict entering movements, R5-1 “Do Not Enter” signs could be installed at the approaches of the Syracuse Street North Access (#6) and the access along Quebec Street (#8). Likewise, to further identify the entrance only accesses and to restrict exiting movements, R6-1 “One Way” signs could be installed at the entering approaches of the Jersey Lane East Access (#5) and the relocated Syracuse Street South Access (#7). Lastly, R1-1 “Stop” signs could be installed on the exiting approaches of the Syracuse Street North Access (#6) and the Quebec Street Access (#8). The possible signing improvement options for the project are shown in **Figure 8**.

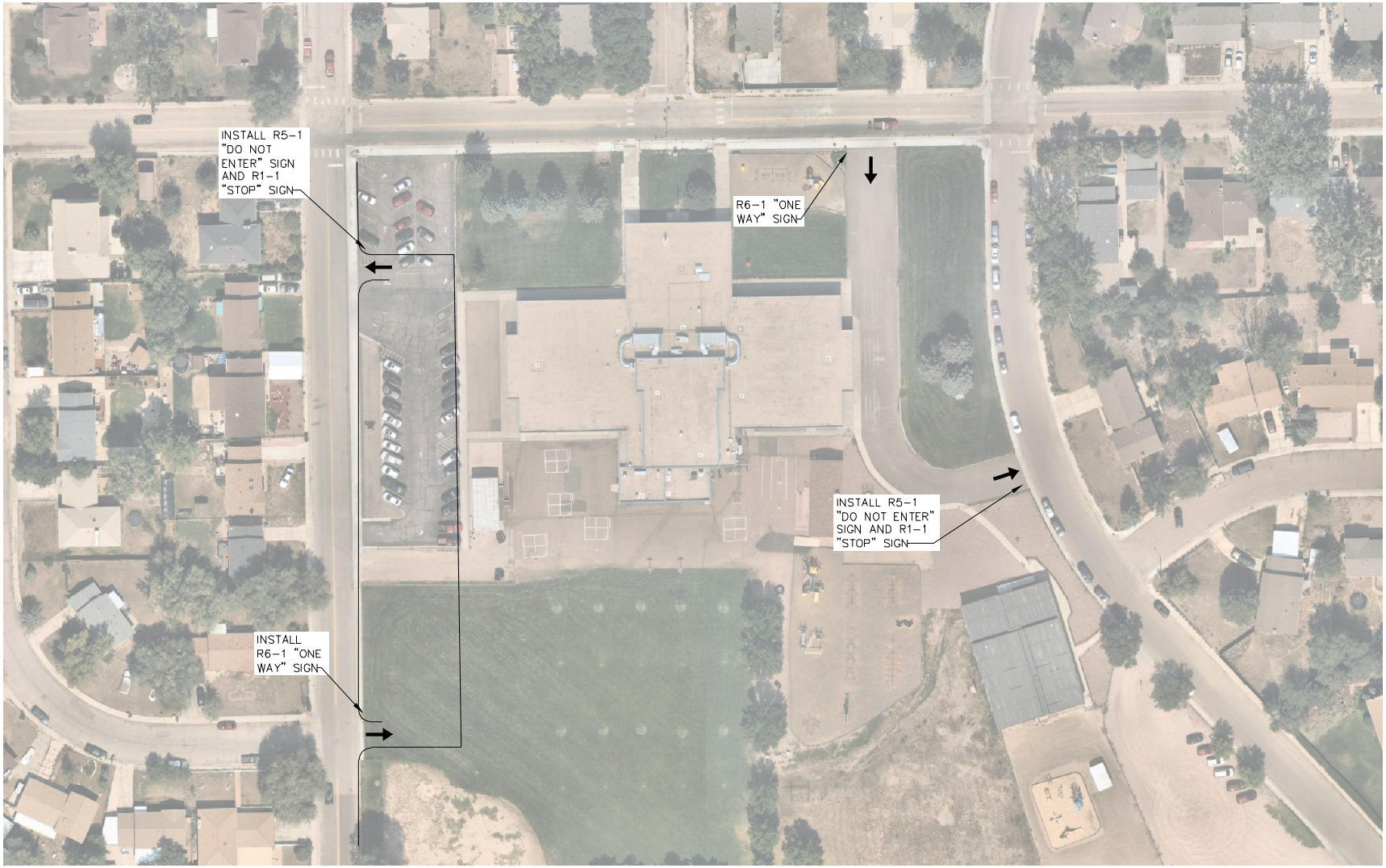


FIGURE 8
WEBSTER ELEMENTARY SCHOOL
EL PASO COUNTY, COLORADO
POTENTIAL IMPROVEMENTS

Kimley»Horn
NORTH
NTS 196341000

Kimley»Horn

In addition, exclusive left turn lanes are warranted for ingress turning volumes of 25 vehicles per hour or greater whereas exclusive right turn lanes are warranted for ingress turning volumes of 50 vph or greater along “Minor Arterial and Lower Classification”. Of note, the surrounding roadway network primarily consists of local streets without the implementation of any designated left and right turn lanes; therefore, auxiliary turn lanes are not recommended at the studied intersections. Further, all studied intersections are expected to operate at LOS B or better during the peak hours.

5.3 Pedestrian and Bicycle Evaluation

There are existing sidewalks located along both sides of Jersey Lane, Syracuse Street, Bickley Street, and Quebec Street. East-west crosswalk pavement markings are provided along Syracuse Street and Quebec Street intersecting with Jersey Lane. In addition, North-south crosswalk pavement markings are provided along Jersey Lane at Bickley Street. Even though the crosswalk pavement markings are provided on only some of the intersection legs, crossings can occur and are only allowed at any leg of the Jersey Lane intersections with Syracuse Street, Bickley Street, and Quebec Street. There are currently no on-street bike lanes along any of the surrounding roadways.

5.4 Access Spacing and Internal Roadway Classifications

The studied roadways all meet the characteristics of as urban local roadway with exception of the Syracuse Street south of Jersey Lane. According to El Paso Engineering Criteria Manual (ECM), spacing of roads along local roadways is 175 feet, whereas spacing along collector residential roadways is 330 feet when intersecting with local roadways.

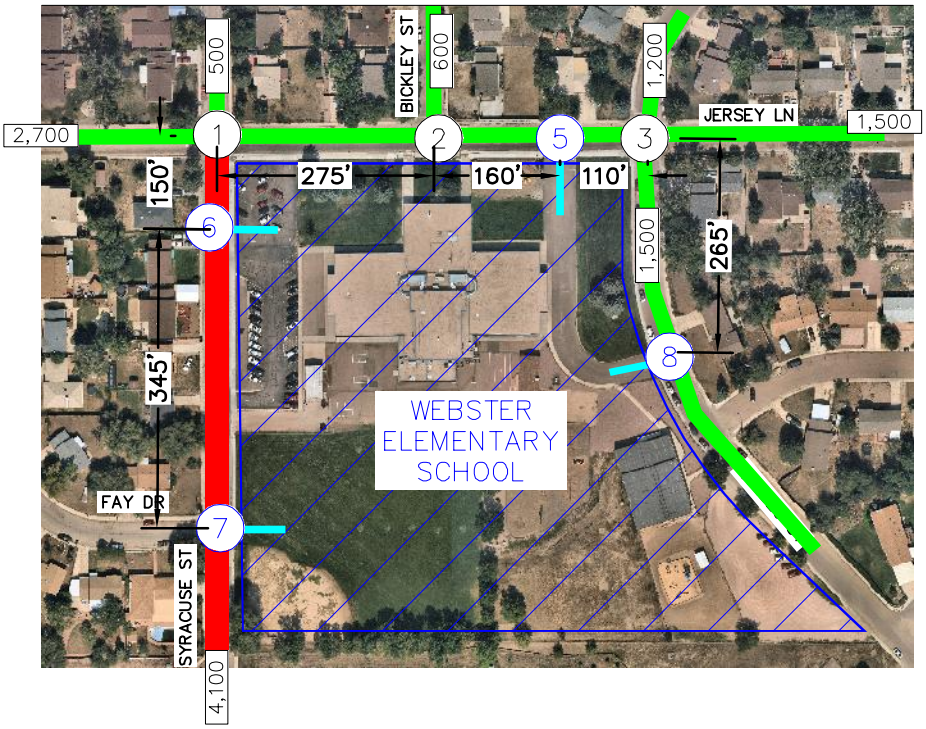
Three existing accesses to remain and one proposed relocated access do not meet the meet the intersection spacing guidelines outlined in the ECM with the exception of three locations. The spacing between Bickley Street and the Bus Entrance (#5) along Jersey Lane provides 160 feet of spacing (measured center to center) and the access spacing between the Bus Entrance and Quebec Street provides 110 feet of spacing (measured center to center). This Bus Entrance access is existing, operates acceptably, has appropriate sight distances, and it is an inbound only access.

The Bus Exit (#8) along Quebec Street is located approximately 100 feet north of Quebec Circle. The access along Quebec Street is existing, operates acceptably, has appropriate sight distances, and is an exit only access.

The existing north access along Syracuse Street only provides 150 feet (measured center to center) to Jersey Lane instead of ECM standards of 330 feet. This access along Syracuse Street has been constructed to substandard access spacing but operates acceptably, has appropriate sight distances, and it is exit only access. Further, the character of this roadway in this segment aligns more to a local street and not a collector street as it has driveways and houses fronting Syracuse Street surrounding this location.

The future inbound only access aligning with Fay Drive along Syracuse Street is located approximately 345 feet (measured center to center) from the North Access. Whereas the Fay Drive alignment access is located approximately 215 feet (measured center to center) from the James Madison Charter Academy Access. Therefore, a deviation will need to be provided requesting for this proposed access to remain at the proposed location. The south access along Syracuse Street is expected to operate acceptably, has appropriate sight distances, and is an entrance only access. Further, the character of this roadway in this segment aligns more to a local street and not a collector street as it has driveways and houses fronting along Syracuse Street surrounding this location.

The average daily traffic (ADT) among the studied roadways is expected to be less than 3,000 vehicles per day (vpd) with exception of Syracuse Street south of Jersey Lane. The south leg of Jersey Lane and Syracuse Street has a projected ADT of 4,100 vpd which matches the classification of an urban residential collector roadway. **Figure 9** illustrates the street classification map and the access spacing for the surrounding area.



LEGEND

- URBAN RESIDENTIAL COLLECTOR
- URBAN LOCAL
- PRIVATE ACCESS
- XX,X00 ESTIMATED 2023 DAILY TRAFFIC VOLUME

FIGURE 9
WEBSTER ELEMENTARY SCHOOL
EL PASO COUNTY, COLORADO
ROADWAY CLASSIFICATION MAP

5.5 Sight Distance Evaluation

It is recommended that sight triangles be provided at all site access points to give drivers exiting the site a clear view of oncoming traffic. Landscaping and objects within sight triangles must not obstruct drivers' views of the adjacent travel lanes. ECM design intersection sight distances for left turn from stop at all the study intersection is recommended to provide an intersection sight distance of 280 feet. Of note, because the intersections are between two local roadways or a local and an access, the distance from the driver's eye to the edge of pavement can be reduced to 10 feet (footnote 2 in Table 2-21 of the ECM) and the sight distance can be measured to the centerline of the road. It is believed that all existing intersections provide the necessary sight distance.

5.6 Site Circulation Evaluation

Based on the videos and counts at the study intersections, the Syracuse Street North Access and South Access are used for student drop-off/pick-up on the west side of the school. Vehicles enter the south access, circulate counterclockwise and drop off or pick up the student, and then exit from the north access along Syracuse Street. With this circulation pattern for student drop-offs and pick-ups, the passenger side of vehicles is appropriately located on the side of the school to minimize vehicle doors opening on the side with circulating traffic. Two vehicles were observed extending beyond the student drop-off area and to the south along Syracuse Street during the arrival morning peak hour. Likewise, approximately 10 vehicles were observed extending beyond the student pick-off area and to the south along Syracuse Street during the dismissal afternoon peak hour.

The existing parking lot to the north of the designated student drop-off and pick-up area is intended for faculty and generated negligible volumes during the school's peak morning and afternoon hours. Typically, faculty and staff arrive prior to student drop-off and depart after student pick-up. Faculty enter from the Syracuse Street Faculty Entrance and circulate counterclockwise while exiting from the Jersey Lane Faculty Exit. Of note, vehicle traffic was not observed entering the north access along Syracuse Street during the peak hours of the school traffic, and this portion of the parking lot will be removed with the expansion of the school.

With the expansion of the school, the drop-off and pick-up parking lot along Syracuse Street will expand to the north and the south while the faculty parking lot located on the southeast corner of

the Jersey Lane and Syracuse Street intersection will be removed. The expansion of the drop-off and pick-up parking lot will provide additional parking for the faculty/staff and account for the increase length in the drop-off/pick-up zone with the proposed increase in students. The entrance to the parking lot is proposed to be moved to the south and align with Fay Drive. The circulation will remain the same with vehicles entering at the south access through the parking lot and exit to the north. Routing plans with law enforcement are an ongoing discussion and will be continued in the future.

The North Carolina Department of Transportation MSTA School Traffic Calculator was used to determine the average queue length for the existing and future enrollment. Based on 518 students enrolled, the queue is projected to be 1,315 feet, approximately 60 vehicles (average car length of 22 feet). There is currently 270 feet (12 vehicles) able to stack at the existing drop-off/pick-up zone within the parking lot located along Syracuse Street. The future 850 student enrollment is anticipated to have an average queue length of 2,150 feet (98 vehicles). The proposed drop-off/pick-up zone within the parking lot along Syracuse Street will provide a length of 450 feet (20 vehicles) for vehicles to queue. In addition, the existing gravel parking lot along Quebec Street will provide 10 vehicles to stack on-site. In summary, the existing west parking lot currently accommodates approximately 12 vehicles for student drop off/pick up while the expanded parking lot will be able to accommodate approximately 20 vehicles for student drop off/pick up. Further, the existing gravel parking lot along Quebec Street is planned for future student drop off/pick up and will be able to accommodate approximately 10 vehicles to stack on-site. The expanded west parking lot and the use of the southeast gravel lot accounts for increase in student drop off/pick up from 12 vehicles of stacking to approximately 30 vehicles. This is an increase of 150 percent compared to existing conditions. The remainder of drop-offs/pick-ups is occurring along the public street right-of-way (ROW). The NCDOT MSTA queue sheets are provided in **Appendix E.**

The east access along Jersey Street is designated for school buses entering the bus drop-off/pick-up zone and the access along Quebec Street is designated for buses exiting the school site. Five (5) school buses accommodate the existing school enrollment of 518 students with an additional bus used for the day care center. The future enrollment is anticipated to increase the school bus number to six (6) and still allow the one (1) day care bus to use the existing bus loop. The bus loop provides approximately 370 feet of stacking length on-site, which will accommodate approximately 10 medium sized school buses (standard school bus is 35 feet long) or seven (7)

large sized school buses (45 feet long). Therefore, the seven (7) buses planned for the future school expansion will remain within the on-site queueing location.

Of note, many drop-offs/pick-ups are occurring along the public street right-of way surrounding the elementary school. As discussed above, minimal student drop-off and pick-ups occur along Syracuse Street. However, it was observed that parents park on the north side of Jersey Lane while the south side of Jersey Lane is restricted with traffic cones. Several vehicles were observed queuing on Bickley Street for student pick-ups. Quebec Street was fairly well utilized for student pick-up and drop-offs while several faculty members seem to utilize parking on Quebec Street. The following recommendations are intended to improve safety and site circulation at the school:

- To mitigate existing conditions and future enrollment capacity of 850 students, the following improvements may be considered by the school:
    - Provide additional school personnel to direct parents with the student drop-off and pick-up circulation. This would potentially allow for additional vehicles to enter the drop-off/pick-up zone to minimize drivers from using other means of drop-off/pick-up in the public right-of-way (ROW) of the adjacent streets.
    - The school could encourage more pedestrian and bicycle traffic and discourage vehicular traffic to reduce the number of vehicle trips to and from the school. Programs could be developed to incentivize reducing single family vehicle trips such as carpooling, bicycle and pedestrian usage. In addition, providing sufficient, convenient, and safe bicycle storage could encourage more bicycle usage.

There is not a need for any right-of-way dedication or preservation along any of the existing study area roadways due to these roadways being built to the ultimate street sections. Further, the study area intersections operate acceptably with level of service B or better during the peak hours.

5.7 Safety Analysis

As requested by El Paso County, a Safety Analysis was performed for the study area roadways and intersections fronting the school. Crash data was obtained for the most recent timeframe available from 207 to 2019, as provided in **Appendix F**. A total of four (4) crashes have been reported with one (1) crash in 2017, one (1) crash in 2018, and two (2) crashes in 2019. None of the four crashes results in a fatality, one (1) crash resulted in injury while the other three (3) resulted in property damage only (PDO). The cross streets for the crashes occurred at Jersey Lane/Bickley Street (1), Jersey Lane/Fay Drive (2), and Fay Drive/Syracuse Street (1). All of them occurred in the daylight and one involved a bicycle.

5.8 Road Impact Fees

Road impact fees were evaluated based on the El Paso County Road Impact Fee Schedule. Based on these fee schedule guidelines, the fee per thousand square feet is $3,372. Therefore, the road impact fee for the proposed 18,500 square feet of elementary school expansion is expected to be $62,382. Road impact fee calculations are shown in **Table 4**.

Table 4 – Road Impact Fees

Use	Square Feet	Fee / KSF	Total Fee
Elementary School Expansion	18,500	$3,372	$62,382

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this report, Kimley-Horn believes the Webster Elementary School expansion project will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following conclusions and recommendations:

- With the expansion of the school, the drop-off and pick-up parking lot along Syracuse Street will expand to the north and the south while the faculty parking lot located on the southeast corner of the Jersey Lane and Syracuse Street intersection will be removed. The expansion of the drop-off and pick-up parking lot will provide additional parking for the faculty/staff and account for the increase in drop-off/pick-up with the proposed increase in students. The entrance to the parking lot is proposed to be moved and align with Fay Drive. The circulation will remain the same with vehicles entering at the south access through the parking lot and exiting to the north.

- The movements at all studied intersections and accesses currently operate acceptably and are expected to continue to operate acceptably with LOS B or better during the peak hours with the school expansion. Therefore, no modifications to the existing lane configurations and control are recommended at the study area key intersections. The existing street network is expected to accommodate the increase in school traffic. However, to further identify the exiting only accesses and to restrict entering movements, R5-1 “Do Not Enter” signs could be installed at the approaches of the Syracuse Street North Access (#6) and the access along Quebec Street (#8). Likewise, to further identify the entrance only accesses and to restrict exiting movements, R6-1 “One Way” signs could be installed at the entering approaches of the Jersey Lane East Access (#5) and the relocated Syracuse Street South Access (#7). Lastly, R1-1 “Stop” signs could be installed on the exiting approaches of the Syracuse Street North Access (#6) and the Quebec Street Access (#8).

- To mitigate existing conditions and future enrollment capacity of 850 students, the following improvements may be considered by the school:
  - Provide additional school personnel to direct parents with the student drop-off and pick-up circulation. This would potentially allow for additional vehicles to enter the drop-off/pick-

up zone to minimize drivers from using other means of drop-off/pick-up in the public right-of-way (ROW) of the adjacent streets.

- The school could encourage more pedestrian and bicycle traffic and discourage vehicular traffic to reduce the number of vehicle trips to and from the school. Programs could be developed to incentivize reducing single family vehicle trips such as carpooling, bicycle and pedestrian usage. In addition, providing sufficient, convenient, and safe bicycle storage could encourage more bicycle usage.

- Any onsite or offsite improvements will be incorporated into the Civil Drawings and conform to standards of the El Paso County and the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

Deviations Required

- A deviation will be provided requesting approval for an inbound only access along Syracuse Street for the future access aligning with Fay Drive. The entrance only access along Syracuse Street will be located approximately 215 feet north of James Madison Charter Academy Access. According to El Paso County ECM section 2.2.5.D, spacing along an urban residential collector roadway shall be spaced 330 feet to a local roadway. Therefore, a deviation will need to be provided requesting for this proposed access to remain at the proposed location. The south access along Syracuse Street (aligning with Fay Drive) is expected to operate acceptably, has appropriate sight distances, and is an entrance only access. Further, the character of this roadway in this segment aligns more to a local street and not a collector street as it has driveways and houses fronting along Syracuse Street surrounding this location.

APPENDICES

APPENDIX A

Intersection Count Sheets

Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
AM Peak
Jersey Lane and Syracuse St

File Name : Jersey and Syracuse AM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 1

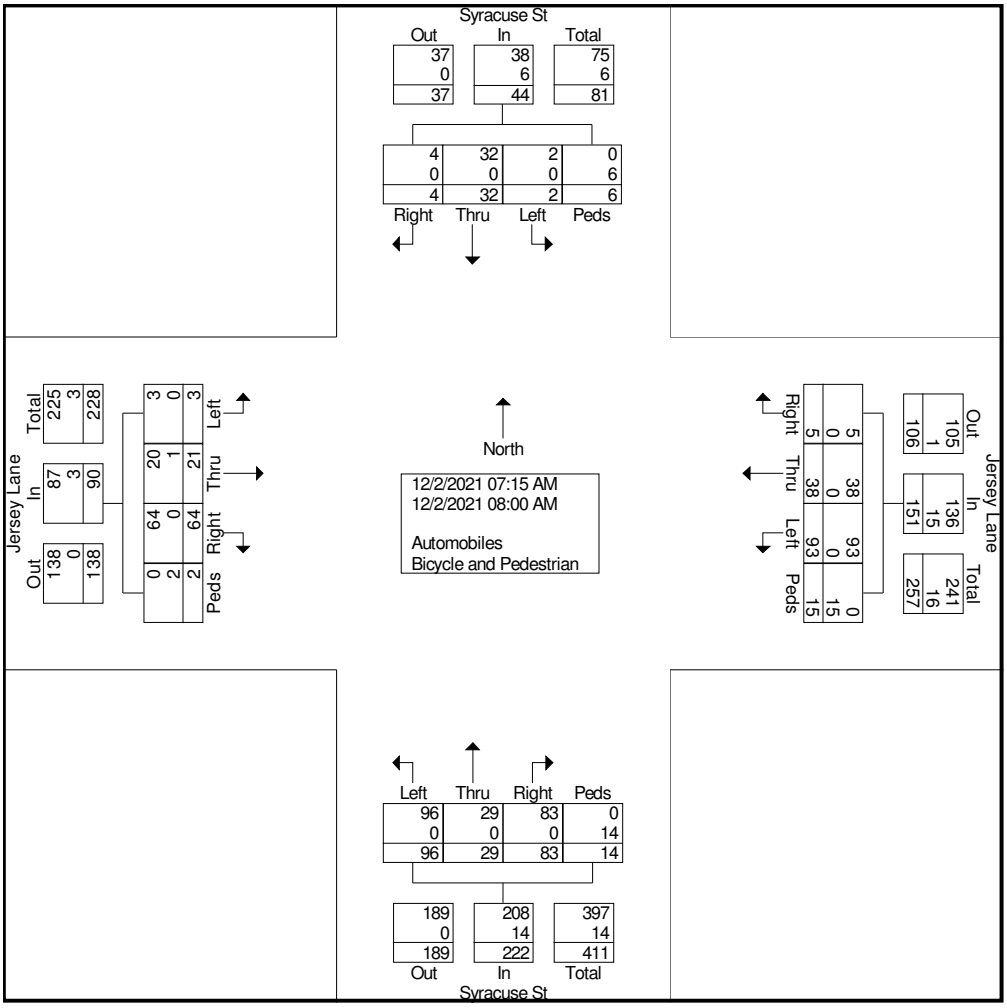
Groups Printed- Automobiles - Bicycle and Pedestrian

	Jersey Lane Eastbound					Jersey Lane Westbound					Syracuse St Northbound					Syracuse St 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
07:15 AM	1	2	28	0	31	26	5	0	0	31	41	10	22	0	73	0	18	0	0	18	153
07:30 AM	1	7	13	2	23	18	13	0	9	40	16	8	19	4	47	0	7	0	2	9	119
07:45 AM	0	6	11	0	17	17	11	2	3	33	23	6	24	9	62	0	1	3	1	5	117
Total	2	15	52	2	71	61	29	2	12	104	80	24	65	13	182	0	26	3	3	32	389
08:00 AM	1	6	12	0	19	32	9	3	3	47	16	5	18	1	40	2	6	1	3	12	118
Grand Total	3	21	64	2	90	93	38	5	15	151	96	29	83	14	222	2	32	4	6	44	507
Apprch %	3.3	23.3	71.1	2.2		61.6	25.2	3.3	9.9		43.2	13.1	37.4	6.3		4.5	72.7	9.1	13.6		
Total %	0.6	4.1	12.6	0.4	17.8	18.3	7.5	1	3	29.8	18.9	5.7	16.4	2.8	43.8	0.4	6.3	0.8	1.2	8.7	
Automobiles	3	20	64	0	87	93	38	5	0	136	96	29	83	0	208	2	32	4	0	38	469
% Automobiles	100	95.2	100	0	96.7	100	100	100	0	90.1	100	100	100	0	93.7	100	100	100	0	86.4	92.5
Bicycle and Pedestrian	0	1	0	2	3	0	0	0	15	15	0	0	0	14	14	0	0	0	6	6	38
% Bicycle and Pedestrian	0	4.8	0	100	3.3	0	0	0	100	9.9	0	0	0	100	6.3	0	0	0	100	13.6	7.5

Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
AM Peak
Jersey Lane and Syracuse St

File Name : Jersey and Syracuse AM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 2

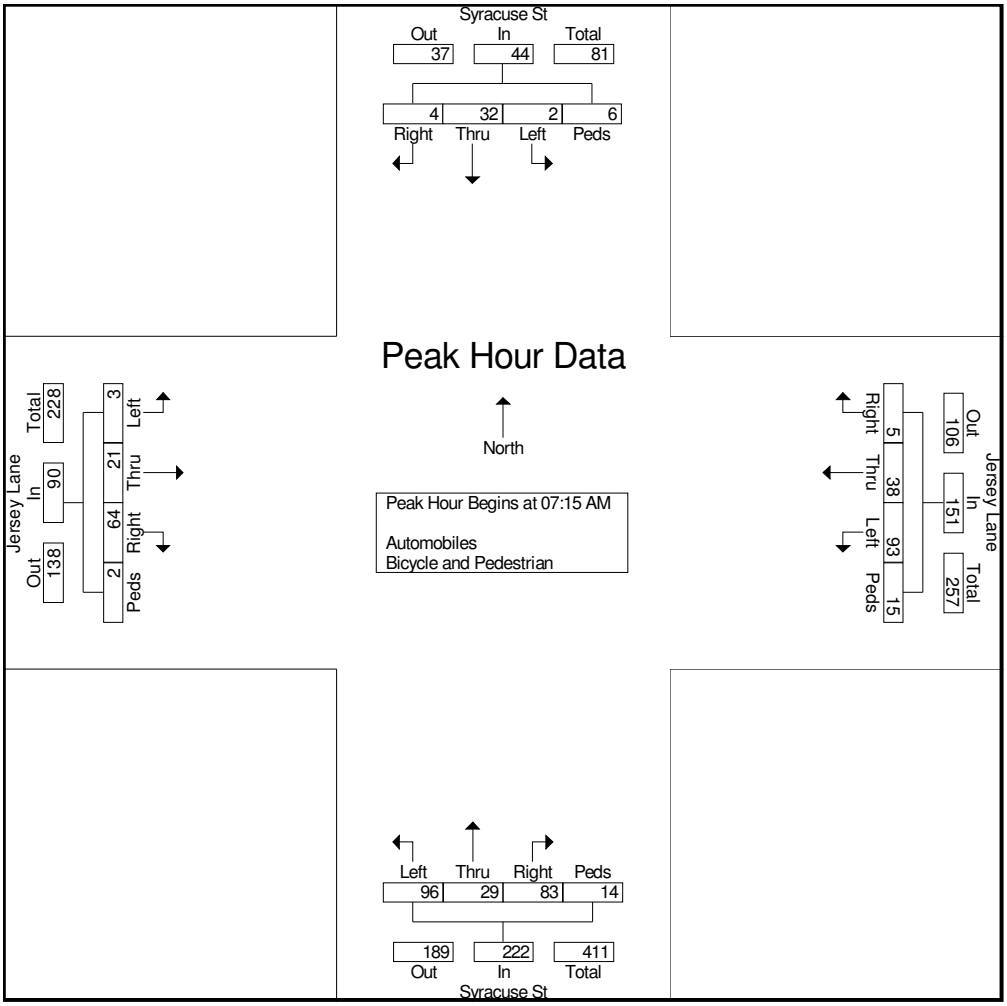


Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
AM Peak
Jersey Lane and Syracuse St

File Name : Jersey and Syracuse AM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 3

	Jersey Lane Eastbound					Jersey Lane Westbound					Syracuse St Northbound					Syracuse St 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 07:15 AM to 08:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**1**	2	**28**	0	**31**	26	5	0	0	31	**41**	**10**	22	0	**73**	0	**18**	0	0	**18**	**153**
07:30 AM	1	**7**	13	**2**	23	18	**13**	0	**9**	40	16	8	19	4	47	0	7	0	2	9	119
07:45 AM	0	6	11	0	17	17	11	2	3	33	23	6	**24**	**9**	62	0	1	**3**	1	5	117
08:00 AM	1	6	12	0	19	**32**	9	**3**	3	**47**	16	5	18	1	40	**2**	6	1	**3**	12	118
Total Volume	3	21	64	2	90	93	38	5	15	151	96	29	83	14	222	2	32	4	6	44	507
% App. Total	3.3	23.3	71.1	2.2		61.6	25.2	3.3	9.9		43.2	13.1	37.4	6.3		4.5	72.7	9.1	13.6		
PHF	.750	.750	.571	.250	.726	.727	.731	.417	.417	.803	.585	.725	.865	.389	.760	.250	.444	.333	.500	.611	.828



Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
PM Peak
Jersey Lane and Syracuse St

File Name : Jersey and Syracuse PM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 1

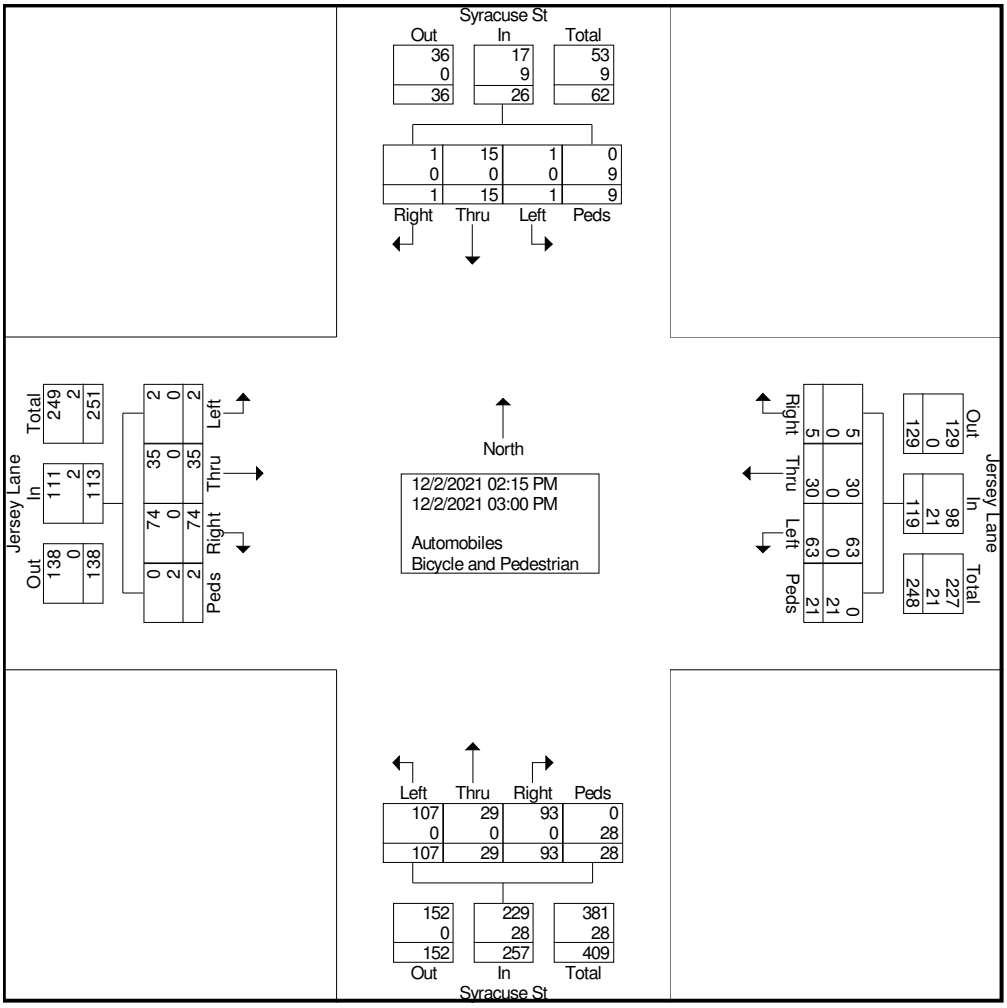
Groups Printed- Automobiles - Bicycle and Pedestrian

	Jersey Lane Eastbound					Jersey Lane Westbound					Syracuse St Northbound					Syracuse St 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
02:15 PM	1	6	16	0	23	7	3	0	0	10	8	4	18	0	30	1	4	0	0	5	68
02:30 PM	1	7	23	2	33	10	5	2	10	27	14	5	17	16	52	0	2	0	2	4	116
02:45 PM	0	16	18	0	34	35	17	2	9	63	49	12	29	8	98	0	5	1	5	11	206
Total	2	29	57	2	90	52	25	4	19	100	71	21	64	24	180	1	11	1	7	20	390
03:00 PM	0	6	17	0	23	11	5	1	2	19	36	8	29	4	77	0	4	0	2	6	125
Grand Total	2	35	74	2	113	63	30	5	21	119	107	29	93	28	257	1	15	1	9	26	515
Apprch %	1.8	31	65.5	1.8		52.9	25.2	4.2	17.6		41.6	11.3	36.2	10.9		3.8	57.7	3.8	34.6		
Total %	0.4	6.8	14.4	0.4	21.9	12.2	5.8	1	4.1	23.1	20.8	5.6	18.1	5.4	49.9	0.2	2.9	0.2	1.7	5	
Automobiles	2	35	74	0	111	63	30	5	0	98	107	29	93	0	229	1	15	1	0	17	455
% Automobiles	100	100	100	0	98.2	100	100	100	0	82.4	100	100	100	0	89.1	100	100	100	0	65.4	88.3
Bicycle and Pedestrian	0	0	0	2	2	0	0	0	21	21	0	0	0	28	28	0	0	0	9	9	60
% Bicycle and Pedestrian	0	0	0	100	1.8	0	0	0	100	17.6	0	0	0	100	10.9	0	0	0	100	34.6	11.7

Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
PM Peak
Jersey Lane and Syracuse St

File Name : Jersey and Syracuse PM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 2

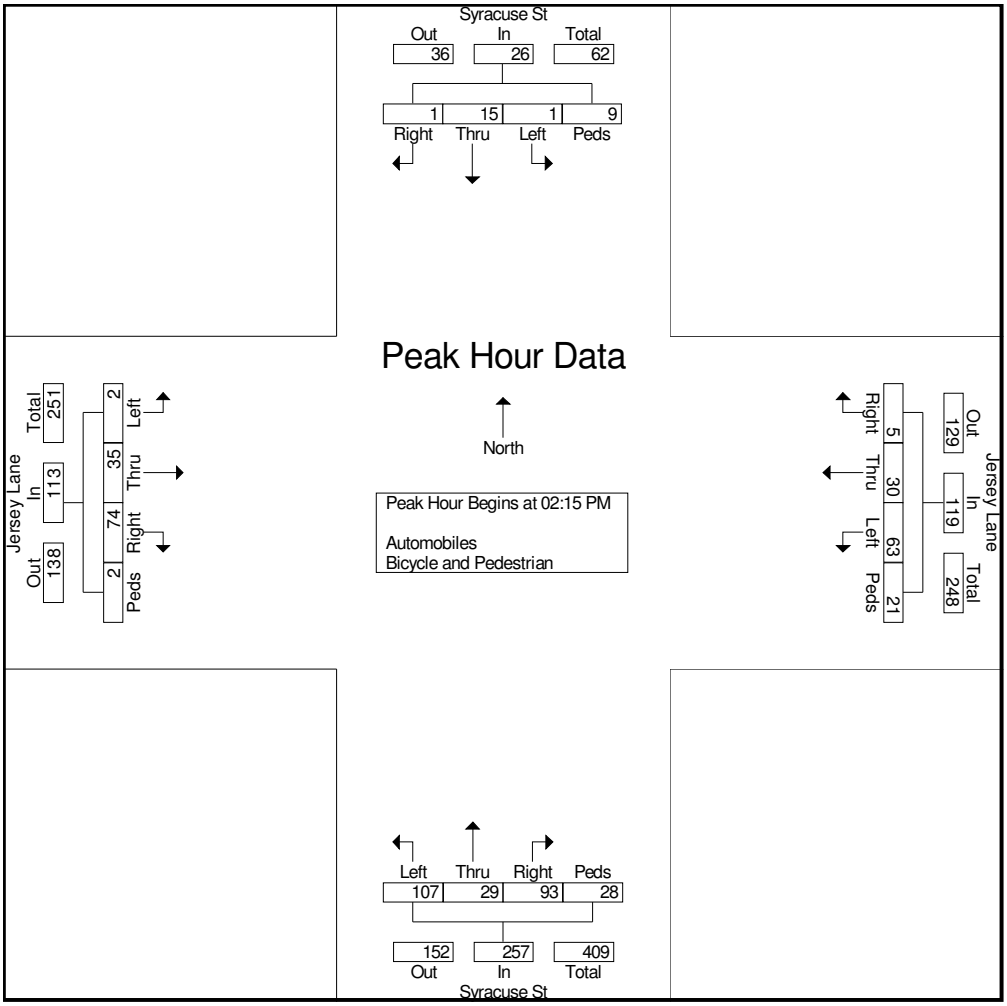


Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
PM Peak
Jersey Lane and Syracuse St

File Name : Jersey and Syracuse PM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 3

	Jersey Lane Eastbound					Jersey Lane Westbound					Syracuse St Northbound					Syracuse St 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 02:15 PM to 03:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:15 PM																					
02:15 PM	**1**	6	16	0	23	7	3	0	0	10	8	4	18	0	30	**1**	4	0	0	5	68
02:30 PM	1	7	**23**	**2**	33	10	5	**2**	**10**	27	14	5	17	**16**	52	0	2	0	2	4	116
02:45 PM	0	**16**	18	0	**34**	**35**	**17**	2	9	**63**	**49**	**12**	**29**	8	**98**	0	**5**	**1**	**5**	**11**	**206**
03:00 PM	0	6	17	0	23	11	5	1	2	19	36	8	29	4	77	0	4	0	2	6	125
Total Volume	2	35	74	2	113	63	30	5	21	119	107	29	93	28	257	1	15	1	9	26	515
% App. Total	1.8	31	65.5	1.8		52.9	25.2	4.2	17.6		41.6	11.3	36.2	10.9		3.8	57.7	3.8	34.6		
PHF	.500	.547	.804	.250	.831	.450	.441	.625	.525	.472	.546	.604	.802	.438	.656	.250	.750	.250	.450	.591	.625



Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
AM Peak
Jersey Lane and Bickley St

File Name : Jersey and Bickley AM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 1

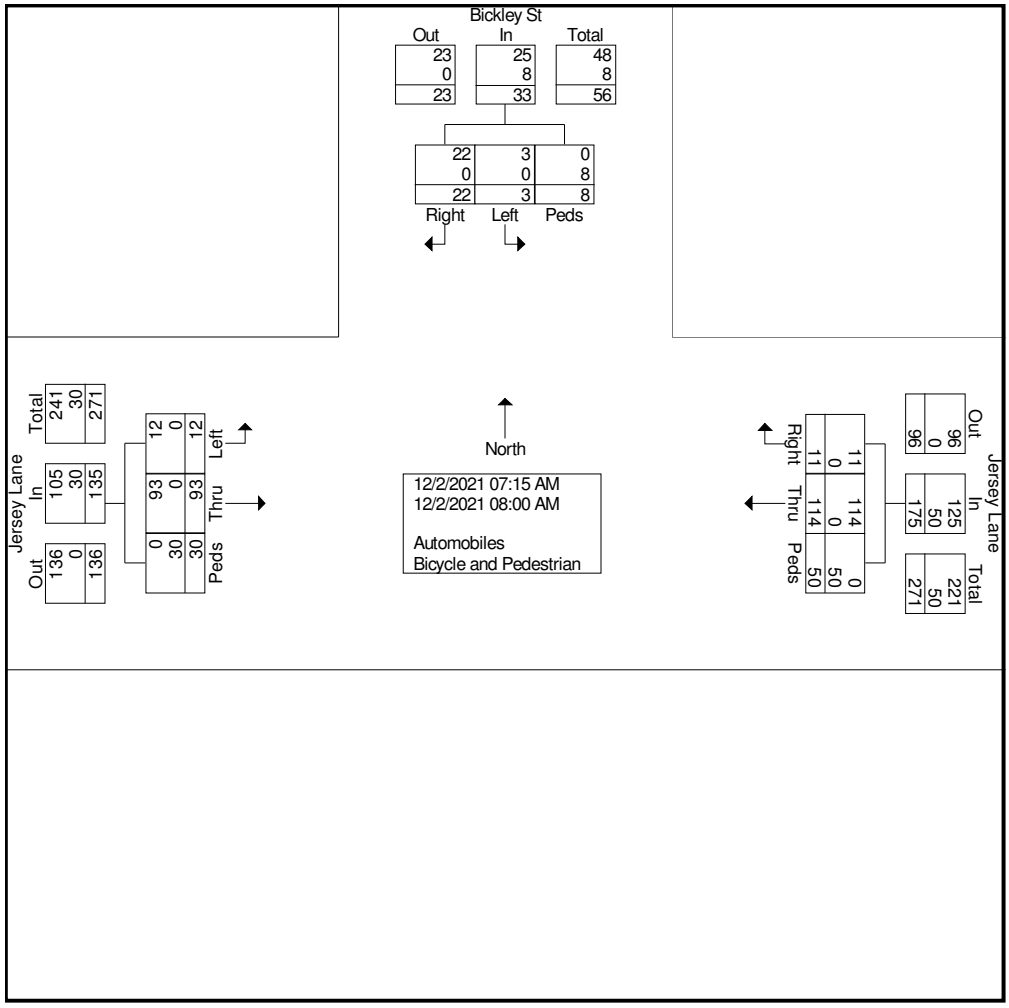
Groups Printed- Automobiles - Bicycle and Pedestrian

	Jersey Lane Eastbound				Jersey Lane Westbound				Bickley St Southbound				
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
07:15 AM	2	22	0	24	27	1	0	28	0	3	0	3	55
07:30 AM	2	20	2	24	25	0	5	30	0	5	0	5	59
07:45 AM	6	30	15	51	34	5	26	65	2	2	3	7	123
Total	10	72	17	99	86	6	31	123	2	10	3	15	237
08:00 AM	2	21	13	36	28	5	19	52	1	12	5	18	106
Grand Total	12	93	30	135	114	11	50	175	3	22	8	33	343
Apprch %	8.9	68.9	22.2		65.1	6.3	28.6		9.1	66.7	24.2		
Total %	3.5	27.1	8.7	39.4	33.2	3.2	14.6	51	0.9	6.4	2.3	9.6	
Automobiles	12	93	0	105	114	11	0	125	3	22	0	25	255
% Automobiles	100	100	0	77.8	100	100	0	71.4	100	100	0	75.8	74.3
Bicycle and Pedestrian	0	0	30	30	0	0	50	50	0	0	8	8	88
% Bicycle and Pedestrian	0	0	100	22.2	0	0	100	28.6	0	0	100	24.2	25.7

Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
AM Peak
Jersey Lane and Bickley St

File Name : Jersey and Bickley AM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 2

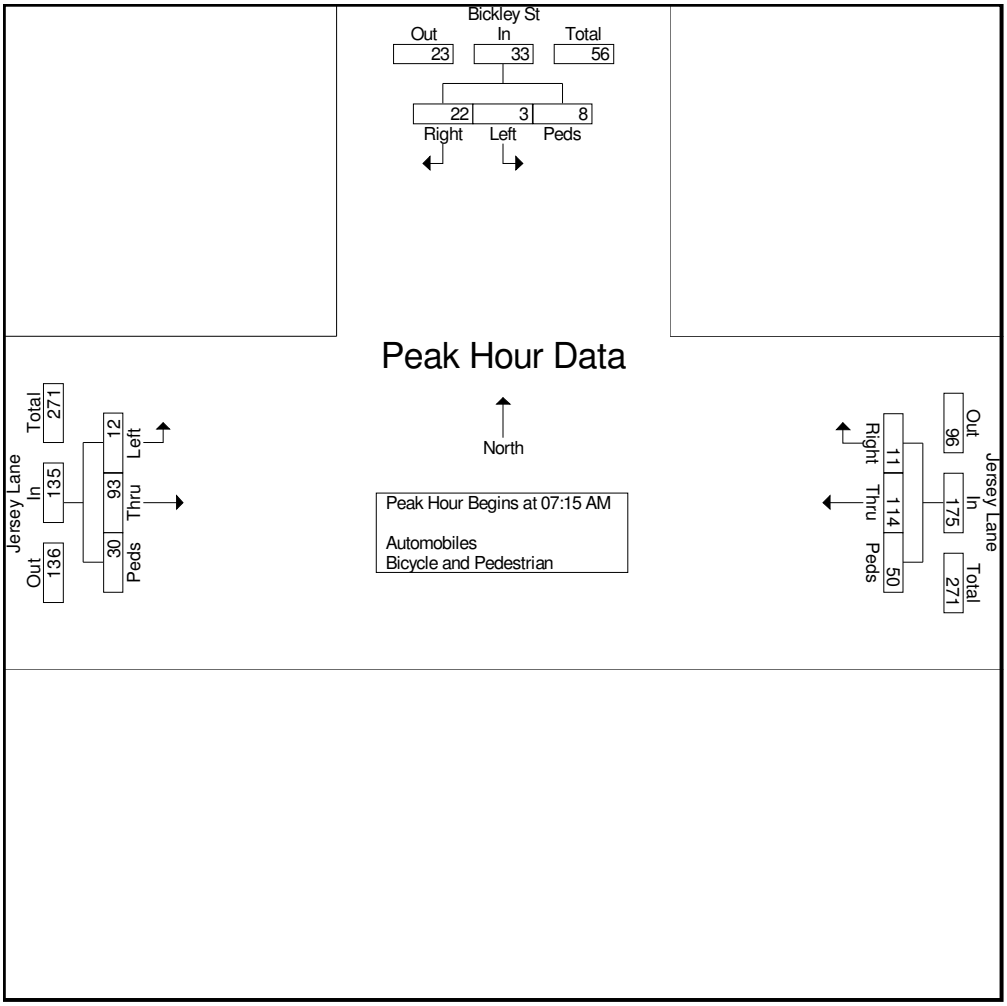


Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
AM Peak
Jersey Lane and Bickley St

File Name : Jersey and Bickley AM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 3

	Jersey Lane Eastbound				Jersey Lane Westbound				Bickley St Southbound				
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	2	22	0	24	27	1	0	28	0	3	0	3	55
07:30 AM	2	20	2	24	25	0	5	30	0	5	0	5	59
07:45 AM	**6**	**30**	**15**	**51**	**34**	**5**	**26**	**65**	**2**	2	3	7	**123**
08:00 AM	2	21	13	36	28	5	19	52	1	**12**	**5**	**18**	106
Total Volume	12	93	30	135	114	11	50	175	3	22	8	33	343
% App. Total	8.9	68.9	22.2		65.1	6.3	28.6		9.1	66.7	24.2		
PHF	.500	.775	.500	.662	.838	.550	.481	.673	.375	.458	.400	.458	.697



Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
PM Peak
Jersey Lane and Bickley St

File Name : Jersey and Bickley PM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 1

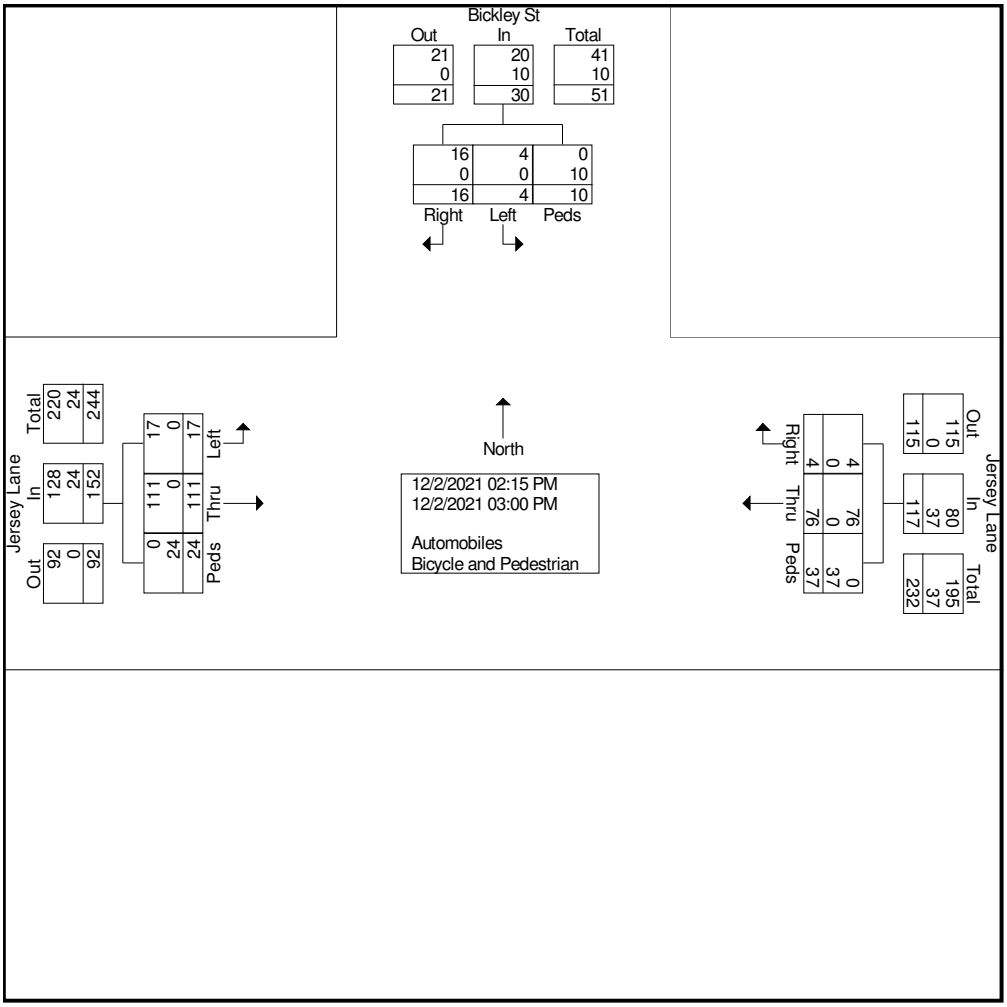
Groups Printed- Automobiles - Bicycle and Pedestrian

	Jersey Lane Eastbound				Jersey Lane Westbound				Bickley St Southbound				
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
02:15 PM	4	19	0	23	8	0	0	8	1	2	0	3	34
02:30 PM	5	19	15	39	15	1	26	42	0	3	7	10	91
02:45 PM	5	37	9	51	39	3	11	53	3	10	3	16	120
Total	14	75	24	113	62	4	37	103	4	15	10	29	245
03:00 PM	3	36	0	39	14	0	0	14	0	1	0	1	54
Grand Total	17	111	24	152	76	4	37	117	4	16	10	30	299
Apprch %	11.2	73	15.8		65	3.4	31.6		13.3	53.3	33.3		
Total %	5.7	37.1	8	50.8	25.4	1.3	12.4	39.1	1.3	5.4	3.3	10	
Automobiles	17	111	0	128	76	4	0	80	4	16	0	20	228
% Automobiles	100	100	0	84.2	100	100	0	68.4	100	100	0	66.7	76.3
Bicycle and Pedestrian	0	0	24	24	0	0	37	37	0	0	10	10	71
% Bicycle and Pedestrian	0	0	100	15.8	0	0	100	31.6	0	0	100	33.3	23.7

Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
PM Peak
Jersey Lane and Bickley St

File Name : Jersey and Bickley PM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 2

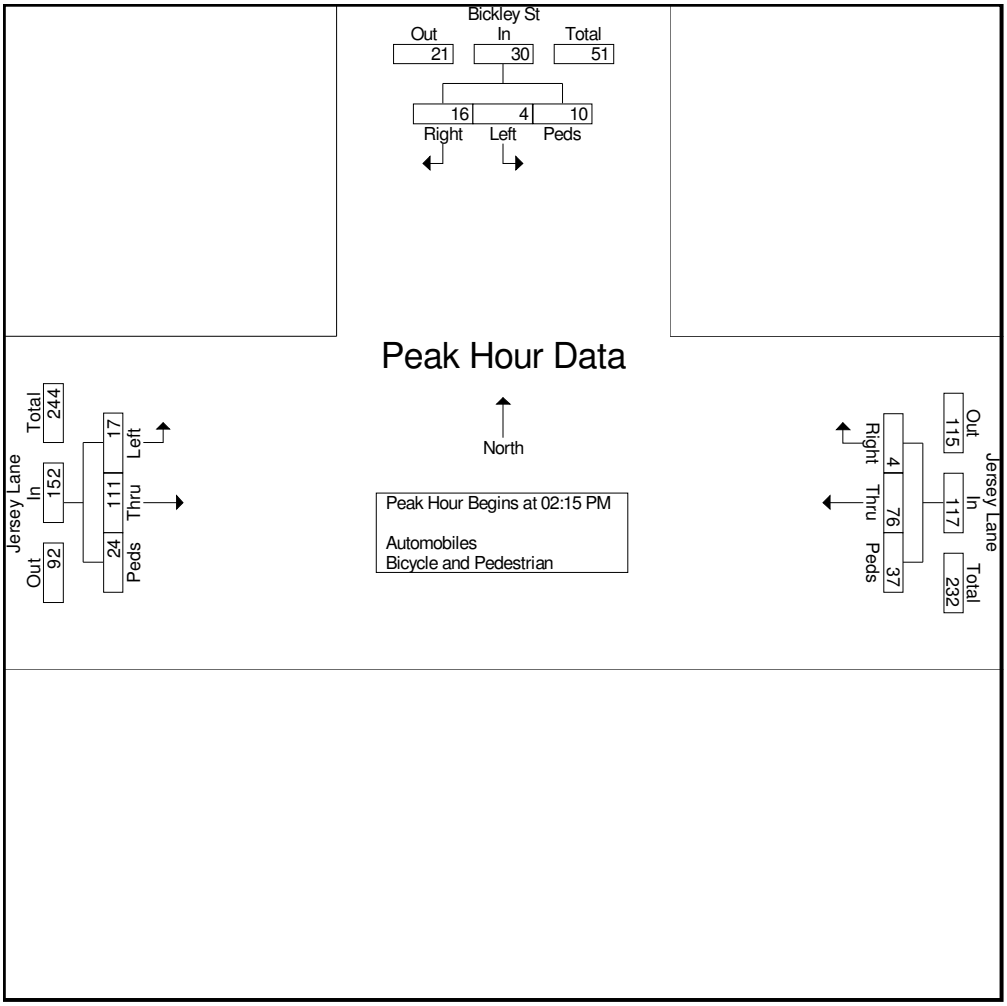


Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
PM Peak
Jersey Lane and Bickley St

File Name : Jersey and Bickley PM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 3

	Jersey Lane Eastbound				Jersey Lane Westbound				Bickley St Southbound				
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:15 PM to 03:00 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 02:15 PM													
02:15 PM	4	19	0	23	8	0	0	8	1	2	0	3	34
02:30 PM	**5**	19	**15**	39	15	1	**26**	42	0	3	**7**	10	91
02:45 PM	5	**37**	9	**51**	**39**	**3**	11	**53**	**3**	**10**	3	**16**	**120**
03:00 PM	3	36	0	39	14	0	0	14	0	1	0	1	54
Total Volume	17	111	24	152	76	4	37	117	4	16	10	30	299
% App. Total	11.2	73	15.8		65	3.4	31.6		13.3	53.3	33.3		
PHF	.850	.750	.400	.745	.487	.333	.356	.552	.333	.400	.357	.469	.623



Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
AM Peak
Jersey Lane and Quebec St

File Name : Jersey and Quebec AM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 1

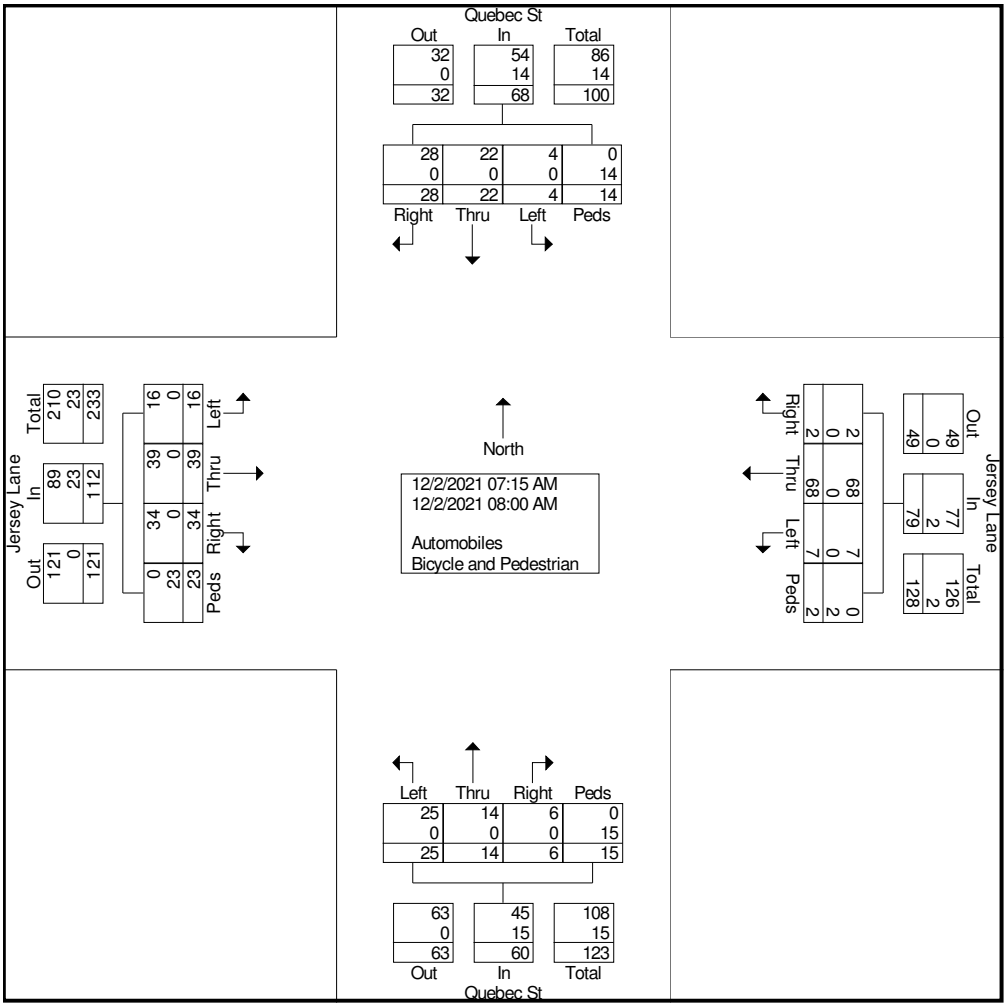
Groups Printed- Automobiles - Bicycle and Pedestrian

	Jersey Lane Eastbound					Jersey Lane Westbound					Quebec St Northbound					Quebec St 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
07:15 AM	5	13	4	0	22	1	16	0	0	17	2	0	0	0	2	1	4	9	0	14	55
07:30 AM	2	6	9	5	22	1	16	0	1	18	7	3	0	2	12	0	4	5	5	14	66
07:45 AM	6	8	11	9	34	4	24	1	1	30	10	6	3	13	32	1	10	7	4	22	118
Total	13	27	24	14	78	6	56	1	2	65	19	9	3	15	46	2	18	21	9	50	239
08:00 AM	3	12	10	9	34	1	12	1	0	14	6	5	3	0	14	2	4	7	5	18	80
Grand Total	16	39	34	23	112	7	68	2	2	79	25	14	6	15	60	4	22	28	14	68	319
Apprch %	14.3	34.8	30.4	20.5		8.9	86.1	2.5	2.5		41.7	23.3	10	25		5.9	32.4	41.2	20.6		
Total %	5	12.2	10.7	7.2	35.1	2.2	21.3	0.6	0.6	24.8	7.8	4.4	1.9	4.7	18.8	1.3	6.9	8.8	4.4	21.3	
Automobiles	16	39	34	0	89	7	68	2	0	77	25	14	6	0	45	4	22	28	0	54	265
% Automobiles	100	100	100	0	79.5	100	100	100	0	97.5	100	100	100	0	75	100	100	100	0	79.4	83.1
Bicycle and Pedestrian	0	0	0	23	23	0	0	0	2	2	0	0	0	15	15	0	0	0	14	14	54
% Bicycle and Pedestrian	0	0	0	100	20.5	0	0	0	100	2.5	0	0	0	100	25	0	0	0	100	20.6	16.9

Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
AM Peak
Jersey Lane and Quebec St

File Name : Jersey and Quebec AM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 2

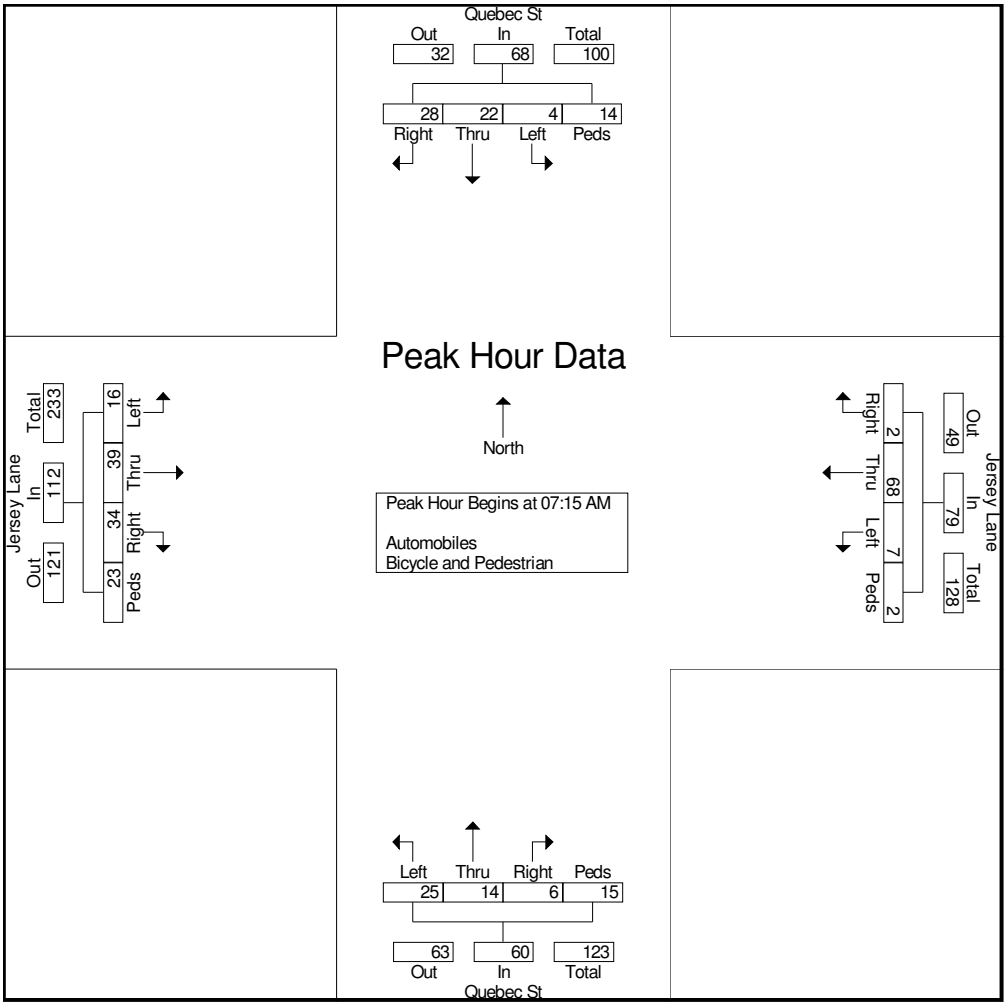


Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
AM Peak
Jersey Lane and Quebec St

File Name : Jersey and Quebec AM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 3

	Jersey Lane Eastbound					Jersey Lane Westbound					Quebec St Northbound					Quebec St 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 07:15 AM to 08:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	5	**13**	4	0	22	1	16	0	0	17	2	0	0	0	2	1	4	**9**	0	14	55
07:30 AM	2	6	9	5	22	1	16	0	**1**	18	7	3	0	2	12	0	4	5	**5**	14	66
07:45 AM	**6**	8	**11**	**9**	**34**	**4**	**24**	**1**	1	**30**	**10**	**6**	**3**	**13**	**32**	1	**10**	7	4	**22**	**118**
08:00 AM	3	12	10	9	34	1	12	1	0	14	6	5	3	0	14	**2**	4	7	5	18	80
Total Volume	16	39	34	23	112	7	68	2	2	79	25	14	6	15	60	4	22	28	14	68	319
% App. Total	14.3	34.8	30.4	20.5		8.9	86.1	2.5	2.5		41.7	23.3	10	25		5.9	32.4	41.2	20.6		
PHF	.667	.750	.773	.639	.824	.438	.708	.500	.500	.658	.625	.583	.500	.288	.469	.500	.550	.778	.700	.773	.676



Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
PM Peak
Jersey Lane and Quebec St

File Name : Jersey and Quebec PM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 1

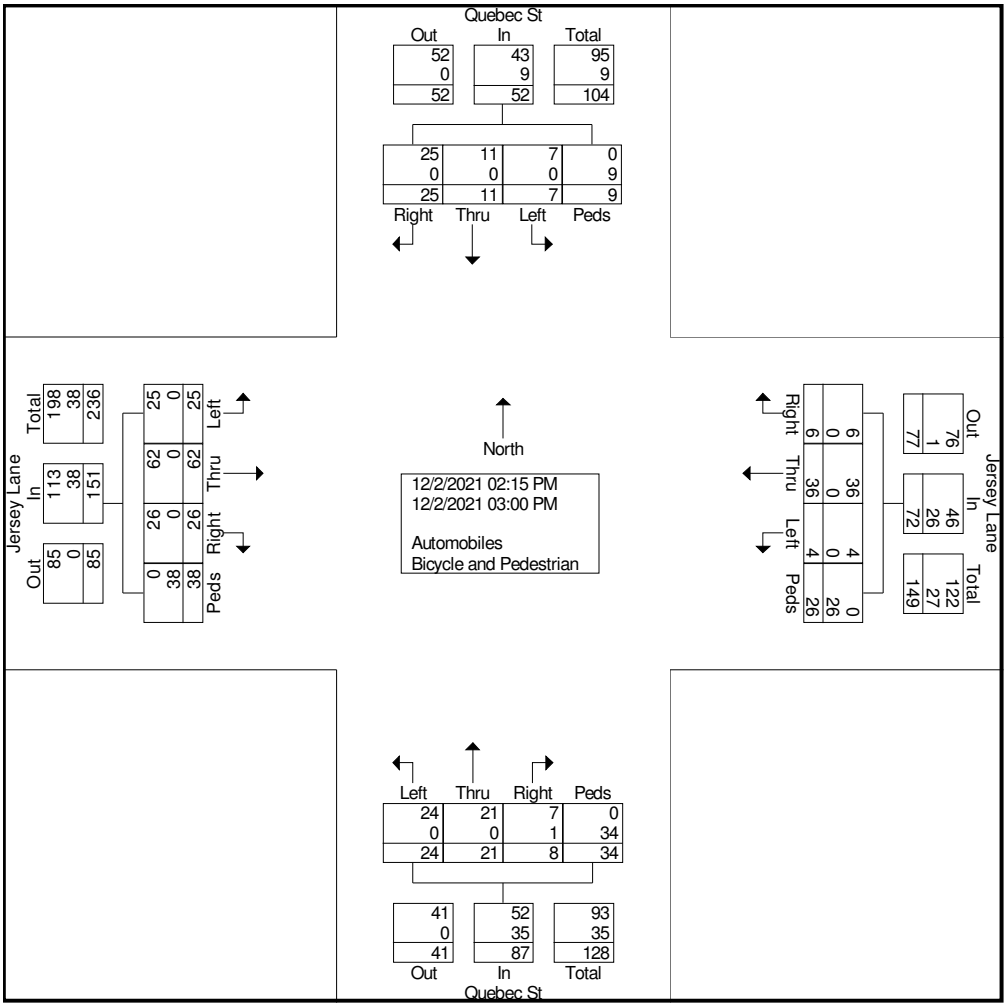
Groups Printed- Automobiles - Bicycle and Pedestrian

	Jersey Lane Eastbound					Jersey Lane Westbound					Quebec St Northbound					Quebec St 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
02:15 PM	2	9	6	1	18	1	5	1	0	7	2	0	1	1	4	3	0	9	0	12	41
02:30 PM	8	4	9	15	36	3	11	2	1	17	0	1	2	23	26	2	5	4	6	17	96
02:45 PM	10	25	7	17	59	0	13	2	24	39	19	18	4	7	48	2	5	7	3	17	163
Total	20	38	22	33	113	4	29	5	25	63	21	19	7	31	78	7	10	20	9	46	300
03:00 PM	5	24	4	5	38	0	7	1	1	9	3	2	1	3	9	0	1	5	0	6	62
Grand Total	25	62	26	38	151	4	36	6	26	72	24	21	8	34	87	7	11	25	9	52	362
Apprch %	16.6	41.1	17.2	25.2		5.6	50	8.3	36.1		27.6	24.1	9.2	39.1		13.5	21.2	48.1	17.3		
Total %	6.9	17.1	7.2	10.5	41.7	1.1	9.9	1.7	7.2	19.9	6.6	5.8	2.2	9.4	24	1.9	3	6.9	2.5	14.4	
Automobiles	25	62	26	0	113	4	36	6	0	46	24	21	7	0	52	7	11	25	0	43	254
% Automobiles	100	100	100	0	74.8	100	100	100	0	63.9	100	100	87.5	0	59.8	100	100	100	0	82.7	70.2
Bicycle and Pedestrian	0	0	0	38	38	0	0	0	26	26	0	0	1	34	35	0	0	0	9	9	108
% Bicycle and Pedestrian	0	0	0	100	25.2	0	0	0	100	36.1	0	0	12.5	100	40.2	0	0	0	100	17.3	29.8

Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
PM Peak
Jersey Lane and Quebec St

File Name : Jersey and Quebec PM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 2

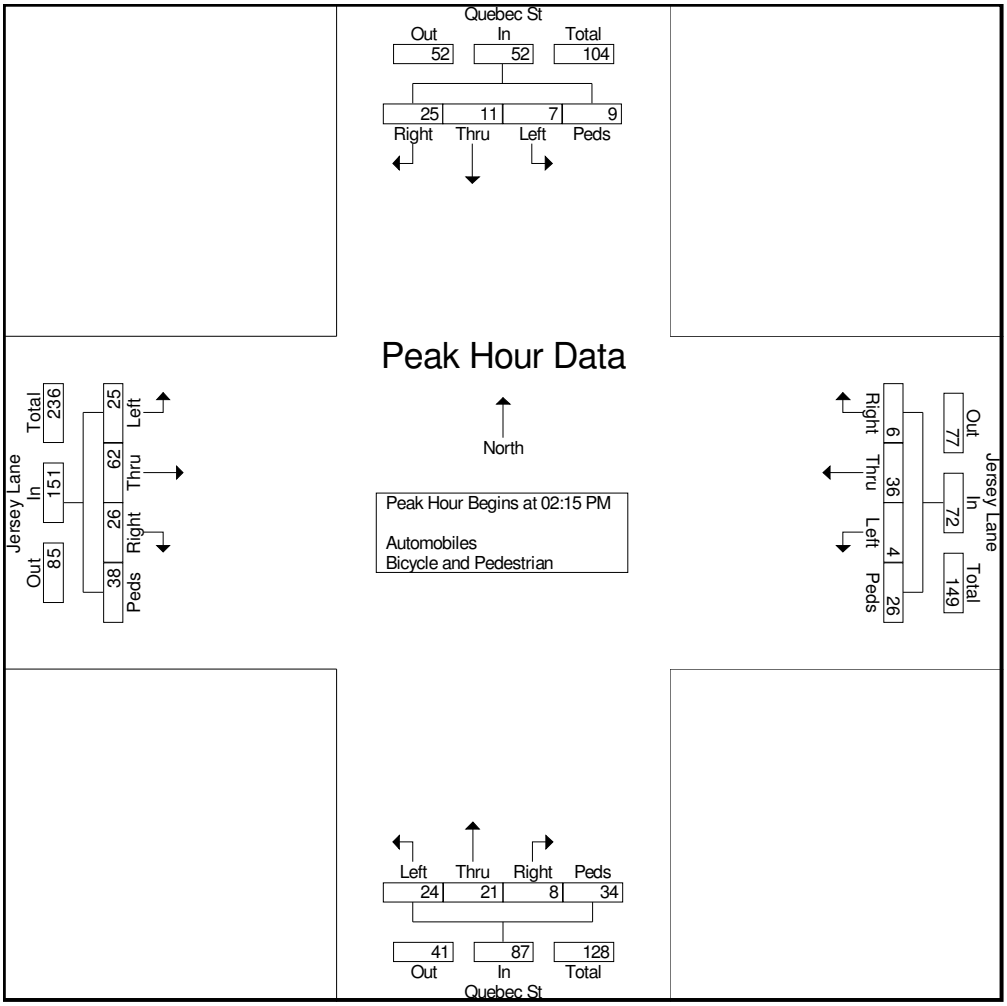


Ridgeview Data Collection

El Paso County, CO
Webster Elementary School
PM Peak
Jersey Lane and Quebec St

File Name : Jersey and Quebec PM
Site Code : IPO 581
Start Date : 12/2/2021
Page No : 3

	Jersey Lane Eastbound					Jersey Lane Westbound					Quebec St Northbound					Quebec St 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 02:15 PM to 03:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:15 PM																					
02:15 PM	2	9	6	1	18	1	5	1	0	7	2	0	1	1	4	**3**	0	**9**	0	12	41
02:30 PM	8	4	**9**	15	36	**3**	11	**2**	1	17	0	1	2	**23**	26	2	**5**	4	**6**	**17**	96
02:45 PM	**10**	**25**	7	**17**	**59**	0	**13**	2	**24**	**39**	**19**	**18**	**4**	7	**48**	2	5	7	3	17	**163**
03:00 PM	5	24	4	5	38	0	7	1	1	9	3	2	1	3	9	0	1	5	0	6	62
Total Volume	25	62	26	38	151	4	36	6	26	72	24	21	8	34	87	7	11	25	9	52	362
% App. Total	16.6	41.1	17.2	25.2		5.6	50	8.3	36.1		27.6	24.1	9.2	39.1		13.5	21.2	48.1	17.3		
PHF	.625	.620	.722	.559	.640	.333	.692	.750	.271	.462	.316	.292	.500	.370	.453	.583	.550	.694	.375	.765	.555



RDC
Ridgeview Data Collection

Webster Elementary School - December 2, 2021

Syracuse South Access

	WB		NB	SB	Peds
	Left	Right	Right	Left	Crossing
7:15	0	0	7	8	0
7:30	0	0	9	5	1
7:45	0	0	29	4	4
8:00	0	0	6	0	7
	0	0	51	17	12

	WB		NB	SB	Peds
	Left	Right	Right	Left	Crossing
2:15	0	0	4	1	0
2:30	0	0	7	1	3
2:45	0	0	2	1	4
3:00	0	0	1	0	0
	0	0	14	3	7

Syracuse North Access

	WB		NB	SB	Peds
	Left	Right	Right	Left	Crossing
7:15	0	0	0	0	0
7:30	9	5	0	0	2
7:45	16	17	0	0	2
8:00	7	3	0	0	3
	32	25	0	0	7

	WB		NB	SB	Peds
	Left	Right	Right	Left	Crossing
2:15	2	2	0	0	0
2:30	4	3	0	0	23
2:45	5	6	0	0	2
3:00	1	1	0	0	0
	12	12	0	0	25

Jersey West Access

	NB		EB	WB	Peds
	Left	Right	Right	Left	Crossing
7:15	0	0	0	0	0
7:30	0	0	0	0	13
7:45	0	0	0	0	18
8:00	0	0	1	0	11
	0	0	1	0	42

	NB		EB	WB	Peds
	Left	Right	Right	Left	Crossing
2:15	0	0	0	0	0
2:30	0	0	0	0	33
2:45	0	0	0	0	33
3:00	1	0	0	0	9
	1	0	0	0	75

Jersey East Access

	NB		EB	WB	Peds
	Left	Right	Right	Left	Crossing
7:15	0	0	0	0	1
7:30	0	0	2	1	13
7:45	0	0	2	1	25
8:00	1	0	0	0	20
	1	0	4	2	59

	NB		EB	WB	Peds
	Left	Right	Right	Left	Crossing
2:15	0	0	0	3	0
2:30	0	0	0	1	61
2:45	0	0	0	0	20
3:00	0	0	2	0	7
	0	0	2	4	88

Quebec Access

	EB		SB	NB	Peds
	Left	Right	Right	Left	Crossing
7:15	0	0	0	0	0
7:30	0	0	0	0	2
7:45	5	0	0	0	2
8:00	1	0	1	0	1
	6	0	1	0	5

	EB		SB	NB	Peds
	Left	Right	Right	Left	Crossing
2:15	0	0	0	0	1
2:30	0	0	0	0	4
2:45	6	0	0	0	21
3:00	1	0	0	0	7
	7	0	0	0	33

APPENDIX B

Trip Generation Worksheets

Kimley»Horn

Project	Webster Elementary School Expansion (Existing)				
Subject	Trip Generation for Elementary School				
Designed by	MAG	*Date*	December 20, 2021	*Job No.*	196341000
Checked by		*Date*		*Sheet No.*	of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Elementary School (520)

Independent Variable - Students (X)

X = 518
T = Average Vehicle Trip Ends

AM Peak Hour of Generator (500 Series Page 329)

Average Weekday
(T) = 0.75 (X)
(T) = 0.75 * (518.0)

Directional Distribution: 54% ent. 46% exit.
T = 389 Average Vehicle Trip Ends
210 entering 179 exiting

210 + 179 = 389

PM Peak Hour of Generator (500 Series Page 330)

Average Weekday
(T) = 0.45 (X)
(T) = 0.45 * (518.0)

Directional Distribution: 46% ent. 54% exit.
T = 233 Average Vehicle Trip Ends
107 entering 126 exiting

107 + 126 = 233

Weekday (500 Series Page 326)

Average Weekday
(T) = 2.27 (X)
(T) = 2.27 * (518.0)

Directional Distribution: 50% entering, 50% exiting
T = 1176 Average Vehicle Trip Ends
588 entering 588 exiting

588 + 588 = 1176

Kimley»Horn

Project	Webster Elementary School Expansion (Future)				
Subject	Trip Generation for Elementary School				
Designed by	MAG	*Date*	December 20, 2021	*Job No.*	196341000
Checked by		*Date*		*Sheet No.*	of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Elementary School (520)

Independent Variable - Students (X)

X = 850
T = Average Vehicle Trip Ends

AM Peak Hour of Generator (500 Series Page 329)

Average Weekday
(T) = 0.75 (X)
(T) = 0.75 * (850.0)

Directional Distribution: 54% ent. 46% exit.
T = 638 Average Vehicle Trip Ends
345 entering 293 exiting

345 + 293 = 638

PM Peak Hour of Generator (500 Series Page 330)

Average Weekday
(T) = 0.45 (X)
(T) = 0.45 * (850.0)

Directional Distribution: 46% ent. 54% exit.
T = 383 Average Vehicle Trip Ends
176 entering 207 exiting

176 + 207 = 383

Weekday (500 Series Page 326)

Average Weekday
(T) = 2.27 (X)
(T) = 2.27 * (850.0)

Directional Distribution: 50% entering, 50% exiting
T = 1930 Average Vehicle Trip Ends
965 entering 965 exiting

965 + 965 = 1930

APPENDIX C

Hourly Distribution

Hourly Distribution - Webster Elemntary School		
Start Time 8:00 AM		
Time	**In**	**Out**
7:15 AM	20%	20%
7:30 AM	20%	20%
7:45 AM	50%	50%
8:00 AM	10%	10%
End Time 2:40 AM		
2:00 PM	0%	0%
2:15 PM	30%	30%
2:30 PM	50%	50%
2:45 PM	15%	15%
3:00 PM	5%	5%

APPENDIX D

Intersection Analysis Worksheets

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	21	64	93	38	5	96	29	83	2	32	4
Future Vol, veh/h	3	21	64	93	38	5	96	29	83	2	32	4
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	25	77	112	46	6	116	35	100	2	39	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	9.3	9.6	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	46%	3%	68%	5%
Vol Thru, %	14%	24%	28%	84%
Vol Right, %	40%	73%	4%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	208	88	136	38
LT Vol	96	3	93	2
Through Vol	29	21	38	32
RT Vol	83	64	5	4
Lane Flow Rate	251	106	164	46
Geometry Grp	1	1	1	1
Degree of Util (X)	0.312	0.13	0.221	0.061
Departure Headway (Hd)	4.481	4.4	4.858	4.817
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	802	812	737	741
Service Time	2.516	2.443	2.9	2.865
HCM Lane V/C Ratio	0.313	0.131	0.223	0.062
HCM Control Delay	9.6	8.1	9.3	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.3	0.4	0.8	0.2

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	35	74	63	30	5	107	29	93	1	15	1
Future Vol, veh/h	2	35	74	63	30	5	107	29	93	1	15	1
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	56	117	100	48	8	170	46	148	2	24	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.2	9.8	11.7	8.5
HCM LOS	A	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	47%	2%	64%	6%
Vol Thru, %	13%	32%	31%	88%
Vol Right, %	41%	67%	5%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	229	111	98	17
LT Vol	107	2	63	1
Through Vol	29	35	30	15
RT Vol	93	74	5	1
Lane Flow Rate	363	176	156	27
Geometry Grp	1	1	1	1
Degree of Util (X)	0.466	0.229	0.224	0.039
Departure Headway (Hd)	4.619	4.679	5.182	5.176
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	774	761	688	684
Service Time	2.677	2.751	3.256	3.266
HCM Lane V/C Ratio	0.469	0.231	0.227	0.039
HCM Control Delay	11.7	9.2	9.8	8.5
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2.5	0.9	0.9	0.1

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	31	73	110	43	5	108	31	94	2	32	4
Future Vol, veh/h	3	31	73	110	43	5	108	31	94	2	32	4
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	37	88	133	52	6	130	37	113	2	39	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.5	9.8	10.2	8.4
HCM LOS	A	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	46%	3%	70%	5%
Vol Thru, %	13%	29%	27%	84%
Vol Right, %	40%	68%	3%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	233	107	158	38
LT Vol	108	3	110	2
Through Vol	31	31	43	32
RT Vol	94	73	5	4
Lane Flow Rate	281	129	190	46
Geometry Grp	1	1	1	1
Degree of Util (X)	0.359	0.163	0.263	0.064
Departure Headway (Hd)	4.607	4.553	4.982	4.999
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	778	783	718	711
Service Time	2.657	2.613	3.038	3.067
HCM Lane V/C Ratio	0.361	0.165	0.265	0.065
HCM Control Delay	10.2	8.5	9.8	8.4
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.6	0.6	1.1	0.2

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	41	78	70	33	5	114	30	99	1	15	1
Future Vol, veh/h	2	41	78	70	33	5	114	30	99	1	15	1
Peak Hour Factor	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	65	124	111	52	8	181	48	157	2	24	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

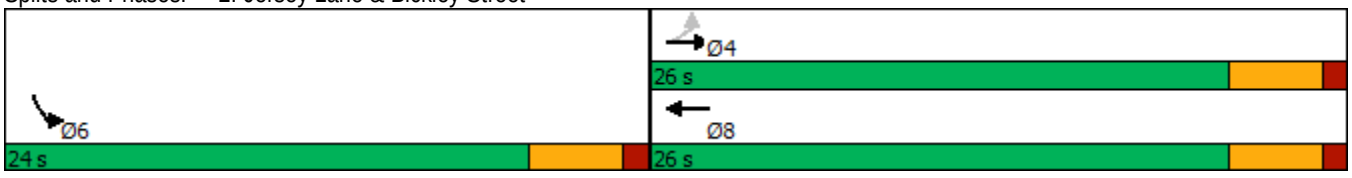
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.5	10.2	12.5	8.7
HCM LOS	A	B	B	A

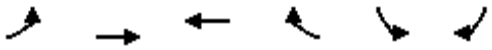
Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	47%	2%	65%	6%
Vol Thru, %	12%	34%	31%	88%
Vol Right, %	41%	64%	5%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	243	121	108	17
LT Vol	114	2	70	1
Through Vol	30	41	33	15
RT Vol	99	78	5	1
Lane Flow Rate	386	192	171	27
Geometry Grp	1	1	1	1
Degree of Util (X)	0.504	0.255	0.251	0.041
Departure Headway (Hd)	4.703	4.785	5.277	5.42
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	760	741	674	665
Service Time	2.776	2.874	3.37	3.42
HCM Lane V/C Ratio	0.508	0.259	0.254	0.041
HCM Control Delay	12.5	9.5	10.2	8.7
HCM Lane LOS	B	A	B	A
HCM 95th-tile Q	2.9	1	1	0.1

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	12	93	114	3
Future Volume (vph)	12	93	114	3
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	26.0	26.0	26.0	24.0
Total Split (%)	52.0%	52.0%	52.0%	48.0%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		4.5	4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	Min
Act Effct Green (s)		7.5	7.5	12.0
Actuated g/C Ratio		0.35	0.35	0.55
v/c Ratio		0.25	0.28	0.04
Control Delay		6.2	6.0	3.7
Queue Delay		0.0	0.0	0.0
Total Delay		6.2	6.0	3.7
LOS		A	A	A
Approach Delay		6.2	6.0	3.7
Approach LOS		A	A	A

Intersection Summary	
Cycle Length: 50	
Actuated Cycle Length: 21.7	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.28	
Intersection Signal Delay: 5.9	Intersection LOS: A
Intersection Capacity Utilization 26.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Jersey Lane & Bickley Street





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	93	114	11	3	22
Future Volume (veh/h)	12	93	114	11	3	22
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	133	163	16	4	31
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	250	360	375	37	50	385
Arrive On Green	0.22	0.22	0.22	0.22	0.28	0.28
Sat Flow, veh/h	125	1610	1676	165	179	1388
Grp Volume(v), veh/h	150	0	0	179	36	0
Grp Sat Flow(s),veh/h/ln	1735	0	0	1841	1612	0
Q Serve(g_s), s	0.0	0.0	0.0	1.5	0.3	0.0
Cycle Q Clear(g_c), s	1.5	0.0	0.0	1.5	0.3	0.0
Prop In Lane	0.11			0.09	0.11	0.86
Lane Grp Cap(c), veh/h	611	0	0	412	447	0
V/C Ratio(X)	0.25	0.00	0.00	0.43	0.08	0.00
Avail Cap(c_a), veh/h	2315	0	0	2194	1742	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.9	0.0	0.0	6.0	4.8	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.1	0.0	0.0	6.7	4.9	0.0
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h		150	179		36	
Approach Delay, s/veh		6.1	6.7		4.9	
Approach LOS		A	A		A	

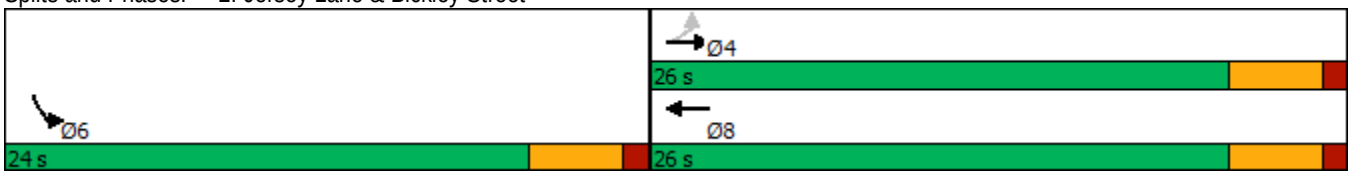
Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			8.5		9.5	8.5
Change Period (Y+Rc), s			4.5		4.5	4.5
Max Green Setting (Gmax), s			21.5		19.5	21.5
Max Q Clear Time (g_c+I1), s			3.5		2.3	3.5
Green Ext Time (p_c), s			0.7		0.1	0.9

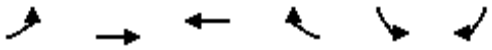
Intersection Summary		
HCM 6th Ctrl Delay	6.3	
HCM 6th LOS	A	

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	17	111	76	4
Future Volume (vph)	17	111	76	4
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	26.0	26.0	26.0	24.0
Total Split (%)	52.0%	52.0%	52.0%	48.0%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		4.5	4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	Min
Act Effct Green (s)		8.1	7.8	12.1
Actuated g/C Ratio		0.37	0.35	0.55
v/c Ratio		0.32	0.20	0.03
Control Delay		6.6	5.5	4.2
Queue Delay		0.0	0.0	0.0
Total Delay		6.6	5.5	4.2
LOS		A	A	A
Approach Delay		6.6	5.5	4.3
Approach LOS		A	A	A

Intersection Summary	
Cycle Length: 50	
Actuated Cycle Length: 22	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.32	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 25.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Jersey Lane & Bickley Street





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	111	76	4	4	16
Future Volume (veh/h)	17	111	76	4	4	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	179	123	6	6	26
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	262	367	398	19	82	354
Arrive On Green	0.23	0.23	0.23	0.23	0.28	0.28
Sat Flow, veh/h	163	1628	1769	86	295	1280
Grp Volume(v), veh/h	206	0	0	129	33	0
Grp Sat Flow(s),veh/h/ln	1791	0	0	1855	1625	0
Q Serve(g_s), s	0.6	0.0	0.0	1.0	0.3	0.0
Cycle Q Clear(g_c), s	1.8	0.0	0.0	1.0	0.3	0.0
Prop In Lane	0.13			0.05	0.18	0.79
Lane Grp Cap(c), veh/h	629	0	0	418	450	0
V/C Ratio(X)	0.33	0.00	0.00	0.31	0.07	0.00
Avail Cap(c_a), veh/h	2326	0	0	2207	1754	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.1	0.0	0.0	5.8	4.8	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.4	0.0	0.0	6.2	4.9	0.0
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h		206	129		33	
Approach Delay, s/veh		6.4	6.2		4.9	
Approach LOS		A	A		A	

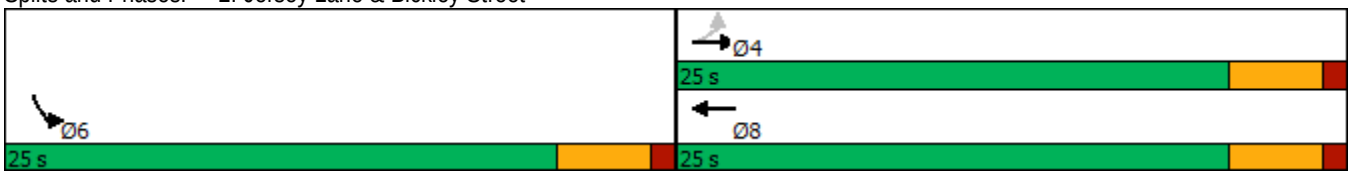
Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			8.6		9.5	8.6
Change Period (Y+Rc), s			4.5		4.5	4.5
Max Green Setting (Gmax), s			21.5		19.5	21.5
Max Q Clear Time (g_c+I1), s			3.8		2.3	3.0
Green Ext Time (p_c), s			1.0		0.0	0.6

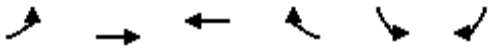
Intersection Summary		
HCM 6th Ctrl Delay	6.2	
HCM 6th LOS	A	

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	22	109	131	8
Future Volume (vph)	22	109	131	8
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		4.5	4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	Min
Act Effct Green (s)		7.8	7.8	9.6
Actuated g/C Ratio		0.33	0.33	0.41
v/c Ratio		0.34	0.35	0.08
Control Delay		7.5	6.8	3.9
Queue Delay		0.0	0.0	0.0
Total Delay		7.5	6.8	3.9
LOS		A	A	A
Approach Delay		7.5	6.8	3.9
Approach LOS		A	A	A

Intersection Summary	
Cycle Length: 50	
Actuated Cycle Length: 23.6	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.35	
Intersection Signal Delay: 6.7	Intersection LOS: A
Intersection Capacity Utilization 30.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Jersey Lane & Bickley Street





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	109	131	21	8	32
Future Volume (veh/h)	22	109	131	21	8	32
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	156	187	30	11	46
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	267	333	377	60	84	350
Arrive On Green	0.24	0.24	0.24	0.24	0.27	0.27
Sat Flow, veh/h	161	1391	1573	252	308	1287
Grp Volume(v), veh/h	187	0	0	217	58	0
Grp Sat Flow(s),veh/h/ln	1552	0	0	1825	1623	0
Q Serve(g_s), s	0.3	0.0	0.0	1.9	0.5	0.0
Cycle Q Clear(g_c), s	2.2	0.0	0.0	1.9	0.5	0.0
Prop In Lane	0.17			0.14	0.19	0.79
Lane Grp Cap(c), veh/h	600	0	0	437	441	0
V/C Ratio(X)	0.31	0.00	0.00	0.50	0.13	0.00
Avail Cap(c_a), veh/h	2085	0	0	2032	1807	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.0	0.0	0.0	6.0	5.1	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.3	0.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.3	0.0	0.0	6.9	5.2	0.0
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h		187	217		58	
Approach Delay, s/veh		6.3	6.9		5.2	
Approach LOS		A	A		A	

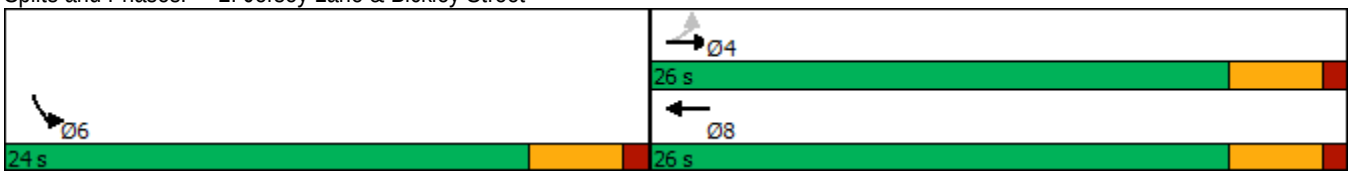
Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			8.9		9.5	8.9
Change Period (Y+Rc), s			4.5		4.5	4.5
Max Green Setting (Gmax), s			20.5		20.5	20.5
Max Q Clear Time (g_c+I1), s			4.2		2.5	3.9
Green Ext Time (p_c), s			0.9		0.1	1.1

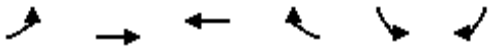
Intersection Summary	
HCM 6th Ctrl Delay	6.4
HCM 6th LOS	A

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Traffic Volume (vph)	23	120	83	7
Future Volume (vph)	23	120	83	7
Turn Type	Perm	NA	NA	Prot
Protected Phases		4	8	6
Permitted Phases	4			
Detector Phase	4	4	8	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5
Total Split (s)	26.0	26.0	26.0	24.0
Total Split (%)	52.0%	52.0%	52.0%	48.0%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		4.5	4.5	4.5
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	Min
Act Effct Green (s)		8.3	8.2	9.7
Actuated g/C Ratio		0.34	0.34	0.40
v/c Ratio		0.39	0.24	0.07
Control Delay		7.8	5.8	4.4
Queue Delay		0.0	0.0	0.0
Total Delay		7.8	5.8	4.4
LOS		A	A	A
Approach Delay		7.8	5.8	4.4
Approach LOS		A	A	A

Intersection Summary	
Cycle Length: 50	
Actuated Cycle Length: 24.1	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.39	
Intersection Signal Delay: 6.7	Intersection LOS: A
Intersection Capacity Utilization 25.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Jersey Lane & Bickley Street





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	120	83	10	7	22
Future Volume (veh/h)	23	120	83	10	7	22
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	194	134	16	11	35
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	274	382	397	47	103	329
Arrive On Green	0.24	0.24	0.24	0.24	0.27	0.27
Sat Flow, veh/h	196	1574	1639	196	382	1216
Grp Volume(v), veh/h	231	0	0	150	47	0
Grp Sat Flow(s),veh/h/ln	1770	0	0	1835	1632	0
Q Serve(g_s), s	0.7	0.0	0.0	1.2	0.4	0.0
Cycle Q Clear(g_c), s	2.0	0.0	0.0	1.2	0.4	0.0
Prop In Lane	0.16			0.11	0.23	0.74
Lane Grp Cap(c), veh/h	655	0	0	445	442	0
V/C Ratio(X)	0.35	0.00	0.00	0.34	0.11	0.00
Avail Cap(c_a), veh/h	2247	0	0	2135	1723	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.1	0.0	0.0	5.8	5.1	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.2	0.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.4	0.0	0.0	6.2	5.2	0.0
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h		231	150		47	
Approach Delay, s/veh		6.4	6.2		5.2	
Approach LOS		A	A		A	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			9.0		9.5	9.0
Change Period (Y+Rc), s			4.5		4.5	4.5
Max Green Setting (Gmax), s			21.5		19.5	21.5
Max Q Clear Time (g_c+I1), s			4.0		2.4	3.2
Green Ext Time (p_c), s			1.2		0.1	0.7

Intersection Summary		
HCM 6th Ctrl Delay	6.2	
HCM 6th LOS	A	

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	39	34	7	68	2	25	14	6	4	22	28
Future Vol, veh/h	16	39	34	7	68	2	25	14	6	4	22	28
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	57	50	10	100	3	37	21	9	6	32	41
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	8.1	8	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	56%	18%	9%	7%
Vol Thru, %	31%	44%	88%	41%
Vol Right, %	13%	38%	3%	52%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	45	89	77	54
LT Vol	25	16	7	4
Through Vol	14	39	68	22
RT Vol	6	34	2	28
Lane Flow Rate	66	131	113	79
Geometry Grp	1	1	1	1
Degree of Util (X)	0.084	0.153	0.139	0.094
Departure Headway (Hd)	4.595	4.198	4.406	4.257
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	781	857	816	843
Service Time	2.615	2.211	2.421	2.276
HCM Lane V/C Ratio	0.085	0.153	0.138	0.094
HCM Control Delay	8	8	8.1	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.5	0.3

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	62	26	4	36	6	24	21	8	7	11	25
Future Vol, veh/h	25	62	26	4	36	6	24	21	8	7	11	25
Peak Hour Factor	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	113	47	7	65	11	44	38	15	13	20	45
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.8	8.1	8.4	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	45%	22%	9%	16%
Vol Thru, %	40%	55%	78%	26%
Vol Right, %	15%	23%	13%	58%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	113	46	43
LT Vol	24	25	4	7
Through Vol	21	62	36	11
RT Vol	8	26	6	25
Lane Flow Rate	96	205	84	78
Geometry Grp	1	1	1	1
Degree of Util (X)	0.125	0.248	0.105	0.095
Departure Headway (Hd)	4.677	4.34	4.503	4.388
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	767	828	796	816
Service Time	2.704	2.362	2.529	2.416
HCM Lane V/C Ratio	0.125	0.248	0.106	0.096
HCM Control Delay	8.4	8.8	8.1	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	1	0.4	0.3

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	55	56	11	85	2	41	23	10	4	36	33
Future Vol, veh/h	21	55	56	11	85	2	41	23	10	4	36	33
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	81	82	16	125	3	60	34	15	6	53	49
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.8	8.8	8.8	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	55%	16%	11%	5%
Vol Thru, %	31%	42%	87%	49%
Vol Right, %	14%	42%	2%	45%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	74	132	98	73
LT Vol	41	21	11	4
Through Vol	23	55	85	36
RT Vol	10	56	2	33
Lane Flow Rate	109	194	144	107
Geometry Grp	1	1	1	1
Degree of Util (X)	0.147	0.237	0.187	0.137
Departure Headway (Hd)	4.866	4.4	4.68	4.584
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	735	815	765	779
Service Time	2.91	2.435	2.719	2.628
HCM Lane V/C Ratio	0.148	0.238	0.188	0.137
HCM Control Delay	8.8	8.8	8.8	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.9	0.7	0.5

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	71	43	7	43	6	39	34	13	7	18	28
Future Vol, veh/h	28	71	43	7	43	6	39	34	13	7	18	28
Peak Hour Factor	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	129	78	13	78	11	71	62	24	13	33	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.8	8.6	9.3	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	45%	20%	12%	13%
Vol Thru, %	40%	50%	77%	34%
Vol Right, %	15%	30%	11%	53%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	86	142	56	53
LT Vol	39	28	7	7
Through Vol	34	71	43	18
RT Vol	13	43	6	28
Lane Flow Rate	156	258	102	96
Geometry Grp	1	1	1	1
Degree of Util (X)	0.212	0.325	0.136	0.125
Departure Headway (Hd)	4.889	4.527	4.811	4.683
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	730	793	741	760
Service Time	2.942	2.57	2.864	2.742
HCM Lane V/C Ratio	0.214	0.325	0.138	0.126
HCM Control Delay	9.3	9.8	8.6	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	1.4	0.5	0.4

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	105	1	0	136	0	0
Future Vol, veh/h	105	1	0	136	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
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	73	50	50	80	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	144	2	0	170	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	315	145
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	170	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	0	-	678	902
Stage 1	-	-	0	-	882	-
Stage 2	-	-	0	-	860	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	678	902
Mov Cap-2 Maneuver	-	-	-	-	678	-
Stage 1	-	-	-	-	882	-
Stage 2	-	-	-	-	860	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	0	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	128	0	0	98	1	0
Future Vol, veh/h	128	0	0	98	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
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	83	50	47	47	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	154	0	0	209	2	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	363	154
Stage 1	-	-	-	-	154	-
Stage 2	-	-	-	-	209	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	636	892
Stage 1	-	0	0	-	874	-
Stage 2	-	0	0	-	826	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	636	892
Mov Cap-2 Maneuver	-	-	-	-	636	-
Stage 1	-	-	-	-	874	-
Stage 2	-	-	-	-	826	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	636	-	-
HCM Lane V/C Ratio	0.003	-	-
HCM Control Delay (s)	10.7	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	89	4	2	125	1	0
Future Volume (Veh/h)	89	4	2	125	1	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.50	0.50	0.66	0.50	0.50
Hourly flow rate (vph)	109	8	4	189	2	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	160					
pX, platoon unblocked						
vC, conflicting volume			117		310	113
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			117		310	113
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1471		681	940

Direction, Lane #	EB 1	WB 1
Volume Total	117	193
Volume Left	0	4
Volume Right	8	0
cSH	1700	1471
Volume to Capacity	0.07	0.00
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.2
Lane LOS		A
Approach Delay (s)	0.0	0.2
Approach LOS		

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	113	2	4	80	0	0
Future Volume (Veh/h)	113	2	4	80	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.50	0.46	0.46	0.50	0.50
Hourly flow rate (vph)	177	4	9	174	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	160					
pX, platoon unblocked			0.95		0.95	0.95
vC, conflicting volume			181		371	179
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			106		307	104
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1405		644	900

Direction, Lane #	EB 1	WB 1
Volume Total	181	183
Volume Left	0	9
Volume Right	4	0
cSH	1700	1405
Volume to Capacity	0.11	0.01
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.4
Lane LOS		A
Approach Delay (s)	0.0	0.4
Approach LOS		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	10.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	127	7	3	158	2	0
Future Volume (Veh/h)	127	7	3	158	2	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.50	0.50	0.66	0.50	0.50
Hourly flow rate (vph)	155	14	6	239	4	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	160					
pX, platoon unblocked			0.97		0.97	0.97
vC, conflicting volume			169		413	162
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			130		381	123
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1414		601	902

Direction, Lane #	EB 1	WB 1
Volume Total	169	245
Volume Left	0	6
Volume Right	14	0
cSH	1700	1414
Volume to Capacity	0.10	0.00
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.2
Lane LOS		A
Approach Delay (s)	0.0	0.2
Approach LOS		

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	139	3	7	102	0	0
Future Volume (Veh/h)	139	3	7	102	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.64	0.50	0.46	0.46	0.50	0.50
Hourly flow rate (vph)	217	6	15	222	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	160					
pX, platoon unblocked			0.94		0.94	0.94
vC, conflicting volume			223		472	220
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			144		408	141
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1355		558	854

Direction, Lane #	EB 1	WB 1
Volume Total	223	237
Volume Left	0	15
Volume Right	6	0
cSH	1700	1355
Volume to Capacity	0.13	0.01
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	0.6
Lane LOS		A
Approach Delay (s)	0.0	0.6
Approach LOS		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	14.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	25	183	0	0	189
Future Vol, veh/h	32	25	183	0	0	189
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	50	50	76	50	50	61
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	50	241	0	0	310

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	551	241	0	-	-	-
Stage 1	241	-	-	-	-	-
Stage 2	310	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	495	798	-	0	0	-
Stage 1	799	-	-	0	0	-
Stage 2	744	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	495	798	-	-	-	-
Mov Cap-2 Maneuver	495	-	-	-	-	-
Stage 1	799	-	-	-	-	-
Stage 2	744	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	594	-
HCM Lane V/C Ratio	-	0.192	-
HCM Control Delay (s)	-	12.5	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.7	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	12	217	0	0	152
Future Vol, veh/h	12	12	217	0	0	152
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	50	50	66	50	50	59
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	24	329	0	0	258

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	587	329	0	-	-	-
Stage 1	329	-	-	-	-	-
Stage 2	258	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	472	712	-	0	0	-
Stage 1	729	-	-	0	0	-
Stage 2	785	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	472	712	-	-	-	-
Mov Cap-2 Maneuver	472	-	-	-	-	-
Stage 1	729	-	-	-	-	-
Stage 2	785	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	568	-
HCM Lane V/C Ratio	-	0.085	-
HCM Control Delay (s)	-	11.9	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.3	-

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	52	41	188	0	0	209
Future Vol, veh/h	52	41	188	0	0	209
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	50	50	76	50	50	61
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	82	247	0	0	343

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	590	247	0	-	-	-
Stage 1	247	-	-	-	-	-
Stage 2	343	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	470	792	-	0	0	-
Stage 1	794	-	-	0	0	-
Stage 2	719	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	470	792	-	-	-	-
Mov Cap-2 Maneuver	470	-	-	-	-	-
Stage 1	794	-	-	-	-	-
Stage 2	719	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	573	-
HCM Lane V/C Ratio	-	0.325	-
HCM Control Delay (s)	-	14.3	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	1.4	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	20	217	0	0	154
Future Vol, veh/h	20	20	217	0	0	154
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	50	50	66	50	50	59
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	40	329	0	0	261

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	590	329	0	-	-	-
Stage 1	329	-	-	-	-	-
Stage 2	261	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	470	712	-	0	0	-
Stage 1	729	-	-	0	0	-
Stage 2	783	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	470	712	-	-	-	-
Mov Cap-2 Maneuver	470	-	-	-	-	-
Stage 1	729	-	-	-	-	-
Stage 2	783	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	566	-
HCM Lane V/C Ratio	-	0.141	-
HCM Control Delay (s)	-	12.4	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.5	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	183	51	17	204
Future Volume (Veh/h)	0	0	183	51	17	204
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.50	0.50	0.76	0.50	0.50	0.61
Hourly flow rate (vph)	0	0	241	102	34	334
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	694	292			343	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	694	292			343	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			97	
cM capacity (veh/h)	397	747			1216	

Direction, Lane #	NB 1	SB 1
Volume Total	343	368
Volume Left	0	34
Volume Right	102	0
cSH	1700	1216
Volume to Capacity	0.20	0.03
Queue Length 95th (ft)	0	2
Control Delay (s)	0.0	1.0
Lane LOS		A
Approach Delay (s)	0.0	1.0
Approach LOS		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	28.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	217	14	3	161
Future Volume (Veh/h)	0	0	217	14	3	161
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.50	0.50	0.66	0.50	0.50	0.59
Hourly flow rate (vph)	0	0	329	28	6	273
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	628	343			357	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	628	343			357	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	445	700			1202	

Direction, Lane #	NB 1	SB 1
Volume Total	357	279
Volume Left	0	6
Volume Right	28	0
cSH	1700	1202
Volume to Capacity	0.21	0.00
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.2
Lane LOS		A
Approach Delay (s)	0.0	0.2
Approach LOS		

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	15.6%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	7	0	0	0	2	192	84	28	239	1
Future Vol, veh/h	1	0	7	0	0	0	2	192	84	28	239	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	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	92	92	92	50	92	50	92	76	50	50	61	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	8	0	0	0	2	253	168	56	392	1

Major/Minor	Minor2					Major1			Major2		
Conflicting Flow All	846	930	393			393	0	0	421	0	0
Stage 1	505	505	-			-	-	-	-	-	-
Stage 2	341	425	-			-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22			4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-			-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-			-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318			2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	333	267	656			1166	-	-	1138	-	-
Stage 1	606	540	-			-	-	-	-	-	-
Stage 2	720	586	-			-	-	-	-	-	-
Platoon blocked, %							-	-		-	-
Mov Cap-1 Maneuver	311	0	656			1166	-	-	1138	-	-
Mov Cap-2 Maneuver	311	0	-			-	-	-	-	-	-
Stage 1	605	0	-			-	-	-	-	-	-
Stage 2	675	0	-			-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1166	-	-	576	1138	-	-
HCM Lane V/C Ratio	0.002	-	-	0.015	0.049	-	-
HCM Control Delay (s)	8.1	-	-	11.3	8.3	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	5	0	0	0	8	223	23	5	178	1
Future Vol, veh/h	1	0	5	0	0	0	8	223	23	5	178	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	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	92	92	92	50	92	50	92	66	50	50	59	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	5	0	0	0	9	338	46	10	302	1

Major/Minor	Minor2				Major1			Major2		
Conflicting Flow All	702	725	303		303	0	0	384	0	0
Stage 1	323	323	-		-	-	-	-	-	-
Stage 2	379	402	-		-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22		4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-		-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-		-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318		2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	404	352	737		1258	-	-	1174	-	-
Stage 1	734	650	-		-	-	-	-	-	-
Stage 2	692	600	-		-	-	-	-	-	-
Platoon blocked, %						-	-		-	-
Mov Cap-1 Maneuver	396	0	737		1258	-	-	1174	-	-
Mov Cap-2 Maneuver	396	0	-		-	-	-	-	-	-
Stage 1	727	0	-		-	-	-	-	-	-
Stage 2	685	0	-		-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	0.2	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1258	-	-	645	1174	-	-
HCM Lane V/C Ratio	0.007	-	-	0.01	0.009	-	-
HCM Control Delay (s)	7.9	-	-	10.6	8.1	0	-
HCM Lane LOS	A	-	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	0	0	39	63	1
Future Vol, veh/h	6	0	0	39	63	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	0	0	78	126	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	205	127	-	0	-	0
Stage 1	127	-	-	-	-	-
Stage 2	78	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	783	923	0	-	-	-
Stage 1	899	-	0	-	-	-
Stage 2	945	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	783	923	-	-	-	-
Mov Cap-2 Maneuver	783	-	-	-	-	-
Stage 1	899	-	-	-	-	-
Stage 2	945	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	783	-	-
HCM Lane V/C Ratio	-	0.015	-	-
HCM Control Delay (s)	-	9.7	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	0	0	46	41	0
Future Vol, veh/h	7	0	0	46	41	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	0	0	92	82	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	174	82	-	0	-	0
Stage 1	82	-	-	-	-	-
Stage 2	92	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	816	978	0	-	-	0
Stage 1	941	-	0	-	-	0
Stage 2	932	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	816	978	-	-	-	-
Mov Cap-2 Maneuver	816	-	-	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	932	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	816	-
HCM Lane V/C Ratio	-	0.017	-
HCM Control Delay (s)	-	9.5	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0.1	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	0	0	64	103	2
Future Vol, veh/h	10	0	0	64	103	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	0	0	128	206	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	336	208	-	0	-	0
Stage 1	208	-	-	-	-	-
Stage 2	128	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	659	832	0	-	-	-
Stage 1	827	-	0	-	-	-
Stage 2	898	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	659	832	-	-	-	-
Mov Cap-2 Maneuver	659	-	-	-	-	-
Stage 1	827	-	-	-	-	-
Stage 2	898	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	659	-	-
HCM Lane V/C Ratio	-	0.03	-	-
HCM Control Delay (s)	-	10.6	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	0	0	75	68	0
Future Vol, veh/h	11	0	0	75	68	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	0	0	150	136	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	286	136	-	0	-	0
Stage 1	136	-	-	-	-	-
Stage 2	150	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	704	913	0	-	-	0
Stage 1	890	-	0	-	-	0
Stage 2	878	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	704	913	-	-	-	-
Mov Cap-2 Maneuver	704	-	-	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	878	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	704	-
HCM Lane V/C Ratio	-	0.031	-
HCM Control Delay (s)	-	10.3	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

APPENDIX E

NC DOT Queue Worksheets

MSTA School Traffic Calculations

AM and PM Peak Traffic Estimates

(These numbers do not reflect peak hour traffic volumes)

AM Cars / Student	PM Cars / Student	Avg. Car Length	PM At one Time
36.56%	25.00%	22.19	45.50%
34.58%	16.00%	22.70	51.90%
9.20%	10.60%	24.42	55.71%

NOTES

- **Average Queue Length does not** include an alternative traffic pattern required for high traffic demand days which is usually 30% additional length.
- **Average Queue Length does not** include the Student Loading Zone.
- Peak traffic volumes at schools normally occur within a 30-minute time period. (justifying a PHF of 0.5)

School Name: Webster Elementary (Existing Enrollment)

Type: **Typical Public with buses**

Version: 04012021

MSTA School Queue Input

Calculations

Type School	Student Population	Number of Buses	Staff Members	Student Drivers	PM Total Vehicles	PM Peak Vehicles	Average Queue Length	Total AM Trips	Total PM Trips	High Demand Length
Elementary	518	5	50		130	59	**1313**	434	265	**1313**
		7	61							
Middle										
High										
							1313	434	265	1313
										0

Elementary School Data

Direction	AM Trips Generated Parents	Buses	Staff	Trips	PM Trips Generated Parents	Buses	Staff	Trips
IN	189	5	50	244	130			130
OUT	189			189	130	5		135
		AM Elementary Trips		**434**		PM Elementary Trips		**265**

Direction	AM Trips Generated Parents	Buses	Staff	Trips	PM Trips Generated Parents	Buses	Staff	Trips
IN								
OUT								
		AM Middle Trips				PM Middle Trips		

Direction	AM Trips Generated Parents	Buses	Staff		Trips	PM Trips Generated Parents	Buses	Staff		Trips
IN										
OUT										
			AM High Trips					PM High Trips		

All AM TRIPS	In	244	**All PM TRIPS**	In	130
	Out	189		Out	135
	Total	434		Total	265

ADT
749
749

Calculated 3/30/2022 By:_____

MSTA School Traffic Calculations

AM and PM Peak Traffic Estimates

(These numbers do not reflect peak hour traffic volumes)

AM Cars / Student	PM Cars / Student	Avg. Car Length	PM At one Time
36.56%	25.00%	22.19	45.50%
34.58%	16.00%	22.70	51.90%
9.20%	10.60%	24.42	55.71%

NOTES

- **Average Queue Length does not** include an alternative traffic pattern required for high traffic demand days which is usually 30% additional length.
- **Average Queue Length does not** include the Student Loading Zone.
- Peak traffic volumes at schools normally occur within a 30-minute time period. (justifying a PHF of 0.5)

School Name: Webster Elementary (Future Enrollment)

Type: **Typical Public with buses**

Version: 04012021

MSTA School Queue Input / Calculations

Type School	Student Population	Number of Buses	Staff Members	Student Drivers	PM Total Vehicles	PM Peak Vehicles	Average Queue Length	Total AM Trips	Total PM Trips	High Demand Length
Elementary	850	6	50		213	97	**2151**	678	432	**2151**
		12	100							
Middle										
High										
							2151	678	432	2151
										0

Elementary School Data

Direction	AM Trips Generated Parents	Buses	Staff	Trips	PM Trips Generated Parents	Buses	Staff	Trips
IN	311	6	50	367	213			213
OUT	311			311	213	6		219
		AM Elementary Trips		**678**		PM Elementary Trips		**432**

Middle School Data

Direction	AM Trips Generated Parents	Buses	Staff	Trips	PM Trips Generated Parents	Buses	Staff	Trips
IN								
OUT								
		AM Middle Trips				PM Middle Trips		

High School Data

Direction	AM Trips Generated Parents	Buses	Staff		Trips	PM Trips Generated Parents	Buses	Staff		Trips
IN										
OUT										
			AM High Trips					PM High Trips		

All AM TRIPS		
	In	367
	Out	311
	Total	678

All PM TRIPS		
	In	213
	Out	219
	Total	432

ADT
1160
1160

Calculated 3/30/2022 By:_____

APPENDIX F

Summary of Crash Data

CRASH DATA

year	system	date	time	severity	agencynar	road_desc	vehicles	condition	lighting	dir_1	vehicle_1	loc_01	loc_02	cycprot_1	county
2017	COUNTY ROAD	8/30/2017	1730	INJ	CSP	NON-INTERSECTION	2	DRY	DAYLIGHT	E	BICYCLE	BICKLEY ST	JERSEY LN	BICYCLE HELMET (BICYCLE ONLY)	EL PASO
2018	COUNTY ROAD	5/10/2018	1730	PDO	CSP	AT INTERSECTION	2	DRY	DAYLIGHT	S	PASSENGER CAR/VAN	FAY DR	JERSEY LN	NONE	EL PASO
2019	COUNTY ROAD	1/9/2019	0800	PDO	CSP	AT INTERSECTION	2	DRY	DAYLIGHT	S	SUV	FAY DR	JERSEY LN	NONE	EL PASO
	COUNTY ROAD	2/11/2019	0700	PDO	CSP	AT INTERSECTION	2	DRY	DAYLIGHT	E	SUV	SYRACUSE ST	FAY DR	NONE	EL PASO

APPENDIX G

Conceptual Site Plan

LEGEND

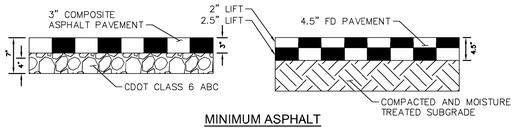
- PROPERTY LINE
- PARCEL LINE
- BUILDING SETBACK
- LANDSCAPE SETBACK
- PROPOSED LANDSCAPING
- PROPOSED ASPHALT DRIVE LANES
- PROPOSED ASPHALT PARKING AREA & NON-VEHICULAR AREA
- EXISTING CONCRETE SIDEWALK
- PROPOSED CONCRETE SIDEWALK
- PROPOSED WOOD FIBER SAFETY SURFACING
- PROPOSED GRAVEL ROAD
- EXISTING GRAVEL PARKING AREA
- EXISTING GRAVEL/MULCH PLAY AREA

GENERAL NOTES

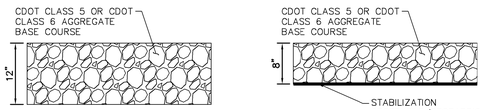
1. ALL PUBLIC IMPROVEMENTS IN THE CITY'S R.O.W. SHALL MEET CITY ENGINEERING AND ADA STANDARDS.
2. ALL SIGNS AND ROADWAY MARKINGS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
3. TWO COATS WHITE TRAFFIC PAINT (4" MIN. WIDTH) REQUIRED FOR PAVEMENT STRIPING.
4. REFERENCE THE GEOTECHNICAL REPORT, BY GROUND ENGINEERING, FOR PAVEMENT SECTIONS AND INFORMATION.
5. ASPHALT MIX DESIGN TO BE SPECIFIED BY GEOTECH ENGINEER.

MINIMUM PAVEMENT SECTIONS

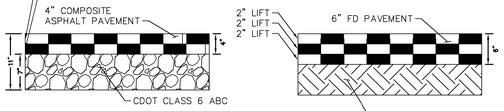
LOCATION	FLEXIBLE PAVEMENT (INCHES ASPHALT)	COMPOSITE SECTION (IN. ASPHALT/IN. AGGREGATE BASE)	RIGID SECTION (IN. CONCRETE/IN. AGGREGATE BASE)
ASPHALT PLAY AREA	4.5	3/4	–
GENERAL PARKING AREAS	6	4/7	6/6
DRIVE LANES	7	4.5/8	6.5/6



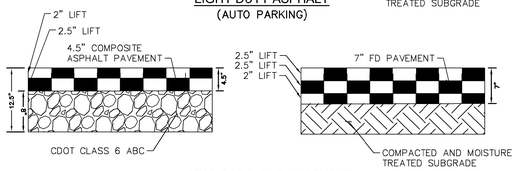
MINIMUM ASPHALT
(ASPHALT PLAY AREAS/COURTYARDS)



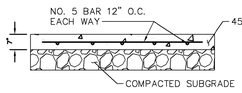
TEMPORARY FIRE ACCESS



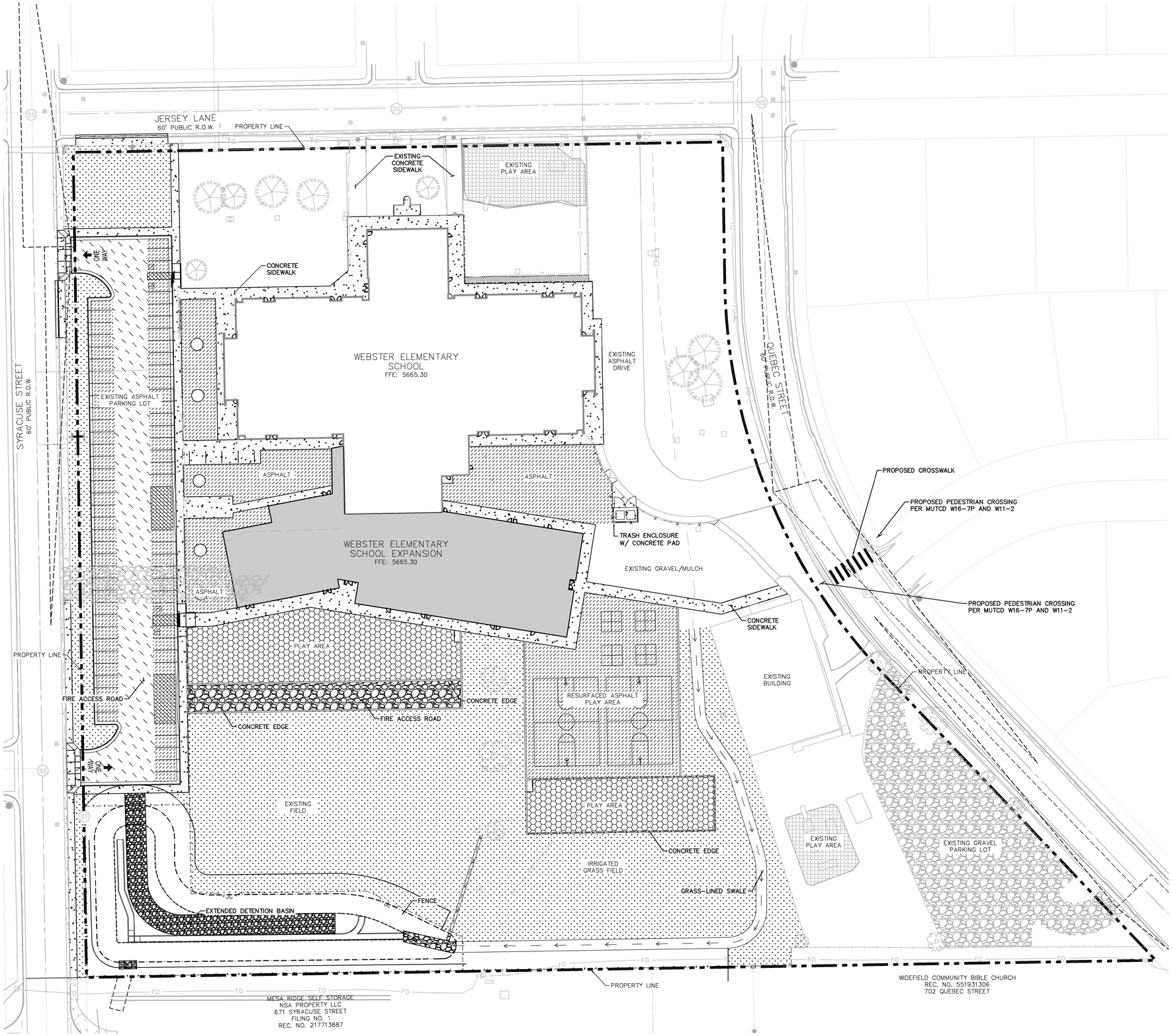
LIGHT DUTY ASPHALT
(AUTO PARKING)



STANDARD DUTY ASPHALT
(AUTO DRIVE)



TRASH ENCLOSURE PAD DETAIL



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COLORADO SPRINGS, COLORADO 80903 (719) 453-0180

Webster Elementary School Addition and Alterations

445 Jersey Lane, Colorado Springs, CO 80911

Widefield School District 3
1820 Main Street
Colorado Springs, CO. 80911

WIDEFIELD SCHOOL DISTRICT 3
PRIDE. TRADITION. INNOVATION.

Construction Documents

Drawn:	JAR
Checked:	EJG
Issued:	6 APRIL, 2022
Revised:	

Area Key Plan

NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

PAVING PLAN

C2.0

Project No.: PPR-22-009 21-003
The LKA Partners Incorporated

NOTE: SEE SHEET SD2.1 FOR SITE PLAN LEGEND AND SITE PLAN GENERAL NOTES

SPECIFIC NOTE LEGEND
(-) SPECIFIC NOTE

PARKING SPACE CALCULATION

NUMBER OF CLASSROOMS (TOTAL CAMPUS)	36
@ 2 STANDARD SPACES PER CLASSROOM	x2
TOTAL STANDARD SPACES REQUIRED	72
ADDITIONAL NUMBER OF DISABLED SPACES REQUIRED (51–75)	3
TOTAL STANDARD SPACES PROVIDED	83
TOTAL NUMBER OF DISABLED SPACES PROVIDED	5

The parties responsible for this plan have familiarized themselves with all current accessibility criteria and specifications and the proposed plan reflects all site elements required by the applicable ADA design standards and guidelines as published by the United States Department of Justice. Approval of this plan by El Paso County does not assure compliance with the ADA or any regulations or guidelines enacted or promulgated under or with respect to such laws.

DRAWING LEGEND
- VEHICLE DROP-OFF/PICK-UP QUEUE
- ACCESSIBLE PATH
- PEDESTRIAN CIRCULATION
- BICYCLE CIRCULATION

SITE PLAN SPECIFIC NOTES

1. CONCRETE CURB AND GUTTER, (25a & 30a/SD3.1) TYP UON
2. CONCRETE RAMPED/MOUNTABLE CURB & GUTTER. PAINT CURB RED. (20a/SD3.1)
3. CONCRETE WALK WITH ISOLATION, EXPANSION & CONTRACTION JOINTS AS SHOWN (1/4" PER FOOT MAX. CROSS SLOPE), (24a,b & 29a,b/SD3.1) UON.
4. HC PARKING RAMP: 2% MAX. CROSS SLOPE. (23/SD3.1)
5. UTILITY ENCLOSURE. TYPE 2 CHAIN LINK FENCE & GATES 10'–0" HIGH, UON. ADJUST ENCLOSURE DIMENSIONS TO PROVIDE REQUIRED CLEARANCES TO AS–CONSTRUCTED ELECTRICAL EQUIPMENT. (28/SD3.1)
6. DUMPSTER ENCLOSURE. TYPE 2 CHAIN LINK FENCE & GATES 7'–0" HIGH, UON. 4 SIDES. (28/SD3.1)
7. CHAIN LINK FENCE AND GATES, TYPE 1, 4'H.
8. CHAIN LINK FENCE, TYPE 2, 4'H.
9. TRAFFIC CONTROL AND PARKING STRIPING:
   - A – CENTER LINES: 4" WIDE SOLID DOUBLE YELLOW 3" APART. NOT USED
   - B – LANE LINES: 4" WIDE DASHED WHITE, 10' LONG 10' GAPS. NOT USED
   - C – CHANNELIZING LINES: 8" WIDE SOLID WHITE
   - D – STOP BARS: 24" WIDE SOLID WHITE
   - E – AUTO PARKING STALL LINES: 4" WIDE SOLID WHITE
   - F – HANDICAP / DISABLED PARKING STALL STRIPING & LOADING AREA LINES 4" WIDE SOLID WHITE PERIMETER & 24" APART AT CROSSHATCH
   - G – PEDESTRIAN CROSSING. 2' X 12' SOLID WHITE BARS, 3' APART.
10. PAINTED TRAFFIC GRAPHICS. (19/SD3.1)
11. BICYCLE RACK.
12. CURB CUT. SEE CIVIL.
13. BASKETBALL GOAL POST AND BACKBOARD (8/SD3.1)
14. FLAGPOLE.
15. GRAVEL SURFACING. SEE CIVIL.
16. BASKETBALL COURT/GAME STRIPING. (21/SD3.1)
17. LANDSCAPING EDGE (SEE LANDSCAPE DRAWINGS).
18. SIDEWALK TRENCH DRAIN AND COVER. CENTER ON GRADED SWALE FLOW LINE (26/SD3.1).
19. DUMPSTERS BY OWNER.
20. PRECAST CONCRETE WHEEL STOP.
21. CONCRETE FLUSH CURB. (13a/SD3.1)
22. CONC HC PLAY AREA RAMP. (11/SD3.1).
23. TETHER BALL POLE (4a & 8/SD3.1)
24. EXG MONUMENT SIGN.
25. BOLLARD. (9a/SD3.1)
26. CATCH BASIN. (12/SD3.1).
27. CONCRETE WALK PER EL PASO COUNTY STANDARDS. SEE CIVIL.
28. CONCRETE TREE RING. (14/SD3.1) SEE LANDSCAPE FOR BOULDERS.
29. HC PARKING RAMP: 2% MAX. CROSS SLOPE. (18/SD3.1)
30. CONCRETE ROLLED CURB & GUTTER FOR SNOW REMOVAL. (25b/SD3.1)
31. PATCH ASPHALT.
32. REINSTALL BENCH.
33. REINSTALL SITE SIGN.
34. SOD INFILL. SEE LANDSCAPE.
35. CONCRETE SWALE. ALIGN WITH AND MATCH EXISTING CONCRETE SWALE WIDTH AND DEPTH. (10b/SD3.1 SIM)
36. REMOVE EXISTING PARKING STRIPING IN PREPARATION FOR NEW PARKING STRIPING.
37. NEW CROSSWALK PAVEMENT MARKING PER EL PASO COUNTY STANDARDS. SEE CIVIL.
38. FLUSH CURB. (20b/SD3.1) PAINT CURB RED.

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Webster Elementary School Addition and Alterations

445 Jersey Lane, Colorado Springs, CO 80911

Widefield School District 3
1820 Main Street
Colorado Springs, CO. 80911

WIDEFIELD SCHOOL DISTRICT 3
PRIDE. TRADITION. INNOVATION.

Construction Documents

Drawn:	TEK
Checked:	JMS
Issued:	11 January 2022
Revised:	

Area Key Plan

N
True North — Plan North

Overall Site Development Plan

SD1.1

Project No. 21-003
The LKA Partners Incorporated

Overall Site Development Plan
Scale: 1" = 30'