TACOMA PERMITS.org
CITY OF TACOMA
Planning & Development Services Department
747 Market St, Rm 345 | Tacoma, WA 98402

NOTICE OF DECISION

Date of Decision: 08/02/2018

Appeal Period Ends: 08/16/2018

Decision Final: 08/17/2018

Decision: Approved, subject to conditions

Applicant: James Heugas for Pacific Charter Schools
Destiny Middle School and SOAR Academy

Location: 1301 E 34th Street; Parcel: 2084390011

Application No.: LU18-0146

Proposal: Modification of Conditional Use Permit to allow K-5 grades to be added to school with current middle school. The total number of students being served will remain at or below the previously-approved 600. No physical changes except re-striping of the existing asphalt lot to add 20 compact parking spaces. Conditions of approval include traffic and circulation changes as well as a follow up traffic study next spring.

For further information regarding the proposal, **log on to the website at tacomapermits.org and select "Public Notices".** The case file may be viewed in Planning and Development Services, 747 Market Street, Rm 345.

Reconsideration: Any person having standing may request reconsideration of the Director's decision, based upon errors of procedure or fact, by submitting a request in writing to Planning and Development Services at the address below.

Appeal to Hearing Examiner: Any aggrieved person or entity may appeal to the Hearing Examiner by filing a written Notice of Appeal and submitting the filing fee of **$343** to the Hearing Examiner (747 Market St., Rm 720) which contains the following:

- A brief statement showing how the appellant is aggrieved or adversely affected.
- A statement of the grounds for the appeal, explaining why the appellant believes the administrative decision is wrong.
- The requested relief, such as reversal or modification of the decision.
- The signature, mailing address and telephone number of the appellant and any representative of the appellant.

The fee shall be refunded to the appellant should the appellant prevail.

You are receiving this postcard because your property is located within the required noticing radius of the proposal. No action is required, but we invite your comments and participation in the process.

Staff Contact: Shirley Schultz, Principal Planner, 747 Market St, Room 345, (253) 591-5121, shirley.schultz@cityoftacoma.org

Environmental Review: Per SEPA, WAC 197-11-800 and TMC Chapter 13.12, the Environmental Official has reviewed this project and determined the project is exempt from SEPA provisions.

To request this information in an alternative format, please contact Planning and Development Services by phone at (voice) 253-591-5030. TTY or STS users please dial 711 to connect to Washington Relay Services

City of Tacoma
Planning & Development Services Department
747 Market St. Rm 345
Tacoma, WA 98402

NOTICE OF DECISION

City of Tacoma
Office of the Director
Report And Decision

CONDITIONAL USE PERMIT **FILE NO: LU18-0146**
APPLICATION OF

Pacific Charter Schools
James Heugas
210 South Hudson St
Seattle, WA 98134

SUMMARY OF REQUEST:
The applicant has requested a Major Modification to a Conditional Use Permit (CUP2014-40000234502) to locate grades Kindergarten-5 (SOAR Academy) within the same building as the current middle school (Destiny Charter School). Also requested is a change in a special condition of the original CUP regarding configuration of bus and passenger loading areas. The site is located in the "R-2" Single-Family Dwelling District. Per the permit modification requirements of Tacoma Municipal Code 13.05.080, a major modification to the permit is required.

LOCATION:
The site is located at 1301 East 34th Street; Parcel Numbers 2083370012 and 2084390010.

DECISION:
The conditional use permit modification is hereby **APPROVED, SUBJECT TO CONDITIONS**.

PLEASE NOTE: **APPEAL PERIOD CLOSES August 16, 2018 .**

The effective date of this decision is August 17, 2018 , provided no requests for reconsideration or appeals are timely filed as identified in APPEAL PROCEDURES of this Report and Decision.

FOR ADDITIONAL INFORMATION CONCERNING THIS LAND USE PERMIT PLEASE CONTACT:

Shirley Schultz, Principal Planner
Planning and Development Services
747 Market Street, Room 345
Tacoma, WA 98402
253-591-5378 | shirley.schultz@cityoftacoma.org

SUMMARY OF RECORD

The following attachments and exhibits constitute the administrative record:

Attachments:

A – Site Plan
B – Memorandum from Public Works – Traffic Division

Exhibits[1]:

A – Applicant's Justification for the Request and Operational Characteristics
B – Traffic Impact Analysis, July 19, 2018
C – Conditional Use Permit file CUP2014-40000234502

The Director enters the following Findings of Fact and Conclusions of Law based upon the applicable criteria and standards set forth in the *Tacoma Municipal Code (TMC)*, the policies of the Comprehensive Plan, and the Attachments and Exhibits listed above.

FINDINGS OF FACT

Proposal:

1. The applicant received a Conditional Use Permit (CUP) to allow the former Rogers Elementary School site to operate as a middle school in December of 2014.
2. The applicant requests to modify the project description of the CUP and the approved site layout for parking and loading areas.
3. The middle school was proposed to have 26 classrooms and a final enrollment of approximately 600 middle school students; the first year of operation was in 2015, with all three grades (6-8) at the school during the 2017-2018 school year.
4. The school has subsequently determined that "full enrollment" of the middle school is approximately 84 students per class, for a total middle school enrollment of 252 students.
5. The applicant requests that the school be allowed to accommodate grades K-5 at a full enrollment of 50 students per grade level, for a full enrollment of 300 elementary students. These students currently attend the school at a different site.
6. The school currently provides busing service to the middle school students; approximately 55% of the students use the service. Approximately 75% of the elementary school students currently use bus transportation and this is expected to continue.
7. The applicant requests modification of the approved loading/unloading plan for the school, verifying and continuing the use of the rear of the school for bus loading and moving the passenger vehicle loading area onto South M Street.
8. The elementary and middle schools would have staggered start and end times.
9. The applicant proposes to stripe an additional 16 parking stalls in a paved area in the rear of the building for staff parking, in addition to the 32 stalls provided.
10. A playground addition will be made.

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[1] All Exhibits are contained in Planning and Development Services File No. CUP2014-40000234502. They are referenced and incorporated herein as though fully set forth.

Project Site:

11. The project site is located northeast of the intersection of East "M" Street and East 34th Street and has a site address of 1301 East 34th Street. The associated parcel numbers are 2083370012 and 2084390010.

12. The site is located in the "R-2" Single-Family Dwelling District. Schools are a permitted use in the "R-2" district with an approved CUP.

13. The City's Comprehensive Plan identifies the site as located within a "Parks and Open Space" future land use area, with an emphasis on open space and preservation of critical areas and habitat. The "R-2" Single-Family Dwelling District and associated uses are appropriate within the Open Space designation provided they meet certain development standards.

14. The site is located within the McKinley Hill subarea of the Eastside Neighborhood.

15. Following the approval of the 2014 CUP, the school made several improvements to the surrounding rights-of-way, including curb, gutter, sidewalk, curb ramps, and access/turnaround on East 34th Street. The school also added onsite parking and circulation on the east side of the site.

Surrounding Area:

16. The area surrounding the proposed site is zoned "R-2" One-Family Dwelling District and is developed predominately with single-family homes. Single-family development and a public park (Rogers Park) are located across East "M" Street to the west. The undeveloped East "N" Street right-of-way abuts the site to east and a number of undeveloped residential parcels are located on the east side of the East "N" Street right-of-way within a densely vegetated steep slope area. Existing single-family development is located further to the east at the base of the steep slope area. Single-family development is also located across East 34th Street to the south and southwest, and to the north across the undeveloped 20-foot wide alley right-of-way abutting the site on the north.

Additional Information:

17. The applicant has provided a written analysis of how the addition of elementary school students at the site will affect the operation of the school, and why the requested changes are within the scope and intent of the original CUP and its conditions. See Exhibit A. The Director understands the key points of the applicant's justification to be that the applicant has fulfilled (or is in compliance with) the conditions of the original CUP, that the colocation of the schools will benefit both schools, and that total attendance will be within the originally-approved student population for the school. Further, the applicant states that relocating the bus drop off area is beneficial to both students and the neighborhood.

18. The schools and their operation are under the authority of the Washington State Charter School Commission; this body has approved the colocation of the schools. Further, the schools report enrollment and other performance measures annually to the commission.

19. The Director would note that, aside from a timing discrepancy for condition 3.F (the traffic study prior to the addition of 7th grade), the conditions of the original CUP have been fulfilled. These conditions included improvements in the right-of-way as well as on-site improvements for parking.

20. Pursuant to WAC 197-11-800, Subsection (6)(b) and the City of Tacoma's State Environmental Policy Act (SEPA) Procedures, this proposed action is categorically exempt

from the Threshold Determination and Environmental Impact Statement requirements of SEPA.

21. The application was submitted on May 8, 2018 and was determined to be complete on May 10, 2018.

Department Comments:

22. The project proposal was distributed to various departments and agencies for review on May 10, 2018. Comments were received from Jennifer Kammerzell in Public Works – Traffic Engineering. Final comments are included as Attachment B.

23. In short, the Ms. Kammerzell concurs with the traffic study received July 19, 2018 (Exhibit B), and the proposed mitigation, which includes:

    - developing materials, regularly communicating, and providing school staff enforcement for approved parent drop-off/pick-up areas and student safety;
    - providing crossing guards at all marked crosswalks;
    - conducting an assessment of the parent drop-off/pick-up, bus loading, traffic distribution, and student crossing in early 2019 (prior to Spring Break); and
    - installing School Zone 20 MPH signs on East M Street and East 34th Street.

24. Ms. Kammerzell also notes that the alley south of Rogers Park is not an acceptable route for school traffic and the aforementioned materials for parents and bus drivers need to include this information.

Public Comment:

25. Written notice of the application was mailed on May 24, 2018, to owners of property within 1000 feet of the site, as indicated by the Pierce County Assessor/Treasurer's records; to the Eastside Neighborhood Council; to all parties on the original CUP; and to qualified neighborhood groups, allowing a 30-day comment period. Public information signs were posted on the property. A public meeting was held on June 7, 2018, because the proposed project was determined to be of broad public significance by the Director of the Planning and Development Services Department. There were several representatives of both schools in attendance and two community members.

26. Verbal comments at the meeting (and via telephone) were related to traffic impacts during drop-off and pick-up times at the school, with complaints of cut-through traffic, illegal u-turns, and blockage of driveways and sidewalks by parents waiting for students. There was also concern expressed about a lack of supervision for students leaving the school grounds on the way to or from school.

27. With regard to the public comment, the Director finds that these concerns have been reviewed and addressed by the Public Works – Traffic Engineering Division.

Conclusion of Law as Finding of Fact:

28. Any conclusion of law hereinafter stated which may be deemed a finding of fact is hereby adopted as such.

CONCLUSIONS OF LAW

Jurisdiction:

1. The Director has jurisdiction in this matter. See *TMC* Section 13.05.030.A.

2. When acting on any land use matter, the Director may attach any reasonable conditions found necessary to make the project compatible with its environment, to carry out the goals and policies of the City's Comprehensive Plan or to provide compliance with applicable criteria or standards set forth in the City's Land Use Regulatory Codes. See *TMC* Section 13.05.040.B.

Burden of Proof:

2. The applicant bears the burden of proof to demonstrate that the proposal is consistent with the provisions of *TMC* Chapter 13.06, including a demonstration of conformance with the prior approvals at the site, implementing regulations, applicable provisions of the City's Comprehensive Plan and other applicable ordinances of the City.

Criteria for Review:

3. TMC 13.05.080 provides that a permit may be modified by following the same procedures as the original permit. However, the criteria for review are limited to the changes proposed under the modification. In this case, the review is limited to impacts from the change in ages of the children at the school; the change in proportions of children arriving by bus, car, and walking; the change in school start and end times; and the changes in the location of bus and car loading areas. The project will be required to comply with all original conditions of the CUP except as modified by this decision.

Conclusions:

4. Any finding of fact later deemed to be a conclusion of law is hereby adopted as such.
5. The use of the site as a middle school was authorized through CUP2014-40000234502 in 2014. An elementary school was established prior to the creation of the zoning code in 1953 and therefore was a legal, nonconforming use, which had lost its nonconforming status due to inactivity at the site for several years.
6. The school has been operating in compliance with the approved CUP, but has been operating with reduced capacity compared to that approved in the CUP.
7. The addition of elementary school will expand the length of pick-up and drop-off time due to staggered school hours; the submitted traffic study notes no significant impacts to the neighborhood if the permit is conditioned appropriately. The Public Works Traffic Engineering Division has provided a review and appropriate conditions; as the City's subject matter experts the Director would place great weight on the Division's comments.

   Therefore, provided that the request is developed consistently with the representations contained herein and properly conditioned, the Director concludes that the use would be located, planned and developed in a manner that is consistent with the health, safety, convenience, and general welfare of persons residing or working in the community.

DECISION

Based on the findings and conclusions, the requested Conditional Use Permit is APPROVED subject to the following conditions:

Conditions:

1. The applicant shall apply for and obtain all necessary building permits for the proposal.
2. The maximum enrollment at the site, including both elementary and middle school, shall be 600 students.

3. The relocation of the bus/car loading areas is approved. The applicant shall conduct an assessment of the parent drop-off/pick-up, bus loading, traffic distribution, and students during the first quarter of 2019, prior to spring break.
4. No later than September 15, 2018, the applicant shall post a good-faith bond of $5,000 for assessment of traffic impacts once the elementary school is in operation at the site, which will be released upon receipt of the required traffic study per Condition 3, above.

Advisory Notes:

1. The decision set forth herein is based upon representations made and information submitted, including development plans and proposals, submitted to the Director. Any substantial change(s) or deviation(s) in such development plans, proposals, or conditions of approval imposed shall be subject to the approval of the Director, and may require additional permitting, public notification and comment.
2. The authorization(s) granted herein is/are subject to all applicable federal, state and local laws, regulations, and ordinances. By accepting this/these approvals, the applicant represents that the development and activity allowed will comply with such laws, regulations and ordinances. If, during the term of the approvals granted, the developments and activities permitted do not comply with such laws, regulations or ordinances, the applicant agrees to promptly bring such developments or activities into compliance.
3. The permit shall become void after a period of five years after the final decision, which is either the date of the permit decision or the appeal decision, in the event no substantial construction has taken place in accordance with the plans for which the permit has been authorized.

ORDERED this 2nd day of August, 2018.

Peter Huffman
Director, Planning and Development Services

FULL DECISION TRANSMITTED this 2nd day of August, 2018 by first class and/or electronic mail to:

James Heugas, 210 South Hudson St, Seattle, WA 98134
PCSD Tacoma Facilities II LLC, Patrick Anton C. Ontiveros, 811 West 7th Street, Suite 310, Los Angeles, CA 90017
Darci Brandvold, Pierce County Assessor-Treasurer, 2401 South 35th Street, Room 142, Tacoma, WA 98409
Christine Phillips and Kent McLaren, BCRA, 2106 Pacific Avenue, Suite 300, Tacoma, WA 98402
Janet Lau, JAWA Investment LLC, 3690 W. Mercer Way, Mercer Island, WA 98040
Susanne E. Marten, 5435 South Bell Street, Tacoma, WA 98408

Kim Combs, 1301 E 34th Street, Tacoma, WA, 98404
Amy Klippert, 1301 E 34th Street, Tacoma, WA 98404
Adam Campbell, 210 S Hudson Street, Seattle, WA, 98134
Lihi Rosenthal, 2136 Martin Luther King, Jr. Way, Tacoma, WA 98404

Paul and Brooke Whitifield, 4010 East I Street, Tacoma, WA 98404
Aaron von Aken, 2114 Tacoma Road East, Puyallup, WA 98371
Brandie Shipps, 4914 123rd Street SW, Lakewood, WA 98499
Joyce Glass, 3403 East M Street, Tacoma, WA 98404
Ki Haelle, 3407 East M Street, Tacoma, WA 98404
Katherine Kleitsch, 4770 32nd Ave S #304, Seattle, WA 98118
Ngla Moore-McCreary, 509 S 35th St, Tacoma, WA 98418

SUMMARY OF DECISION TRANSMITTED this 2nd day of August, 2018 by first class mail and electronic mail to:

All owners of property as indicated by the Pierce County Assessor/Treasurer's records within 1000 feet of the subject site
Eastside Neighborhood Council
DomeTop Association, Lynette Scheidt
Planning Services Division: Brian Boudet, Ian Munce
Greg Heath, Traffic Engineer
Community & Economic Development Department: Carol Wolfe

NOTE: Pursuant to *RCW* 36.70B.130, you are hereby notified that affected property owner(s) receiving this notice of decision may request a change in valuation for property tax purposes consistent with Pierce County's procedure for administrative appeal. To request a change in value for property tax purposes you must file with the Pierce County Board of Equalization on or before July 1st of the assessment year or within 30 days of the date of notice of value from the Assessor-Treasurer's Office. To contact the board, you may call 253-798-7415 or by e-mail at www.co.pierce.wa.us/boe.

RECONSIDERATION and APPEAL PROCEDURES

RECONSIDERATION:

Any person having standing under the ordinance governing this application and feeling that the decision of the Director is based on errors of procedure or fact may make a written request for review by the Director within fourteen (14) days of the issuance of the written order. This request shall set forth the alleged errors, and the Director may, after further review, take such further actions as deemed proper, and may render a revised decision. A request for RECONSIDERATION of the Director's decision in this matter must be filed in writing with the Planning and Development Services Department, Room 345, Third Floor, Tacoma Municipal Building, 747 Market Street, Tacoma, WA 98402, on or before August 16, 2018 .

APPEAL TO HEARING EXAMINER

The applicant, property owner, or owners of property entitled to receive a copy of the decision of the Director shall have the right, within fourteen (14) calendar days of the issuance of this decision, or within seven (7) calendar days of the date of issuance of the Director's decision on reconsideration, to appeal the decision to the Hearing Examiner, not counting the day of the issuance of the decision.

An appeal to the Hearing Examiner is initiated by filing a Notice of Appeal accompanied by the required filing fee. Filing of the appeal shall not be complete until both the Notice of Appeal and required filing fee have been received. The Notice of Appeal must be in writing and shall contain the following:

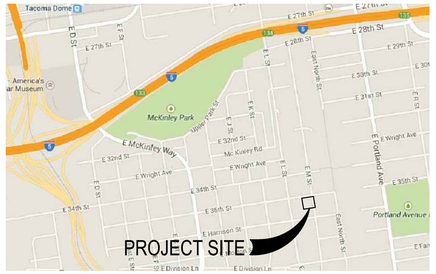
(1) A brief statement showing how the appellant is aggrieved or adversely affected.

(2) A statement of the grounds for the appeal, explaining why the appellant believes the administrative decision is wrong.

(3) The requested relief, such as reversal or modification of the decision.

(4) The signature, mailing address and telephone number of the appellant and any representative of the appellant.

An APPEAL of the Director's decision in this matter must be filed with the Hearing Examiner's Office, Seventh Floor, Tacoma Municipal Building, on or before August 16, 2018, together with a fee of $343. THE FEE SHALL BE REFUNDED TO THE APPELLANT SHOULD APPELLANT PREVAIL.



VICINITY MAP

SITE ADDRESS

1301 E. 34TH ST., TACOMA

SITE AREA

137,125± S.F. (3.148± AC)

PARCEL NUMBERS

208337-001-2 & 208439-001-0

LEGAL DESCRIPTION

(PER FIRST AMERICAN TITLE INSURANCE COMPANY NATIONAL COMMERCIAL SERVICES FILE NO. NCS-666549-WA1, DATED APRIL 21, 2014)

LOTS 1 TO 9, INCLUSIVE, BLOCK 8339;
LOTS 1 TO 12, INCLUSIVE, BLOCK 8340;
TOGETHER WITH THE NORTH HALF OF THE VACATED ALLEY ABUTTING AND ADJOINING SAID LOTS IN BLOCK 8340, WHICH UPON VACATION REVERTED TO SAID PREMISES BY OPERATION OF LAW; AND

LOTS 1 TO 12, INCLUSIVE, BLOCK 8439;
TOGETHER WITH THE SOUTH HALF OF THE VACATED ALLEY ABUTTING AND ADJOINING SAID LOTS IN BLOCK 8439,WHICH UPON VACATION REVERTED TO SAID PREMISES BY OPERATION OF LAW, ALL OF THE ABOVE BEING IN TACOMA LAND COMPANY'S FIRST ADDITION, ACCORDING TO THE PLAT THEREOF RECORDED JULY 7, 1884, RECORDS OF PIERCE COUNTY AUDITOR.
TOGETHER WITH THE NORTH 10 FEET OF EAST 34TH STREET ATTACHED TO BLOCK 8439, AS VACATED BY ORDINANCE NO. 18498 OF THE CITY OF TACOMA AND RECORDED UNDER RECORDING NUMBER 2230045.
ALSO TOGETHER WITH THAT PORTION OF VACATED WRIGHT AVENUE LYING BETWEEN SAID ABOVE BLOCKS 8339 AND 8340 AND LYING BETWEEN EAST "M" STREET AND EAST "N" STREET, VACATED BY CITY OF TACOMA ORDINANCE NO. 27442, RECORDED MAY 17, 2006 UNDER RECORDING NO. 200605171138, WHICH UPON VACATION REVERTED TO SAID PREMISES BY OPERATION OF LAW, IN PIERCE COUNTY, WASHINGTON.

BASIS OF BEARINGS (NAD83(91) PER CITY OF TACOMA)

BASIS OF BEARING FOR THIS SURVEY IS A LINE BETWEEN A FOUND 3" SURFACE BRASS WITH PUNCH AT THE INTERSECTION OF EAST 32ND STREET AND PORTLAND AVENUE KNOWN AS CITY OF TACOMA SURVEY CONTROL POINT #795 AND ANOTHER FOUND 3" SURFACE BRASS AT THE INTERSECTION OF EAST K STREET AND EAST 35TH STREET. BEARING HELD AS SOUTH 53°09'05" WEST

#	MONUMENT LOCATION	NORTHING	EASTING
795	EAST 32ND ST & PORTLAND AVE.	699141.784	1166083.801
397	EAST 35TH ST & K ST.	697825.759	1164327.738

VERTICAL DATUM (NGVD29) PER CITY OF TACOMA)

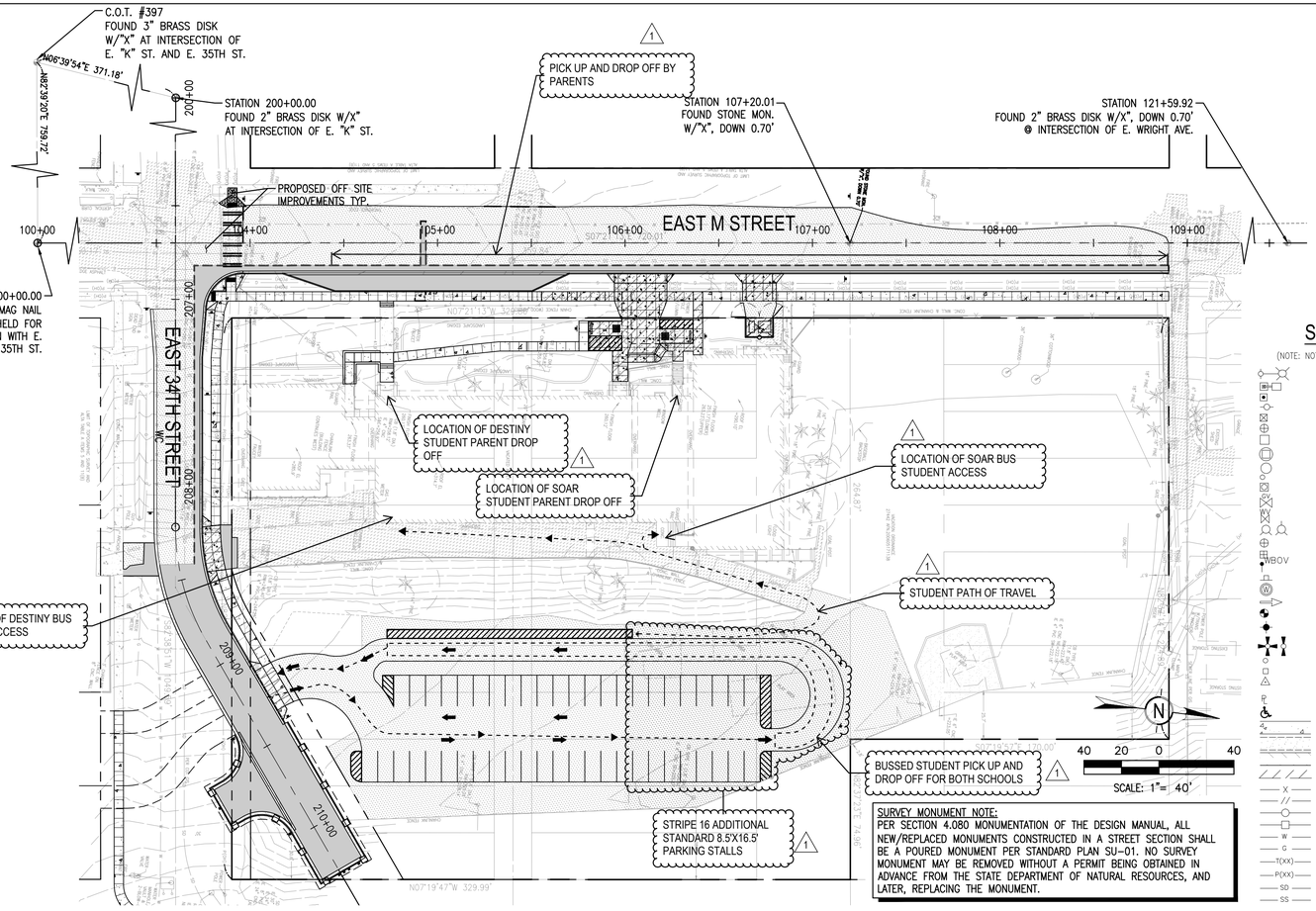
PROJECT BENCHMARK FOR THIS SITE IS A FOUND 3" SURFACE BRASS WITH PUNCH AT THE INTERSECTION OF EAST 32ND STREET AND PORTLAND AVENUE KNOWN AS CITY OF TACOMA VERTICAL CONTROL POINT #3412. NGVD29 ELEVATION OF 3412 WAS HELD AS 75.559'

A CHECK TO CITY OF TACOMA BENCHMARK 3412 HAD A CLOSURE OF +0.03'

#	MONUMENT LOCATION	ELEVATION
3412	EAST 32ND ST. AND PORTLAND AVE.	75.559

ABBREVIATIONS

AC	ACRE
AP	ANGLE POINT
APPD	APPROVED
APPROX	APPROXIMATELY
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
ARCH	ARCHITECTURAL
ASPH	ASPHALT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AVE	AVENUE
BMP	BEST MANAGEMENT PRACTICE
BLDG	BUILDING
BW	BACK OF WALK
℄	CENTERLINE
CB	CATCH BASIN
CCP	CEMENT CONCRETE PAVEMENT
CF	CUBIC FEET
CI	CAST IRON
CL	CLASS
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
CONC	CONCRETE
COT	CITY OF TACOMA
CPEP	CORRUGATED POLYETHYLENE PIPE
CSTC	CRUSHED SURFACING TOP COURSE
DEC	DECIDUOUS
DEPT	DEPARTMENT
DI	DIAMETER
E	EAST
EA	EACH
EC	EXTRUDED CURB
EG	EXISTING GRADE
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
ESC	EROSION & SEDIMENT CONTROL
EXIST	EXISTING
FFE	FINISH FLOOR ELEVATION
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
G	GAS
GA	GAUGE
GRVL	GRAVEL
GV	GAS VALVE
H	HEIGHT
HDPE	HIGH DENSITY POLYETHYLENE
HMA	HOT MIX ASPHALT
HORIZ	HORIZONTAL
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCH
IRR	IRRIGATION
JBX	JUNCTION BOX
L	LENGTH
LAT	LATITUDE
LF	LINEAR FEET
LGT	LIGHT
LON	LONGITUDE
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MON	MONUMENT
N	NORTH
NO.	NUMBER
NTS	NOT TO SCALE
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PP	POWER POLE
PRC	POINT OF REVERSE CURVE
PROP	PROPOSED
PT	POINT OF TANGENT
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
RCP	REINFORCED CONCRETE
RCW	REVISED CODE OF WASHINGTON
RJ	RESTRAINED JOINT
ROW	RIGHT-OF-WAY
RW	RIGHT-OF-WAY
RPM	RAISED PAVEMENT MARKER
RT	RIGHT
S	SOUTH
SCH	SCHEDULE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SDR	STANDARD DIMENSION RATIO
SF	SQUARE FEET
SPECS	SPECIFICATIONS
SQ YD	SQUARE YARD
SS	SANITARY SEWER
STA	STREET
STD	STATION
SWPPP	STANDARD STORM WATER POLLUTION PREVENTION PLAN
T	TELEPHONE
TC	TOP OF CURB
TEMP	TEMPORARY
TESC	TEMPORARY EROSION & SEDIMENT CONTROL
TMC	TACOMA MUNICIPAL CODE
TP	TOP OF PAVEMENT
TRANS	TRANSITION
TWLT	TWO-WAY LEFT TURN
TYP	TYPICAL
UG	UNDER GROUND
UP	UTILITY POLE
V	VALVE
VAR	VARIABLE
VERT	VERTICAL
W	WEST
W/	WITH
WAC	WASHINGTON ADMINISTRATIVE CODE
WO	WORK ORDER
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
WV	WATER VALVE



SURVEY MONUMENT NOTE:
PER SECTION 4.080 MONUMENTATION OF THE DESIGN MANUAL, ALL NEW/REPLACED MONUMENTS CONSTRUCTED IN A STREET SECTION SHALL BE A POURED MONUMENT PER STANDARD PLAN SU-01. NO SURVEY MONUMENT MAY BE REMOVED WITHOUT A PERMIT BEING OBTAINED IN ADVANCE FROM THE STATE DEPARTMENT OF NATURAL RESOURCES, AND LATER, REPLACING THE MONUMENT.

SURVEY LEGEND

(NOTE: NOT ALL SYMBOLS MAY APPEAR ON THE MAP)

LUMINAIRE (LUM.)
YARD LIGHT
POWER METER
POWER POLE
JUNCTION BOX (AS NOTED)
TELEPHONE MANHOLE
CATCH BASIN (CB)
STORM MANHOLE (SDMH)
SANITARY SEWER MANHOLE (SSMH)
CLEANOUT (AS NOTED)
GAS METER
GAS VALVE
WATER VALVE (WV)
FIRE HYDRANT(FH) / CONNECTION(FDC)
WATER MANHOLE
WATER METER
BLOW-OFF / AIRVAC
SIGN
MONITOR WELL
DIRECTIONAL ARROW
SURVEY MONUMENT (AS NOTED)
BENCHMARK
SECTION CORNER (AS NOTED)
FOUND REBAR/CAP (AS NOTED)
FOUND LEAD/TACK
SURVEY CONTROL STATION
PROPERTY LINE
HANDICAP
CONCRETE
GRAVEL/SAND (AS NOTED)
ASPHALT
BUILDING LINE
CHAIN LINK FENCE
WOOD FENCE
BARBED WIRE FENCE
HOGWIRE FENCE
WATER LINE
GAS LINE
OVERHEAD/UNDERGROUND TEL. LINE
OVERHEAD/UNDERGROUND PWR. LINE
STORM LINE
SEWER LINE

ALL NEW PAVEMENT AND SIDEWALK CONSTRUCTION BEHIND THE NEW CURB LINE WILL BE SHADED.

ALL REMOVAL OR REMOVAL AND REPLACEMENT OF EXISTING PAVEMENT OR SIDEWALK BEHIND THE NEW CURB LINE SHALL BE SHADED.

WHERE NO SHADING APPEARS BETWEEN THE NEW CURB LINES, REFER TO THE TYPICAL SECTIONS TO DETERMINE WHAT IS TO BE DONE IN THE SPECIFIC AREA.

THIS TYPE OF SHADING DENOTES REMOVAL AND REPLACEMENT OF EXISTING WALK.

THIS WOULD DENOTE CONSTRUCTION OF NEW CURB, SIDEWALK, AND A DRIVEWAY AS SHOWN.

ALL EXISTING IMPROVEMENTS (PAVEMENT, SIDEWALKS, ETC.) WILL BE REMOVED BETWEEN A POINT ONE (1) FOOT IN FRONT OF THE EXISTING FACE OF CURB AND THE BACK OF THE NEW CURB.

THIS WOULD DENOTE REMOVAL OF EVERYTHING BETWEEN THE OLD AND NEW CURB LINES; CONSTRUCTION OF A NEW INTEGRAL WALK AND A NEW DRIVEWAY; ALSO THE REMOVAL AND REPLACEMENT OF THE EXISTING DRIVEWAY SLAB TO THE SHADED LIMITS.

WHERE A PERMANENT PAVEMENT SURFACE EXISTS BETWEEN THE NEW CURB LINES (OTHER THAN DRIVEWAYS AND PARKING AREAS) THE PAVEMENT WILL REMAIN UNLESS SHADED.

NEW CURB — THIS WOULD DENOTE CONSTRUCTION OF NEW CURB LINES, INCLUDING REMOVAL OF EVERYTHING BETWEEN EXISTING AND NEW CURB LINES, WITHOUT DISTURBING EXISTING WALKS. SHADING SHOWS THAT EXISTING PAVEMENT (ASPH., CONC., OR ASPH. OVER CONC.) IS TO BE REMOVED.

MEET LINE — WHEN LINE IS LABELED IT DENOTES MEET LINE OF NEW PAVING WITH EXISTING PAVED STREETS.

WHEN LINE IS NOT LABELED IT DENOTES LIMITS OF FULL SECTION PAVING MEETING UNPAVED STREETS.

SHADED BORDER WITH SOLID LINE DENOTES ASPHALT PAVING ON UNPAVED STREETS. IT WILL ALSO BE USED TO SHOW ASPHALT PAVING OF DRIVEWAYS AND ALLEYS.

SHADED BORDER WITH DASHED LINE DENOTES GRADING REQUIRED ON DIRT STREET. IT WILL ALSO BE USED TO SHOW REQUIRED GRADING IN DIRT ALLEYS AND DRIVEWAYS.

DENOTES TOP OR TOE OF SLOPE. ALSO LIMITS OF CONST. PERMITS WHEN LABELED CONST. PERMIT.

DENOTES APPROXIMATE LIMITS OF FILL OR CUT SLOPE. SHADED TRIANGLE SHOWS TOP OF SLOPE.

CITY OF TACOMA DEPARTMENT OF PUBLIC WORKS	APPROVED FOR PUBLICATION — CITY ENGINEER — DATE 2/4/03	STANDARD SHADING SYMBOLS FOR CONSTRUCTION PLANS — STANDARD PLAN NO. DR-02

ITEMS	TO BUILD	EXISTING
CEMENT CONCRETE PAVEMENT		
ASPHALTIC CONCRETE PAVEMENT		
CEMENT CONCRETE SIDEWALK		
CEMENT CONCRETE CURB		
STORM SEWER		
SANITARY SEWER		
MANHOLE		
INLET OR CATCH BASIN		
TELEPHONE CONDUIT		
GAS MAIN		
GAS SERVICE		
WATER MAIN		
WATER SERVICE		
HYDRANT		
WATER GATE		
ORNAMENTAL LIGHT		
POWER POLE		

ITEMS	TO BUILD	EXISTING
COMBINATION POLE		
TELEPHONE POLE		
GUY POLE		
ANCHOR OR DEADMAN		
CONDUIT		
TREE		
WIRE FENCE		
WOOD FENCE		
MONUMENT		
ROCK WALL		
RETAINING WALL		
PROFILE CENTER LINE		
PROFILE LINE, RIGHT		
PROFILE LINE, LEFT		
CULVERT PIPE		
MONUMENT LINE		
CONSTRUCTION CENTER LINE		

CITY OF TACOMA DEPARTMENT OF PUBLIC WORKS	APPROVED FOR PUBLICATION — CITY ENGINEER — DATE 2/4/03	STANDARD SYMBOLS — STANDARD PLAN NO. DR-01

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GENERAL NOTES

1. ALL WORK, MATERIALS, AND TESTING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION ISSUED PRIOR TO BID DATE OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION (WSDOT STD. SPEC.), DELETE MEASUREMENT AND PAYMENT PROVISIONS, AND WSDOT STANDARDS PLANS (WSDOT STD. PLANS), EXCEPT AS MODIFIED BY THE CONTRACT DOCUMENTS.
2. EXISTING TOPOGRAPHY AND BOUNDARY INFORMATION PROVIDED BY LANKTREE LAND SURVEYING, INC., 05/07/14.
3. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE SITE AND SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ENGINEER PRIOR TO UNDERTAKING THE AFFECTED WORK.
4. ANY INCONSISTENCY IN THESE DRAWINGS, SPECIFICATIONS, AND/OR THE SITE CONDITIONS SHALL BE REPORTED TO THE ENGINEER, WHO SHALL CORRECT SUCH INCONSISTENCY IN WRITING AFTER REVIEWING ANY CHANGES. ANY WORK DONE BY THE CONTRACTOR AFTER THE DISCOVERY OF SUCH INCONSISTENCY SHALL BE DONE AT THE CONTRACTOR'S RISK. VERIFY AND COORDINATE THE DIMENSIONS AMONG ALL DRAWINGS PRIOR TO PROCEEDING WITH ANY WORK.
5. BURIED UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATION. PRIOR TO INSTALLATION OF ANY PROJECT IMPROVEMENTS, VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES. IN THE EVENT OF ANY DISCREPANCY FROM THE INFORMATION PRESENTED ON THESE PLANS, CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
   a. THE LOCATION OF EXISTING UTILITIES SHOWN MAY DIFFER FROM ACTUAL LOCATION. CONTRACTOR SHOULD NOT ASSUME UTILITIES SHOWN WILL BE THE ONLY UTILITIES/OBSTACLES THAT MAY BE PRESENT ON THE SITE. VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. GIVE NOTICE TO UTILITY PURVEYORS REGARDING DEMOLITION AND REMOVAL OF SERVICE LINES AND CAP LINES BEFORE PROCEEDING WITH FURTHER WORK.
6. AS-BUILT RECORDS: KEEP THREE SETS OF DRAWINGS ONSITE AT ALL TIMES FOR RECORDING AS-BUILT INFORMATION. ONE SET SHALL BE PROVIDED TO THE ENGINEER AND ONE TO THE AGENCY HAVING JURISDICTION (AHJ). ONE ELECTRONIC SET OF AS-BUILT DRAWINGS IN PORTABLE DOCUMENT FORMAT (PDF) MAY BE PROVIDED IN LIEU OF MULTIPLE COPIES. SURVEYED AS-BUILT INFORMATION IN AUTOCAD AND PDF FORMAT SHALL BE PROVIDED FOR THE FOLLOWING:
   a. STORM AND/OR SANITARY SEWER STRUCTURE LOCATIONS (STATION AND OFFSET IF APPLICABLE) INVERT AND RIM ELEVATIONS TO THE NEAREST 0.01 FOOT.
   b. DRIVEWAY/ROAD CENTERLINE AND GUTTER PROFILES AT BEGINNING AND ENDING STATIONS AND END OF RADII.
   c. WATER SYSTEM LOCATION (VALVES, FIRE HYDRANTS, BLOWOFF, AIR VAC ASSEMBLIES, ETC.) TO THE NEAREST 0.10 FEET.
7. SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, AND/OR OTHER APPROPRIATE BEST MANAGEMENT PRACTICES; COORDINATE WITH MEASURES WITH OWNER AND AHJ.
9. CONTINUOUS ACCESS SHALL BE MAINTAINED FOR THE SURROUNDING PROPERTIES ALL TIMES DURING THE DURATION OF THE PROJECT.

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811 Know what's below. Call before you dig.

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NO	REVISION	DATE	APPD
1	CUP AMMEND	5/8/2018	

FINAL CONSTRUCTION CHECKED
BY
DATE
FIELD BOOKS

DATE	SCALE
06-16-2015	AS NOTED
DESIGNED	CHECKED
JG/RJB	JG
DRAWN	PROJECT NAME
RJB	14122
DRAWING NAME	
14122C-WO-01-02.dwg	

JUSTIN JAN GOROCH — STATE OF WASHINGTON — 43432 — REGISTERED PROFESSIONAL ENGINEER

CITY OF TACOMA
ENVIRONMENTAL SERVICES DEPARTMENT
Environmental Services Science & Engineering

GREEN DOT PUBLIC SCHOOLS WASHINGTON
STATE CHARTER MIDDLE SCHOOL
EAST 34TH STREET & EAST M STREET
COVER SHEET

WO #60000037540

SHEET NO. WO-01
SHEET 01 OF 20

Jun 16 2015 8:57 AM cosign

City of Tacoma
Public Works Department

Memorandum

TO: Shirley Schultz

FROM: Jennifer Kammerzell

SUBJECT: Destiny Middle School Conditional Use Permit (LU18-0146)

DATE: July 23, 2018

The City Engineering Division has reviewed the Conditional Use Permit application and revised Traffic Impact Analysis for the modification to Destiny School that proposes utilization of an existing building approved for 600 middle school (6th – 8th grade) students to allow for 600 elementary (Kindergarten – 5th Grade) and middle school students combined. The project is bounded by East 34th and East M Streets.

After consideration of the applicant's revised Traffic Impact Analysis (TIA) conducted by Heath & Associates, Inc. (dated 7-19-18), the City has determined that the applicant and representative have conducted a reasonable analysis of the probable traffic conditions. Based on the new trips generated and public comment, the City has concluded that the development will impact the City's transportation system. Recommended mitigation included in the TIA is acceptable and shall be a required as part of the Conditional Use Permit approval.

The following comments and mitigating actions are based on the review of the TIA, mitigation outlined in the TIA, field observations, public comment, and the objective of reducing impacts to the neighborhood and city transportation system. A summary of the proposed mitigation includes:

1) Developing materials, regularly communicating, and providing school staff enforcement for approved parent drop-off/pick-up areas and student safety;
2) Providing crossing guards at all marked crosswalks;
3) Conducting an assessment of the parent drop-off/pick-up, bus loading, traffic distribution, and student crossing in early 2019 (prior to Spring Break); and
4) Install School Zone 20 MPH signs on East M Street and East 34th Street.

The alley south of Rogers Park is not an acceptable route for school traffic – buses or parents. Alleys are intended to provide a means of access to the abutting property, not general through access use.

The comments and conditions are consistent with the Transportation Master Plan Goals and Policies to "prioritize the movement of people and goods via modes that have the least environmental impact and greatest contribution to livability in order to build a balanced transportation network that provides mobility options, accessibility, and economic vitality for all across all neighborhoods." It is also consistent with policies 2.3 Improve Safety, 2.4 Promote Health, 2.5 Traffic Calming Measures, 3.1 Complete Streets/Layered Network, 3.2 Green Hierarchy, 3.6 Street System Design, 3.7 Special Needs of Transportation Users, 3.9 Pedestrian Facilities, 3.10 Bicycle Facilities, 3.18 Roadway Capacity, and 6.3 20-Minute Neighborhoods.

If circumstances change and the project scope is modified then the City reserves the right to reconsider this recommendation. If you have any questions, please contact me at (253) 591-5511 or jkammerzell@cityoftacoma.org.

CONDITIONAL USE PERMIT APPLICATION

Applicant Information:

PCSD Tacoma Facilities II LLC
Destiny Middle School – Application to Modify Existing CUP 2014-40000234502
1301 E 34th St, Tacoma, WA
Parcels 2083370012 & 2084390011
Q-S-T-R:SW - 10 - 20N - 3E

Building and Land Use Information:

Site and Building Description: The site has a total area of approximately 3.22 acres and is largely rectangular. It slopes downward from west to east with an elevation change of approximately 50 feet. Abutting streets include East M Street, East 34th Street, undeveloped East N Street, and an unimproved alley. Rogers Park, a public park, is located across East M Street to the northeast. Aside from the park, single-family development surrounds the site.

The existing building was constructed as an elementary school in 1907, prior to the implementation of the City's existing zoning regulations. The building is approximately 46,000 square feet in area, and is 3 stories in height at its tallest point. The site is improved with surface pavement, parking, and grass play areas, along with mature trees and groundcover.

Zoning: R-2 – One Family Dwelling (schools are a permitted use with an approved CUP)
Eastside Neighborhood, McKinley Hill neighborhood (located between McKinley and Lower Portland Avenue mixed-use centers), Pre-War Expansion Residential Pattern Area
FLUM Designation: Parks and Open Space

Application Request:

Tacoma Facilities II LLC ('TFII') requests that the City of Tacoma modify the existing Conditional Use Permit 2014-40000234502 to clarify that both elementary and middle school grades may operate at the existing public charter school facility located at 1301 East 34th Street in the former Rodgers Elementary School.

The original CUP application envisioned 600 students receiving a free public charter school education at the facility. The modification request does not envision any change to that originally proposed school use or an increase in intensity of use. The request is simply to allow students from grades K through 5 be part of that previously approved and allowed 600-student population.

In January, TFII met with planning and other City staff to discuss the proposed modification. The City of Tacoma indicated the modification will be "major," requiring a new CUP, and it directed TFII apply for a CUP in order to obtain this modification. TFII has objected to the "major" determination via separate correspondence, and incorporates those objections by reference here. Nonetheless, TFII hereby submits this CUP application, without waiving any rights.

Summary of Enrollment and Operations:

Enrollment:

Destiny Charter School (hereafter, "Destiny") has operated at the facility with approximately 250 students enrolled for each of the past two years. This is less than the 600-student enrollment level envisioned in the CUP. The original CUP contemplated that 200 students would be enrolled in 2015, 400 in 2016, and full enrollment starting in 2017.

Destiny proposes to continue operating with approximately 84 students (three cohorts) per grade level for a total of just over 250 students. This is Destiny's anticipated level of stable enrollment, which results in an unused student capacity of approximately 350 seats at the facility. Destiny is proposing to minimize ongoing operational costs by subletting 300 seats of this remaining enrollment capacity to another public charter school. SOAR Academy is an elementary school that, as of this most recent academic year, had enrolled 200 1st through 4th grade students. They plan on growing to a sustained enrolment of 300 kindergarten through 5th grade students, starting in the 2018-2019 school year.

Destiny Academic Year

grades	15/16	16/17	17/18	18/19	Stabilized ongoing enrollment
6	175	150	55	84	84
7	0	100	87	84	84
8	0	0	102	84	84

SOAR Academic Year

grades	17/18	18/19	Stabilized ongoing enrollment
K	0	50	50
1	50	50	50
2	50	50	50
3	50	50	50
4	50	40	50
5	0	10	50

Operations:

Destiny and SOAR Academy plan to split the existing building operationally. The top floor (the second floor) and half of the ground level floor will be used to house the 6th, 7th, and 8th grade Destiny middle school. The lowest floor (the day-lighted basement) and the second half of the ground floor will be used to house the kindergarten through 5th grades of SOAR Academy. Both schools will schedule alternating uses of the lunch/multi-room and the exterior play areas. While the recess times and the period when students will be outside enjoying the play field and exterior play areas will increase with the younger grades, the school and its play space is substantially isolated for neighboring residential properties by the natural topography of the site. The play field is set into the same hillside as the school building and is approximately 20 to 25 feet below East M Street. The closest residential structure to the east of the play fields is further buffered from the school and student activities by a utility easement that travels north to south.

Staff from both schools already collaborate to a high degree because they have similar missions and instructional models. Both schools also use many of the same vendor services to support their classroom operations. Therefore, from the perspective of both schools, this colocation is an opportunity to further deepen their existing partnership, capitalize on synergies, further reduce costs, and continue to offer students a high quality public education option in a new kindergarten through 8th grade format.

The two schools will operate on an offset schedule with the SOAR Academy starting their day at 7:30am and ending at 2:45pm. Destiny will start at 8am and end at 3:30pm. This overall schedule is substantially in line with the operating times of 7:45 to 3:30 reflected in the original CUP approval. After-school programming is anticipated to end at 5:30, also consistent with the original CUP approval. The schools will operate during the typical school year (August to June).

Over the past two years of operation, Destiny has worked with various community groups and with the local Tacoma Police liaison officer to develop the safest and most efficient pick-up and drop-off process that has the lowest impact to the surrounding community. The majority of the students who arrive at Destiny do so using the school-provided busing service. Destiny will continue to use three large buses and one small one to transport approximately 55% of the students. These busses perform their drop-off and pick-up functions at the rear of the building, off the public street and with direct entrance to the building through a dedicated door. Historically, pick-up occurs completely in a 15-minute window starting from when students are dismissed from class. The remaining 45% of Destiny students who are driven to school by their parents utilize the pull-in and curbed locations along East M Street where there is a dedicated ADA access to the building provided for all students.

SOAR will mirror the same pick-up and drop-off process with busses utilizing the rear of the building to transport approximately 75% of their students. Parents will use East M Street to perform drop-off. With an offset of 30 minutes, both schools are confident that they will each complete the arrival and dismissal activities without the two populations mixing. Once SOAR students arrive at school by bus or by parent drop-off, they will be able to access the facility

through dedicated entrances at the north (ground floor) or south (basement floor) sides of the facility.

Per the conclusions in the independent traffic analysis performed by Heath Traffic Engineers, the schedule offset will further mitigate the impacts of the both schools operating at the same building. Perhaps most importantly, the schedule offset will bring the total school impact to the surrounding local streets and intersections to well below their operational capacity. Heath Engineers do not foresee any adverse traffic impacts associated with the co-location of schools as planned. A traffic analysis reflecting the schools' anticipated operations has been submitted to the City. Beyond the recommendations from Heath Traffic Engineers, and at the request of the schools, TIFF is proposing to restripe the existing asphalt surface at the south side of the property and add 16 standard sized parking stalls. The intent is to further reduce any potential impacts to the neighborhood associated with the SOAR staff.

Satisfaction of Existing Permit Conditions:

TFII has satisfied all of the permit conditions contained in the original CUP. The table below summarizes each condition and how it was fulfilled. Note that improvements satisfying the conditions were originally envisioned to be completed in two phases but were all completed in the first phase.

Condition:	**Action:**
1. The applicant shall apply for and obtain all necessary building permits for the proposal.	All improvements to the building and site were performed in accordance with approved plans dated February 3rd, 2015. A Certificate of Occupancy was granted September 4th, 2015.
2. Any substantial changes in development plans or conditions of approval shall be subject to the approval of the Director.	There have been no substantial changes in development plans since initial plans were approved. This CUP application represents the extent of proposed changes.
3.A.i. Construct concrete curb and gutter along East M Street to create a curb bulb for bus drop-off, passenger loading, and angled parking.	All improvements to East M Street and East 34th Street were designed and submitted as part of the proposed site improvements package (dated June 16, 2015). These improvements were then completed as part of the overall project that received its Certificate of Occupancy on September 4th, 2015.
3.A.ii. Improve East M Street in accordance with City of Tacoma standard plan SU-15b	
3.A.iii. Construct cement sidewalk along East M Street meeting PROWAG and ADA guidelines	

3.A.iv. Install curb ramps at the intersection of East 34 and East M Streets meeting PROWAG and ADA guidelines	
3.A.v. All driveway approaches shall be approved by City Engineer	
3.A.vi. Extend the City's stormwater drainage system to serve the site and meet the requirements of the City of Tacoma 2012 and 2004 SWMM	The design of the extension and connection of the City Stormwater drainage system was submitted in our site improvement plans dated June 16th, 2015 and were approved by the City Engineer prior to being delivered as part of the overall initial project delivery.
3.B.i. Replace damaged concrete sidewalk on East 34th Street to meet PROWAG and ADA guidelines	All improvements to East M Street and East 34th Street were designed and submitted as part of the proposed site improvements package (dated June 16th, 2015). These improvements were then completed as part of the overall project that received its Certificate of Occupancy on September 4th, 2015.
3.C. Construct bus and passenger loading zones to meet ADA guidelines	Bus loading and unloading pull in areas on M Street along with a pick-up and drop-off zone in the car park area to the south of the project were presented and approved in the site improvements package dated June 16th, 2015 and were approved by the City Engineer. The provision of parking at the south side of building, and loading/unloading zones on M Street were all done in in support of the findings presented in the completed Traffic Impact Assessment dated May 20, 2015.
3.D. Coordinate any additional bus stops with Pierce Transit	No additional bus stops were requested from Pierce Transit.
3.E. Planting strips shall not be used for parking	Planting strips are not used for parking. A curb and gutter was provided along East M Street and East 34th Street in accordance with CUP conditions.
3.F. Complete an updated traffic study prior to addition of 7th grade operations (2016) to assess the need for parking or traffic modifications	An updated traffic study that assessed the potential impacts associated with a fully enrolled school of 600 students (200 in each of the 6th, 7th, and 8th grades) was completed

	on May 20, 2015. This report provided a series of recommendations associated with street improvements adjacent to the site and the provision of off-site parking. All of these recommendations were incorporated into the site improvements package dated June 16th, 2015 and were approved by the City Engineer. These improvements were then delivered as part of the overall project delivery.
3.II.A.i. Improve East M Street with a half 2" grind and 2" HMA overlay	All improvements to East M Street and East 34th Street were designed and submitted as part of the proposed site improvements package (dated June 16th, 2015). These improvements were then completed as part of the overall project that received its Certificate of Occupancy on September 4th, 2015.
3.II.B.i. Construct concrete curb and gutter along East 34th Street	
3.II.B.ii. Improve East 34th Street to Public Works Standards, including a 24-foot width	
3.II.B.iii. Construct concrete sidewalk along East 34th Street meeting PROWAG and ADA guidelines	
3.II.B.iv. Construct additional storm water and drainage system improvements as needed	The designed and developed East 34th Street included storm drain system improvements that meet with City codes and was approved as part of the site improvements package dated June 16th, 2015.
3.II.C. Additional street lighting may be needed	Street lighting associated with the school was evaluated as part of the overall site improvements plan with comments and recommendations from the City being incorporated in the final improvements.
3.II.D. Additional parking proposed will be installed to City of Tacoma standards	Additional off-site parking in line with the recommendations presented in the Traffic Impact Assessment dated May 20 2015 was incorporated into the site improvements package dated June 16th, 2015. These improvements were delivered with the building improvements

4.A. Various Water System Conditions	Compliance with the various water system conditions was confirm as part of the site improvements package dated June 16th, 2015. Compliance is ongoing with operations.

<u>Response to Conditional Use Permit Criteria:</u> (Criteria in **bold**, responses in normal type)

TMC 13.06.640.D. A conditional use permit shall be subject to the following criteria:

1. There shall be a demonstrated need for the use within the community at large which shall not be contrary to the public interest.

The Destiny school currently located in the existing building has approximately 250 students enrolled in the 2017-2018 academic year in grades 6 through 8, meaning there is the capacity for 350 more students to be located at the school based on the originally approved CUP. Destiny proposes to sublet a portion of the existing building to SOAR Academy, another independent public charter school operator, with 200 existing students in grades 1st through 3rd. For academic year 2018/19 SOAR is proposing to include kindergarten, 4th, and 5th grade students to its program for a total student population of 300 students. These existing and proposed students come from the community at large and the proposed expansion in grades will serve the public interest by providing education space for all enrolled and proposed students. If there is no facility to house these students, then they must be enrolled elsewhere, which could contribute to overcrowding at other schools. The facility will thus continue to serve the community and will not be contrary to the public interest.

2. The use shall be consistent with the goals and policies of the Comprehensive Plan, any adopted neighborhood or community plan, and applicable ordinances of the City of Tacoma.

Continued school use at the facility is consistent with the goals and policies of the Comprehensive Plan and applicable City of Tacoma Ordinances, including the following:

<u>OneTacoma Comprehensive Plan:</u>

GOAL UF–1 Guide development, growth, and infrastructure investment to support positive outcomes for all Tacomans.

Policy UF–1.3 Promote the development of compact, complete and connected neighborhoods where residents have easy, convenient access to many of the places and services they use daily including grocery stores, restaurants, schools and parks, that support a variety of transportation options, and which are characterized by a vibrant mix of commercial and residential uses within an easy walk of home.

Continuing the school use of the facility will ensure the community has access to a complete neighborhood with complementary and appropriate services.

GOAL DD–7 Support sustainable and resource efficient development and redevelopment.

Policy DD–7.1 Encourage rehabilitation and adaptive reuse of buildings, especially those of historic or cultural significance, to conserve natural resources, reduce waste, and demonstrate stewardship of the built environment.

Continuing the school use at the facility rather than pursuing a new building elsewhere conserves resources and reduces waste. Further, the previously existing empty building was an eyesore in the community with vandalism, graffiti, and an overgrown landscape. Restoration and activation of this building with an operating school has improved the community appearance and helped cut down on crime simply through the benefit of being occupied.

GOAL DD–13 Protect and preserve Tacoma's historic and cultural character.

Policy DD–13.2 Encourage development that fills in vacant and underutilized gaps within the established urban fabric, while preserving and complementing historic resources and neighborhood patterns.

The existing building was built as a school in 1907. The elementary school ceased to operate in 2002 and sat empty for several years. Thus, continuing the school use fully utilizes a previously vacant and underutilized site.

GOAL P–2 Promote public and private partnerships that expand the variety of community services and programs, provide open space, and enhance the quality of life for Tacomans.

Policy P–2.7 Recognize public school fields and play areas as a valuable part of the City's park system. Seek opportunities to work with the school districts to enhance the recreational value of these facilities.

The school playfields that are maintained with the school use are a valuable recreational asset to the students in the community. Further, the City has limited resources to allocate among many competing needs, so the ability of a private non-profit developer to continue to revitalize this public school and site means more dollars that the City and the traditional school district can allocate elsewhere.

Tacoma Municipal Code:

- TMC 13.06.100.A-C. Residential Districts, notes that schools are a compatible use in residential neighborhoods and are allowed as conditional uses. *See also* TMC 13.06.640.

- TMC 13.06.100.D sets out development standards for new development. This proposal does not involve any new construction. Thus, any non-conformities to development standards should remain. *See also* TMC 13.06.602, TMC 13.06.630.

- Per the recommendations provided in the Traffic Impact Report that was commissioned and published as part of fulfilling CUP Condition F, off-street parking was developed at a rate of 1.2 spaces per classroom in accordance with TMC 13.06.510. These proposed improvements were submitted as part of the school's overall offsite improvements proposal that was implemented prior to the first year of operation. The current landscaping and play field will remain unchanged as part of this application to amend the existing CUP.

3. If the property is listed on the Tacoma Register of Historic Places or is within a historic special review district, it must be compatible with historic preservation standards…

The building is not listed on the Tacoma Register of Historic Places or located within a historic special review district. No specific historic preservation standards apply.

4. The use shall be located, planned, and developed in such a manner that it is not inconsistent with the health, safety, convenience, or general welfare of persons residing or working in the community. The following shall be considered in making a decision on a conditional property use:

a. The generation of noise, noxious or offensive emissions, light, glare, traffic, or other nuisances which may be injurious or to the detriment to a significant portion of the community.

Although the building was vacant for a number of years, the original use was as an elementary school. The first building was constructed in 1907 and operated for almost 100 years. Reintroducing the educational use with both elementary and middle school components will bring back similar levels of noise from the children on the property as existed historically. Noise from children's play at recess may be audible during daytime hours, but will not occur at night. Such noise is not expected to be materially different from the existing condition with the addition of elementary grades and is not expected to be a nuisance detrimental to a significant portion of the community.

A traffic analysis shows that the levels of service on streets will be acceptable when taking into account traffic generated by student drop-off and pick-up. Both schools have agreed to stagger the arrival and dismal times by half an hour to further reduce potential traffic disturbance associated with running both schools in the same facility.

No offensive emissions, light, or glare are expected due to elementary school operation of the building.

b. Availability of public services which may be necessary or desirable for the support of the use. These may include, but shall not be limited to, availability of utilities, transportation systems (including vehicular, pedestrian, and public transportation systems), education, police and fire facilities, and social and health services.

Public services are already in place for this developed residential/urban area and serviced the original school. Approval of SOAR Academy's school use will increase services available in the neighborhood as it will provide a free, public charter elementary school education option. Density will also continue to provide a free, public charter middle school education option.

c. The adequacy of landscaping, screening, yard setbacks, open spaces, or other development characteristics necessary to mitigate the impact of the use upon neighboring properties.

While the existing yard setbacks aren't all in compliance with current codes, the landscaping on the site is very developed with mature trees throughout and landscaping around most of the base of the building. Open space areas of grass and pavement currently exist for play behind and to the north of the building, and substantial landscaping provides buffering of those play areas from the neighbors.

DESTINY CHARTER
TRAFFIC IMPACT ANALYSIS

City of Tacoma, WA

Prepared for: James Huegas
Washington Charter School Development
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July 2018

DESTINY CHARTER
TRAFFIC IMPACT ANALYSIS

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DESTINY CHARTER
TRAFFIC IMPACT ANALYSIS

1. INTRODUCTION

This report summarizes traffic impacts related to the updating of the existing Destiny Charter School in the City of Tacoma. The general goals of this impact study concentrate on 1) the assessment of existing roadway conditions and intersection congestion, 2) forecasts of newly generated project traffic, 3) estimations of future delay, and 4) recommendations for mitigation. Preliminary tasks include the detailed collection of roadway information, road improvement information, and peak hour traffic counts. A level of service analysis for existing traffic conditions is then made to determine the present degree of intersection congestion. Based on this analysis, forecasts of future traffic levels on the surrounding street system are found. Following this forecast, the future service levels for the key intersections are investigated. As a final step, applicable conclusions and possible on-site or off-site mitigation measures are defined.

2. PROJECT DESCRIPTION

Destiny Charter Middle School is an existing charter school opened in 2015 serving grades 6-8 with a 2018 enrollment of just over 250 students. The school is located on the northeast corner of the E. 34th Street/E. “M” Street intersection at 1301 E. 34th Street and is situated on a 3.15-acre parcel (#2084390011). The proposed project intends to incorporate the SOAR Academy school located at 2136 M.L.K. Jr Way to Destiny Charter and subsequently offer a K-8 school at one colocation. The incoming SOAR student population is approximately 300 students for a campus total of 550-600 students. No changes are proposed to the existing Destiny Charter structure which was previously studied and planned to accommodate the incoming cumulative student enrollment. The existing parking lot is proposed to be restriped to accommodate 16 additional stalls.

Schools will have an offset bell schedule with Destiny Charter’s first and last bell at 8:00 AM and 3:30 PM, respectively and SOAR Academy at 7:30 AM and 2:45 PM, respectively. The staggered bell schedule allows appropriate timing to clear parental drop-off/pick-up and bus service associated with each school. Busses will queue on the east side of the building in the parking lot with up to 4 full-size and 2 small busses serving each school. Student drop-off/pick-up generally occurs at the designated curbside zone along E. “M” Street in front of the school. Observations also indicate parents using street parking primarily on E. “M” Street and E. 34th Street for student drop-off/pick-up.

A three-year horizon of 2021 was used to determine capacity and delay analyses under future conditions and when school operations have normalized. Figure 1 on the following page shows the general site location and street network serving the vicinity. Figure 2 on page 6 shows the general site plan and circulation plan.

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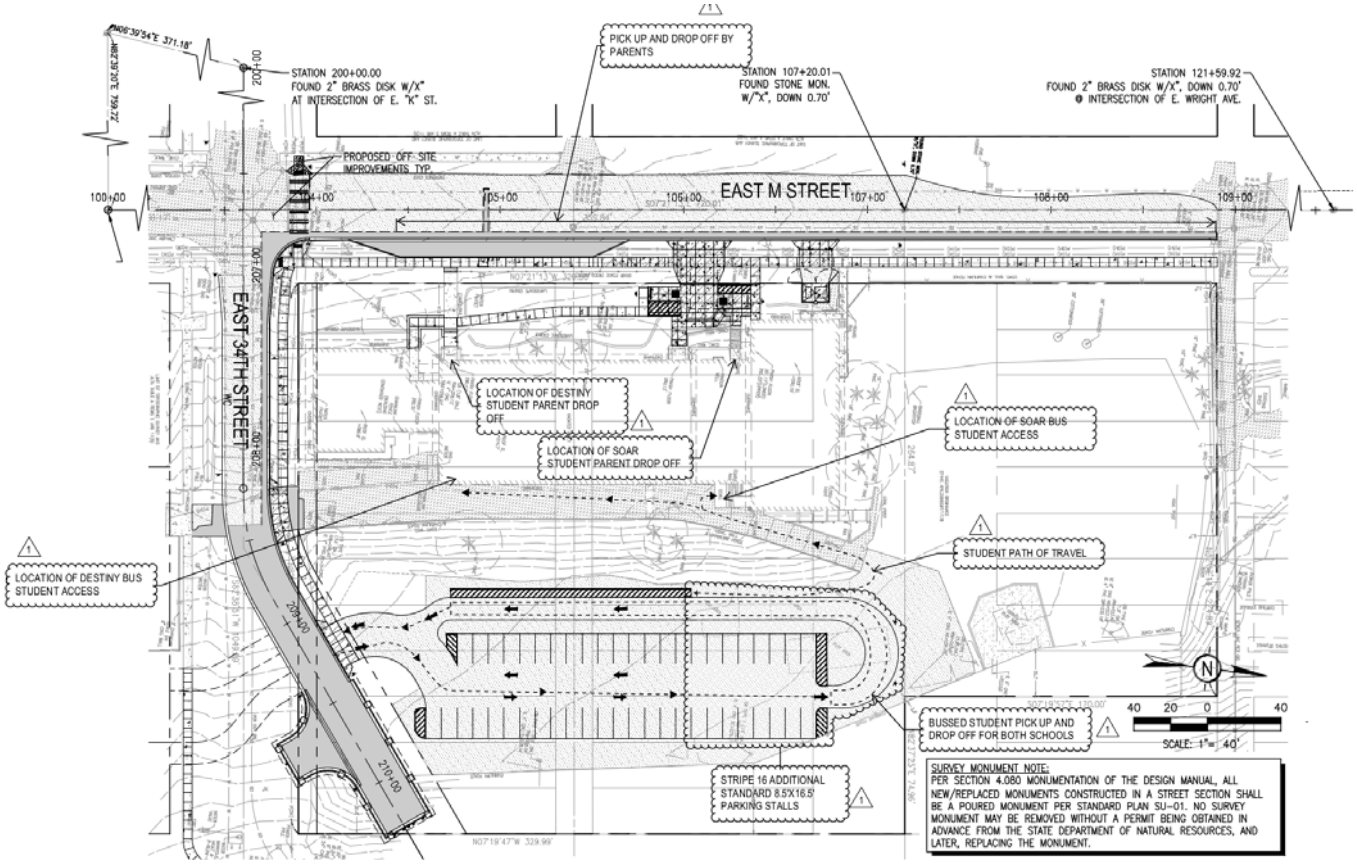
DESTINY CHARTER SCHOOL - TACOMA

VICINITY MAP & ROADWAY SYSTEM
FIGURE 1



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DESTINY CHARTER SCHOOL - TACOMA

SITE PLAN
FIGURE 2

3. EXISTING CONDITIONS

3.1. Surrounding Roadway System

The street network serving the proposed project consists of a variety of roadways. Streets near the site mainly consist of collector and local roadways. Characteristics for these roadways vary with respect to lane widths, grades, speeds, and function. The major roadways surrounding the site are listed and described below.

E. 34th Street: is an east-west, two-lane collector west of E. "L" Street and a local road to the east. The total width of the roadway varies from approximately 30-34 feet and has a posted speed limit of 30 mph. Shoulders are generally gravel/grass and can support on-street parking. Detached continuous sidewalks are available along either side of the road. A marked crosswalk with ADA ramps was recently implemented at the intersection of E. 34th Street/E. "M" Street.

E. "L" Street: is a north-south, two-lane collector classification from Puyallup Avenue to the north to E. Fairbanks Street to the south. Total width of the roadway near the school vicinity is approximately 44-48 feet wide and has a posted speed limit of 30 mph. A marked crosswalk is available on the north leg of the E. "L" Street/E. 34th Street intersection. Detached sidewalks are available in some areas.

E. "M" Street: is a north-south, two-lane local roadway that borders the west side of the school site. Total width of the roadway varies from approximately 36-38 feet and has a speed limit of 25 mph. Street parking was generally observed along either side of the roadway. Detached sidewalks are available in the vicinity.

3.2. Existing Peak Hour Volumes and Patterns

Field data for this study was collected in February and March of 2018 to capture existing travel patterns associated with the current Destiny Charter School. Generally, the highest volumes of traffic associated with the school in the AM occur within the hour that parents drop their children off before the morning bell. Conversely, the highest vehicular volumes observed in the PM occur within the hour that parents queue at the school, shortly before/after the dismissal bell. Field counts were conducted in the AM and PM from the hours of 7:00 – 9:00 AM and 2:30 – 4:00 PM, respectively, to capture the morning and afternoon peak periods. Counts were coordinated with the current Destiny Charter bell schedule to capture peak travel demands. The intersections of study are presented in Table 1 on the following page.

Table 1
Study Area

Control	Intersection
Two-Way Stop	E. “M” Street / E. 34th Street
	E. “L” Street / E. 34th Street

Peak hour count volumes are shown in Figure 2 on the following page while the full-count data sheets have been attached to the appendix.

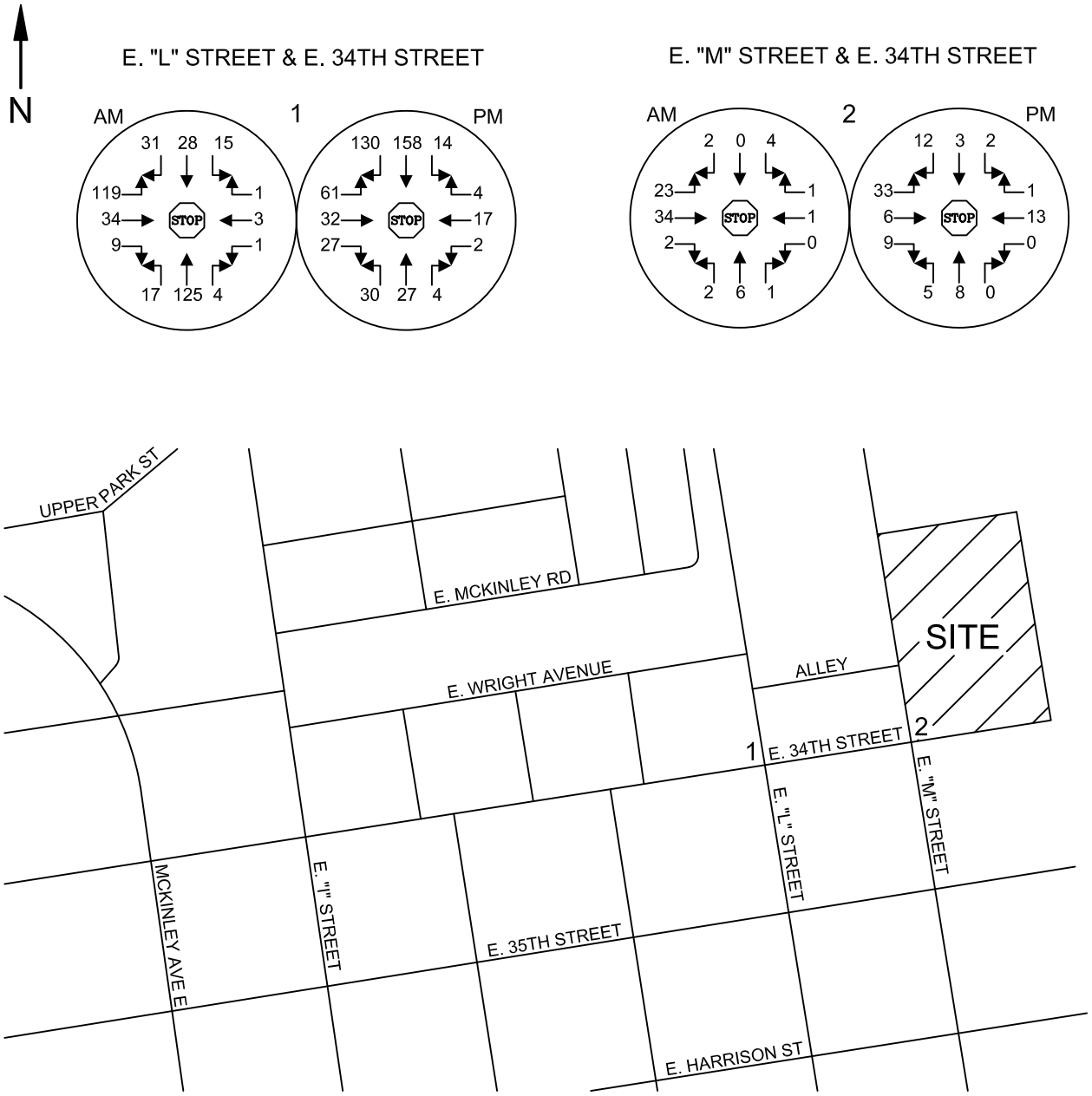
3.3. Non-Motorist Traffic & Safety

Pedestrian and bicycle activity was observed during routine peak hour field counts. A moderate amount of pedestrian activity was observed and noted primarily upon dismissal times of the school. During the afternoon peak hour, 16 pedestrian crossings were observed on the north leg and 4 pedestrian crossings on the east leg at the intersection of E. “M” Street/E. 34th Street; the AM peak hour had only 1 pedestrian crossing on each the north and east leg. As the charter school captures a greater service area than a typical local school, many students utilize the provided bussing service. Available walking routes that offer complete sidewalk connections and marked crosswalks in the general vicinity to Destiny Charter School are shown in Figure 4 on page 9.

3.4. Roadway Improvements

A review of the current City of Tacoma 6-Year Comprehensive Transportation Improvement Program indicates that a project was identified in the generally vicinity of the Destiny Charter School. A brief description of the project is provided below:

Project Title: 34th St. Bridge – Pacific Ave. to B St.
The scope of this project intends to replace the original aging S. 34th Street bridge from East “B” Street to Pacific Avenue. The project is currently seeking grant funding with an estimated cost of $10,000,000.



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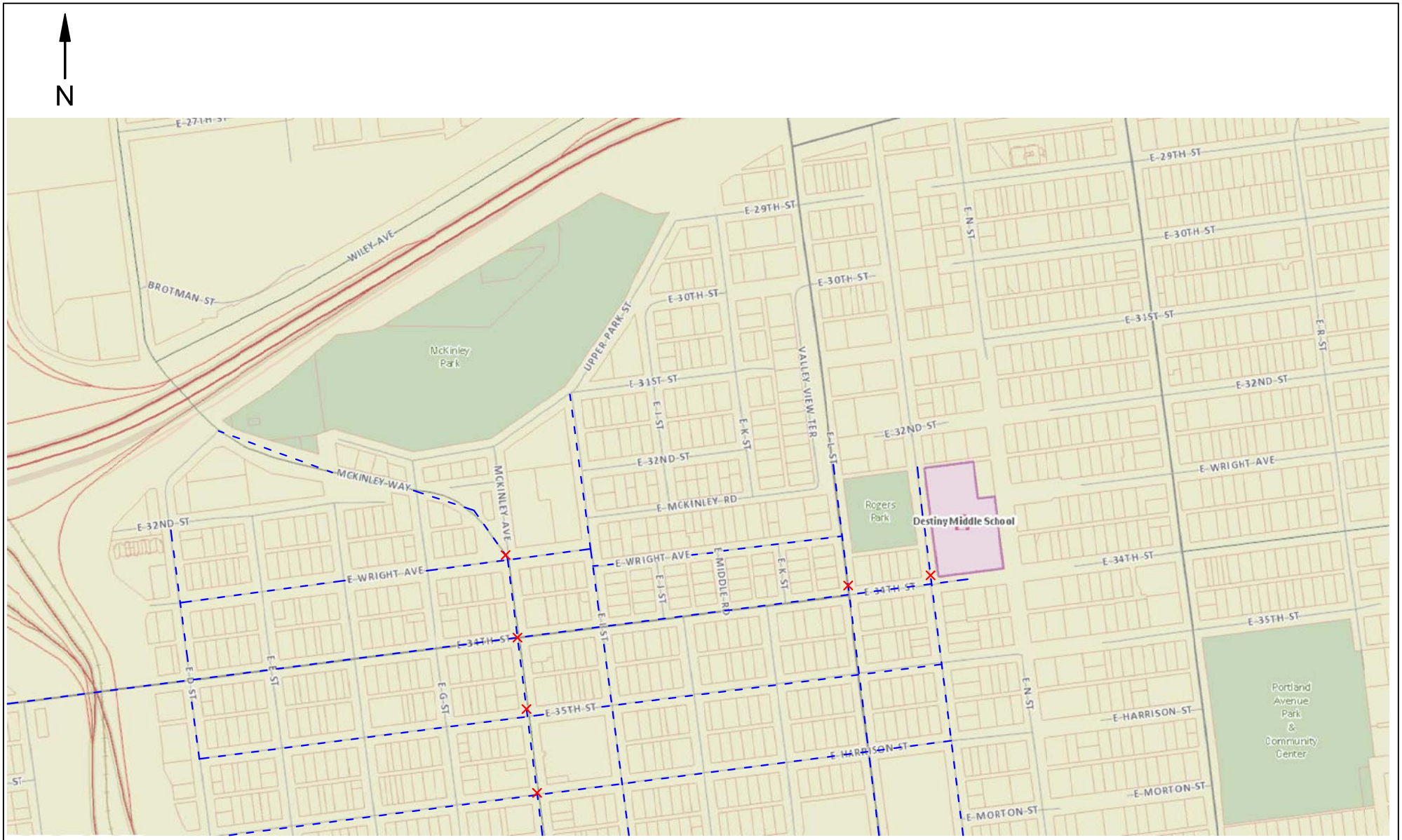
DESTINY CHARTER SCHOOL - TACOMA

EXISTING PEAK HOUR VOLUMES
FIGURE 3



MARKED CROSSWALK SIDEWALK

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DESTINY CHARTER SCHOOL - TACOMA
WALKING ROUTES
FIGURE 4

3.5. Existing Level of Service

Peak hour delays were determined through the use of the *Highway Capacity Manual* 6th Edition. Capacity analysis is used to determine level of service (LOS) which is an established measure of congestion for transportation facilities. The range[1] for intersection level of service is LOS A to LOS F with the former indicating the best operating conditions with low control delays and the latter indicating the worst conditions with heavy control delays. Detailed descriptions of intersection LOS are given in the 2016 Highway Capacity Manual. Level of service calculations were made through the use of the Synchro 10 analysis program. Table 2 below portrays existing LOS delays for the key intersections defined in the study area.

Table 2

Existing Level of Service

Delays given in seconds per vehicle

		AM Peak Hour		*PM Peak Hour*	
Intersection	**Control**	**LOS**	**Delay**	**LOS**	**Delay**
E. "M" Street & E. 34th Street	TWSC	A	9.7	A	9.4
E. "L" Street & E. 34th Street	TWSC	B	13.0	B	13.5

(TWSC: Two-Way Stop Control)

As shown in Table 2, existing delays operate at LOS B or better during the critical AM and PM school peak hours of travel. Destiny Charter school is located in a residential area with low volumes of background volumes. The morning and afternoon peak times were observed to clear in approximately 15 minutes.

[1] *Signalized Intersections - Level of Service*

Level of Service	Control Delay per Vehicle (sec)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

Stop Controlled Intersections – Level of Service

Level of Service	Control Delay per Vehicle (sec)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

Highway Capacity Manual, 6th Edition

4. FUTURE TRAFFIC DEMAND

4.1. School Traffic Generation & Flow

As mentioned, Destiny Charter and SOAR Academy are proposing to combine campuses to form one location to serve grades K-8. Each school has an approximate 250-300 student population for a campus total of up to 600 students. The combined schools will use the Destiny Charter location resulting in a shift for the SOAR population. The Institute of Transportation Engineer's (ITE) publication *Trip Generation,* 10th Edition was used for forecasting purposes with the Land Use Code of LUC 537 – Charter Elementary School. However, since not all charter schools are required to offer formal bussing for students, the student population currently being bussed were not included in the calculation. Based on observations at both schools, trips are significantly less than ITE projections. A 2017-2018 "Verification of Ridership Data Submitted" provided by the school indicates approximately an average of 120 students using bus services at SOAR Academy. The input variable for ITE calculations of "students" was therefore 180 students for trip generation calculations (300 total students less 120 students bussing = 180). Refer to the appendix for trip generation output.

Table 3
Project Trip Generation

Land Use	AM Peak-Hour Trips			PM Peak-Hour Trips		
	In	Out	Total	In	Out	Total
Charter School	93	83	**176**	55	65	**120**

Table 3 above indicates an increase of 176 AM peak hour trips and 120 PM peak hour trips with the addition of the SOAR student population. Again, these trip rates should be considered conservative when compared to field observations. It should be noted that the school has indicated a proposed stabilized ongoing enrollment of up to 600 students. School associated traffic is therefore anticipated to remain relatively unchanged beyond the scope of this analysis.

4.2. Distribution & Assignment

Forecast peak hour trip distributions are shown on Figure 5 on the following page. Distribution percentages are largely based on existing travel patterns identified from the field counts and the original traffic study from 2015. The following paragraphs summarize existing and proposed circulation plans

Existing

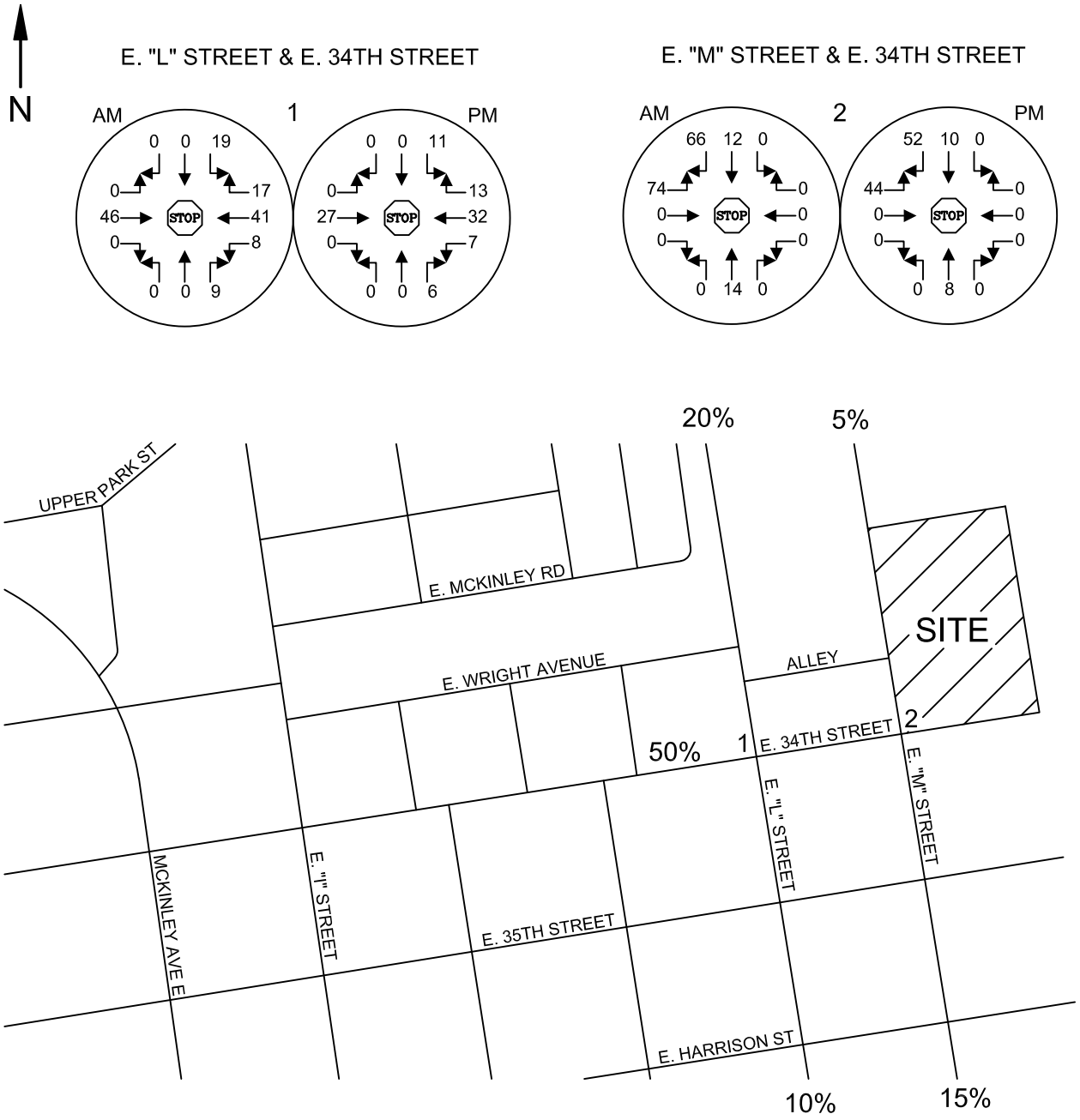
Currently student drop-off/pick-up at Destiny Charter generally occurs on the surrounding roadways with the majority occurring along either side of E. “M” Street and E. 34th Street. Afternoon field observations noted 9 vehicles using the E. “M” Street to E. “L” Street alley access subsequent to student pick-up. Four busses were observed queued along the east side of the school in the parking lot.

Proposed

Operations are proposed to remain as is with the incoming SOAR Academy providing student pick-up/drop-off along E. “M” Street and bussing in the easterly parking lot. An increase supply of 16 parking stalls is proposed with restriping the existing lot (see Figure 2). Given the bell schedules with 30-45-minute separation between each school, adequate time is available to clear each influx of traffic with minimal to no overlap. As observations and delays from Table 2 indicate, no operational deficiencies are anticipated. With Destiny Charter traffic clearing in approximately 15 minutes, introducing a second similar arrangement for SOAR is anticipated to operate satisfactorily.

4.3. Forecast Traffic Volumes

2021 was used as the horizon study year in order to assess future impacts on the roadways serving the vicinity of the site. Forecast 2021 background traffic volumes were derived by applying a 1.2 percent compound annual growth rate to the existing volumes of Figure 3. Forecast 2021 peak hour volumes with the applied growth rate only are given on Figure 6. Cumulative 2021 peak hour volumes and SOAR Academy trips are presented on Figure 7. It should be noted that Figure 7 represents Destiny Charter volumes and SOAR Academy trips for conservative analysis; the staggered bell schedules will provide separation resulting in not all traffic arriving and leaving simultaneously.



PROJECT TRIP GENERATION

AM PEAK HOUR TRIPS	PM PEAK HOUR TRIPS
INBOUND: 93 VPH	INBOUND: 55 VPH
OUTBOUND: 83 VPH	OUTBOUND: 65 VPH

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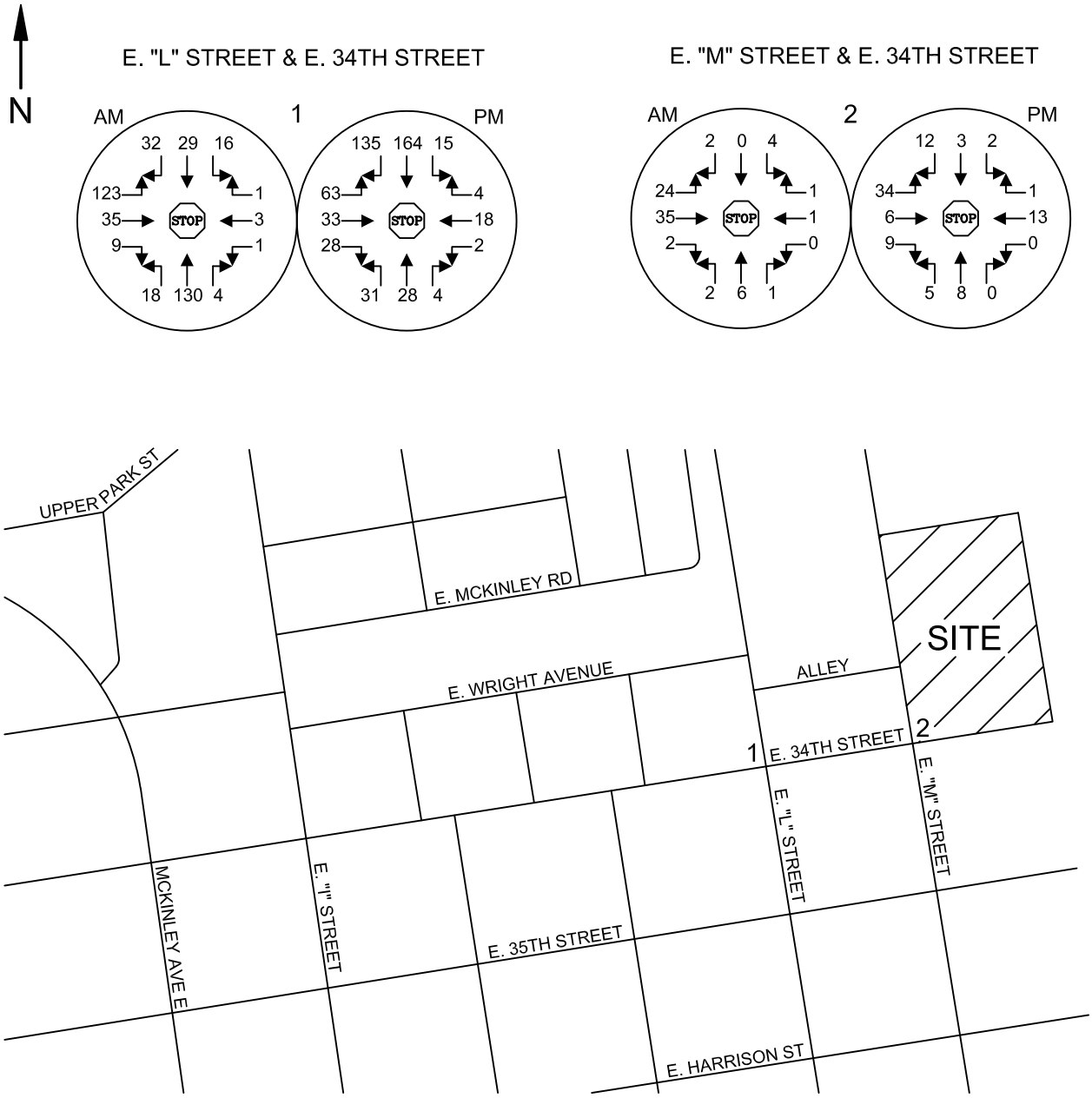
DESTINY CHARTER SCHOOL - TACOMA

TRIP DISTRIBUTION & ASSIGNMENT
FIGURE 5



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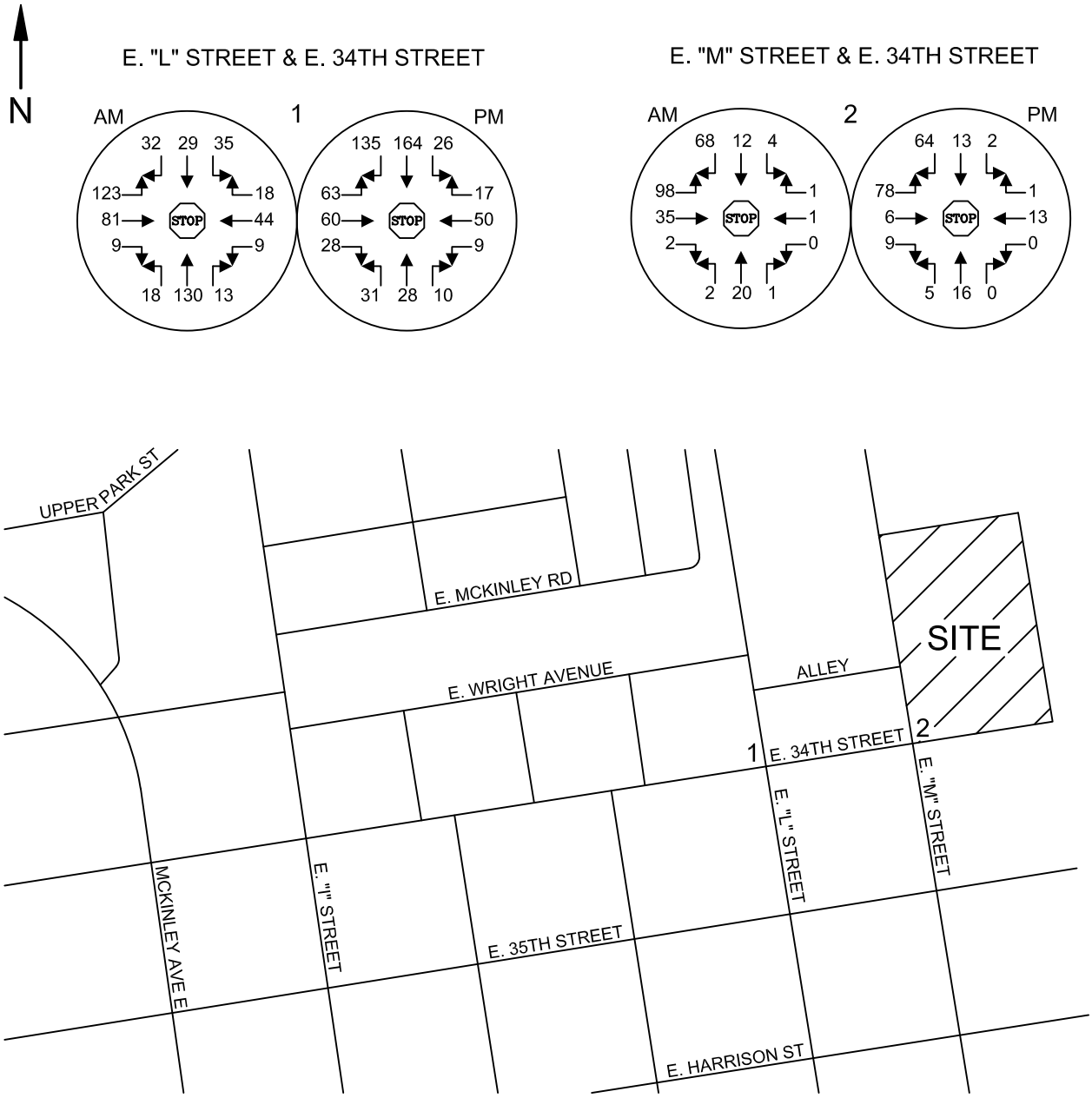
FORECAST 2021 PEAK HOUR VOLUMES WITHOUT SOAR
FIGURE 6



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DESTINY CHARTER SCHOOL - TACOMA

FORECAST 2021 PEAK HOUR VOLUMES WITH SOAR

FIGURE 7

4.4. Future Level of Service

Level of service analyses were made of the future AM and PM peak hour volumes at the key roadways and intersections using the *Synchro 10* analysis program. Delays for the key intersections under future conditions with the projected traffic shift are shown below in Table 4.

Table 4
Forecast 2021 Level of Service
Delays given in seconds per vehicle

		Without SOAR				**With SOAR**			
		AM Peak Hour		*PM Peak Hour*		*AM Peak Hour*		*PM Peak Hour*	
Intersection	**Control**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
E. "M" Street & E. 34th Street	TWSC	A	9.7	A	9.4	B	11.8	B	10.2
E. "L" Street & E. 34th Street	TWSC	B	13.4	B	13.9	C	18.6	C	16.5

(TWSC: Two-Way Stop Control)

The results of Table 4 indicate forecast level of service operating with delays up to LOS C for the intersection of E. "L" Street/E. 34th Street. Again, these calculations reflect total concurrent volumes from both schools and a conservative trip generation estimate. Actual delays may be lower due to the staggered bell schedule between the schools. The surrounding roadways are shown to adequately support the additional SOAR Academy traffic.

5. CONCLUSIONS AND MITIGATION

Destiny Charter Middle School and SOAR Academy propose to combine schools and offer a K-8 charter school located at the current Destiny Charter campus. The school is located on the northeast corner of the E. "M" Street/E. 34th Street intersection. Each school has an approximate 250-300 student enrollment. Destiny Charter, which opened in 2015, was originally studied to accommodate 600 students. Based on the original traffic study, existing traffic volumes are lower than what was assumed when compared to current field counts and observations. ITE trip rates were used to provide a conservative analysis and estimates 176 new AM peak hour trips (93 in/83 out) and 120 PM peak hour trips (55 in/65 out) with the addition of SOAR Academy.

Existing delays at the intersections of study are mild at LOS B or better during school peak hours. The residential nature of the area and geographical location of Destiny Charter results in relatively low amounts of background traffic. Parents tend to drop-off/pick-up students along the school frontage on E. “M” Street and along either side of E. 34th Street with busses queuing in the easterly parking lot behind the school. Striping of an additional 16 parking stalls are proposed as shown in Figure 2. Given the size of the school, associated arrival/dismissal traffic was observed to clear in approximately 15 minutes.

The incoming SOAR Academy will start and dismiss 30-45 minutes before Destiny Charter to provide separation and reduce congestion. The staggered bell schedule is anticipated to alleviate localized congestion concerns. Each school will provide 3-4 full-size busses to transport students which will continue to load and unload in the easterly parking lot. Forecast delays with combined school traffic are shown to operate at LOS C or better indicating no operational deficiencies.

Based on the above, the recommended mitigation is as follows:

1. The school(s) shall communicate a “preferred path of travel” to driving parents about continuous one-direction travel along E. “M” Street. Behaviors such as U-turns and alley access should be discussed and discouraged on a routine basis. An example diagram illustrating the travel path is attached to the appendix.

2. School staff shall be present along E. “M” Street during student pick up/drop off to coordinate and facilitate safe and efficient student ingress/egress. The school shall determine the appropriate number of staff to ensure a timely process. No parking shall be allowed in the designated load/unload curbside zone.

3. Crossing guards are required for elementary schools at designated school crosswalks. Guards are recommended to be placed at the intersections of E. “M” Street/E. 34th Street and E. “L” Street/E. 34th Street.

4. Other proposed operational procedures have been provided from the school including additional rules that will be discussed on a routine basis with the parent/student populations. The proposed procedures have been included in the appendix.

5. It is recommended that the preceding mitigations and procedures be reviewed in January of 2019 or later to assess operations subsequent to the incoming SOAR population and reevaluate bus loading in the rear parking lot and student pick-up/drop-off along E. “M” Street.

No other mitigation is identified at this time.

DESTINY CHARTER
TRAFFIC IMPACT ANALYSIS

APPENDIX

LEVEL OF SERVICE

The following are excerpts from the *2016 Highway Capacity Manual - Transportation Research Board Special Report 209.*

Quality of service requires quantitative measures to characterize operational conditions within a traffic stream. Level of service (LOS) is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.

Six LOS are defined for each type of facility that has analysis procedures available. Letters designate each level, from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions and the driver's perception of those conditions.

Level-of-Service definitions

The following definitions generally define the various levels of service for arterials.

Level of service A represents primarily free-flow operations at average travel speeds, usually about 90 percent of the free-flow speed for the arterial classification. Vehicles are seldom impeded in their ability to maneuver in the traffic stream. Delay at signalized intersections is minimal.

Level of service B represents reasonably unimpeded operations at average travel speeds, usually about 70 percent of the free-flow speed for the arterial classification. The ability to maneuver in the traffic stream is only slightly restricted and delays are not bothersome.

Level of service C represents stable operations; however, ability to maneuver and change lanes in midblock locations may be more restricted than in LOS B, and longer queues, adverse signal coordination, or both may contribute to lower average travel speeds of about 50 percent of the average free-flow speed for the arterial classification.

Level of service D borders on a range in which small increases in flow may cause substantial increases in approach delay and hence decreases in arterial speed. LOS D may be due to adverse signal progression, inappropriate signal timing, high volumes, or some combination of these. Average travel speeds are about 40 percent of free-flow speed.

Level of service E is characterized by significant delays and average travel speeds of one-third the free-flow speed or less. Such operations are caused by some combination of

adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.

Level of service F characterizes arterial flow at extremely low speeds, from less than one-third to one-quarter of the free-flow speed. Intersection congestion is likely at critical signalized locations, with long delays and extensive queuing.

These definitions are general and conceptual in nature, and they apply primarily to uninterrupted flow. Levels of service for interrupted flow facilities vary widely in terms of both the user's perception of service quality and the operational variables used to describe them.

For each type of facility, levels of service are defined based on one or more operational parameters that best describe operating quality for the subject facility type. While the concept of level of service attempts to address a wide range of operating conditions, limitations on data collection and availability make it impractical to treat the full range of operational parameters for every type of facility. The parameters selected to define levels of service for each facility type are called "measures of effectiveness" or "MOE's", and represent available measures that best describe the quality of operation on the subject facility type.

Each level of service represents a range of conditions, as defined by a range in the parameters given. Thus, a level of service is not a discrete condition, but rather a range of conditions for which boundaries are established.

The following tables describe levels of service for signalized and unsignalized intersections. Level of service for signalized intersections is defined in terms of average control delay. Delay is a measure of driver discomfort, frustration, fuel consumption and lost travel time, as well as time from movements at slower speeds and stops on intersection approaches as vehicles move up in queue position or slow down upstream of an intersection. Level of service for unsignalized intersections is determined by the computed or measured control delay and is determined for each minor movement.

Signalized Intersections - Level of Service

Level of Service	Control Delay per Vehicle (sec)
A	≤10
B	> 10 and ≤20
C	> 20 and ≤35
D	> 35 and ≤55
E	> 55 and ≤80
F	> 80

Unsignalized Intersections - Level of Service

Level of Service	Average Total Delay per Vehicle (sec)
A	≤10
B	> 10 and ≤15
C	> 15 and ≤25
D	> 25 and ≤35
E	> 35 and ≤50
F	> 50

As described in the 2016 Highway Capacity Manual, level of service breakpoints for all-way stop controlled (AWSC) intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from distinct kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an AWSC intersection. Thus a higher level of control delay is acceptable at a signalized intersection for the same level of service.

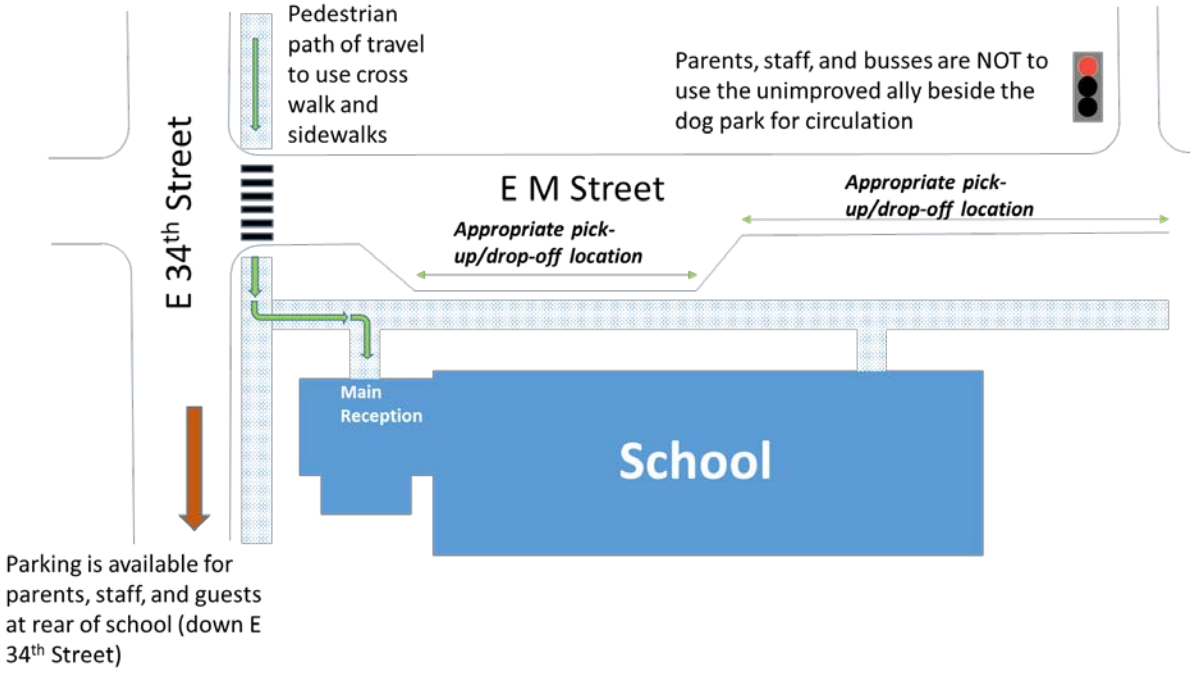
AWSC Intersections - Level of Service

Level of Service	Average Total Delay per Vehicle (sec)
A	≤10
B	> 10 and ≤15
C	> 15 and ≤25
D	> 25 and ≤35
E	> 35 and ≤50
F	> 50

Proposed procedures for pick-up and drop off of students at the Destiny Middle School/ SOAR Academy.

- Parents will perform pick-up and drop-off of students only on the dedicated areas directly in front of the school
- Parents will refrain from walking students into the school building
- Both schools will adequately staff the pick-up and drop-off areas at the start and end of each school day to facilitate a concierge system of meeting students as they arrive and walking into school
- Staff will encourage parents to not park and wait for students at pick-up time
- After dropping off or collecting students, north bound parents travelling by car will make their way out of the area by descending E M Street until it reaches E 31st or E 28th Streets.
- No staff, busses, or parents will be permitted to use the unimproved alley way on the west side of E M Street to circulate away from the school following pick-up or drop-off
- No staff, busses, or parents will perform a U-turn on E M street
- A parking lot at the rear (east side) of the school has been provided for staff, parents, and visitors to the school.
- All school bus pick-up and drop-off will occur in the parking lot area at the rear of the school.

<u>Diagram showing the appropriate locations for pick-up and drop-off of students traveling by car</u>



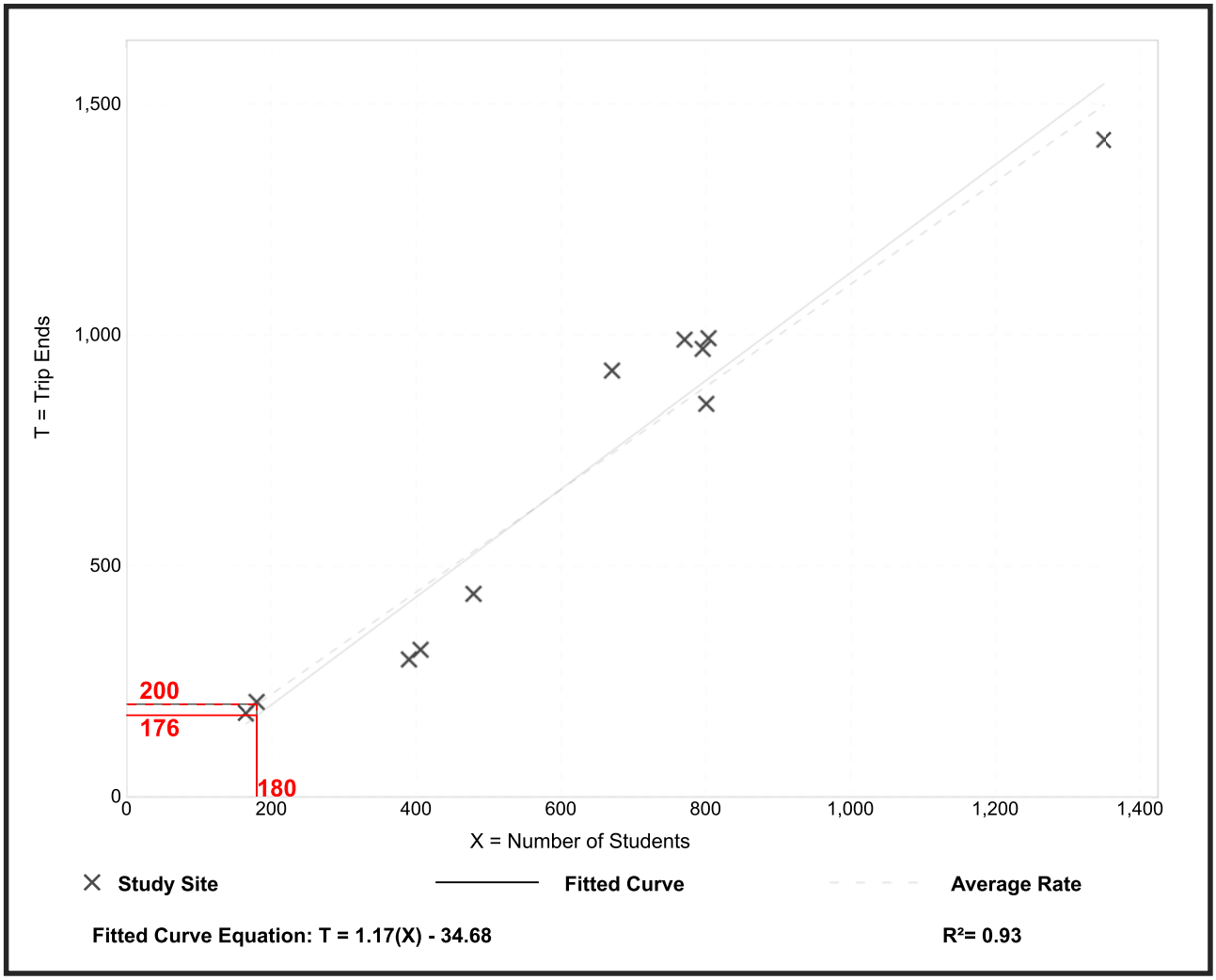
Charter Elementary School
(537)

Vehicle Trip Ends vs:	**Students**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	11
Avg. Num. of Students:	619
Directional Distribution:	53% entering, 47% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
1.11	0.76 - 1.38	0.18

Data Plot and Equation



Trip Generation Manual, 10th Edition ● Institute of Transportation Engineers

Charter Elementary School
(537)

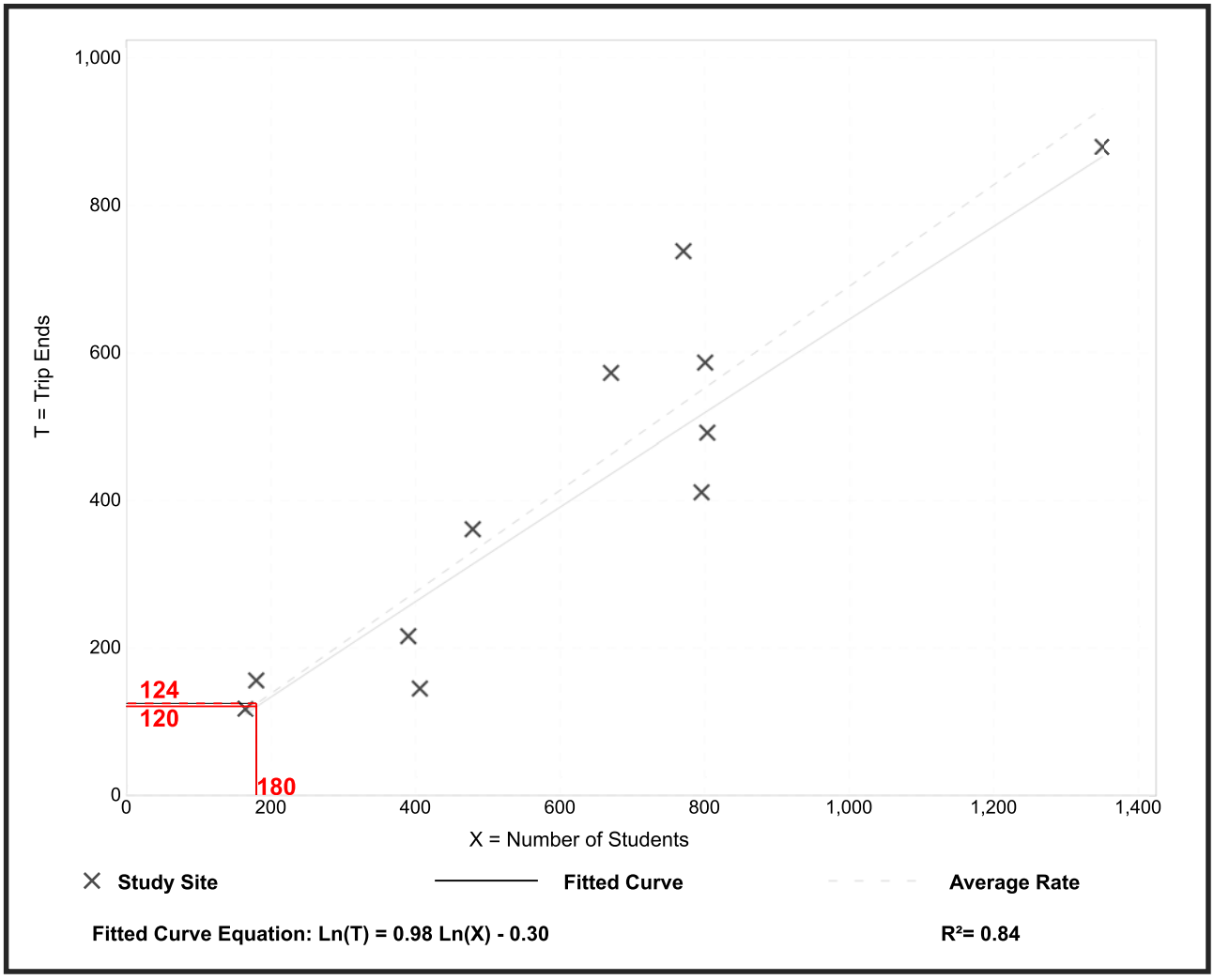
Vehicle Trip Ends vs: **Students**
On a: **Weekday,**
PM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 11
Avg. Num. of Students: 619
Directional Distribution: 46% entering, 54% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.69	0.36 - 0.96	0.16

Data Plot and Equation



Trip Generation Manual, 10th Edition ● Institute of Transportation Engineers

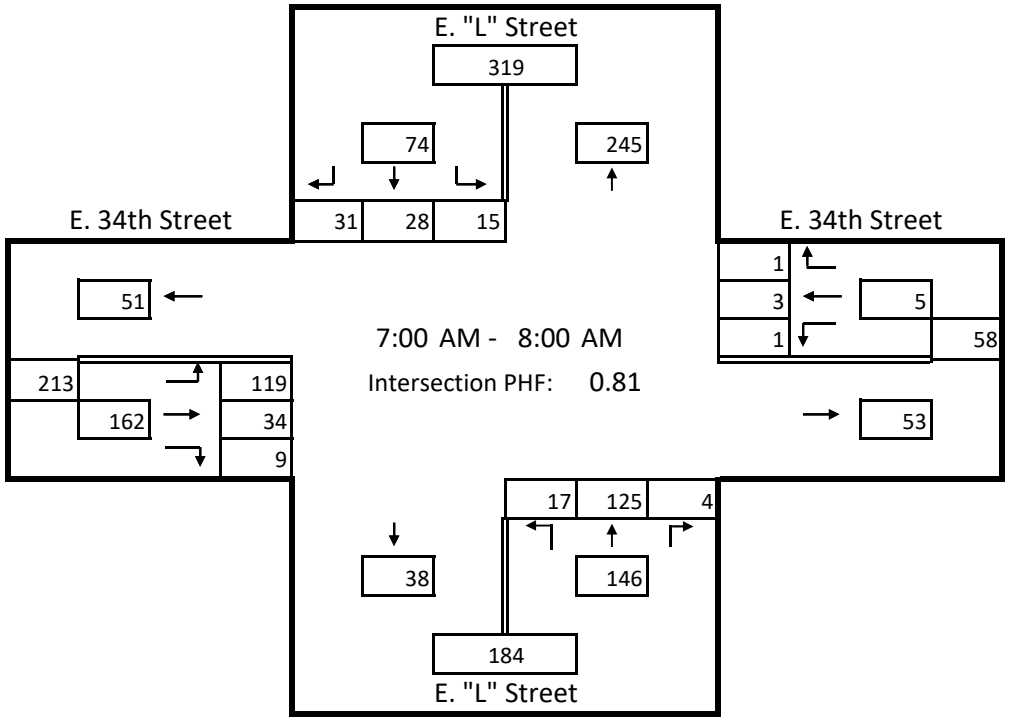
Heath & Associates, Inc.
2214 Tacoma Road
Puyallup, WA 98371

Project Name: Destiny Charter

Intersection: E. 34th & E. "L" Street — Date of Count: 3/1/2018

Jurisdiction: Tacoma — Project Number: 4073

Time Period	Soutbound E. "L" Street				Westbound E. 34th Street				Northbound E. "L" Street				Eastbound E. 34th Street				
	HV	R	T	L	HV	R	T	L	HV	R	T	L	HV	R	T	L	Total
7:00 AM	0	5	8	4	0	1	0	1	0	0	34	1	0	1	6	26	87
7:15 AM	0	11	10	5	0	0	1	0	0	1	37	6	0	2	15	31	119
7:30 AM	0	5	5	4	0	0	1	0	0	3	23	3	0	3	9	31	87
7:45 AM	0	10	5	2	0	0	1	0	0	0	31	7	0	3	4	31	94
8:00 AM	0	11	13	0	0	0	1	0	0	0	28	3	0	4	2	22	84
8:15 AM	0	9	17	1	0	0	1	0	0	0	19	2	0	2	3	27	81
8:30 AM	0	13	7	1	0	0	1	0	0	1	14	3	0	2	1	20	63
8:45 AM	0	11	10	0	0	1	3	0	0	2	17	3	0	0	6	14	67
Total	0	75	75	17	0	2	9	1	0	7	203	28	0	17	46	202	682
Peak Hour	**7:00 AM to 8:00 AM**																Total
Peak Total	0	31	28	15	0	1	3	1	0	4	125	17	0	9	34	119	387
Heavy Veh.	0.0%				0.0%				0.0%				0.0%				
PHF	0.71				0.63				0.83				0.84				

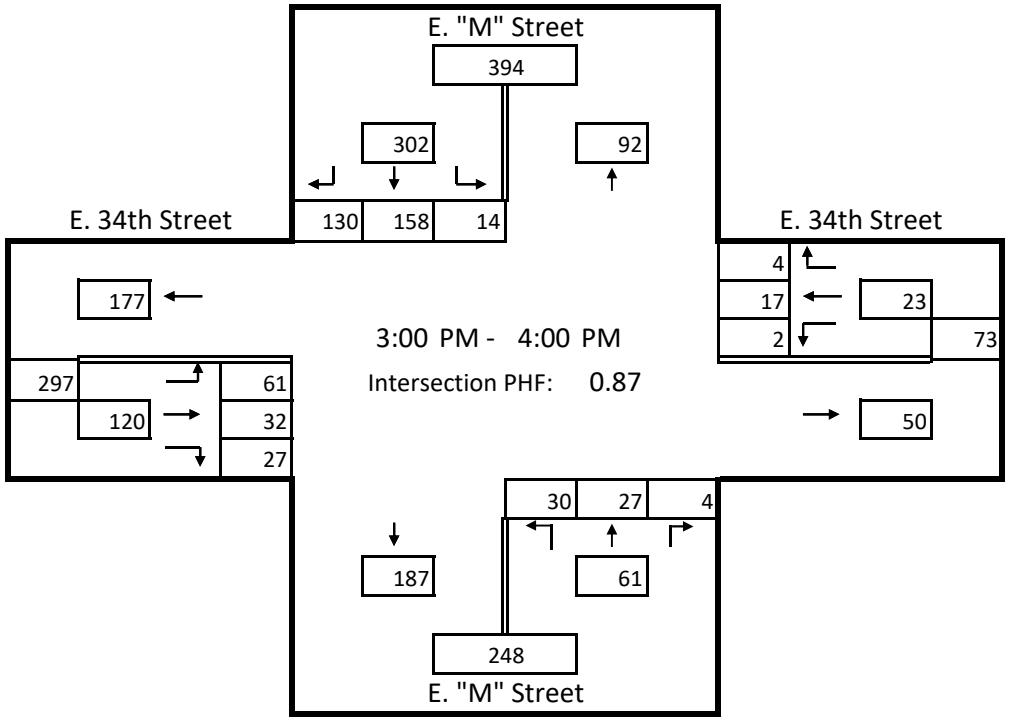


Heath & Associates, Inc.
2214 Tacoma Road
Puyallup, WA 98371

Project Name: **Destiny Charter**
Intersection: E. 34th Street & E. "L" Street
Jurisdiction: Tacoma

Date of Count: 2/28/2018
Project Number: 4073

Time Period	Soutbound E. "M" Street				Westbound E. 34th Street				Northbound E. "M" Street				Eastbound E. 34th Street				
	HV	R	T	L	HV	R	T	L	HV	R	T	L	HV	R	T	L	Total
2:30 PM	0	20	29	1	0	0	2	0	0	0	9	0	0	3	6	12	82
2:45 PM	0	22	27	2	0	1	3	0	0	0	10	0	0	4	10	18	97
3:00 PM	0	22	38	4	0	0	1	0	0	2	8	5	0	6	6	14	106
3:15 PM	0	31	35	5	0	0	3	1	0	0	11	8	0	2	11	14	121
3:30 PM	0	44	44	4	0	3	9	1	0	1	5	6	0	8	11	10	146
3:45 pm	0	33	41	1	0	1	4	0	0	1	3	11	0	11	4	23	133
Total	0	172	214	17	0	5	22	2	0	4	46	30	0	34	48	91	685
Peak Hour	**3:00 PM to 4:00 PM**																Total
Peak Total	0	130	158	14	0	4	17	2	0	4	27	30	0	27	32	61	506
Heavy Veh.	0.0%				0.0%				0.0%				0.0%				
PHF	0.82				0.44				0.80				0.79				



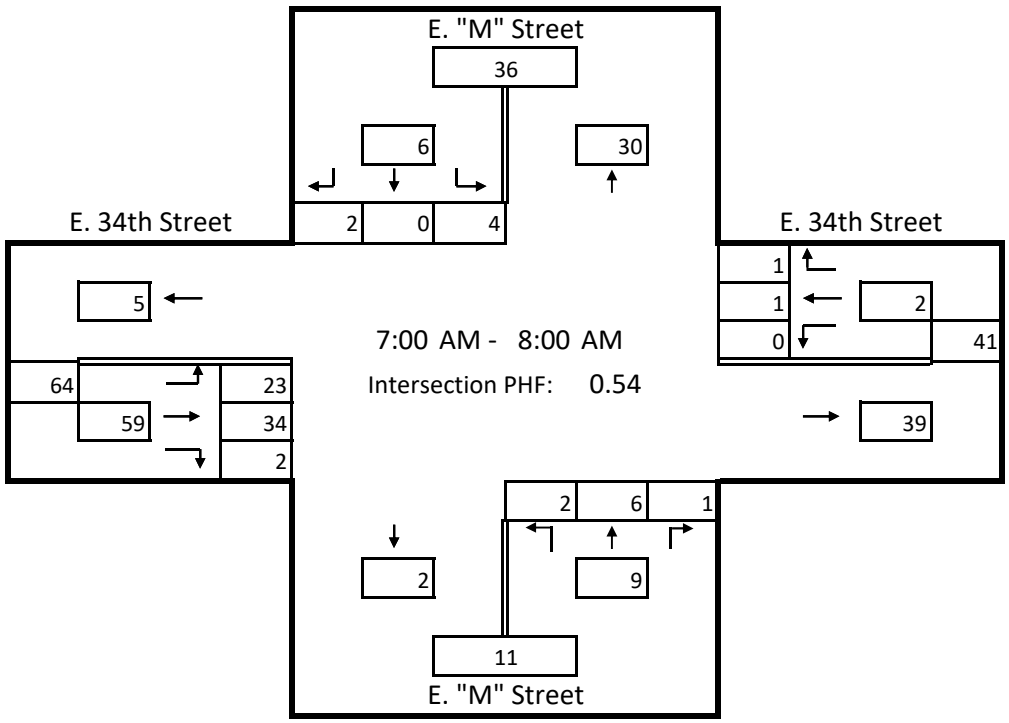
Heath & Associates, Inc.
2214 Tacoma Road
Puyallup, WA 98371

Project Name: Destiny Charter

Intersection: E. 34th & E. "M" Street — Date of Count: 3/1/2018

Jurisdiction: Tacoma — Project Number: 4073

Time Period	Soutbound E. "M" Street				Westbound E. 34th Street				Northbound E. "M" Street				Eastbound E. 34th Street				
	HV	R	T	L	HV	R	T	L	HV	R	T	L	HV	R	T	L	Total
7:00 AM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	5	3	10
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	1	0	1	6	3	12
7:30 AM	0	0	0	1	0	0	1	0	0	1	3	1	0	0	16	12	35
7:45 AM	0	1	0	2	0	1	0	0	0	0	2	0	0	1	7	5	19
8:00 AM	0	2	0	0	0	1	0	0	0	1	2	0	0	0	2	2	10
8:15 AM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	2	5
8:30 AM	0	1	0	0	0	0	0	0	0	0	1	1	0	1	1	2	7
8:45 AM	0	2	0	0	0	2	1	2	0	0	1	0	0	0	1	1	10
Total	0	7	0	4	0	5	2	2	0	2	11	3	0	3	39	30	108
Peak Hour	**7:00 AM to 8:00 AM**																Total
Peak Total	0	2	0	4	0	1	1	0	0	1	6	2	0	2	34	23	76
Heavy Veh.	0.0%				0.0%				0.0%				0.0%				
PHF	0.50				0.50				0.45				0.53				



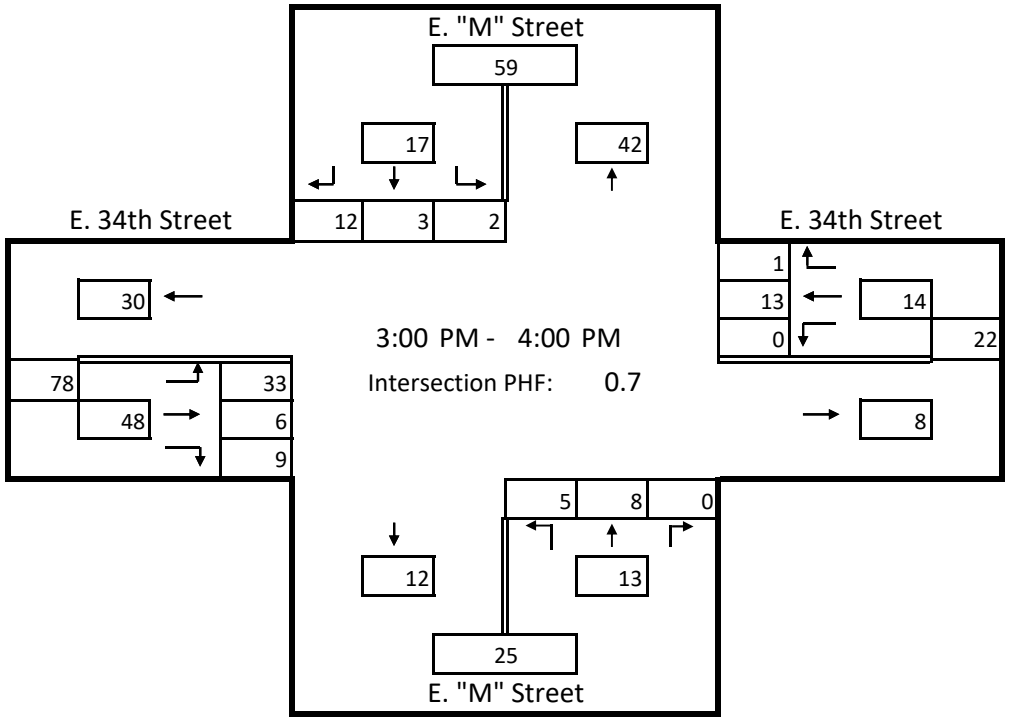
Heath & Associates, Inc.
2214 Tacoma Road
Puyallup, WA 98371

Project Name: **Destiny Charter**
Intersection: E. 34th Street & E. "M" Street
Jurisdiction: Tacoma

Date of Count: 3/1/2018
Project Number: 4073

Time Period	Soutbound E. "M" Street				Westbound E. 34th Street				Northbound E. "M" Street				Eastbound E. 34th Street				
	HV	R	T	L	HV	R	T	L	HV	R	T	L	HV	R	T	L	Total
2:30 PM	0	0	1	0	0	1	0	0	0	0	1	0	0	1	2	3	9
2:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	4	8
3:00 PM	0	0	0	2	0	0	2	0	0	0	2	2	0	1	5	5	19
3:15 PM	0	2	1	0	0	0	0	0	0	0	5	0	0	4	0	10	22
3:30 PM	0	7	1	0	0	1	8	0	0	0	0	1	0	3	0	12	33
3:45 PM	0	3	1	0	0	0	3	0	0	0	1	2	0	1	1	6	18
Total	0	12	4	2	0	2	13	1	0	0	9	5	0	11	10	40	109

Peak Hour	**3:00 PM to 4:00 PM**																Total
Peak Total	0	12	3	2	0	1	13	0	0	0	8	5	0	9	6	33	92
Heavy Veh.	0.0%				0.0%				0.0%				0.0%				
PHF	0.53				0.39				0.65				0.80				



Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	23	34	2	0	1	1	2	6	1	4	0	2
Future Vol, veh/h	23	34	2	0	1	1	2	6	1	4	0	2
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
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	54	54	54	54	54	54	54	54	54	54	54	54
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	43	63	4	0	2	2	4	11	2	7	0	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	48	47	12	80	48	22	9	0	0	18	0	0
Stage 1	21	21	-	25	25	-	-	-	-	-	-	-
Stage 2	27	26	-	55	23	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	958	849	1074	913	847	1061	1624	-	-	1612	-	-
Stage 1	1003	882	-	998	878	-	-	-	-	-	-	-
Stage 2	996	878	-	962	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	942	835	1064	845	833	1051	1616	-	-	1604	-	-
Mov Cap-2 Maneuver	942	835	-	845	833	-	-	-	-	-	-	-
Stage 1	996	874	-	991	872	-	-	-	-	-	-	-
Stage 2	985	872	-	882	872	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	8.9	1.6	4.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1616	-	-	880	929	1604	-	-
HCM Lane V/C Ratio	0.002	-	-	0.124	0.004	0.005	-	-
HCM Control Delay (s)	7.2	0	-	9.7	8.9	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	119	34	9	1	3	1	17	125	4	15	28	31
Future Vol, veh/h	119	34	9	1	3	1	17	125	4	15	28	31
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
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	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	145	41	11	1	4	1	21	152	5	18	34	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	292	292	57	316	309	159	74	0	0	159	0	0
Stage 1	91	91	-	199	199	-	-	-	-	-	-	-
Stage 2	201	201	-	117	110	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	664	622	1015	641	609	892	1538	-	-	1433	-	-
Stage 1	921	823	-	807	740	-	-	-	-	-	-	-
Stage 2	805	739	-	892	808	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	643	602	1011	586	590	889	1535	-	-	1430	-	-
Mov Cap-2 Maneuver	643	602	-	586	590	-	-	-	-	-	-	-
Stage 1	905	811	-	793	727	-	-	-	-	-	-	-
Stage 2	786	726	-	825	796	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13	10.8	0.9	1.5
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1535	-	-	647	632	1430	-	-
HCM Lane V/C Ratio	0.014	-	-	0.305	0.01	0.013	-	-
HCM Control Delay (s)	7.4	0	-	13	10.8	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0	0	-	-

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	33	6	9	0	13	1	5	8	0	2	3	12
Future Vol, veh/h	33	6	9	0	13	1	5	8	0	2	3	12
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
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	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	47	9	13	0	19	1	7	11	0	3	4	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	64	54	23	65	62	21	26	0	0	16	0	0
Stage 1	24	24	-	30	30	-	-	-	-	-	-	-
Stage 2	40	30	-	35	32	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	935	841	1060	934	833	1062	1601	-	-	1615	-	-
Stage 1	999	879	-	992	874	-	-	-	-	-	-	-
Stage 2	980	874	-	986	872	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	905	828	1050	902	820	1052	1593	-	-	1607	-	-
Mov Cap-2 Maneuver	905	828	-	902	820	-	-	-	-	-	-	-
Stage 1	990	873	-	983	866	-	-	-	-	-	-	-
Stage 2	949	866	-	958	866	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	9.4	2.8	0.9
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1593	-	-	918	833	1607	-	-
HCM Lane V/C Ratio	0.004	-	-	0.075	0.024	0.002	-	-
HCM Control Delay (s)	7.3	0	-	9.2	9.4	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	61	32	27	2	17	4	30	27	4	14	158	130
Future Vol, veh/h	61	32	27	2	17	4	30	27	4	14	158	130
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	70	37	31	2	20	5	34	31	5	16	182	149

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	407	397	261	429	469	38	333	0	0	38	0	0
Stage 1	291	291	-	104	104	-	-	-	-	-	-	-
Stage 2	116	106	-	325	365	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	558	544	783	540	495	1040	1238	-	-	1585	-	-
Stage 1	721	675	-	907	813	-	-	-	-	-	-	-
Stage 2	894	811	-	692	627	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	519	520	780	474	473	1036	1236	-	-	1582	-	-
Mov Cap-2 Maneuver	519	520	-	474	473	-	-	-	-	-	-	-
Stage 1	699	665	-	880	789	-	-	-	-	-	-	-
Stage 2	842	787	-	618	618	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.5	12.3	3.9	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1236	-	-	562	522	1582	-	-
HCM Lane V/C Ratio	0.028	-	-	0.245	0.051	0.01	-	-
HCM Control Delay (s)	8	0	-	13.5	12.3	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1	0.2	0	-	-

Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	24	35	2	0	1	1	2	6	1	4	0	2
Future Vol, veh/h	24	35	2	0	1	1	2	6	1	4	0	2
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
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	54	54	54	54	54	54	54	54	54	54	54	54
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	44	65	4	0	2	2	4	11	2	7	0	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	48	47	12	81	48	22	9	0	0	18	0	0
Stage 1	21	21	-	25	25	-	-	-	-	-	-	-
Stage 2	27	26	-	56	23	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	958	849	1074	912	847	1061	1624	-	-	1612	-	-
Stage 1	1003	882	-	998	878	-	-	-	-	-	-	-
Stage 2	996	878	-	961	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	942	835	1064	843	833	1051	1616	-	-	1604	-	-
Mov Cap-2 Maneuver	942	835	-	843	833	-	-	-	-	-	-	-
Stage 1	996	874	-	991	872	-	-	-	-	-	-	-
Stage 2	985	872	-	879	872	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	8.9	1.6	4.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1616	-	-	881	929	1604	-	-
HCM Lane V/C Ratio	0.002	-	-	0.128	0.004	0.005	-	-
HCM Control Delay (s)	7.2	0	-	9.7	8.9	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	123	35	9	1	3	1	18	130	4	16	29	32
Future Vol, veh/h	123	35	9	1	3	1	18	130	4	16	29	32
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
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	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	150	43	11	1	4	1	22	159	5	20	35	39

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	307	307	59	332	324	166	76	0	0	166	0	0
Stage 1	97	97	-	208	208	-	-	-	-	-	-	-
Stage 2	210	210	-	124	116	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	649	610	1012	625	597	884	1536	-	-	1424	-	-
Stage 1	914	819	-	799	734	-	-	-	-	-	-	-
Stage 2	797	732	-	885	803	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	628	589	1008	568	576	881	1533	-	-	1421	-	-
Mov Cap-2 Maneuver	628	589	-	568	576	-	-	-	-	-	-	-
Stage 1	898	805	-	785	721	-	-	-	-	-	-	-
Stage 2	778	719	-	815	789	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.4	10.9	0.9	1.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1533	-	-	632	617	1421	-	-
HCM Lane V/C Ratio	0.014	-	-	0.322	0.01	0.014	-	-
HCM Control Delay (s)	7.4	0	-	13.4	10.9	7.6	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.4	0	0	-	-

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	34	6	9	0	13	1	5	8	0	2	3	12
Future Vol, veh/h	34	6	9	0	13	1	5	8	0	2	3	12
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
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	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	49	9	13	0	19	1	7	11	0	3	4	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	64	54	23	65	62	21	26	0	0	16	0	0
Stage 1	24	24	-	30	30	-	-	-	-	-	-	-
Stage 2	40	30	-	35	32	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	935	841	1060	934	833	1062	1601	-	-	1615	-	-
Stage 1	999	879	-	992	874	-	-	-	-	-	-	-
Stage 2	980	874	-	986	872	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	905	828	1050	902	820	1052	1593	-	-	1607	-	-
Mov Cap-2 Maneuver	905	828	-	902	820	-	-	-	-	-	-	-
Stage 1	990	873	-	983	866	-	-	-	-	-	-	-
Stage 2	949	866	-	958	866	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	9.4	2.8	0.9
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1593	-	-	918	833	1607	-	-
HCM Lane V/C Ratio	0.004	-	-	0.076	0.024	0.002	-	-
HCM Control Delay (s)	7.3	0	-	9.2	9.4	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	63	33	28	2	18	4	31	28	4	15	164	135
Future Vol, veh/h	63	33	28	2	18	4	31	28	4	15	164	135
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	72	38	32	2	21	5	36	32	5	17	189	155

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	425	414	271	447	489	39	346	0	0	39	0	0
Stage 1	303	303	-	109	109	-	-	-	-	-	-	-
Stage 2	122	111	-	338	380	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	543	532	773	525	482	1038	1224	-	-	1584	-	-
Stage 1	711	667	-	901	809	-	-	-	-	-	-	-
Stage 2	887	807	-	681	617	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	503	507	770	457	459	1034	1222	-	-	1581	-	-
Mov Cap-2 Maneuver	503	507	-	457	459	-	-	-	-	-	-	-
Stage 1	688	656	-	872	783	-	-	-	-	-	-	-
Stage 2	832	781	-	605	607	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.9	12.5	4	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1222	-	-	547	506	1581	-	-
HCM Lane V/C Ratio	0.029	-	-	0.261	0.055	0.011	-	-
HCM Control Delay (s)	8	0	-	13.9	12.5	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1	0.2	0	-	-

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	98	35	2	0	1	1	2	20	1	4	12	68
Future Vol, veh/h	98	35	2	0	1	1	2	20	1	4	12	68
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
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	54	54	54	54	54	54	54	54	54	54	54	54
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	181	65	4	0	2	2	4	37	2	7	22	126

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	157	156	95	190	218	48	153	0	0	44	0	0
Stage 1	104	104	-	51	51	-	-	-	-	-	-	-
Stage 2	53	52	-	139	167	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	814	740	967	774	684	1027	1440	-	-	1577	-	-
Stage 1	907	813	-	967	856	-	-	-	-	-	-	-
Stage 2	965	856	-	869	764	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	799	727	958	707	672	1017	1433	-	-	1569	-	-
Mov Cap-2 Maneuver	799	727	-	707	672	-	-	-	-	-	-	-
Stage 1	900	805	-	959	849	-	-	-	-	-	-	-
Stage 2	954	849	-	788	756	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	9.5	0.7	0.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1433	-	-	781	809	1569	-	-
HCM Lane V/C Ratio	0.003	-	-	0.32	0.005	0.005	-	-
HCM Control Delay (s)	7.5	0	-	11.8	9.5	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.4	0	0	-	-

Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	123	81	9	9	44	18	18	130	13	35	29	32
Future Vol, veh/h	123	81	9	9	44	18	18	130	13	35	29	32
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
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	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	150	99	11	11	54	22	22	159	16	43	35	39

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	394	364	59	411	375	171	76	0	0	177	0	0
Stage 1	143	143	-	213	213	-	-	-	-	-	-	-
Stage 2	251	221	-	198	162	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	569	567	1012	555	559	878	1536	-	-	1411	-	-
Stage 1	865	782	-	794	730	-	-	-	-	-	-	-
Stage 2	758	724	-	808	768	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	492	538	1008	453	530	875	1533	-	-	1408	-	-
Mov Cap-2 Maneuver	492	538	-	453	530	-	-	-	-	-	-	-
Stage 1	849	755	-	780	717	-	-	-	-	-	-	-
Stage 2	671	711	-	671	742	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.6	12.4	0.8	2.8
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1533	-	-	520	575	1408	-	-
HCM Lane V/C Ratio	0.014	-	-	0.5	0.151	0.03	-	-
HCM Control Delay (s)	7.4	0	-	18.6	12.4	7.6	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.8	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	78	6	9	0	13	1	5	16	0	2	13	64
Future Vol, veh/h	78	6	9	0	13	1	5	16	0	2	13	64
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
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	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	111	9	13	0	19	1	7	23	0	3	19	91

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	128	118	75	129	163	33	115	0	0	28	0	0
Stage 1	76	76	-	42	42	-	-	-	-	-	-	-
Stage 2	52	42	-	87	121	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	850	776	992	849	733	1046	1487	-	-	1599	-	-
Stage 1	938	836	-	978	864	-	-	-	-	-	-	-
Stage 2	966	864	-	926	800	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	820	763	983	818	721	1036	1480	-	-	1591	-	-
Mov Cap-2 Maneuver	820	763	-	818	721	-	-	-	-	-	-	-
Stage 1	929	830	-	968	855	-	-	-	-	-	-	-
Stage 2	935	855	-	898	794	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	10	1.8	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1480	-	-	829	737	1591	-	-
HCM Lane V/C Ratio	0.005	-	-	0.16	0.027	0.002	-	-
HCM Control Delay (s)	7.4	0	-	10.2	10	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.1	0	-	-

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	63	60	28	9	50	17	31	28	10	26	164	135
Future Vol, veh/h	63	60	28	9	50	17	31	28	10	26	164	135
Conflicting Peds, #/hr	2	0	2	2	0	2	2	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	72	69	32	10	57	20	36	32	11	30	189	155

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	479	446	271	491	518	42	346	0	0	45	0	0
Stage 1	329	329	-	112	112	-	-	-	-	-	-	-
Stage 2	150	117	-	379	406	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	500	510	773	491	465	1034	1224	-	-	1576	-	-
Stage 1	688	650	-	898	807	-	-	-	-	-	-	-
Stage 2	857	803	-	647	601	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	422	481	770	401	438	1030	1222	-	-	1573	-	-
Mov Cap-2 Maneuver	422	481	-	401	438	-	-	-	-	-	-	-
Stage 1	666	633	-	869	781	-	-	-	-	-	-	-
Stage 2	754	777	-	538	585	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.5	13.8	3.6	0.6
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1222	-	-	486	496	1573	-	-
HCM Lane V/C Ratio	0.029	-	-	0.357	0.176	0.019	-	-
HCM Control Delay (s)	8	0	-	16.5	13.8	7.3	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.6	0.6	0.1	-	-