



CITY OF DUPONT

Department of Community Development
1700 Civic Drive, DuPont, WA 98327
Telephone: (253) 964-8121
www.dupontwa.gov

PLANNING DIVISION REPORT AND RECOMMENDATION TO THE DIRECTOR

Project: Northwest Logistics II Parking Expansion
Requests: Type I Minor Site Plan Amendment (PLNG 2020-016)
Date of Report: October 5, 2020
From: Lisa Klein, AICP, AHBL, Inc. (Planning Consultant to the City)

SUMMARY OF REQUEST: City approval for Type I Minor Site Plan Amendment (PLNG 2020-016).

PROJECT DESCRIPTION: A proposed modification to a previously approved and partially constructed building and development to modify and increase interior building space. Tenant improvements inside the building will add 50,415 SF to the interior mezzanine for storing flammable and combustible liquid and aerosol products. The total floor area of the building after the addition will increase from 746,790 SF to 797,205 SF.

Other site and building changes were previously approved through the following permits: Type II Major Site Plan Amendment (PLNG2020-012), administrative variance (PLNG2020-013), lot line elimination (PLNG2020-014), and SEPA Environmental Review (SEPA2020-001). Only the changed aspects of the proposal are up for review.

LOCATION: Northeast corner of International Place and Center Drive, Pierce County Assessor's Parcel Number 300039-0011. The project is located within a portion of the Southwest quarter of Section 24, Township 19 North, Range 1 East and the Northwest quarter of Section 25, Township 19 North, Range 1 East.

APPLICANT: Panattoni Development Company, Inc.
900 SW 16th Street, Suite 330
Renton, WA 98057

APPLICANT'S AGENT: Dan Balmelli, PE, Barghausen Consulting Engineers

CITY CONTACT: Janet Howald
Community Development
Administrative Specialist
City of DuPont
1700 Civic Drive
DuPont, WA 98327-9603
Office: (253) 964-8121
Fax: (253) 964-1455
jhowald@dupontwa.gov

SUMMARY OF RECOMMENDATION: Staff recommends **Approval** of the Minor Site Plan Amendment (PLNG 2020-016) subject to conditions listed in Section F.

A. SUMMARY OF RECORD

See the list of attachments provided in Section I, which includes the submittal plans and documents received for processing the application, comments received on the application during the City review process and historical background information (Attachments 1 - 4).

B. FINDINGS OF FACT

1. Background

- a. Northwest Logistics Center II History, aka “main parcel” (Tax Parcel 3000390011):
 - i. On September 18, 2020 the City issued approval for a Site Plan Amendment (2020-012), Administrative Variance (2020-013) and Lot Line Elimination (2020-014) with 34 Conditions of Approval.
 - ii. On September 18, 2020 the City issued a SEPA Mitigated Determination of Nonsignificance with 15 mitigation measures.
- b. The northern parcel, aka “north parcel” is located on tax parcel 3000390282. This property is vacant land that was previously cleared and graded.
- c. In 2018, the City rezoned 10 properties from Industrial to Community Business, including both the main and north parcel.

2. Proposal and Property Details

- a. The proposal is in the Community Business (CB) zoning district. The City’s Comprehensive Plan Land Use Map Designates the property’s future land use as Industry with Community Commercial Opportunity Area Overlay.
- b. The proposal is located on two tax parcels 3000390011 and 3000390282, comprising 37.3 acres. Parcel 3000390011 (“main parcel”) has recently been developed as part of the Northwest Logistics Center II project. Parcel 3000390282 (“north parcel”) is vacant land with a 25-foot wide sewer easement for the benefit of Joint Base Lewis-McChord (JBLM) and a 30-foot wide private access and utility easement that runs east-west through the property.
- c. Adjacent uses include:
 - North: Mini Storage
 - East: DuPont Steilacoom Road and Joint Base Lewis McChord
 - South: Center Drive and Commercial and light industrial uses
 - West: International Place and Warehouse Distribution uses
- d. The property has access via four driveways from International Place.

3. Procedural Requirements

- a. The application materials were received on September 29, 2020. (Attachment 1.1)
- b. A Notice of Complete Application was issued on October 1, 2020. (Attachment I.2.a)

- c. On October 5, 2020 the City SEPA Official issued an Addendum to the previously issued SEPA Mitigated Determination of Nonsignificance dated September 18, 2020. (Attachment I.2.b)
- d. DMC 25.10.190(S) defines Minor Site Plan Amendments as follows (emphasis bolded):

“Site plan amendment, minor” means an amendment to an approved site plan for modifications to the dimensions or footprint location of a building(s) but does not substantially modify the arrangement or increase the number of buildings approved in the plan. Increases in density shall be less than 5 percent **and building size/area shall be less than 10 percent**. The amount and quality of landscaping may be increased but may not be reduced more than 10 percent, provided it complies with the minimum landscaping requirements of the zone in which the property is located. **Proposed amendments shall not deviate from the standards of the applicable district.**

Staff Analysis: The proposal meets the definition of a minor site plan amendment because the changes to building area are less than 10 percent of the building size associated with the previous site plan approval. The additional building area is approximate 6.8 percent in size of the approved building area. No increase to the building footprint or site plan is required. Minor site plan amendments are processed in accordance with DMC 25.150.050 and are processed as a Type I procedure as set forth in DMC 25.175.010.

- e. DMC Chapter 25.150 Site Plan Review states that in order to obtain site plan approval, all of the development regulations and criteria specified in the district applicable to the property must be satisfied in addition to any general development requirements in DMC Chapters 25.75 through 25.95 and 25.105 through 254.125.

The previous Type II Major Site Plan Amendment process approved September 18, 2020 (PLNG 2020-012) included review of the project to ensure it is carried out in a manner consistent with the DMC and site plan review criteria. Only the changed aspects of the proposal are up for review with this site plan amendment. The changed aspects of the proposal to be reviewed are limited to the following chapter shown in bold type:

- **Chapter 25.27 Community Business District**
- **Chapter 25.95 Off-Street Parking**

C. WITH CITY OF DUPONT COMPREHENSIVE PLAN

Chapter 25.175.040, Consistency with Development Regulations, requires evaluation of consistency with the Comprehensive Plan *in the absence of development regulations* (emphasis added). The addition of interior building area does not modify the City’s previous findings of the proposal’s consistency with the Comprehensive Plan. See PLNG2020-012 for the Comprehensive Plan consistency analysis.

D. ANALYSIS AND CONCLUSIONS OF CONSISTENCY WITH DEVELOPMENT REGULATIONS

As described in Finding B.3.d, the, proposed Minor Site Plan Amendment is to be reviewed for consistency with Chapters 25.27 Community Business District and 25.95 Off-Street Parking.

1. PLANNING DEPARTMENT – MINOR SITE PLAN AMENDMENT (PLNG 2020-016)

- a. DMC Chapter 25.25 - Community Business (CB) District

- 1) Permitted Uses - The property is in the CB zoning district. DMC 25.27.020-040 establishes permitted and conditional uses within the CB zoning district.

Staff Analysis and Conclusion: The main warehouse and distribution use is a permitted use. The proposal is compliant.

- 2) Building Height - DMC 25.27.050(1) establishes that building height shall not exceed 65 feet within 100 feet of a public street and no taller than 70 feet when set back 100 feet or more from a public street.

Staff Analysis and Conclusions: The interior building modifications will not increase building height, which will be less than the code maximum. The proposal is compliant.

- 3) Yard Setbacks - DMC 25.27.050(2)(a) establishes a minimum front yard setback of 10 feet. DMC 25.27.050(2)(b) establishes a minimum side yard setback of 15 feet.

Staff Analysis and Conclusions: The interior building improvements do not modify the building footprint or building setbacks. The proposal is compliant.

- 4) Loading and Service Area Screening - DMC 25.27.050(4) establishes that loading and service areas shall be screen from public right-of-way with an opaque wall, fence, or other similar architecture feature.

Staff Analysis and Conclusions: Not applicable. No modifications to loading or service areas are proposed.

- b. DMC Chapter 25.95 - Off-Street Parking requires the following:

- 1) DMC 25.95.030 provides the minimum and maximum number of parking spaces based on the type of use. For warehouse uses, DMC 25.95.030 requires a minimum of 0.3 and a maximum of 1 parking space per worker at maximum shift.

Staff Analysis and Conclusion: The additional interior building area is provided for the purposes of product storage. No additional employees are anticipated and no changes to parking are indicated or required. The proposal is compliant.

2. ENGINEERING DEPARTMENT REVIEW

The City Engineer has submitted a “no comment” email dated October 2, 2020. (Attachment I.3.c.)

The City’s Traffic and Transportation Engineering Consultant, Geralyn Reinart, P.E., reviewed the proposal and provided a “no comment” email dated September 30, 2020. (Attachment I.3.d.)

3. FIRE DEPARTMENT REVIEW

The City Fire Department submitted a “no comment” email dated October 2, 2020 (Attachment I.3.a.)

4. BUILDING DEPARTMENT REVIEW

The City Building Department submitted a “no comment” email dated September 29, 2020 (Attachment I.3.b)

E. CONCLUSIONS

In accordance with the criteria in DMC 25.175.040, staff has evaluated the proposal and finds that the interior building size increase does not modify the previous findings and conclusions, therefore subject to the previously recommended conditions in the Report and Decision for the NW Logistics Parking Expansion proposal (PLNG2020-012, -013, -014 and SEPA2020-001), the proposal is consistent with the DMC and existing ordinances concerning public utilities, traffic, facilities, and services, and provides access, landscaping, screening, building placement, parking lot layout, and protection of sensitive areas. As demonstrated in the Consistency Analysis, the proposal meets the criteria for approval.

F. RECOMMENDATION

Staff recommends approval of the Minor Site Plan Amendment (PLNG2020-016) subject to the Conditions of Approval in the Report and Decision for the NW Logistics Parking Expansion proposal (PLNG2020-012, -013, -014 and SEPA2020-001) (Attachment I.4).

G. DECISION

Based on the Findings and Analysis summarized above, the City finds that the proposal, as conditioned, is consistent with the Comprehensive Plan and DMC Title 24.08, 25.75 through 25.95, 25.105 through 25.125, 25.150, and 25.160. The City has determined that the proposal meets the standards and criteria necessary to obtain approval by the City. All conditions included in the Recommendations associated with the Report and Decision for the NW Logistics Parking Expansion proposal (PLNG2020-012, -013, -014 and SEPA2020-001) are incorporated herein with this Approval.



Andy Takata
City Administrator, City of DuPont

October 5, 2020

Date

H. APPEALS

Consistent with DMC 25.175.060(4), this decision by the director may be appealed to the City hearing examiner. Only parties of record may file an administrative appeal. **An appeal must be filed within 14 days after issuance of this decision (by 5:00 p.m. on October 19, 2020).** The instructions for filing an appeal are found in DMC 25.175.060(4). Appeals shall be in writing, be accompanied by the required appeal fee (\$1,000), and contain the information detailed in DMC 25.175.060(4)(d).

I. ATTACHMENTS (SUMMARY OF RECORD)

The following attachments to the Staff Report constitute the administrative record for the application:

1. Land Use Application Plans and Documents:
 - a. Land Use Application Form dated September 28, 2020
 - b. Cover Letter prepared by Barghausen Consulting Engineers dated September 28, 2020
 - c. Architectural Site Plan prepared by Mackenzie dated September 25, 2020
 - d. Traffic Impact Analysis prepared by Heath Associates dated September 21, 2020
2. Land Use Process Documents:
 - a. Notice of Complete Application dated October 1, 2020.
 - b. SEPA Addendum dated October 5, 2020.
3. City Department Comment Letters

- a. City of DuPont Fire Department comment email dated October 2, 2020.
 - b. City of DuPont Building Services Division comment email dated September 29, 2020.
 - c. City of DuPont Engineering Department comment email dated October 2, 2020.
 - d. City of DuPont Traffic & Transportation Engineer comment memorandum dated September 30, 2020.
4. The following previous City approvals are related to the proposal and, due to the large file size are available for viewing at City Hall and the City's website at:
<https://www.dupontwa.gov/451/Notices-Decisions>:
- a. Report and Decision for a Major Site Plan Amendment (PLNG2020-012), Administrative Variance (PLNG2020-013) and Lot Line Elimination (PLNG2020-014) dated September 18, 2020.
 - b. SEPA MDNS dated September 18, 2020.
-

J. PARTIES OF RECORD

- Panattoni Development (c/o Brian Mattson) (Applicant)
 - Ben Eldridge, Barghausen Consulting Engineers (Applicant's Representative)
 - Dan Balmelli, Barghausen Consulting Engineers
 - Bill Anderson, City of DuPont Building Official
 - Mike Turner, City of DuPont Fire Marshal
 - Dominic Miller, Gray & Osborne, Inc. (as City Engineer)
 - Geralyn Reinart, PE (City's traffic engineer consultant)
 - Lisa Klein, AHBL, Inc. (as City Contract Planner)
-

cc: File No: PLNG2020-016, 012, -013, -014, SEPA 2020-001



City of DuPont Planning Division Land Use Application

1700 Civic Drive
DuPont, WA 98327
www.dupontwa.gov

Phone: (253) 912-5393
Fax: (253) 964-1455

City File Number: _____

All information listed in this application, or by applicable ordinance, must be submitted in order for a land use application to be determined complete. Only a complete land use application will be processed for conformance with adopted policies and requirements.

General Information:

Project name: Northwest Logistics Center II - Parking Lot Expansion

Applicant name: Brian Mattson, Panattoni Development Company

Address: 1821 Dock Street, Suite 100, Tacoma, WA 98402

Phone number: 206-838-6182 Fax number: bmattson@panattoni.com

Applicant's representative: Ben Eldridge, Barghausen Consulting Engineers

Address: 18215 - 72nd Avenue South, Kent, WA 98032

Phone number: 425-251-6222 Fax number: beldridge@barghausen.com

Description of proposal. Be specific.

Process Type I Site Plan Amendment to correct building size for tenant improvements to
existing building.

Site Information:

Assessor's Parcel Number(s): 300039-0282 & 300039-0011

Area of site in square feet: 1,633,531 sq. ft. total

Area of streets and alleys: N/A

Area of storm drainage improvements and conveyance lines: 8,000 sq.ft (new)

Area of open space and neighborhood green tracts: N/A

Area of critical areas and buffers: N/A

Area of building floors: 797,205 sq. ft. total

Area of impervious surfaces: 236,328 sq. ft. new/replaced [1,316,189 sq. ft. total for site]

Area of landscaping: 317,342 sq. ft. total for site

Building height: Guard house 12 feet maximum

Number of dwelling units: N/A

Number of employees: 912 total

Number of disabled, compact and standard parking stalls: ADA - 19 / HOV - 46 / Auto - 847
passenger total = 912 stalls / Trailer - 77

Description and area of all proposed tracts: N/A

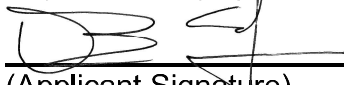
Required Plans, Information and Fee:

(Quantity and minimum scale of each item or drawing is indicated in parenthesis. Plans shall be no larger than 24 by 36 inch sheet size)

1. ☐ Vicinity Map (include as part of site plan).
2. ☒ Site Plan drawn at 1 inch = 20 feet extending 100 feet beyond the property lines (eight copies).
3. ☐ Landscape Plans identifying: location, size and species of all landmark, historic and specimen trees; trees to be retained, specific tree protection measures drawn at 1 inch = 20 feet (seven copies).
4. ☐ Grading Plan with estimated dimensions and quantities of work involved drawn at 1 inch = 20 feet horizontal with 2' contour intervals (seven copies).
5. ☐ Storm Drainage and Utility Plan drawn at 1 inch = 20 feet (seven copies).
6. ☐ Preliminary Stormwater Management Report and calculations (three copies).
7. ☐ Roadway cross sections, (seven copies of single line drawing with dimensions).
8. ☐ One each 8 by 11 inch reduction of all drawings.
9. ☒ Average daily trips generated by the proposal based on the International Transportation Engineers Trip Generation Manual (two copies).
10. ☐ Building Elevations drawn at ¼ inch = 1 foot or larger. Identify building materials and colors (eight copies).
11. ☐ Title report of subject lot that is less than 30 days old to identify all encumbrances (two copies).
12. ☐ Draft of proposed covenants, conditions and restrictions related to the maintenance of open space or commonly owned improvements, if applicable (two copies).
13. ☐ Letter of Sewer Availability from Pierce County (two copies).
14. ☐ Letter of Water Availability from City of DuPont (two copies).
15. ☐ One site drawing showing the refuse enclosure(s) that is approved via signature and date by LeMay, Inc. Contact person is Charlie Maxwell, Public Relations Director, 253-537-8687.
16. ☐ Completed Environmental Checklist (two copies).
17. ☒ Completed Land Use Application (one copy).
18. ☐ Completed Agent Affidavit (one copy).
19. ☒ Filing fee(s). \$1,500

Note:

Fill out and return this application with all material listed in the Required Plans, Information and Fee section. Submittal of all required plans, information and fees constitutes a complete application. You will be contacted by the City within 28 days of formal application submittal regarding whether the application is complete. Site work may not start until all necessary permits have been obtained. Paper or electronic drawings of the proposal may be requested for presentation purposes.

 , Agent 9/28/2020
(Applicant Signature) (Date)

Ben Eldridge
(Print name)



September 28, 2020

Lisa Klein
AHBL
c/o City of DuPont
Planning Division
1700 Civic Drive
DuPont, WA 98327

RE: Minor Site Plan Amendment Type I Application and SEPA Addendum for
Northwest Logistics Center II – Trailer Lot Expansion located at
3230 International Place North, DuPont, Pierce County, Washington
Related to City of DuPont Application Nos PLNG2020-012, -013, -014, SEPA2020-001
Our Job No. 21227

Dear Lisa,

Near to the time of the submittal of the initial Major Site Plan Amendment – Type II for the Northwest Logistics Center II project, a structural design revision necessitated an increased separation from the exterior walls than what was initially shown on the architectural plans that were included with the original submittal under Application Nos. PLNG2020-012 and 013. The structural revision resulted in the following changes to the floor areas:

Main Floor – no change	628,640 sq. ft.
Aerosol Mezzanine (- 139 sf / 0.3% smaller)	51,080 sq. ft.
F&CL Mezzanine (- 450 sf / 0.4% smaller)	117,485 sq. ft.

This resulted in a revised total building size of 797,205 square foot. In order to amend the SEPA Determination and Site Plan Amendment to correct the building size, the City of DuPont has directed the Applicant to submit a Type I Site Plan Amendment to the city for processing. Further, the City has directed that the application materials should include the following documents.

1. Three (3) each new Land Use Application
2. One (1) each check in the amount of \$1,500 for Type I Application Fee for Minor Site Plan Amendment (previously paid by Panattoni Development)
3. Three (3) each Cover Letter Addressing Correct Building Size
4. Three (3) each updated Traffic Impact Analysis
5. Three (3) each updated Architectural Site Plan
6. One (1) each electronic copy Application, Plans and Documents

All other application materials associated with the initial Type II Land Use package (PLNG2020-012, -013, -014 and SEPA2020-001) will remain applicable.

**Attachment 1.b. Cover Letter prepared by Barghausen
Consulting Engineers dated September 28, 2020**

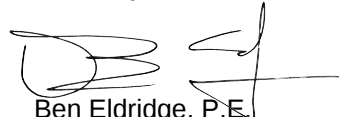
Lisa Klein
AHBL
c/o City of DuPont
Planning Division

-2-

September 28, 2020

We believe that the enclosed plans and documents constitute a complete package to address the Minor Site Plan Amendment – Type I and SEPA Addendum review. Please review at your earliest convenience and please feel free to contact me if you have any questions or need any additional information. Thank you.

Sincerely,



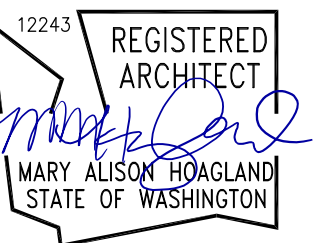
Ben Eldridge, P.E.
Senior Project Engineer

BE/bd

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enc: As Noted

cc: Brian Mattson, Panattoni Development Company
Bjorn Brynestad, Panattoni Development Company
Dan Balmelli, Barghausen Consulting Engineers, Inc.
Betsy Dyer, Barghausen Consulting Engineers, Inc.

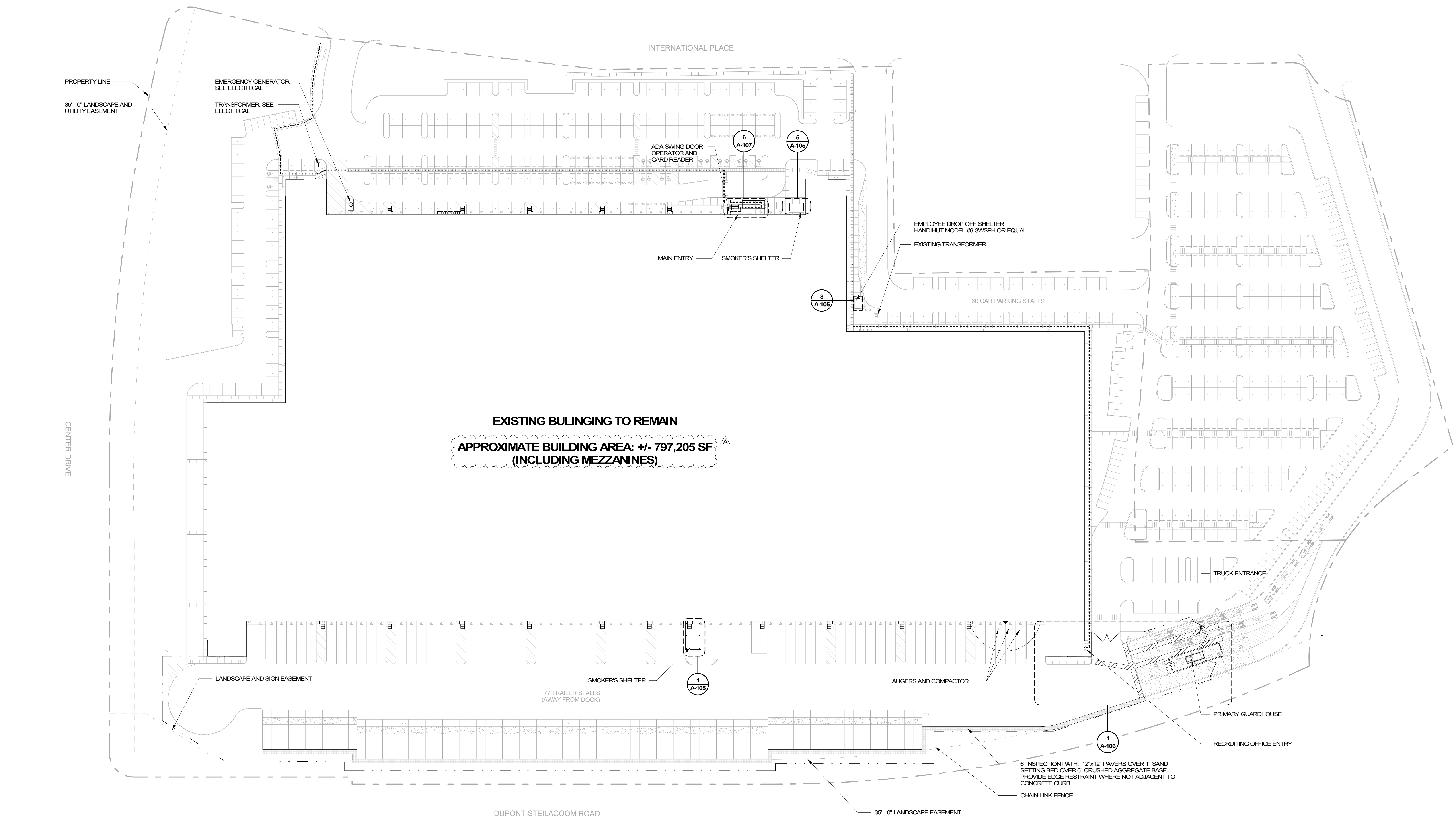


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WITHOUT PRIOR WRITTEN PERMISSION

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OVERALL SITE PLAN

Attachment 1.c. Architectural Site Plan prepared by
Mackenzie dated September 25, 2020



GENERAL NOTES

- A. LIMITED LANDSCAPE EASEMENTS SHOWN ON ARCHITECTURAL SITE PLAN FOR REFERENCE ONLY. SEE CIVIL FOR ALL EASEMENT AND SETBACK INFORMATION, INCLUDING UTILITY AND POWER EASEMENTS.

LEGEND

CROSSWALK FROM MAIN GARDEN
SHACK TO BUILDING: 12" STRIPING
OUTLINE: 6" O" WIDE, 26" O.C.
HATCH FILL
COLOR: "SAFETY YELLOW"
THERMAL PAVEMENT STRIPS, TO
BE VISIBLE AT NIGHT, NON-SLIP

SECURE TRUCK YARD FENCE

LANDSCAPE EASEMENT, SHOWN
FOR REFERENCE ONLY. SEE CIVIL

PROPERTY LINE

ACCESSIBLE ACCESS TO THE
PUBLIC WAY

PARKING SUMMARY

PARKING REQUIRED (MAX. EMPLOYEE/SHIFT)	= 912 STALLS
PARKING PROVIDED	= 912 STALLS
847 STANDARD STALLS	
19 ACCESSIBLE STALLS	
46 HOV STALLS	
TOTAL TRUCK LOADING PROVIDED	= 50 DOCK DOORS
47 DOCK DOORS	
3 DRIVE IN DOORS	
TRAILER STALLS	= 77 STALLS

OWN BY: KSY

HECKED BY: JAB

ET

A-101

NO. **2200159.00**

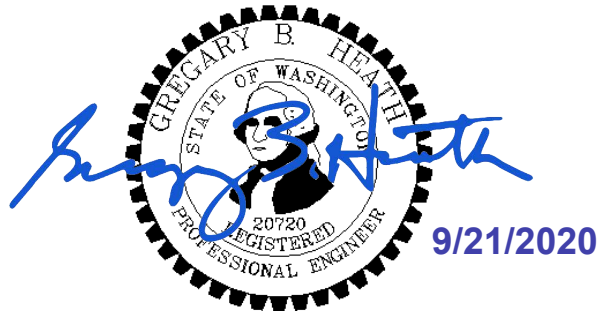
PERMIT SET 09/25/20

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SNOW BLOSSOM FULFILLMENT CENTER
TRAFFIC IMPACT ANALYSIS

DuPont, WA



Prepared for: Mr. Brian Mattson
Panattoni Development Company, Inc.
1821 Dock Street, Suite 100
Tacoma, WA 98402

September 2020

SNOW BLOSSOM FULFILLMENT CENTER
TRAFFIC IMPACT ANALYSIS

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SNOW BLOSSOM FULFILLMENT CENTER TRAFFIC IMPACT ANALYSIS

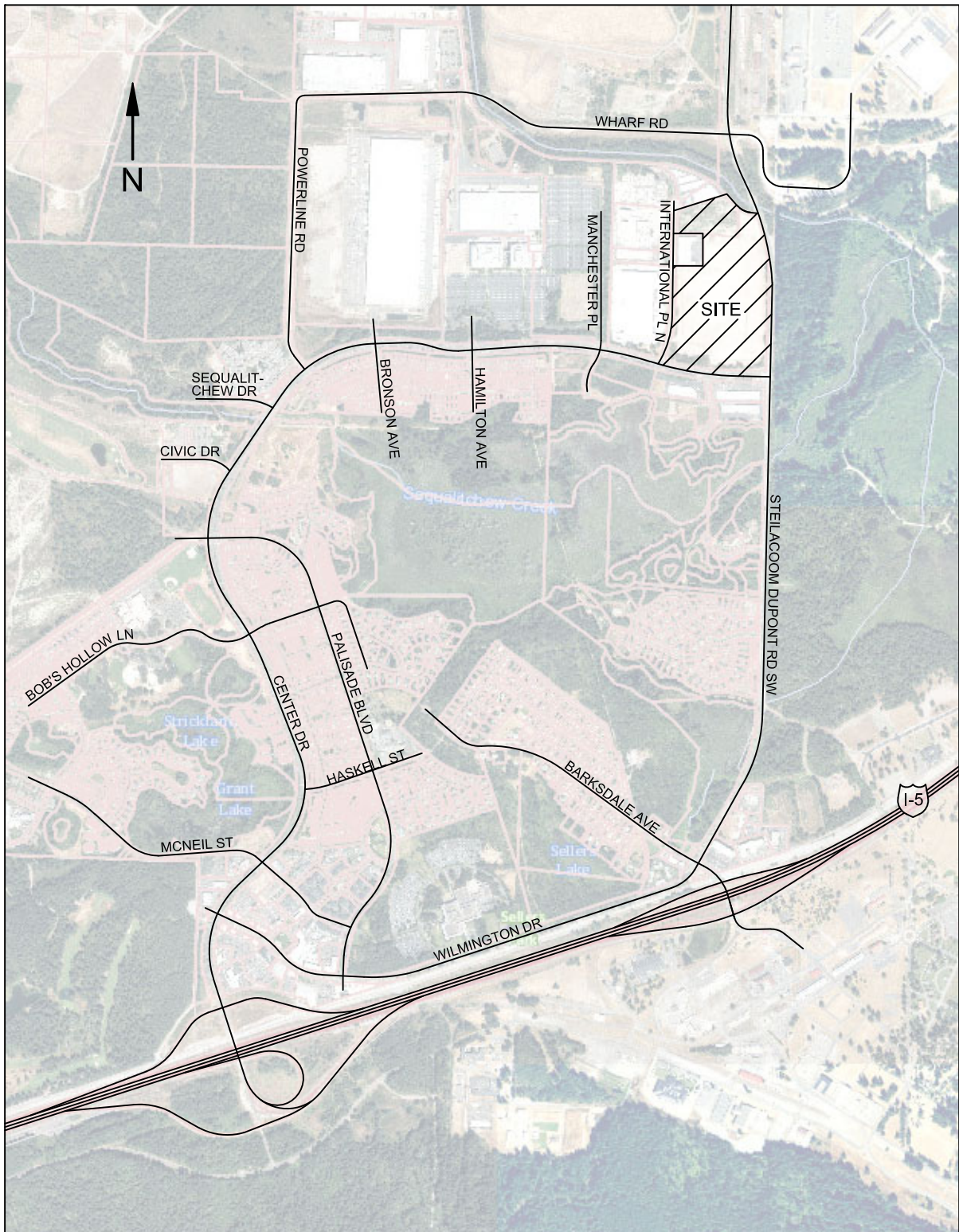
1. INTRODUCTION

The main goals of this study focus on the assessment of existing roadway conditions and forecasts of newly generated project traffic. The first task includes the review of general roadway information on the adjacent street system, baseline vehicular volumes, and any planned infrastructure projects that may affect the study area. Forecasts of future traffic and dispersion patterns on the street system are then determined using established trip generation and distribution techniques. As a final step, appropriate conclusions and mitigation measures are defined if needed.

2. PROJECT DESCRIPTION

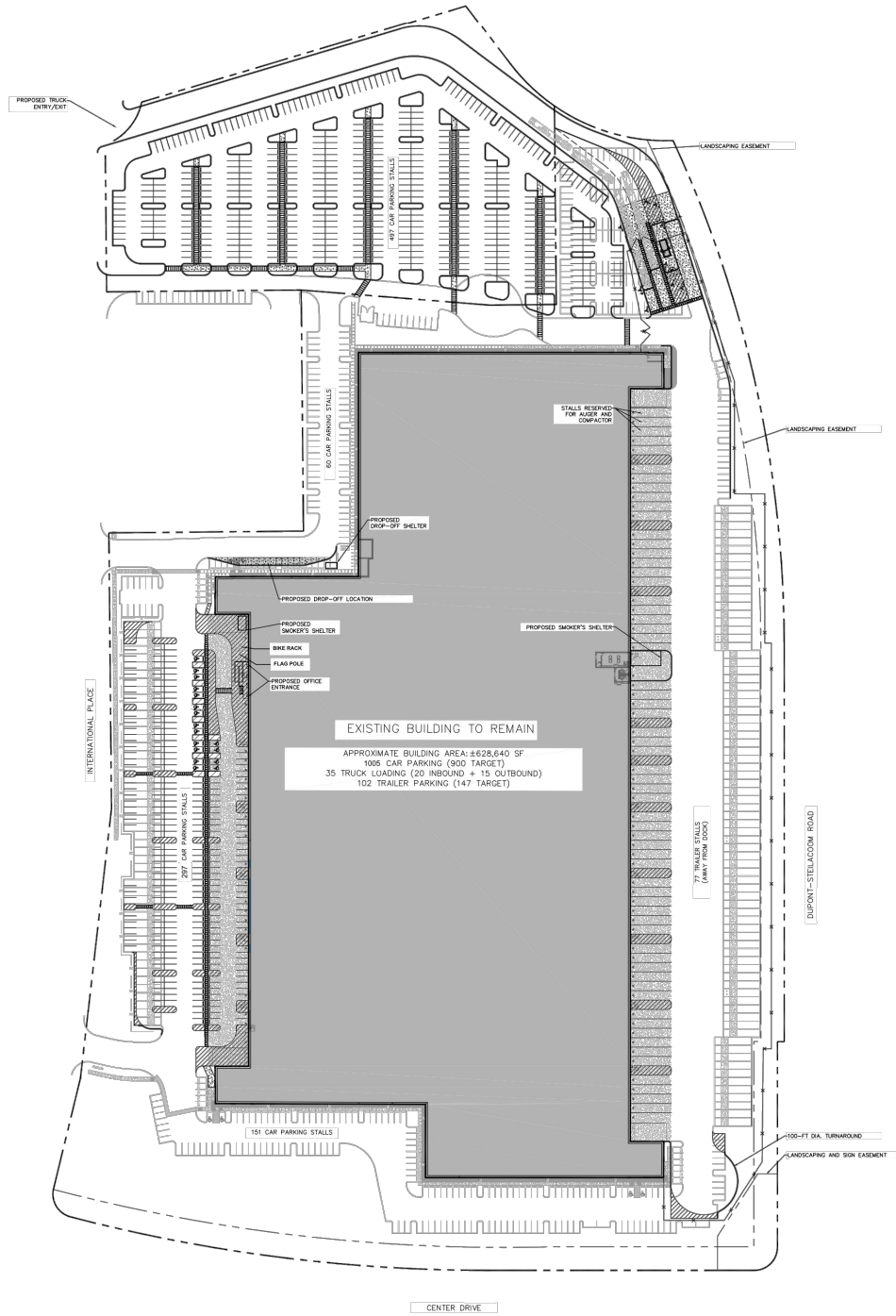
Snow Blossom Fulfillment Center proposes to occupy an existing warehouse and add a mezzanine to total 797,794 square feet located in the city of DuPont. The warehouse, with a site address of 3230 International Place N, is proposed to be utilized as a hazmat fulfillment center. The subject property is bordered to the west by International Place N, to the east by Steilacoom DuPont Road SW and to the south by Center Drive on a cumulative 37.5-acres within tax parcel #'s: 300039-0011; - 3282. Access is to be provided via International Place N. A two-year horizon of 2022 was analyzed to assess future project impacts subsequent to tenant occupancy. Figure 1 on the following page shows the general site location and roadway network serving the vicinity. A site plan illustrating the overall configuration of the project is presented in Figure 2.





HEATH & ASSOCIATES
TRAFFIC AND CIVIL ENGINEERING

SNOW BLOSSOM FULFILLMENT CENTER
VICINITY MAP & ROADWAY SYSTEM
FIGURE 1



HEATH & ASSOCIATES
TRAFFIC AND CIVIL ENGINEERING

SNOW BLOSSOM FULFILLMENT CENTER

SITE PLAN
FIGURE 2

3. EXISTING CONDITIONS

3.1 Existing Roadway Characteristics

The street network serving the proposed project consists of a variety of roadways. The major roadways and arterials defined in the study area are listed and described below.

Table 1: Roadway Network

Functional Classification	Roadway	Speed Limit	Lanes	Street Parking	Sidewalk	Bike Facilities
Principal Arterial	Center Street	35 mph	4	No	Yes	Lanes
Minor Arterial	Steilacoom DuPont Rd SW	35-45 mph	2-3	No	S/O Station Dr	Signage
Local	International Place	25 mph	2	No	Yes	Paved Shoulders

3.2 Public Transit Service

Transit within the city is provided via two Sound Transit Express Bus routes. Route 592 – DuPont-Seattle provides service from DuPont to Downtown Seattle and runs from approximately 4:00 AM to 8:30 PM with 15-20 minute headways during peak periods. Route 594 – Lakewood/Tacoma-Seattle offers select service to DuPont (see Sound Transit routes and schedules for further information). All stops originate and depart from the DuPont Station located on the southeast corner of Wilmington Drive & Palisade Boulevard, approximately two miles from the subject site and is therefore not anticipated to be significantly utilized by the proposed development's employees.

According to the DuPont's Comprehensive Plan, the City would like to explore adding and expanding transit opportunities as employment and populations continue to grow. As a potential transportation demand measure, and if demand exists, the developer may consider adding a shuttle service to run to and from DuPont Station during employee shift periods as a way to incentivize and encourage alternative modes of transport.

3.3 Non-Motorist Infrastructure

The adjacent Center Drive and International Place roadways support detached sidewalks along either side and shoulders accommodating bicycle transport. The intersection of the two roadways allows for safe pedestrian crossings facilitated via actuated walk phases controlled by the signal. However, with no transit readily available within the immediate site vicinity, little non-motorist activity to/from the site can be expected.

3.4 Roadway Improvements

A review of the City of DuPont's Six-Year (2019-2024) Transportation Improvement Plan and WSDOT's 2020-2023 Statewide Transportation Improvement Program indicates improvement projects are scheduled within the project vicinity. The most significant project to note is WSDOT's proposed Interchange Exit 119 Redesign:

I-5 Exit 119 Reconstruction – is a proposed redesign of the existing I-5 Exit 119 to increase capacity and allow for a more efficient and safe design. The scope of work include removing a portion of Barksdale Avenue, east of Steilacoom-DuPont Road and constructing a new grade-separated southbound exit. Also proposed are new I-5 Northbound and Southbound Bypass routes to Steilacoom-DuPont Road and the JBLM DuPont Gate. See appendix for WSDOT's design exhibits. The project is currently undergoing environmental studies and the construction is estimated to be completed in 2025.

As part of WSDOT's involvements with the I-5 Exit 119 Reconstruction, the City has established a number of improvements along Steilacoom-DuPont Road from the proposed Exit 119 location to Wharf Road including intersection improvements at Center Drive.

Other City improvement projects consist of traffic signal modernization and coordination from I-5 Exit 118 to Steilacoom-DuPont Road; however, these projects have not secured funding and are in the preplanning stages. Given the time horizons of the planned improvements, no projects were considered in the forecast horizon analysis as they would not be completed at such time.

3.5 Baseline Intersection Volumes

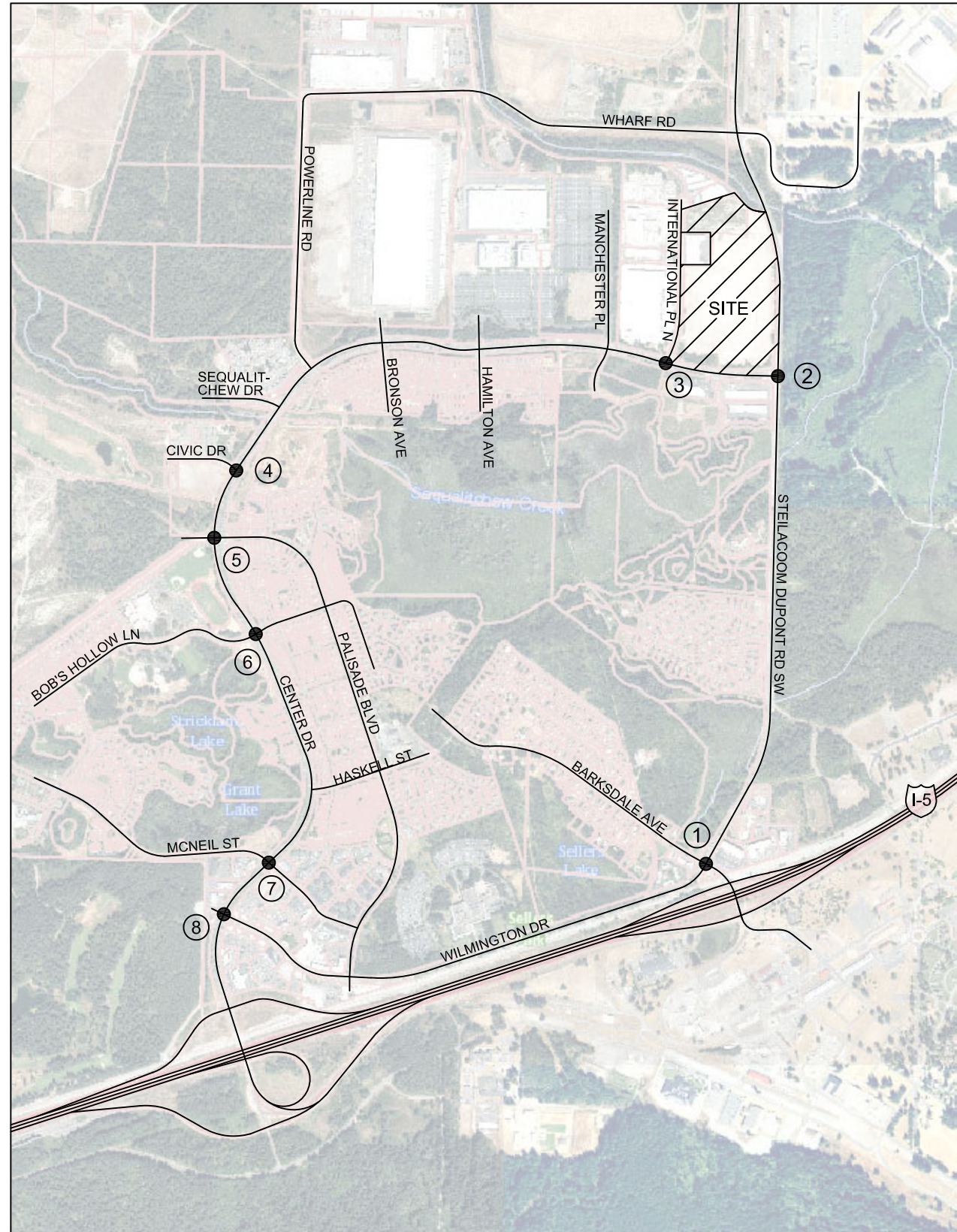
In order to assess and evaluate the project impacts relative to the adjacent street system, a number of outlying intersections were selected for evaluation by the City. All intersections are signalized controlled and turning movement count data were provided in the scoping request through the City. Timeframes examined in this analysis consist of the AM peak period (7:00-9:00 AM) and the PM peak period (4:00-6:00 PM) as these periods generally represent the highest congestion points of a typical weekday.

Data were available from 2019 for all locations with the exception of two intersections. These two intersections were from 2017 and have been adjusted via a two percent compound annual growth rate. Listed on the following page are the study intersections with respective AM and PM peak hour volumes illustrated in Figure 3A & 3B. Full count sheets and baseline volumes are included in the appendix.

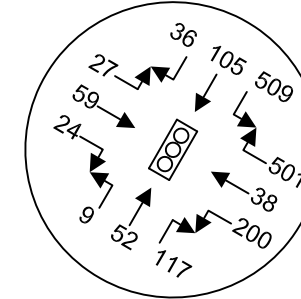
1. Barksdale Ave & Steilacoom DuPont Rd
2. Center Drive & Steilacoom DuPont Rd
3. Center Drive & International Drive
4. Center Drive & Civic Drive
5. Center Drive & Palisade Drive
6. Center Drive & Bob's Hollow Lane
7. Center Drive & McNeil Street
8. Center Drive & Wilmington Drive

Study Intersections

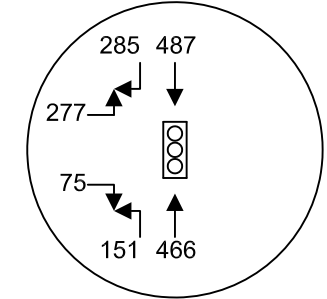




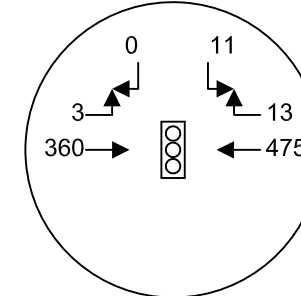
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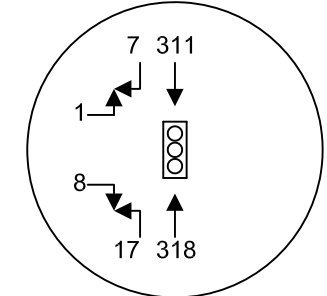
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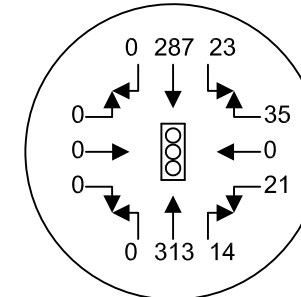
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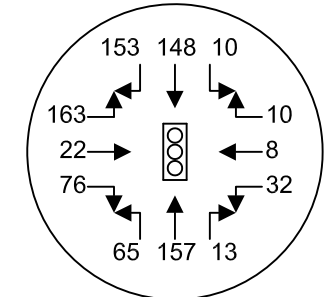
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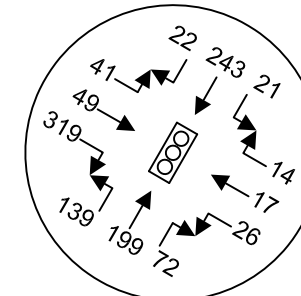
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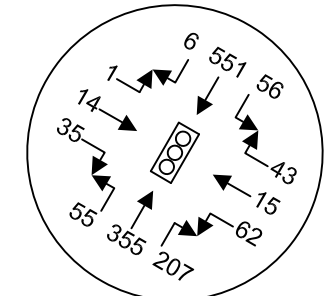
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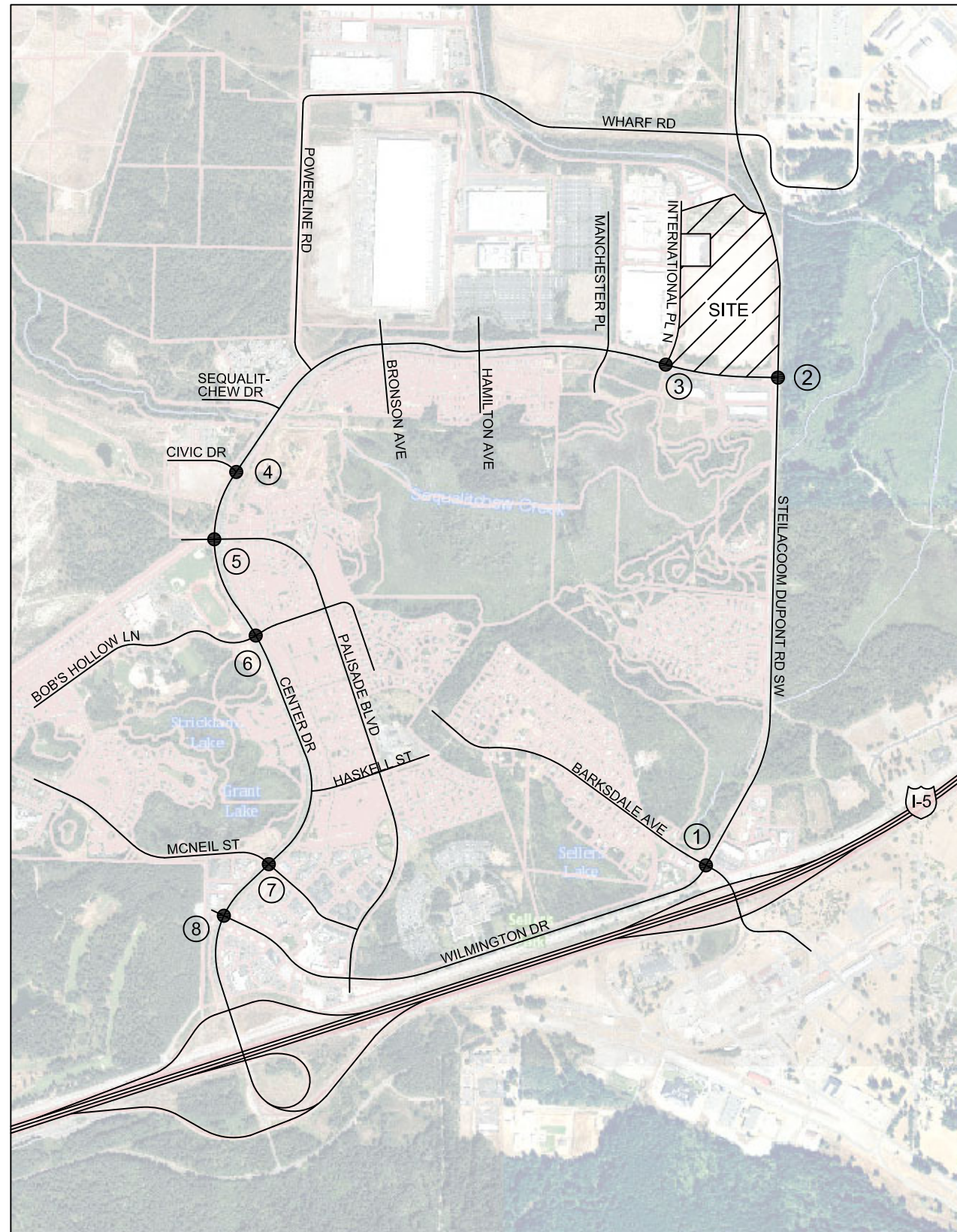


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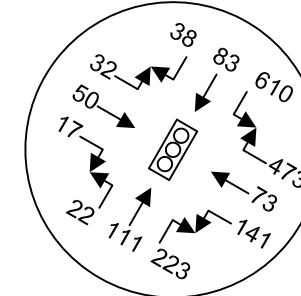


⑧ CENTER DR & WILMINGTON DR

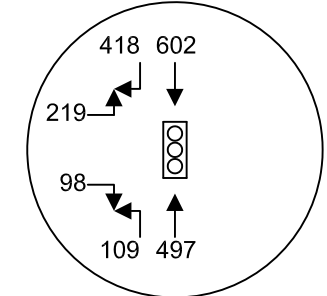




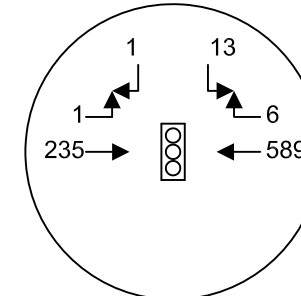
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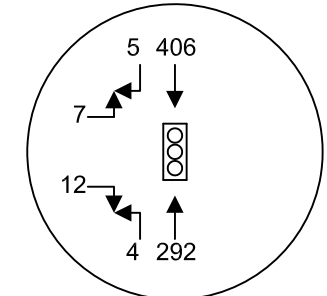
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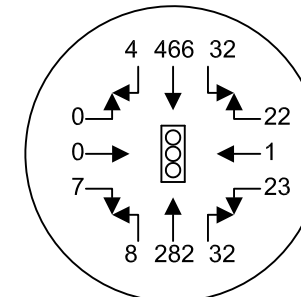
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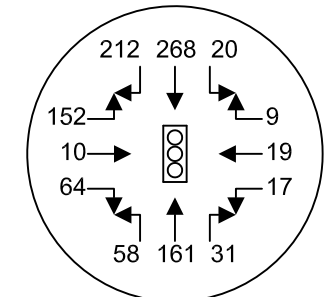
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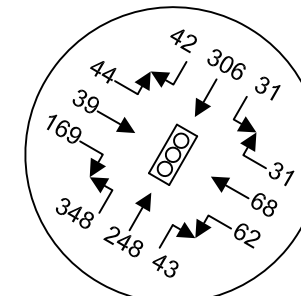
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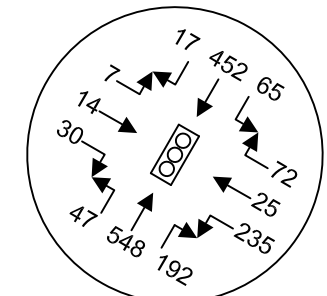
⑥ CENTER DR & BOB'S HOLLOW LN



⑦ CENTER DR & MCNEIL ST



⑧ CENTER DR & WILMINGTON DR



3.6 Baseline Level of Service

Baseline 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 range¹ 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 saturated 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 summarizes existing peak hour delays at the eight study intersections. For signalized control, LOS is determined as the overall average delay experienced by the intersection. Delays are reported in seconds per vehicle.

Table 2: Existing Peak Hour Level of Service

Map ID	Intersection	Control	Peak Hour	LOS	Delay
1	Barksdale Ave & Steilacoom DuPont Rd / Wilmington Dr	Signal	AM	C	24.0
			PM	C	24.4
2	Center Drive & Steilacoom DuPont Rd	Signal	AM	B	14.3
			PM	B	12.6
3	Center Drive & International Place N	Signal	AM	A	2.1
			PM	A	3.1
4	Center Drive & Civic Drive	Signal	AM	A	4.4
			PM	A	4.6
5	Center Drive & Palisade Blvd	Signal	AM	A	5.5
			PM	A	6.8
6	Center Drive & Bob's Hollow Ln	Signal	AM	B	12.0
			PM	B	10.7
7	Center Drive & McNeil Street	Signal	AM	B	11.1
			PM	C	29.2
8	Center Drive & Wilmington Drive	Signal	AM	A	8.9
			PM	B	12.9

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

Highway Capacity Manual, 6th Edition

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

City of DuPont Level of Service Standards²: The city has an adopted standard of LOS D for most intersections within the City. Exemptions are allowed for Steilacoom DuPont Road's intersections with Barksdale Avenue and Center Drive, which may operate at LOS E.

As shown in Table 2 above, all study intersections are shown to meet City standards operating at LOS C or better for either the AM or PM peak hour periods.

4. FUTURE TRAFFIC CONDITIONS

4.1 Trip Generation

Trip generation can be defined by the number of vehicles entering or exiting a site within a particular time period such as a "peak hour" or an entire day. Vehicular volume estimates have been obtained from the client based on a number of similar hazmat fulfillment centers, which tend to function similarly. Table 3 below summarizes the average weekday daily trips (AWDT) and the AM and PM peak hour volumes. Classifications have been broken down to identify either passenger vehicle/delivery vans versus heavy vehicles (multi-axle).

Table 3: Project Trip Generation

Land Use	Vehicle Type	AWDT	AM Peak-Hour Trips			PM Peak-Hour Trips		
			In	Out	Total	In	Out	Total
Hazmat	Vehicle	1942	336	13	349	296	302	598
Fulfillment Center	Heavy Vehicle	225	7	7	14	3	3	6
Total		2167	343	20	363	299	305	604

Based on data provided by the client, the project can be anticipated to generate approximately 2,167 daily trips, 363 AM and 604 PM peak hour trips. As shown, the majority of trips would be in the form of employee or delivery vehicle/van with few heavy vehicle trips. It should be acknowledged that these volumes represent typical operations or "non-peak" volumes. During peak seasons (i.e., holiday season) volumes to and from the site would increase. According to the aggregated trip generation report, peak season AM peak hour volumes would close to double while peak PM volumes would increase by approximately 50 percent. These volumes, however, are not typical through most of the year. Also to consider, the hazmat fulfillment center's peak hours tend to be dissimilar with respect to the adjacent street. The AM peak hour tends to start at 6:00 or 6:30 AM while the PM peak hour tends to start at 5:30 PM. No volume adjustments were considered given the 7:00-9:00 AM and 4:00-6:00 PM study periods so as to remain conservative.

² 2015 Comprehensive Plan Periodic Update, City of DuPont – Chapter 9 Transportation

4.2 Trip Distribution and Assignment

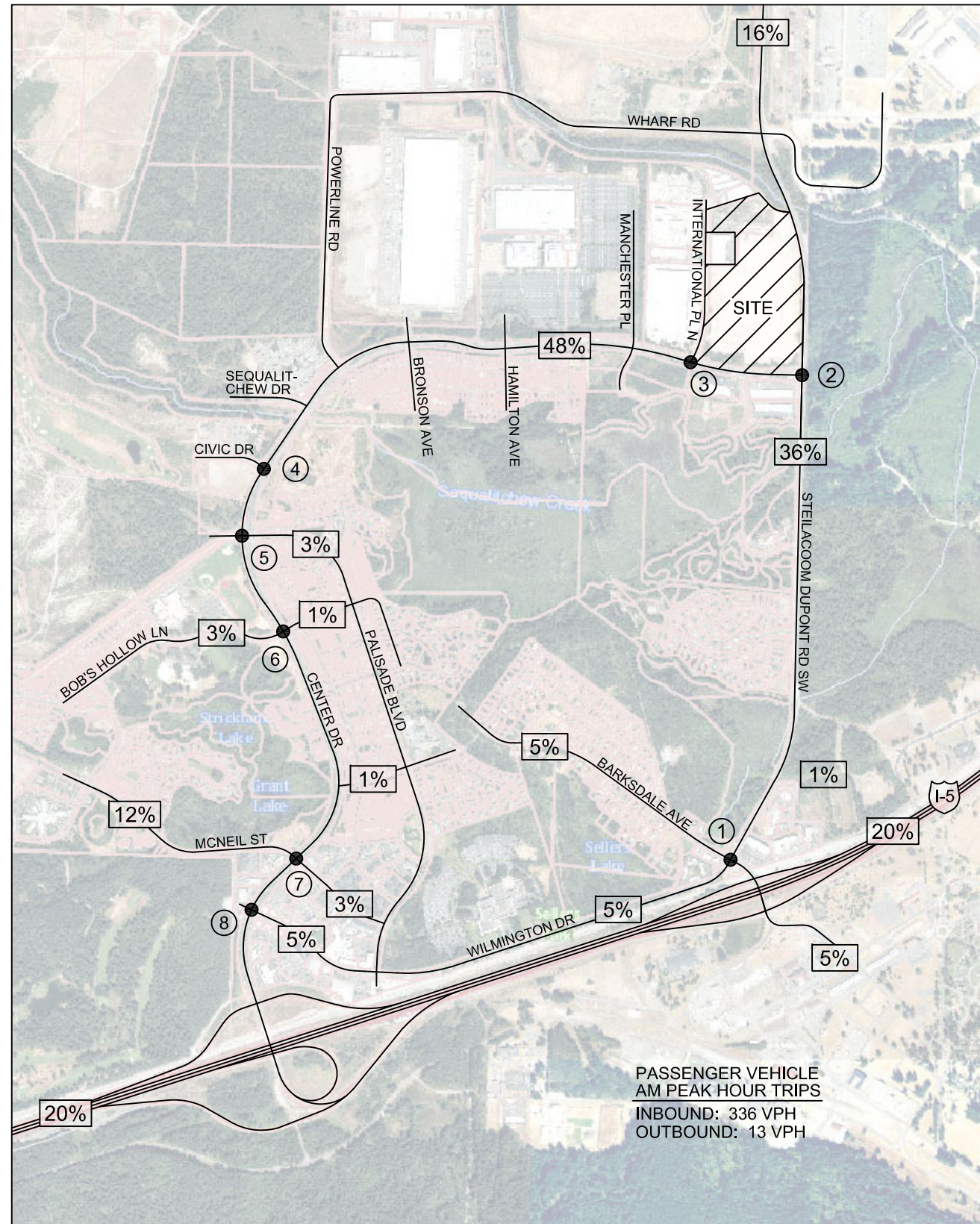
Trip distribution can be described as the travel routes to/from the subject site relative to the adjacent street system. The specific destinations and origins of the generated traffic primarily influences the key study intersections, which will effectively receive the bulk of project impacts. The trips generated by the project are expected to follow the general trip pattern as shown in Figures 4A & 4B and Figures 5A & 5B for the AM and PM peak hours, respectively. Separate distributions have been assigned to passenger and heavy vehicle trip types. Center Drive, west of the site, has a gross weight vehicle restriction of 14,000 pounds and therefore no heavy vehicles were routed to and from the west.

Additional trip distribution exhibits have been prepared under the following scenarios: Scenario 2 – With I-5 Interchange Project and Scenario 3 – Peak Season Volumes. These scenarios were provided as additional information for the City.

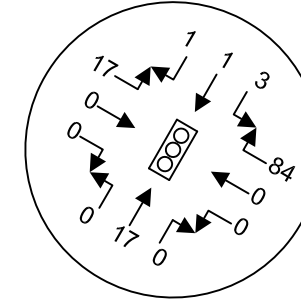
4.3 Future Peak Hour Volumes

A two-year horizon of 2022 was used for future delay analysis. The proposed building is already constructed and the developer would intend to occupy late 2021 or early 2022. Forecast 2022 background volumes were estimated by applying two assumptions: planned projects in the City that would act as pipeline; and a general background growth rate to account for other miscellaneous growth. Pipeline projects were obtained through the City and are included in the appendix. The aggregate AM and PM peak hour intersection pipeline volumes are illustrated in Figures 6A & 6B.

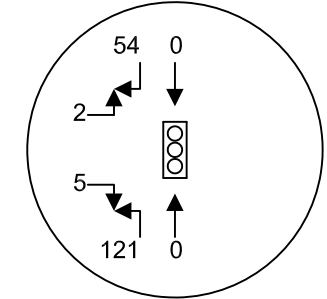
A general two percent compound annual growth rate was similarly applied to all existing volumes. Forecast 2022 AM and PM peak hour volumes without project (pipeline and background growth only) and with project are presented in Figures 7A & 7B and Figures 8A & 8B, respectively.



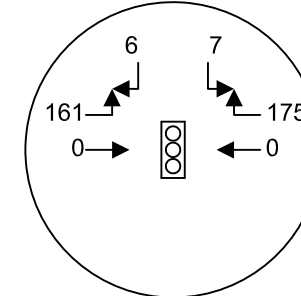
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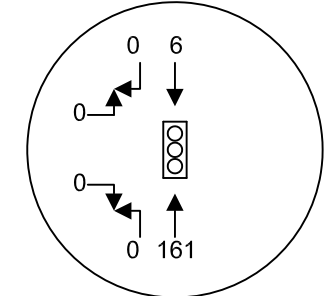
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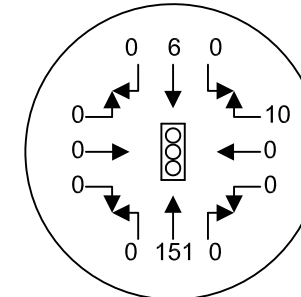
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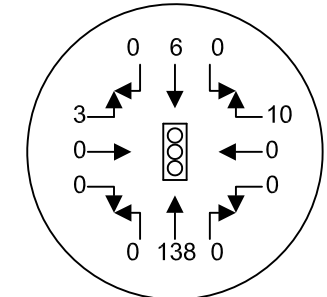
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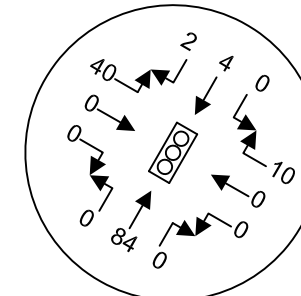
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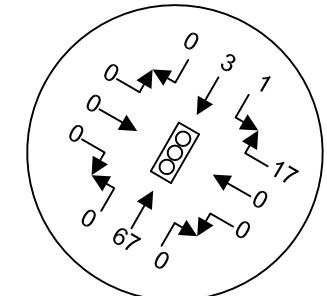
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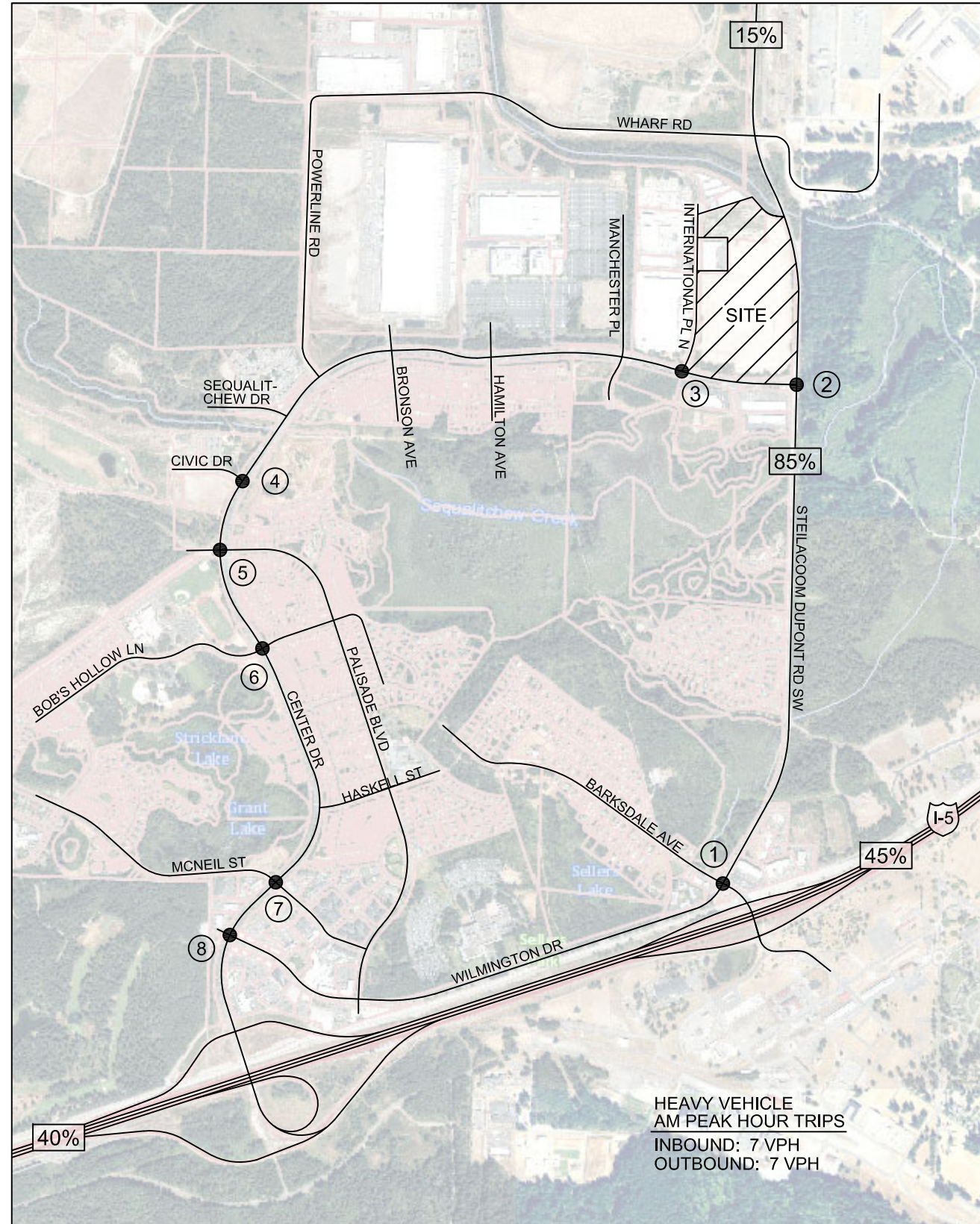


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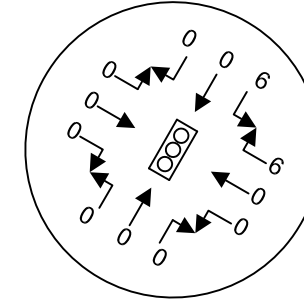


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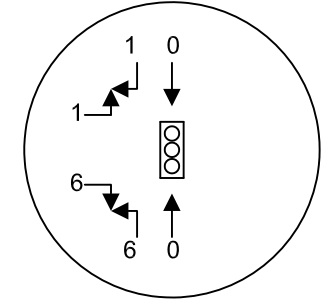




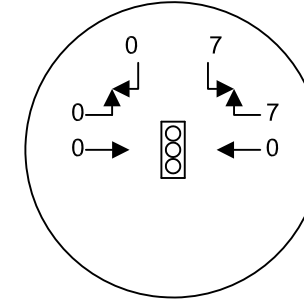
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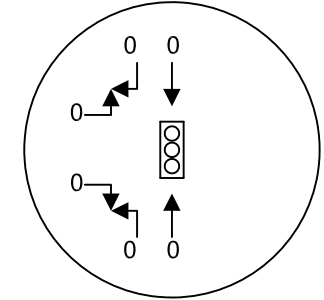
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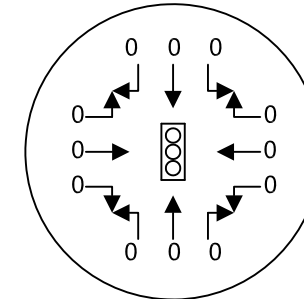
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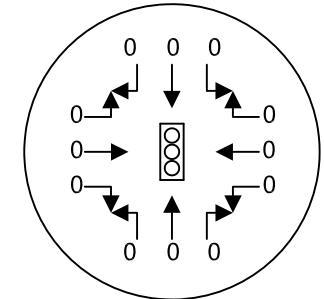
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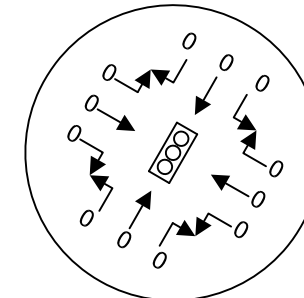
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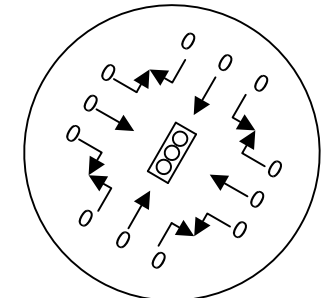
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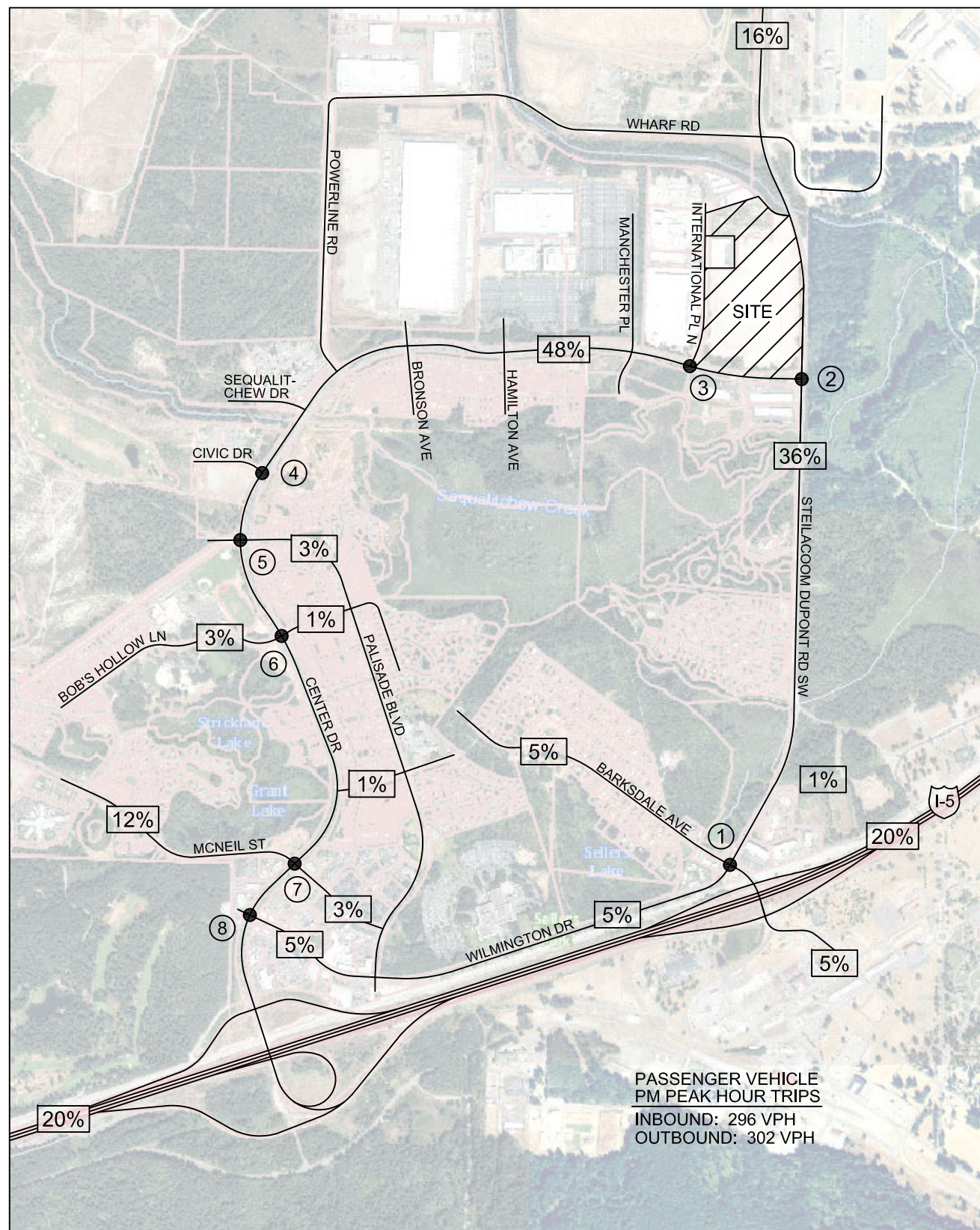


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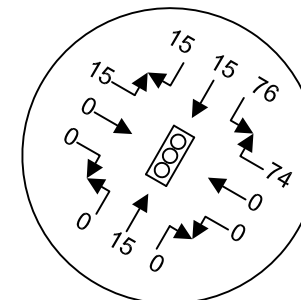


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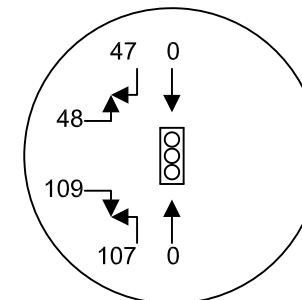




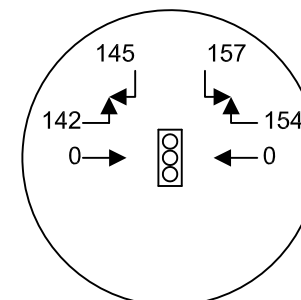
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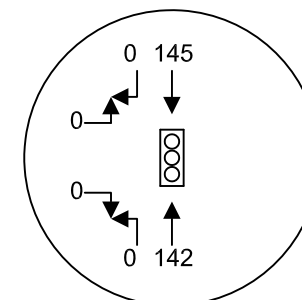
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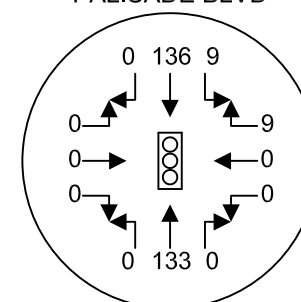
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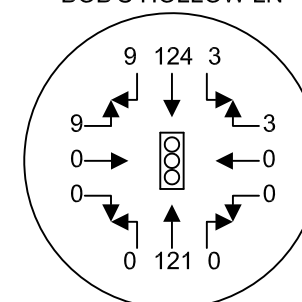
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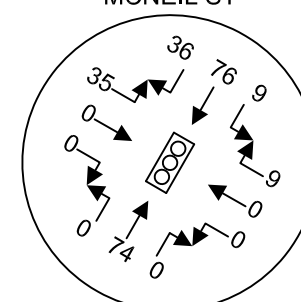
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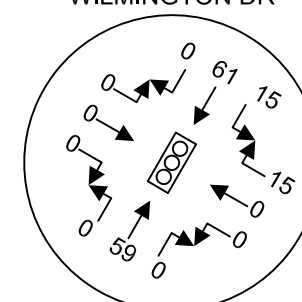
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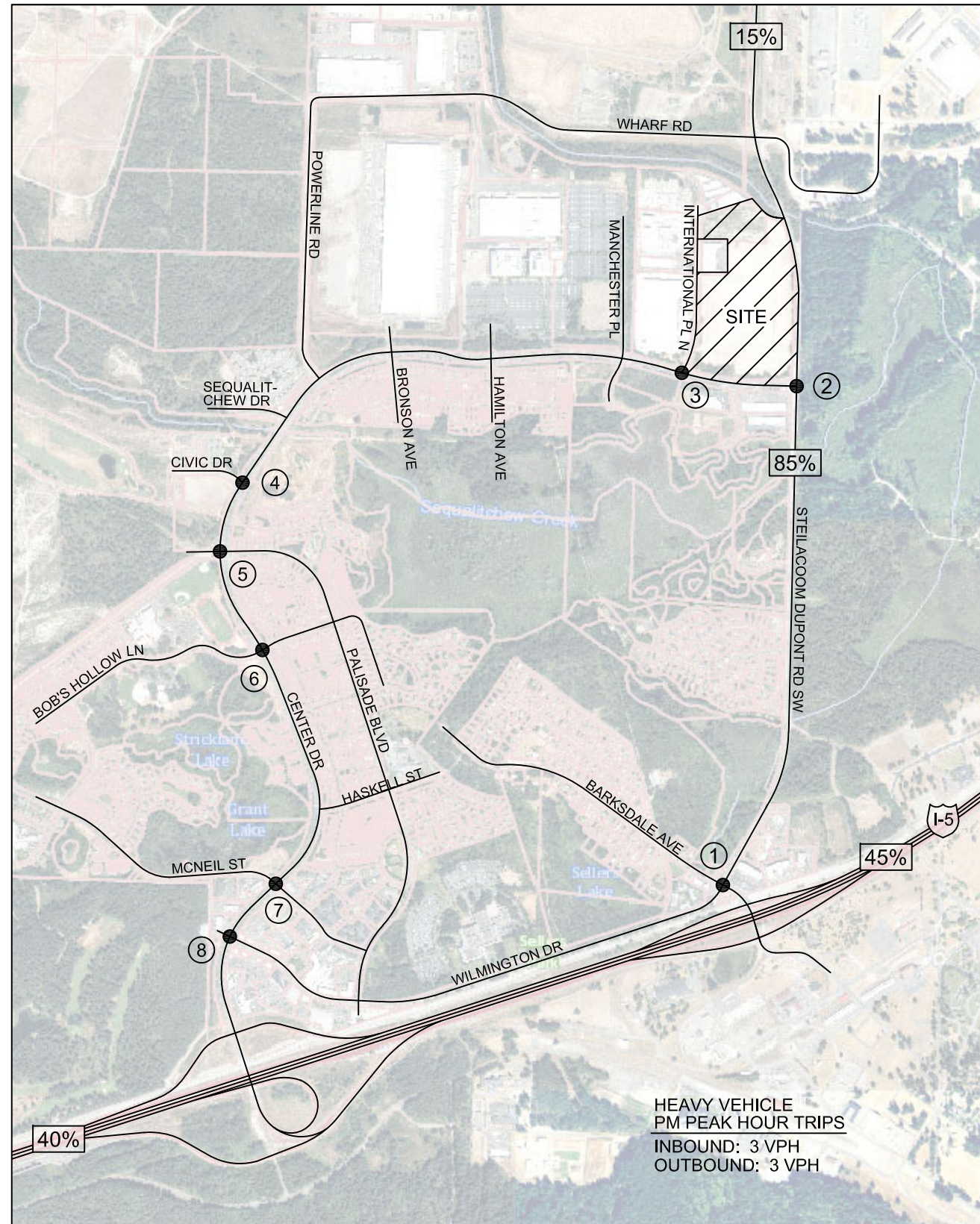


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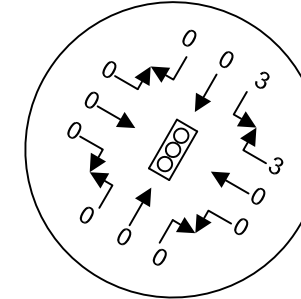


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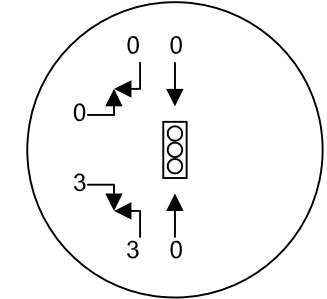




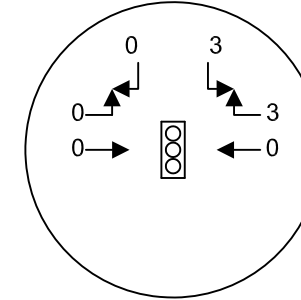
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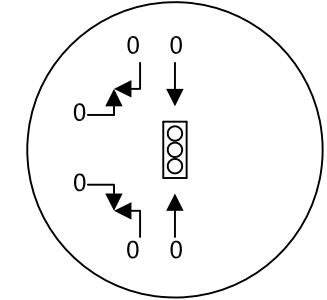
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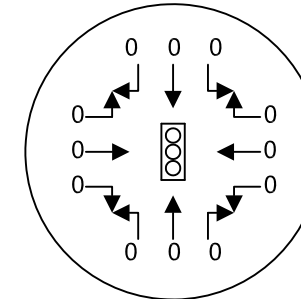
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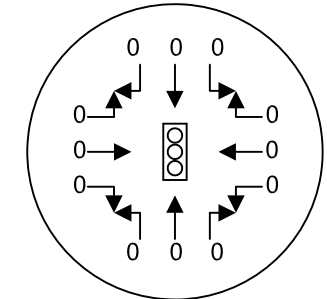
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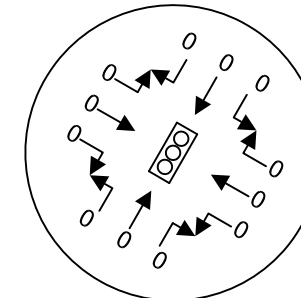
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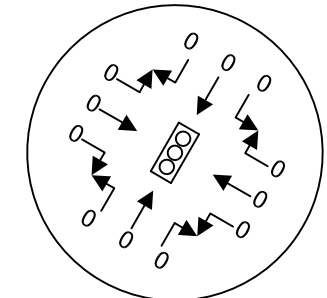
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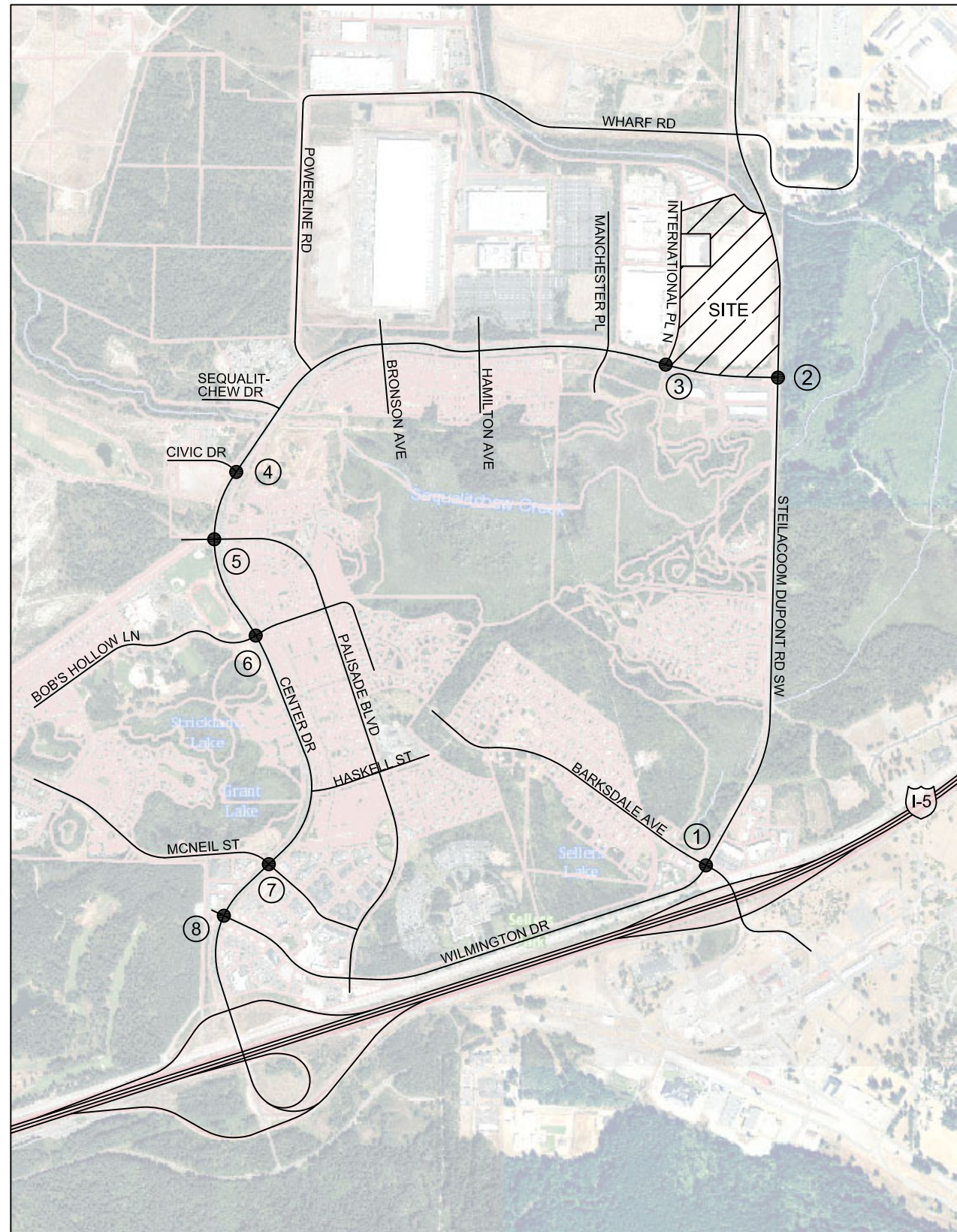


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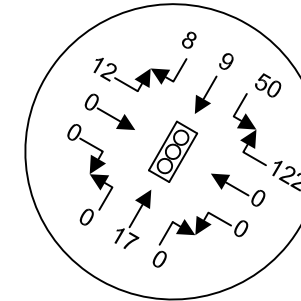


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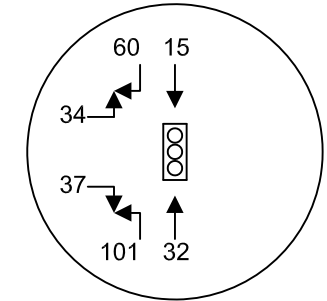




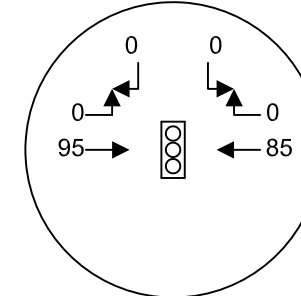
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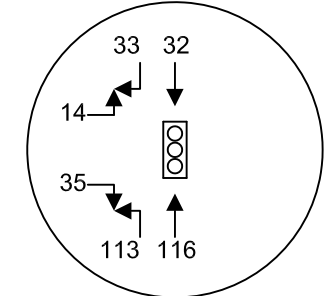
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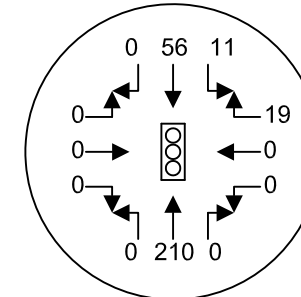
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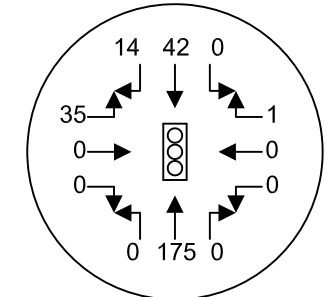
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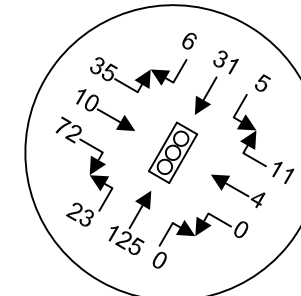
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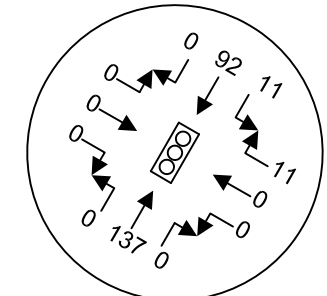
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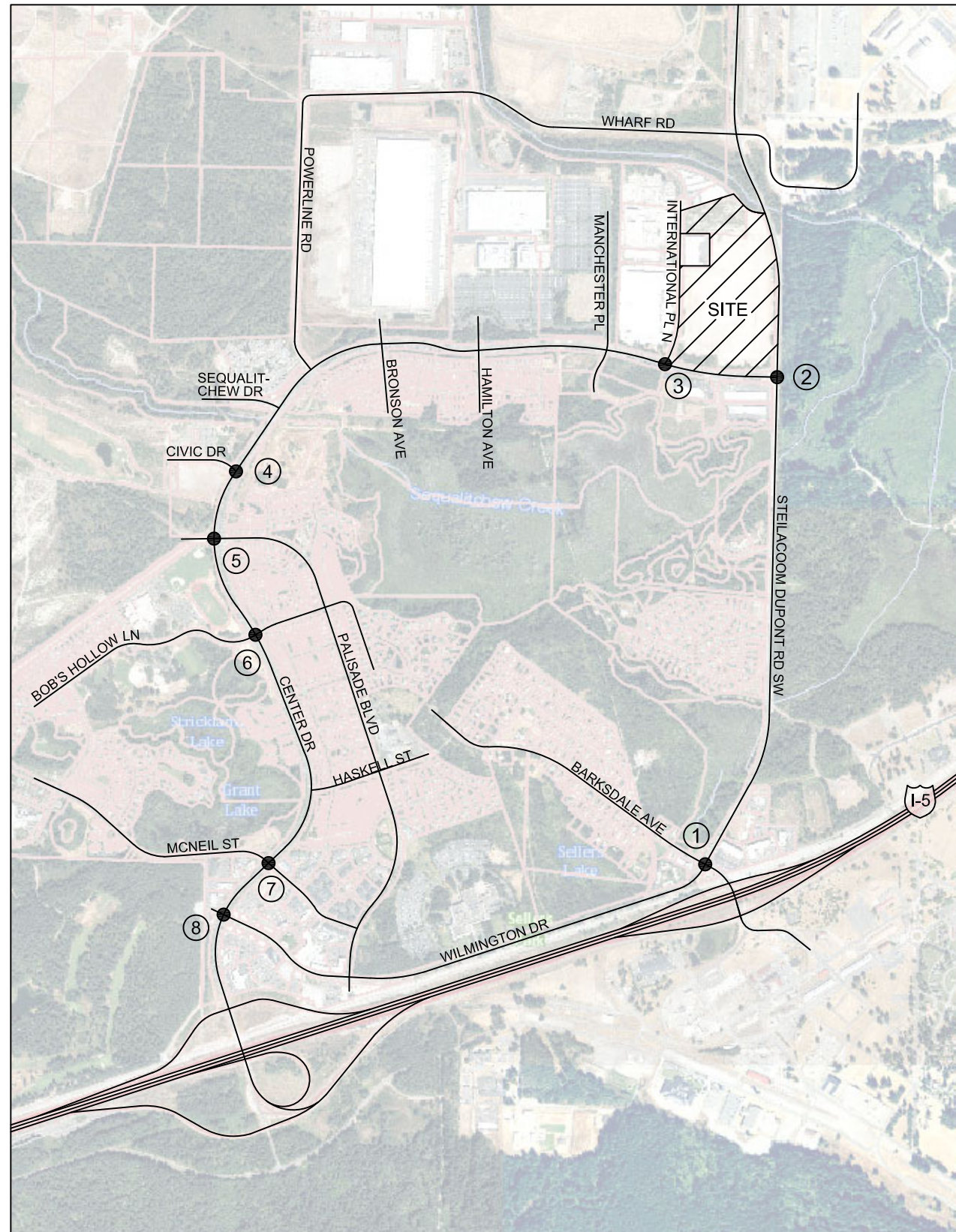


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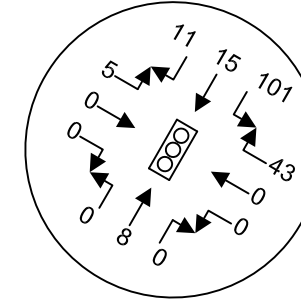


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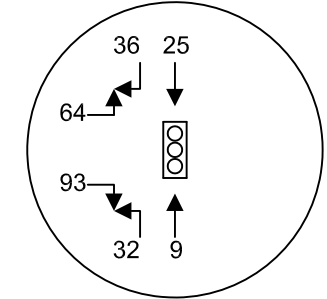




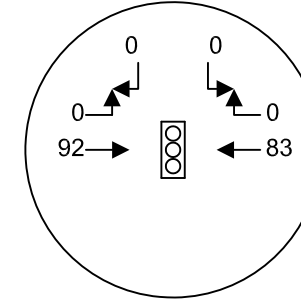
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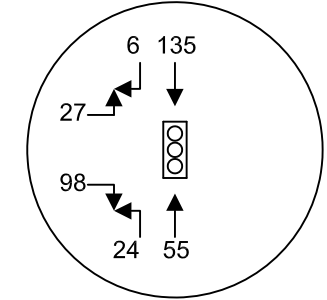
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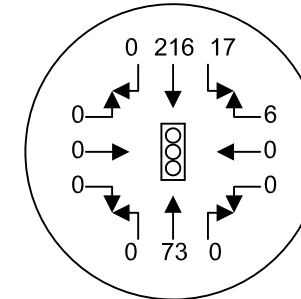
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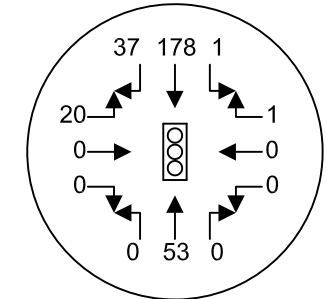
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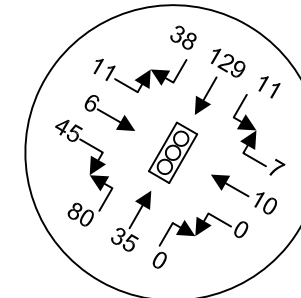
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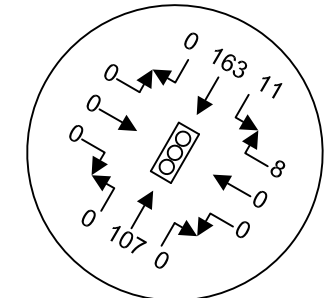
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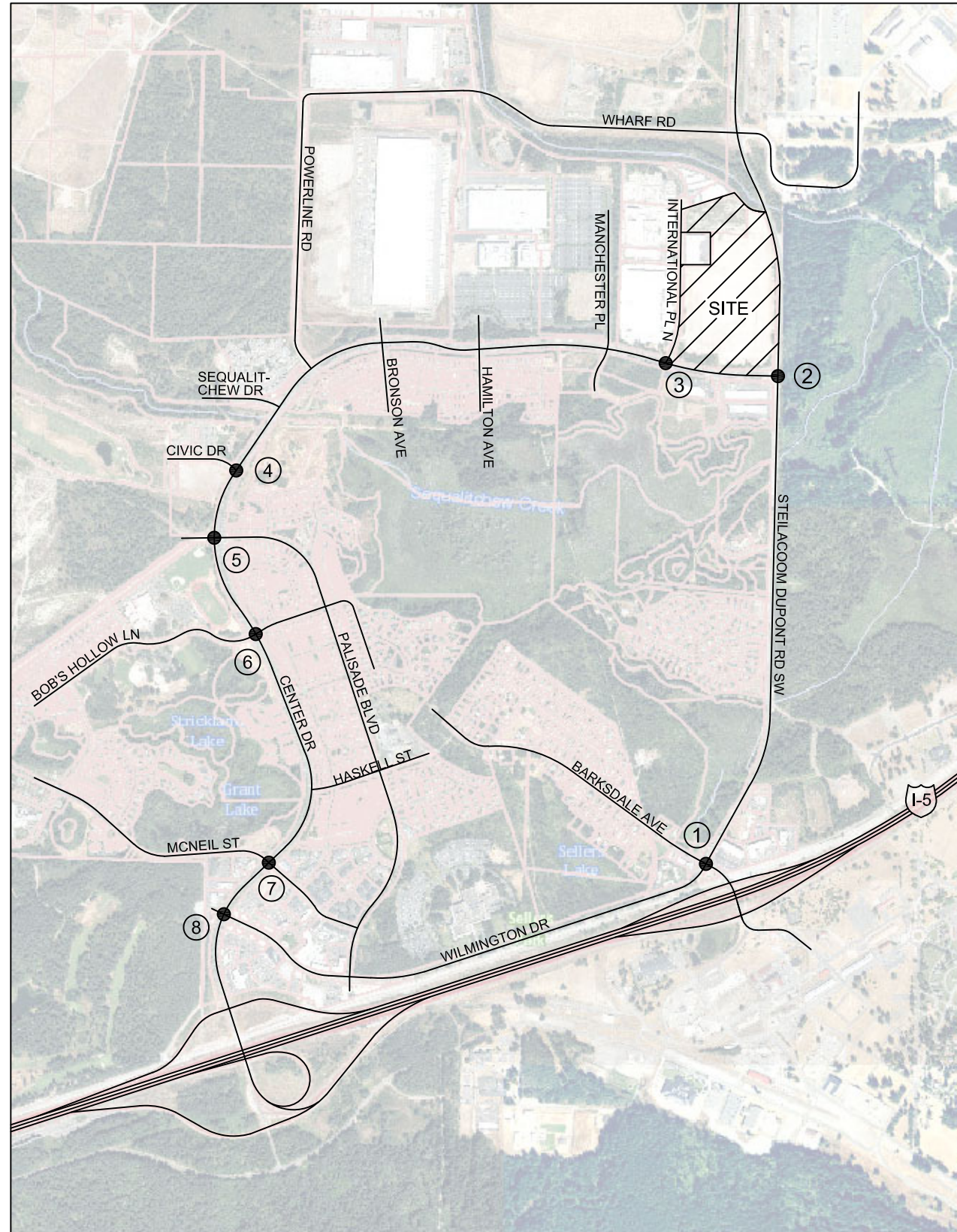


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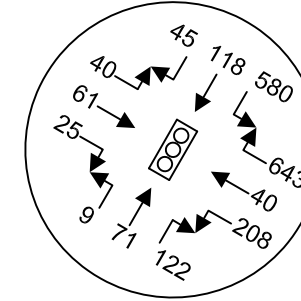


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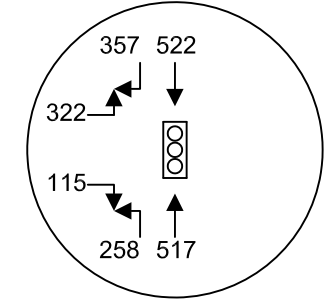




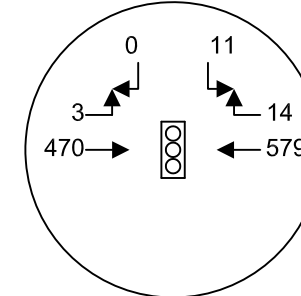
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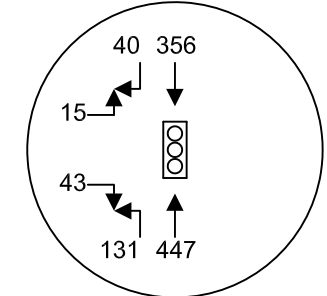
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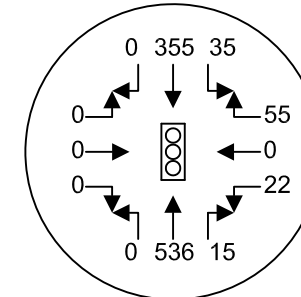
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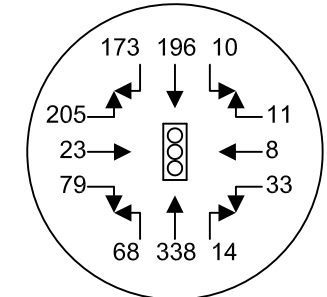
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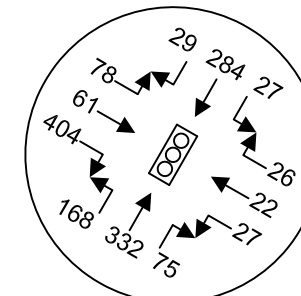
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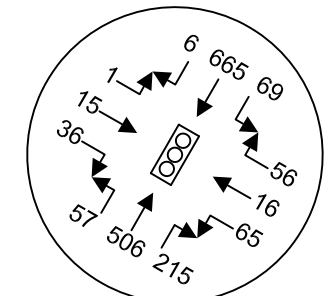
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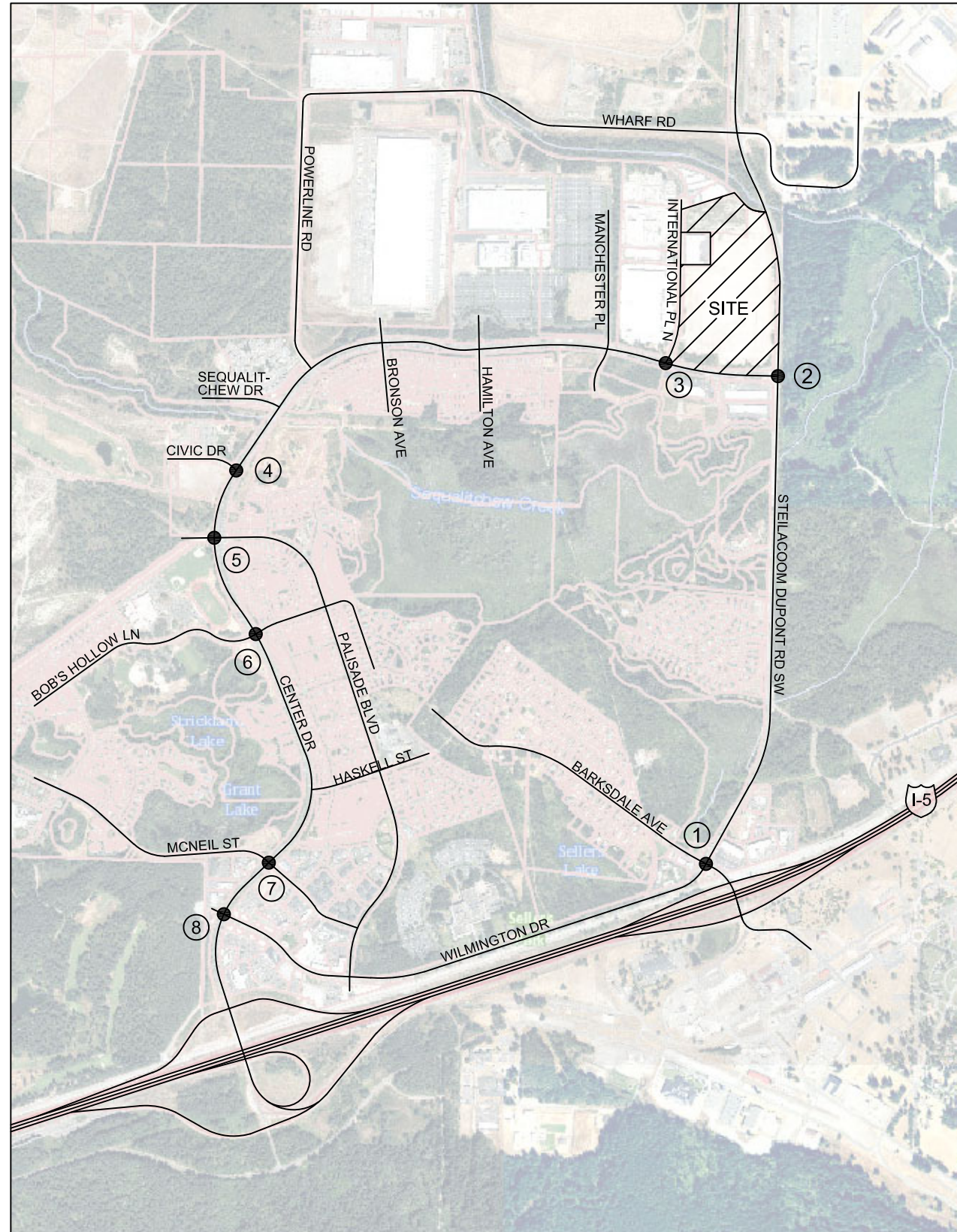


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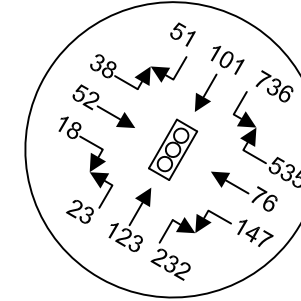


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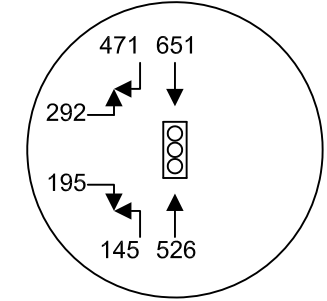




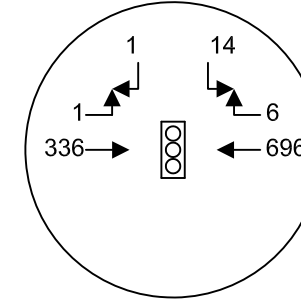
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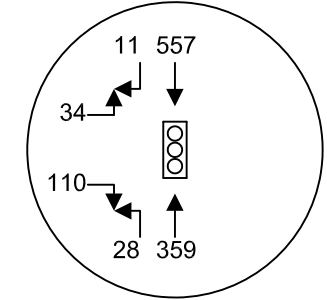
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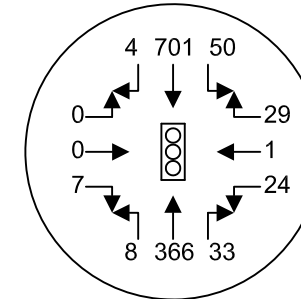
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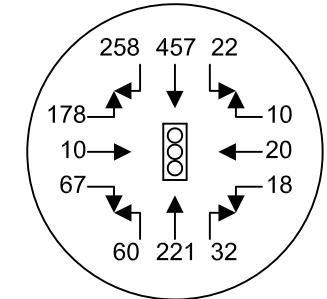
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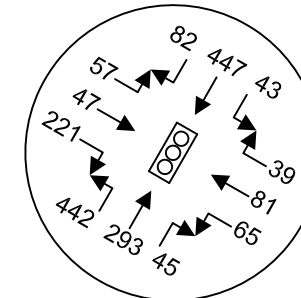
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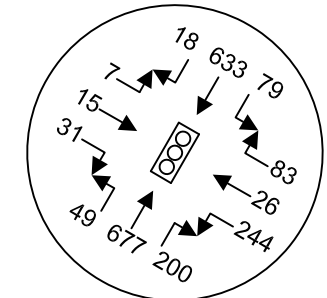
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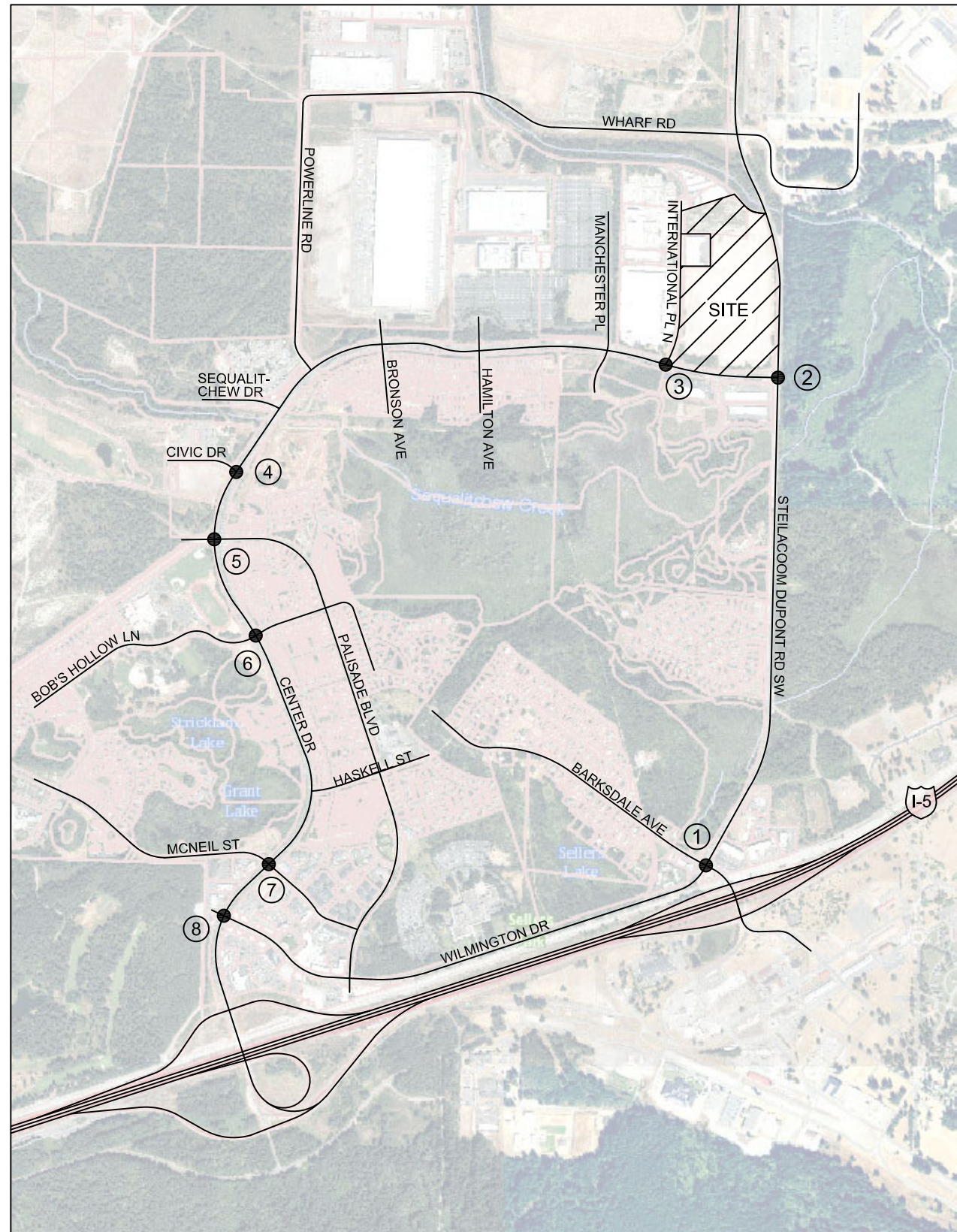


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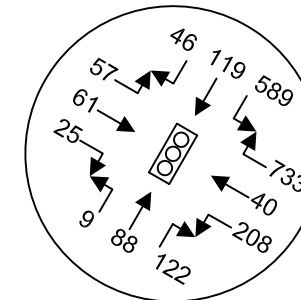


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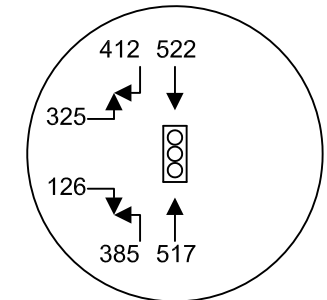




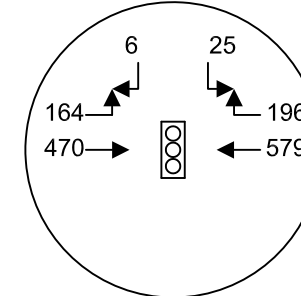
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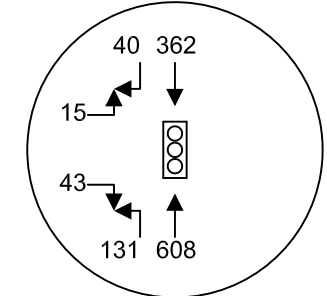
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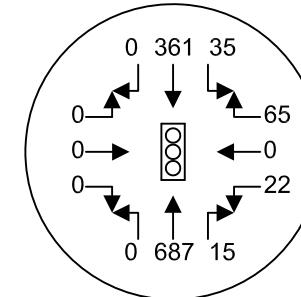
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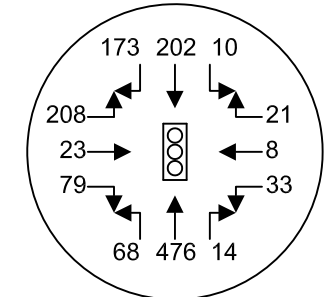
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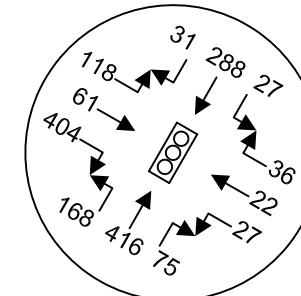
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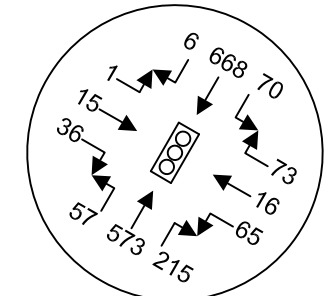
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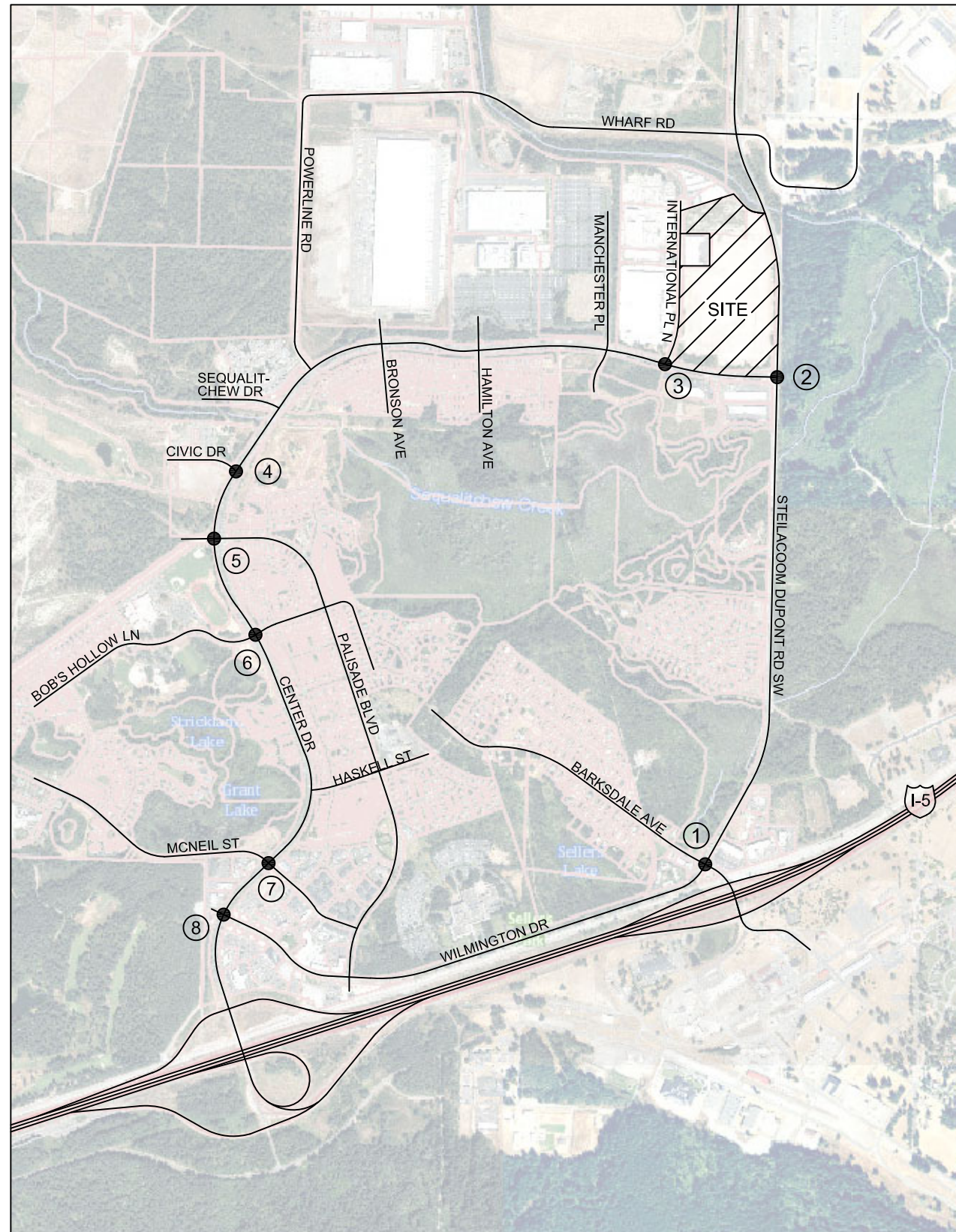


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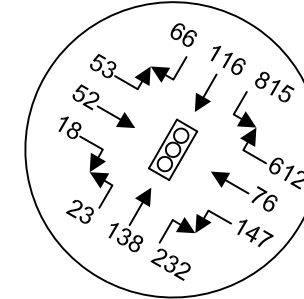


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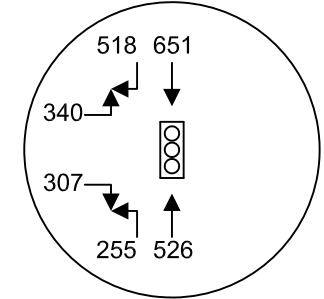




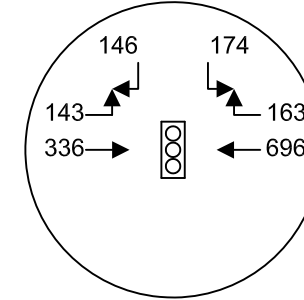
① BARKSDALE AVE & STEILACOOM DUPONT RD SW



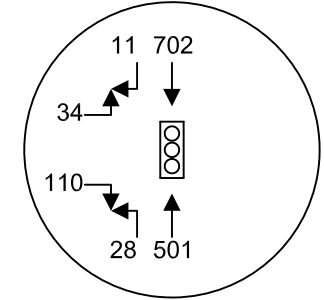
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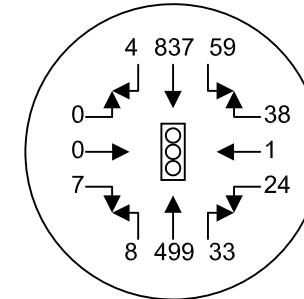
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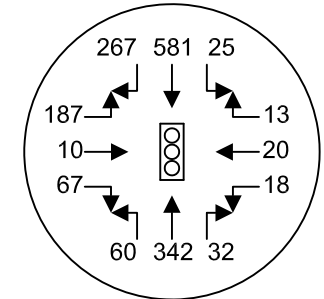
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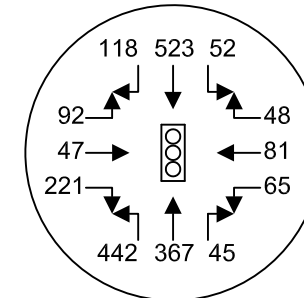
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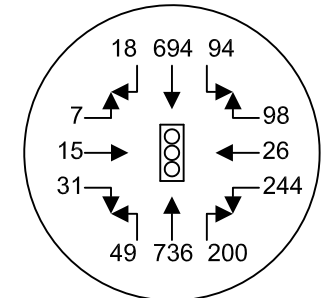
⑥ CENTER DR & BOB'S HOLLOW LN



⑦ CENTER DR & MCNEIL ST



⑧ CENTER DR & WILMINGTON DR



4.4 Future Level of Service

Level of Service calculations were made for future conditions without (background) and with project-generated traffic added to the adjacent street network. Table 4 below portrays forecast LOS delays for the intersections of study.

Table 4: Forecast 2022 Peak Hour Level of Service

Delays given in seconds per vehicle

Map ID	Intersection	Control	Peak Hour	Without Project		With Project	
				LOS	Delay	LOS	Delay
1	Barksdale Ave & Steilacoom DuPont Rd / Wilmington Dr	Signal	AM	C	26.2	C	27.0
			PM	C	26.8	C	28.9
2	Center Drive & Steilacoom DuPont Rd	Signal	AM	C	21.0	C	30.9
			PM	B	17.7	C	29.4
3	Center Drive & International Place N	Signal	AM	A	2.8	A	8.3
			PM	A	3.1	B	13.7
4	Center Drive & Civic Drive	Signal	AM	A	5.6	A	6.1
			PM	A	6.8	A	7.1
5	Center Drive & Palisade Blvd	Signal	AM	A	6.3	A	6.7
			PM	A	7.2	A	7.3
6	Center Drive & Bob's Hollow Ln	Signal	AM	B	13.4	B	13.6
			PM	B	12.2	B	12.8
7	Center Drive & McNeil Street	Signal	AM	B	14.9	C	26.1
			PM	C	30.7	D	42.3
8	Center Drive & Wilmington Drive	Signal	AM	A	9.1	A	9.2
			PM	B	14.0	B	14.4

As shown in Table 4, all study intersections are anticipated to remain meeting the city of DuPont's LOS D standards. No operational deficiencies are identified as a result of the project.

4.5 Queuing

As part of the project evaluation, the City requested two specific movements to examine in terms of vehicle queuing: northbound left-turns at Steilacoom DuPont Road & Center Drive and eastbound left-turns at Center Drive & International Place N. A queuing analysis can determine whether there is sufficient storage capacity to accommodate turning demands during peak periods and avoid any spillover to the advancing through lanes.

Queues were estimated through the use of *SimTraffic*, a traffic simulation modeling program, in conjunction with *Synchro 10*. Using peak hour volumes under forecast 2022 conditions, 5 one-hour simulations were performed under each scenario to determine average queue lengths. As requested, the project's "non-peak" and "peak" conditions were both evaluated. Queue outputs are summarized in the table below.

Table 5: Forecast 2022 Queuing

Center Street at	Approach	Non-Peak Season				Peak Season			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Avg.	95 th	Avg.	95 th	Avg.	95 th	Avg.	95 th
Steilacoom DuPont Rd	NB LT	267'	303'	221'	308'	270'	296'	255'	311'
International Place	WB LT	52'	92'	66'	113'	69'	71'	95'	157'

Center Street & Steilacoom DuPont Road: is a signalized intersection offering approximately 250-feet of storage for the northbound left-turn before the lane striping transitions into a two-way left-turn lane. The max queue was estimated at 311 feet, which exceeds the storage capacity. However, no driveways exist south of the intersection where blocking conflicts would occur. Additional green time allocation and signal timing adjustments for the northbound left-turn phase could be implemented, should queuing become an issue.

Also of note: intersection improvements are identified at this location under the City's Six Year Transportation Improvement Plan. A consideration may be for the City to examine the benefits of dual northbound left-turn lanes. Dual left-turn lanes are generally considered when left-turn volumes exceed 300 vehicles per hour³ provided that opposing volumes are moderate to high. Dual left-turn lanes can also allow for a shorter cycle while increasing left-turn capacity and allocate green time to other critical movements. However, with no queuing conflicts and acceptable service levels, dual left-turn lanes may not be needed until further demand and growth occur.

Center Drive & International Place: has recently been converted from stop-control to signalization with a new stop-bar and crosswalk located along the west leg. The eastbound left-turn lane has approximately 125-feet of storage as delineated by the solid white lane marking. An additional approximately 50 feet is available as the deceleration area before the tapers begin which can also be used to store vehicles under congested conditions. In total, approximately 175-feet of storage capacity is available which is shown to accommodate forecast peak demands under all scenarios.

³ Federal Highway Administration Research and Technology

5. SUMMARY

Snow Blossom Fulfillment Center proposes to occupy an existing warehouse and add a mezzanine (totaling 797,794 square feet) for the use of a hazmat fulfillment center. The subject site is located on the northwest corner of Steilacoom DuPont Road & Center Drive and has multiple access driveways along International Place N. A site plan illustrating the building and parking configuration is presented in Figure 2.

The site can be expected to generate approximately 2,167 average weekday daily trips with 363 trips occurring during the AM peak hour and 604 during the PM peak hour. These volume estimates were derived from data provided by the client from a number of similar facilities and are representative of typical operations. Additional volume increases would be expected during the peak holiday season with volume and distribution estimations supplied in the appendix. The majority of traffic would be in the form of employee vehicles and delivery vans with relatively low amounts of heavy vehicles. A total of eight intersections within the city were selected for examination as part of this impact analysis. Existing conditions and a list of the study intersections are summarized in Table 2.

A two-year horizon was analyzed to assess project impacts subsequent to occupancy. Background growth rates and traffic volumes from nearby planned developments were included in the forecast analysis. All study intersections are shown to continue to meet the City of DuPont's LOS D standards for both AM and PM peak hours. No intersection or operational deficiencies were identified as a result of the proposed tenant occupancy. Queuing analyses were performed for the northbound left-turn approach at Steilacoom DuPont Road & Center Drive and the eastbound left-turn approach at Center Drive and International Place N with findings summarized in Table 5. Queuing was shown to exceed the 250-foot storage capacity for the northbound left-turn lane along Steilacoom DuPont Road at Center Drive with approximately 311 feet during the PM peak season period. However, additional storage is available as the lane transitions into a two-way left turn lane with no nearby driveways that would be obstructed. The City may want to consider dual left-turn lanes though the forecast Level of Service was shown to be acceptable. Additional green time allocation or other signal adjustments may also mitigate the left-turn queues.

Based on the findings above, no offsite mitigation is identified at this time.

SNOW BLOSSOM FULFILLMENT CENTER
TRAFFIC IMPACT ANALYSIS

APPENDIX

INTERSECTION COUNT SHEETS



Prepared for: **Geralyn Reinart, P.E.**
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

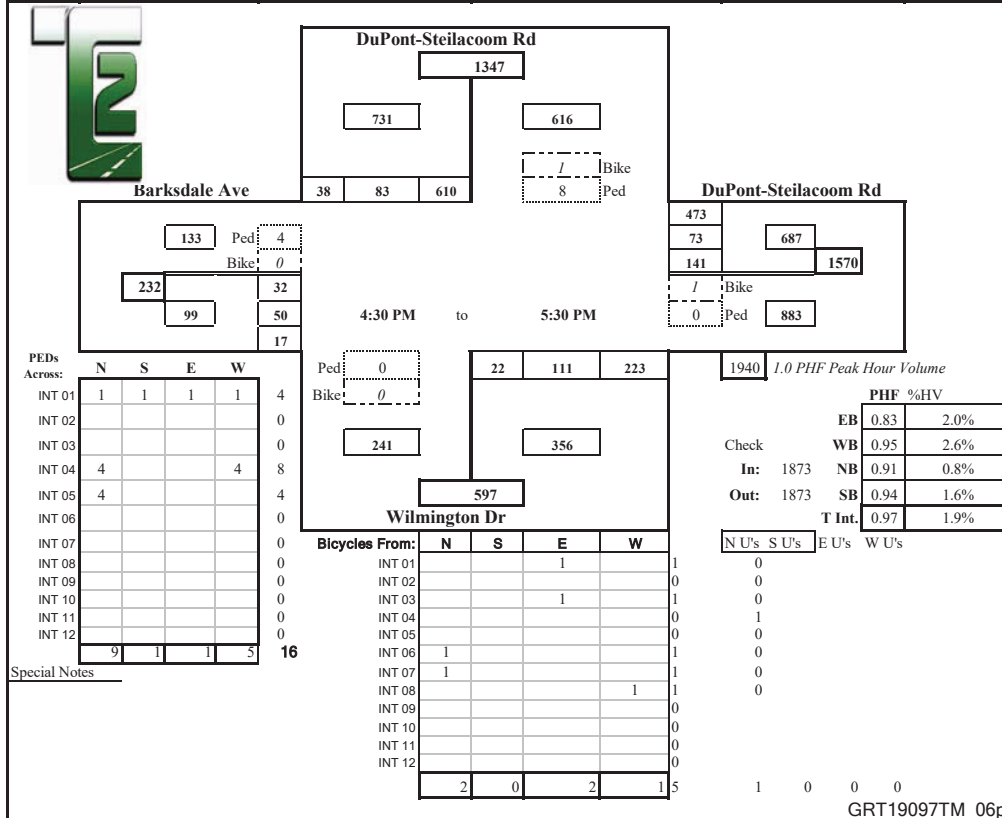
WBE/DBE

Intersection: DuPont-Steilacoom Rd/Wilmington Dr & DuPont-Steilacoom Rd/Barksdale Ave
Location: DuPont, Washington

Date of Count: Thurs 10/03/2019
Checked By: Jess

Time Interval	From North on (SB) DuPont-Steilacoom Rd				From South on (NB) Wilmington Dr				From East on (WB) DuPont-Steilacoom Rd				From West on (EB) Barksdale Ave				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	7	131	9	5	2	8	25	54	2	32	16	110	1	11	20	7	428
4:30 P	4	167	13	10	0	4	12	31	1	36	20	114	0	10	19	5	441
4:45 P	4	167	16	7	1	4	23	61	5	26	20	119	1	6	8	3	460
5:00 P	0	146	20	15	2	9	41	48	6	38	10	132	1	8	14	4	485
5:15 P	4	160	26	8	0	5	28	46	3	31	19	117	0	8	12	6	466
5:30 P	4	137	21	8	0	4	19	68	4	46	24	105	0	10	16	4	462
5:45 P	3	124	15	8	1	3	27	57	1	46	21	123	1	8	11	5	448
6:00 P	3	97	15	2	0	2	13	34	3	38	18	125	1	10	12	8	374
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	29	1129	135	63	6	39	188	399	25	293	148	945	5	71	112	42	3564
Peak Hour: 4:30 PM to 5:30 PM																	
Total	12	610	83	38	3	22	111	223	18	141	73	473	2	32	50	17	1873
Approach	731				356				687				99				1873
%HV	1.6%				0.8%				2.6%				2.0%				1.9%
PHF	0.94				0.91				0.95				0.83				0.97





Prepared for: **Geralyn Reinart, P.E.**
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: DuPont-Steilacoom Rd & Center Dr
Location: DuPont, Washington

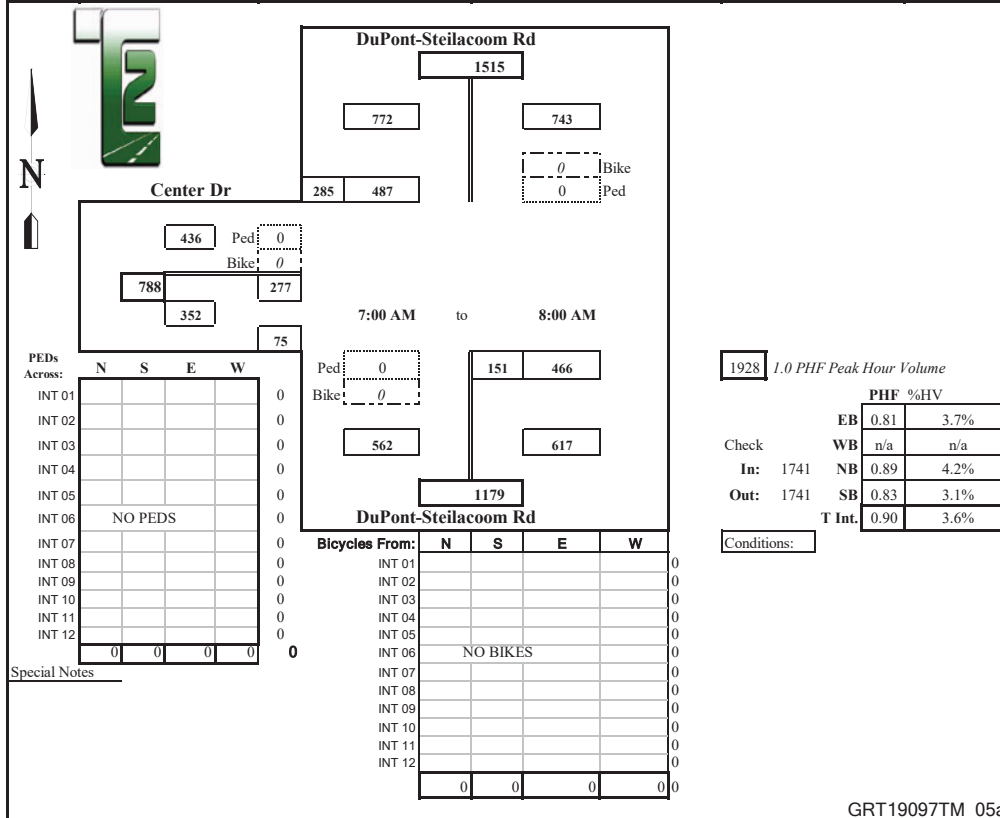
Date of Count: Thurs 10/03/2019
Checked By: Jess

Time Interval	From North on (SB) DuPont-Steilacoom Rd				From South on (NB) DuPont-Steilacoom Rd				From East on (WB) 0				From West on (EB) Center Dr				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	3	0	90	36	9	35	125	0	0	0	0	0	2	87	0	22	395
7:30 A	5	0	128	72	5	49	117	0	0	0	0	0	2	70	0	11	447
7:45 A	9	0	140	93	8	34	139	0	0	0	0	0	6	60	0	16	482
8:00 A	7	0	129	84	4	33	85	0	0	0	0	0	3	60	0	26	417
8:15 A	9	0	120	55	6	20	88	0	0	0	0	0	9	85	0	17	385
8:30 A	12	0	109	43	4	20	105	0	0	0	0	0	4	53	0	18	348
8:45 A	10	0	95	30	4	22	109	0	0	0	0	0	7	85	0	28	369
9:00 A	5	0	73	32	6	20	108	0	0	0	0	0	2	102	0	28	363
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	60	0	884	445	46	233	876	0	0	0	0	0	35	602	0	166	3206
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Peak Hour: 7:00 AM to 8:00 AM

Total	24	0	487	285	26	151	466	0	0	0	0	0	13	277	0	75	1741
Approach	772				617				0				352				1741
%HV	3.1%				4.2%				n/a				3.7%				3.6%
PHF	0.83				0.89				n/a				0.81				0.90





Prepared for:

Geralyn Reinart, P.E.

Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: DuPont-Steilacoom Rd & Center Dr

Date of Count: Thurs 10/03/2019

Location: DuPont, Washington

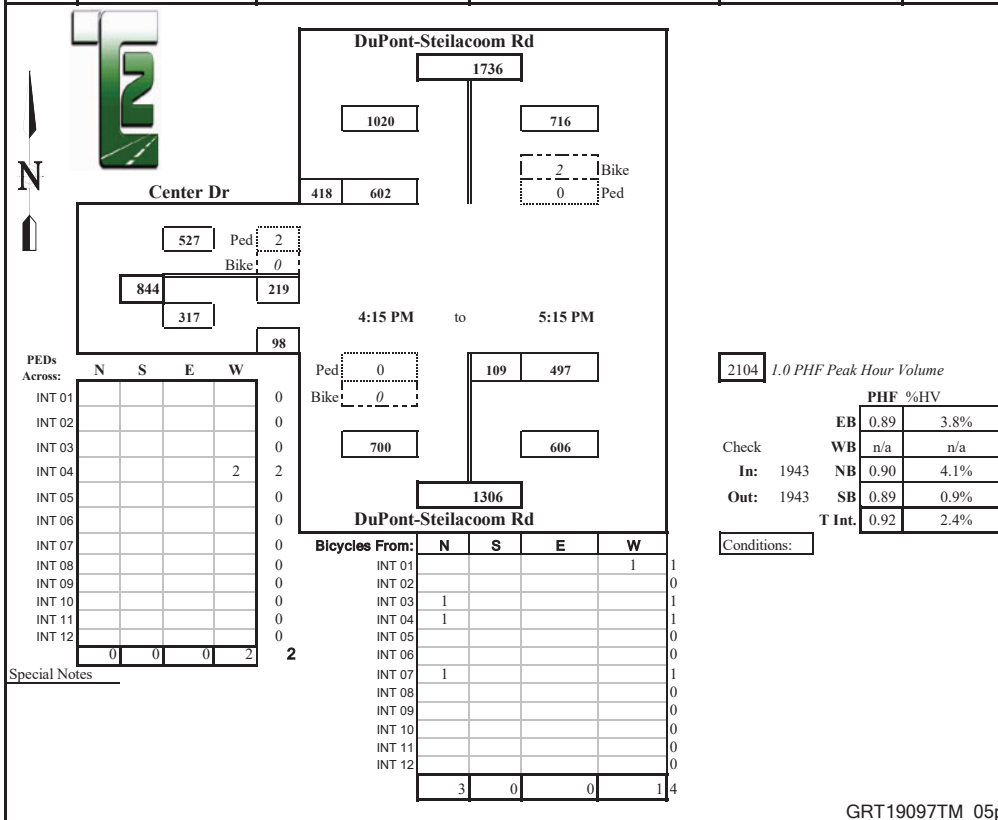
Checked By: Jess

Time Interval	From North on (SB) DuPont-Steilacoom Rd				From South on (NB) DuPont-Steilacoom Rd				From East on (WB) 0				From West on (EB) Center Dr				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	6	0	128	67	5	20	105	0	0	0	0	0	5	35	0	28	383
4:30 P	3	0	155	75	3	26	105	0	0	0	0	0	5	55	0	28	444
4:45 P	2	0	122	95	7	20	124	0	0	0	0	0	5	55	0	34	450
5:00 P	0	0	165	121	7	38	130	0	0	0	0	0	0	54	0	15	523
5:15 P	4	0	160	127	8	25	138	0	0	0	0	0	2	55	0	21	526
5:30 P	0	0	123	115	3	32	99	0	0	0	0	0	3	55	0	17	441
5:45 P	0	0	102	96	2	40	82	0	0	0	0	0	4	66	0	20	406
6:00 P	3	0	79	82	5	47	98	0	0	0	0	0	2	57	0	17	380
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	18	0	1034	778	40	248	881	0	0	0	0	0	26	432	0	180	3553
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Peak Hour: 4:15 PM to 5:15 PM																	
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Total	9	0	602	418	25	109	497	0	0	0	0	0	12	219	0	98	1943
Approach	1020				606				0				317				1943
%HV	0.9%				4.1%				n/a				3.8%				2.4%
PHF	0.89				0.90				n/a				0.89				0.92





Prepared for: **PH Consulting LLC**
Traffic Count Consultants, Inc.

Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

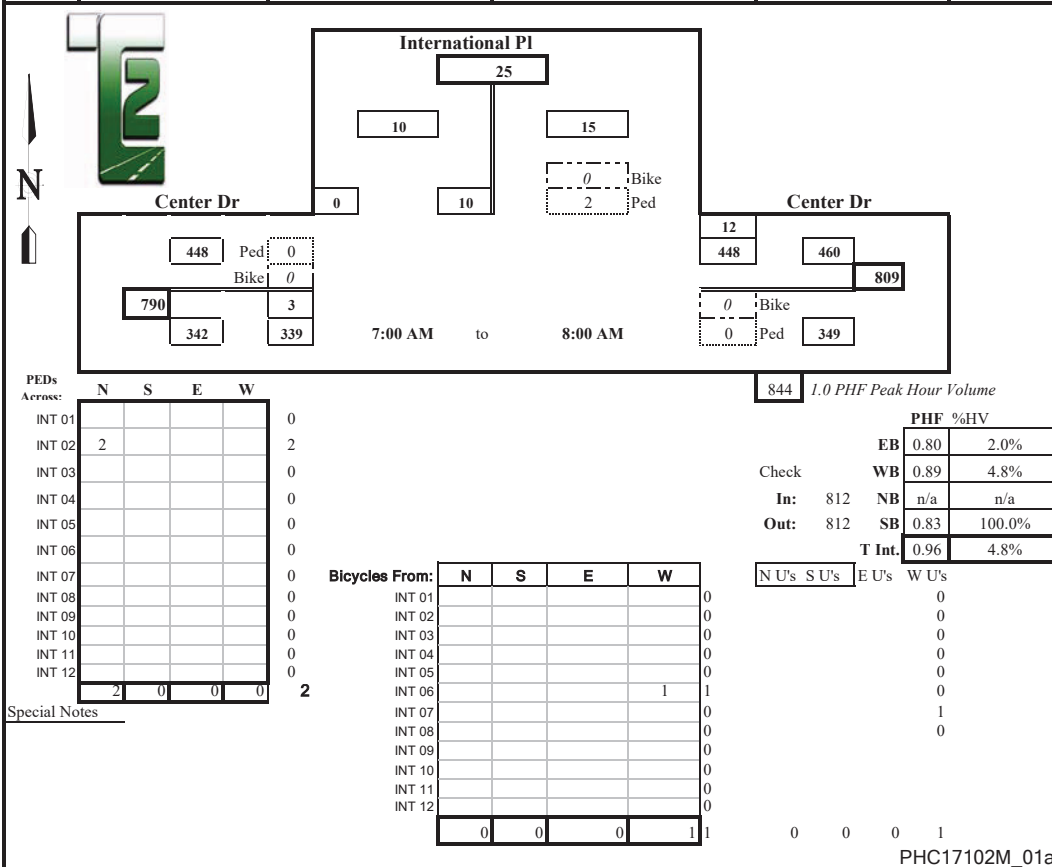
Intersection: International Pl & Center Dr

Date of Count: Tues 10/03/2017

Location: Dupont, Washington

Checked By: Jess

Time Interval	From North on (SB) International Pl				From South on (NB) Center Dr				From East on (WB) Center Dr				From West on (EB) Center Dr				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	3	3	0	0	0	0	0	0	3	0	88	3	3	0	107	0	201
7:30 A	2	2	0	0	0	0	0	0	6	0	115	5	0	0	77	0	199
7:45 A	3	3	0	0	0	0	0	0	2	0	119	1	0	1	77	0	201
8:00 A	2	2	0	0	0	0	0	0	11	0	126	3	4	2	78	0	211
8:15 A	2	2	0	0	0	0	0	0	1	0	65	1	4	0	78	0	146
8:30 A	2	1	0	1	0	0	0	0	2	0	40	1	3	0	81	0	124
8:45 A	2	2	0	0	0	0	0	0	6	0	55	4	0	0	99	0	160
9:00 A	1	1	0	0	0	0	0	0	2	0	44	1	4	0	144	0	190
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	17	16	0	1	0	0	0	0	33	0	652	19	18	3	741	0	1432
Peak Hour: 7:00 AM to 8:00 AM																	
Total	10	10	0	0	0	0	0	0	22	0	448	12	7	3	339	0	812
Approach	10				0				460				342				812
%HV	100.0%				n/a				4.8%				2.0%				4.8%
PHF	0.83				n/a				0.89				0.80				0.96





Prepared for:

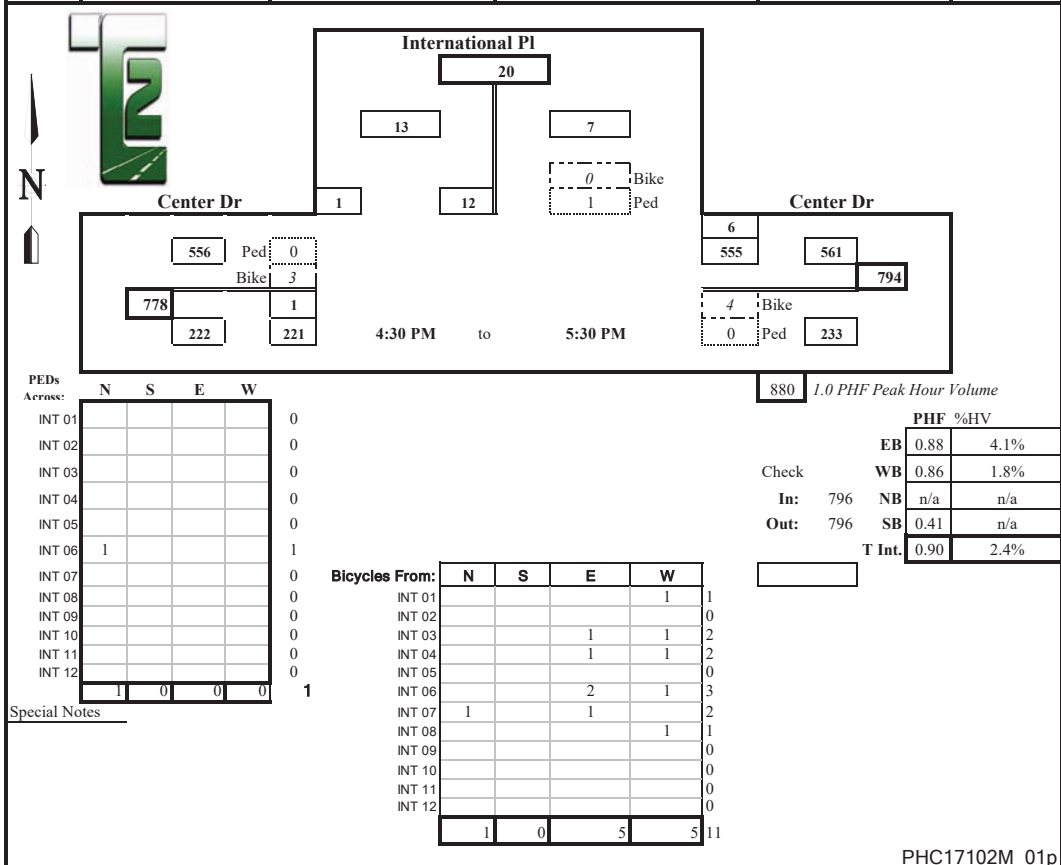
PH Consulting LLC**Traffic Count Consultants, Inc.**

Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: International Pl & Center Dr**Date of Count:** Tues 10/03/2017**Location:** Dupont, Washington**Checked By:** Jess

Time Interval	From North on (SB)				From South on (NB)				From East on (WB)				From West on (EB)				Interval Total
Ending at	International Pl				0				Center Dr				Center Dr				
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	1	3	0	6	0	0	0	0	2	0	91	0	5	0	55	0	155
4:30 P	0	2	0	1	0	0	0	0	2	0	86	0	4	0	48	0	137
4:45 P	0	7	0	1	0	0	0	0	4	0	108	3	1	0	54	0	173
5:00 P	0	4	0	0	0	0	0	0	2	0	164	0	3	0	52	0	220
5:15 P	0	1	0	0	0	0	0	0	3	0	139	1	3	0	63	0	204
5:30 P	0	0	0	0	0	0	0	0	1	0	144	2	2	1	52	0	199
5:45 P	1	1	0	1	0	0	0	0	0	0	106	1	4	0	62	0	171
6:00 P	1	2	0	3	0	0	0	0	0	0	132	1	3	0	59	0	197
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	3	20	0	12	0	0	0	0	14	0	970	8	25	1	445	0	1456
Peak Hour: 4:30 PM to 5:30 PM																	
Total	0	12	0	1	0	0	0	0	10	0	555	6	9	1	221	0	796
Approach	13				0				561				222				796
%HV	n/a				n/a				1.8%				4.1%				2.4%
PHF	0.41				n/a				0.86				0.88				0.90





Prepared for: **PH Consulting LLC**

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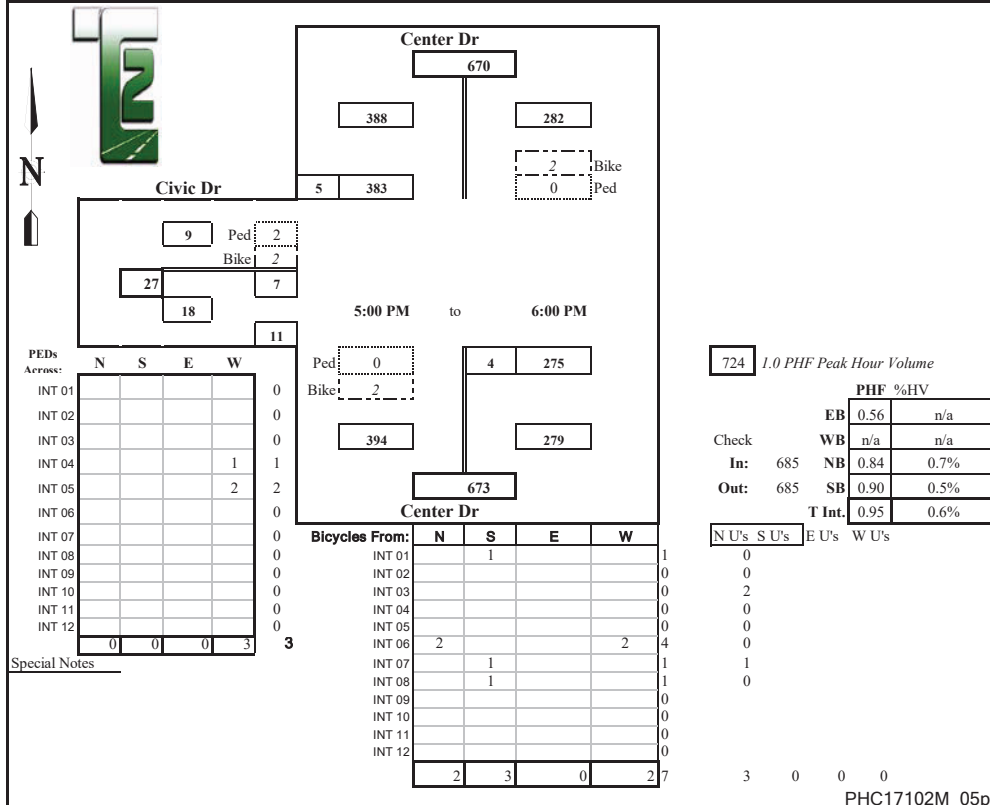
WBE/DBE

Intersection: Center Dr & Civic Dr
Location: Dupont, Washington

Date of Count: Tues 9/05/2017
Checked By: Jess

Time Interval Ending at	From North on (SB)				From South on (NB)				From East on (WB)				From West on (EB)				Interval Total
	Center Dr				Center Dr				0				Civic Dr				
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	0	82	2	2	0	51	0	0	0	0	0	0	2	0	4	141
4:30 P	0	0	83	0	3	0	52	0	0	0	0	0	0	0	0	6	141
4:45 P	1	0	94	0	2	2	68	0	0	0	0	0	0	2	0	4	170
5:00 P	1	0	91	0	0	2	55	0	0	0	0	0	0	1	0	2	151
5:15 P	1	0	106	2	1	0	51	0	0	0	0	0	0	3	0	5	167
5:30 P	0	0	97	1	1	0	65	0	0	0	0	0	0	1	0	4	168
5:45 P	1	0	89	0	0	1	79	0	0	0	0	0	0	0	0	0	169
6:00 P	0	0	91	2	0	3	80	0	0	0	0	0	0	3	0	2	181
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	4	0	733	7	9	8	501	0	0	0	0	0	0	12	0	27	1288
Peak Hour: 5:00 PM to 6:00 PM																	
Total	2	0	383	5	2	4	275	0	0	0	0	0	0	7	0	11	685
Approach	388				279				0				18				685
%HV	0.5%				0.7%				n/a				n/a				0.6%
PHF	0.90				0.84				n/a				0.56				0.95



[illegible]



Prepared for: **Geralyn Reinart, P.E.**
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Center Dr & Palisade Blvd
Location: DuPont, Washington

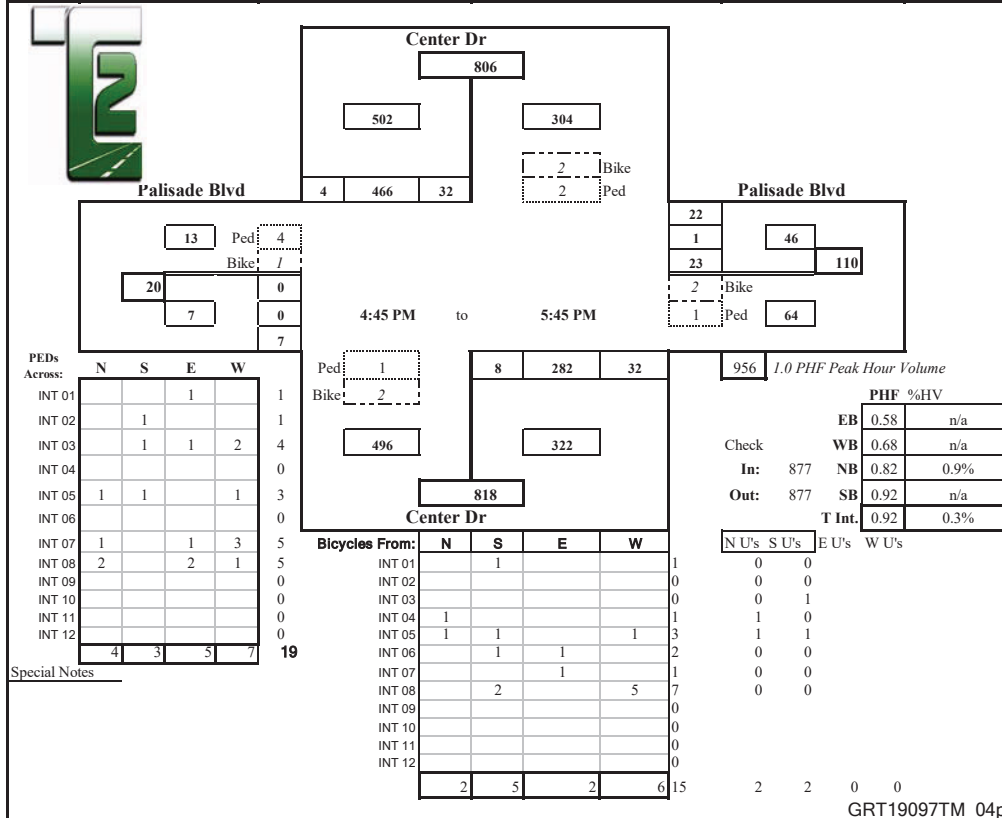
Date of Count: Thurs 10/03/2019
Checked By: Jess

Time Interval Ending at	From North on (SB) Center Dr				From South on (NB) Center Dr				From East on (WB) Palisade Blvd				From West on (EB) Palisade Blvd				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	2	6	83	0	3	0	48	2	0	7	0	7	0	0	0	1	154
4:30 P	1	5	83	0	2	0	57	8	1	2	0	10	0	0	0	0	165
4:45 P	0	7	94	2	3	1	57	9	0	6	0	6	0	0	0	0	182
5:00 P	0	11	114	1	0	3	55	7	0	7	0	3	0	0	0	2	203
5:15 P	0	4	128	1	1	1	64	9	0	5	1	2	0	0	0	1	216
5:30 P	0	8	128	0	1	2	75	8	0	7	0	10	0	0	0	1	239
5:45 P	0	9	96	2	1	2	88	8	0	4	0	7	0	0	0	3	219
6:00 P	1	6	72	0	0	0	83	2	0	4	0	8	0	0	0	0	175
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	4	56	798	6	11	9	527	53	1	42	1	53	0	0	0	8	1553
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Peak Hour: 4:45 PM to 5:45 PM

Total	0	32	466	4	3	8	282	32	0	23	1	22	0	0	0	7	877
Approach	502				322				46				7				877
%HV	n/a				0.9%				n/a				n/a				0.3%
PHF	0.92				0.82				0.68				0.58				0.92





Prepared for: **Geralyn Reinart, P.E.**
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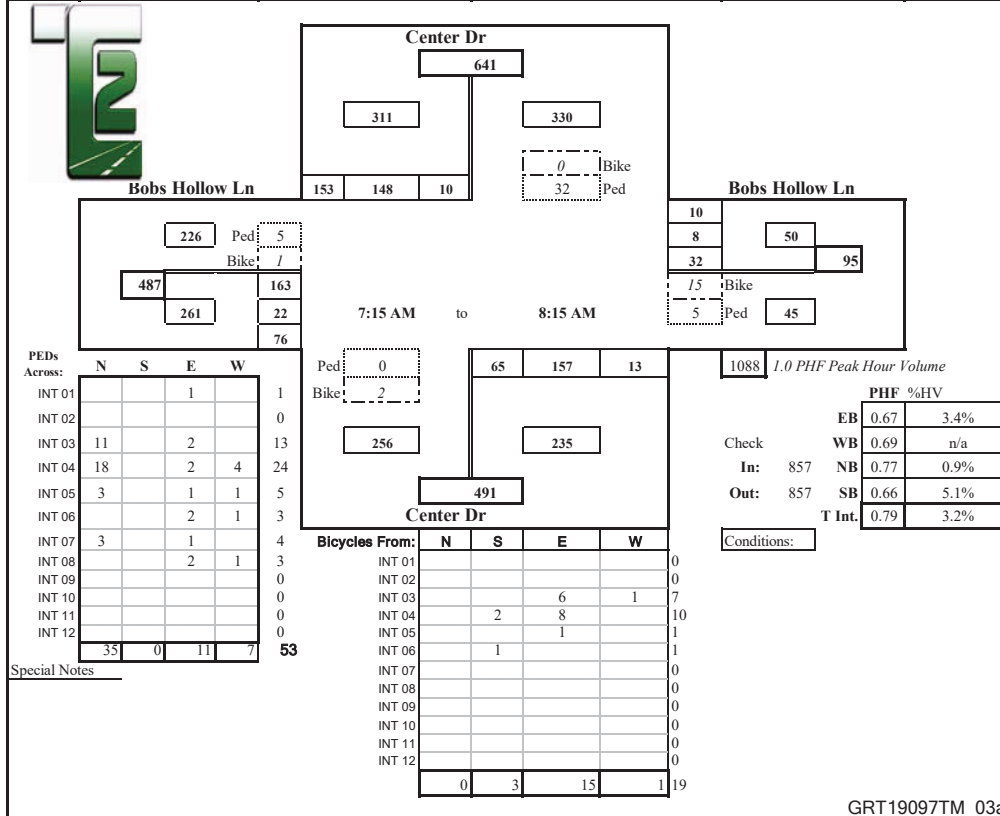
WBE/DBE

Intersection: Center Dr & Bobs Hollow Ln
Location: DuPont, Washington

Date of Count: Thurs 10/03/2019
Checked By: Jess

Time Interval	From North on (SB) Center Dr				From South on (NB) Center Dr				From East on (WB) Bobs Hollow Ln				From West on (EB) Bobs Hollow Ln				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	0	0	25	11	0	4	45	0	0	6	1	3	0	43	5	8	151
7:30 A	2	2	27	17	0	7	65	4	0	13	0	5	0	33	3	7	183
7:45 A	7	1	43	42	0	23	33	4	0	9	2	1	0	34	2	8	202
8:00 A	7	4	44	70	1	18	26	1	0	7	3	1	5	52	7	39	272
8:15 A	0	3	34	24	1	17	33	4	0	3	3	3	4	44	10	22	200
8:30 A	1	2	31	14	0	6	38	1	0	7	0	3	1	28	3	8	141
8:45 A	0	1	34	15	0	1	52	0	0	7	1	4	1	40	15	13	183
9:00 A	3	4	42	14	3	6	53	2	0	12	9	10	1	43	24	11	230
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	20	17	280	207	5	82	345	16	0	64	19	30	12	317	69	116	1562
Peak Hour: 7:15 AM to 8:15 AM																	
Total	16	10	148	153	2	65	157	13	0	32	8	10	9	163	22	76	857
Approach	311				235				50				261				857
%HV	5.1%				0.9%				n/a				3.4%				3.2%
PHF	0.66				0.77				0.69				0.67				0.79





Prepared for: **Geralyn Reinart, P.E.**

Traffic Count Consultants, Inc.

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WBE/DBE

Intersection: Center Dr & Bobs Hollow Ln

Date of Count: Thurs 10/03/2019

Location: DuPont, Washington

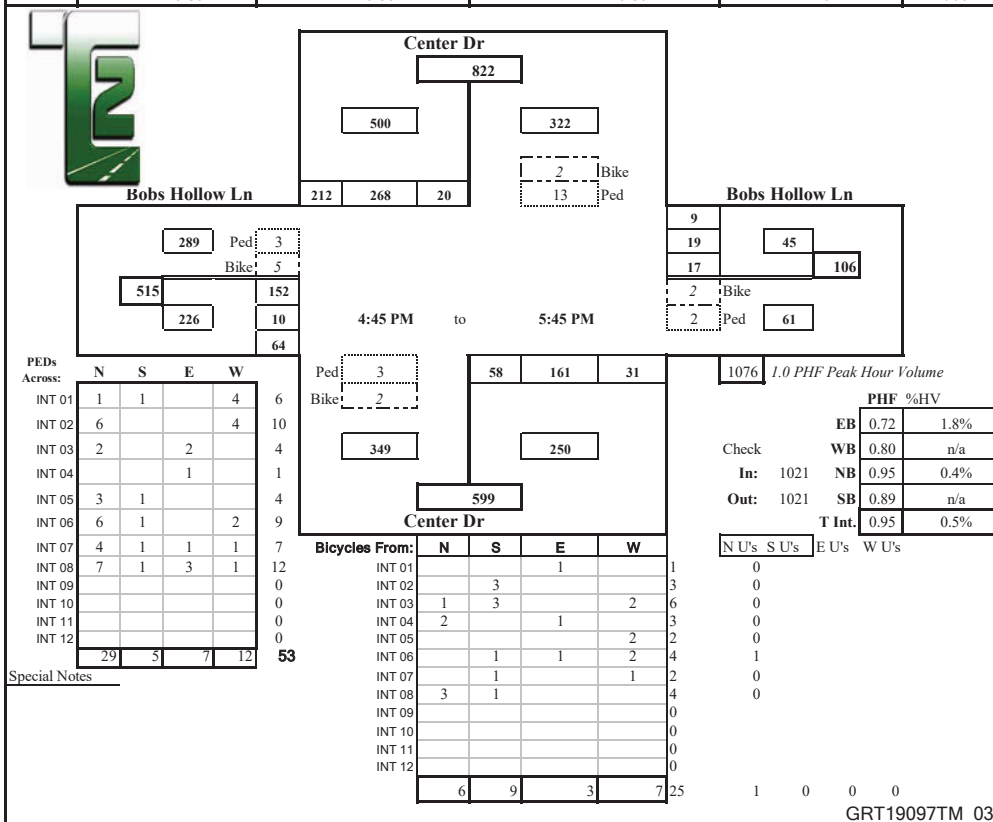
Checked By: Jess

Time Interval Ending at	From North on (SB) Center Dr				From South on (NB) Center Dr				From East on (WB) Bobs Hollow Ln				From West on (EB) Bobs Hollow Ln				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	2	5	49	36	2	18	33	1	0	1	4	4	1	17	3	3	174
4:30 P	0	5	48	28	1	6	35	10	0	1	2	2	2	26	6	6	175
4:45 P	1	4	66	36	2	23	44	9	0	1	2	7	1	18	3	7	220
5:00 P	0	2	68	49	0	12	36	9	0	4	4	2	1	30	3	8	227
5:15 P	0	6	74	60	0	12	43	9	0	7	5	1	1	36	3	10	266
5:30 P	0	5	78	48	1	16	40	7	0	4	3	1	1	38	1	18	259
5:45 P	0	7	48	55	0	18	42	6	0	2	7	5	1	48	3	28	269
6:00 P	1	3	46	22	0	12	58	3	0	1	5	3	0	23	4	11	191
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Survey	4	37	477	334	6	117	331	54	0	21	32	25	8	236	26	91	1781
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Peak Hour: 4:45 PM to 5:45 PM																	
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Total	0	20	268	212	1	58	161	31	0	17	19	9	4	152	10	64	1021
Approach	500				250				45				226				1021
%HV	n/a				0.4%				n/a				1.8%				0.5%
PHF	0.89				0.95				0.80				0.72				0.95





Prepared for:

Geralyn Reinart, P.E.

Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

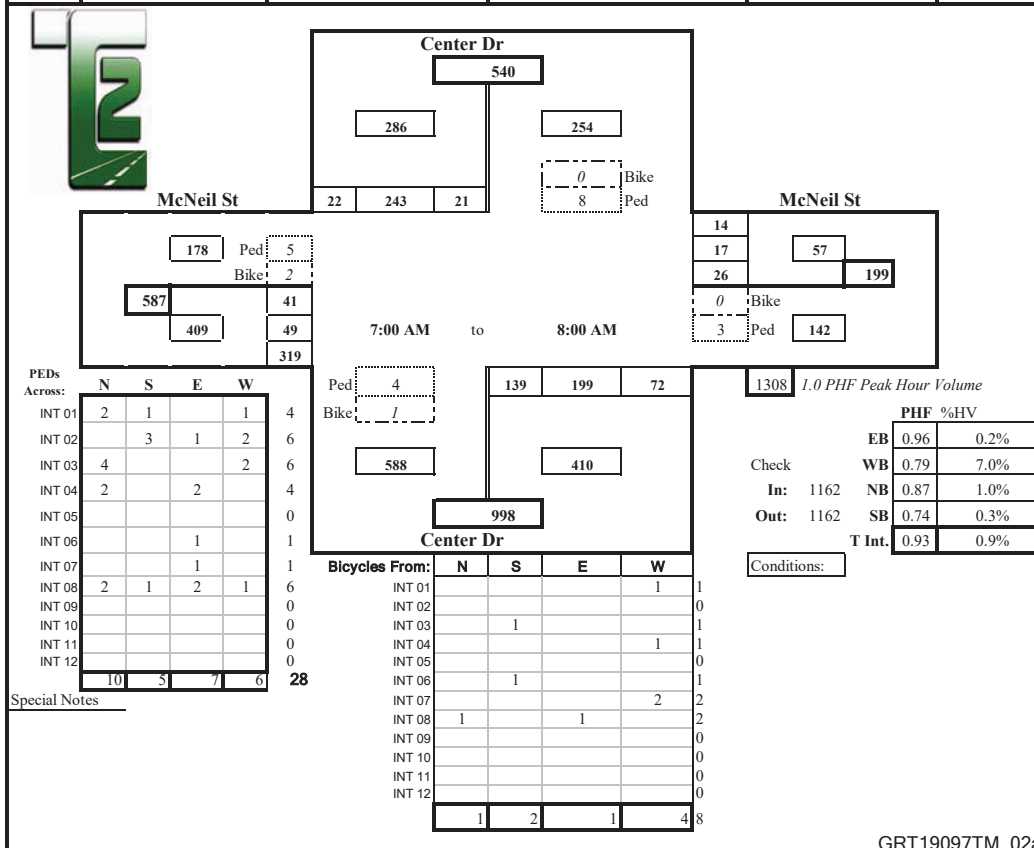
Intersection: Center Dr & McNeil St

Date of Count: Thurs 10/03/2019

Location: DuPont, Washington

Checked By: Jess

Time Interval Ending at	From North on (SB) Center Dr				From South on (NB) Center Dr				From East on (WB) McNeil St				From West on (EB) McNeil St				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	0	4	51	3	1	24	51	10	1	4	2	3	0	11	12	79	254
7:30 A	0	3	57	6	0	34	58	18	1	8	3	4	0	9	11	86	297
7:45 A	0	7	53	5	0	43	54	21	1	9	3	3	0	7	16	77	298
8:00 A	1	7	82	8	3	38	36	23	1	5	9	4	1	14	10	77	313
8:15 A	0	2	62	5	2	28	43	15	0	10	4	2	0	12	9	61	253
8:30 A	0	6	52	5	2	21	47	10	0	5	5	3	0	14	5	50	223
8:45 A	0	3	56	1	1	31	31	12	1	10	4	4	1	30	15	91	288
9:00 A	1	6	79	17	0	25	32	4	0	7	7	1	3	50	23	76	327
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	2	38	492	50	9	244	352	113	5	58	37	24	5	147	101	597	2253
Peak Hour: 7:00 AM to 8:00 AM																	
Total	1	21	243	22	4	139	199	72	4	26	17	14	1	41	49	319	1162
Approach	286				410				57				409				1162
%HV	0.3%				1.0%				7.0%				0.2%				0.9%
PHF	0.74				0.87				0.79				0.96				0.93





Prepared for:

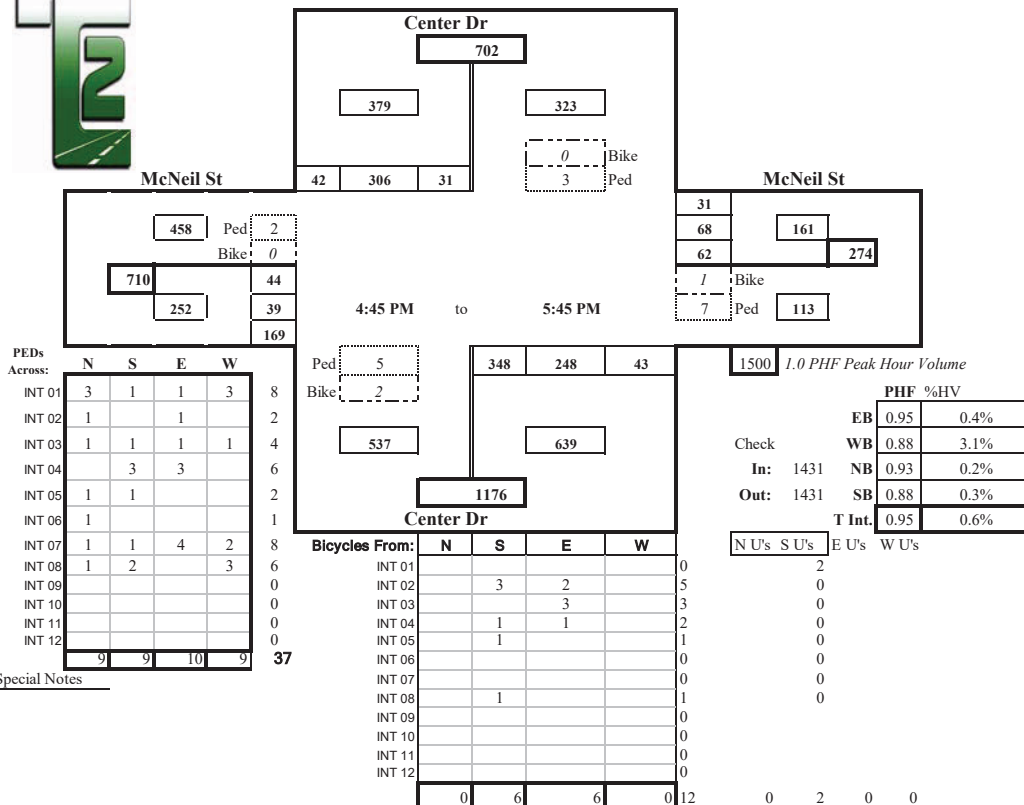
Geralyn Reinart, P.E.**Traffic Count Consultants, Inc.**

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Center Dr & McNeil St**Date of Count:** Thurs 10/03/2019**Location:** DuPont, Washington**Checked By:** Jess

Time Interval Ending at	From North on (SB) Center Dr				From South on (NB) Center Dr				From East on (WB) McNeil St				From West on (EB) McNeil St				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	1	3	58	8	2	76	47	12	0	27	17	5	1	5	9	34	301
4:30 P	0	2	66	1	1	64	41	11	0	13	14	5	1	14	9	37	277
4:45 P	0	4	54	10	0	81	60	4	0	31	16	8	2	12	6	36	322
5:00 P	1	2	70	11	0	93	61	11	2	13	17	5	1	8	9	49	349
5:15 P	0	7	73	11	0	77	61	8	1	22	16	8	0	15	10	36	344
5:30 P	0	13	86	9	0	90	66	16	1	12	15	9	0	10	11	38	375
5:45 P	0	9	77	11	1	88	60	8	1	15	20	9	0	11	9	46	363
6:00 P	0	4	43	9	0	84	66	13	1	12	25	5	0	23	7	40	331
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	2	44	527	70	4	653	462	83	6	145	140	54	5	98	70	316	2662
Peak Hour: 4:45 PM to 5:45 PM																	
Total	1	31	306	42	1	348	248	43	5	62	68	31	1	44	39	169	1431
Approach	379				639				161				252				1431
%HV	0.3%				0.2%				3.1%				0.4%				0.6%
PHF	0.88				0.93				0.88				0.95				0.95



GRT19097TM_02p



Prepared for:

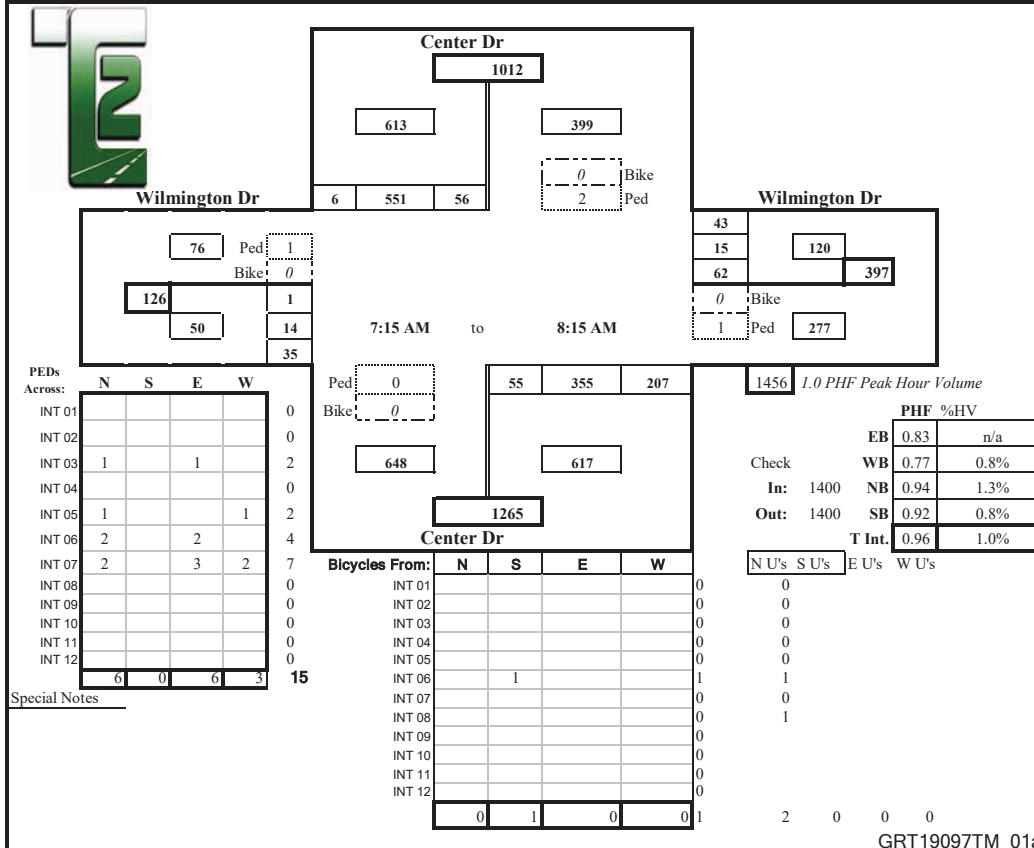
Geralyn Reinart, P.E.**Traffic Count Consultants, Inc.**

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Center Dr & Wilmington Dr**Date of Count:** Thurs 10/03/2019**Location:** DuPont, Washington**Checked By:** Jess

Time Interval Ending at	From North on (SB) Center Dr				From South on (NB) Center Dr				From East on (WB) Wilmington Dr				From West on (EB) Wilmington Dr				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
7:15 A	1	5	122	4	2	10	66	27	0	27	5	7	0	1	2	9	285
7:30 A	2	9	155	2	1	7	97	52	0	12	3	8	0	1	6	8	360
7:45 A	1	19	126	1	2	6	101	57	0	19	6	14	0	0	3	12	364
8:00 A	2	18	147	1	3	17	85	54	1	13	4	9	0	0	2	5	355
8:15 A	0	10	123	2	2	25	72	44	0	18	2	12	0	0	3	10	321
8:30 A	0	13	96	5	2	13	62	56	0	22	5	13	0	3	2	14	304
8:45 A	1	9	160	6	1	17	60	47	0	34	3	9	0	3	4	9	361
9:00 A	1	21	147	8	0	11	46	43	0	13	5	9	0	4	3	7	317
9:15 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey																	
8 104 1076 29 13 106 589 380 1 158 33 81 0 12 25 74 2667																	
Peak Hour: 7:15 AM to 8:15 AM																	
Total 5 56 551 6 8 55 355 207 1 62 15 43 0 1 14 35 1400																	
Approach 613 617 120 50 1400																	
%HV 0.8% 1.3% 0.8% n/a 1.0%																	
PHF 0.92 0.94 0.77 0.83 0.96																	

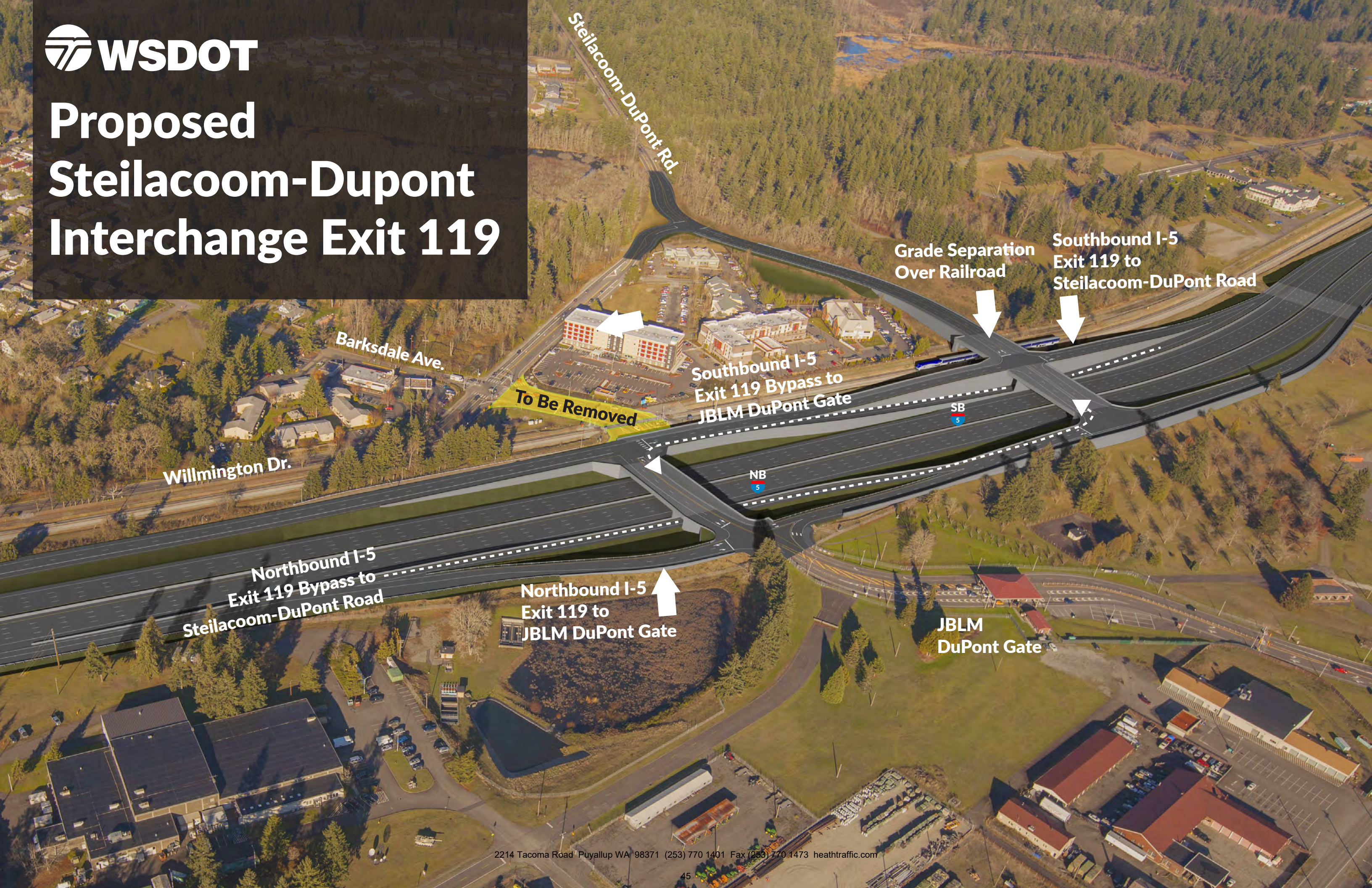


APPENDIX

WSDOT I-5 EXIT 119 INTERCHANGE
DESIGN EXHIBITS



Proposed Steilacoom-DuPont Interchange Exit 119





Proposed Steilacoom-DuPont Interchange Exit 119



Southbound I-5
Exit 119 to
Steilacoom-DuPont
Road

Northbound I-5
Exit 119 Bypass to
Steilacoom-DuPont Road

JBLM
DuPont Gate

Grade Separation
Over Railroad

Steilacoom-DuPont Rd.

To Be
Removed

Southbound I-5
Exit 119 Bypass to
JBLM DuPont Gate

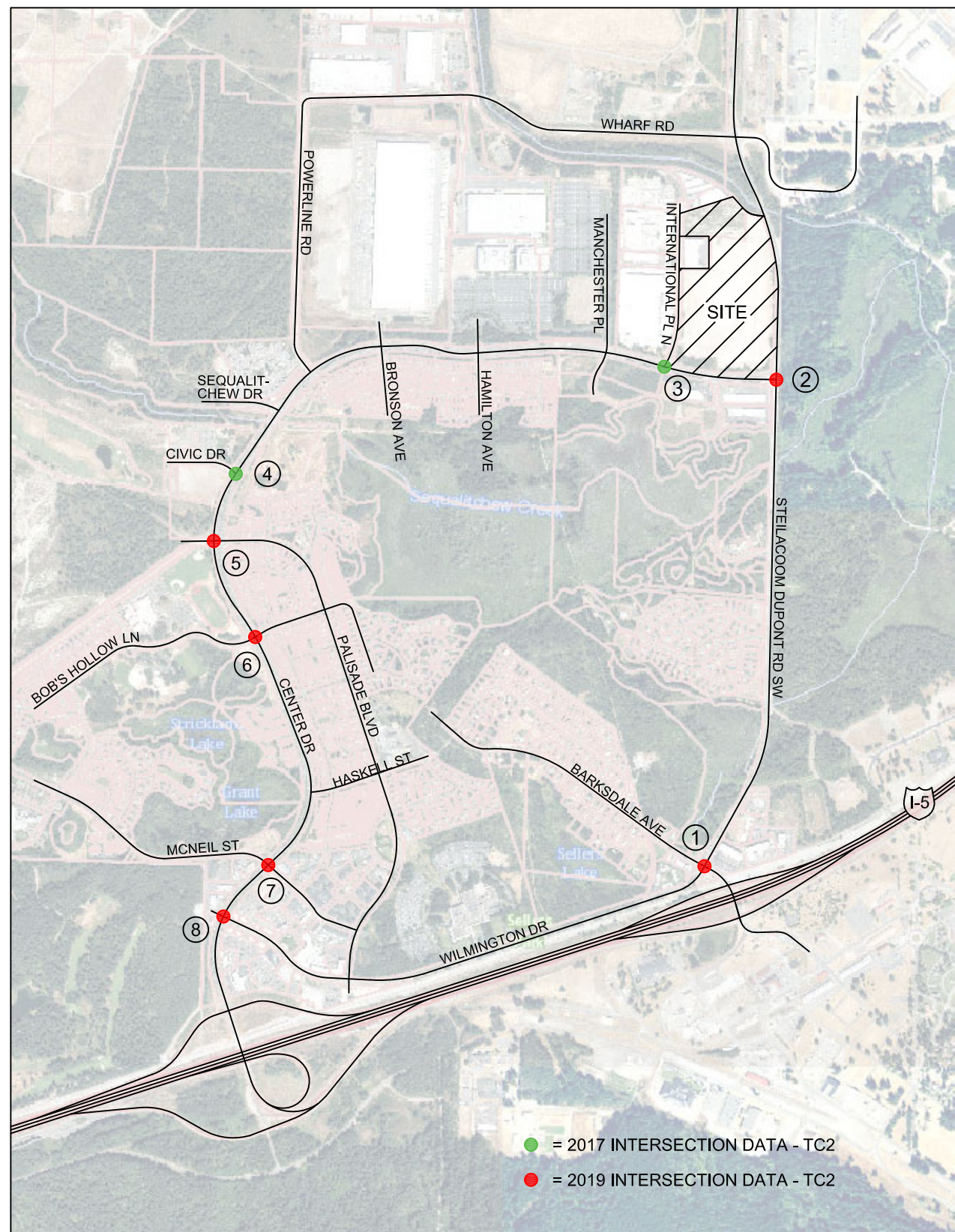
Northbound I-5
Exit 119 to
JBLM DuPont Gate

Willmington Dr.

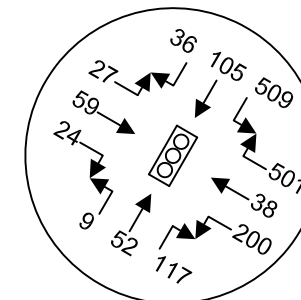
Barksdale Ave.

APPENDIX

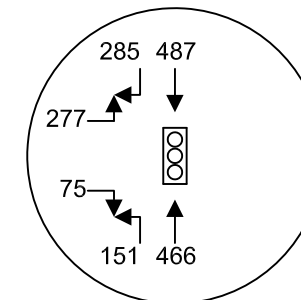
BASELINE VOLUMES &
INTERSECTION COMPARISON FIGURES



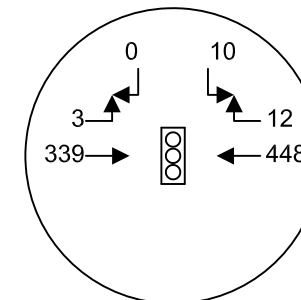
① BARKSDALE AVE & DUPONT STEILACOOM RD SW



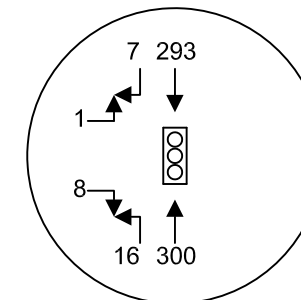
② CENTER DR & DUPONT STEILACOOM RD SW



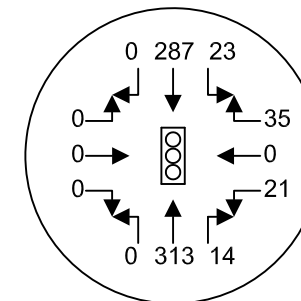
③ CENTER DR & INTERNATIONAL PL N



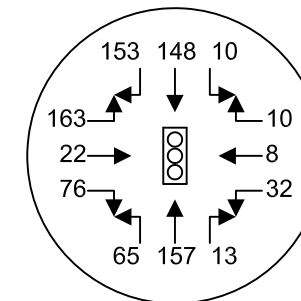
④ CENTER DR & CIVIC DR



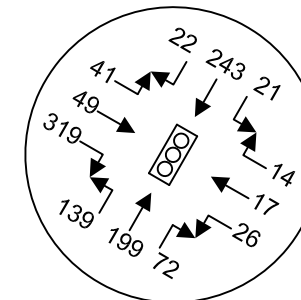
⑤ CENTER DR & PALISADE BLVD



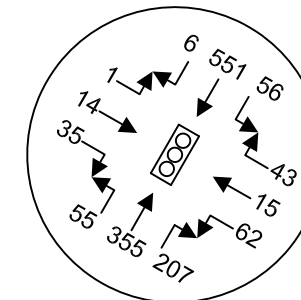
⑥ CENTER DR & BOB'S HOLLOW LN

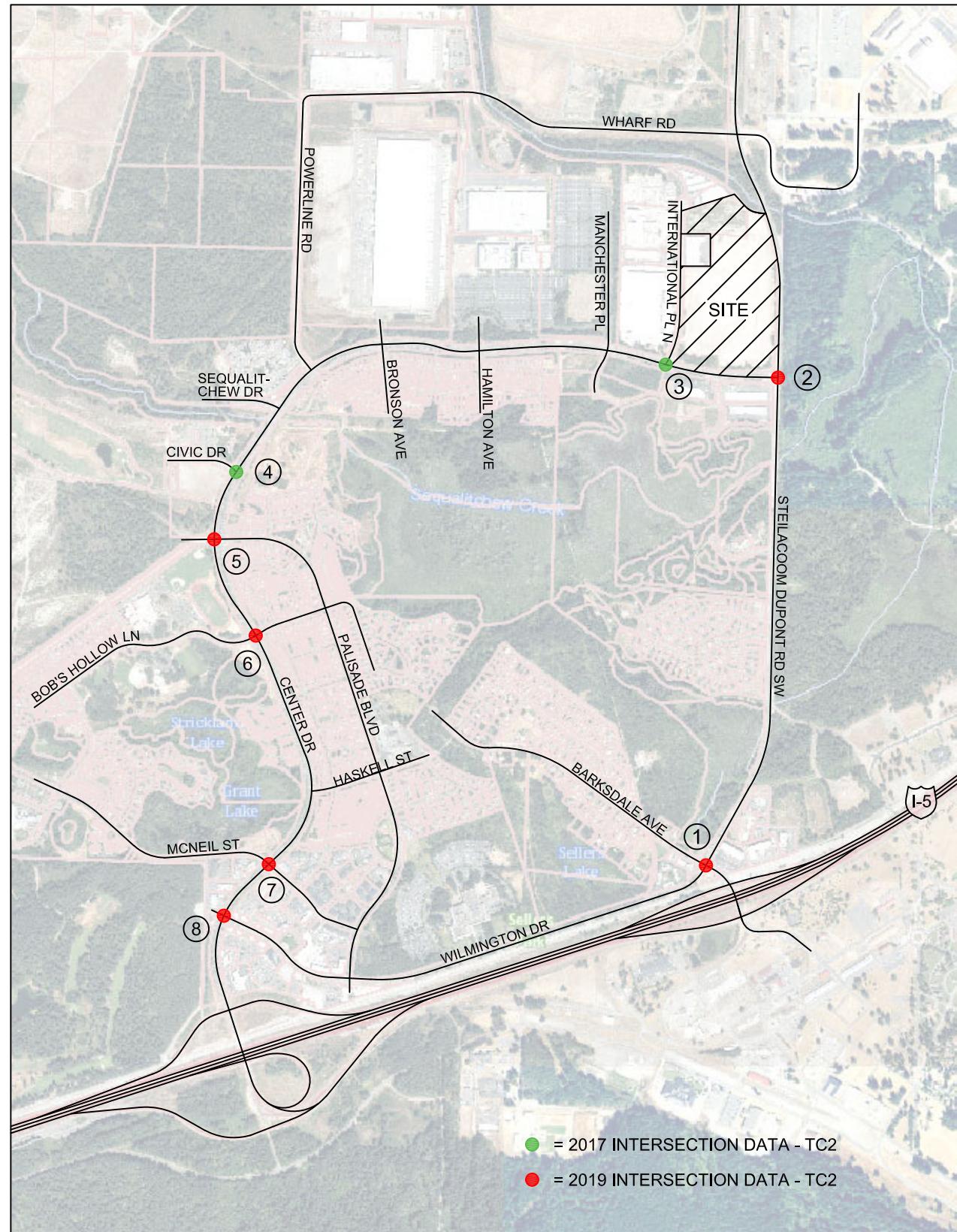


⑦ CENTER DR & MCNEIL ST

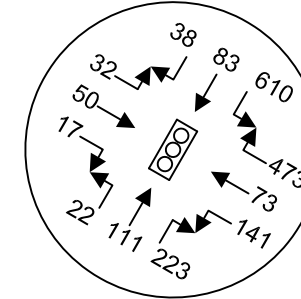


⑧ CENTER DR & WILMINGTON DR

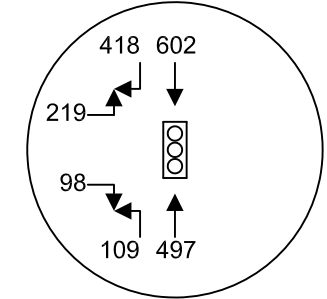




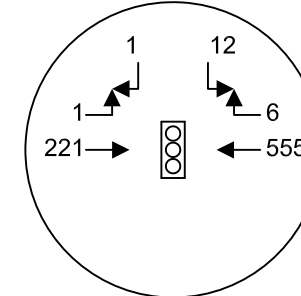
① BARKSDALE AVE & DUPONT STEILACOOM RD SW



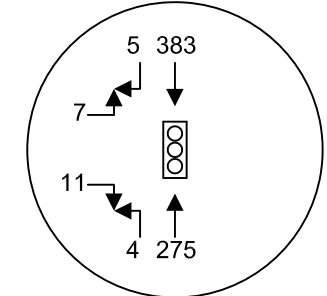
② CENTER DR & DUPONT STEILACOOM RD SW



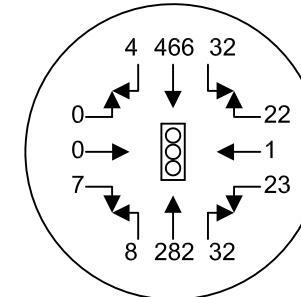
③ CENTER DR & INTERNATIONAL PL N



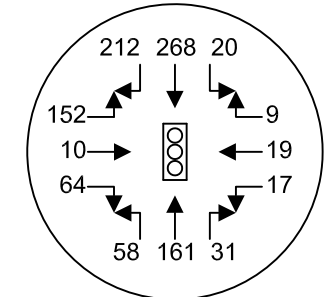
④ CENTER DR & CIVIC DR



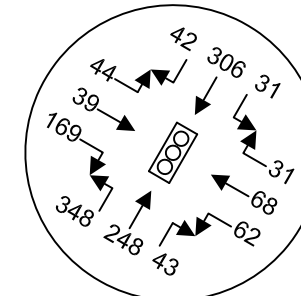
⑤ CENTER DR & PALISADE BLVD



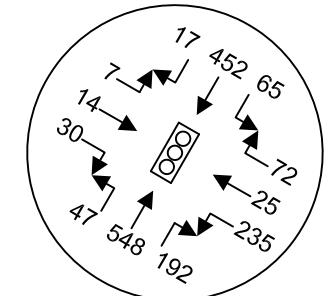
⑥ CENTER DR & BOB'S HOLLOW LN

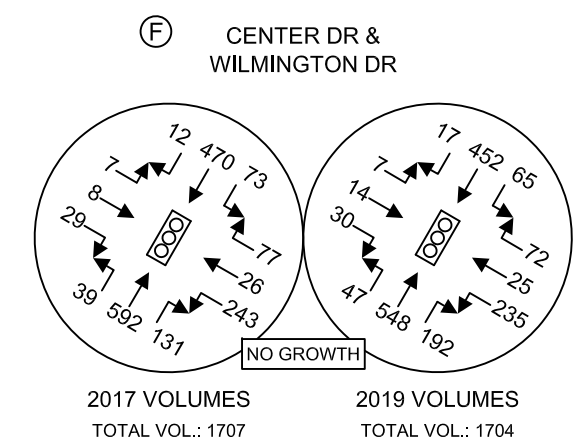
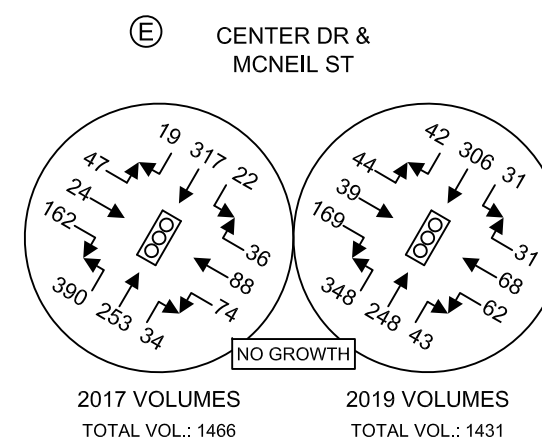
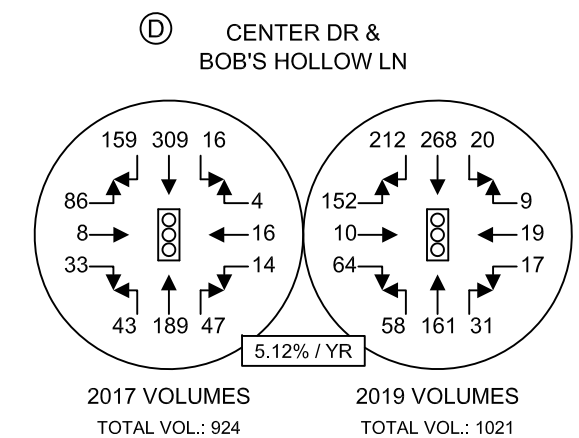
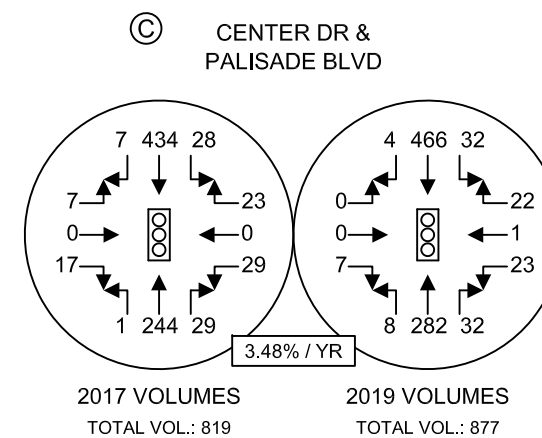
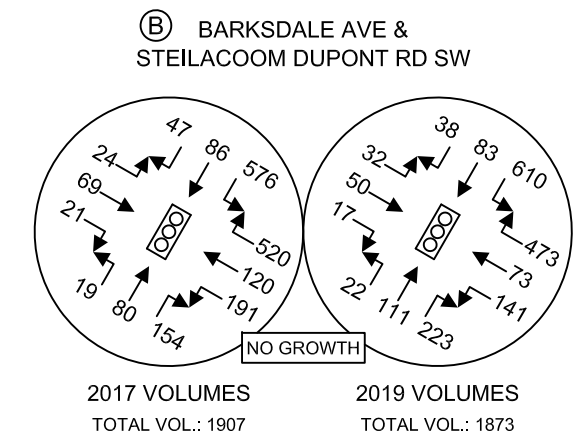
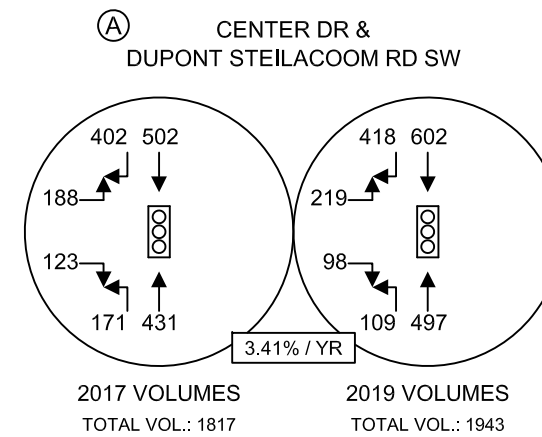
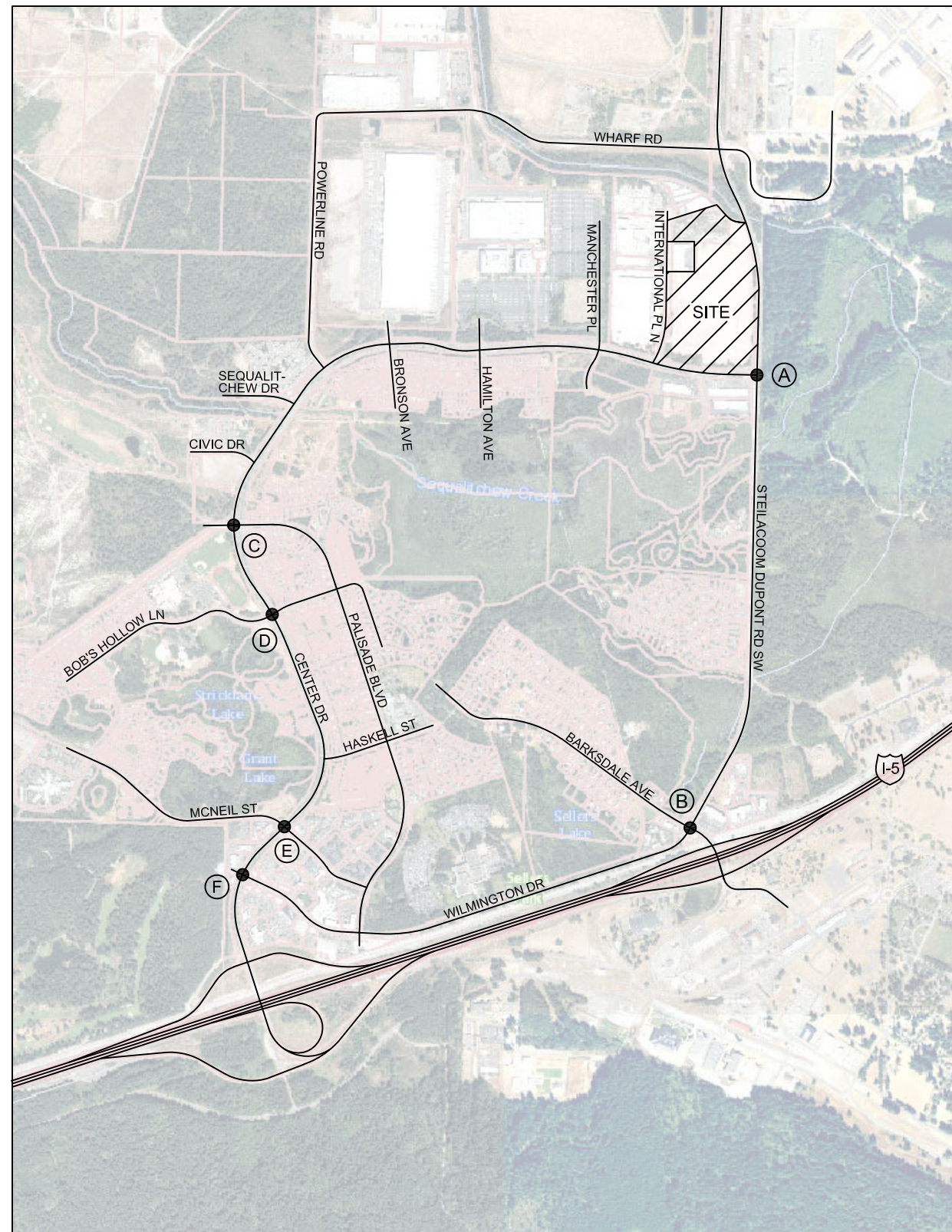


⑦ CENTER DR & MCNEIL ST



⑧ CENTER DR & WILMINGTON DR





APPENDIX

TRIP GENERATION MODEL

HAZMAT FC - Non Peak Season

TRAFFIC DATA FOR ENTITLMENT USE

Headcount

Headcount - Day Shift 486
Headcount Night Shift 486

Shift Structure

	Start	End	
Day Shift Inbound Employees	7:00:00 AM	5:30:00 PM	Inbound Are Employees Working Receiving Side of Operation
Day Shift Outbound Employees	7:30:00 AM	6:00:00 PM	Outbound Are Employees Working Shipping Side of Operation
Night Shift Inbound Employees	6:00:00 PM	4:30:00 AM	
Night Shift Outbound Employees	6:30:00 PM	5:00:00 AM	

Adjustment below accounts for mass transit and carpool users. Adjust as needed for local jurisdiction.

Net Cars Factor 95%

Traffic Schedule

Cars			
Average Weekday - Non Peak			
	In	Out	Total
00:00	2	3	5
01:00	1	2	3
02:00	3	7	10
03:00	4	7	11
04:00	9	93	102
05:00	19	246	265
06:00	14	8	22
06:15	38	9	47
06:30	66	5	71
06:45	88	3	91
07:00	87	5	92
07:15	113	2	115
07:30	17	3	20
07:45	4	3	7
08:00	13	9	22
09:00	8	5	13
10:00	11	9	20
11:00	20	21	41
12:00	6	9	15
13:00	7	7	14
14:00	6	13	19
15:00	15	19	34
16:00	23	17	40
17:00	14	17	31
17:15	26	8	34
17:30	57	66	123
17:45	74	38	112
18:00	92	128	220
18:15	89	86	175
18:30	12	57	69
18:45	3	21	24
19:00	9	18	27
20:00	4	4	8
21:00	8	8	16
22:00	9	11	20
23:00	1	3	4
	972	970	1,942

Trucks			
Average Weekday - Non Peak			
	In	Out	Total
00:00	7	6	14
01:00	6	6	12
02:00	6	6	12
03:00	8	7	15
04:00	7	6	14
05:00	9	8	17
06:00	2	2	3
06:15	2	2	3
06:30	2	2	3
06:45	2	2	3
07:00	2	2	3
07:15	1	1	2
07:30	1	1	2
07:45	1	1	2
08:00	5	4	9
09:00	5	5	10
10:00	5	4	9
11:00	5	4	9
12:00	5	5	10
13:00	5	4	9
14:00	4	3	7
15:00	4	3	7
16:00	3	2	5
17:00	1	1	2
17:15	1	1	2
17:30	1	1	2
17:45	0	0	0
18:00	1	1	2
18:15	1	1	2
18:30	1	1	2
18:45	0	0	0
19:00	4	3	7
20:00	2	2	3
21:00	3	2	5
22:00	4	3	7
23:00	6	6	12
	119	106	225

Total			
Average Weekday - Non Peak			
	In	Out	Total
00:00	9	9	18
01:00	7	8	15
02:00	9	12	22
03:00	12	14	26
04:00	16	95	111
05:00	27	242	269
06:00	15	9	24
06:15	38	10	48
06:30	65	6	71
06:45	85	4	90
07:00	84	6	91
07:15	108	3	111
07:30	17	4	21
07:45	5	4	8
08:00	17	13	29
09:00	13	10	23
10:00	15	13	28
11:00	24	24	48
12:00	11	13	25
13:00	11	11	22
14:00	9	16	25
15:00	18	21	39
16:00	25	19	43
17:00	14	17	31
17:15	26	8	34
17:30	55	64	119
17:45	70	36	106
18:00	88	122	211
18:15	85	83	168
18:30	12	55	67
18:45	3	20	23
19:00	12	20	33
20:00	6	5	11
21:00	10	10	20
22:00	12	14	26
23:00	7	9	16
	1,042	1,028	2,070

APPENDIX

PIPELINE VOLUMES

PIPELINE TRIPS AT CRITICAL INTERSECTIONS (AM PEAK HOUR)

1. Center Drive/Wilmington Drive

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (2)	0	0	0	0	0	1	0	4	0	2	16	0
Williamson Pl. (3)	0	0	0	0	0	0	0	12	0	0	3	0
Patriot's Lndng. (1)	0	0	0	0	0	1	0	17	0	4	50	0
Civic Ctr. Phase 2	0	0	0	0	0	5	0	28	0	3	4	0
Civic Ctr. Phase 3	0	0	0	0	0	1	0	27	0	0	4	0
DuPont Corp. Ctr.	0	0	0	0	0	3	0	23	0	1	9	0
DuPont Industrial	0	0	0	0	0	0	0	21	0	0	6	0
Barksdale Sta. (1)	0	0	0	0	0	0	0	0	0	0	0	0
PW Facility	0	0	0	0	0	0	0	5	0	1	0	0
Total	0	0	0	0	0	11	0	137	0	11	92	0

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

(3) – modified from original TIA to reflect scaled-back SEPA proposal

2. Center Drive/McNeil Street

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (2)	0	2	18	0	1	0	5	0	0	0	0	0
Williamson Pl. (3)	17	0	0	0	0	3	0	12	0	0	3	2
Patriot's Lndng. (1)	2	8	54	0	3	0	18	0	0	0	0	1
Civic Ctr. Phase 2	3	0	0	0	0	4	0	33	0	3	7	0
Civic Ctr. Phase 3	3	0	0	0	0	2	0	28	0	0	4	0
DuPont Corp. Ctr.	7	0	0	0	0	2	0	26	0	1	10	2
DuPont Industrial	2	0	0	0	0	0	0	21	0	0	6	0
Barksdale Sta. (1)	0	0	0	0	0	0	0	0	0	0	0	0
PW Facility	1	0	0	0	0	0	0	5	0	1	1	1
Total	35	10	72	0	4	11	23	125	0	5	31	6

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

(3) – modified from original TIA to reflect scaled-back SEPA proposal

3. Center Drive/Bob's Hollow Lane

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (2)	7	0	0	0	0	0	0	0	0	0	0	2
Williamson Pl. (3)	0	0	0	0	0	0	0	35	0	0	5	0
Patriot's Lndng. (1)	5	0	0	0	0	0	0	2	0	0	1	2
Civic Ctr. Phase 2	12	0	0	0	0	0	0	40	0	0	10	6
Civic Ctr. Phase 3	6	0	0	0	0	0	0	33	0	0	4	1
DuPont Corp. Ctr.	2	0	0	0	0	1	0	35	0	0	13	1
DuPont Industrial	2	0	0	0	0	0	0	23	0	0	6	1
Barksdale Sta. (1)	0	0	0	0	0	0	0	0	0	0	0	0
PW Facility	1	0	0	0	0	0	0	7	0	0	3	1
Total	35	0	0	0	0	1	0	175	0	0	42	14

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

(3) – modified from original TIA to reflect scaled-back SEPA proposal

4. Center Drive/Palisade Blvd.

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (2)	0	0	0	0	0	0	0	7	0	0	2	0
Williamson Pl. (3)	0	0	0	0	0	3	0	35	0	0	5	0
Patriot's Lndng. (1)	0	0	0	0	0	0	0	7	0	0	3	0
Civic Ctr. Phase 2	0	0	0	0	0	10	0	52	0	7	16	0
Civic Ctr. Phase 3	0	0	0	0	0	4	0	39	0	1	5	0
DuPont Corp. Ctr.	0	0	0	0	0	1	0	38	0	1	14	0
DuPont Industrial	0	0	0	0	0	0	0	25	0	0	7	0
Barksdale Sta. (1)	0	0	0	0	0	0	0	0	0	0	0	0
PW Facility	0	0	0	0	0	1	0	7	0	2	4	0
Total	0	0	0	0	0	19	0	210	0	11	56	0

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

(3) – modified from original TIA to reflect scaled-back SEPA proposal

5. Center Drive/Civic

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (2)	0		0				0	7			2	0
Williamson Pl. (3)	0		0				0	38			5	0
Patriot's Lndng. (1)	0		0				0	7			3	0
Civic Ctr. Phase 2	8		23				62	0			0	18
Civic Ctr. Phase 3	2		6				43	0			0	11
DuPont Corp. Ctr.	0		0				0	39			15	0
DuPont Industrial	0		0				0	25			7	0
Barksdale Sta. (1)	0		0				0	0			0	0
PW Facility	4		6				8	0			0	4
Total	14		35				113	116			32	33

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

(3) – modified from original TIA to reflect scaled-back SEPA proposal

6. Center Drive/International Place

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (1,2)	0	10	0	0	6	0	0	0	0	0	0	0
Williamson Pl. (3)	0	38	0	0	5	0	0	0	0	0	0	0
Patriot's Lndg. (1)	0	12	0	0	4	0	0	0	0	0	0	0
Civic Ctr. Phs. 2	0	8	0	0	18	0	0	0	0	0	0	0
Civic Ctr. Phs. 3	0	2	0	0	11	0	0	0	0	0	0	0
DuPont Corp. Ctr.	0	7	0	0	18	0	0	0	0	0	0	0
DuPont Industrial	0	3	0	0	8	0	0	0	0	0	0	0
Barksdale Sta. (1)	0	12	0	0	11	0	0	0	0	0	0	0
PW Facility	0	3	0	0	4	0	0	0	0	0	0	0
Total	0	95	0	0	85	0	0	0	0	0	0	0

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

(3) – modified from original TIA to reflect scaled-back SEPA proposal

7. Center Drive/DuPont Steilacoom Road

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (1,2)	8		2				2	0			0	4
Williamson Pl. (3)	4		10				61	0			0	20
Patriot's Lndg. (1)	12		0				0	0			0	4
Civic Ctr. Phase 2	4		4				6	0			0	12
Civic Ctr. Phase 3	1		1				3	0			0	8
DuPont Corp. Ctr.	3		4				9	27			10	9
DuPont Ind. (1)	1		2				6	0			0	2
Barksdale Sta.	0		12				11	5			5	0
PW Facility	1		2				3	0			0	1
Total	34		37				101	32			15	60

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

(3) – modified from original TIA to reflect scaled-back SEPA proposal

8. Barksdale Avenue/DuPont-Steilacoom Road

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (1,2)	0	0	0	0	0	2	0	0	0	2	0	0
Williamson Pl. (3)	6	0	0	0	0	49	0	6	0	8	0	2
Patriot's Lndg. (1)	0	0	0	0	0	0	0	0	0	0	0	0
Civic Ctr. Phs. 2 (1)	0	0	0	0	0	3	0	0	0	2	0	0
Civic Ctr. Phs. 3 (1)	0	0	0	0	0	2	0	0	0	0	0	0
DuPont Corp. Ctr.	3	0	0	0	0	30	0	3	0	11	1	1
DuPont Ind. (1)	0	0	0	0	0	6	0	0	0	2	0	0
Barksdale Sta.	3	0	0	0	0	27	0	8	0	25	8	3
PW Facility	0	0	0	0	0	3	0	0	0	0	0	2
Total	12	0	0	0	0	122	0	17	0	50	9	8

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

(3) – modified from original TIA to reflect scaled-back SEPA proposal

(4) – includes pass-by trip volumes

Barksdale Avenue considered the east-west street

Revised 07/08/2020

(PM PEAK HOUR)

1. Center Drive/Wilmington Drive

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (2)	0	0	0	0	0	1	0	18	0	1	8	0
Williamson Pl. (3)	0	0	0	0	0	0	0	3	0	0	12	0
Patriot's Lndng. (1)	0	0	0	0	0	4	0	57	0	3	33	0
Civic Ctr. Phase 2	0	0	0	0	0	1	0	5	0	2	25	0
Civic Ctr. Phase 3	0	0	0	0	0	0	0	4	0	1	25	0
DuPont Corp. Ctr.	0	0	0	0	0	2	0	12	0	4	30	0
DuPont Industrial	0	0	0	0	0	0	0	8	0	0	23	0
Barksdale Sta. (1)	0	0	0	0	0	0	0	0	0	0	0	0
PW Facility	0	0	0	0	0	0	0	0	0	0	7	0
Total	0	0	0	0	0	8	0	107	0	11	163	0

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

(3) – modified from original TIA to reflect scaled-back SEPA proposal

2. Center Drive/McNeil Street

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (2)	0	1	9	0	1	0	19	0	0	0	0	0
Williamson Pl. (3)	3	0	0	0	0	3	0	3	0	3	12	17
Patriot's Lndng. (1)	2	5	36	0	9	0	61	0	0	0	0	3
Civic Ctr. Phase 2	1	0	0	0	0	2	0	6	0	3	27	3
Civic Ctr. Phase 3	1	0	0	0	0	1	0	4	0	2	26	3
DuPont Corp. Ctr.	3	0	0	0	0	1	0	14	0	2	34	9
DuPont Industrial	1	0	0	0	0	0	0	8	0	0	23	2
Barksdale Sta. (1)	0	0	0	0	0	0	0	0	0	0	0	0
PW Facility	0	0	0	0	0	0	0	0	0	1	7	1
Total	11	6	45	0	10	7	80	35	0	11	129	38

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

(3) – modified from original TIA to reflect scaled-back SEPA proposal

3. Center Drive/Bob's Hollow Lane

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (2)	8	0	0	0	0	0	0	0	0	0	0	10
Williamson Pl. (3)	0	0	0	0	0	0	0	9	0	0	32	0
Patriot's Lndng. (1)	6	0	0	0	0	0	0	2	0	0	3	10
Civic Ctr. Phase 2	3	0	0	0	0	0	0	9	0	0	33	7
Civic Ctr. Phase 3	1	0	0	0	0	0	0	6	0	0	31	5
DuPont Corp. Ctr.	1	0	0	0	0	1	0	18	0	1	45	2
DuPont Industrial	1	0	0	0	0	0	0	9	0	0	25	2
Barksdale Sta. (1)	0	0	0	0	0	0	0	0	0	0	0	0
PW Facility	0	0	0	0	0	0	0	0	0	0	9	1
Total	20	0	0	0	0	1	0	53	0	1	178	37

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

(3) – modified from original TIA to reflect scaled-back SEPA proposal

4. Center Drive/Palisade Blvd.

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (2)	0	0	0	0	0	0	0	8	0	0	10	0
Williamson Pl. (3)	0	0	0	0	0	0	0	9	0	3	32	0
Patriot's Lndng. (1)	0	0	0	0	0	0	0	8	0	0	13	0
Civic Ctr. Phase 2	0	0	0	0	0	4	0	12	0	7	40	0
Civic Ctr. Phase 3	0	0	0	0	0	1	0	7	0	4	36	0
DuPont Corp. Ctr.	0	0	0	0	0	1	0	19	0	2	48	0
DuPont Industrial	0	0	0	0	0	0	0	10	0	0	27	0
Barksdale Sta. (1)	0	0	0	0	0	0	0	0	0	0	0	0
PW Facility	0	0	0	0	0	0	0	0	0	1	10	0
Total	0	0	0	0	0	6	0	73	0	17	216	0

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

(3) – modified from original TIA to reflect scaled-back SEPA proposal

5. Center Drive/Civic Drive

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (2)	0		0				0	8			10	0
Williamson Pl. (3)	0		0				0	9			35	0
Patriot's Lndng. (1)	0		0				0	8			13	0
Civic Ctr. Phase 2	12		47				16	0			0	4
Civic Ctr. Phase 3	10		40				8	0			0	2
DuPont Corp. Ctr.	0		0				0	20			50	0
DuPont Industrial	0		0				0	10			27	0
Barksdale Sta. (1)	0		0				0	0			0	0
PW Facility	5		11				0	0			0	0
Total	27		98				24	55			135	6

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

(3) – modified from original TIA to reflect scaled-back SEPA proposal

6. Center Drive/International Place

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (1,2)	0	8	0	0	10	0	0	0	0	0	0	0
Williamson Pl. (3)	0	9	0	0	35	0	0	0	0	0	0	0
Patriot's Lndg. (1)	0	8	0	0	13	0	0	0	0	0	0	0
Civic Ctr. Phs. 2	0	12	0	0	4	0	0	0	0	0	0	0
Civic Ctr. Phs. 3	0	10	0	0	2	0	0	0	0	0	0	0
DuPont Corp. Ctr.	0	24	0	0	10	0	0	0	0	0	0	0
DuPont Industrial	0	9	0	0	3	0	0	0	0	0	0	0
Barksdale Sta.	0	7	0	0	6	0	0	0	0	0	0	0
PW Facility	0	5	0	0	0	0	0	0	0	0	0	0
Total	0	92	0	0	83	0	0	0	0	0	0	0

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

(3) – modified from original TIA to reflect scaled-back SEPA proposal

7. Center Drive/DuPont Steilacoom Road

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (1,2)	6		2				2	0			0	8
Williamson Pl. (3)	17		57				14	0			0	6
Patriot's Lndg. (1)	8		0				0	0			0	13
Civic Ctr. Phase 2	9		3				2	0			0	2
Civic Ctr. Phase 3	8		2				1	0			0	1
DuPont Corp. Ctr.	12		12				5	9			21	5
DuPont Ind. (1)	3		6				2	0			0	1
Barksdale Sta. (1)	0		7				6	0			4	0
PW Facility	1		4				0	0			0	0
Total	64		93				32	9			25	36

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

(3) – modified from original TIA to reflect scaled-back SEPA proposal

8. Barksdale Avenue/DuPont-Steilacoom Road

Development	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Village IV (1,2)	0	0	0	0	0	2	0	0	0	2	0	0
Williamson Pl. (3)	1	0	0	0	0	12	0	1	0	46	6	5
Patriot's Lndg. (1)	0	0	0	0	0	0	0	0	0	0	0	0
Civic Ctr. Phs. 2 (1)	0	0	0	0	0	1	0	0	0	2	0	0
Civic Ctr. Phs. 3 (1)	0	0	0	0	0	0	0	0	0	1	0	0
DuPont Corp. Ctr.	2	0	0	0	0	10	0	2	0	24	4	4
DuPont Ind. (1)	0	0	0	0	0	2	0	0	0	6	0	0
Barksdale Sta. (1)	2	0	0	0	0	16	0	5	0	16	5	2
PW Facility	0	0	0	0	0	0	0	0	0	4	0	0
Total	5	0	0	0	0	43	0	8	0	101	15	11

(1) – estimated trips; assignment not available or not provided in TIA

(2) – assignment revised to reflect modified trip generation for partial build-out

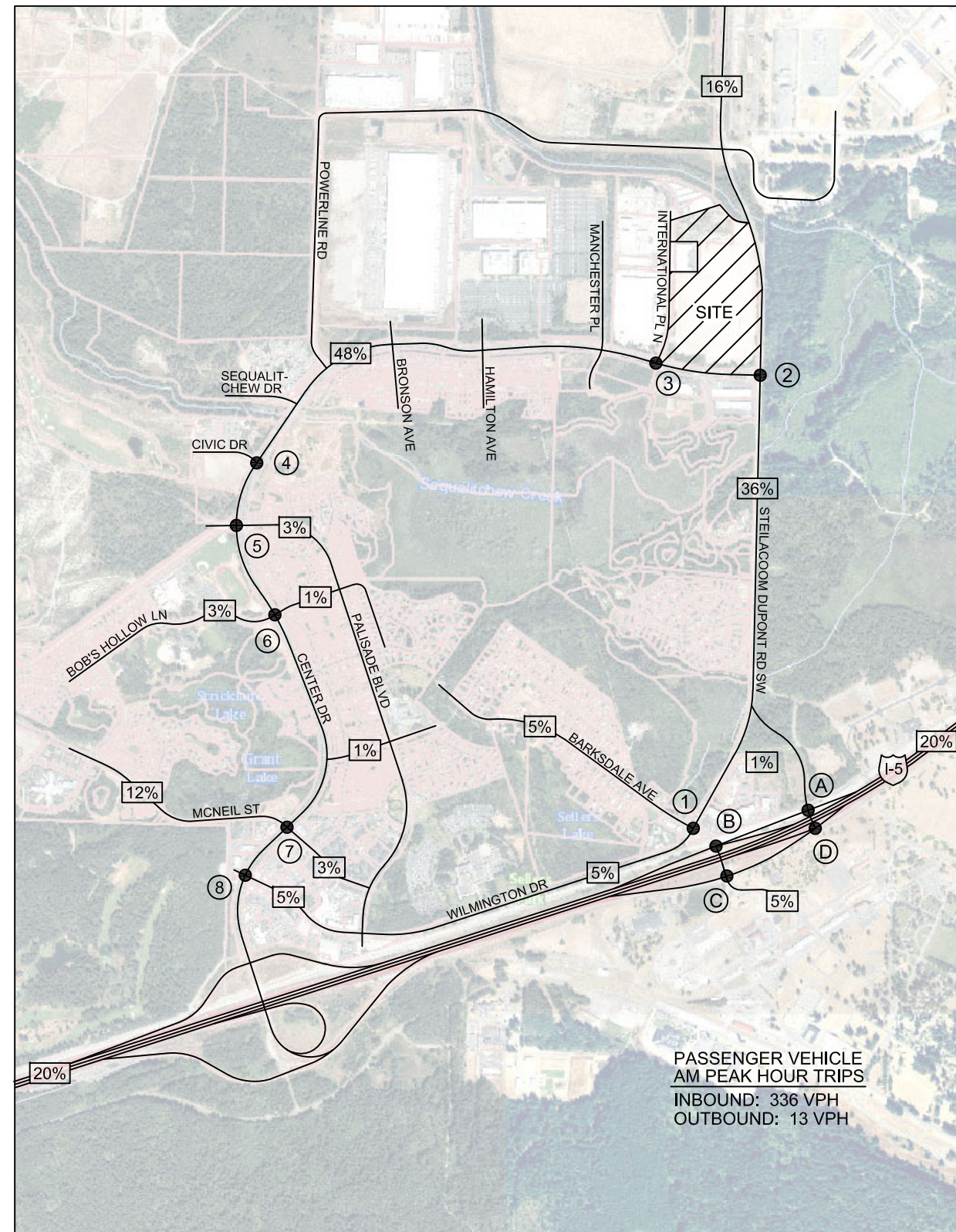
(3) – modified from original TIA to reflect scaled-back SEPA proposal

Barksdale Avenue considered the east-west street

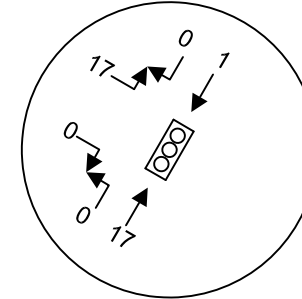
Revised 07/08/2020

APPENDIX

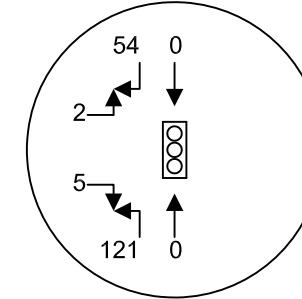
TRIP DISTRIBUTION & ASSIGNMENT
SCENARIO 2: WITH I-5 EXIT 119 INTERCHANGE PROJECT



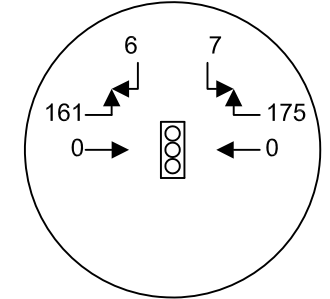
① BARKSDALE AVE & DUPONT STEILACOOM RD SW



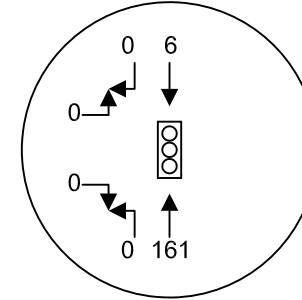
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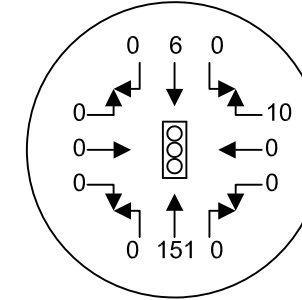
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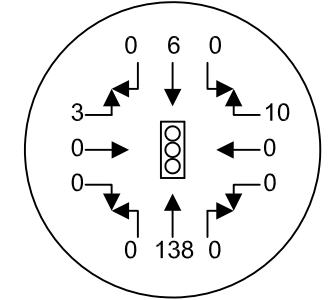
④ CENTER DR & CIVIC DR



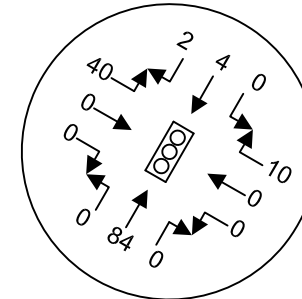
⑤ CENTER DR & PALISADE BLVD



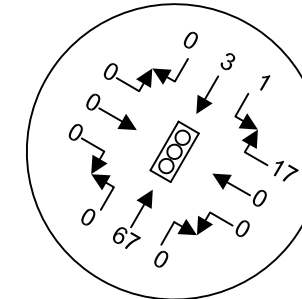
⑥ CENTER DR & BOB'S HOLLOW LN



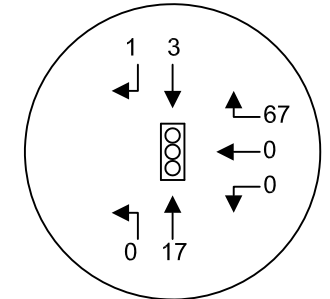
⑦ CENTER DR & MCNEIL ST



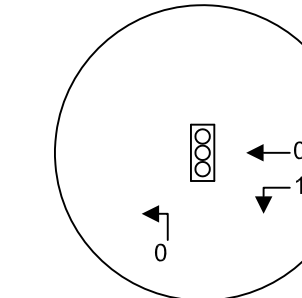
⑧ CENTER DR & WILMINGTON DR



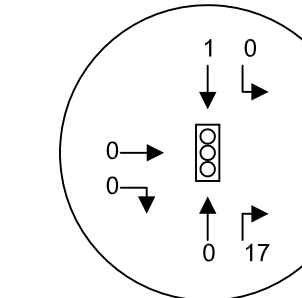
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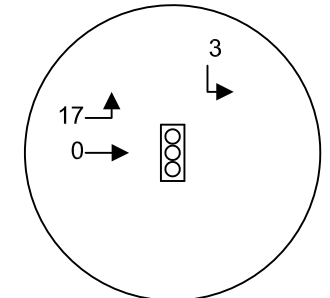
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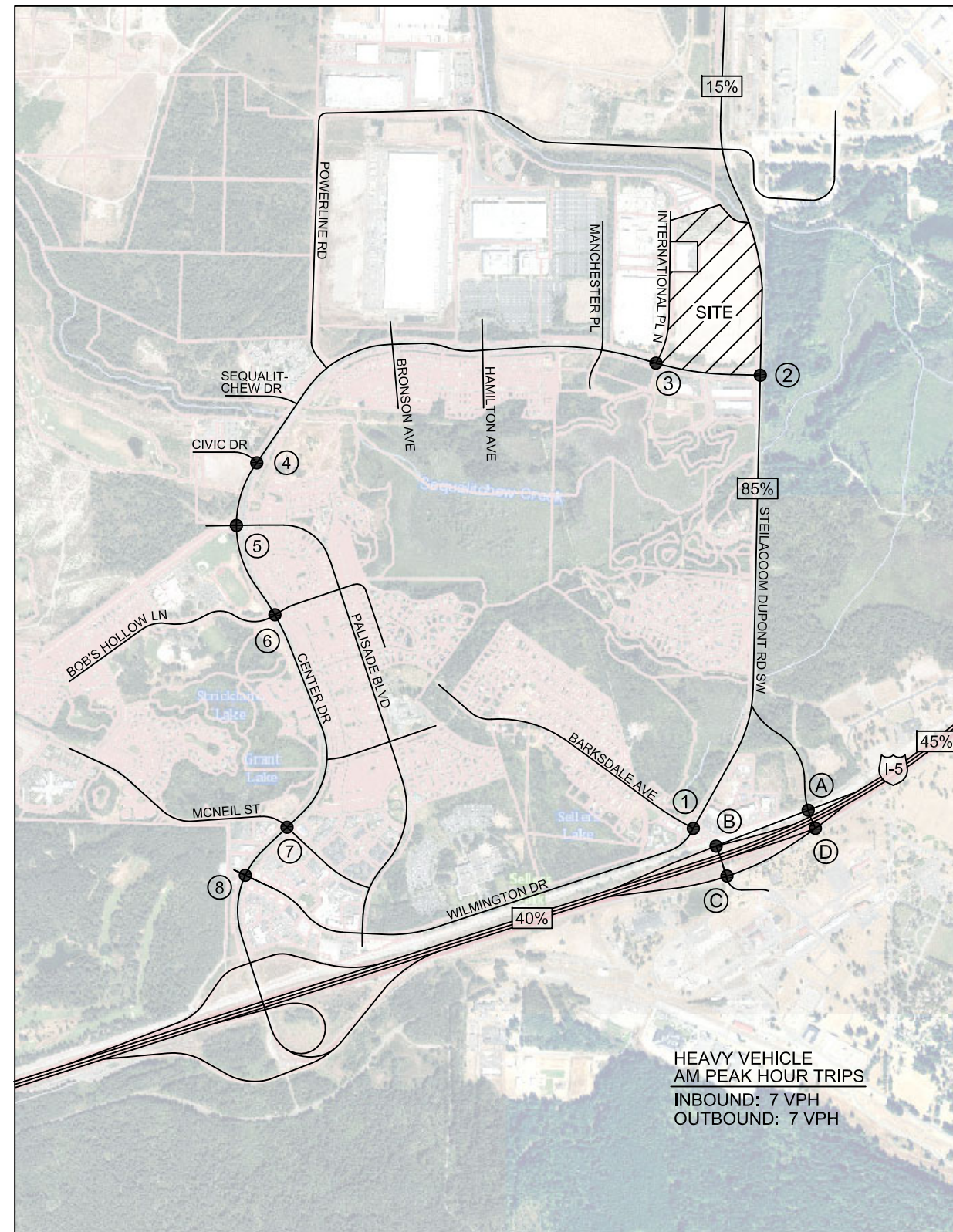


Ⓒ NB I-5 EXIT 119 TO JBLM DUPONT GATE

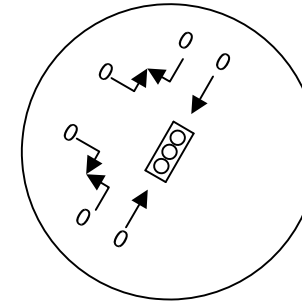


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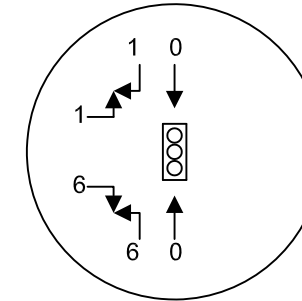




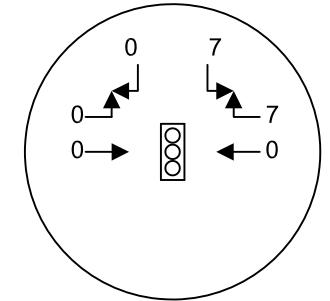
① BARKSDALE AVE & DUPONT STEILACOOM RD SW



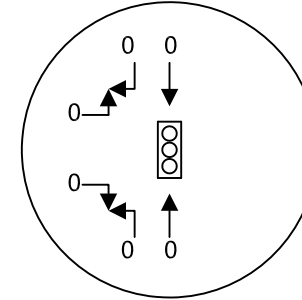
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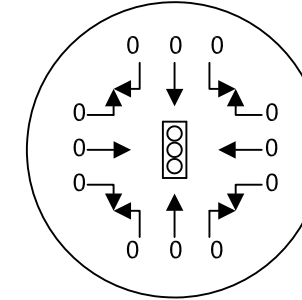
③ CENTER DR & INTERNATIONAL PL N



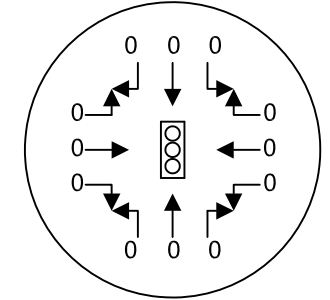
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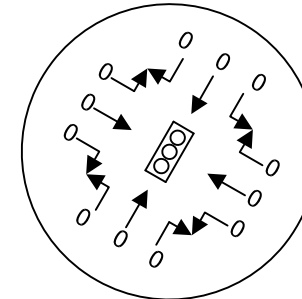
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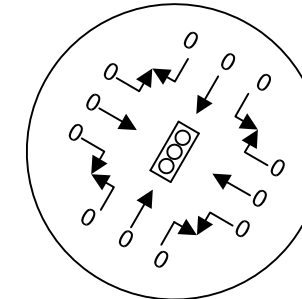
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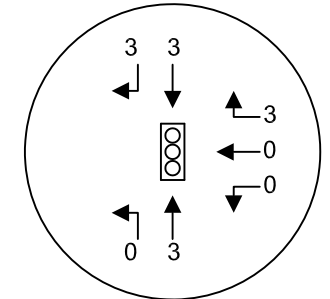
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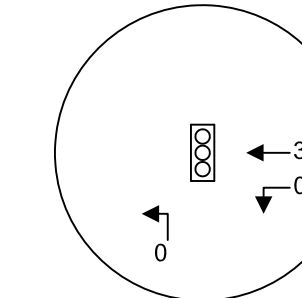
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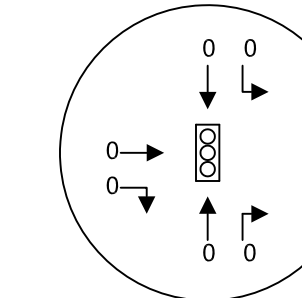
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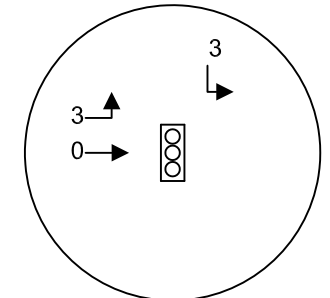
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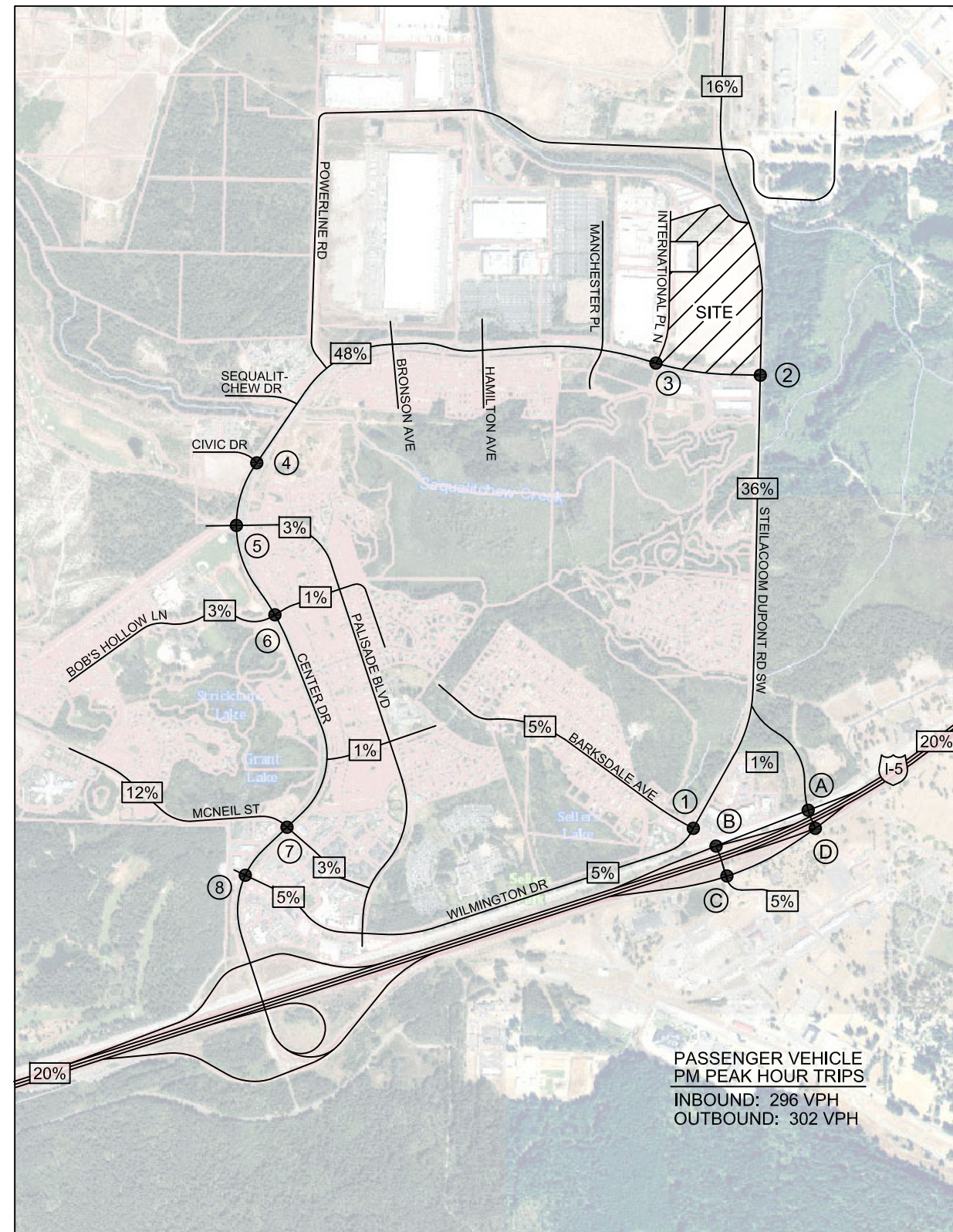


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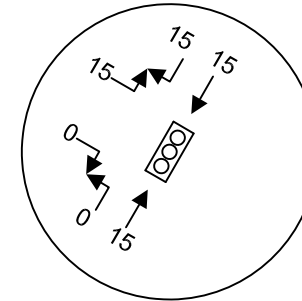


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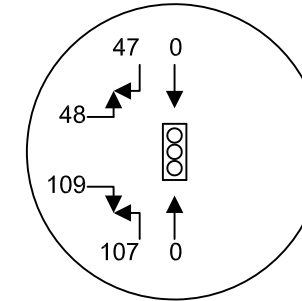




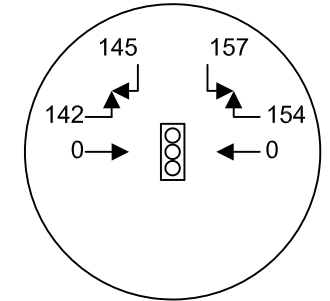
① BARKSDALE AVE & DUPONT STEILACOOM RD SW



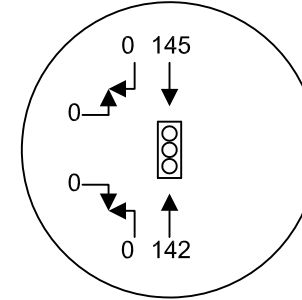
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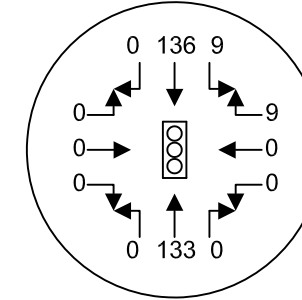
③ CENTER DR & INTERNATIONAL PL N



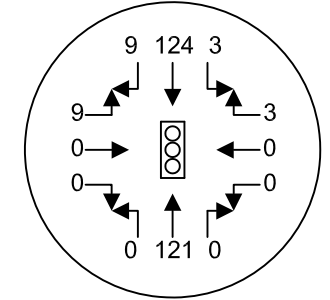
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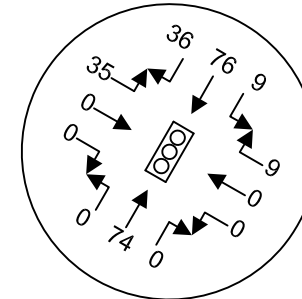
⑤ CENTER DR & PALISADE BLVD



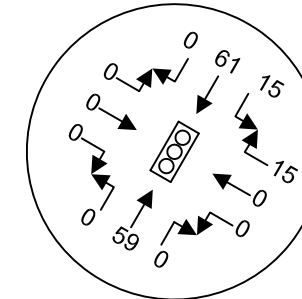
⑥ CENTER DR & BOB'S HOLLOW LN



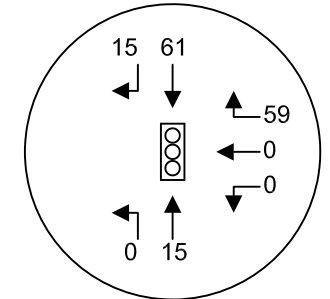
⑦ CENTER DR & MCNEIL ST



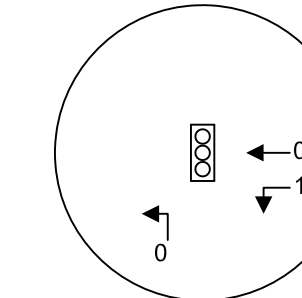
⑧ CENTER DR & WILMINGTON DR



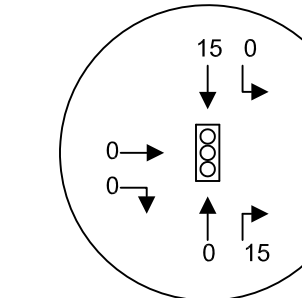
A SB I-5 EXIT 119 TO DUPONT STEILACOOM RD SW



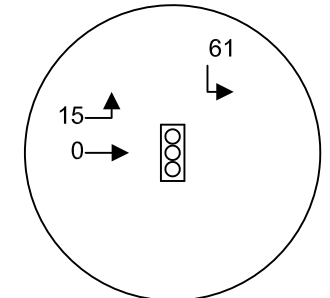
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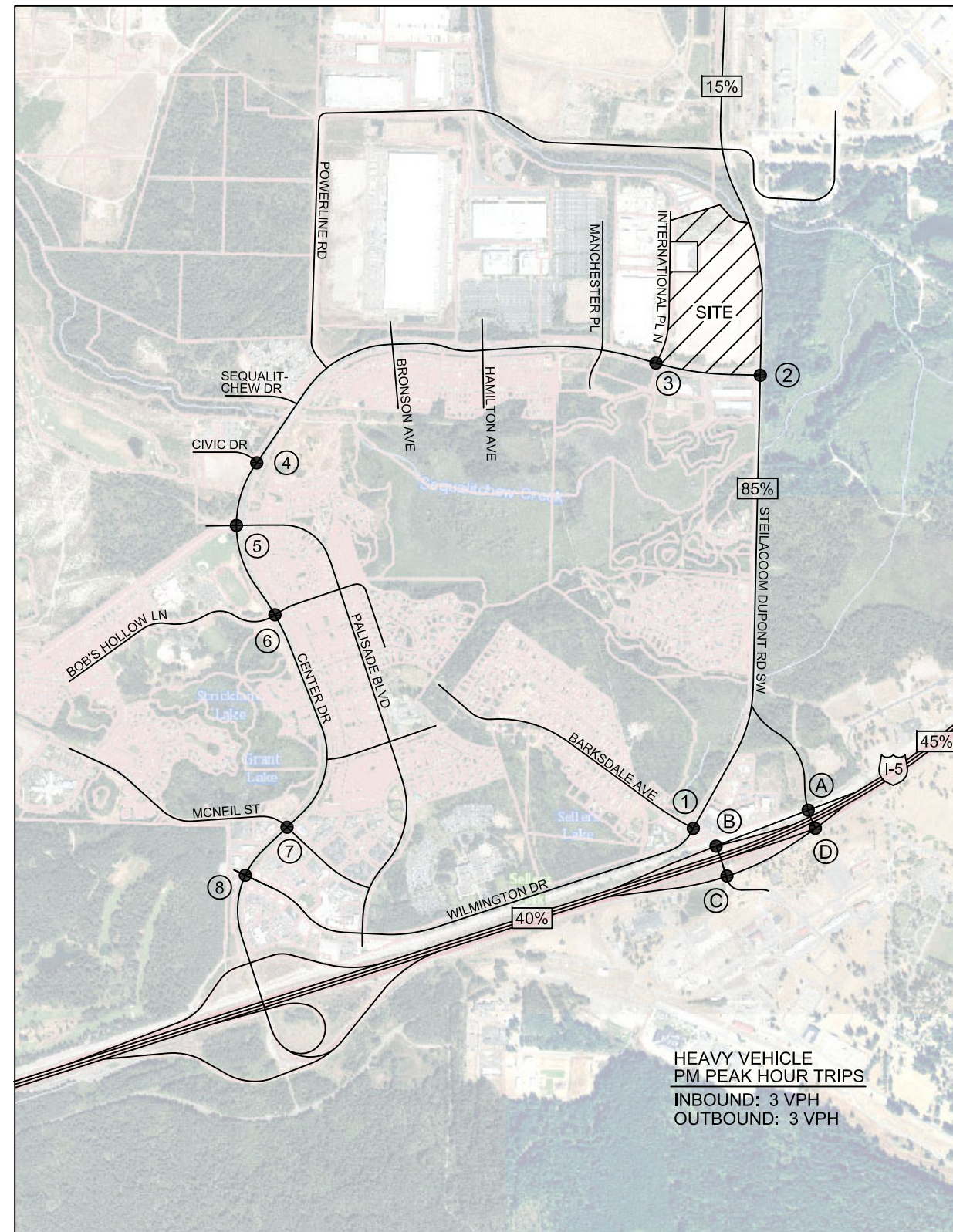


C NB I-5 EXIT 119 TO JBLM DUPONT GATE

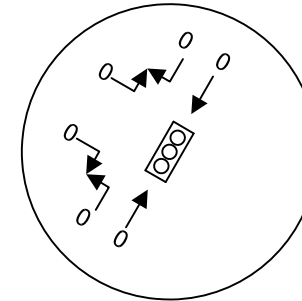


D SB I-5 EXIT 119 TO JBLM DUPONT GATE

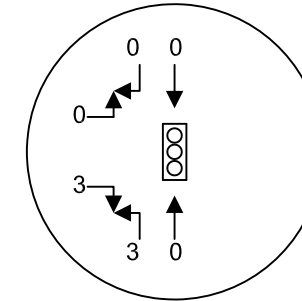




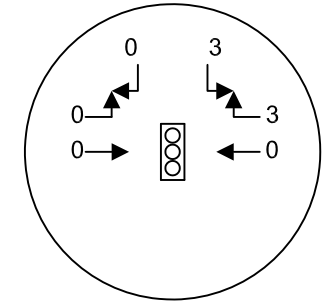
① BARKSDALE AVE & DUPONT STEILACOOM RD SW



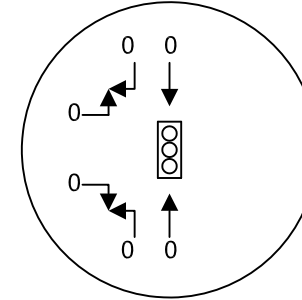
② CENTER DR & DUPONT STEILACOOM RD SW



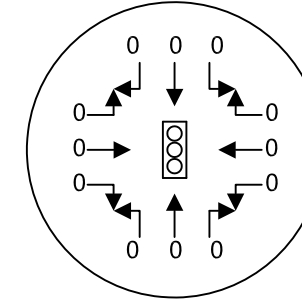
③ CENTER DR & INTERNATIONAL PL N



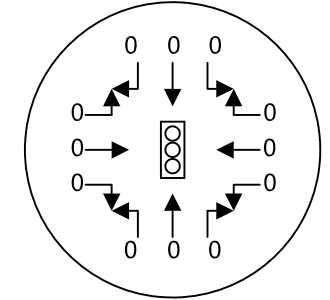
④ CENTER DR & CIVIC DR



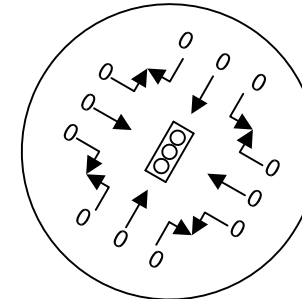
⑤ CENTER DR & PALISADE BLVD



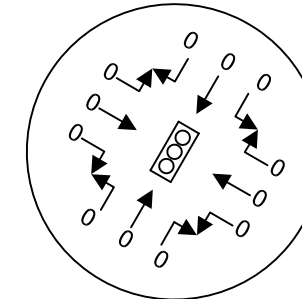
⑥ CENTER DR & BOB'S HOLLOW LN



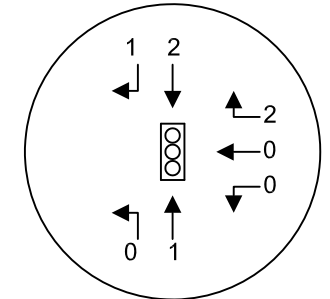
⑦ CENTER DR & MCNEIL ST



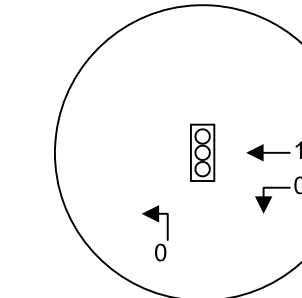
⑧ CENTER DR & WILMINGTON DR



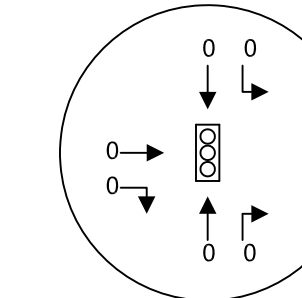
A SB I-5 EXIT 119 TO DUPONT STEILACOOM RD SW



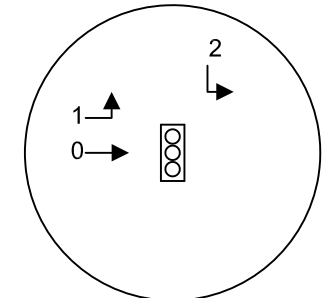
B NB I-5 EXIT 119 TO DUPONT STEILACOOM RD SW



C NB I-5 EXIT 119 TO JBLM DUPONT GATE

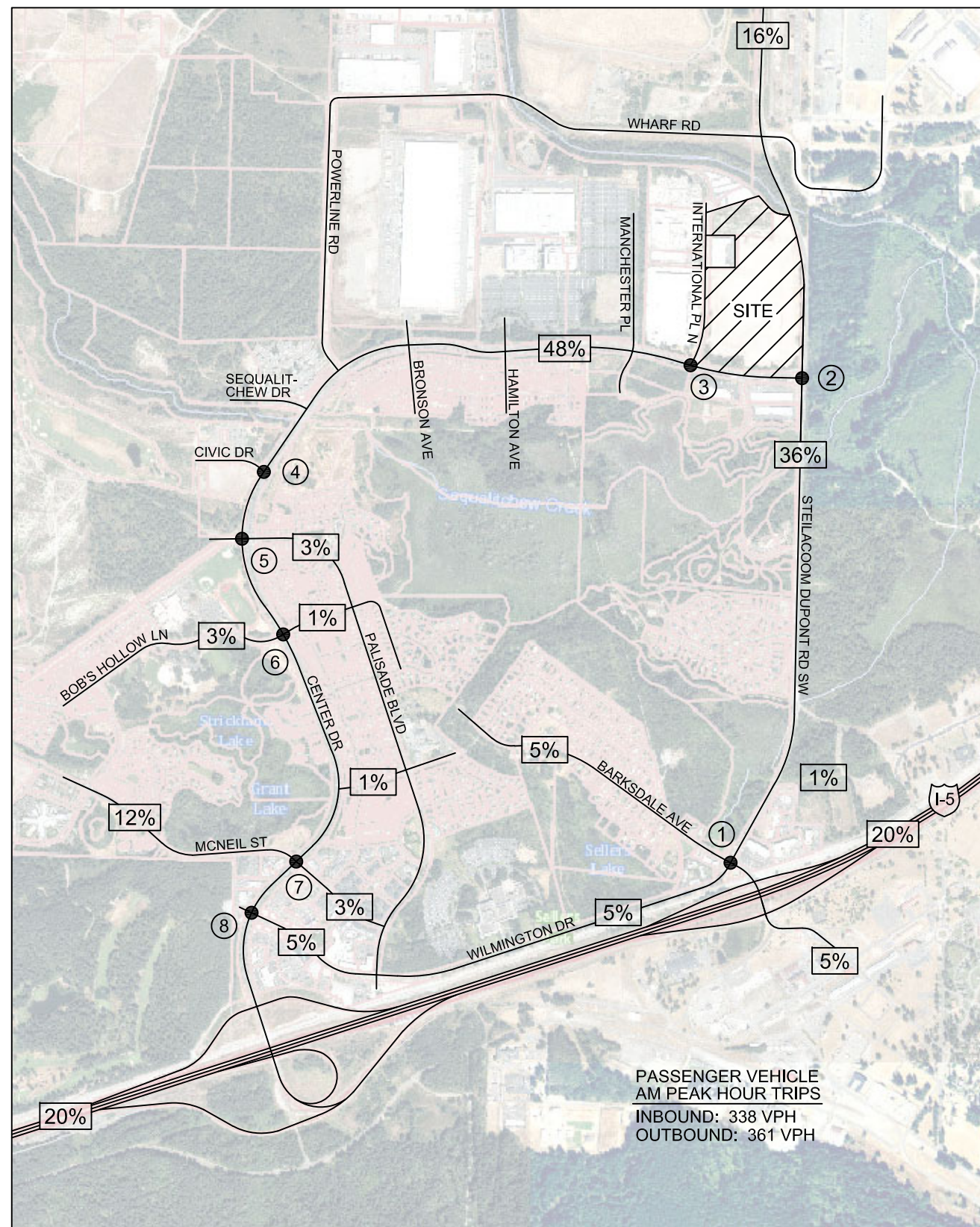


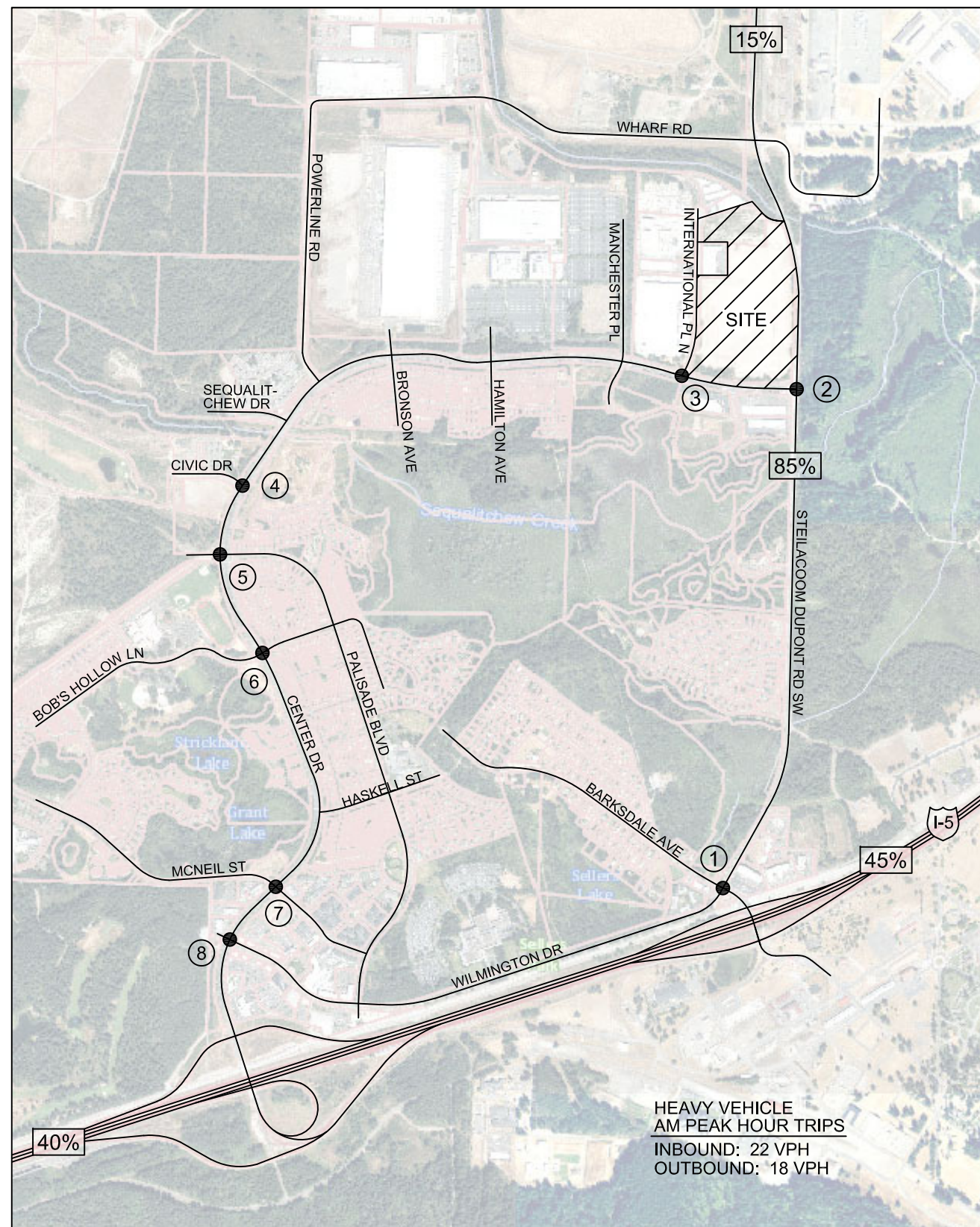
D SB I-5 EXIT 119 TO JBLM DUPONT GATE



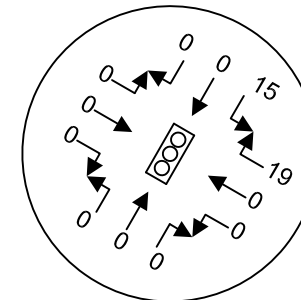
APPENDIX

TRIP DISTRIBUTION & ASSIGNMENT
SCENARIO 3: PEAK SEASON VOLUMES

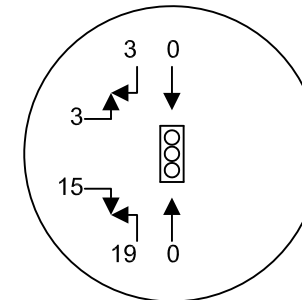




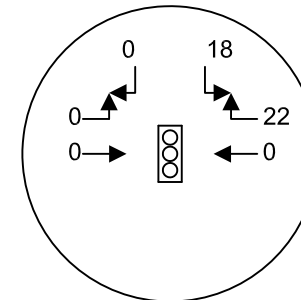
① BARKSDALE AVE & STEILACOOM DUPONT RD SW



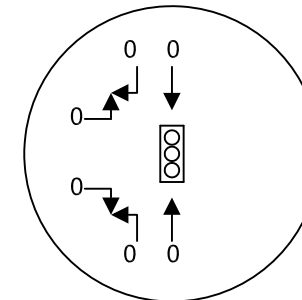
② CENTER DR & STEILACOOM DUPONT RD SW



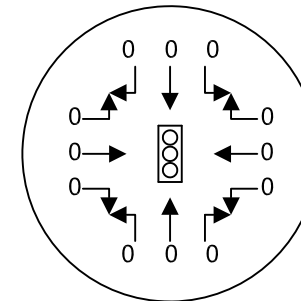
③ CENTER DR & INTERNATIONAL PL N



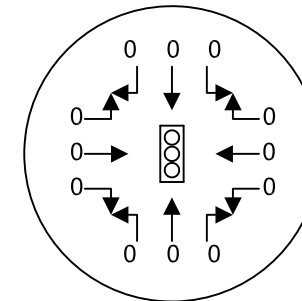
④ CENTER DR & CIVIC DR



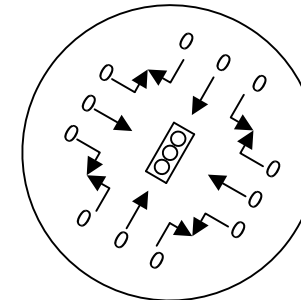
⑤ CENTER DR & PALISADE BLVD



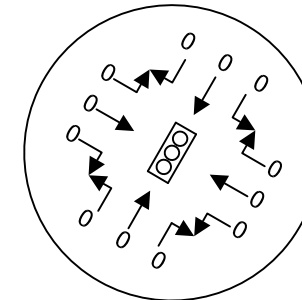
⑥ CENTER DR & BOB'S HOLLOW LN

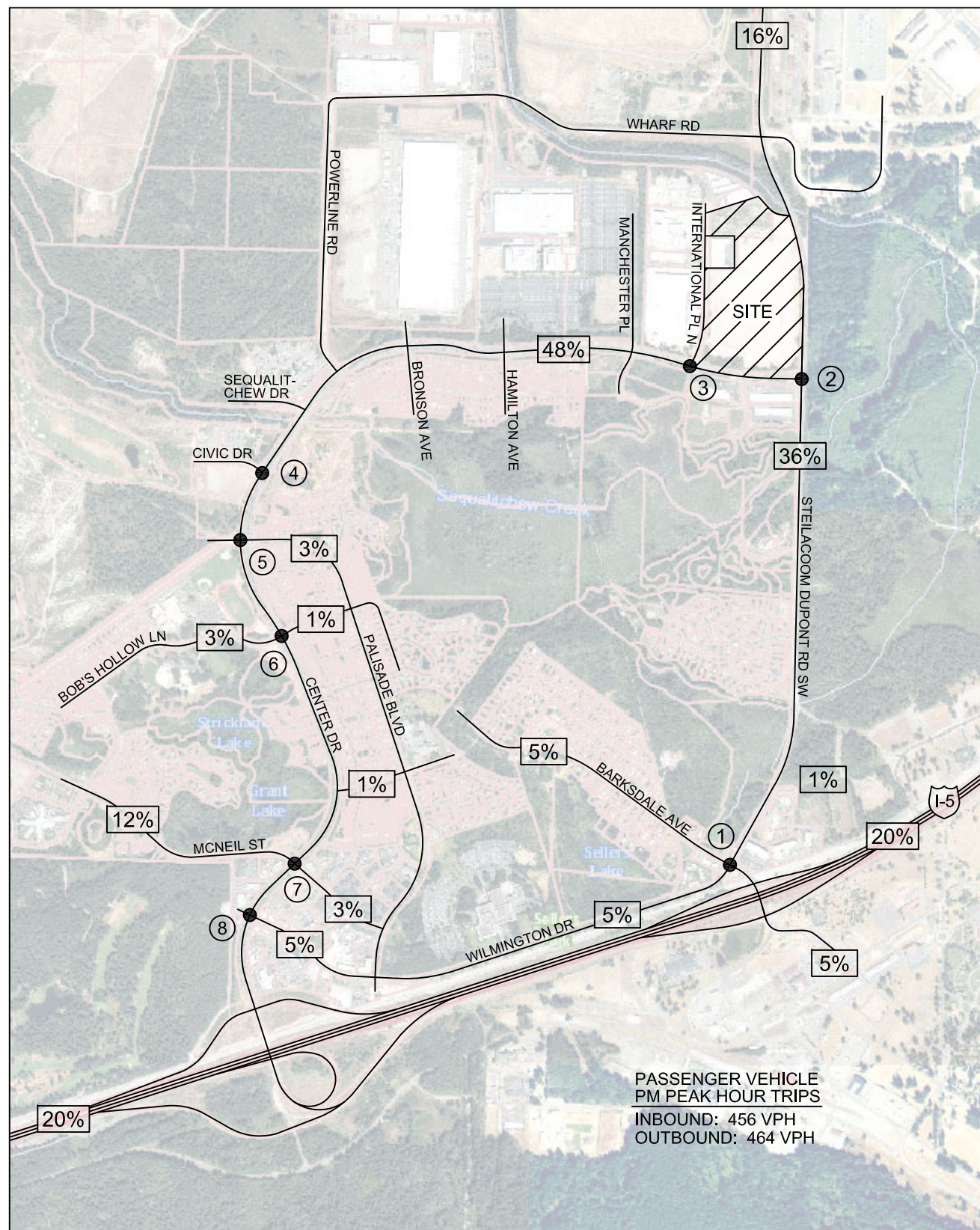


⑦ CENTER DR & MCNEIL ST

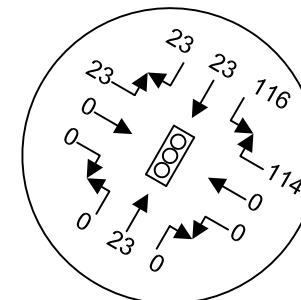


⑧ CENTER DR & WILMINGTON DR

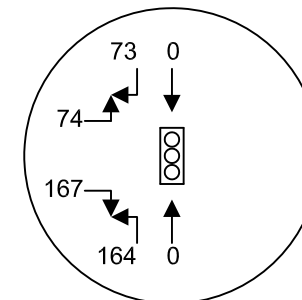




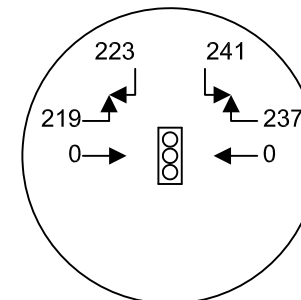
① BARKSDALE AVE & STEILACOOM DUPONT RD SW



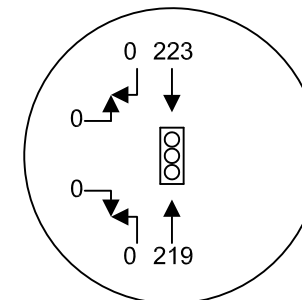
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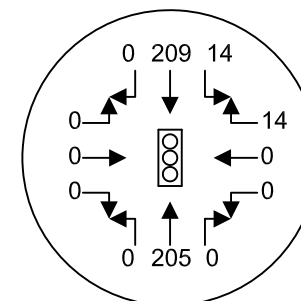
③ CENTER DR & INTERNATIONAL PL N



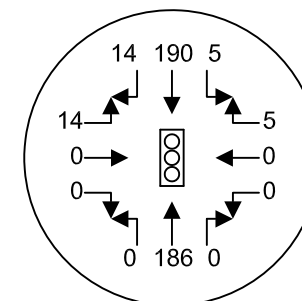
④ CENTER DR & CIVIC DR



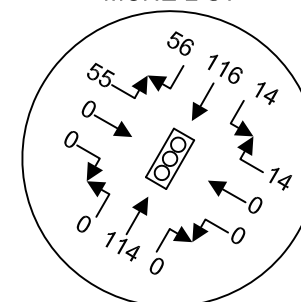
⑤ CENTER DR & PALISADE BLVD



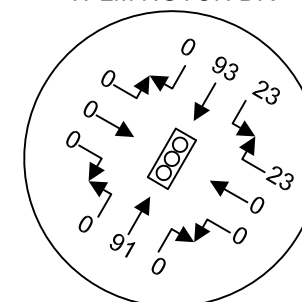
⑥ CENTER DR & BOB'S HOLLOW LN

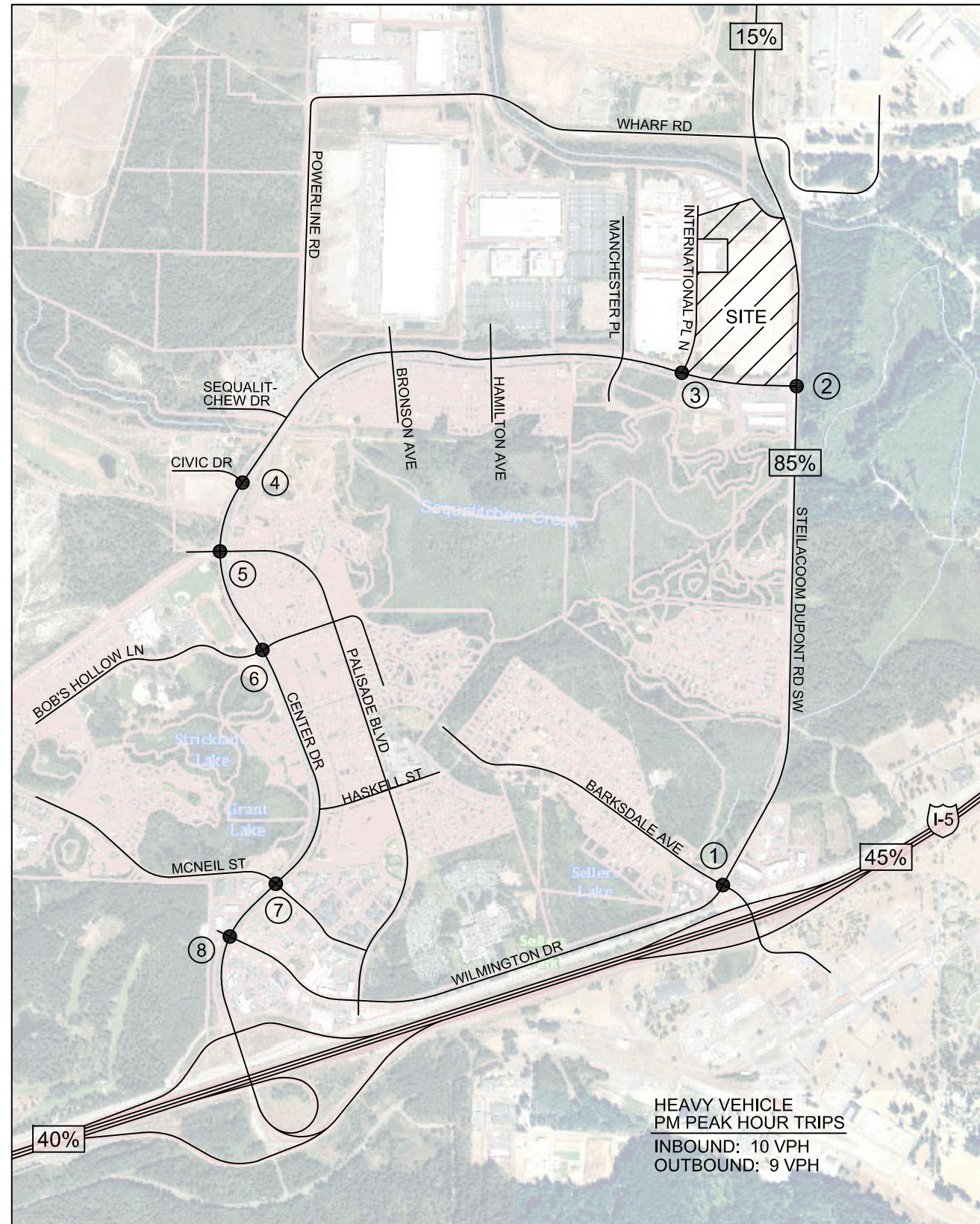


⑦ CENTER DR & MCNEIL ST

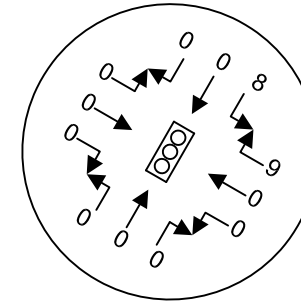


⑧ CENTER DR & WILMINGTON DR

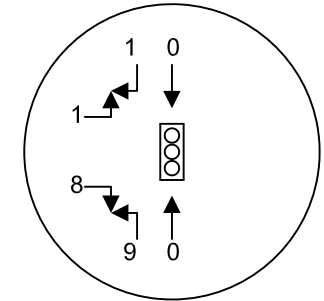




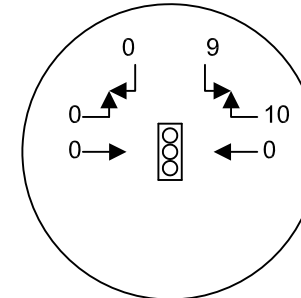
① BARKSDALE AVE &
STEILACOOM DUPONT RD SW



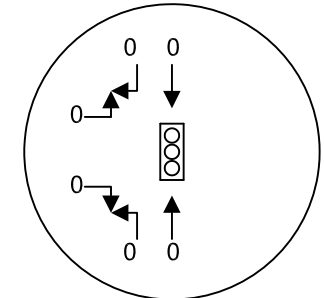
② CENTER DR &
STEILACOOM DUPONT RD SW



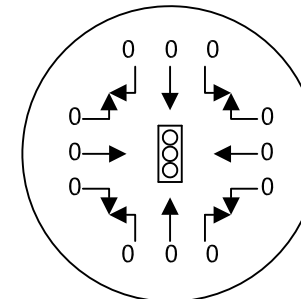
③ CENTER DR &
INTERNATIONAL PL N



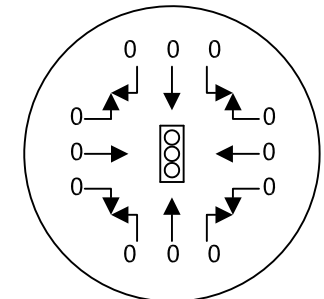
④ CENTER DR &
CIVIC DR



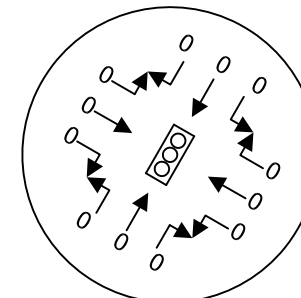
⑤ CENTER DR &
PALISADE BLVD



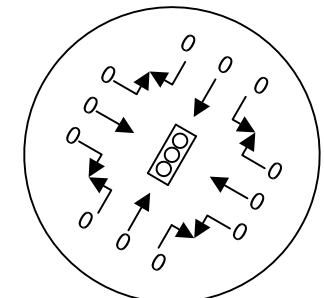
⑥ CENTER DR &
BOB'S HOLLOW LN



⑦ CENTER DR &
MCNEIL ST



⑧ CENTER DR &
WILMINGTON DR



APPENDIX

LEVEL OF SERVICE

Lanes, Volumes, Timings

Existing Conditions - AM Peak Hour

1: Wilimington Dr & Barksdale Ave & Steilacoom Dupont Rd SW

07/21/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	59	24	200	38	501	9	52	117	509	105	36
Future Volume (vph)	27	59	24	200	38	501	9	52	117	509	105	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	125		125	100		75	0		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	0.99	0.99		0.99		0.97	0.99		0.97	0.99	0.99	
Frt		0.956				0.850			0.850		0.983	
Flt Protected	0.950			0.950			0.950			0.950	0.973	
Satd. Flow (prot)	1719	1714	0	1752	1845	1568	1770	1863	1583	1633	1639	0
Flt Permitted	0.950			0.950			0.950			0.950	0.973	
Satd. Flow (perm)	1702	1714	0	1737	1845	1519	1758	1863	1533	1618	1630	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				533			134		5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		355			383			251			690	
Travel Time (s)		8.1			8.7			5.7			15.7	
Confl. Peds. (#/hr)	3		3	3		3	3		3	3		3
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	2%	2%	2%	5%	5%	5%
Adj. Flow (vph)	29	63	26	213	40	533	10	55	124	541	112	38
Shared Lane Traffic (%)										36%		
Lane Group Flow (vph)	29	89	0	213	40	533	10	55	124	346	345	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8			2			
Total Split (s)	14.5	26.5		29.5	24.6	24.6	27.5	27.5	27.5	39.5	39.5	
Total Lost Time (s)	4.5	4.5		4.5	4.6	4.6	4.5	4.5	4.5	4.5	4.5	
Act Effect Green (s)	8.4	10.8		16.7	23.6	23.6	13.4	13.4	13.4	24.5	24.5	
Actuated g/C Ratio	0.11	0.14		0.22	0.32	0.32	0.18	0.18	0.18	0.33	0.33	
v/c Ratio	0.15	0.34		0.54	0.07	0.63	0.03	0.17	0.32	0.65	0.64	
Control Delay	42.9	35.3		37.6	24.7	6.7	37.3	37.4	9.1	32.5	31.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	42.9	35.3		37.6	24.7	6.7	37.3	37.4	9.1	32.5	31.8	
LOS	D	D		D	C	A	D	D	A	C	C	
Approach Delay		37.2			16.0			18.9			32.2	
Approach LOS		D			B			B			C	
Queue Length 50th (ft)	13	33		93	12	0	4	24	0	149	146	
Queue Length 95th (ft)	51	98		220	48	89	22	74	46	348	343	
Internal Link Dist (ft)		275			303			171			610	
Turn Bay Length (ft)	75			125		125	100		75			
Base Capacity (vph)	283	631		722	1025	1081	671	706	664	878	883	
Starvation Cap Reductn	0	0		0	0	17	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.10	0.14		0.30	0.04	0.50	0.01	0.08	0.19	0.39	0.39	

Baseline

Synchro 10 Report
Page 1

Intersection Summary

Area Type: Other

Cycle Length: 123

Actuated Cycle Length: 74.8

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 24.0

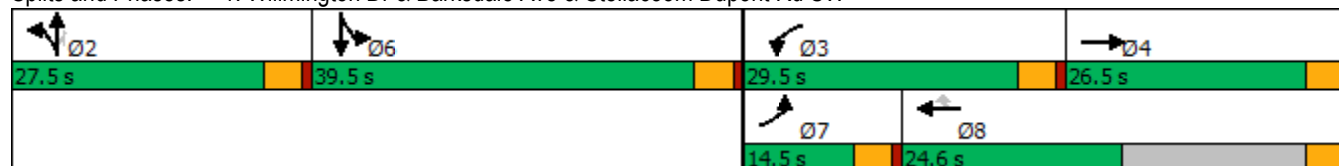
Intersection LOS: C

Intersection Capacity Utilization 56.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Wilimington Dr & Barksdale Ave & Steilacoom Dupont Rd SW



HCM 6th Signalized Intersection Summary

2: Dupont-Steilacoom Rd & Center Drive

Existing Conditions - AM Peak Hour

07/21/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	277	75	151	466	487	285
Future Volume (veh/h)	277	75	151	466	487	285
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1856	1856
Adj Flow Rate, veh/h	308	83	168	518	541	317
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	4	4	4	3	3
Cap, veh/h	399	355	224	1093	718	595
Arrive On Green	0.23	0.23	0.13	0.59	0.39	0.39
Sat Flow, veh/h	1753	1560	1753	1841	1856	1538
Grp Volume(v), veh/h	308	83	168	518	541	317
Grp Sat Flow(s),veh/h/ln	1753	1560	1753	1841	1856	1538
Q Serve(g_s), s	8.3	2.2	4.7	8.0	12.7	8.0
Cycle Q Clear(g_c), s	8.3	2.2	4.7	8.0	12.7	8.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	399	355	224	1093	718	595
V/C Ratio(X)	0.77	0.23	0.75	0.47	0.75	0.53
Avail Cap(c_a), veh/h	1392	1239	1392	2193	2210	1832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	15.9	21.2	5.8	13.4	11.9
Incr Delay (d2), s/veh	3.2	0.3	5.0	0.3	1.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	2.1	1.9	1.6	4.2	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.5	16.2	26.2	6.1	15.0	12.7
LnGrp LOS	C	B	C	A	B	B
Approach Vol, veh/h	391			686	858	
Approach Delay, s/veh	20.3			11.0	14.1	
Approach LOS	C			B	B	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	34.9			15.5	10.4	24.5
Change Period (Y+Rc), s	5.0			4.0	4.0	5.0
Max Green Setting (Gmax), s	60.0			40.0	40.0	60.0
Max Q Clear Time (g_c+l1), s	10.0			10.3	6.7	14.7
Green Ext Time (p_c), s	3.3			1.2	0.4	4.8
Intersection Summary						
HCM 6th Ctrl Delay			14.3			
HCM 6th LOS			B			

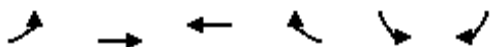
Baseline

Synchro 10 Report
Page 1

Lanes, Volumes, Timings
3: Center Drive & International Pl

Existing Conditions - AM Peak Hour

07/21/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	3	360	475	13	11	0
Future Volume (vph)	3	360	475	13	11	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	1.00		1.00		1.00	
Frt			0.996			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3360	0	902	0
Flt Permitted	0.394				0.950	
Satd. Flow (perm)	732	3539	3360	0	899	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			3			
Link Speed (mph)		35	35		25	
Link Distance (ft)		687	519		307	
Travel Time (s)		13.4	10.1		8.4	
Confl. Peds. (#/hr)	2			2	2	2
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	5%	75%	100%	0%
Adj. Flow (vph)	3	375	495	14	11	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3	375	509	0	11	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		4	
Permitted Phases	2					
Total Split (s)	26.0	93.0	67.0		27.0	
Total Lost Time (s)	4.5	4.5	4.5		4.5	
Act Effct Green (s)	26.4	30.8	29.5		6.5	
Actuated g/C Ratio	0.81	0.94	0.90		0.20	
v/c Ratio	0.00	0.11	0.17		0.06	
Control Delay	1.7	1.0	2.6		16.4	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	1.7	1.0	2.6		16.4	
LOS	A	A	A		B	
Approach Delay		1.0	2.6		16.4	
Approach LOS		A	A		B	
Queue Length 50th (ft)	0	0	0		1	
Queue Length 95th (ft)	2	26	71		16	
Internal Link Dist (ft)		607	439		227	
Turn Bay Length (ft)	150					
Base Capacity (vph)	1337	3539	3360		679	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.00	0.11	0.15		0.02	

Baseline

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Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 32.7

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.17

Intersection Signal Delay: 2.1

Intersection LOS: A

Intersection Capacity Utilization 26.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Center Drive & International Pl



HCM 6th Signalized Intersection Summary

4: Center Drive & Civic Drive

Existing Conditions - AM Peak Hour

07/21/2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	8	17	318	311	7
Future Volume (veh/h)	1	8	17	318	311	7
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1737	1737	1856	1856	1841	1841
Adj Flow Rate, veh/h	1	9	19	349	342	8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	11	11	3	3	4	4
Cap, veh/h	22	20	624	1916	1037	24
Arrive On Green	0.01	0.01	0.03	0.54	0.30	0.30
Sat Flow, veh/h	1654	1472	1767	3618	3583	81
Grp Volume(v), veh/h	1	9	19	349	171	179
Grp Sat Flow(s),veh/h/ln	1654	1472	1767	1763	1749	1823
Q Serve(g_s), s	0.0	0.1	0.1	1.0	1.5	1.6
Cycle Q Clear(g_c), s	0.0	0.1	0.1	1.0	1.5	1.6
Prop In Lane	1.00	1.00	1.00			0.04
Lane Grp Cap(c), veh/h	22	20	624	1916	519	542
V/C Ratio(X)	0.04	0.45	0.03	0.18	0.33	0.33
Avail Cap(c_a), veh/h	407	362	2102	15009	5551	5788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.9	9.9	3.8	2.3	5.6	5.6
Incr Delay (d2), s/veh	0.8	15.2	0.0	0.0	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.0	0.0	0.2	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.7	25.2	3.8	2.4	5.9	5.9
LnGrp LOS	B	C	A	A	A	A
Approach Vol, veh/h	10			368	350	
Approach Delay, s/veh	23.7			2.5	5.9	
Approach LOS	C			A	A	
Timer - Assigned Phs	2		4		5	6
Phs Duration (G+Y+Rc), s	15.5		4.8		5.0	10.5
Change Period (Y+Rc), s	4.5		4.5		4.5	4.5
Max Green Setting (Gmax), s	86.5		5.0		17.5	64.5
Max Q Clear Time (g_c+I1), s	3.0		2.1		2.1	3.6
Green Ext Time (p_c), s	2.5		0.0		0.0	2.1
Intersection Summary						
HCM 6th Ctrl Delay			4.4			
HCM 6th LOS			A			

Baseline

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HCM 6th Signalized Intersection Summary

5: Center Drive & Palisade Blvd

Existing Conditions - AM Peak Hour

07/21/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕↕		↕	↕↕	
Traffic Volume (veh/h)	0	0	0	21	0	35	0	313	14	23	287	0
Future Volume (veh/h)	0	0	0	21	0	35	0	313	14	23	287	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	0.98		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1900	1870	1900	1870	1870	1826	1826	1900
Adj Flow Rate, veh/h	0	0	0	23	0	39	0	348	16	26	319	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	2	0	2	0	2	2	5	5	0
Cap, veh/h	0	136	0	373	0	111	7	1360	62	46	2045	0
Arrive On Green	0.00	0.00	0.00	0.07	0.00	0.07	0.00	0.39	0.39	0.03	0.59	0.00
Sat Flow, veh/h	0	1900	0	1416	0	1550	1810	3455	158	1739	3561	0
Grp Volume(v), veh/h	0	0	0	23	0	39	0	178	186	26	319	0
Grp Sat Flow(s),veh/h/ln	0	1900	0	1416	0	1550	1810	1777	1837	1739	1735	0
Q Serve(g_s), s	0.0	0.0	0.0	0.4	0.0	0.6	0.0	1.8	1.8	0.4	1.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.4	0.0	0.6	0.0	1.8	1.8	0.4	1.1	0.0
Prop In Lane	0.00		0.00	1.00		1.00	1.00		0.09	1.00		0.00
Lane Grp Cap(c), veh/h	0	136	0	373	0	111	7	699	723	46	2045	0
V/C Ratio(X)	0.00	0.00	0.00	0.06	0.00	0.35	0.00	0.26	0.26	0.57	0.16	0.00
Avail Cap(c_a), veh/h	0	2148	0	1872	0	1752	1364	4018	4153	1311	7844	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	11.6	0.0	11.7	0.0	5.4	5.4	12.8	2.5	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	1.9	0.0	0.2	0.2	10.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.3	0.3	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	11.7	0.0	13.6	0.0	5.6	5.6	23.4	2.5	0.0
LnGrp LOS	A	A	A	B	A	B	A	A	A	C	A	A
Approach Vol, veh/h	0				62			364			345	
Approach Delay, s/veh	0.0				12.9			5.6			4.1	
Approach LOS					B			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	14.9		6.4	0.0	20.1		6.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.4	3.8		0.0	0.0	3.1		2.6				
Green Ext Time (p_c), s	0.0	2.2		0.0	0.0	2.2		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	5.5											
HCM 6th LOS	A											

Baseline

Synchro 10 Report
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HCM 6th Signalized Intersection Summary
6: Center Drive & Bob's Hollow Ln

Existing Conditions - AM Peak Hour

07/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	22	76	32	8	10	65	157	13	10	148	153
Future Volume (veh/h)	163	22	76	32	8	10	65	157	13	10	148	153
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.98		0.97	0.99		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1885	1885	1885	1826	1826	1826
Adj Flow Rate, veh/h	206	28	96	41	10	13	82	199	16	13	187	194
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	3	3	3	1	1	1	1	1	1	5	5	5
Cap, veh/h	399	61	130	405	103	93	493	1151	92	521	477	391
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.09	0.34	0.34	0.02	0.27	0.27
Sat Flow, veh/h	846	200	429	861	340	306	1795	3351	267	1739	1735	1424
Grp Volume(v), veh/h	330	0	0	64	0	0	82	105	110	13	187	194
Grp Sat Flow(s),veh/h/ln	1476	0	0	1506	0	0	1795	1791	1827	1739	1735	1424
Q Serve(g_s), s	7.1	0.0	0.0	0.0	0.0	0.0	1.2	1.7	1.7	0.2	3.6	4.7
Cycle Q Clear(g_c), s	8.2	0.0	0.0	1.0	0.0	0.0	1.2	1.7	1.7	0.2	3.6	4.7
Prop In Lane	0.62		0.29	0.64		0.20	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	589	0	0	600	0	0	493	615	627	521	477	391
V/C Ratio(X)	0.56	0.00	0.00	0.11	0.00	0.00	0.17	0.17	0.17	0.02	0.39	0.50
Avail Cap(c_a), veh/h	1209	0	0	1197	0	0	1207	2615	2667	1333	2533	2079
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.7	0.0	0.0	10.3	0.0	0.0	8.9	9.4	9.4	10.3	12.1	12.5
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.1	0.0	0.0	0.2	0.1	0.1	0.0	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.0	0.4	0.0	0.0	0.4	0.5	0.5	0.1	1.2	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	0.0	0.0	10.4	0.0	0.0	9.1	9.5	9.6	10.3	12.6	13.5
LnGrp LOS	B	A	A	B	A	A	A	A	A	B	B	B
Approach Vol, veh/h		330			64			297			394	
Approach Delay, s/veh		13.6			10.4			9.4			13.0	
Approach LOS		B			B			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	18.7		16.9	8.2	15.9		16.9				
Change Period (Y+Rc), s	4.6	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.2	3.7		10.2	3.2	6.7		3.0				
Green Ext Time (p_c), s	0.0	1.3		2.1	0.1	2.6		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				12.0								
HCM 6th LOS				B								

Baseline

Synchro 10 Report
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HCM 6th Signalized Intersection Summary
7: Center Drive & McNeil Street

Existing Conditions - AM Peak Hour

07/21/2020

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	41	49	319	26	17	14	139	199	72	21	243	22
Future Volume (veh/h)	41	49	319	26	17	14	139	199	72	21	243	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1796	1796	1796	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	44	53	343	28	18	15	149	214	77	23	261	24
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	7	7	7	1	1	1	1	1	1
Cap, veh/h	311	317	655	340	177	476	237	755	262	62	644	59
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.13	0.29	0.29	0.03	0.19	0.19
Sat Flow, veh/h	563	1116	1566	610	625	1493	1795	2583	896	1795	3307	301
Grp Volume(v), veh/h	97	0	343	46	0	15	149	146	145	23	140	145
Grp Sat Flow(s),veh/h/ln	1679	0	1566	1235	0	1493	1795	1791	1689	1795	1791	1817
Q Serve(g_s), s	0.0	0.0	5.7	0.0	0.0	0.2	2.7	2.2	2.3	0.4	2.4	2.4
Cycle Q Clear(g_c), s	1.3	0.0	5.7	1.3	0.0	0.2	2.7	2.2	2.3	0.4	2.4	2.4
Prop In Lane	0.45		1.00	0.61		1.00	1.00		0.53	1.00		0.17
Lane Grp Cap(c), veh/h	628	0	655	518	0	476	237	523	493	62	349	354
V/C Ratio(X)	0.15	0.00	0.52	0.09	0.00	0.03	0.63	0.28	0.29	0.37	0.40	0.41
Avail Cap(c_a), veh/h	1568	0	1566	1193	0	1344	1036	3100	2923	1036	3100	3145
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.4	0.0	7.6	9.1	0.0	8.1	14.2	9.5	9.5	16.4	12.2	12.2
Incr Delay (d2), s/veh	0.1	0.0	0.6	0.1	0.0	0.0	2.7	0.3	0.3	3.7	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.2	0.2	0.0	0.1	1.0	0.6	0.6	0.2	0.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.5	0.0	8.2	9.2	0.0	8.2	17.0	9.7	9.8	20.1	12.9	13.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	C	B	B
Approach Vol, veh/h		440			61			440			308	
Approach Delay, s/veh		8.5			8.9			12.2			13.5	
Approach LOS		A			A			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.3	5.7	14.6		14.3	9.1	11.2				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		30.0	20.0	60.0		30.0	20.0	60.0				
Max Q Clear Time (g_c+I1), s		3.3	2.4	4.3		7.7	4.7	4.4				
Green Ext Time (p_c), s		0.3	0.0	1.8		1.8	0.3	1.7				
Intersection Summary												
HCM 6th Ctrl Delay			11.1									
HCM 6th LOS			B									

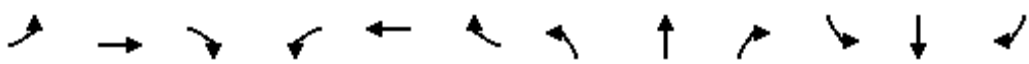
Baseline

Synchro 10 Report
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HCM 6th Signalized Intersection Summary 8: Center Drive & Wilmington Drive

Existing Conditions - AM Peak Hour

07/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	14	35	62	15	43	55	355	207	56	551	6
Future Volume (veh/h)	1	14	35	62	15	43	55	355	207	56	551	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	1	15	36	65	16	45	57	370	216	58	574	6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	408	78	188	417	69	195	525	730	419	513	1224	13
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.06	0.34	0.34	0.06	0.34	0.34
Sat Flow, veh/h	1348	486	1167	1360	431	1212	1795	2171	1245	1795	3630	38
Grp Volume(v), veh/h	1	0	51	65	0	61	57	304	282	58	283	297
Grp Sat Flow(s), veh/h/ln	1348	0	1653	1360	0	1643	1795	1791	1625	1795	1791	1877
Q Serve(g_s), s	0.0	0.0	0.8	1.3	0.0	1.0	0.6	4.2	4.3	0.6	3.8	3.8
Cycle Q Clear(g_c), s	1.0	0.0	0.8	2.2	0.0	1.0	0.6	4.2	4.3	0.6	3.8	3.8
Prop In Lane	1.00		0.71	1.00		0.74	1.00		0.77	1.00		0.02
Lane Grp Cap(c), veh/h	408	0	266	417	0	265	525	602	547	513	604	633
V/C Ratio(X)	0.00	0.00	0.19	0.16	0.00	0.23	0.11	0.50	0.52	0.11	0.47	0.47
Avail Cap(c_a), veh/h	1506	0	1612	1525	0	1603	1581	3494	3171	1566	3494	3663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.7	0.0	11.2	12.1	0.0	11.2	6.0	8.2	8.2	6.0	8.0	8.0
Incr Delay (d2), s/veh	0.0	0.0	0.3	0.2	0.0	0.4	0.1	0.7	0.8	0.1	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.3	0.3	0.0	0.3	0.1	1.1	1.0	0.1	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.7	0.0	11.5	12.3	0.0	11.7	6.1	8.8	8.9	6.1	8.6	8.6
LnGrp LOS	B	A	B	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h	52			126			643			638		
Approach Delay, s/veh	11.5			12.0			8.6			8.4		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	14.8		9.5	6.4	14.9		9.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.6	6.3		3.0	2.6	5.8		4.2				
Green Ext Time (p_c), s	0.1	4.1		0.2	0.1	3.8		0.5				
Intersection Summary												
HCM 6th Ctrl Delay	8.9											
HCM 6th LOS	A											

Baseline

Synchro 10 Report
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Lanes, Volumes, Timings

Existing Conditions - PM Peak Hour

1: Wilimington Dr & Barksdale Ave & Steilacoom Dupont Rd SW

07/21/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	50	17	141	73	473	22	111	223	610	83	38
Future Volume (vph)	32	50	17	141	73	473	22	111	223	610	83	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	125		125	100		75	0		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	0.98	0.99		0.98		0.96	0.99		0.96	0.99	0.99	
Frt		0.961				0.850			0.850		0.984	
Flt Protected	0.950			0.950			0.950			0.950	0.968	
Satd. Flow (prot)	1770	1772	0	1752	1845	1568	1787	1881	1599	1681	1679	0
Flt Permitted	0.950			0.950			0.950			0.950	0.968	
Satd. Flow (perm)	1742	1772	0	1725	1845	1508	1769	1881	1537	1657	1663	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				488			230		5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		355			383			251			690	
Travel Time (s)		8.1			8.7			5.7			15.7	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	33	52	18	145	75	488	23	114	230	629	86	39
Shared Lane Traffic (%)										40%		
Lane Group Flow (vph)	33	70	0	145	75	488	23	114	230	377	377	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8			2			
Total Split (s)	14.5	26.5		29.5	24.6	24.6	27.5	27.5	27.5	39.5	39.5	
Total Lost Time (s)	4.5	4.5		4.5	4.6	4.6	4.5	4.5	4.5	4.5	4.5	
Act Effect Green (s)	7.7	9.5		12.5	16.7	16.7	12.6	12.6	12.6	24.5	24.5	
Actuated g/C Ratio	0.10	0.13		0.17	0.22	0.22	0.17	0.17	0.17	0.33	0.33	
v/c Ratio	0.18	0.30		0.50	0.18	0.68	0.08	0.36	0.51	0.69	0.69	
Control Delay	41.2	33.7		39.6	29.3	8.7	34.5	37.6	10.0	31.8	31.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	41.2	33.7		39.6	29.3	8.7	34.5	37.6	10.0	31.8	31.3	
LOS	D	C		D	C	A	C	D	A	C	C	
Approach Delay		36.1			17.2			20.1			31.6	
Approach LOS		D			B			C			C	
Queue Length 50th (ft)	14	25		61	29	0	9	48	0	152	150	
Queue Length 95th (ft)	53	77		155	79	90	38	126	68	354	350	
Internal Link Dist (ft)		275			303			171			610	
Turn Bay Length (ft)	75			125		125	100		75			
Base Capacity (vph)	257	575		637	991	1035	598	629	667	856	857	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.12		0.23	0.08	0.47	0.04	0.18	0.34	0.44	0.44	

Baseline

Synchro 10 Report
Page 1

Intersection Summary

Area Type: Other

Cycle Length: 123

Actuated Cycle Length: 75.2

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 24.4

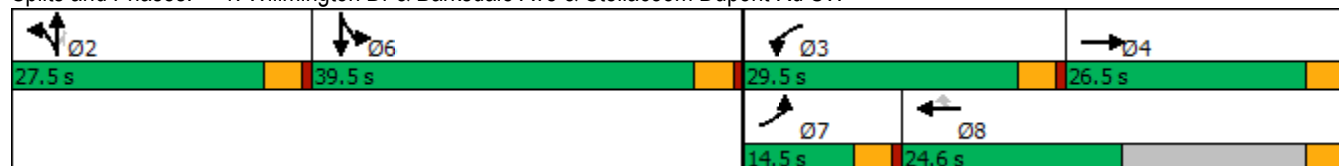
Intersection LOS: C

Intersection Capacity Utilization 55.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Wilimington Dr & Barksdale Ave & Steilacoom Dupont Rd SW



HCM 6th Signalized Intersection Summary

2: Dupont-Steilacoom Rd & Center Drive

Existing Conditions - PM Peak Hour

07/21/2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	219	98	109	497	602	418
Future Volume (veh/h)	219	98	109	497	602	418
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1885	1885
Adj Flow Rate, veh/h	238	107	118	540	654	454
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	1	1
Cap, veh/h	329	292	158	1163	869	720
Arrive On Green	0.19	0.19	0.09	0.63	0.46	0.46
Sat Flow, veh/h	1753	1560	1753	1841	1885	1561
Grp Volume(v), veh/h	238	107	118	540	654	454
Grp Sat Flow(s),veh/h/ln	1753	1560	1753	1841	1885	1561
Q Serve(g_s), s	6.3	3.0	3.3	7.6	14.2	11.0
Cycle Q Clear(g_c), s	6.3	3.0	3.3	7.6	14.2	11.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	329	292	158	1163	869	720
V/C Ratio(X)	0.72	0.37	0.75	0.46	0.75	0.63
Avail Cap(c_a), veh/h	1410	1255	1410	2221	2274	1883
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	17.6	22.1	4.8	11.1	10.2
Incr Delay (d2), s/veh	3.0	0.8	6.9	0.3	1.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.1	1.4	1.3	4.2	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.0	18.4	29.0	5.1	12.4	11.1
LnGrp LOS	C	B	C	A	B	B
Approach Vol, veh/h	345			658	1108	
Approach Delay, s/veh	20.9			9.4	11.9	
Approach LOS	C			A	B	
Timer - Assigned Phs	2		4		5	6
Phs Duration (G+Y+Rc), s	36.4		13.3		8.5	27.9
Change Period (Y+Rc), s	5.0		4.0		4.0	5.0
Max Green Setting (Gmax), s	60.0		40.0		40.0	60.0
Max Q Clear Time (g_c+I1), s	9.6		8.3		5.3	16.2
Green Ext Time (p_c), s	3.5		1.1		0.3	6.7
Intersection Summary						
HCM 6th Ctrl Delay			12.6			
HCM 6th LOS			B			

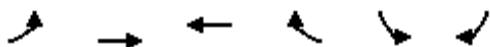
Baseline

Synchro 10 Report
Page 1

Lanes, Volumes, Timings
3: Center Drive & International Pl

Existing Conditions - PM Peak Hour

07/21/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	235	589	6	13	1
Future Volume (vph)	1	235	589	6	13	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	1.00		1.00		1.00	
Frt			0.998		0.991	
Flt Protected	0.950				0.955	
Satd. Flow (prot)	1736	3471	3531	0	1761	0
Flt Permitted	0.349				0.955	
Satd. Flow (perm)	637	3471	3531	0	1757	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			1		1	
Link Speed (mph)		30	30		30	
Link Distance (ft)		687	519		294	
Travel Time (s)		15.6	11.8		6.7	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				4		4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	4%	2%	2%	2%	2%
Adj. Flow (vph)	1	261	654	7	14	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	261	661	0	15	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4					
Total Split (s)	16.0	91.0	75.0		29.0	
Total Lost Time (s)	4.5	4.5	4.5		4.5	
Act Effct Green (s)	31.4	36.3	35.2		7.9	
Actuated g/C Ratio	0.81	0.93	0.90		0.20	
v/c Ratio	0.00	0.08	0.21		0.04	
Control Delay	3.0	1.7	3.4		16.9	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	3.0	1.7	3.4		16.9	
LOS	A	A	A		B	
Approach Delay		1.7	3.4		16.9	
Approach LOS		A	A		B	
Queue Length 50th (ft)	0	0	0		2	
Queue Length 95th (ft)	2	34	128		20	
Internal Link Dist (ft)		607	439		214	
Turn Bay Length (ft)	150					
Base Capacity (vph)	897	3471	3453		1311	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.00	0.08	0.19		0.01	

Baseline

Synchro 10 Report
Page 1

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 38.9

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.21

Intersection Signal Delay: 3.1

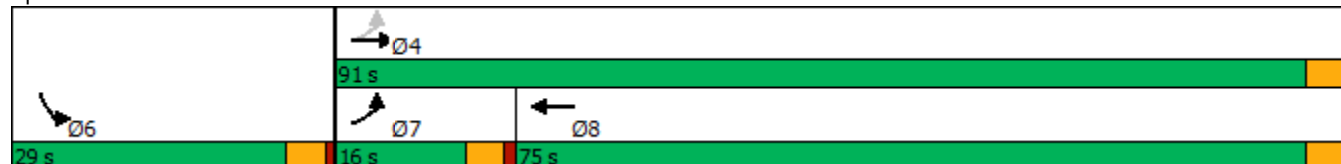
Intersection LOS: A

Intersection Capacity Utilization 28.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Center Drive & International Pl



HCM 6th Signalized Intersection Summary

4: Center Drive & Civic Drive

Existing Conditions - PM Peak Hour

07/21/2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	12	4	292	406	5
Future Volume (veh/h)	7	12	4	292	406	5
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	7	13	4	307	427	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	47	42	581	1959	1189	14
Arrive On Green	0.03	0.03	0.01	0.55	0.33	0.33
Sat Flow, veh/h	1795	1598	1795	3676	3719	42
Grp Volume(v), veh/h	7	13	4	307	211	221
Grp Sat Flow(s),veh/h/ln	1795	1598	1795	1791	1791	1876
Q Serve(g_s), s	0.1	0.2	0.0	0.9	1.9	1.9
Cycle Q Clear(g_c), s	0.1	0.2	0.0	0.9	1.9	1.9
Prop In Lane	1.00	1.00	1.00			0.02
Lane Grp Cap(c), veh/h	47	42	581	1959	587	615
V/C Ratio(X)	0.15	0.31	0.01	0.16	0.36	0.36
Avail Cap(c_a), veh/h	2001	1781	1891	14865	5734	6007
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.0	10.1	3.8	2.4	5.4	5.4
Incr Delay (d2), s/veh	1.4	4.1	0.0	0.0	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.0	0.0	0.3	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.5	14.2	3.8	2.4	5.8	5.8
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	20			311	432	
Approach Delay, s/veh	13.2			2.4	5.8	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	16.0			5.1	4.6	11.4
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	87.5			23.5	15.5	67.5
Max Q Clear Time (g_c+I1), s	2.9			2.2	2.0	3.9
Green Ext Time (p_c), s	2.1			0.0	0.0	2.7
Intersection Summary						
HCM 6th Ctrl Delay			4.6			
HCM 6th LOS			A			

Baseline

Synchro 10 Report
Page 1

HCM 6th Signalized Intersection Summary

5: Center Drive & Palisade Blvd

Existing Conditions - PM Peak Hour

07/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	7	23	1	22	8	282	32	32	466	4
Future Volume (veh/h)	0	0	7	23	1	22	8	282	32	32	466	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1900	1885	1900	1885	1885	1885	1885	1900
Adj Flow Rate, veh/h	0	0	8	25	1	24	9	307	35	35	507	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	1	0	1	0	1	1	1	1	0
Cap, veh/h	0	0	105	352	3	104	18	1253	141	62	1501	12
Arrive On Green	0.00	0.00	0.07	0.07	0.07	0.07	0.01	0.39	0.39	0.03	0.41	0.41
Sat Flow, veh/h	0	0	1577	1272	51	1565	1810	3234	365	1795	3641	29
Grp Volume(v), veh/h	0	0	8	26	0	24	9	169	173	35	249	262
Grp Sat Flow(s),veh/h/ln	0	0	1577	1323	0	1565	1810	1791	1808	1795	1791	1879
Q Serve(g_s), s	0.0	0.0	0.1	0.5	0.0	0.4	0.1	1.7	1.7	0.5	2.5	2.5
Cycle Q Clear(g_c), s	0.0	0.0	0.1	0.6	0.0	0.4	0.1	1.7	1.7	0.5	2.5	2.5
Prop In Lane	0.00		1.00	0.96		1.00	1.00		0.20	1.00		0.02
Lane Grp Cap(c), veh/h	0	0	105	356	0	104	18	694	701	62	738	774
V/C Ratio(X)	0.00	0.00	0.08	0.07	0.00	0.23	0.51	0.24	0.25	0.57	0.34	0.34
Avail Cap(c_a), veh/h	0	0	1793	1882	0	1779	1372	4073	4112	1361	4073	4274
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	11.6	11.8	0.0	11.7	13.0	5.5	5.5	12.5	5.3	5.3
Incr Delay (d2), s/veh	0.0	0.0	0.3	0.1	0.0	1.1	21.4	0.2	0.2	8.0	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.3	0.3	0.3	0.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	11.9	11.9	0.0	12.8	34.4	5.6	5.7	20.5	5.6	5.6
LnGrp LOS	A	A	B	B	A	B	C	A	A	C	A	A
Approach Vol, veh/h	8				50		351				546	
Approach Delay, s/veh	11.9				12.3		6.4				6.5	
Approach LOS	B				B		A				A	
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.4	14.7	6.3		4.8	15.4	6.3					
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5					
Max Green Setting (Gmax), s	20.0	60.0	30.0		20.0	60.0	30.0					
Max Q Clear Time (g_c+I1), s	2.5	3.7	2.1		2.1	4.5	2.6					
Green Ext Time (p_c), s	0.0	2.1	0.0		0.0	3.2	0.2					
Intersection Summary												
HCM 6th Ctrl Delay			6.8									
HCM 6th LOS			A									

Baseline

Synchro 10 Report
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HCM 6th Signalized Intersection Summary
6: Center Drive & Bob's Hollow Ln

Existing Conditions - PM Peak Hour

07/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	10	64	17	19	9	58	161	31	20	268	212
Future Volume (veh/h)	152	10	64	17	19	9	58	161	31	20	268	212
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.98	0.99		0.97	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	160	11	67	18	20	9	61	169	33	21	282	223
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	1	1	1	1	1	1	1	1	1
Cap, veh/h	381	41	100	244	232	80	492	1030	196	613	571	434
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.08	0.35	0.35	0.03	0.30	0.30
Sat Flow, veh/h	884	168	412	434	960	330	1795	2983	568	1795	1898	1443
Grp Volume(v), veh/h	238	0	0	47	0	0	61	100	102	21	265	240
Grp Sat Flow(s),veh/h/ln	1465	0	0	1725	0	0	1795	1791	1760	1795	1791	1550
Q Serve(g_s), s	4.5	0.0	0.0	0.0	0.0	0.0	0.8	1.4	1.4	0.3	4.4	4.6
Cycle Q Clear(g_c), s	5.2	0.0	0.0	0.7	0.0	0.0	0.8	1.4	1.4	0.3	4.4	4.6
Prop In Lane	0.67		0.28	0.38		0.19	1.00		0.32	1.00		0.93
Lane Grp Cap(c), veh/h	522	0	0	555	0	0	492	618	608	613	538	466
V/C Ratio(X)	0.46	0.00	0.00	0.08	0.00	0.00	0.12	0.16	0.17	0.03	0.49	0.51
Avail Cap(c_a), veh/h	1375	0	0	1488	0	0	1355	2993	2942	1556	2993	2591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	0.0	0.0	10.6	0.0	0.0	7.5	8.1	8.2	8.1	10.3	10.4
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.7	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	0.2	0.0	0.0	0.2	0.4	0.4	0.1	1.3	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	0.0	0.0	10.7	0.0	0.0	7.6	8.3	8.3	8.1	11.0	11.3
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	B	B
Approach Vol, veh/h		238			47			263			526	
Approach Delay, s/veh		12.9			10.7			8.1			11.0	
Approach LOS		B			B			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	17.0		13.2	7.3	15.4		13.2				
Change Period (Y+Rc), s	4.6	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.3	3.4		7.2	2.8	6.6		2.7				
Green Ext Time (p_c), s	0.0	1.2		1.5	0.1	3.5		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				10.7								
HCM 6th LOS				B								

Baseline

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HCM 6th Signalized Intersection Summary
7: Center Drive & McNeil Street

Existing Conditions - PM Peak Hour

07/21/2020

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	44	39	169	62	68	31	348	248	43	31	306	42
Future Volume (veh/h)	44	39	169	62	68	31	348	248	43	31	306	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1856	1856	1856	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	46	41	178	65	72	33	366	261	45	33	322	44
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	3	3	3	1	1	1	1	1	1
Cap, veh/h	90	58	1016	86	69	707	405	1067	181	71	517	70
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.23	0.35	0.35	0.04	0.16	0.16
Sat Flow, veh/h	27	139	1570	23	166	1546	1795	3047	517	1795	3152	426
Grp Volume(v), veh/h	87	0	178	137	0	33	366	152	154	33	181	185
Grp Sat Flow(s),veh/h/ln	166	0	1570	189	0	1546	1795	1791	1773	1795	1791	1787
Q Serve(g_s), s	1.0	0.0	3.2	1.0	0.0	0.8	13.9	4.2	4.3	1.3	6.6	6.7
Cycle Q Clear(g_c), s	29.1	0.0	3.2	29.1	0.0	0.8	13.9	4.2	4.3	1.3	6.6	6.7
Prop In Lane	0.53		1.00	0.47		1.00	1.00		0.29	1.00		0.24
Lane Grp Cap(c), veh/h	148	0	1016	155	0	707	405	627	621	71	294	293
V/C Ratio(X)	0.59	0.00	0.18	0.88	0.00	0.05	0.90	0.24	0.25	0.47	0.62	0.63
Avail Cap(c_a), veh/h	167	0	1035	173	0	726	514	1538	1523	514	1538	1535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	5.0	22.8	0.0	10.5	26.3	16.1	16.2	32.8	27.2	27.2
Incr Delay (d2), s/veh	4.2	0.0	0.1	35.7	0.0	0.0	16.5	0.2	0.2	4.7	2.1	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.9	3.8	0.0	0.3	7.3	1.6	1.6	0.6	2.8	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.4	0.0	5.1	58.5	0.0	10.6	42.8	16.3	16.4	37.6	29.3	29.5
LnGrp LOS	C	A	A	E	A	B	D	B	B	D	C	C
Approach Vol, veh/h		265			170			672			399	
Approach Delay, s/veh		11.1			49.2			30.8			30.1	
Approach LOS		B			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	29.3		34.1	20.5	16.1		34.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	3.3	6.3		31.1	15.9	8.7		31.1				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.5	2.3		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			29.2									
HCM 6th LOS			C									

Baseline

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HCM 6th Signalized Intersection Summary

8: Center Drive & Wilmington Drive

Existing Conditions - PM Peak Hour

07/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	14	30	235	25	72	47	548	192	65	452	17
Future Volume (veh/h)	7	14	30	235	25	72	47	548	192	65	452	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	1.00		0.96	0.99		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	8	15	32	253	27	77	51	589	206	70	486	18
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	460	154	328	522	121	346	487	924	322	383	1300	48
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.36	0.36	0.06	0.37	0.37
Sat Flow, veh/h	1269	530	1130	1366	417	1190	1795	2584	902	1795	3517	130
Grp Volume(v), veh/h	8	0	47	253	0	104	51	408	387	70	247	257
Grp Sat Flow(s),veh/h/ln	1269	0	1659	1366	0	1607	1795	1791	1694	1795	1791	1856
Q Serve(g_s), s	0.2	0.0	1.0	7.8	0.0	2.3	0.8	8.9	8.9	1.1	4.7	4.7
Cycle Q Clear(g_c), s	2.5	0.0	1.0	8.8	0.0	2.3	0.8	8.9	8.9	1.1	4.7	4.7
Prop In Lane	1.00		0.68	1.00		0.74	1.00		0.53	1.00		0.07
Lane Grp Cap(c), veh/h	460	0	482	522	0	467	487	641	606	383	662	686
V/C Ratio(X)	0.02	0.00	0.10	0.48	0.00	0.22	0.10	0.64	0.64	0.18	0.37	0.37
Avail Cap(c_a), veh/h	903	0	1062	999	0	1028	1160	2291	2168	1034	2291	2375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.6	0.0	12.1	15.3	0.0	12.6	8.6	12.5	12.5	9.1	10.8	10.8
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.7	0.0	0.2	0.1	1.1	1.1	0.2	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.3	2.2	0.0	0.8	0.3	3.0	2.8	0.3	1.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	0.0	12.2	16.0	0.0	12.9	8.7	13.6	13.7	9.3	11.2	11.1
LnGrp LOS	B	A	B	B	A	B	A	B	B	A	B	B
Approach Vol, veh/h	55			357			846			574		
Approach Delay, s/veh	12.4			15.1			13.3			10.9		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	21.3		18.1	6.9	21.8		18.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	3.1	10.9		4.5	2.8	6.7		10.8				
Green Ext Time (p_c), s	0.1	5.9		0.2	0.1	3.2		1.4				
Intersection Summary												
HCM 6th Ctrl Delay	12.9											
HCM 6th LOS	B											

Baseline

Synchro 10 Report
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Lanes, Volumes, Timings

Forecast 2022 Background Peak - AM Peak Hour

1: Wilimington Dr & Barksdale Ave & Steilacoom Dupont Rd SW

07/21/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	61	25	208	40	643	9	71	122	580	118	45
Future Volume (vph)	40	61	25	208	40	643	9	71	122	580	118	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	125		125	100		75	0		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	0.99	0.99		0.99		0.97	0.99		0.97	0.99	0.99	
Frt		0.956				0.850			0.850		0.982	
Flt Protected	0.950			0.950			0.950			0.950	0.973	
Satd. Flow (prot)	1719	1714	0	1752	1845	1568	1770	1863	1583	1633	1636	0
Flt Permitted	0.950			0.950			0.950			0.950	0.973	
Satd. Flow (perm)	1702	1714	0	1737	1845	1519	1759	1863	1533	1618	1628	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				684			134		6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		355			383			251			690	
Travel Time (s)		8.1			8.7			5.7			15.7	
Confl. Peds. (#/hr)	3		3	3		3	3		3	3		3
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	2%	2%	2%	5%	5%	5%
Adj. Flow (vph)	43	65	27	221	43	684	10	76	130	617	126	48
Shared Lane Traffic (%)										36%		
Lane Group Flow (vph)	43	92	0	221	43	684	10	76	130	395	396	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8			2			
Total Split (s)	14.5	26.5		29.5	24.6	24.6	27.5	27.5	27.5	39.5	39.5	
Total Lost Time (s)	4.5	4.5		4.5	4.6	4.6	4.5	4.5	4.5	4.5	4.5	
Act Effect Green (s)	8.0	10.3		16.7	21.3	21.3	12.1	12.1	12.1	28.3	28.3	
Actuated g/C Ratio	0.10	0.12		0.20	0.26	0.26	0.15	0.15	0.15	0.34	0.34	
v/c Ratio	0.26	0.41		0.63	0.09	0.76	0.04	0.28	0.39	0.71	0.71	
Control Delay	46.3	39.1		42.6	28.2	9.0	38.9	41.0	10.9	35.0	34.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	46.3	39.1		42.6	28.2	9.0	38.9	41.0	10.9	35.0	34.3	
LOS	D	D		D	C	A	D	D	B	C	C	
Approach Delay		41.4			17.7			22.8			34.6	
Approach LOS		D			B			C			C	
Queue Length 50th (ft)	21	38		108	18	0	5	37	0	182	180	
Queue Length 95th (ft)	68	102		228	52	110	22	95	51	#434	#429	
Internal Link Dist (ft)		275			303			171			610	
Turn Bay Length (ft)	75			125		125	100		75			
Base Capacity (vph)	222	498		566	880	1082	526	554	550	739	744	
Starvation Cap Reductn	0	0		1	0	8	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.18		0.39	0.05	0.64	0.02	0.14	0.24	0.53	0.53	

Baseline

Synchro 10 Report
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Intersection Summary

Area Type: Other

Cycle Length: 123

Actuated Cycle Length: 83.2

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 26.2

Intersection LOS: C

Intersection Capacity Utilization 65.4%

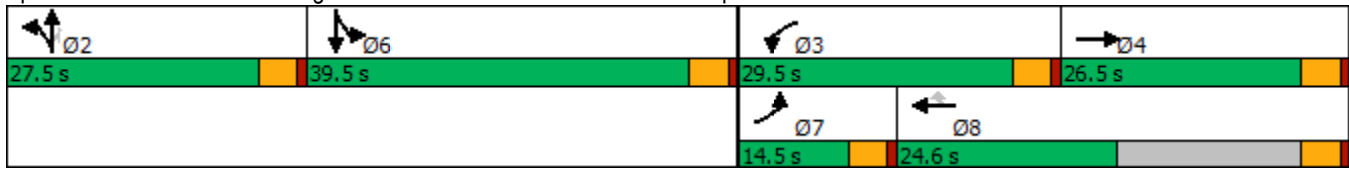
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Wilimington Dr & Barksdale Ave & Steilacoom Dupont Rd SW



HCM 6th Signalized Intersection Summary Forecast 2022 Background Peak - AM Peak Hour

2: Dupont-Steilacoom Rd & Center Drive

07/21/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	322	115	258	517	522	357
Future Volume (veh/h)	322	115	258	517	522	357
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1856	1856
Adj Flow Rate, veh/h	358	128	287	574	580	397
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	4	4	4	3	3
Cap, veh/h	425	379	342	1167	712	590
Arrive On Green	0.24	0.24	0.20	0.63	0.38	0.38
Sat Flow, veh/h	1753	1560	1753	1841	1856	1538
Grp Volume(v), veh/h	358	128	287	574	580	397
Grp Sat Flow(s),veh/h/ln	1753	1560	1753	1841	1856	1538
Q Serve(g_s), s	14.2	4.9	11.5	12.1	20.4	15.6
Cycle Q Clear(g_c), s	14.2	4.9	11.5	12.1	20.4	15.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	425	379	342	1167	712	590
V/C Ratio(X)	0.84	0.34	0.84	0.49	0.81	0.67
Avail Cap(c_a), veh/h	1010	899	842	2577	1604	1329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	22.8	28.2	7.1	20.1	18.6
Incr Delay (d2), s/veh	4.6	0.5	5.5	0.3	2.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	4.6	4.9	3.3	8.0	5.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.8	23.3	33.7	7.4	22.5	20.0
LnGrp LOS	C	C	C	A	C	B
Approach Vol, veh/h	486			861	977	
Approach Delay, s/veh	28.8			16.2	21.5	
Approach LOS	C			B	C	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	51.2			21.7	18.2	33.0
Change Period (Y+Rc), s	5.0			4.0	4.0	5.0
Max Green Setting (Gmax), s	102.0			42.0	35.0	63.0
Max Q Clear Time (g_c+l1), s	14.1			16.2	13.5	22.4
Green Ext Time (p_c), s	3.8			1.5	0.8	5.5
Intersection Summary						
HCM 6th Ctrl Delay			21.0			
HCM 6th LOS			C			

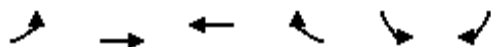
Baseline

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Lanes, Volumes, Timings
3: Center Drive & International Pl

Forecast 2022 Background Peak - AM Peak Hour

07/21/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	3	470	579	14	11	0
Future Volume (vph)	3	470	579	14	11	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	1.00		1.00		1.00	
Frt			0.996			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3368	0	902	0
Flt Permitted	0.363				0.950	
Satd. Flow (perm)	675	3539	3368	0	899	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			3			
Link Speed (mph)		35	35		25	
Link Distance (ft)		687	519		294	
Travel Time (s)		15.6	11.8		6.7	
Confl. Peds. (#/hr)	2			2	2	2
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	5%	75%	100%	0%
Adj. Flow (vph)	3	490	603	15	11	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3	490	618	0	11	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4					
Total Split (s)	18.0	88.0	70.0		32.0	
Total Lost Time (s)	4.5	4.5	4.5		4.5	
Act Effct Green (s)	31.0	36.0	35.0		8.2	
Actuated g/C Ratio	0.80	0.93	0.91		0.21	
v/c Ratio	0.00	0.15	0.20		0.06	
Control Delay	2.7	1.7	3.4		18.1	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	2.7	1.7	3.4		18.1	
LOS	A	A	A		B	
Approach Delay		1.7	3.4		18.1	
Approach LOS		A	A		B	
Queue Length 50th (ft)	0	0	0		1	
Queue Length 95th (ft)	3	62	121		17	
Internal Link Dist (ft)		607	439		214	
Turn Bay Length (ft)	150					
Base Capacity (vph)	1000	3539	3249		758	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.00	0.14	0.19		0.01	

Baseline

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Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 38.6

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.20

Intersection Signal Delay: 2.8

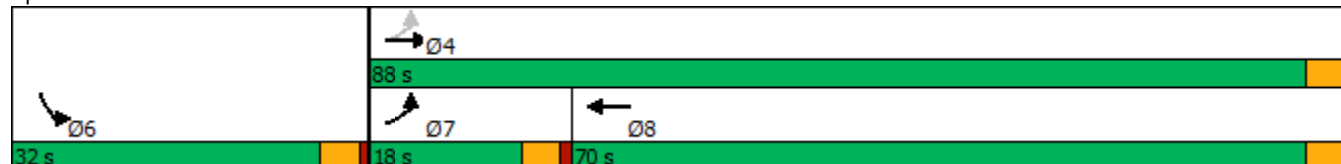
Intersection LOS: A

Intersection Capacity Utilization 29.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Center Drive & International Pl



HCM 6th Signalized Intersection Summary Forecast 2022 Background Peak - AM Peak Hour

4: Center Drive & Civic Drive

07/21/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Traffic Volume (veh/h)	15	43	131	447	356	40
Future Volume (veh/h)	15	43	131	447	356	40
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1737	1737	1856	1856	1841	1841
Adj Flow Rate, veh/h	16	47	144	491	391	44
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	11	11	3	3	4	4
Cap, veh/h	116	103	675	2078	935	104
Arrive On Green	0.07	0.07	0.12	0.59	0.30	0.30
Sat Flow, veh/h	1654	1472	1767	3618	3253	353
Grp Volume(v), veh/h	16	47	144	491	215	220
Grp Sat Flow(s),veh/h/ln	1654	1472	1767	1763	1749	1765
Q Serve(g_s), s	0.2	0.8	1.2	1.8	2.6	2.6
Cycle Q Clear(g_c), s	0.2	0.8	1.2	1.8	2.6	2.6
Prop In Lane	1.00	1.00	1.00			0.20
Lane Grp Cap(c), veh/h	116	103	675	2078	517	522
V/C Ratio(X)	0.14	0.46	0.21	0.24	0.42	0.42
Avail Cap(c_a), veh/h	313	278	1627	11539	4268	4308
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.5	11.8	4.2	2.6	7.5	7.5
Incr Delay (d2), s/veh	0.5	3.1	0.2	0.1	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.0	0.6	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.1	14.9	4.3	2.6	8.0	8.0
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	63			635	435	
Approach Delay, s/veh	14.2			3.0	8.0	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	20.1			6.4	7.8	12.3
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	86.5			5.0	17.5	64.5
Max Q Clear Time (g_c+I1), s	3.8			2.8	3.2	4.6
Green Ext Time (p_c), s	3.6			0.0	0.3	2.8
Intersection Summary						
HCM 6th Ctrl Delay			5.6			
HCM 6th LOS			A			

Baseline

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HCM 6th Signalized Intersection Summary Forecast 2022 Background Peak - AM Peak Hour

5: Center Drive & Palisade Blvd

07/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	22	0	55	0	536	15	35	355	0
Future Volume (veh/h)	0	0	0	22	0	55	0	536	15	35	355	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	0.99		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1900	1870	1900	1870	1870	1826	1826	1900
Adj Flow Rate, veh/h	0	0	0	24	0	61	0	596	17	39	394	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	2	0	2	0	2	2	5	5	0
Cap, veh/h	0	162	0	385	0	132	7	1349	38	65	2030	0
Arrive On Green	0.00	0.00	0.00	0.09	0.00	0.09	0.00	0.38	0.38	0.04	0.59	0.00
Sat Flow, veh/h	0	1900	0	1420	0	1549	1810	3525	100	1739	3561	0
Grp Volume(v), veh/h	0	0	0	24	0	61	0	300	313	39	394	0
Grp Sat Flow(s),veh/h/ln	0	1900	0	1420	0	1549	1810	1777	1849	1739	1735	0
Q Serve(g_s), s	0.0	0.0	0.0	0.4	0.0	1.0	0.0	3.4	3.4	0.6	1.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.4	0.0	1.0	0.0	3.4	3.4	0.6	1.5	0.0
Prop In Lane	0.00		0.00	1.00		1.00	1.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	0	162	0	385	0	132	7	680	708	65	2030	0
V/C Ratio(X)	0.00	0.00	0.00	0.06	0.00	0.46	0.00	0.44	0.44	0.60	0.19	0.00
Avail Cap(c_a), veh/h	0	2087	0	1823	0	1702	1325	3904	4062	1274	7622	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	11.6	0.0	11.9	0.0	6.3	6.3	12.9	2.7	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	2.5	0.0	0.5	0.4	8.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.7	0.7	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	11.7	0.0	14.4	0.0	6.7	6.7	21.4	2.7	0.0
LnGrp LOS	A	A	A	B	A	B	A	A	A	C	A	A
Approach Vol, veh/h	0				85				613			
Approach Delay, s/veh	0.0				13.6				6.7			
Approach LOS					B				A			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	15.0		6.8	0.0	20.5		6.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.6	5.4		0.0	0.0	3.5		3.0				
Green Ext Time (p_c), s	0.1	4.0		0.0	0.0	2.8		0.3				
Intersection Summary												
HCM 6th Ctrl Delay	6.3											
HCM 6th LOS	A											

Baseline

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HCM 6th Signalized Intersection Summary Forecast 2022 Background Peak - AM Peak Hour
6: Center Drive & Bob's Hollow Ln 07/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	23	79	33	8	11	68	338	14	10	196	173
Future Volume (veh/h)	205	23	79	33	8	11	68	338	14	10	196	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.98		0.97	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1885	1885	1885	1826	1826	1826
Adj Flow Rate, veh/h	259	29	100	42	10	14	86	428	18	13	248	219
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	3	3	3	1	1	1	1	1	1	5	5	5
Cap, veh/h	445	49	127	414	103	105	450	1221	51	427	490	403
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.09	0.35	0.35	0.02	0.28	0.28
Sat Flow, veh/h	942	146	378	857	309	314	1795	3497	147	1739	1735	1426
Grp Volume(v), veh/h	388	0	0	66	0	0	86	219	227	13	248	219
Grp Sat Flow(s),veh/h/ln	1465	0	0	1480	0	0	1795	1791	1853	1739	1735	1426
Q Serve(g_s), s	9.8	0.0	0.0	0.0	0.0	0.0	1.4	4.2	4.2	0.2	5.5	6.0
Cycle Q Clear(g_c), s	11.0	0.0	0.0	1.2	0.0	0.0	1.4	4.2	4.2	0.2	5.5	6.0
Prop In Lane	0.67		0.26	0.64		0.21	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	621	0	0	623	0	0	450	625	647	427	490	403
V/C Ratio(X)	0.63	0.00	0.00	0.11	0.00	0.00	0.19	0.35	0.35	0.03	0.51	0.54
Avail Cap(c_a), veh/h	1071	0	0	1059	0	0	1070	2321	2401	1143	2248	1848
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.8	0.0	0.0	10.6	0.0	0.0	9.9	11.2	11.2	11.4	13.9	14.1
Incr Delay (d2), s/veh	1.0	0.0	0.0	0.1	0.0	0.0	0.2	0.3	0.3	0.0	0.8	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	0.0	0.4	0.0	0.0	0.5	1.4	1.4	0.1	1.9	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	0.0	0.0	10.7	0.0	0.0	10.1	11.5	11.5	11.4	14.7	15.2
LnGrp LOS	B	A	A	B	A	A	B	B	B	B	B	B
Approach Vol, veh/h		388			66			532			480	
Approach Delay, s/veh		14.8			10.7			11.3			14.9	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	20.8		20.0	8.6	17.7		20.0				
Change Period (Y+Rc), s	4.6	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.2	6.2		13.0	3.4	8.0		3.2				
Green Ext Time (p_c), s	0.0	2.8		2.4	0.2	3.3		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				13.4								
HCM 6th LOS				B								

Baseline

Synchro 10 Report
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HCM 6th Signalized Intersection Summary Forecast 2022 Background Peak - AM Peak Hour
7: Center Drive & McNeil Street 07/21/2020

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	78	61	404	27	22	26	168	332	75	27	284	29
Future Volume (veh/h)	78	61	404	27	22	26	168	332	75	27	284	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1796	1796	1796	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	84	66	434	29	24	28	181	357	81	29	305	31
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	7	7	7	1	1	1	1	1	1
Cap, veh/h	199	125	847	164	101	667	233	775	173	69	578	58
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.13	0.27	0.27	0.04	0.18	0.18
Sat Flow, veh/h	196	308	1570	112	248	1496	1795	2888	646	1795	3271	329
Grp Volume(v), veh/h	150	0	434	53	0	28	181	219	219	29	166	170
Grp Sat Flow(s),veh/h/ln	504	0	1570	360	0	1496	1795	1791	1743	1795	1791	1810
Q Serve(g_s), s	2.5	0.0	8.3	0.7	0.0	0.5	4.6	4.8	4.9	0.7	4.0	4.0
Cycle Q Clear(g_c), s	17.3	0.0	8.3	16.4	0.0	0.5	4.6	4.8	4.9	0.7	4.0	4.0
Prop In Lane	0.56		1.00	0.55		1.00	1.00		0.37	1.00		0.18
Lane Grp Cap(c), veh/h	324	0	847	265	0	667	233	480	467	69	316	320
V/C Ratio(X)	0.46	0.00	0.51	0.20	0.00	0.04	0.78	0.46	0.47	0.42	0.52	0.53
Avail Cap(c_a), veh/h	878	0	1407	667	0	1202	1734	2376	2312	438	1083	1095
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.1	0.0	7.0	10.7	0.0	7.4	19.8	14.4	14.4	22.1	17.6	17.6
Incr Delay (d2), s/veh	1.0	0.0	0.5	0.4	0.0	0.0	5.5	0.7	0.7	4.0	1.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	1.9	0.3	0.0	0.1	2.0	1.7	1.7	0.4	1.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.2	0.0	7.5	11.1	0.0	7.4	25.3	15.1	15.2	26.2	18.9	19.0
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		584			81			619			365	
Approach Delay, s/veh		9.4			9.8			18.1			19.5	
Approach LOS		A			A			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.9	6.4	17.4		24.9	10.8	13.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		36.0	11.5	62.5		36.0	45.5	28.5				
Max Q Clear Time (g_c+I1), s		18.4	2.7	6.9		19.3	6.6	6.0				
Green Ext Time (p_c), s		0.3	0.0	2.8		2.4	0.5	1.8				
Intersection Summary												
HCM 6th Ctrl Delay			14.9									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary Forecast 2022 Background Peak - AM Peak Hour

8: Center Drive & Wilmington Drive

07/21/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	→	↱	↰	→	↱	↰	↕	↕	↰	↕	↱
Traffic Volume (veh/h)	1	15	36	65	16	56	57	506	215	69	665	6
Future Volume (veh/h)	1	15	36	65	16	56	57	506	215	69	665	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	1	16	38	68	17	58	59	527	224	72	693	6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	359	76	180	378	57	196	509	938	397	490	1437	12
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.06	0.39	0.39	0.07	0.40	0.40
Sat Flow, veh/h	1331	490	1163	1356	370	1263	1795	2432	1029	1795	3638	31
Grp Volume(v), veh/h	1	0	54	68	0	75	59	387	364	72	341	358
Grp Sat Flow(s),veh/h/ln	1331	0	1653	1356	0	1633	1795	1791	1671	1795	1791	1879
Q Serve(g_s), s	0.0	0.0	1.0	1.6	0.0	1.4	0.7	5.9	6.0	0.8	5.0	5.0
Cycle Q Clear(g_c), s	1.4	0.0	1.0	2.6	0.0	1.4	0.7	5.9	6.0	0.8	5.0	5.0
Prop In Lane	1.00		0.70	1.00		0.77	1.00		0.62	1.00		0.02
Lane Grp Cap(c), veh/h	359	0	256	378	0	253	509	690	644	490	707	742
V/C Ratio(X)	0.00	0.00	0.21	0.18	0.00	0.30	0.12	0.56	0.56	0.15	0.48	0.48
Avail Cap(c_a), veh/h	1298	0	1423	1335	0	1405	1427	3083	2876	1391	3083	3234
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	0.0	12.9	14.0	0.0	13.0	5.8	8.4	8.4	5.9	7.9	7.9
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.2	0.0	0.6	0.1	0.7	0.8	0.1	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.3	0.4	0.0	0.5	0.1	1.5	1.5	0.2	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.7	0.0	13.3	14.2	0.0	13.7	5.9	9.1	9.2	6.0	8.4	8.4
LnGrp LOS	B	A	B	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		55			143			810			771	
Approach Delay, s/veh		13.3			13.9			8.9			8.2	
Approach LOS		B			B			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	17.9		9.9	6.7	18.3		9.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.8	8.0		3.4	2.7	7.0		4.6				
Green Ext Time (p_c), s	0.1	5.5		0.3	0.1	4.7		0.6				

Intersection Summary

HCM 6th Ctrl Delay	9.1
HCM 6th LOS	A

Lanes, Volumes, Timings

Forecast 2022 Background - PM Peak Hour

1: Wilimington Dr & Barksdale Ave & Steilacoom Dupont Rd SW

07/21/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	52	18	147	76	535	23	123	232	736	101	51
Future Volume (vph)	38	52	18	147	76	535	23	123	232	736	101	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	125		125	100		75	0		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	0.98	0.99		0.98		0.96	0.99		0.96	0.99	0.99	
Frt		0.961				0.850			0.850		0.983	
Flt Protected	0.950			0.950			0.950			0.950	0.968	
Satd. Flow (prot)	1770	1772	0	1752	1845	1568	1787	1881	1599	1681	1677	0
Flt Permitted	0.950			0.950			0.950			0.950	0.968	
Satd. Flow (perm)	1742	1772	0	1725	1845	1508	1771	1881	1537	1657	1661	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				552			239		6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		355			383			251			690	
Travel Time (s)		8.1			8.7			5.7			15.7	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	39	54	19	152	78	552	24	127	239	759	104	53
Shared Lane Traffic (%)										40%		
Lane Group Flow (vph)	39	73	0	152	78	552	24	127	239	455	461	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8			2			
Total Split (s)	11.0	24.6		23.4	37.0	37.0	25.0	25.0	25.0	50.0	50.0	
Total Lost Time (s)	4.5	4.5		4.5	4.6	4.6	4.5	4.5	4.5	4.5	4.5	
Act Effect Green (s)	7.0	9.9		13.4	18.7	18.7	13.6	13.6	13.6	30.5	30.5	
Actuated g/C Ratio	0.08	0.12		0.16	0.22	0.22	0.16	0.16	0.16	0.36	0.36	
v/c Ratio	0.26	0.33		0.54	0.19	0.72	0.08	0.42	0.53	0.74	0.75	
Control Delay	50.9	39.3		46.1	32.4	9.3	38.9	43.1	10.6	33.3	33.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	50.9	39.3		46.1	32.4	9.3	38.9	43.1	10.6	33.3	33.3	
LOS	D	D		D	C	A	D	D	B	C	C	
Approach Delay		43.3			18.8			22.9			33.3	
Approach LOS		D			B			C			C	
Queue Length 50th (ft)	20	30		73	35	0	11	62	0	207	208	
Queue Length 95th (ft)	67	88		180	89	102	41	152	73	443	447	
Internal Link Dist (ft)		275			303			171			610	
Turn Bay Length (ft)	75			125		125	100		75			
Base Capacity (vph)	153	484		441	797	965	488	514	594	1019	1019	
Starvation Cap Reductn	0	0		0	0	3	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.25	0.15		0.34	0.10	0.57	0.05	0.25	0.40	0.45	0.45	

Baseline

Synchro 10 Report

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Intersection Summary

Area Type: Other

Cycle Length: 123

Actuated Cycle Length: 83.6

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 26.8

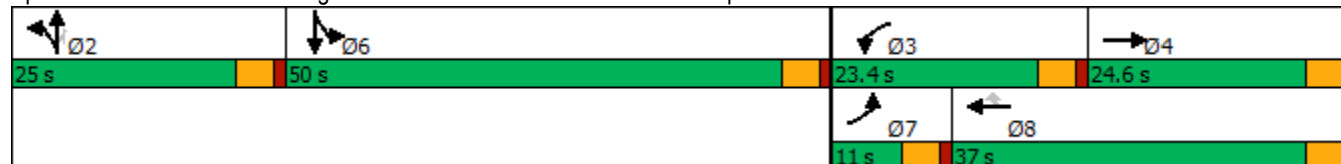
Intersection LOS: C

Intersection Capacity Utilization 60.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Wilimington Dr & Barksdale Ave & Steilacoom Dupont Rd SW



HCM 6th Signalized Intersection Summary

2: Dupont-Steilacoom Rd & Center Drive

Forecast 2022 Background - PM Peak Hour

07/21/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	292	195	145	526	651	471
Future Volume (veh/h)	292	195	145	526	651	471
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1885	1885
Adj Flow Rate, veh/h	317	212	158	572	708	512
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	1	1
Cap, veh/h	395	352	203	1181	879	728
Arrive On Green	0.23	0.23	0.12	0.64	0.47	0.47
Sat Flow, veh/h	1753	1560	1753	1841	1885	1561
Grp Volume(v), veh/h	317	212	158	572	708	512
Grp Sat Flow(s),veh/h/ln	1753	1560	1753	1841	1885	1561
Q Serve(g_s), s	11.6	8.2	5.9	10.9	21.7	17.6
Cycle Q Clear(g_c), s	11.6	8.2	5.9	10.9	21.7	17.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	395	352	203	1181	879	728
V/C Ratio(X)	0.80	0.60	0.78	0.48	0.81	0.70
Avail Cap(c_a), veh/h	1036	922	612	2830	2129	1763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	23.5	29.1	6.3	15.4	14.3
Incr Delay (d2), s/veh	3.8	1.7	6.3	0.3	1.8	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	7.2	2.6	2.7	7.8	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.6	25.1	35.4	6.6	17.2	15.6
LnGrp LOS	C	C	D	A	B	B
Approach Vol, veh/h	529			730	1220	
Approach Delay, s/veh	27.2			12.8	16.5	
Approach LOS	C			B	B	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	48.4			19.3	11.8	36.6
Change Period (Y+Rc), s	5.0			4.0	4.0	5.0
Max Green Setting (Gmax), s	104.0			40.0	23.6	76.4
Max Q Clear Time (g_c+I1), s	12.9			13.6	7.9	23.7
Green Ext Time (p_c), s	3.8			1.7	0.3	7.9
Intersection Summary						
HCM 6th Ctrl Delay			17.7			
HCM 6th LOS			B			

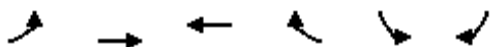
Baseline

Synchro 10 Report
Page 1

Lanes, Volumes, Timings
3: Center Drive & International Pl

Forecast 2022 Background - PM Peak Hour

07/21/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	336	696	6	14	1
Future Volume (vph)	1	336	696	6	14	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	1.00		1.00		1.00	
Frt			0.999		0.992	
Flt Protected	0.950				0.955	
Satd. Flow (prot)	1736	3471	3535	0	1763	0
Flt Permitted	0.309				0.955	
Satd. Flow (perm)	564	3471	3535	0	1760	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			1		1	
Link Speed (mph)		35	35		25	
Link Distance (ft)		687	519		294	
Travel Time (s)		13.4	10.1		8.0	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				4		4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	4%	2%	2%	2%	2%
Adj. Flow (vph)	1	373	773	7	16	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	373	780	0	17	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4					
Total Split (s)	21.0	72.0	51.0		48.0	
Total Lost Time (s)	4.5	4.5	4.5		4.5	
Act Effct Green (s)	32.2	37.0	36.0		8.0	
Actuated g/C Ratio	0.81	0.93	0.91		0.20	
v/c Ratio	0.00	0.12	0.24		0.05	
Control Delay	3.0	1.7	3.5		17.3	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	3.0	1.7	3.5		17.3	
LOS	A	A	A		B	
Approach Delay		1.7	3.5		17.3	
Approach LOS		A	A		B	
Queue Length 50th (ft)	0	0	0		2	
Queue Length 95th (ft)	2	47	154		22	
Internal Link Dist (ft)		607	439		214	
Turn Bay Length (ft)	150					
Base Capacity (vph)	1027	3368	3243		1604	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.00	0.11	0.24		0.01	

Baseline

Synchro 10 Report
Page 1

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 39.7

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.24

Intersection Signal Delay: 3.1

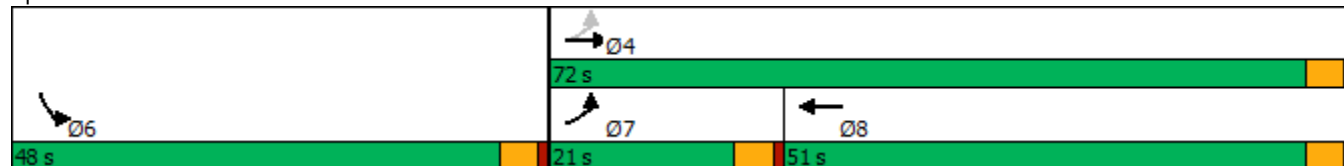
Intersection LOS: A

Intersection Capacity Utilization 31.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Center Drive & International Pl



HCM 6th Signalized Intersection Summary

4: Center Drive & Civic Drive

Forecast 2022 Background - PM Peak Hour

07/21/2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	110	28	359	557	11
Future Volume (veh/h)	34	110	28	359	557	11
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	36	116	29	378	586	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	223	199	512	1975	1268	26
Arrive On Green	0.12	0.12	0.04	0.55	0.35	0.35
Sat Flow, veh/h	1795	1598	1795	3676	3681	73
Grp Volume(v), veh/h	36	116	29	378	292	306
Grp Sat Flow(s),veh/h/ln	1795	1598	1795	1791	1791	1870
Q Serve(g_s), s	0.5	1.9	0.2	1.5	3.5	3.5
Cycle Q Clear(g_c), s	0.5	1.9	0.2	1.5	3.5	3.5
Prop In Lane	1.00	1.00	1.00			0.04
Lane Grp Cap(c), veh/h	223	199	512	1975	633	661
V/C Ratio(X)	0.16	0.58	0.06	0.19	0.46	0.46
Avail Cap(c_a), veh/h	1520	1352	1449	11288	4354	4545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.9	11.5	4.7	3.1	6.9	6.9
Incr Delay (d2), s/veh	0.3	2.7	0.0	0.0	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.8	0.0	0.1	0.8	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.2	14.2	4.7	3.2	7.5	7.4
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	152			407	598	
Approach Delay, s/veh	13.5			3.3	7.5	
Approach LOS	B			A	A	
Timer - Assigned Phs	2		4		5	6
Phs Duration (G+Y+Rc), s	19.8		8.0		5.5	14.3
Change Period (Y+Rc), s	4.5		4.5		4.5	4.5
Max Green Setting (Gmax), s	87.5		23.5		15.5	67.5
Max Q Clear Time (g_c+I1), s	3.5		3.9		2.2	5.5
Green Ext Time (p_c), s	2.7		0.4		0.0	3.9
Intersection Summary						
HCM 6th Ctrl Delay			6.8			
HCM 6th LOS			A			

Baseline

Synchro 10 Report
Page 1

HCM 6th Signalized Intersection Summary

5: Center Drive & Palisade Blvd

Forecast 2022 Background - PM Peak Hour

07/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	7	24	1	29	8	366	33	50	701	4
Future Volume (veh/h)	0	0	7	24	1	29	8	366	33	50	701	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1900	1885	1900	1885	1885	1885	1885	1900
Adj Flow Rate, veh/h	0	0	8	26	1	32	9	398	36	54	762	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	1	0	1	0	1	1	1	1	0
Cap, veh/h	0	0	114	350	4	113	17	1281	115	88	1556	8
Arrive On Green	0.00	0.00	0.07	0.07	0.07	0.07	0.01	0.39	0.39	0.05	0.43	0.43
Sat Flow, veh/h	0	0	1576	1283	49	1564	1810	3315	298	1795	3653	19
Grp Volume(v), veh/h	0	0	8	27	0	32	9	214	220	54	374	392
Grp Sat Flow(s),veh/h/ln	0	0	1576	1332	0	1564	1810	1791	1822	1795	1791	1881
Q Serve(g_s), s	0.0	0.0	0.1	0.5	0.0	0.5	0.1	2.3	2.3	0.8	4.1	4.1
Cycle Q Clear(g_c), s	0.0	0.0	0.1	0.6	0.0	0.5	0.1	2.3	2.3	0.8	4.1	4.1
Prop In Lane	0.00		1.00	0.96		1.00	1.00		0.16	1.00		0.01
Lane Grp Cap(c), veh/h	0	0	114	354	0	113	17	692	704	88	763	801
V/C Ratio(X)	0.00	0.00	0.07	0.08	0.00	0.28	0.51	0.31	0.31	0.61	0.49	0.49
Avail Cap(c_a), veh/h	0	0	1725	1812	0	1711	1320	3919	3988	1310	3919	4117
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	11.9	12.2	0.0	12.0	13.5	5.9	5.9	12.8	5.7	5.7
Incr Delay (d2), s/veh	0.0	0.0	0.3	0.1	0.0	1.4	21.5	0.3	0.3	6.7	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.4	0.4	0.4	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	12.1	12.2	0.0	13.4	35.0	6.1	6.1	19.4	6.2	6.2
LnGrp LOS	A	A	B	B	A	B	C	A	A	B	A	A
Approach Vol, veh/h		8			59			443			820	
Approach Delay, s/veh		12.1			12.9			6.7			7.1	
Approach LOS		B			B			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	15.1		6.5	4.8	16.2		6.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.8	4.3		2.1	2.1	6.1		2.6				
Green Ext Time (p_c), s	0.1	2.7		0.0	0.0	5.3		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			7.2									
HCM 6th LOS			A									

Baseline

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HCM 6th Signalized Intersection Summary
6: Center Drive & Bob's Hollow Ln

Forecast 2022 Background - PM Peak Hour

07/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	10	67	18	20	10	60	221	32	22	457	258
Future Volume (veh/h)	178	10	67	18	20	10	60	221	32	22	457	258
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.98	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	187	11	71	19	21	11	63	233	34	23	481	272
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	1	1	1	1	1	1	1	1	1
Cap, veh/h	378	33	98	228	229	95	423	1259	181	617	789	443
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.07	0.40	0.40	0.03	0.36	0.36
Sat Flow, veh/h	945	129	385	458	899	373	1795	3129	449	1795	2176	1223
Grp Volume(v), veh/h	269	0	0	51	0	0	63	132	135	23	395	358
Grp Sat Flow(s),veh/h/ln	1459	0	0	1731	0	0	1795	1791	1788	1795	1791	1607
Q Serve(g_s), s	6.4	0.0	0.0	0.0	0.0	0.0	0.9	2.1	2.2	0.3	8.0	8.1
Cycle Q Clear(g_c), s	7.4	0.0	0.0	1.0	0.0	0.0	0.9	2.1	2.2	0.3	8.0	8.1
Prop In Lane	0.70		0.26	0.37		0.22	1.00		0.25	1.00		0.76
Lane Grp Cap(c), veh/h	509	0	0	552	0	0	423	721	719	617	650	583
V/C Ratio(X)	0.53	0.00	0.00	0.09	0.00	0.00	0.15	0.18	0.19	0.04	0.61	0.61
Avail Cap(c_a), veh/h	1116	0	0	1217	0	0	1104	2431	2426	1370	2431	2182
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	12.6	0.0	0.0	8.1	8.5	8.5	8.2	11.5	11.5
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.1	0.0	0.0	0.2	0.1	0.1	0.0	0.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	0.4	0.0	0.0	0.3	0.6	0.6	0.1	2.6	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.8	0.0	0.0	12.7	0.0	0.0	8.3	8.6	8.7	8.2	12.4	12.6
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	B	B
Approach Vol, veh/h		269			51			330			776	
Approach Delay, s/veh		15.8			12.7			8.6			12.4	
Approach LOS		B			B			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	22.4		15.7	7.8	20.6		15.7				
Change Period (Y+Rc), s	4.6	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.3	4.2		9.4	2.9	10.1		3.0				
Green Ext Time (p_c), s	0.0	1.6		1.7	0.1	5.6		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				12.2								
HCM 6th LOS				B								

Baseline

Synchro 10 Report
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HCM 6th Signalized Intersection Summary
7: Center Drive & McNeil Street

Forecast 2022 Background - PM Peak Hour

07/21/2020

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	57	47	221	65	81	39	442	293	45	43	447	82
Future Volume (veh/h)	57	47	221	65	81	39	442	293	45	43	447	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1856	1856	1856	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	60	49	233	68	85	41	465	308	47	45	471	86
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	3	3	3	1	1	1	1	1	1
Cap, veh/h	88	49	901	82	73	519	513	1403	211	93	654	118
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.29	0.45	0.45	0.05	0.22	0.22
Sat Flow, veh/h	0	171	1566	0	256	1542	1795	3108	468	1795	3008	545
Grp Volume(v), veh/h	109	0	233	153	0	41	465	176	179	45	279	278
Grp Sat Flow(s),veh/h/ln	171	0	1566	256	0	1542	1795	1791	1785	1795	1791	1763
Q Serve(g_s), s	0.0	0.0	4.8	0.0	0.0	1.2	15.8	3.8	3.9	1.5	9.2	9.3
Cycle Q Clear(g_c), s	18.0	0.0	4.8	18.0	0.0	1.2	15.8	3.8	3.9	1.5	9.2	9.3
Prop In Lane	0.55		1.00	0.44		1.00	1.00		0.26	1.00		0.31
Lane Grp Cap(c), veh/h	137	0	901	155	0	519	513	808	806	93	389	383
V/C Ratio(X)	0.80	0.00	0.26	0.99	0.00	0.08	0.91	0.22	0.22	0.48	0.72	0.73
Avail Cap(c_a), veh/h	137	0	901	155	0	519	552	907	904	181	537	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	0.0	6.9	23.7	0.0	14.4	21.8	10.6	10.6	29.2	23.0	23.1
Incr Delay (d2), s/veh	27.4	0.0	0.2	68.6	0.0	0.1	17.9	0.1	0.1	3.9	2.8	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	1.3	5.2	0.0	0.4	8.5	1.3	1.3	0.7	3.8	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.4	0.0	7.0	92.4	0.0	14.4	39.7	10.7	10.7	33.1	25.8	26.2
LnGrp LOS	D	A	A	F	A	B	D	B	B	C	C	C
Approach Vol, veh/h		342			194			820			602	
Approach Delay, s/veh		21.2			75.9			27.2			26.5	
Approach LOS		C			E			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.5	7.8	33.1		22.5	22.6	18.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	6.4	32.1		18.0	19.5	19.0				
Max Q Clear Time (g_c+I1), s		20.0	3.5	5.9		20.0	17.8	11.3				
Green Ext Time (p_c), s		0.0	0.0	2.0		0.0	0.3	2.0				
Intersection Summary												
HCM 6th Ctrl Delay			30.7									
HCM 6th LOS			C									

Baseline

Synchro 10 Report
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HCM 6th Signalized Intersection Summary 8: Center Drive & Wilmington Drive

Forecast 2022 Background - PM Peak Hour

07/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	15	31	244	26	83	49	677	200	79	633	18
Future Volume (veh/h)	7	15	31	244	26	83	49	677	200	79	633	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	1.00		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	8	16	33	262	28	89	53	728	215	85	681	19
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	421	155	319	494	109	347	430	1073	317	358	1466	41
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.05	0.40	0.40	0.07	0.41	0.41
Sat Flow, veh/h	1254	543	1119	1363	383	1217	1795	2708	800	1795	3555	99
Grp Volume(v), veh/h	8	0	49	262	0	117	53	481	462	85	343	357
Grp Sat Flow(s),veh/h/ln	1254	0	1661	1363	0	1600	1795	1791	1716	1795	1791	1863
Q Serve(g_s), s	0.3	0.0	1.2	9.4	0.0	3.0	0.9	11.9	11.9	1.4	7.5	7.5
Cycle Q Clear(g_c), s	3.3	0.0	1.2	10.6	0.0	3.0	0.9	11.9	11.9	1.4	7.5	7.5
Prop In Lane	1.00		0.67	1.00		0.76	1.00		0.47	1.00		0.05
Lane Grp Cap(c), veh/h	421	0	474	494	0	457	430	710	680	358	738	768
V/C Ratio(X)	0.02	0.00	0.10	0.53	0.00	0.26	0.12	0.68	0.68	0.24	0.46	0.46
Avail Cap(c_a), veh/h	764	0	928	866	0	893	1007	2001	1917	907	2001	2081
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.1	0.0	14.1	18.0	0.0	14.8	8.9	13.4	13.4	9.7	11.5	11.5
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.9	0.0	0.3	0.1	1.1	1.2	0.3	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.4	2.8	0.0	1.0	0.3	4.1	4.0	0.5	2.5	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	0.0	14.2	18.9	0.0	15.1	9.0	14.5	14.6	10.0	11.9	11.9
LnGrp LOS	B	A	B	B	A	B	A	B	B	B	B	B
Approach Vol, veh/h	57			379			996			785		
Approach Delay, s/veh	14.5			17.7			14.3			11.7		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	25.8		19.8	7.2	26.6		19.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	3.4	13.9		5.3	2.9	9.5		12.6				
Green Ext Time (p_c), s	0.2	7.4		0.2	0.1	4.8		1.4				
Intersection Summary												
HCM 6th Ctrl Delay				14.0								
HCM 6th LOS				B								

Baseline

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Lanes, Volumes, Timings

Forecast 2022 with Project - AM Peak Hour

1: Wilimington Dr & Barksdale Ave & Steilacoom Dupont Rd SW

07/21/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	61	25	208	40	733	9	88	122	589	119	46
Future Volume (vph)	57	61	25	208	40	733	9	88	122	589	119	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	125		125	100		75	0		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	0.99	0.99		0.99		0.97	0.99		0.97	0.99	0.99	
Frt		0.956				0.850			0.850		0.982	
Flt Protected	0.950			0.950			0.950			0.950	0.973	
Satd. Flow (prot)	1719	1714	0	1752	1845	1553	1770	1863	1583	1618	1628	0
Flt Permitted	0.950			0.950			0.950			0.950	0.973	
Satd. Flow (perm)	1702	1714	0	1737	1845	1504	1759	1863	1533	1603	1619	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				780			134		6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		355			383			251			690	
Travel Time (s)		8.1			8.7			5.7			15.7	
Confl. Peds. (#/hr)	3		3	3		3	3		3	3		3
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	5%	3%	3%	4%	2%	2%	2%	6%	5%	5%
Adj. Flow (vph)	61	65	27	221	43	780	10	94	130	627	127	49
Shared Lane Traffic (%)										36%		
Lane Group Flow (vph)	61	92	0	221	43	780	10	94	130	401	402	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8			2			
Total Split (s)	14.5	26.5		29.5	24.6	24.6	27.5	27.5	27.5	39.5	39.5	
Total Lost Time (s)	4.5	4.5		4.5	4.6	4.6	4.5	4.5	4.5	4.5	4.5	
Act Effect Green (s)	8.6	10.3		16.8	18.4	18.4	12.2	12.2	12.2	29.2	29.2	
Actuated g/C Ratio	0.10	0.12		0.20	0.22	0.22	0.14	0.14	0.14	0.35	0.35	
v/c Ratio	0.35	0.41		0.64	0.11	0.83	0.04	0.35	0.39	0.72	0.71	
Control Delay	48.0	39.7		43.3	29.9	11.5	39.0	42.5	10.9	35.4	34.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.0	39.7		43.3	29.9	11.5	39.0	42.5	10.9	35.4	34.5	
LOS	D	D		D	C	B	D	D	B	D	C	
Approach Delay		43.0			19.0			24.8			35.0	
Approach LOS		D			B			C			C	
Queue Length 50th (ft)	31	39		111	19	0	5	48	0	187	184	
Queue Length 95th (ft)	88	102		228	52	127	22	114	51	#448	#441	
Internal Link Dist (ft)		275			303			171			610	
Turn Bay Length (ft)	75			125		125	100		75			
Base Capacity (vph)	218	490		557	865	1119	517	544	543	720	727	
Starvation Cap Reductn	0	0		1	0	6	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.28	0.19		0.40	0.05	0.70	0.02	0.17	0.24	0.56	0.55	

Baseline

Synchro 10 Report

Page 1

Intersection Summary

Area Type: Other

Cycle Length: 123

Actuated Cycle Length: 84.4

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 27.0

Intersection LOS: C

Intersection Capacity Utilization 71.0%

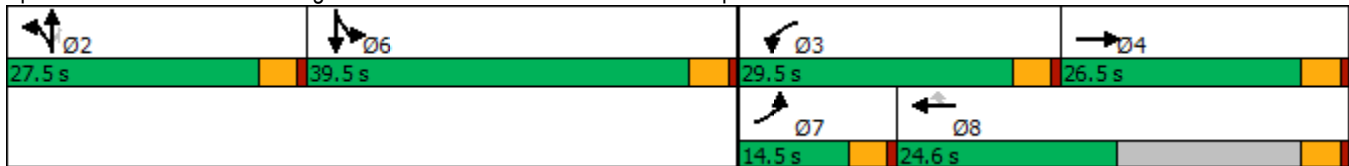
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Wilimington Dr & Barksdale Ave & Steilacoom Dupont Rd SW



HCM 6th Signalized Intersection Summary 2: Dupont-Steilacoom Rd & Center Drive

Forecast 2022 with Project - AM Peak Hour

07/21/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	325	126	385	517	522	412
Future Volume (veh/h)	325	126	385	517	522	412
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1826	1826	1841	1856	1856
Adj Flow Rate, veh/h	361	140	428	574	580	458
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	5	5	4	3	3
Cap, veh/h	410	362	469	1244	679	562
Arrive On Green	0.23	0.23	0.27	0.68	0.37	0.37
Sat Flow, veh/h	1753	1547	1739	1841	1856	1537
Grp Volume(v), veh/h	361	140	428	574	580	458
Grp Sat Flow(s),veh/h/ln	1753	1547	1739	1841	1856	1537
Q Serve(g_s), s	19.8	7.6	23.7	14.6	28.7	26.8
Cycle Q Clear(g_c), s	19.8	7.6	23.7	14.6	28.7	26.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	410	362	469	1244	679	562
V/C Ratio(X)	0.88	0.39	0.91	0.46	0.85	0.81
Avail Cap(c_a), veh/h	705	622	699	1244	1119	927
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	32.1	35.2	7.6	29.1	28.5
Incr Delay (d2), s/veh	6.8	0.7	12.0	0.3	3.6	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	0.1	11.0	4.6	12.5	9.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.6	32.8	47.2	7.9	32.7	31.5
LnGrp LOS	D	C	D	A	C	C
Approach Vol, veh/h	501			1002	1038	
Approach Delay, s/veh	40.5			24.6	32.2	
Approach LOS	D			C	C	
Timer - Assigned Phs	2		4		5	6
Phs Duration (G+Y+Rc), s	72.2		27.3		30.8	41.4
Change Period (Y+Rc), s	5.0		4.0		4.0	5.0
Max Green Setting (Gmax), s	60.0		40.0		40.0	60.0
Max Q Clear Time (g_c+I1), s	16.6		21.8		25.7	30.7
Green Ext Time (p_c), s	3.8		1.5		1.1	5.7
Intersection Summary						
HCM 6th Ctrl Delay			30.9			
HCM 6th LOS			C			

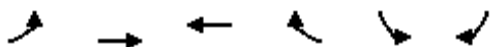
Baseline

Synchro 10 Report
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Lanes, Volumes, Timings
3: Center Drive & International Pl

Forecast 2022 with Project - AM Peak Hour

07/21/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	164	470	579	196	25	6
Future Volume (vph)	164	470	579	196	25	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	1.00		0.99		0.99	
Frt			0.962		0.975	
Flt Protected	0.950				0.961	
Satd. Flow (prot)	1770	3539	3247	0	1103	0
Flt Permitted	0.237				0.961	
Satd. Flow (perm)	441	3539	3247	0	1099	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			54		6	
Link Speed (mph)		35	35		25	
Link Distance (ft)		687	519		294	
Travel Time (s)		13.4	10.1		8.0	
Confl. Peds. (#/hr)	2			2	2	2
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	5%	10%	75%	0%
Adj. Flow (vph)	171	490	603	204	26	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	171	490	807	0	32	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4					
Total Split (s)	27.0	90.0	63.0		30.0	
Total Lost Time (s)	4.5	4.5	4.5		4.5	
Act Effct Green (s)	38.4	41.9	22.6		8.3	
Actuated g/C Ratio	0.79	0.87	0.47		0.17	
v/c Ratio	0.26	0.16	0.52		0.16	
Control Delay	4.0	2.6	12.3		19.6	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	4.0	2.6	12.3		19.6	
LOS	A	A	B		B	
Approach Delay		3.0	12.3		19.6	
Approach LOS		A	B		B	
Queue Length 50th (ft)	0	0	48		5	
Queue Length 95th (ft)	51	63	204		30	
Internal Link Dist (ft)		607	439		214	
Turn Bay Length (ft)	150					
Base Capacity (vph)	1015	3539	3112		628	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.17	0.14	0.26		0.05	

Baseline

Synchro 10 Report
Page 1

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 48.4

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 8.3

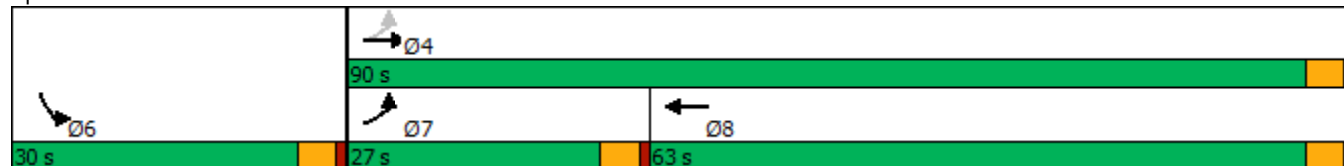
Intersection LOS: A

Intersection Capacity Utilization 47.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Center Drive & International Pl



HCM 6th Signalized Intersection Summary

4: Center Drive & Civic Drive

Forecast 2022 with Project - AM Peak Hour

07/21/2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	43	131	608	362	40
Future Volume (veh/h)	15	43	131	608	362	40
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1737	1737	1856	1856	1841	1841
Adj Flow Rate, veh/h	16	47	144	668	398	44
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	11	11	3	3	4	4
Cap, veh/h	116	103	673	2083	944	104
Arrive On Green	0.07	0.07	0.12	0.59	0.30	0.30
Sat Flow, veh/h	1654	1472	1767	3618	3259	348
Grp Volume(v), veh/h	16	47	144	668	219	223
Grp Sat Flow(s),veh/h/ln	1654	1472	1767	1763	1749	1767
Q Serve(g_s), s	0.2	0.8	1.2	2.5	2.7	2.7
Cycle Q Clear(g_c), s	0.2	0.8	1.2	2.5	2.7	2.7
Prop In Lane	1.00	1.00	1.00			0.20
Lane Grp Cap(c), veh/h	116	103	673	2083	521	527
V/C Ratio(X)	0.14	0.46	0.21	0.32	0.42	0.42
Avail Cap(c_a), veh/h	312	277	1621	11490	4250	4293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.6	11.9	4.2	2.7	7.5	7.5
Incr Delay (d2), s/veh	0.5	3.1	0.2	0.1	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.0	0.6	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.1	15.0	4.3	2.8	8.0	8.0
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	63			812	442	
Approach Delay, s/veh	14.3			3.1	8.0	
Approach LOS	B			A	A	
Timer - Assigned Phs	2		4		5	6
Phs Duration (G+Y+Rc), s	20.2		6.4		7.8	12.4
Change Period (Y+Rc), s	4.5		4.5		4.5	4.5
Max Green Setting (Gmax), s	86.5		5.0		17.5	64.5
Max Q Clear Time (g_c+I1), s	4.5		2.8		3.2	4.7
Green Ext Time (p_c), s	5.2		0.0		0.3	2.8
Intersection Summary						
HCM 6th Ctrl Delay			6.1			
HCM 6th LOS			A			

Baseline

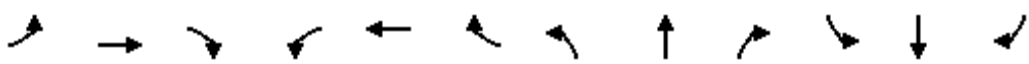
Synchro 10 Report
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HCM 6th Signalized Intersection Summary

5: Center Drive & Palisade Blvd

Forecast 2022 with Project - AM Peak Hour

07/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Traffic Volume (veh/h)	0	0	0	22	0	65	0	687	15	35	361	0
Future Volume (veh/h)	0	0	0	22	0	65	0	687	15	35	361	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	0.99		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1900	1870	1900	1870	1870	1826	1826	1900
Adj Flow Rate, veh/h	0	0	0	24	0	72	0	763	17	39	401	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	2	0	2	0	2	2	5	5	0
Cap, veh/h	0	169	0	368	0	138	6	1498	33	64	2115	0
Arrive On Green	0.00	0.00	0.00	0.09	0.00	0.09	0.00	0.42	0.42	0.04	0.61	0.00
Sat Flow, veh/h	0	1900	0	1421	0	1548	1810	3551	79	1739	3561	0
Grp Volume(v), veh/h	0	0	0	24	0	72	0	382	398	39	401	0
Grp Sat Flow(s), veh/h/ln	0	1900	0	1421	0	1548	1810	1777	1854	1739	1735	0
Q Serve(g_s), s	0.0	0.0	0.0	0.5	0.0	1.3	0.0	4.7	4.7	0.7	1.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.5	0.0	1.3	0.0	4.7	4.7	0.7	1.5	0.0
Prop In Lane	0.00		0.00	1.00		1.00	1.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	0	169	0	368	0	138	6	750	782	64	2115	0
V/C Ratio(X)	0.00	0.00	0.00	0.07	0.00	0.52	0.00	0.51	0.51	0.61	0.19	0.00
Avail Cap(c_a), veh/h	0	1909	0	1669	0	1555	1212	3571	3725	1165	6972	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	12.6	0.0	13.0	0.0	6.4	6.4	14.2	2.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	3.0	0.0	0.5	0.5	8.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1	0.0	0.5	0.0	0.9	1.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	12.7	0.0	16.0	0.0	6.9	6.9	23.0	2.6	0.0
LnGrp LOS	A	A	A	B	A	B	A	A	A	C	A	A
Approach Vol, veh/h	0				96				780			
Approach Delay, s/veh	0.0				15.2				6.9			
Approach LOS					B				A			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	17.1		7.2	0.0	22.7		7.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.7	6.7		0.0	0.0	3.5		3.3				
Green Ext Time (p_c), s	0.1	5.5		0.0	0.0	2.9		0.3				
Intersection Summary												
HCM 6th Ctrl Delay	6.7											
HCM 6th LOS	A											

Baseline

Synchro 10 Report
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HCM 6th Signalized Intersection Summary

6: Center Drive & Bob's Hollow Ln

Forecast 2022 with Project - AM Peak Hour

07/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	208	23	79	33	8	21	68	476	14	10	202	173
Future Volume (veh/h)	208	23	79	33	8	21	68	476	14	10	202	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.98		0.97	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1885	1885	1885	1826	1826	1826
Adj Flow Rate, veh/h	263	29	100	42	10	27	86	603	18	13	256	219
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	3	3	3	1	1	1	1	1	1	5	5	5
Cap, veh/h	448	48	126	358	101	177	447	1240	37	358	496	400
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.09	0.35	0.35	0.02	0.28	0.28
Sat Flow, veh/h	946	142	372	711	298	524	1795	3547	106	1739	1751	1414
Grp Volume(v), veh/h	392	0	0	79	0	0	86	304	317	13	253	222
Grp Sat Flow(s),veh/h/ln	1460	0	0	1533	0	0	1795	1791	1862	1739	1735	1430
Q Serve(g_s), s	9.8	0.0	0.0	0.0	0.0	0.0	1.5	6.2	6.2	0.2	5.7	6.1
Cycle Q Clear(g_c), s	11.2	0.0	0.0	1.5	0.0	0.0	1.5	6.2	6.2	0.2	5.7	6.1
Prop In Lane	0.67		0.26	0.53		0.34	1.00		0.06	1.00		0.99
Lane Grp Cap(c), veh/h	621	0	0	635	0	0	447	626	651	358	491	405
V/C Ratio(X)	0.63	0.00	0.00	0.12	0.00	0.00	0.19	0.49	0.49	0.04	0.52	0.55
Avail Cap(c_a), veh/h	1056	0	0	1067	0	0	1060	2298	2390	1067	2226	1835
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.8	0.0	0.0	10.7	0.0	0.0	10.0	11.9	11.9	11.5	14.1	14.2
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.1	0.0	0.0	0.2	0.6	0.6	0.0	0.8	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	0.0	0.5	0.0	0.0	0.5	2.1	2.1	0.1	2.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9	0.0	0.0	10.8	0.0	0.0	10.2	12.5	12.5	11.6	14.9	15.4
LnGrp LOS	B	A	A	B	A	A	B	B	B	B	B	B
Approach Vol, veh/h		392			79			707			488	
Approach Delay, s/veh		14.9			10.8			12.2			15.0	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	20.9		20.3	8.6	17.8		20.3				
Change Period (Y+Rc), s	4.6	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.2	8.2		13.2	3.5	8.1		3.5				
Green Ext Time (p_c), s	0.0	4.1		2.4	0.2	3.3		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				13.6								
HCM 6th LOS				B								

Baseline

Synchro 10 Report
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HCM 6th Signalized Intersection Summary

7: Center Drive & McNeil Street

Forecast 2022 with Project - AM Peak Hour

07/21/2020

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	118	61	404	27	22	36	168	416	75	27	288	31
Future Volume (veh/h)	118	61	404	27	22	36	168	416	75	27	288	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1796	1796	1796	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	127	66	434	29	24	39	181	447	81	29	310	33
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	7	7	7	1	1	1	1	1	1
Cap, veh/h	131	43	826	122	65	651	233	812	146	73	586	62
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.13	0.27	0.27	0.04	0.18	0.18
Sat Flow, veh/h	0	109	1570	0	165	1496	1795	3015	542	1795	3254	343
Grp Volume(v), veh/h	193	0	434	53	0	39	181	264	264	29	169	174
Grp Sat Flow(s),veh/h/ln	109	0	1570	165	0	1496	1795	1791	1766	1795	1791	1807
Q Serve(g_s), s	0.0	0.0	8.3	0.0	0.0	0.7	4.5	5.8	5.9	0.7	3.9	4.0
Cycle Q Clear(g_c), s	18.0	0.0	8.3	18.0	0.0	0.7	4.5	5.8	5.9	0.7	3.9	4.0
Prop In Lane	0.66		1.00	0.55		1.00	1.00		0.31	1.00		0.19
Lane Grp Cap(c), veh/h	174	0	826	187	0	651	233	483	476	73	323	325
V/C Ratio(X)	1.11	0.00	0.53	0.28	0.00	0.06	0.78	0.55	0.55	0.40	0.52	0.53
Avail Cap(c_a), veh/h	174	0	826	187	0	651	374	883	870	236	745	752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	7.1	11.6	0.0	7.5	19.2	14.3	14.3	21.4	16.9	17.0
Incr Delay (d2), s/veh	101.2	0.0	0.6	0.8	0.0	0.0	5.5	1.0	1.0	3.5	1.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	1.9	0.3	0.0	0.2	2.0	2.0	2.0	0.3	1.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	119.7	0.0	7.8	12.4	0.0	7.5	24.7	15.3	15.3	24.9	18.3	18.3
LnGrp LOS	F	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		627			92			709			372	
Approach Delay, s/veh		42.2			10.3			17.7			18.8	
Approach LOS		D			B			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.5	6.3	16.8		22.5	10.4	12.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	6.0	22.5		18.0	9.5	19.0				
Max Q Clear Time (g_c+I1), s		20.0	2.7	7.9		20.0	6.5	6.0				
Green Ext Time (p_c), s		0.0	0.0	2.7		0.0	0.1	1.5				
Intersection Summary												
HCM 6th Ctrl Delay			26.1									
HCM 6th LOS			C									

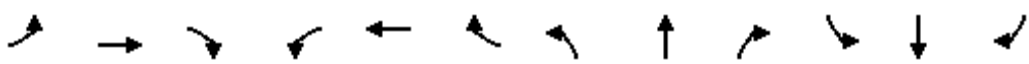
Baseline

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HCM 6th Signalized Intersection Summary 8: Center Drive & Wilmington Drive

Forecast 2022 with Project - AM Peak Hour

07/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	15	36	65	16	73	57	573	215	70	668	6
Future Volume (veh/h)	1	15	36	65	16	73	57	573	215	70	668	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	1	16	38	68	17	76	59	597	224	73	696	6
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	331	75	179	366	46	204	516	1028	385	474	1513	13
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.06	0.41	0.41	0.07	0.42	0.42
Sat Flow, veh/h	1310	490	1163	1356	296	1324	1795	2531	948	1795	3638	31
Grp Volume(v), veh/h	1	0	54	68	0	93	59	422	399	73	343	359
Grp Sat Flow(s),veh/h/ln	1310	0	1652	1356	0	1620	1795	1791	1688	1795	1791	1879
Q Serve(g_s), s	0.0	0.0	1.0	1.7	0.0	1.9	0.7	6.7	6.7	0.8	5.1	5.1
Cycle Q Clear(g_c), s	1.9	0.0	1.0	2.7	0.0	1.9	0.7	6.7	6.7	0.8	5.1	5.1
Prop In Lane	1.00		0.70	1.00		0.82	1.00		0.56	1.00		0.02
Lane Grp Cap(c), veh/h	331	0	254	366	0	249	516	727	685	474	745	781
V/C Ratio(X)	0.00	0.00	0.21	0.19	0.00	0.37	0.11	0.58	0.58	0.15	0.46	0.46
Avail Cap(c_a), veh/h	1202	0	1353	1269	0	1327	1385	2934	2765	1326	2934	3077
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	0.0	13.6	14.8	0.0	13.9	5.7	8.5	8.5	5.9	7.7	7.7
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.2	0.0	0.9	0.1	0.7	0.8	0.1	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.4	0.5	0.0	0.7	0.2	1.8	1.7	0.2	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	0.0	14.0	15.0	0.0	14.8	5.8	9.2	9.2	6.1	8.2	8.1
LnGrp LOS	B	A	B	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h	55			161			880			775		
Approach Delay, s/veh	14.0			14.9			9.0			8.0		
Approach LOS	B			B			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	19.4		10.1	6.8	19.7		10.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.8	8.7		3.9	2.7	7.1		4.7				
Green Ext Time (p_c), s	0.1	6.1		0.3	0.1	4.8		0.7				
Intersection Summary												
HCM 6th Ctrl Delay	9.2											
HCM 6th LOS	A											

Baseline

Synchro 10 Report
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Lanes, Volumes, Timings

Forecast 2022 with Project - PM Peak Hour

1: Wilimington Dr & Barksdale Ave & Steilacoom Dupont Rd SW

07/21/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	52	18	147	76	612	23	138	232	815	101	66
Future Volume (vph)	53	52	18	147	76	612	23	138	232	815	101	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	125		125	100		75	0		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	0.98	0.99		0.98		0.96	0.99		0.96	0.99	0.99	
Frt		0.961				0.850			0.850		0.980	
Flt Protected	0.950			0.950			0.950			0.950	0.968	
Satd. Flow (prot)	1770	1772	0	1752	1845	1553	1787	1881	1599	1665	1659	0
Flt Permitted	0.950			0.950			0.950			0.950	0.968	
Satd. Flow (perm)	1742	1772	0	1725	1845	1494	1772	1881	1537	1641	1644	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				631			239		7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		355			383			251			690	
Travel Time (s)		8.1			8.7			5.7			15.7	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	2%	3%	3%	4%	1%	1%	1%	3%	2%	2%
Adj. Flow (vph)	55	54	19	152	78	631	24	142	239	840	104	68
Shared Lane Traffic (%)										40%		
Lane Group Flow (vph)	55	73	0	152	78	631	24	142	239	504	508	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8			2			
Total Split (s)	11.1	23.7		23.4	36.0	36.0	25.9	25.9	25.9	50.0	50.0	
Total Lost Time (s)	4.5	4.5		4.5	4.6	4.6	4.5	4.5	4.5	4.5	4.5	
Act Effect Green (s)	7.1	10.2		13.6	16.6	16.6	14.3	14.3	14.3	34.8	34.8	
Actuated g/C Ratio	0.08	0.11		0.15	0.19	0.19	0.16	0.16	0.16	0.39	0.39	
v/c Ratio	0.39	0.34		0.57	0.23	0.80	0.08	0.47	0.53	0.78	0.78	
Control Delay	57.2	41.5		49.7	36.2	11.6	40.3	45.8	10.6	35.3	35.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	57.2	41.5		49.7	36.2	11.6	40.3	45.8	10.6	35.3	35.2	
LOS	E	D		D	D	B	D	D	B	D	D	
Approach Delay		48.2			20.6			24.7			35.2	
Approach LOS		D			C			C			D	
Queue Length 50th (ft)	31	34		82	39	0	12	77	0	252	251	
Queue Length 95th (ft)	#101	88		184	90	115	42	168	72	#560	#562	
Internal Link Dist (ft)		275			303			171			610	
Turn Bay Length (ft)	75			125		125	100		75			
Base Capacity (vph)	145	432		411	720	968	475	500	584	942	941	
Starvation Cap Reductn	0	0		0	0	4	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.38	0.17		0.37	0.11	0.65	0.05	0.28	0.41	0.54	0.54	

Baseline

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Intersection Summary

Area Type: Other

Cycle Length: 123

Actuated Cycle Length: 89

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 28.9

Intersection LOS: C

Intersection Capacity Utilization 64.1%

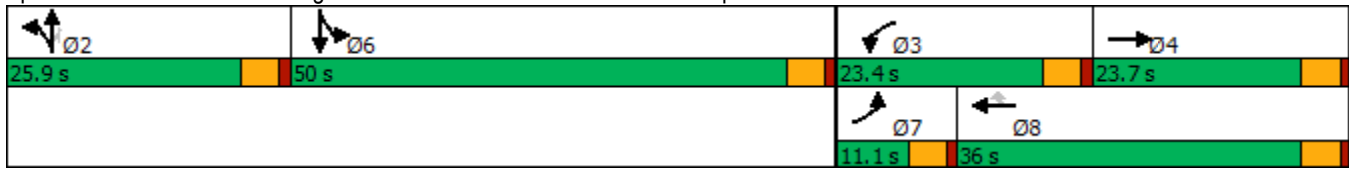
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Wilimington Dr & Barksdale Ave & Steilacoom Dupont Rd SW



HCM 6th Signalized Intersection Summary

2: Dupont-Steilacoom Rd & Center Drive

Forecast 2022 with Project - PM Peak Hour

07/21/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↱	↱	↱
Traffic Volume (veh/h)	340	307	255	526	651	518
Future Volume (veh/h)	340	307	255	526	651	518
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1841	1826	1826	1841	1885	1885
Adj Flow Rate, veh/h	370	334	277	572	708	563
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	5	5	4	1	1
Cap, veh/h	437	386	316	1214	825	683
Arrive On Green	0.25	0.25	0.18	0.66	0.44	0.44
Sat Flow, veh/h	1753	1547	1739	1841	1885	1561
Grp Volume(v), veh/h	370	334	277	572	708	563
Grp Sat Flow(s),veh/h/ln	1753	1547	1739	1841	1885	1561
Q Serve(g_s), s	19.9	20.5	15.3	15.2	33.5	31.4
Cycle Q Clear(g_c), s	19.9	20.5	15.3	15.2	33.5	31.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	437	386	316	1214	825	683
V/C Ratio(X)	0.85	0.87	0.88	0.47	0.86	0.82
Avail Cap(c_a), veh/h	708	625	562	1934	1295	1072
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	35.6	39.4	8.3	25.1	24.5
Incr Delay (d2), s/veh	5.3	7.2	7.6	0.3	3.6	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	16.8	6.9	4.9	14.3	11.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.6	42.8	47.0	8.6	28.7	27.6
LnGrp LOS	D	D	D	A	C	C
Approach Vol, veh/h	704			849	1271	
Approach Delay, s/veh	41.7			21.1	28.2	
Approach LOS	D			C	C	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	70.3			28.7	22.0	48.3
Change Period (Y+Rc), s	5.0			4.0	4.0	5.0
Max Green Setting (Gmax), s	104.0			40.0	32.0	68.0
Max Q Clear Time (g_c+I1), s	17.2			22.5	17.3	35.5
Green Ext Time (p_c), s	3.8			2.2	0.7	7.8
Intersection Summary						
HCM 6th Ctrl Delay			29.4			
HCM 6th LOS			C			

Baseline

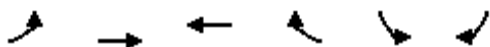
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HCM 6th Signalized Intersection Summary

3: Center Drive & International Pl

Forecast 2022 with Project - PM Peak Hour

07/21/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	143	336	696	163	174	146
Future Volume (veh/h)	143	336	696	163	174	146
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1841	1841	1870	1856	1856	1870
Adj Flow Rate, veh/h	159	373	773	181	193	162
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	4	4	2	3	3	2
Cap, veh/h	386	1988	1131	265	236	198
Arrive On Green	0.09	0.57	0.40	0.40	0.26	0.26
Sat Flow, veh/h	1753	3589	2935	665	900	755
Grp Volume(v), veh/h	159	373	483	471	356	0
Grp Sat Flow(s),veh/h/ln	1753	1749	1777	1730	1660	0
Q Serve(g_s), s	2.5	2.7	11.9	11.9	10.7	0.0
Cycle Q Clear(g_c), s	2.5	2.7	11.9	11.9	10.7	0.0
Prop In Lane	1.00			0.38	0.54	0.46
Lane Grp Cap(c), veh/h	386	1988	707	689	435	0
V/C Ratio(X)	0.41	0.19	0.68	0.68	0.82	0.00
Avail Cap(c_a), veh/h	815	4521	1559	1519	1331	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.2	5.5	13.2	13.2	18.4	0.0
Incr Delay (d2), s/veh	0.7	0.0	1.2	1.2	3.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.7	4.0	3.9	4.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.9	5.6	14.4	14.4	22.2	0.0
LnGrp LOS	A	A	B	B	C	A
Approach Vol, veh/h		532	954		356	
Approach Delay, s/veh		6.9	14.4		22.2	
Approach LOS		A	B		C	
Timer - Assigned Phs			4		6	7
Phs Duration (G+Y+Rc), s			34.6		18.4	25.6
Change Period (Y+Rc), s			4.5		4.5	4.5
Max Green Setting (Gmax), s			68.5		42.5	17.5
Max Q Clear Time (g_c+I1), s			4.7		12.7	4.5
Green Ext Time (p_c), s			2.6		1.2	0.3
Intersection Summary						
HCM 6th Ctrl Delay			13.7			
HCM 6th LOS			B			

Baseline

Synchro 10 Report
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HCM 6th Signalized Intersection Summary

4: Center Drive & Civic Drive

Forecast 2022 with Project - PM Peak Hour

07/21/2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	110	28	501	702	11
Future Volume (veh/h)	34	110	28	501	702	11
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	36	116	29	527	739	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	213	190	478	2099	1452	24
Arrive On Green	0.12	0.12	0.04	0.59	0.40	0.40
Sat Flow, veh/h	1795	1598	1795	3676	3699	59
Grp Volume(v), veh/h	36	116	29	527	367	384
Grp Sat Flow(s),veh/h/ln	1795	1598	1795	1791	1791	1873
Q Serve(g_s), s	0.5	2.1	0.2	2.2	4.7	4.7
Cycle Q Clear(g_c), s	0.5	2.1	0.2	2.2	4.7	4.7
Prop In Lane	1.00	1.00	1.00			0.03
Lane Grp Cap(c), veh/h	213	190	478	2099	721	754
V/C Ratio(X)	0.17	0.61	0.06	0.25	0.51	0.51
Avail Cap(c_a), veh/h	1384	1232	1327	10282	3966	4147
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.1	12.8	4.6	3.1	6.8	6.8
Incr Delay (d2), s/veh	0.4	3.2	0.1	0.1	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.0	0.0	0.1	1.0	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.4	15.9	4.6	3.1	7.4	7.4
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	152			556	751	
Approach Delay, s/veh	15.1			3.2	7.4	
Approach LOS	B			A	A	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	22.4			8.1	5.6	16.8
Change Period (Y+Rc), s	4.5			4.5	4.5	4.5
Max Green Setting (Gmax), s	87.5			23.5	15.5	67.5
Max Q Clear Time (g_c+I1), s	4.2			4.1	2.2	6.7
Green Ext Time (p_c), s	3.9			0.4	0.0	5.2
Intersection Summary						
HCM 6th Ctrl Delay			7.1			
HCM 6th LOS			A			

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HCM 6th Signalized Intersection Summary

5: Center Drive & Palisade Blvd

Forecast 2022 with Project - PM Peak Hour

07/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	7	24	1	38	8	499	33	59	837	4
Future Volume (veh/h)	0	0	7	24	1	38	8	499	33	59	837	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.98	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1900	1885	1900	1885	1885	1885	1885	1900
Adj Flow Rate, veh/h	0	0	8	26	1	41	9	542	36	64	910	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	1	0	1	0	1	1	1	1	0
Cap, veh/h	0	0	119	330	4	119	17	1445	96	99	1719	8
Arrive On Green	0.00	0.00	0.08	0.08	0.08	0.08	0.01	0.42	0.42	0.05	0.47	0.47
Sat Flow, veh/h	0	0	1575	1289	50	1562	1810	3403	226	1795	3657	16
Grp Volume(v), veh/h	0	0	8	27	0	41	9	285	293	64	446	468
Grp Sat Flow(s),veh/h/ln	0	0	1575	1338	0	1562	1810	1791	1838	1795	1791	1882
Q Serve(g_s), s	0.0	0.0	0.1	0.5	0.0	0.8	0.2	3.3	3.3	1.1	5.3	5.3
Cycle Q Clear(g_c), s	0.0	0.0	0.1	0.7	0.0	0.8	0.2	3.3	3.3	1.1	5.3	5.3
Prop In Lane	0.00		1.00	0.96		1.00	1.00		0.12	1.00		0.01
Lane Grp Cap(c), veh/h	0	0	119	334	0	119	17	761	781	99	842	885
V/C Ratio(X)	0.00	0.00	0.07	0.08	0.00	0.35	0.52	0.37	0.38	0.65	0.53	0.53
Avail Cap(c_a), veh/h	0	0	1555	1635	0	1543	1192	3538	3630	1182	3538	3717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	13.0	13.4	0.0	13.3	15.0	6.0	6.0	14.1	5.7	5.7
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.1	0.0	1.7	21.7	0.3	0.3	7.0	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.2	0.0	0.3	0.2	0.6	0.7	0.5	0.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	13.3	13.5	0.0	15.0	36.7	6.3	6.3	21.0	6.2	6.2
LnGrp LOS	A	A	B	B	A	B	D	A	A	C	A	A
Approach Vol, veh/h	8				68				587		978	
Approach Delay, s/veh	13.3				14.4				6.7		7.2	
Approach LOS	B				B				A		A	
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	6.2	17.4	6.8		4.8	18.8	6.8					
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5					
Max Green Setting (Gmax), s	20.0	60.0	30.0		20.0	60.0	30.0					
Max Q Clear Time (g_c+I1), s	3.1	5.3	2.1		2.2	7.3	2.8					
Green Ext Time (p_c), s	0.1	3.8	0.0		0.0	6.8	0.2					
Intersection Summary												
HCM 6th Ctrl Delay			7.3									
HCM 6th LOS			A									

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HCM 6th Signalized Intersection Summary

6: Center Drive & Bob's Hollow Ln

Forecast 2022 with Project - PM Peak Hour

07/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	187	10	67	18	20	13	60	342	32	25	581	267
Future Volume (veh/h)	187	10	67	18	20	13	60	342	32	25	581	267
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.98	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	197	11	71	19	21	14	63	360	34	26	612	281
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	1	1	1	1	1	1	1	1	1
Cap, veh/h	374	28	95	209	214	113	388	1419	133	570	932	428
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.07	0.43	0.43	0.04	0.40	0.40
Sat Flow, veh/h	977	110	371	430	839	444	1795	3300	310	1795	2353	1080
Grp Volume(v), veh/h	279	0	0	54	0	0	63	194	200	26	466	427
Grp Sat Flow(s),veh/h/ln	1457	0	0	1714	0	0	1795	1791	1818	1795	1791	1642
Q Serve(g_s), s	7.4	0.0	0.0	0.0	0.0	0.0	1.0	3.4	3.5	0.4	10.4	10.4
Cycle Q Clear(g_c), s	8.6	0.0	0.0	1.1	0.0	0.0	1.0	3.4	3.5	0.4	10.4	10.4
Prop In Lane	0.71		0.25	0.35		0.26	1.00		0.17	1.00		0.66
Lane Grp Cap(c), veh/h	496	0	0	536	0	0	388	770	782	570	709	650
V/C Ratio(X)	0.56	0.00	0.00	0.10	0.00	0.00	0.16	0.25	0.26	0.05	0.66	0.66
Avail Cap(c_a), veh/h	1003	0	0	1093	0	0	992	2186	2219	1235	2186	2004
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	0.0	14.1	0.0	0.0	8.5	9.0	9.0	8.1	12.1	12.1
Incr Delay (d2), s/veh	1.0	0.0	0.0	0.1	0.0	0.0	0.2	0.2	0.2	0.0	1.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	0.4	0.0	0.0	0.3	1.1	1.1	0.1	3.4	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	0.0	14.2	0.0	0.0	8.7	9.1	9.1	8.1	13.2	13.3
LnGrp LOS	B	A	A	B	A	A	A	A	A	A	B	B
Approach Vol, veh/h		279			54			457			919	
Approach Delay, s/veh		17.7			14.2			9.1			13.1	
Approach LOS		B			B			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	25.7		17.0	8.1	24.1		17.0				
Change Period (Y+Rc), s	4.6	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	2.4	5.5		10.6	3.0	12.4		3.1				
Green Ext Time (p_c), s	0.0	2.4		1.7	0.1	7.0		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				12.8								
HCM 6th LOS				B								

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HCM 6th Signalized Intersection Summary
7: Center Drive & McNeil Street

Forecast 2022 with Project - PM Peak Hour

07/21/2020

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	92	47	221	65	81	48	442	367	45	52	523	118
Future Volume (veh/h)	92	47	221	65	81	48	442	367	45	52	523	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1856	1856	1856	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	97	49	233	68	85	51	465	386	47	55	551	124
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	3	3	3	1	1	1	1	1	1
Cap, veh/h	90	29	877	78	70	509	508	1499	181	103	698	156
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.28	0.47	0.47	0.06	0.24	0.24
Sat Flow, veh/h	0	106	1566	0	256	1541	1795	3206	387	1795	2886	647
Grp Volume(v), veh/h	146	0	233	153	0	51	465	214	219	55	341	334
Grp Sat Flow(s),veh/h/ln	106	0	1566	256	0	1541	1795	1791	1802	1795	1791	1741
Q Serve(g_s), s	0.0	0.0	5.2	0.0	0.0	1.5	16.6	4.8	4.9	2.0	11.8	11.9
Cycle Q Clear(g_c), s	18.0	0.0	5.2	18.0	0.0	1.5	16.6	4.8	4.9	2.0	11.8	11.9
Prop In Lane	0.66		1.00	0.44		1.00	1.00		0.21	1.00		0.37
Lane Grp Cap(c), veh/h	119	0	877	148	0	509	508	837	843	103	433	421
V/C Ratio(X)	1.23	0.00	0.27	1.03	0.00	0.10	0.91	0.26	0.26	0.53	0.79	0.79
Avail Cap(c_a), veh/h	119	0	877	148	0	509	528	867	872	173	513	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.9	0.0	7.7	25.3	0.0	15.4	23.0	10.7	10.7	30.4	23.5	23.6
Incr Delay (d2), s/veh	155.6	0.0	0.2	83.3	0.0	0.1	20.2	0.2	0.2	4.2	6.8	7.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	1.4	5.8	0.0	0.5	9.2	1.7	1.7	0.9	5.4	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	184.5	0.0	7.9	108.6	0.0	15.5	43.2	10.8	10.9	34.6	30.3	30.9
LnGrp LOS	F	A	A	F	A	B	D	B	B	C	C	C
Approach Vol, veh/h		379			204			898			730	
Approach Delay, s/veh		75.9			85.3			27.6			30.9	
Approach LOS		E			F			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		22.5	8.3	35.5		22.5	23.3	20.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0	6.4	32.1		18.0	19.5	19.0				
Max Q Clear Time (g_c+I1), s		20.0	4.0	6.9		20.0	18.6	13.9				
Green Ext Time (p_c), s		0.0	0.0	2.5		0.0	0.2	1.8				
Intersection Summary												
HCM 6th Ctrl Delay			42.3									
HCM 6th LOS			D									

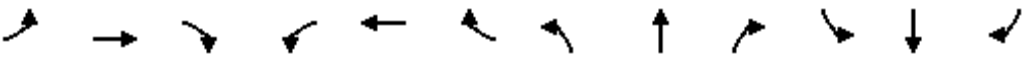
Baseline

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HCM 6th Signalized Intersection Summary 8: Center Drive & Wilmington Drive

Forecast 2022 with Project - PM Peak Hour

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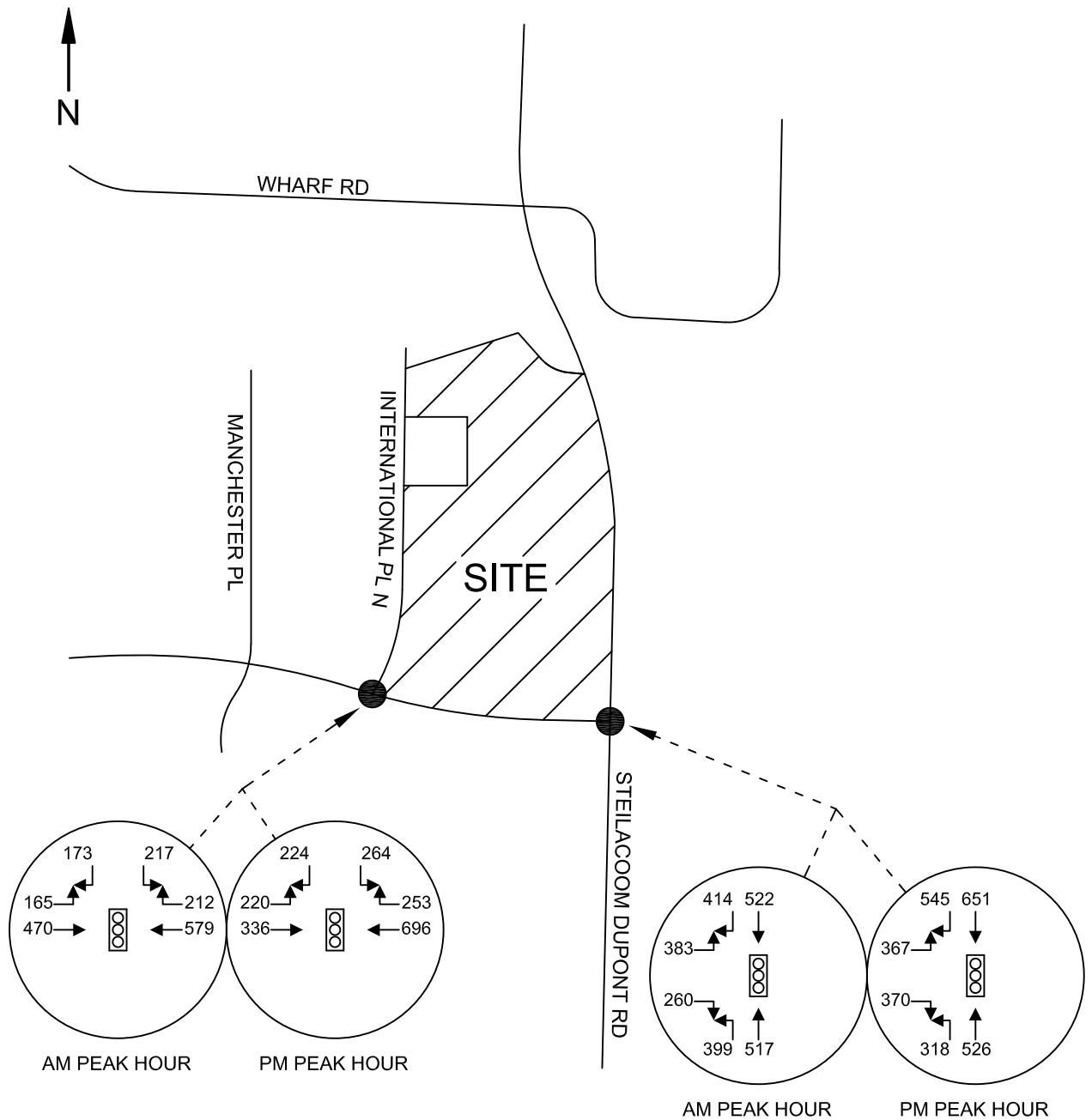
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	15	31	244	26	98	49	736	200	94	694	18
Future Volume (veh/h)	7	15	31	244	26	98	49	736	200	94	694	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	1.00		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	8	16	33	262	28	105	53	791	215	101	746	19
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	393	153	315	480	94	353	415	1139	310	351	1540	39
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.05	0.41	0.41	0.07	0.43	0.43
Sat Flow, veh/h	1237	542	1119	1363	335	1255	1795	2766	752	1795	3565	91
Grp Volume(v), veh/h	8	0	49	262	0	133	53	512	494	101	375	390
Grp Sat Flow(s),veh/h/ln	1237	0	1661	1363	0	1590	1795	1791	1727	1795	1791	1865
Q Serve(g_s), s	0.3	0.0	1.2	10.0	0.0	3.7	0.9	13.4	13.4	1.8	8.6	8.6
Cycle Q Clear(g_c), s	4.0	0.0	1.2	11.3	0.0	3.7	0.9	13.4	13.4	1.8	8.6	8.6
Prop In Lane	1.00		0.67	1.00		0.79	1.00		0.44	1.00		0.05
Lane Grp Cap(c), veh/h	393	0	467	480	0	447	415	738	711	351	774	806
V/C Ratio(X)	0.02	0.00	0.10	0.55	0.00	0.30	0.13	0.69	0.69	0.29	0.48	0.48
Avail Cap(c_a), veh/h	696	0	875	814	0	837	955	1886	1818	856	1886	1964
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	0.0	15.2	19.3	0.0	16.1	9.0	13.8	13.8	10.0	11.6	11.6
Incr Delay (d2), s/veh	0.0	0.0	0.1	1.0	0.0	0.4	0.1	1.2	1.2	0.4	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.5	3.1	0.0	1.3	0.3	4.7	4.5	0.6	2.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	15.3	20.3	0.0	16.4	9.2	15.0	15.0	10.5	12.1	12.1
LnGrp LOS	B	A	B	C	A	B	A	B	B	B	B	B
Approach Vol, veh/h	57			395			1059			866		
Approach Delay, s/veh	15.6			19.0			14.7			11.9		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	28.0		20.5	7.3	29.1		20.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.0	60.0		30.0	20.0	60.0		30.0				
Max Q Clear Time (g_c+I1), s	3.8	15.4		6.0	2.9	10.6		13.3				
Green Ext Time (p_c), s	0.2	8.0		0.2	0.1	5.3		1.5				
Intersection Summary												
HCM 6th Ctrl Delay	14.4											
HCM 6th LOS	B											

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APPENDIX

QUEUING ANALYSIS



HEATH & ASSOCIATES
TRAFFIC AND CIVIL ENGINEERING

SNOW BLOSSOM FULFILLMENT CENTER
FORECAST 2022 PEAK HOUR VOLUMES - PEAK SEASON QUEUING
FIGURE L

Intersection: 3: Center Drive & Steilacoom-Dupont Rd

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	479	105	275	1318	1054	250
Average Queue (ft)	290	47	267	854	776	226
95th Queue (ft)	438	88	303	1540	1258	320
Link Distance (ft)	1070	1070		1274	1004	
Upstream Blk Time (%)				14	23	
Queuing Penalty (veh)				0	0	
Storage Bay Dist (ft)			250			225
Storage Blk Time (%)			40	1	37	2
Queuing Penalty (veh)			227	4	168	9

Intersection: 4: Center Drive & International Place

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (ft)	117	101	38	151	208	104
Average Queue (ft)	52	22	9	42	77	38
95th Queue (ft)	92	66	32	106	150	89
Link Distance (ft)		919	919	1070	1070	319
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	200					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 408

Intersection: 3: Center Drive & Steilacoom-Dupont Rd

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	657	389	275	1333	1035	250
Average Queue (ft)	419	139	270	1157	672	214
95th Queue (ft)	725	339	296	1660	1152	326
Link Distance (ft)	1070	1070		1274	1004	
Upstream Blk Time (%)				46	11	
Queuing Penalty (veh)				0	0	
Storage Bay Dist (ft)			250			225
Storage Blk Time (%)			54	0	33	0
Queuing Penalty (veh)			306	2	149	2

Intersection: 4: Center Drive & International Place

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (ft)	152	153	140	256	279	316
Average Queue (ft)	69	71	58	116	152	176
95th Queue (ft)	124	129	112	222	261	290
Link Distance (ft)		919	919	1070	1070	319
Upstream Blk Time (%)						1
Queuing Penalty (veh)						0
Storage Bay Dist (ft)	200					
Storage Blk Time (%)	0					
Queuing Penalty (veh)	1					

Network Summary

Network wide Queuing Penalty: 460

Intersection: 3: Center Drive & Steilacoom-Dupont Rd

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	503	335	274	592	1048	250
Average Queue (ft)	283	154	221	225	978	227
95th Queue (ft)	433	270	308	467	1240	318
Link Distance (ft)	1070	1070		1274	1004	
Upstream Blk Time (%)					39	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)			250			225
Storage Blk Time (%)			10	2	36	1
Queuing Penalty (veh)			56	5	201	8

Intersection: 4: Center Drive & International Place

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (ft)	140	123	109	245	275	319
Average Queue (ft)	66	49	49	123	156	157
95th Queue (ft)	113	102	95	214	254	280
Link Distance (ft)		919	919	1070	1070	319
Upstream Blk Time (%)						0
Queuing Penalty (veh)						0
Storage Bay Dist (ft)	200					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 270

Intersection: 3: Center Drive & Steilacoom-Dupont Rd

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	494	330	275	1107	1049	250
Average Queue (ft)	301	182	255	446	980	229
95th Queue (ft)	458	299	311	954	1229	315
Link Distance (ft)	1070	1070		1274	1004	
Upstream Blk Time (%)				1	42	
Queuing Penalty (veh)				0	0	
Storage Bay Dist (ft)			250			225
Storage Blk Time (%)			26	2	39	2
Queuing Penalty (veh)			151	6	233	15

Intersection: 4: Center Drive & International Place

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (ft)	196	132	124	264	308	365
Average Queue (ft)	95	46	48	142	180	297
95th Queue (ft)	157	97	101	246	290	410
Link Distance (ft)		919	919	1070	1070	319
Upstream Blk Time (%)						39
Queuing Penalty (veh)						0
Storage Bay Dist (ft)	200					
Storage Blk Time (%)	0					
Queuing Penalty (veh)	1					

Network Summary

Network wide Queuing Penalty: 406



CITY OF DUPONT

Department of Community Development
1700 Civic Drive, DuPont, WA 98327
Telephone: (253) 964-8121
www.dupontwa.gov

October 1, 2020

Sent via email only to: beldridge@barghausen.com

Ben Eldridge
Barghausen Consulting Engineers, Inc.
18215 72nd Ave South
Kent, WA 98032

Subject: NW Logistics Center 2 Parking Expansion - Applications for PLNG2020-016 (Minor Site Plan Amendment), and SEPA2020-001 (SEPA Environmental Review)
Notice of Complete Application

Dear Mr. Eldridge:

On September 29, 2020, we received the following information related to your application for a Minor Site Plan Amendment and SEPA Review:

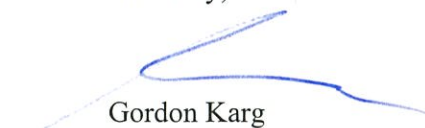
- Land Use Application Form dated September 28, 2020
- Cover Letter prepared by Barghausen Consulting Engineers dated September 28, 2020
- Architectural Site Plan prepared by Mackenzie dated September 25, 2020
- Traffic Impact Analysis prepared by Heath Associates dated September 21, 2020

In your cover letter you state that all other application materials associated with the previously approved Type II Major Site Plan Amendment, Administrative Variance and Lot Line Elimination (PLNG2020-012, -013, -014) and SEPA MDNS (SEPA 2020-001) will remain applicable.

Your application is now complete for processing.

Per DMC 25.175.010(7)(b), permits/approvals for which SEPA environmental review has previously been completed in connection with other project permits, are excluded from the Notice of Application and Notice of Decision requirements. We will let you know if we have any questions or require additional information prior to issuance of the land use decision.

Sincerely,



Gordon Karg
Acting City Administrator

**Attachment 2.a. Notice of Complete Application dated
October 1, 2020.**

Cc: Brian Mattson, Panattoni Development Company via email: bmattson@panattoni.com
File No. PLNG2020-016, -012, -013, -014, SEPA2020-001
Bill Anderson, City of DuPont Building Official
Mike Turner, City of DuPont Fire Marshal
Fred Foreman, City of DuPont Public Works
Scott Hein, City of DuPont Public Works
Dominic Miller, Gray & Osborne, Inc. (representing the City of DuPont)
Lisa Klein, AHBL, Inc. (representing the City of DuPont)



CITY OF DUPONT

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ADDENDUM

SEPA ENVIRONMENTAL POLICY ACT

MITIGATED DETERMINATION OF NONSIGNIFICANCE

Northwest Logistics Center II Parking Expansion

The City of DuPont is issuing an Addendum to the SEPA Determination issued on September 18, 2020 on a proposal for modifications to a partially developed site. The Addendum is issued to correct the overall building size, which does not change the analysis of significant impacts or require modifications to the SEPA Mitigation Measures. Project changes are noted in underlined text.

City File Number: SEPA2020-001

Related File Numbers: PLNG2020-016 (Type I Minor Site Plan Amendment), PLNG2020-012 (Type II Major Site Plan Amendment), -013 (Type I Administrative Variance), -014 (Type I Lot Line Elimination)

Description of proposal (changes underlined): A proposed modification to a previously approved and constructed development to modify building space, construct a new guard house, expand and reconfigure parking, and add the 5.3-acre lot adjacent to the north of the Northwest Logistics Center II site to the project. The changes require approval of a Type II Major Site Plan Amendment (PLNG2020-012), administrative variance (PLNG2020-013), a boundary line adjustment to eliminate a lot line (PLNG2020-014), and SEPA Environmental Review (SEPA2020-001) and Type I Minor Site Plan Amendment (PLNG2020-016). Only the changed aspects of the proposal are up for review.

The lot line elimination would add 5.3 acres to the existing 32-acre site for a total of 37.3 acres. The parking reconfiguration and expansion of the north parking area will add 498 vehicle parking spaces and reduce trailer storage spaces by 47. In total, the proposal will provide 912 vehicle parking spaces and 77 trailer storage spaces. The proposal will also include clearing and grading, storm drainage facilities, and the addition of a 277 square foot guard shack to be located in the southeast corner of the site. Tenant improvements inside the building include adding two interior mezzanines for a total of 168,565 square feet for storing flammable and combustible liquid and aerosol products. The total floor area of the building after the addition will be 797,205 square feet. Roadway improvements will be provided along the frontage of International Place North.

Project Location: Northeast corner of International Place and Center Drive, Pierce County Assessor's Parcel Numbers 300039-0011 and 300039-0282. The project is located within a portion of the SW quarter of Section 24, Township 19 North, Range 1 East and the NW quarter of Section 25, Township 19 North, Range 1 East.

Proponent: Panattoni Development Company, Inc.
1821 Dock Street, Suite 100
Tacoma, WA 98402

Attachment 2.b. SEPA Addendum dated
October 5, 2020.

Lead Agency: City of DuPont

Responsible Official: Andy Takata
City Administrator
City of DuPont

Contact Information: Janet Howald, City of DuPont | 1700 Civic Drive, DuPont, WA 98327 | 253-964-8121

SEPA Environmental Review Process: The City issued a SEPA Mitigated Determination of Non-significance (SEPA MDNS) on September 18, 2020 that included 15 mitigation measures. The applicant has filed for a minor site plan amendment (PLNG2020-016) to correct the size of the interior building space. SEPA regulations allow for a SEPA addendum to be prepared when there is not a substantial change in the analysis of significant impacts (WAC 197-11-600(4)(C)). An addendum is defined the State's SEPA Rules as follows:

An environmental document used to provide additional information or analysis that does not substantially change the analysis of significant impacts and alternatives in the existing environmental document.

The Responsible Official has reviewed the additional information and determined that the increased building size does not change the evaluation of the proposal's impacts. The building improvements are to the interior of the existing building for product storage purposes and do not require other site modifications. The applicant submitted a revised Traffic Impact Analysis dated September 21, 2020 which did not increase or modify the anticipated trip generation or impacts to City streets or intersections. The City finds the changes do not substantially change the analysis of significant impacts and alternatives in the existing environmental document.

If you have questions, please contact Janet Howald, City of DuPont at 253-964-8121.

SEPA Responsible Official Signature:



Andy Takata
City Administrator
City of DuPont

10/5/2020
Date

Issue Date: October 5, 2020

Parties of Record:

Applicant: Brian Mattson, Panattoni Development Company, Inc.
Eva Barber, Washington State Department of Ecology, Southwest Regional Office
(evba461@ECY.WA.GOV)
Charles S. Markham, JBLM DPW (Charles.s.markham2.civ@mail.mil)
Stephanie Jolivet, DAHP: stephanie.jolivet@dahp.wa.gov
Brad Beach, Annette "Nettsie" Bullchild, and Jeremy "Badoldman" Perkuhn, Nisqually Indian
Tribe: beach.brad@nisqually-nsn.gov; bullchild.annette@nisqually-nsn.gov;
badoldman.jp@nisqually-nsn.gov

Distributed to the Attached List



City of DuPont

SEPA Checklist

303 Barksdale Avenue
DuPont, WA 98327

phone 253-912-5393
fax 253-964-1455

City File Number: _____

STATE ENVIRONMENTAL POLICY ACT ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21 C, RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions to Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

A BACKGROUND

1. Name of proposed project, if applicable:

Northwest Logistics Center 2

2. Name of applicant:

Brian Mattson

3. Address and phone number of applicant and contact person:

Applicant:
Brian Mattson
Panattoni Development Company
1821 Dock Street, Suite 100
Tacoma, WA 98402
(206) 838-6182

Contact:
Daniel K. Balmelli
Barghausen Consulting Engineers
18215-72nd Avenue South
Kent, WA 98032
(425) 251-6222

4. Date checklist prepared:

March 20, 2013
Revised September 13, 2013
Revised February 28, 2018
Revised June 12, 2018
Revised August 20, 2018
Revised November 16, 2018
Revised July 2, 2020
Revised August 4, 2020
Revised August 25, 2020
Revised September 2, 2020

5. Agency requesting checklist:

City of DuPont

6. Proposed timing or schedule (including phasing, if applicable):

Construction to start as soon as applicable permits are issued. **Construction for parking lot addition, guard house and tenant improvements would be anticipated to start summer of 2020.**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

There are no future additions or expansions associated with this proposal **beyond the parking lot expansion and tenant improvements to the building including mezzanine areas that are proposed in this application.**

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Environmental Checklist prepared by Barghausen Consulting Engineers, Inc., dated March 20, 2013, revised September 13, 2013, Revised February 28, 2018

Lighting site plan prepared by Nelson, undated

Phase I Environmental Site Assessment prepared by Farallon Consulting, Dated July 26, 2012

Soils Sampling Results Letter prepared by Farallon Consulting, dated July 3, 2012

Geotechnical Engineering Report prepared by GeoResources, June 20, 2012

Stormwater Site Plan prepared by Barghausen Consulting Engineers, Inc., March 5, 2013

Environmental Mitigation Plan prepared by Barghausen Consulting Engineers, Inc., January 4, 2013

Geotech Report by Terra Associated dated April 2016

Tree Retention History Memo by EDA dated February 2018

Cultural Resource Report by Aqua Terra dated October 2015

Archaeological Excavation Permit dated November 2015

NFA Letter by Department of Ecology dated June 2016

Updated Trip Generation and Assignment by Heath & Associates dated November 2018

Updated Stormwater Site Plan by Barghausen Consulting Engineers dated November 2018

Stormwater Site Plan prepared by Barghausen Consulting Engineers dated June 30, 2020

Stormwater Pollution Prevention Plan prepared by Barghausen Consulting Engineers dated June 30, 2020

Cultural Resources Report prepared by Aqua Terra Consultants dated June 3, 2020

Geotechnical Engineering Report prepared by Terra Associates dated May 12, 2020

Subsurface Investigative Report prepared by ATC dated June 30, 2020

Non-Wetland and Fish and Wildlife Habitat Assessment prepared by Soundview Consultants dated Sept. 2, 2020

Traffic Impact Analysis prepared by Heath & Associates dated Aug. 28, 2020, updated Sept 21, 2020

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

A grading permit has been issued by the City of DuPont and cleanup of specific areas of contaminated soil on the site has been completed.

10. List any government approvals or permits that will be needed for your proposal, if known.

Environment Determination by City of DuPont

Site Work Construction Permit by City of DuPont

Type II Administrative Approval by City of DuPont

Minor Site Plan Modification by City of DuPont

Boundary Line Adjustment or Lot Line Adjustment by City of DuPont

Building Permit by City of DuPont

Plumbing/Electrical Mechanical Permits by City of DuPont

Fire Suppression/Underground Fire Supply and Fire Alarm Permits by City of DuPont

Right-of Way Use Permit by City of DuPont

Pre-Treatment Review by Pierce County Public Works and Utilities

Sanitary Sewer Permits by Pierce County Public Works and Utilities

NFA by Department of Ecology

Environmental Determination for Parking Lot Addition by City of DuPont

Major Site Plan Amendment by City of DuPont

Site Development Permit by City of DuPont

Water Connection Permit for Guard Shack by City of DuPont

Right-of-Way Use Permit by City of DuPont

Sewer Service Permit for Guard Shack by Pierce County Utilities

NPDES Permit by Department of Ecology

Demolition permit

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The proposed project will construct a 628,640± square foot warehouse building on an approximately 32 acre site with the associated grading activities, asphalt parking, drive aisles and truck loading and maneuvering areas, landscaping, stormwater infiltration facilities, water and sanitary sewer extensions, franchise utilities improvements and half-street frontage improvements to include sidewalk extension along International Place.

The proposed project will construct additional vehicular parking and a guard shack in association with the Northwest Logistics II project. The site is located on the 5.3-acre Steilacoom Historic School District (SHSD) lot adjacent to the north of the Northwest Logistics II site. A portion of the parking addition consists of removal and relocation of existing parking in the northeast corner of the Northwest Logistics II site. Along with construction of the additional parking, the project will also include clearing and grading, storm drainage facilities, and a guard shack to be located in the southeast corner of the site and will be connected to sewer and water available to the site. Tenant improvements inside the building include *mezzanine areas of 118,150 square feet of flammable and combustible liquid shelving and 51,040 square feet of aerosol shelving are proposed for the building.* Roadway improvements along the frontage of the site along International Place North will be constructed as part of the project. The total floor area of the building after the addition will be 797,205 SF.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The site is located on the northeast corner of International Place and Center Drive in DuPont, Pierce County, Washington and includes tax parcel numbers 300039-0010 through 0210 and 300039-0240 through 0270 within the Northwest Landing Industrial Park Division I Plat. The project is located within a portion of the Southwest quarter of Section 24, Township 19 North, Range 1 East and the Northwest quarter of Section 25, Township 19 North, Range 1 East.

The parking lot addition is located on the eastern side of the terminus of International Place North and is within a portion of the southwest quarter of Section 24, Township 19 North, Range 1 East in DuPont, Pierce County, Washington.

Tax Parcel Nos: 300039-0011 (Northwest Logistics II) and 300039-0282 (SHSD)

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site:

The site is generally flat.

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope on site is approximately 8 percent.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

According to the Soil Survey of Pierce County Area, Washington, the soil type is classified as 41A-Spanaway gravelly sandy loam.

The Geologic Map of the Tacoma 1:100,000-scale Quadrangle, Washington, maps the site soils as Vashon Recessional outwash, Steilacoom gravel (Qgo_{sg}) Per the Geotechnical Engineering Report prepared by Terra Associates, dated May 12, 2020, soils observed in the test pits correlate with the published description of this soil unit.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

There is no known history of unstable soils to our knowledge.

e. Describe the purpose, type, total area and approximate quantities and total affected area of any filling, excavation and grading proposed. Indicate source of fill.

Approximately 81,100 cubic yards of cut material and 65,200 cubic yards of fill material will be used to prepare the site for construction of the proposed building. Approximately 60,000 cubic yards of cut and 46,000 cubic yards of fill work has been completed on the site. Approximately 18,000 cubic yards of cut and 17,000 cubic yards of fill work will be completed for completion of the project.

Approximately 7,000 cubic yards of cut, 8,000 cubic yards of fill and 2,000 cubic yards of stripping will be used to prepare the site for construction of the proposed parking expansion. The source of fill material is unknown at this time but will be from an approved source.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Depending on weather conditions, erosion could occur as a result of construction activities.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Approximately 83% of the site will be impervious surface upon completion of the project. **Approximately 81 percent of the site will be impervious surface upon completion of the proposed new parking area.**

- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

A temporary erosion and sedimentation control plan has been designed and constructed to meet City of DuPont standards to control erosion impacts.

2. Air

- a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities, if known.

Emissions from construction equipment would be present from approximately 7 am to 6 pm, Monday through Friday during the construction phase of the project. Emissions from vehicular traffic to and from the site would be present upon project completion. **A minor additional emissions increase from vehicular traffic would be anticipated upon completion of the proposed new parking addition.**

- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

Emissions from vehicular traffic traveling the surrounding roadways may be present but would not be anticipated to affect the proposal.

- c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Construction equipment will meet state and federal emission standards. No other specific measures are proposed.

3. Water

- a. Surface:

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

A Type F Stream is located approx. 95 feet offsite to the northeast. The stream flows to Puget Sound.

~~There are no surface water bodies on or in the immediate vicinity of the site.~~

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Yes, work will occur within 100 feet of the stream. See the Non-Wetland and Fish and Wildlife Habitat Assessment.

No work will be done in or adjacent to any waters.

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

No fill or dredge material will be placed in or removed from surface water.

- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities, if known.

No surface water withdrawals or diversions are proposed.

- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

The site is not within a 100-year floodplain. **Per current FIRM map panel 53053C0507, dated March 7, 2017, the site is not located in the 100-year floodplain.**

- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No waste materials will be discharged to surface waters.

b. Ground:

- 1) Will ground water be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities, if known.

No groundwater will be withdrawn however, water will be discharged into the ground from storm drainage infiltration facilities.

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals;... agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

No waste materials will be discharged into the ground under this proposal. All sanitary sewer effluent will be routed via tightlined pipe to the existing sanitary sewer system.

c. Water Runoff (including storm water):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

The source of runoff will be from the building roof top and pavement areas. All runoff will be routed via storm pipes and catch basins into infiltration galleries for water quality treatment and infiltration. **Under the new proposal, stormwater from new impervious surfaces will be collected and conveyed via storm pipe and catch basins to a retention infiltration facility prior to discharging to the ground.**

- 2) Could waste materials enter ground or surface waters? If so, generally describe.

No waste material will enter ground or surface waters. All stormwater runoff will be routed for treatment into the infiltration system prior to discharge and all sanitary sewer discharge will be routed to the existing sanitary sewer system.

- 3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site?
If so, describe.

The proposed development is designed to incorporate the existing drainage system and will not affect the drainage patterns in the vicinity of the site.

- d. Proposed measures to reduce or control surface, ground, and runoff water impacts, and drainage pattern impacts, if any:

Temporary erosion and sedimentation control measures will be implemented per City of DuPont standards for the construction phase of the project and the storm drainage infiltration system will be designed and constructed per City of DuPont standards to control stormwater runoff from the completed project. **A storm drainage plan for the parking lot addition will be designed according to the 2014 Department of Ecology stormwater manual and City of DuPont standards and implemented to control runoff from the proposed project.**

4. Plants

- a. Check or circle types of vegetation found on the site:

☐ deciduous tree: Alder, Maple, Oregon White Oaks, Apple, Plum, Pear
☐ evergreen tree: Fir, Cedar, Pine
☒ shrubs
☒ grass
☐ pasture
☐ crop or grain
☐ Orchard, vineyards or other permanent crops
☐ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
☐ water plants: water lily, eelgrass, milfoil, other
☐ other types of vegetation

- b. What kind and amount of vegetation will be removed or altered?

Most of the vegetation has been removed from the site for development of the proposed project. Also, the project has complied with the City of DuPont Oak Management Mapping Criteria for tree retention. **The majority of the vegetation on the SHSD site will be removed and a portion of the existing landscaping on the Northwest Logistics II site will be removed for reconfiguration of the parking.**

- c. List threatened and endangered species known to be on or near the site.

None are known to exist to our knowledge.

- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Landscaping will be designed and implemented to meet City of DuPont standards and trees will be retained where possible to meet with City code.

- e. List all noxious weeds and invasive species known to be on or near the site.

None are known to exist on or near the site.

5. Animals

- a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

Examples include:

birds: Hawk, Heron, Eagle, Songbirds, other:

mammals: deer, bear, elk, beaver, other:

fish: bass, salmon, trout, herring, shellfish, other:

- b. List any threatened or endangered species known to be on or near the site.

None are known to exist to our knowledge. **Cutthroat trout and coho salmon are mapped within the stream located to the northeast of the site.**

- c. Is the site part of a migration route? If so, explain.

Yes, the site is part of the Pacific Flyway for Migratory Birds.

- d. Proposed measures to preserve or enhance wildlife, if any:

On-site landscaping and tree retention will help to preserve wildlife in the area.

- e. List any invasive animal species known to be on or near the site.

None are known to be on or near the site to our knowledge.

6. Energy and Natural Resources

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electricity will be used for lighting and natural gas will be used for heating.

- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe:

It is not anticipated that the project would affect potential use of solar energy by adjacent properties.

- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

The building will comply with all current energy code requirements. **The proposed guard shack will use electricity for lighting and natural gas for heating.**

7. Environmental Health

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

No environmental hazards are expected to occur as a result of this project.

- 1) Describe any known or possible contamination at the site from present or past users.

None are known to be present at the site to our knowledge.

- 2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

None are known to exist to our knowledge.

- 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

During the construction phase of the project, chemicals associated with construction equipment will be at the site. Upon project completion, no hazardous chemicals are anticipated to be at the site. Flammable and combustible products will be stored onsite.

- 4) Describe special emergency services that might be required.

Other than fire, medical and police services already available in the area, no other specific services are anticipated.

- 5) Proposed measures to reduce or control environmental health hazards, if any:

No specific measures are proposed. Building design & materials and fire suppression will be required to meet the International Building Code and International Fire Code.

b. Noise

- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Noise from vehicular traffic along Center Drive and International Place exist but would not be anticipated to affect the project.

- 2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

On a short-term basis, noise from construction equipment will be present from approximately 7 am to 6 pm, Monday – Friday. On a long-term basis, noise from vehicular traffic to and from the site will be present from approximately 6 am to 6 pm, Monday – Friday.

3) Proposed measures to reduce or control noise impacts, if any:

Construction equipment will be maintained and will comply with state standards. No other specific measures are proposed.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The site is undeveloped but has been previously cleared and graded. Property to the north contains a warehouse facility and areas of undeveloped land which will be used for the future Steilacoom Historical School District Bus Barn. Directly to the northwest is a warehouse building for metal fabrication. Steilacoom-DuPont Road and JBLM are located to the east and Northwest Logistics Center Phase I is completed to the west and is currently being used as a storage warehouse. The property to the south contains office and warehouse use developments. **The SHSD site is vacant land that was previously cleared and graded and the Northwest Landing site is occupied with a warehouse facility. Adjacent properties to the north and west are industrial/warehouse use. Center Drive is located to the south and Steilacoom-DuPont Road S.W. is located to the east.**

b. Has the site been used as working farmlands or forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

Historically, the site may have been used for agriculture but specific details are not known.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

There are no working farm or forest lands near the site to our knowledge.

c. Describe any structures on the site.

There are no structures on site.

d. Will any structures be demolished? If so, what?

No structures will be demolished. **The building roof will be replaced.**

e. What is the current zoning classification of the site?

The current zoning classification is Industrial (IND). **The current zoning of the site is Community Business.**

f. What is the current comprehensive plan designation of the site?

The current comprehensive plan designation is Industrial. **The current comprehensive plan designation is ~~Manufacturing Research Park and Industry Planning area.~~ with Community Commercial Opportunity Area Overlay.**

- g. If applicable, what is the current shoreline master program designation of the site?

N/A

- h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Yes. The Department of Ecology indicates that the site and vicinity have a known or suspected presence of metals in the soil from the Tacoma Asarco Smelter plume, including lead and arsenic. A Soils Sampling Report has been prepared by Farallon Consulting to locate areas of contaminated soil and a grading permit to remove the soil in these areas has been approved by the City of DuPont. Clearing and grading work has been completed and NFA letters from the Department of Ecology have been issued. **A portion of the stream buffer extends onsite. The township is mapped as containing Priority Habitat for the three bat species, however the site was previously cleared and graded and does not contain habitat.**

- i. Approximately how many people would reside or work in the completed project?

The maximum number of employees per shift would be a total of approximately 300 to 400 persons could work at the completed project depending on the tenants. **Four hundred and eighty-six (486) total employees is the maximum employee count per shift.**

- j. Approximately how many people would the completed project displace?

No persons will be displaced.

- k. Proposed measures to avoid or reduce displacement impacts, if any:

No specific measures are proposed.

- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The proposed warehouse use is compatible with the City of DuPont zoning code and the project will be designed to meet City standards.

- m. Proposed measures to ensure that proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

There are no nearby working farms or forest lands.

9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

N/A

- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

N/A

- c. Proposed measures to reduce or control housing impacts, if any:

N/A

10. Aesthetics

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The tallest height of the building will be approximately 38-foot and the principal building materials will be concrete and glass. **The guard shack proposed with the vehicular parking addition would be not taller than the maximum height allowed within the Community Business zoning designation.**

- b. What views in the immediate vicinity would be altered or obstructed?

Some views from adjacent properties are expected to be altered with completion of the project but no views are anticipated to be obstructed.

- c. Proposed measures to reduce or control aesthetic impacts, if any:

No specific measures are proposed. **New wall construction with plantings will screen the view of the site from travelers using DuPont Steilacoom Road.**

11. Light and Glare

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Glare from building window glass could occur during daylight hours and light and glare from parking lot lighting could be present during evening hours. **Lighting for the parking lot addition could generate additional light or glare during evening hours.**

- b. Could light or glare from the finished project be a safety hazard or interfere with views?

It is not anticipated that light or glare created by the project would be a safety hazard.

- c. What existing off-site sources of light or glare may affect your proposal?

Headlights from vehicular traffic on nearby roadways could be present but would not be anticipated to affect the project.

- d. Proposed measures to reduce or control light and glare impacts, if any:

The building will use non-glare window glass and the parking lot lighting will be shielded. Perimeter landscaping will also help to control light or glare impacts. **The additional parking lot lighting will be shielded and directed appropriately.** No other specific measures are proposed.

12. Recreation

- a. What designated and informal recreational opportunities are in the immediate vicinity?

No recreational areas are in the immediate vicinity of the site.

- b. Would the proposed project displace any existing recreational uses? If so, describe.

No recreational uses will be displaced.

- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

No specific measures are proposed.

13. Historic and Cultural Preservation

- a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.

None are known to exist on the site to our knowledge.

- b. Are there any landmarks, features or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

None are known to exist on the site to our knowledge. **A Cultural Resource Report has been completed for the parking lot addition site and a copy is included with this package.**

- c. Describe the methods used to access the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archaeology and historic preservations, archaeological surveys, historic maps, GIS data, etc.

A Cultural Resource Report was prepared by Aqua Terra, dated October 2015 for the site and a copy is included with this package.

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

No specific measures are proposed however, the Memorandum of Agreement will be implemented and if cultural artifacts are found during construction, the proper agencies will be notified.

14. Transportation

- a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

International Place is to the west of the site and Center Drive is to the south. Two driveways are proposed on International Place for access. Access will also be obtained from the existing cul-de-sak to the north that is part of the Northwest Landing Industrial Park Division I Plat. **One new driveway onto International Drive North will be constructed for access to the proposed parking area.**

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

Transit service is not available to the site. The closest transit route is Route 592 with a stop at the park and ride located at Wilmington Drive and Palisades Drive.

- c. How many parking spaces would the completed project or non-project have? How many would the project eliminate?

The completed project will provide 414 car parking stalls and 124 trailer parking stalls. No parking stalls will be eliminated. **With the proposed parking lot addition a total of 912 vehicular parking stalls and 77 trailer storage stalls will be provided across both lots. Some existing parking will be reconfigured but no parking will be eliminated.**

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

Yes, half-street improvements along International Place will be required as well as completion of the cul-de-sac access on the north end and construction of a new traffic signal at Center Drive and International Place. **Roadway improvements to the frontage of the SHSD lot will be construction as part of the proposal.**

- e. Will the project or proposed use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

It is anticipated that, based on high-cube warehousing use, the proposed project could generate approximately 880 average daily trips upon completion. ***Upon tenant occupancy the site can be estimated to generate approximately 2,167 average daily trips. Peak volumes would likely occur between 6:30-7:30 AM with 363 trips and 5:30-6:30 PM with 604 trips. The majority of trips would be employee vehicles and delivery vans with approximately 10-15 percent of the total volumes in the form of multi-axle trucks. Data were obtained from an independent study on similar fulfillment centers.*** (Please refer to the updated Traffic Impact Analysis by Heath and Associates.)

- g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

It is no anticipated that the proposal would affect the movement of agricultural or forest products on area roadways.

- h. Proposed measures to reduce or control transportation impacts, if any:

Construction of roadway improvements and payment of traffic mitigation fees, if required will reduce transportation impacts.

15. Public Services

- a. Would the project result in an increase need for public services (for example, fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

Yes, the project will result in an increased need for public services.

- b. Proposed measures to reduce or control direct impacts on public services, if any.

Roadway improvements, construction of water line with the addition of fire hydrants and payment of traffic and fire mitigation fees will reduce impacts to public services. . **Payment of additional traffic mitigation and construction of roadway improvements, new fire line and fire hydrant will reduce current impacts from the parking addition.**

16. Utilities

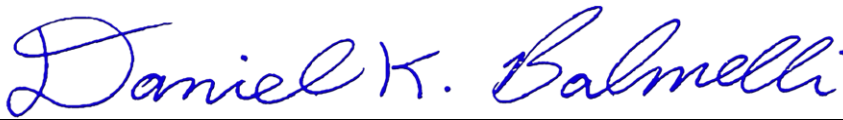
- a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

Electricity:	Puget Sound Energy
Natural Gas:	Puget Sound Energy
Water:	City of DuPont
Sanitary Sewer:	Pierce County Public Works and Utilities
Refuse:	LeMay
Telephone:	CenturyLink
Cable:	Comcast

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: 

Print your name: Daniel K. Balmelli

Date Submitted: September 17, 2013 / Revised February 28, 2018 / Revised June 12, 2018 / Revised August 20, 2018/ Revised November 16, 2018, Revised July 2, 2020, Revised August 4, 2020, Revised August 25, 2020, Revised September 2, 2020
(Issued 4/6/01)

City comments updated 10-5-2020

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

(Evaluation for Agency Use Only. Do not use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent of the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources? Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection: such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.



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[illegible]

OVERALL SITE PLAN

DRAWN BY: KSY

REVIEWED BY: JAB

ET

A-101

NO. **2200159.00**

PERMIT SET 09/25/20

A. LIMITED LANDSCAPE EASEMENTS SHOWN ON ARCHITECTURAL SITE PLAN FOR REFERENCE ONLY. SEE CIVIL FOR ALL EASEMENT AND SETBACK INFORMATION, INCLUDING UTILITY AND POWER EASEMENTS.

	OUTLINE: 6'-0" WIDE, 26" O.C. HATCH/FILL COLOR: "SAFETY YELLOW" THERMAL PAVEMENT STRIPS, TO BE VISIBLE AT NIGHT, NON-SLIP
	SECURE TRUCK YARD FENCE
	LANDSCAPE EASEMENT, SHOWN FOR REFERENCE ONLY. SEE CIVIL
	PROPERTY LINE
	ACCESSIBLE ACCESS TO THE PUBLIC WAY

PARKING REQUIRED (MAX. EMPLOYEE/SHIFT) = 912 STALLS	
PARKING PROVIDED	= 912 STALLS
847 STANDARD STALLS	
19 ACCESSIBLE STALLS	
46 HOV STALLS	
TOTAL TRUCK LOADING PROVIDED	= 50 DOCK DOORS
47 DOCK DOORS	
3 DRIVE IN DOORS	
TRAILER STALLS	= 77 STALLS

PERMIT SET 09/25/20

From: [Mike Turner](#)
To: [Lisa Klein](#)
Subject: RE: NW Log New Site Plan Amendment PLNG2020-016
Date: Friday, October 2, 2020 12:41:59 PM

Hi Lisa,

I have no comment in this project.

Thanks

Mike

Sent from my Verizon, Samsung Galaxy smartphone

----- Original message -----

From: Lisa Klein <LKlein@AHBL.com>
Date: 10/2/20 6:58 AM (GMT-08:00)
To: Mike Turner <MTurner@dupontwa.gov>
Cc: Janet Howald <JHowald@dupontwa.gov>
Subject: NW Log New Site Plan Amendment PLNG2020-016

Mike,

Could I get your comments in the new application to add interior building space today? We want to issue on Monday.

Thanks,

Lisa

Lisa Klein, AICP | Associate Principal

AHBL, Inc. | **TACOMA** • SEATTLE • SPOKANE • TRI-CITIES
253.383.2422 **TEL** | 253.284.0256 **DIRECT** | lklein@ahbl.com **EMAIL**

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Attachment 3.a. City of DuPont Fire Department
comment email dated October 2, 2020.

Lisa Klein

From: Bill Anderson <BAnderson@dupontwa.gov>
Sent: Tuesday, September 29, 2020 2:55 PM
To: Lisa Klein; Dominic Miller; Gus Lim; Mike Turner; Scott Hein; Sherri Ingles; Fred Foreman; Geri Reinart (greinart@msn.com)
Cc: Janet Howald
Subject: RE: NW Log II Building Size PLNG2020-012-013 SEPA2020-001

Lisa,
I do not have comments on the amended site plan.

Bill Anderson

From: Lisa Klein <LKlein@AHBL.com>
Sent: Tuesday, September 29, 2020 9:01 AM
To: Dominic Miller <dmiller@g-o.com>; Gus Lim <GLim@dupontwa.gov>; Mike Turner <MTurner@dupontwa.gov>; Bill Anderson <BAnderson@dupontwa.gov>; Scott Hein <SHein@dupontwa.gov>; Sherri Ingles <SIngles@dupontwa.gov>; Fred Foreman <FForeman@dupontwa.gov>; Geri Reinart (greinart@msn.com) <greinart@msn.com>
Cc: Janet Howald <JHowald@dupontwa.gov>
Subject: FW: NW Log II Building Size PLNG2020-012-013 SEPA2020-001
Importance: High

All,
Janet will be distributing to you a new application for a minor site plan amendment for the NW Logistics II proposal. The building size numbers were short approximately 50,000 SF so that needs to be corrected in both the SEPA and land use decision before building permits can be issued. The increased building size is related to building interior improvements, there are no changes to the site. Below is a detailed summary of the process we provided to them last week to address the change. I have committed to issuing the amendment at the conclusion of the current appeal period, assuming no appeals are filed, which means it is going out on Monday, October 5. Can I get your comments by Friday to meet this deadline? You will see that the materials are very limited.
Any questions or concerns please let me know.
Lisa

Lisa Klein, AICP | Associate Principal
AHBL, Inc. | TACOMA • SEATTLE • SPOKANE • TRI-CITIES
253.383.2422 **TEL** | 253.284.0256 **DIRECT** | lklein@ahbl.com **EMAIL** | Send us a [file](#).

From: Lisa Klein
Sent: Wednesday, September 23, 2020 2:55 PM
To: Brian Mattson <BMattson@panattoni.com>
Cc: Bjorn Brynestad <BJorn@panattoni.com>; Dan Balmelli <dbalmelli@barghausen.com>; Andy Takata <ATakata@dupontwa.gov>; Janet Howald <JHowald@dupontwa.gov>
Subject: NW Log II Building Size PLNG2020-012-013 SEPA2020-001

Brian,
We had a meeting today to discuss the procedures for amending the SEPA Determination and Site Plan Amendment to correct the building size. The following will describe the process and schedule.

Process

Attachment 3.b. City of DuPont Building Services
Division comment email dated September 29, 2020.

To amend the land use decision, we need to process a Type I Site Plan Amendment. The required application materials are:

1. Application form, located here:
2. Application fee of \$1,500
3. Cover letter describing the correct building size. Please state in the letter that all other application materials associated with PLNG2020-012, -013 remain applicable.
4. Revised TIA – I see you have already completed that
5. Revised Architectural Site Plan –add the total new building size to it.

For SEPA we will issue an Addendum. No application fee or additional information is required.

The DMC does not require a notice of application process and/or comment period when SEPA has already been completed.

SEPA Addendums are more of a notice and do not require a comment or appeal period.

Schedule

Assuming you can provide the above information by Monday 9/23, the following is the schedule:

End of appeal period on original SEPA/Land Use Decision:	October 2
Issuance of the SEPA Addendum and new Site Plan Amendment:	October 5
End of appeal period on the new site plan amendment:	October 19

Only the items that are being amended could be appealed for the new site plan amendment.

You would be able to obtain a site development permit after the conclusion of the Oct. 2 appeal period.

The building permit cannot be obtained until completion of the October 19 appeal period.

If you have any questions let me know.

Lisa

Lisa Klein, AICP | Associate Principal

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253.383.2422 **TEL** | 253.284.0256 **DIRECT** | lklein@ahbl.com **EMAIL**

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From: [Dom Miller](#)
To: [Lisa Klein](#)
Cc: ["Janet Howald"](#)
Subject: RE: NW Log New Site Plan Amendment PLNG2020-016
Date: Friday, October 2, 2020 11:35:55 AM

Lisa,

I have reviewed the submitted materials on the Minor Site Plan Amendment PLNG2020-016 and have no comments.

*Dominic J. Miller, P.E. | 360.292.7481, Ext. 1504 p | 360.292.7517 f
Gray & Osborne, Inc. | 2102 Carriage Drive SW, Building I, Olympia, WA 98502*

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From: Dom Miller [mailto:dmiller@g-o.com]
Sent: Friday, October 2, 2020 8:27 AM
To: 'Lisa Klein' <LKlein@AHBL.com>
Cc: 'Janet Howald' <jhowald@dupontwa.gov>
Subject: RE: NW Log New Site Plan Amendment PLNG2020-016

Lisa,

Yes, I will have something to you by 12 noon today.

*Dominic J. Miller, P.E. | 360.292.7481, Ext. 1504 p | 360.292.7517 f
Gray & Osborne, Inc. | 2102 Carriage Drive SW, Building I, Olympia, WA 98502*

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From: Lisa Klein [mailto:LKlein@AHBL.com]
Sent: Friday, October 2, 2020 6:57 AM
To: Dominic Miller <dmiller@g-o.com>
Cc: Janet Howald <jhowald@dupontwa.gov>
Subject: NW Log New Site Plan Amendment PLNG2020-016

Dominic,

Could I get your comments in the new application today? I suspect that you will likely say “no

**Attachment 3.c. City of DuPont Engineering
Department comment email dated October 2, 2020.**

comment”.

Thanks,

Lisa

Lisa Klein, AICP | Associate Principal

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253.383.2422 **TEL** | 253.284.0256 **DIRECT** | lklein@ahbl.com **EMAIL**

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From: [Geraldyn Reinart](#)
To: [Janet Howald](#); [Bill Anderson](#); [Mike Turner](#); [Dominic Miller](#); [Gus Lim](#); [Fred Foreman](#); [Scott Hein](#); [Sherri Ingles](#); [Valeska Silva](#)
Cc: [Lisa Klein](#)
Subject: Re: REVISED NW Logistics/Minor Site Plan PLNG2020-016
Date: Wednesday, September 30, 2020 2:58:39 PM

No comments/no impact on the TIA. Thanks!

geri

Geraldyn Reinart, P.E.
831 Sprague Street
Edmonds, WA. 98020
(206) 285-9035
(425) 530-0664 cell
greinart@msn.com

From: Janet Howald <JHowald@dupontwa.gov>
Sent: Tuesday, September 29, 2020 3:21 PM
To: Bill Anderson <BAnderson@dupontwa.gov>; Mike Turner <MTurner@dupontwa.gov>; Dominic Miller <dmiller@g-o.com>; Gus Lim <GLim@dupontwa.gov>; Fred Foreman <FForeman@dupontwa.gov>; Geri Reinart <greinart@msn.com>; Scott Hein <SHein@dupontwa.gov>; Sherri Ingles <SIgles@dupontwa.gov>; Valeska Silva <vsilva@dupontwa.gov>
Cc: Lisa Klein, AHBL <LKlein@AHBL.com>
Subject: REVISED NW Logistics/Minor Site Plan PLNG2020-016

Hi all,
See attached revised materials for NW Logistics Minor Site Plan.

Janet Howald
Community Development
Administrative Specialist
City of DuPont
1700 Civic Drive, DuPont WA 98327

Direct - 253.912.5232
Internal Ext. 5209
City Hall - 253.964.8121
jhowald@dupontwa.gov

Attachment 3.d. City of DuPont Traffic & Transportation Engineer
comment memorandum dated September 30, 2020.