Exhibit J - Environmental Assessment for P21-01833 [09/05/2023]

E20231000203

PLEASE POST FOR THIRTY (30) DAYS FROM FILING

NOTICE OF DETERMINATION

DATE RECEIVED FOR FILING:

TO: ___ Office of Planning and Research
1400 Tenth Street, Room 121
Sacramento, CA 95814

FROM: CITY OF FRESNO
Development & Resource Management Dept
2600 Fresno Street, Room 3043
Fresno, CA 93721-3604

FILED
SEP 06 2023 TIME 12:17pm
FRESNO COUNTY CLERK
By _____ DEPUTY

X County Clerk
County of Fresno
2220 Tulare Street
Fresno, CA 93721

SUBJECT: Filing of Notice of Determination in compliance with Section 21152 of the Public Resources Code

PROJECT TITLE:

City of Fresno Environmental Assessment No. P21-01833 for Development Permit Application No. P21-01833

State Clearinghouse Number (If subject to Clearinghouse)	***Lead Agency Contact Person***	***Area Code/Telephone***
2022080501	City of Fresno Planning and Development Department Jose Valenzuela, Supervising Planner	(559) 621-8070

PROJECT LOCATION:

6050 West Barstow Avenue; located on northeast corner of Barstow Avenue and Contessa Avenue in the City and County of Fresno, California (See Exhibit A - Vicinity Map). APN: 505-070-44 . . Site Latitude: 36° 48' 58.54" N & Site Longitude: -119° 53' 57.67" W Mount Diablo Base & Meridian, Township 13S, Range 19E, Section 9 & 10.

PROJECT DESCRIPTION:

Development Permit Application No. P21-01833 was filed by Sangha Carrier (Project Applicant). The Project Applicant proposes to construct a truck parking facility with approximately 374 parking stalls, a 5,400 square-foot Office/Truck Repair Service Center, a 5,400 square-foot Truck Wash facility and associated infrastructure and circulation improvements on the approximately 18.87-acre project site. The property is zoned BP/UGM/cz (*Business Park/Urban Growth Management/conditions of zoning)*.

This is to advise and certify that the City of Fresno, the Lead Agency, approved the environmental finding and assessment prepared for the above-described project on March 13, 2023. The following determinations have been made regarding this project:

1. The project ([ ] will [X] will not) have a significant effect on the environment.
2. [ ] An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   [X] A Mitigated Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
   [ ] A determination of project conformity to the Fresno General Plan Master Environmental Impact Report (City of Fresno MEIR No. SCH No. 2012111015) was made. (Fresno County Clerk File No. E201410000345)

E20231000203

3. Mitigation measures ([X] were [ ] were not) made a condition of the approval of the project.
4. A statement of Overriding Considerations ([ ] was [X] was not) adopted for this project.
5. Findings ([X] were [ ] were not) made pursuant to the provisions of CEQA.

The above-described environmental assessment, together with the full initial study, comments and responses and record of project approval, is available to the general public at the City of Fresno Development and Resource Management Department, 2600 Fresno Street, Room 3043, Fresno, California 93721-3604.

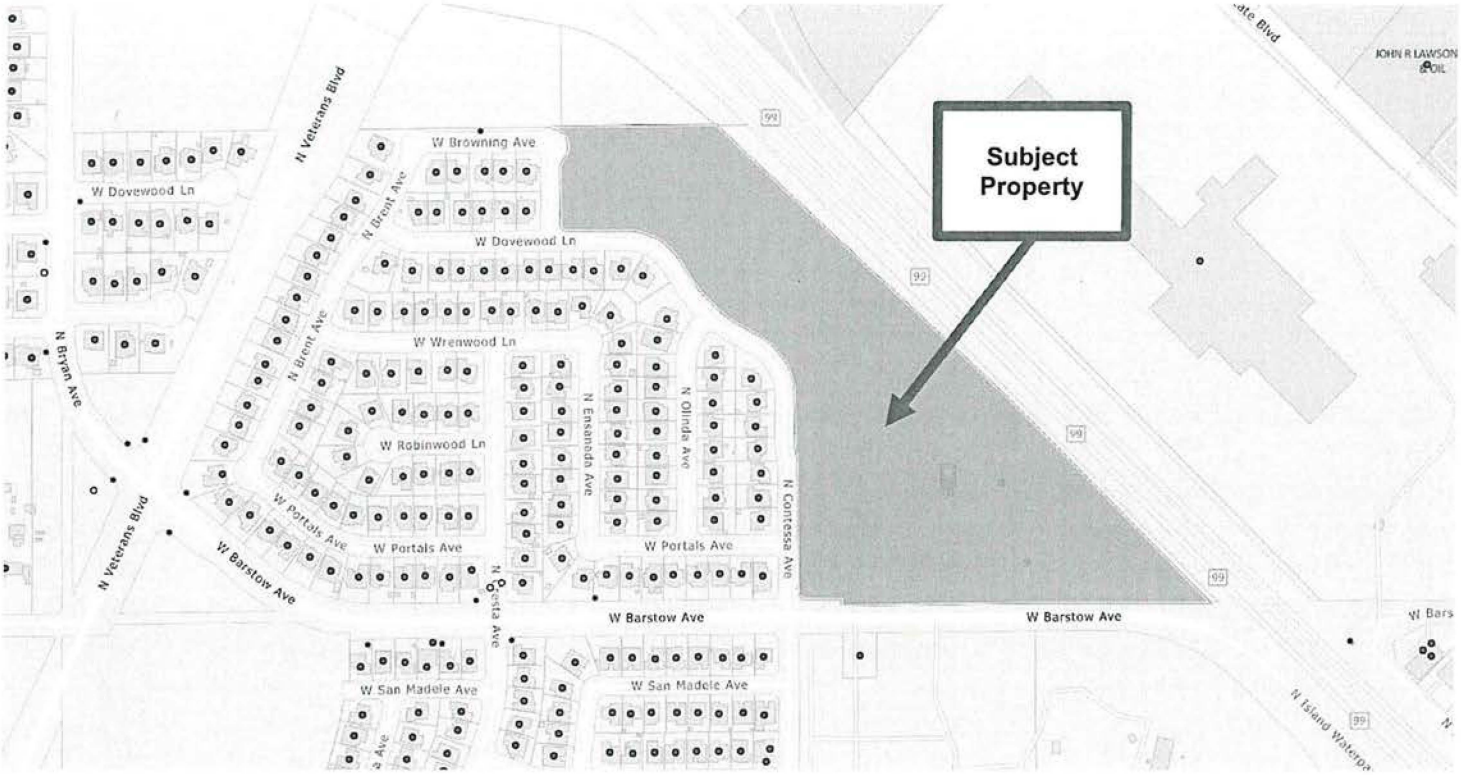
Jose Valenzuela
Supervising Planner

9/5/2023

Attachments: Project Vicinity Map

E20231000203

Vicinity Map



N NW NE W E SW SE S

Not To Scale

Subject property to developed:
18.87-acres

PLANNING AND DEVELOPMENT DEPARTMENT

Environmental Assessment No.
P21-01833
Development Permit Application
No. P21-01833

PROPERTY ADDRESS

6050 West Barstow Avenue
APN: 505-070-44

Planned Land Use: Employment – Heavy Industrial

Zone District: BP/UGM/cz (*Business Park/Urban Growth Management/conditions of zoning)*
By: T. Veatch
September 5, 2023

State of California - Department of Fish and Wildlife

2023 ENVIRONMENTAL DOCUMENT FILING FEE CASH RECEIPT

DFW 753.5a (REV. 01/01/23) Previously DFG 753.5a

RECEIPT NUMBER:
E202310000203
STATE CLEARINGHOUSE NUMBER *(if applicable)*

SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY.

LEAD AGENCY	LEAD AGENCY EMAIL	DATE
CITY OF FRESNO		09/06/2023

COUNTY/STATE AGENCY OF FILING	DOCUMENT NUMBER
FRESNO COUNTY	E202310000203

PROJECT TITLE

EA FOR DEVELOPMENT PERMIT APPLICATION NO. P21-01833

PROJECT APPLICANT NAME	PROJECT APPLICANT EMAIL		PHONE NUMBER
CITY OF FRESNO			
PROJECT APPLICANT ADDRESS	**CITY**	**STATE**	**ZIP CODE**
2600 FRESNO ST	FRESNO	CA	93721

PROJECT APPLICANT *(Check appropriate box)*

☒ Local Public Agency ☐ School District ☐ Other Special District ☐ State Agency ☐ Private Entity

CHECK APPLICABLE FEES:

☐ Environmental Impact Report (EIR)	$3,839.25	$	0.00
☒ Mitigated/Negative Declaration (MND)(ND)	$2,764.00	$	2,764.00
☒ Certified Regulatory Program (CRP) document - payment due directly to CDFW	$1,305.25	$	0.00

☐ Exempt from fee

- ☐ Notice of Exemption (attach)
- ☐ CDFW No Effect Determination (attach)

☐ Fee previously paid (attach previously issued cash receipt copy)

☐ Water Right Application or Petition Fee (State Water Resources Control Board only)	$850.00	$	0.00
☒ County documentary handling fee	$50.00	$	50.00
☐ Other		$	0.00

PAYMENT METHOD:

☐ Cash ☒ Credit ☐ Check ☐ Other **TOTAL RECEIVED** $ **2,814.00**

SIGNATURE	AGENCY OF FILING PRINTED NAME AND TITLE
X	**Cierra Loera Deputy Clerk**

ORIGINAL - PROJECT APPLICANT | COPY - CDFW/ASB | COPY - LEAD AGENCY | COPY - COUNTY CLERK | DFW 753.5a (Rev. 01012023)

E20231000203

CITY OF FRESNO

NOTICE OF INTENT TO ADOPT A

MITIGATED NEGATIVE DECLARATION

ENVIRONMENTAL ASSESSMENT FOR DEVELOPMENT PERMIT APPLICATION NO. P21-01833

Filed with the
FRESNO COUNTY CLERK
2220 Tulare Street, Fresno, CA 93721

FILED
JUL 21 2023 TIME 1227 pm
FRESNO COUNTY CLERK
By _____ DEPUTY

APPLICANT:

Inderjit "Indy" Sangha
Sangha Carriers
5812 W Bedford Ave
Fresno, CA, 93722

PROJECT LOCATION:

6050 West Barstow Avenue; located on the northeast corner of West Barstow and North Contessa Avenues in the City and County of Fresno, California (See Exhibit A - Vicinity Map)

APN: 505-070-44

Site Latitude: 36° 48' 58.54" N & Site Longitude: -119° 53' 57.67" W Mount Diablo Base & Meridian, Township 13S, Range 19E, Section 9 & 10

The full Initial Study and the Fresno General Plan Program Environmental Impact Report (PEIR) are on file in the Planning and Development Department, Fresno City Hall, 3rd Floor, Room 3043, 2600 Fresno Street, Fresno, CA 93721.

PROJECT DESCRIPTION:

Development Permit Application No. P21-01833 was filed by Sangha Carrier (Project Applicant). The Project Applicant proposes to construct a truck parking facility with approximately 374 parking stalls, a 5,400 square-foot Office/Truck Repair Service Center, a 5,400 square-foot Truck Wash facility, and associated infrastructure and circulation improvements on the approximately 18.87-acre project site. The property is zoned BP/UGM/cz (*Business Park/Urban Growth Management/conditions of zoning)*.

Project Characteristics

The proposed project would result in the development of a truck parking facility with associated uses and infrastructure improvement at the project site. The proposed project would be constructed in four phases, described below.

- **Phase 1** of the proposed project would result in the development of ±7.61 acres in the southern portion of the project site. Phase 1 would construct 132 truck parking stalls and nine standard vehicle-parking stalls in the project site, including two electrical vehicle (EV) stalls and one Americans with Disabilities Act (ADA) compliant parking space.

- **Phase 2** of the proposed project would result in the development of ±5.0 acres in the middle

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portion of the project site. Phase 2 would construct 138 truck parking stalls and five standard vehicle-parking stalls on the project site, including one ADA-compliant parking space.

- **Phase 3** of the proposed project would result in the development of ±5.7 acres in the northern portion of the project site. Phase 3 would construct 122 truck parking stalls and 39 regular vehicle-parking stalls on the project site, including three ADA-compliant parking spaces.

- **Phase 4** of the proposed project would result in the re-development of ±1.3 acres in the southern portion of the project site developed under Phase 1. Phase 4 would require the removal of 18 truck parking stalls constructed under Phase 1. Phase 4 would result in the construction of two buildings: a 5,400 square-foot office/truck repair service center, which would include a 1,800 square-foot office, and a four-bay, 3,600 square-foot truck repair service center; and a two-tunnel, 5,400 square-foot truck wash facility. Additionally, this phase would construct six standard vehicle-parking stalls on the project site, including two EV stalls.

The hours of operation for the proposed office/truck repair service center would be Monday through Saturday from 8:00 AM to 10:00 PM, and the facility would employ approximately 18 to 20 staff members. The proposed truck wash and parking facilities would operate 24 hours a day, seven days a week, and would be self-service facilities. The proposed project would introduce approximately 15.91 acres of impervious surfaces into the project site.

The proposed project would include new exterior lighting, with the installation of approximately 30 new lights around the perimeter of the project site and 11 new lights within the project site. The proposed project would install a 6-foot-high chain link fence along the northern and eastern boundaries of the project site and would construct a six-foot-high vinyl privacy fence along the southern boundary of the site during Phase One. The western boundary of the project site is bordered by an existing eight-foot-high block wall. The proposed project would install 11 fire hydrants along the perimeter of the project site. In addition, the proposed project would comply with the latest CALGreen standard building measures and Title 24 standards. The proposed truck washing facility would primarily utilize recycled water, with approximately 10 percent nonrecycled water or approximately 7,000 to 10,000 gallons of potable water used per month. At the end of each truck wash, used water would be discharged to an underground tank to undergo a degerming/filtration process to be used again as part of the truck wash cycle.

Access, Circulation, and Parking

As described above, the proposed project would include 374 truck parking stalls and 59 standard vehicle parking stalls. The proposed project would also include a truck unloading zone in the site's southern portion. The proposed project would also include five bicycle parking spaces. Vehicle access to the project site would be provided through one 48-foot-wide gated ingress and egress driveway along West Barstow Avenue. Vehicle circulation within the project site would be provided by a network of 50-foot drive aisles. The proposed project would also include a 24-foot-wide gated emergency access drive approach along West Barstow Avenue with a fire department-accessible padlock, per the City's P-67 *Standard Drawings* requirements. A dedicated fire lane would also be included on the southwest corner of the project site. Concrete sidewalks along the project frontage with West Barstow Avenue for pedestrian circulation will also be constructed. An existing pedestrian sidewalk along the project's western boundary would allow pedestrian circulation on the project's frontage with North Contessa Avenue.

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Landscaping

The proposed project would include approximately 2.53 acres (110,181 square feet) of landscaped areas on the perimeter of the project site.

Utilities and Infrastructure

The project site is located in an urban area and is currently served by existing utilities, including water, sanitary sewer, storm drainage, electricity, and natural gas infrastructure. Proposed utility connections are discussed below.

Water and Wastewater

The Department of Public Utilities would provide water supply and wastewater services for the proposed project. The proposed project would connect to existing 14-inch and 8-inch water mains along West Barstow and North Contessa Avenue, respectively. Additionally, the proposed project would connect to existing 8-inch wastewater service lines located along West Barstow and North Contessa Avenue.

Stormwater

The Fresno Metropolitan Flood Control District (FMFCD) would provide flood control and urban stormwater services to the project site. Stormwater from the project site would be drained through surface drainage infrastructure along West Barstow and North Contessa Avenue and redirected towards a nearby ponding basin.

Electricity and Natural Gas

Electricity and natural gas services to the site are provided by Pacific Gas and Electric Company (PG&E). PG&E has an existing electric tower located on the project frontage with North Contessa Avenue and an existing 137.5-foot easement that extends inwards from the site's western boundary and crosses the project site from north to south. Existing underground utility connections and gas mains provide electricity and gas to the project site. The proposed project would connect to existing service lines in the vicinity of the project site.

Grading and Construction

Construction of the proposed project is expected to occur over a period of 10 months, starting in June 2023. Site preparation would include the removal of rocks, debris, and vegetation from the project site. Construction of the proposed project would comply with City standards, including the City's current building code, landscape standards, and lighting standards. In addition, the project site would be graded similarly to other developments throughout the City.

The City of Fresno has prepared an Initial Study of the above-described project and proposes to adopt a Mitigated Negative Declaration. The environmental analysis contained in the Initial Study is tiered from the PEIR State Clearinghouse No. 2019050005 prepared for the Fresno General Plan pursuant to CEQA Guidelines § 15152 and incorporates the PEIR by reference pursuant to CEQA Guidelines § 15150.

Pursuant to the California Public Resources Code (PRC) §§ 21093 and 21094 and California Environmental Quality Act (CEQA) Guidelines §§ 15070 to 15075, 15150, and 15152, this project has been evaluated with respect to each item on the attached Appendix G/Initial Study Checklist to determine whether this project may cause any additional significant effect on the environment, which

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was not previously examined in the PEIR. After conducting a review of the adequacy of the PEIR pursuant to PRC § 21157.6(b)(1) and CEQA Guidelines §§ 15151 and 15179(b), the Planning and Development Department, as lead agency, finds that no substantial changes have occurred with respect to the circumstances under which the PEIR was certified and that no new information, which was not known and could not have been known at the time that the PEIR was certified as complete, has become available.

The completed Appendix G/Initial Study Checklist, its associated narrative, technical studies, and mitigation measures reflect applicable comments of responsible and trustee agencies and research and analyses conducted to examine the interrelationship between the proposed project and the physical environment. The information contained in the project application and its related environmental assessment application, responses to requests for comment, checklist, Initial Study narrative, and any attachments combined to form a record indicating that an Initial Study has been completed in compliance with the State CEQA Guidelines and the CEQA.

All new development activities and many non-physical projects contribute directly or indirectly toward cumulative impacts on the physical environment. It has been determined that the incremental effect contributed by this project toward cumulative impacts is not considered significant in itself and/or that cumulative impacts accruing from this project may be mitigated to less than significant with the application of feasible mitigation measures.

With mitigation imposed under the PEIR and project-specific mitigation, there is no substantial evidence in the record that this project may have additional significant, direct, indirect, or cumulative effects on the environment that are significant and that were not identified and analyzed in the PEIR. The Planning and Development Department, as lead agency, finds that no substantial changes have occurred with respect to the circumstances under which the PEIR was certified and that no new information, which was not known and could not have been known at the time that the PEIR was certified as complete has become available.

Based upon the evaluation guided by the Appendix G/Initial Study Checklist, it was determined that there are project-specific foreseeable impacts that require project-level mitigation measures.

The Initial Study has concluded that the proposed project will not result in any adverse effects, which fall within the "Mandatory Findings of Significance" contained in § 15065 of the State CEQA Guidelines. The finding is, therefore, made that the proposed project will not have a significant adverse effect on the environment.

Public notice has been provided regarding staff's finding in the manner prescribed by § 15072 of the CEQA Guidelines and by § 21092 of the PRC Code (CEQA provisions).

Additional information on the proposed project, including the PEIR, proposed environmental finding of a Mitigated Negative Declaration, and the Initial Study may be obtained from the Planning and Development Department, Fresno City Hall, 2600 Fresno Street, 3rd Floor, Room 3043, Fresno, California 93721 3604. Please contact Thomas Veatch at (559) 621-8076 or via email at Thomas.Veatch@fresno.gov for more information.

ANY INTERESTED PERSON may comment on the proposed environmental finding. Comments must be in writing and must state (1) the commentor's name and address; (2) the commentor's interest in, or relationship to, the project; (3) the environmental determination being commented upon; and (4) the specific reason(s) why the proposed environmental determination should or should not be made. Any

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comments may be submitted at any time between the publication date of this notice and close of business on August 21, 2023). Please direct comments to Thomas Veatch, Planner City of Fresno Planning and Development Department, City Hall, 2600 Fresno Street, Room 3043, Fresno, California, 93721-3604, or by email to Thomas.Veatch@fresno.gov.	
INITIAL STUDY PREPARED BY: Thomas Veatch, Planner	SUBMITTED BY: 
DATE: July 21, 2023	Jose Valenzuela, Supervising Planner CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT
Attachments: Exhibit A – Vicinity Map	

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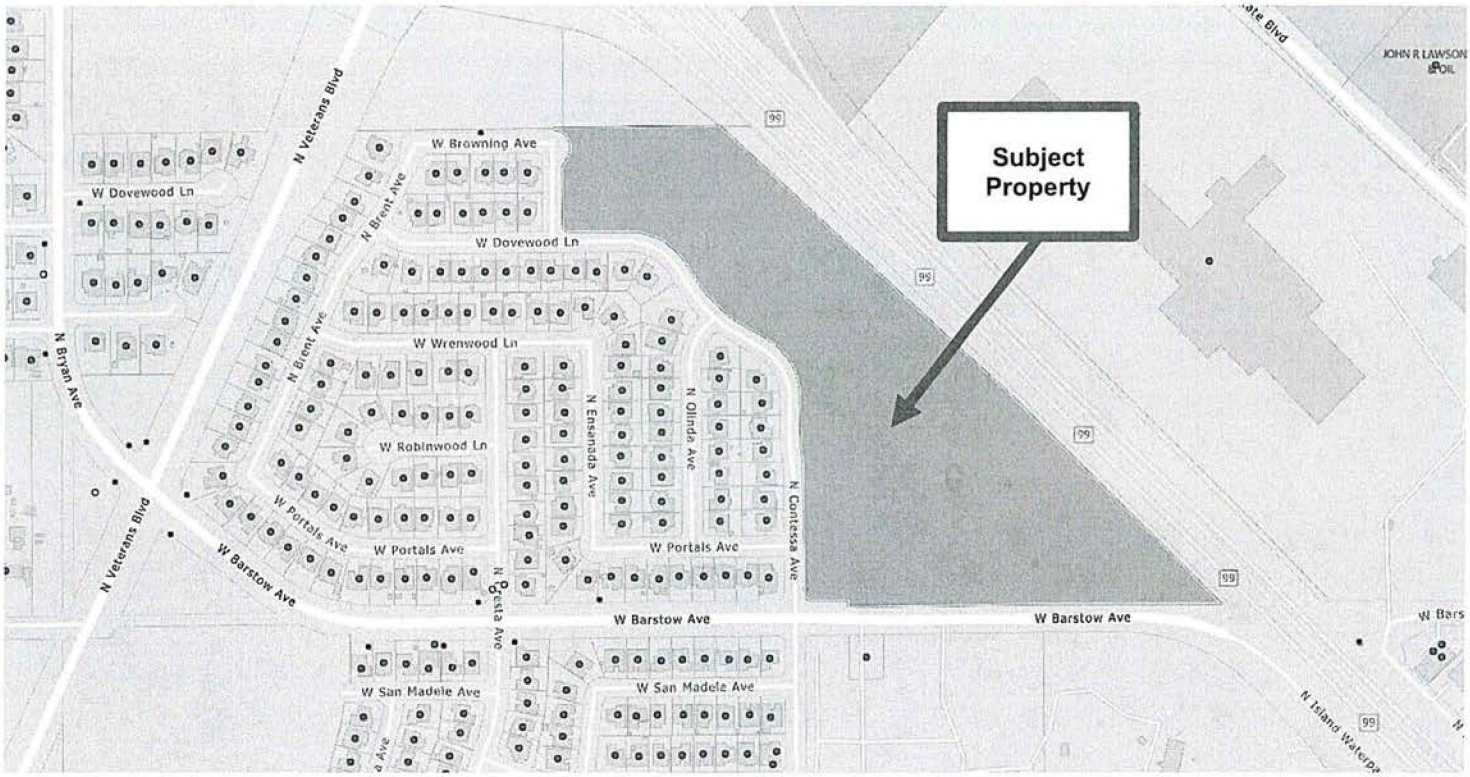
Vicinity Map



N NW NE W E SW SE S

Not To Scale

Subject property to developed:
18.87-acres

PLANNING AND DEVELOPMENT DEPARTMENT

Environmental Assessment No. P21-01833
Development Permit Application No. P21-01833

PROPERTY ADDRESS

6050 West Barstow Avenue
APN: 505-070-44

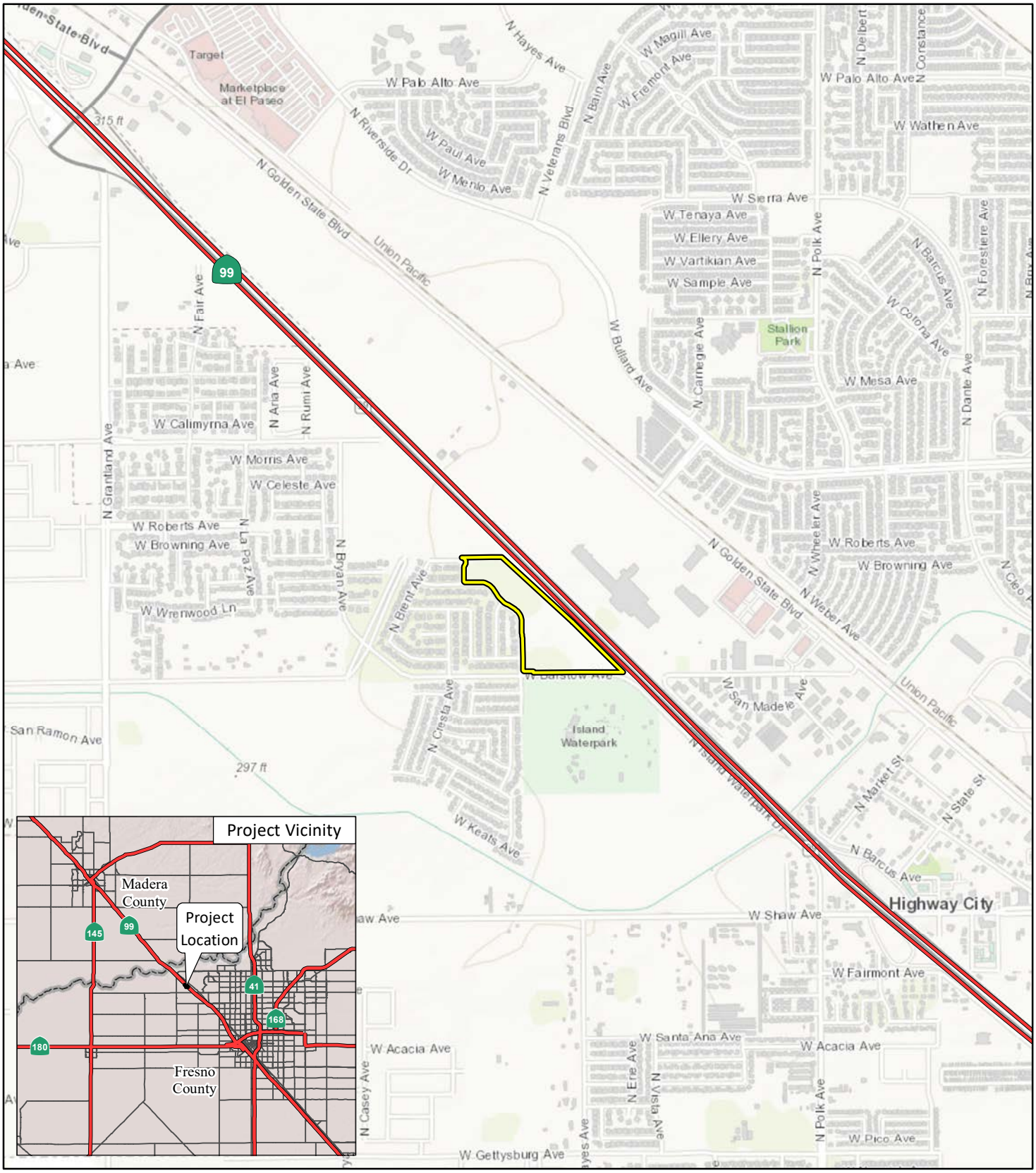
Planned Land Use: Employment – Heavy Industrial

Zone District: BP/UGM/cz (*Business Park/Urban Growth Management/conditions of zoning)*
By: T. Veatch
July 21, 2023

APPENDIX G/INITIAL STUDY FOR A MITIGATED NEGATIVE DECLARATION

Environmental Checklist Form for:
Development Permit Application No. P21-01833

1.	**Project title:** Development Permit Application No. P21-01833
2.	**Lead agency name and address:** City of Fresno Planning and Development Department 2600 Fresno Street Fresno, CA 93721
3.	**Contact person and phone number:** Thomas Veatch, Planner City of Fresno Planning and Development Department (559) 621-8076
4.	**Project location:** 6050 W. Barstow Ave Fresno, CA The 18.87-acre project site [Assessor's Parcel Number (APN): 505-070-44] is located at the northeast corner of Barstow Avenue and Contessa Avenue, in the City of Fresno. Figure 1 shows the site's regional and local context. The project site is bounded to the north by open space, to the east by industrial uses, to the south by commercial uses, and to the west by residential uses. Figure 2 depicts an aerial photograph of the project site and surrounding land uses. Figure 3 shows the project site plan.
5.	**Project sponsor's name and address:** Inderjit "Indy" Sangha Sangha Carriers 5812 W Bedford Ave Fresno, CA, 93722
6.	**General & Community plan land use designation:** Business Park
7.	**Zoning:** Business Park (BP)



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LEGEND

FIGURE 1

N

0 1040 2080
FEET

Barstow Truck Parking Facility Project

Regional Project Location

SOURCE: ArcGIS Online Topographic Map (2020)

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LSA

FIGURE 2

N

0 160 320
FEET

SOURCE: Google Earth 2021

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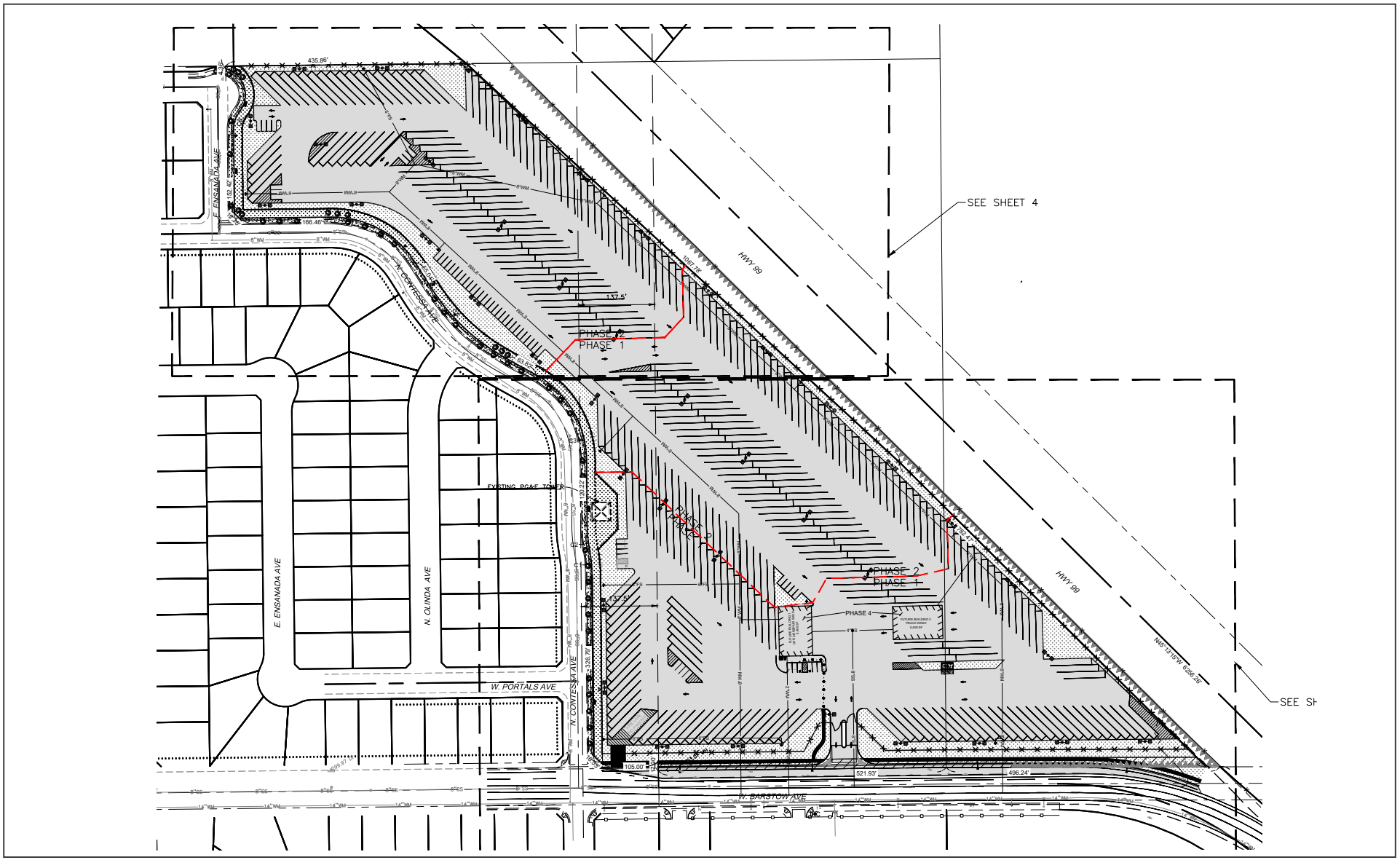
Barstow Truck Parking Facility Project

Aerial Photograph of Project Site and Surrounding Land Uses



LSA

FIGURE 3

0 160 320
FEET

SOURCE: Vang Inc. Consulting Engineers

I:\ESL2201.41\G\Site_Plan.ai (11/15/2022)

Barstow Truck Parking Facility Project

Site Plan

8. **Description of project:**

Development Permit Application No. P21-01833 was filed by Sangha Carrier (Project Applicant). The Project Applicant proposes to construct a truck parking facility with approximately 374 parking stalls, a 5,400 square-foot Office/Truck Repair Service Center, a 5,400 square-foot Truck Wash facility and associated infrastructure and circulation improvements on the approximately 18.87-acre project site.

Project Characteristics

The proposed project would result in the development of a truck parking facility with associated uses and infrastructure in the project site. The proposed project would be constructed in four phases, described below. Figure 3 shows the project site plan.

- **Phase 1** of the proposed project would result in the development of 7.61 acres in the southern portion of the project site. Phase 1 would construct 132 truck parking stalls and nine standard vehicle-parking stalls in the project site, including two electrical vehicle (EV) stalls and one Americans with Disabilities Act (ADA) compliant parking space.

- **Phase 2** of the proposed project would result in the development of 5.0 acres in the middle portion of the project site. Phase 2 would construct 138 truck parking stalls, and five standard vehicle-parking stalls in the project site, including one ADA-compliant parking space.

- **Phase 3** of the proposed project would result in the development of 5.7 acres in the northern portion of the project site. Phase 3 would construct 122 truck parking stalls and 39 regular vehicle-parking stalls in the project site, including three ADA-compliant parking spaces.

- **Phase 4** of the proposed project would result in the re-development of 1.3 acres in the southern portion of the project site developed under Phase 1. Phase 4 would require the removal of 18 truck parking stalls constructed under Phase 1. Phase 4 would result in the construction of two buildings: a 5,400 square-foot office/truck repair service center, which would include a 1,800 square-foot office, and a four-bay, 3,600 square-foot truck repair service center; and a two-tunnel, 5,400 square-foot truck wash facility. Additionally, this phase would construct six standard vehicle-parking stalls in the project site, including two EV-stalls.

The hours of operation for the proposed office/truck repair service center would be Monday through Saturday from 8:00 AM to 10:00 PM, and the facility would employ approximately 18 to 20 staff members. The proposed truck wash and truck parking facilities would operate 24 hours a day, 7 days a week, and would be self-service facilities. The proposed project would introduce approximately 15.91 acres of impervious surfaces into the project site.

	The proposed project would include new exterior lighting, with the installation of approximately 30 new lights around the perimeter of the project site, and 11 new lights to within the project site. The proposed project would install a 6-foot-high chain link fence along the northern and eastern boundaries of the project site and would construct a 6-foot-high vinyl privacy fence along the southern boundary of the site during Phase 1. The western boundary of the project site is bordered by an existing 8-foot-high block wall. The proposed project would install 11 fire hydrants along the perimeter of the project site. In addition, the proposed project would comply with the latest CALGreen standard building measures and Title 24 standards. The proposed truck washing facility would primarily utilize recycled water, with approximately 10 percent nonrecycled water or approximately 7,000 to 10,000 gallons of potable water used per month. At the end of each truck wash, used water would be discharged to an underground tank to undergo a degerming/filtration process to be used again as part of the truck wash cycle. The proposed project would be consistent with the site's Business Park (BP) zoning and General Plan land use designation. <u>Access, Circulation, and Parking</u> As described above, the proposed project would include 374 truck parking stalls and 59 standard vehicle parking stalls. The proposed project would also include a truck unloading zone in the southern portion of the site. The proposed project would also include five bicycle parking spaces. Vehicle access to the project site would be provided through one 48-foot-wide gated ingress and egress driveway located along West Barstow Avenue. Vehicle circulation within the project site would be provided by a network of 50-foot driveways. The proposed project would also include a 24-foot-wide gated emergency access driveway along West Barstow Avenue with a fire department-accessible padlock, per the City's P-67 *Standard Drawings* requirements. A dedicated fire lane would also be included on the southwest corner of the project site. Concrete sidewalks along the project frontage with West Barstow Avenue for pedestrian circulation will also be constructed. An existing pedestrian sidewalk along the project's western boundary would allow pedestrian circulation on the project's frontage with North Contessa Avenue. <u>Landscaping</u> The proposed project would include approximately 2.53 acres (110,181 square feet) of landscaped areas on the perimeter of the project site. <u>Utilities and Infrastructure</u> The project site is located in an urban area and is currently served by existing utilities, including: water, sanitary sewer, storm drainage, electricity, and natural gas infrastructure. Proposed utility connections are discussed below. <u>Water and Wastewater</u> Water supply and wastewater services for the proposed project would be provided by the Department of Public Utilities. The proposed project would connect to existing 14-inch and 8-inch water mains located along West Barstow and North Contessa Avenue,

respectively. Additionally, the proposed project would connect to existing 8-inch wastewater service lines located along West Barstow and North Contessa Avenue.

Stormwater

The Fresno Metropolitan Flood Control District (FMFCD) would provide flood control and urban storm water services to the project site. Stormwater from the project site would be drained through surface drainage infrastructure along West Barstow and North Contessa Avenue and redirected towards a nearby ponding basin.

Electricity and Natural Gas

Electricity and natural gas services to the site are provided by Pacific Gas and Electric Company (PG&E). PG&E has an existing electric tower located on the project frontage with North Contessa Avenue, and an existing 137.5-foot easement that extends inwards from the site's western boundary and crosses the project site from north to south. Existing underground utility connections and gas mains provide electricity and gas to the project site. The proposed project would connect to existing service lines in the vicinity of the project site.

Grading and Construction

Construction of the proposed project is expected to occur over a period of 10 months starting in June 2023. Site preparation would include removal of rocks, debris, and vegetation from the project site. Construction of the proposed project would comply with City standards, including the City's current building code, landscape standards, and lighting standards. In addition, the project site would be graded similar to other developments throughout the City.

9. **Surrounding land uses and setting:**

	Planned Land Use	Existing Zoning	Existing Land Use
North	Open Space – Ponding Basin	OS - Open Space	Open Space – Ponding Basin
East	Employment - Light Industrial	IL - Light Industrial	Light Industrial
South	Commercial Recreational	CRC - Commercial Recreation	Commercial Recreational (Island Water Park)
West	Medium Low Density Residential	RS-4 - Residential Single-Family, Medium Low Density	Medium Low Density Residential

10.	**Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):** • Development and Resource Management Department; • Building & Safety Services Division; • Department of Public Works; • Department of Public Utilities; • County of Fresno, Department of Public Health; • City of Fresno Fire Department; • Fresno Metropolitan Flood Control District; • San Joaquin Valley Air Pollution Control District; and • Fresno Irrigation District.
11.	**Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code (PRC) Section 21080.3.1? If so, has consultation begun?** The State requires lead agencies to consider the potential effects of proposed projects and consult with California Native American tribes during the local planning process for the purpose of protecting Traditional Tribal Cultural Resources through the California Environmental Quality Act (CEQA) Guidelines. Pursuant to PRC Section 21080.3.1, the lead agency shall begin consultation with the California Native American tribe that is traditionally and culturally affiliated with the geographical area of the proposed project. Such significant cultural resources are either sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe which is either on or eligible for inclusion in the California Historic Register or local historic register, or, the lead agency, at its discretion, and support by substantial evidence, choose to treat the resources as Tribal Cultural Resources (PRC Section 21074(a)(1-2)). According to the most recent census data, California is home to 109 currently recognized Indian tribes. Tribes in California currently have nearly 100 separate reservations or Rancherias. Fresno County has a number of Rancherias such as Table Mountain Rancheria, Millerton Rancheria, Big Sandy Rancheria, Cold Springs Rancheria, and Squaw Valley Rancheria. These Rancherias are not located within the city limits. Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See PRC Section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per PRC Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that PRC Section 21082.3(c) contains provisions specific to confidentiality. Currently, the Table Mountain Rancheria Tribe and the Dumna Wo Wah Tribe have requested to be notified pursuant to Assembly Bill 52 (AB 52). A certified letter was mailed to the above-mentioned tribes on December 23, 2021. The 30-day comment

	period ended on January 24, 2022. Neither tribe requested consultation.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐	Aesthetics	☐	Agriculture and Forestry Resources
☐	Air Quality	☐	Biological Resources
☐	Cultural Resources	☐	Energy
☐	Geology/Soils	☐	Greenhouse Gas Emissions
☐	Hazards and Hazardous Materials	☐	Hydrology/Water Quality
☐	Land Use/Planning	☐	Mineral Resources
☐	Noise	☐	Population/Housing
☐	Public Services	☐	Recreation
☐	Transportation	☐	Tribal Cultural Resources
☐	Utilities/Service Systems	☐	Wildfire
☐	Mandatory Findings of Significance		

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

___	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
_X_	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
___	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT (EIR) is required.
___	I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An EIR is required, but it must analyze only the effects that remain to be addressed.

___	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_____

Thomas Veatch, Planner Date

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS – Except as provided in PRC Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock out-croppings, and historic buildings within a state scenic highway?				X
c) In non-urbanized areas, substantially degrade the existing visual character or quality public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?		X		

DISCUSSION

a) Have a substantial adverse effect on a scenic vista?

A scenic vista is generally considered to be a public vantage point with an expansive view of a significant landscape feature. An impact on scenic vistas is considered significant if it substantially diminishes, blocks, or impedes an expansive view of a significant landscape feature from a public vantage point.

The project site is located in a primarily developed area of the city and is not located in an area with expansive or far field views. The proposed project would include the construction of a truck parking facility, including an office/truck repair service center, and

a truck wash facility and associated infrastructure. The project site is bounded to the north by open space, to the east by industrial uses, to the south by commercial uses, and to the west by residential uses. There are no significant trees, rock outcroppings, and/or historic buildings located on the subject property that have been identified as important scenic resources or would otherwise constitute significant landscape features. Therefore, the proposed project would not substantially diminish any scenic vistas within or near the project area and would likewise not substantially block or impede surrounding views. Therefore, the proposed project would result in a less-than-significant impact related to a substantial adverse effect on a scenic vista, and no mitigation is required.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

There are no trees, rock outcroppings, and/or historic buildings located on the subject property that have been identified as important scenic resources or would otherwise constitute significant landscape features. Additionally, there are no officially-designated State Scenic Highways in the immediate vicinity of the project site. According to the California Department of Transportation (Caltrans) mapping of State Scenic Highways,[1] the County of Fresno has one officially designated State Scenic Highways located along State Route (SR-) 180, east of the City of Fresno. Three eligible State Scenic Highways are also located within the County of Fresno, the nearest of which is located along SR-168 east of the City of Clovis. None of these are in the immediate vicinity of the project site. Since there are no eligible or officially designated State Scenic Highways within the immediate vicinity of the project site, the project would not impact a designated State Scenic Highway. Furthermore, the eligibility of the three State Scenic Highways, scenic resources located within the highway segments or its viewshed would not be impacted by the proposed project. Therefore, no impact on scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway would occur as a result of the proposed project and no mitigation is required.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The proposed project would alter the existing visual character from undeveloped vacant land to developed with a truck parking facility, that includes an office/truck repair service center, and a truck wash facility and the associated infrastructure. As identified above, nearby parcels consist of light industrial, commercial, open space, and residential uses. Although the proposed project would change the visual characteristics of the project site by developing the site, the design of the project would be consistent with the visual

[1] California Department of Transportation (Caltrans). Mapping of State Scenic Highways. Website: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways (accessed November 2022).

character within the project area. The project site is zoned in the City's Business Park (BP) district, which is intended to provide a campus-type office professional environment that is well suited for large offices or multi-tenant buildings and accommodate and allow for the expansion of small businesses with limited outdoor storage. The proposed project would introduce uses compatible with the zoning of the project site.[2] Therefore, the proposed project is consistent with the existing and historic zoning of the site and would not conflict with any applicable zoning or other regulations governing scenic quality.

In addition, the project design would be subject to the City's Design Guidelines adopted for the City's General Plan and Municipal Code which apply to site layout, building design, landscaping, interior street design, lighting, parking and signage. Detailed architectural plans, color palettes and building materials as well as landscaping plans would be submitted by the Project developer to the City of Fresno Planning and Development Department prior to issuance of any building permits.

Therefore, the proposed project would not substantially degrade the visual character of the area and would not diminish the visual quality of the area, as they would be consistent with the existing visual setting. The proposed project itself is not visually imposing against the scale of the existing adjacent uses and nature of the surrounding area. As such, the proposed project would not conflict with the site's zoning or with regulations governing scenic quality. A less-than-significant impact would occur.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

The project site is located in a primarily urbanized area, which is subject to preexisting exterior lighting from surrounding development and existing street lighting.

Construction of the proposed project could include temporary light and glare resulting from construction activities that could adversely affect day or nighttime views. Construction could result in light and glare from construction vehicles or equipment; however, construction activities are anticipated to occur primarily during daylight hours and once construction is completed, light and glare from these activities would cease to occur.

As described in the Project Description, the proposed project would include new on-site exterior lighting, with the installation of approximately 30 new lights around the perimeter of the project site, and 11 new lights to within the project site. Nighttime lighting levels would increase over current levels in the project area, associated with parking lot lights and security-related lighting. While compliance with California Building Code (Title 24, California Code of Regulations [CCR]) standards would minimize the proposed project's

2 City of Fresno. 2016. Fresno Municipal Code Chapter 15: Citywide Development Code. *Table 15-1302: Land Use Regulations—Employment Districts.* Website: https://www.fresno.gov/darm/wp-content/uploads/sites/10/2016/11/Complete_Code_March_2017.pdfhttps://www.fresno.gov/darm/wp-content/uploads/sites/10/2016/11/Complete_Code_March_2017.pdf (accessed November 14, 2022).

light and glare impacts, the proposed project's lighting systems could constitute substantial new sources of light relative to baseline conditions if the project's lighting systems are significantly more intense than existing lighting sources or if they are not appropriately shielded to prevent light diffusion. Additionally, the proposed project could create a substantial new source of glare if highly reflective building materials are used.

All exterior lighting at the project site would be directed downward toward the project site to minimize lighting levels at nearby uses. In addition, the proposed project would be required to comply with Article 25, Performance Standards, of the Zoning Ordinance, which includes standards related to lighting and glare. Further, Mitigation Measures AES-1 and AES-2 would ensure that the proposed project's lighting systems do not create a substantial new source of light by requiring shielding mechanisms to direct light away from nearby uses. As a result, any new sources of light resulting from the proposed project would not be substantial in the context of existing lighting sources. Implementation of Mitigation Measure AES-3 would ensure that the proposed project's lighting systems do not create a substantial new source of light by imposing a cap on the intensity of lighting systems based on the average intensity of the surrounding streets.

Additionally, while the project does not propose use of highly reflective glass elements or building materials, Mitigation Measure AES-4 requires materials used on building façades to be non-reflective. Therefore, any new source of glare would not be substantial.

Accordingly, with the incorporation of Mitigation Measures AES-1 through AES-4, the project's potential impacts would be less than significant.

Mitigation Measures

Mitigation Measure AES-1: Lighting systems for street and parking areas shall include shields to direct light to the roadway surfaces and parking areas. Vertical shields on the light fixtures shall also be used to direct light away from adjacent light sensitive land uses such as residences.

Mitigation Measure AES-2: Lighting systems for non-residential uses, not including public facilities, shall provide shields on the light fixtures and orient the lighting system away from adjacent properties. Low intensity light fixtures shall also be used if excessive spillover light onto adjacent properties will occur.

Mitigation Measure AES-3: Lighting systems for freestanding signs shall not exceed 100 foot Lamberts (FT-L) when adjacent to streets which have an average light intensity of less than 2.0 horizontal footcandles and shall not exceed 500 FT-L when adjacent to streets which have an average light intensity of 2.0 horizontal footcandles or greater.

Mitigation Measure AES-4: Materials used on building facades shall be non-reflective.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

DISCUSSION

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

The project site is classified as Farmland of Local Importance by the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP)[3]. Although the proposed project would result in the conversion of Farmland of Local Importance to non-agricultural uses, development of the project site would not result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use. Additionally, the project site is currently zoned within the City's Business Park (BP) district, and the proposed project would be consistent with uses allowed within this zoning district. As such, development of the proposed project would result in no impact to the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use and no mitigation is required.

b) Conflict with existing zoning for agricultural use or a Williamson Act contract?

The project site is currently zoned within the City's Business Park (BP) district and designated Business Park on the City's General Plan. The project site is not zoned for agricultural use and is not subject to a Williamson Act contract. Therefore, development of the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract. Therefore, the proposed project would have no impact on existing zoning for agricultural use or a Williamson Act contract, and no mitigation is required.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in

3 California Department of Conservation. 2016. California Important Farmland Finder. Available online at: https://maps.conservation.ca.gov/DLRP/CIFF/ (Accessed November 2022).

Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

The project site is located within an existing urban area and is zoned within the Business Park (BP) district within the City of Fresno. The project site is not currently used for timberland production, nor is it zoned for forest land or timberland. Therefore, the proposed project would have no impact to existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)), and no mitigation is required.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

The project site consists of a vacant lot surrounded by an urban environment. As such, the proposed project would not convert forest land to non-forest use and would result in no impact to the loss or conversion of forest land to a non-forest use, and no mitigation is required.

e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

Please refer to discussions a) and c) of this section. The project site is located within an existing urban environment and would not result in the conversion of farmland to non-agricultural uses or forest land to non-forest uses. Therefore, no impact to changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use would occur, and no mitigation is required.

Mitigation Measure

The proposed project would not result in any potentially significant impacts related to agriculture and forestry resources, and no mitigation is required.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan (*e.g.*, by having potential emissions of regulated criterion pollutants which exceed the San Joaquin Valley Air Pollution Control Districts (SJVAPCD) adopted thresholds for these pollutants)?			X	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

DISCUSSION

a) Conflict with or obstruct implementation of the applicable air quality plan?

The City of Fresno is part of the San Joaquin Valley Air Basin (SJVAB), which is within the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD is responsible for air quality regulation within the eight-county San Joaquin Valley region.

Both the State and the federal government have established health-based Ambient Air Quality Standards (AAQS) for six criteria air pollutants: carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead, and suspended particulate matter ($PM_{2.5}$ and PM_{10}). The SJVAB is designated as non-attainment for O_3 and $PM_{2.5}$ for federal standards and non-attainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards.

CEQA requires that certain proposed projects be analyzed for consistency with the applicable air quality plan. An air quality plan describes air pollution control strategies to be implemented by a city, county, or region classified as a non-attainment area. The main purpose of the air quality plan is to bring the area into compliance with the requirements of the federal and State air quality standards. To bring the SJVAB into attainment, the SJVAPCD adopted the 2016 Plan for the 2008 8-Hour Ozone Standard in June 2016 to satisfy Clean Air Act requirements and ensure attainment of the 75 parts per billion (ppb) 8-hour ozone standard.

To ensure the SJVAB's continued attainment of the U.S. Environmental Protection Agency (USEPA) PM_{10} standard, the SJVAPCD adopted the 2007 PM_{10} Maintenance Plan in September 2007. SJVAPCD Regulation VIII (Fugitive PM_{10} Prohibitions) is designed to reduce PM_{10} emissions generated by human activity. The SJVAPCD adopted the 2018 plan for the 1997, 2006, and 2012 $PM_{2.5}$ standards to address the USEPA federal annual $PM_{2.5}$ standard of 12 $\mu g/m^3$, established in 2012.

For a project to be consistent with SJVAPCD air quality plans, the pollutants emitted from a project should not exceed the SJVAPCD emission thresholds or cause a significant impact on air quality. In addition, emission reductions achieved through implementation of offset requirements are a major component of the SJVAPCD air quality plans. As discussed below, construction of the proposed project would not result in the generation of criteria air pollutants that would exceed SJVAPCD thresholds of significance. Implementation measures required under SJVAPCD's Regulation VIII would further reduce construction dust impacts. As discussed below, long-term operational emissions associated with the proposed project, including area, energy, and mobile source emissions, would also not exceed SJVAPCD established significance thresholds. Therefore, impacts related to the proposed project's potential to conflict with or obstruct implementation of the applicable air quality plan would be less than significant and no mitigation is required.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

The SJVAB is designated as non-attainment for O_3 and $PM_{2.5}$ for federal standards and non-attainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards. The SJVAPCD's non-attainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single

project is sufficient in size to, by itself, result in non-attainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

Short-Term Construction Emissions. During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by grading, paving, building, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO_x, reactive organic gases (ROG), directly emitted particulate matter ($PM_{2.5}$ and PM_{10}), and toxic air contaminants (TACs) such as diesel exhaust particulate matter.

Project construction activities would include site preparation, grading, building construction, paving, and architectural coating activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The SJVAPCD has implemented Regulation VIII measures for reducing fugitive dust emissions (PM_{10}). Regulation VIII is a series of rules designed to reduce fugitive dust from construction sites, parking and staging areas, open areas, material storage areas, etc. No permits are required by Regulation VIII, but failure to comply can result in fines and penalties. Measures generally required by Regulation VIII at all construction sites include the following:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.

- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.

- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.

- When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container shall be maintained.

- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.)

- Following the addition of materials to, or the removal of materials from, the surface of out-door storage piles, said piles shall be effectively stabilized of fugitive dust emission utilizing sufficient water or chemical stabilizer/suppressant.

With the implementation of Regulation VIII measures, fugitive dust emissions from construction activities would not result in adverse air quality impacts.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_x, ROG, and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

The SJVAPCD has established construction emissions thresholds on an annual basis as shown in Table 1 below. Construction emissions for the proposed project were analyzed using the California Emissions Estimator Model (CalEEMod) version 2022 Construction of the proposed project is anticipated to begin in June 2023 and continue for a period of 10 months. The project would be constructed over 4 phases. The timing of construction for each phase would be dependent on market forces and therefore the precise schedule is unknown. This analysis assumes the CalEEMod default assumption of 10 months to provide a conservative analysis. Other precise details of construction activities are unknown at this time; therefore, default assumptions (e.g., construction worker and truck trips and fleet activities) from CalEEMod were used. Construction-related emissions are presented in Table 1. CalEEMod output sheets are included in Appendix A.

Table 1: Project Construction Emissions (Tons per Year)

Construction Year	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
2023	0.1	2.1	1.6	<0.1	0.3	0.1
2024	0.2	0.6	0.5	<0.1	<0.1	<0.1
Maximum Annual Construction Emissions	**0.2**	**2.1**	**1.6**	**<0.1**	**0.3**	**0.1**
SJVAPCD Significance Threshold	10.0	10.0	100.0	27.0	15.0	15.0
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: LSA (November 2022).
CO = carbon monoxide
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic gas
SJVAPCD = San Joaquin Valley Air Pollution Control District
SO_X = sulfur oxides

As shown in Table 1, construction emissions would not exceed the SJVAPCD threshold for annual construction emissions for the proposed project. Therefore, construction of the proposed project would result in a less-than-significant impact related to a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State AAQS. No mitigation is required.

Long-Term Operational Emissions. Long-term air pollutant emission impacts associated with the proposed project are those related to mobile sources (e.g., vehicle trips), energy sources (e.g., electricity and natural gas), and area sources (e.g., architectural coatings and the use of landscape maintenance equipment).

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.

Energy source emissions result from activities in buildings for which natural gas is used. The quantity of emissions is the product of usage intensity (i.e., the amount of natural gas) and the emission factor of the fuel source.

Typically, area source emissions consist of direct sources of air emissions located at the project site, including architectural coatings and the use of landscape maintenance equipment. Area source emissions associated with the project would include emissions from the use of landscaping equipment and the use of consumer products.

Emission estimates for operation of the proposed project were calculated using CalEEMod. Model results are shown in Table 2. Trip generation rates for the proposed project were based on the project's trip generation estimate, as identified in Section XVII, Transportation. As discussed in Section XVII, Transportation, the proposed project would generate approximately 1,121 average daily trips. In addition, based on project-specific information included in the Health Risk Assessment (HRA) prepared for the proposed project, the CalEEMod analysis assumed that half of all project trips would be generated

by heavy trucks. Of the approximately 560 truck trips, this analysis assumed including 8.8 percent would consist of Light-Heavy-Duty truck (LHDT) trips, 18.6 percent would consist of Medium-Heavy-Duty truck (MHDT) trips, and 70.2 would consist of Heavy-Heavy-Duty truck (HHDT) trips.[4]

The primary emissions associated with the proposed project are regional in nature, meaning that air pollutants are rapidly dispersed on release or, in the case of vehicle emissions associated with the proposed project; emissions are released in other areas of the Air Basin. The annual emissions associated with project operational trip generation, energy, and area sources are identified in Table 2.

Table 2: Project Operation Emissions (Tons per Year)

	ROG	NO_X	CO	SO_x	PM_{10}	$PM_{2.5}$
Area Source Emissions	0.1	<0.1	<0.1	0.0	<0.1	<0.1
Energy Source Emissions	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile Source Emissions	0.2	3.5	2.3	<0.1	0.5	0.2
Total Project Operation Emissions	**0.3**	**3.5**	**2.3**	**<0.1**	**0.5**	**0.2**
SJVAPCD Significance Threshold	10.0	10.0	100.0	27.0	15.0	15.0
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: LSA (November 2022).
CO = carbon monoxide
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic gas
SJVAPCD = San Joaquin Valley Air Pollution Control District
SO_X = sulfur oxides

The results shown in Table 2 indicate the proposed project's operational emissions would not exceed the significance criteria for annual CO, NO_x, ROG, SO_x, PM_{10}, or $PM_{2.5}$ emissions. Therefore, operation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the proposed project region is in non-attainment under an applicable federal or State AAQS. As a result, impacts would be less than significant. No mitigation is required.

c) Expose sensitive receptors to substantial pollutant concentrations?

This section describes the potential impact on sensitive receptors from construction and operation of the proposed project based on the HRA[5] prepared for the project, included in Appendix B. Sensitive receptors are defined as people that have increased sensitivity to air pollution or environmental contaminants, including schools, parks, playgrounds, day care centers, nursing homes, hospitals, and residential uses.[6] Individuals particularly vulnerable to diesel particulate matter are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to diesel particulate matter. The closest sensitive receptors include the single-

[4] Johnson Johnson and Miller Air Quality Consulting Services, 2022. *Barstow Truck Parking Project Health Risk Assessment*. February 9.

[5] Johnson Johnson and Miller Air Quality Consulting Services, 2022. op. Cit.

[6] San Joaquin Valley Air Pollution Control District, 2015. *Guidance for Assessing and Mitigating Air Quality Impacts*. March 9. Website: http://www.valleyair.org/transportation/GAMAQI.pdf (accessed May 2023).

family residences located approximately 70 feet west of the project site across North Contessa Avenue.

Project Construction – Toxic Air Contaminants. Construction of the proposed project may expose surrounding sensitive receptors to airborne particulates, as well as a small quantity of construction equipment pollutants (i.e., usually diesel-fueled vehicles and equipment). However, construction contractors would be required to implement measures to reduce or eliminate emissions by following Regulation VIII, Fugitive PM_{10} Prohibitions. Project construction emissions would be below the SJVAPCD significance thresholds. In addition, project-related construction emissions would be temporary and would no longer occur once construction is finished. Therefore, given the temporary nature of short-term construction impacts and the absence of any exceeded threshold of significance related to construction impacts, the proposed project's potential construction-related impacts to sensitive receptors would be less than significant.

Project Operation – Toxic Air Contaminants. To determine the potential health risk to people living and working near the proposed project associated with the exhaust of diesel-powered trucks and equipment, an HRA was conducted for the proposed project, which is included in Appendix B.

The HRA was prepared to assess potential elevated TAC concentrations and associated health impacts that could result from operation of the proposed project, consistent with guidelines and methodologies from the SJVAPCD, California Air Resources Board (CARB), Office of Environmental Health Hazard Assessment (OEHHA), and the USEPA. Consistent with the methods recommended in the appliable guidelines, the HRA evaluates the estimated excess lifetime cancer risk as well as Diesel Particulate Matter (DPM) that would be emitted by on-site operational activities, including any exhaust emissions that would be emitted from vehicle trips.

Health risks were estimated for sensitive receptors located within approximately 0.5-mile of the project boundary.

An air dispersion model is a mathematical formulation used to estimate the air quality impacts at specific locations (receptors) surrounding a source of emissions given the rate of emissions and prevailing meteorological conditions. The air dispersion model applied in this assessment was the USEPA AERMOD (version 21112) air dispersion model. Specifically, AERMOD was used to estimate levels of air emissions at sensitive receptor locations from potential sources of project-generated TACs. The use of AERMOD provides a refined methodology for estimating operational impacts by utilizing long-term, measured representative meteorological data for the project site.

Specifically, National Elevation Dataset (NED) data for the area were obtained and included in the model runs to account for complex terrain. The air dispersion model assessment used meteorological data from the Fresno 93193 Station. The meteorological data used was preprocessed for use with AERMOD by the SJVAPCD and included data for the years 2013 to 2017; all years were used in the assessment. To evaluate the

proposed project's localized impacts at the point of maximum impact, all receptors were placed within the breathing zone at 1.5 meters above ground level. Emissions were assumed to occur over a 24-hour-per-day, 365 day-per-year averaging period. Detailed parameters and complete calculations are contained in Appendix B.

The project would generate passenger vehicle and truck trips from visitors traveling to and from the project site. In addition to visiting trucks, the project would also be served with truck deliveries. The main source of DPM from the long-term operations of the proposed project would be from combustion of diesel fuel in diesel-powered engines in on-road trucks, while additional DPM would be emitted from TRUs. On-site motor vehicle emissions refer to DPM exhaust emissions from the motor vehicle traffic that would travel and idle within the project site each day.

The proposed project is estimated to generate 1,121 daily trips. Based on project-specific information provided by the preparers of the Traffic Impact Analysis, it was assumed that half of all project trips would be generated by heavy trucks. The vehicle fleet mix for trucks would consist of LHDT, MHDT, and HHDT trips.[7] Emission factors are assigned to the expected vehicle mix as a function of vehicle age, vehicle class, speed, and fuel type. The operational fleet mix and daily diesel truck trips used to assess emissions from the proposed project are summarized in Table 3 below.

Table 3: Truck Vehicle Type Classification used to Estimate Emissions

Vehicle Type	Classification	Fleet Mix	Daily Trips	Number of Daily Diesel Trips
Trucks	LHDT1 (2-axle truck)	8.8%	49	23
	LHDT2 (2-axle truck)	2.5%	14	9
	MHDT (3-axle truck)	18.6%	104	104
	HHDT (4+ axle truck)	70.2%	393	393
	Truck Totals	**100.0%**	**560**	**529**

Source: Johnson Johnson and Miller Air Quality Consulting Services (February 2022).
SJVAPCD = San Joaquin Valley Air Pollution Control District

As the proposed project would consist of a truck parking lot, it was assumed that some trucks making trips to and from the project site would be equipped with a Transportation Refrigeration Unit (TRU). The number of trucks equipped with TRUs was based on statewide inventory percentages that were then applied to the heavy-heavy duty and medium-heavy duty truck trips associated with the proposed project.

The idling emissions of trucks operating on the project site were modeled as point sources within the area sources representing the planned loading docks. EMFAC2017 was used to determine the emissions factors of idling and operating diesel trucks to determine the total emissions of DPM. While it is expected that the truck emissions rate will continue to reduce over time, an HRA only allows for a single emission rate to represent the entire 70-year exposure period. The use of emissions factors for the year 2022, was used as a conservative estimate of emissions, although, the project is not expected to be fully

7 Johnson Johnson and Miller Air Quality Consulting Services, 2022. op. cit.

operational until 2024.

Results of the health risk analysis are summarized in Table 4 below.

Table 4: Health Risk Levels for Existing Residents near the Project Site

	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index
Maximally Exposed Resident	15.75	0.003
SJVAPCD Significance Threshold	**20**	**1.00**
Significant?	**No**	**No**

Source: Johnson Johnson and Miller Air Quality Consulting Services (February 2022).
SJVAPCD = San Joaquin Valley Air Pollution Control District

For the nearest residential receptor, the maximum cancer risk for the maximally exposed individual (MEI) would be 15.75 in one million, less than the threshold of 20 in one million. The chronic health risk from the project's activity would be 0.003, which would not exceed the threshold of 1.0. See Appendix B for additional details on the modeling.

As demonstrated in the analysis, the health risk levels to nearby residents from project-related emissions of TACs would be well below the SJVAPCD's HRA thresholds. Therefore, impacts would be less than significant related to the exposure of sensitive receptors to substantial pollutant concentrations during project operation. Therefore, the proposed project's potential air quality impacts on sensitive receptors are less than significant and no mitigation is required.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

During construction, the various diesel-powered vehicles and equipment in use on site would create localized odors. These odors would be temporary and are not likely to be noticeable for extended periods of time beyond the project site. The closest sensitive receptors include the single-family residences located approximately 70 feet west of the project site across North Contessa Avenue. At this distance and because the project's potential construction-related odor impacts are localized and temporary, they would not adversely affect a substantial number of people. Therefore, the project's potential construction-related odor impacts are less than significant.

Once operational, the proposed project would include truck activity, which could result in diesel odor impacts. As identified above, the closest sensitive receptors include the single-family residences located approximately 70 feet west of the project site across North Contessa Avenue. These odor emissions may be noticeable from time to time near the project site; however, they would be localized and are not likely to adversely affect a substantial number of people by resulting in confirmed odor complaints. In addition, idling of trucks would be limited by the CARB In-Use Off-Road Diesel Vehicles regulation, which limits idling to 5 minutes or less. Minimizing idling time reduces odors, as unburned fuel

and products of combustion from some engines condense in the exhaust, particularly during warmup or shortly after engine startup, resulting in more intense odors. Therefore, the proposed project would result in a less-than-significant impact related to other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Mitigation Measures

The proposed project would not result in any potentially significant impacts related to air quality, and no mitigation is required

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?				X
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

DISCUSSION

The analysis in this section is based on the findings of the Biological Resource Assessment[8] prepared for the proposed project. The Biological Resource Assessment is included as Appendix C.

The project site is located in central San Joaquin Valley in the Fresno County in the southwest quarter of Township 13 South, Range 19 East, mapped on the Herndon United States Geological Survey (USGS) topographic quadrangle.

The project site is vacant and disturbed from previous agricultural uses, and is bounded by open space uses to the north, industrial uses to the east, commercial uses to the south, and residential uses to the west. The project site is flat with almost no topographic variation and is at approximately 305 feet (93 meters) above mean sea level in elevation; however, the southern portion of the site contains soil piles leftover from soil disposal activities. There are no natural drainage features, depressional wetlands, or riparian areas present within the project site.

Methods. A field survey was conducted on July 19, 2021 and August 2021, which consisted of walking across the project site while identifying land uses and biotic habitats, identifying plant and animal species encountered, and assessing the suitability of the habitats within the project site for special-status species.

In addition, an analysis of potential project impacts to biological resources based on the known and potential biotic resources of the project site and vicinity was conducted. Sources of information used in the preparation of this analysis included:

[8] Argonaut Ecological Consulting, Inc. 2021. Biological Resource Assessment for Barstow Truck Parking at N. Contessa & W. Barstow Avenue, Fresno, CA. APN 505-070-44. September 2021.

- U.S. Department of Agriculture, Natural Resources Conservation Service, Soil Survey of Fresno Area (Soils mapper).

- California Natural Diversity Data Base information (CNDDB), which is administered by the California Department of Fish and Wildlife (CDFW), formerly known as the California Department of Fish and Game (CDFG). This database covers sensitive plant and animal species as well as sensitive natural communities that occur in California.

- Fresno County Farmland Mapping and Monitoring Program (FMMP) 1984-2014

- United States Fish and Wildlife Service's (USFWS) Information for Planning and Conservation (IPaC) Online System, which lists all proposed, candidate, threatened, and endangered species managed by the Endangered Species Program of the USFWS that have the potential to occur on or near a particular site. This database also lists all known critical habitats, national wildlife refuges, and migratory birds that could potentially be impacted by activities from a proposed project.

- The USFWS National Wetlands Inventory was reviewed to determine whether any wetlands or surface waters of the United States have been previously identified in the survey area.

In addition to the databases listed above, historic, and current aerial imagery, existing environmental reports for developments in the project vicinity, and local land use policies related to biological resources were reviewed.

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Special-Status Natural Communities. No special-status natural communities or conservation areas exist within the project site or in adjacent parcels. The project site is completely isolated and distant from all special-status natural communities that occur in the region. Therefore, no special-status natural community would be impacted by the proposed project.

Special-Status Plants. No special-status plants exist within the project site or in adjacent parcels. The project site does not contain suitable habitat and is situated outside of the species' known distribution. Therefore, as the project site does not contain any special-status plants, special-status plants would not be impacted by the proposed project.

Special-Status Animals. No special-status species were observed on the project site during the on-site survey. The project site appears only to support potential suitable for

one species, American badger. The species requires friable soils to create dens; however, no evidence of current occupation was observed. In addition, there is one CNDDB record for San Joaquin kit fox immediately north of the project site. Although it is unlikely the species would reside on the project site as the record is from 1939 and there were no dens present at the time of the field survey, it is possible that San Joaquin kit fox could forage within the project, especially given the high prey population (ground squirrels). San Joaquin pocket mouse and Valley elderberry longhorn beetle could also be present at the project site; however, the San Joaquin pocket mouse has no federal or State listing status and the Valley elderberry longhorn beetle does not require US Fish and Wildlife Service Consultation in Fresno or Madera Counties.

There is no suitable nesting habitat for Swainson's hawk at the project site as there are no large trees that could be used for nesting. However, the project site supports suitable habitat for the ground-nesting burrowing owl. Burrowing owls rely on ground burrowing mammals for nesting cavities (such as ground squirrels) and there is an extensive ground squirrel population within the project area. No evidence of current occupation was found during the field survey; however, that does not preclude future nesting/occupation.

In addition, nearly all native birds are protected by the Federal Migratory Bird Treaty Act, the California Migratory Bird Protection Act (16 USC Section 703-711), and the California Fish and Game Code Section 1802. Construction activities that occur during the nesting bird season (typically February 1 through August 31) have potential to result in the mortality/disturbance of nesting birds.

If unmitigated or unavoided, potential impacts on the San Joaquin kit fox and burrowing owl could be considered potentially significant. However, construction best management practices would ensure that no significant impacts to special-status species would occur. Therefore, implementation of Mitigation Measures BIO-1 through BIO-3 would effectively mitigate any impacts on special-status species to less-than-significant levels.

Critical Habitat. The project site is not located within or adjacent to critical habitat. Therefore, the project would not result in any impacts to critical habitat, and no mitigation is required.

Summary. No special-status plant or animal species would be impacted by the proposed project. However, the proposed project has potential to impact the San Joaquin kit fox, and burrowing owl. With implementation of Mitigation Measures BIO-1 through BIO-3 impacts on these species would be avoided and the project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service. Impacts would be less than significant with mitigation incorporated.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife

Service?

No riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulation by the CDFW or USFWS is present on the site. The project would be constructed within previously disturbed and barren areas surrounded by urban development. Therefore, implementation of the proposed project would have no impact related to a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or the USFWS. No mitigation is required.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No records of wetlands or potential jurisdictional drainage features existing within the project site or within the vicinity of the project site. There would be no impact on state or federally protected wetlands, and no mitigation is required.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

The project site does not contain any features that would function as wildlife movement corridors for resident or migratory wildlife species. In addition, the perimeter chain-link fence would inhibit the movement of native or migratory wildlife. Therefore, the proposed project would not place any permanent barriers within any known wildlife movement corridors or interfere with habitat connectivity. The proposed project would result in a less-than-significant impact related to the potential to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. No mitigation is required.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No sensitive species or habitat are located within the project site. Trees subject to local ordinances are also absent from the project site. Therefore, the project would not conflict with any local policies or ordinances protecting biological resources. There would be no impact and no mitigation is required.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The PG&E San Joaquin Valley Operation and Maintenance (O&M) Habitat Conservation Plan (HCP) was approved in 2007 and covers portions of nine counties, including Fresno

County and the City of Fresno. This HCP covers PG&E activities which occur as a result of ongoing O&M that would have an adverse impact on any of the 65 covered species and provides incidental take coverage from the USFWS and CDFW. The project site is not located within a designated HCP reserve area and the project would not impact any covered species. Therefore, the project would not conflict with the provisions of the PG&E HCP or any other regional conservation plan. There would be no impact. No mitigation is required.

Mitigation Measures

Mitigation Measure BIO-1: The following measures for protection of the San Joaquin kit fox shall be implemented prior and during ground disturbing activities at the project site:

- A worker-training program shall be implemented prior to construction activities to educate the crew as to the potential to encounter the San Joaquin kit fox within the project site. The training program shall be developed and delivered by a qualified biologist and would include information about potential burrowing owl and American badger habitat onsite, and measures to avoid impacts to special- status and protected species.

- No pets (such as dogs) should be permitted on the project site to prevent harassment or mortality of kit foxes.

- All food-related trash such a wrappers and food scraps should be disposed of in securely closed contains and removed at least once a week to prevent attracting kit fox.

- At the start of daily construction activities, stored pipes, culverts, or similar structures with a diameter of 4-inches or greater shall be inspected for the San Joaquin kit fox before they are moved, buried or capped. If a San Joaquin kit fox is found within the construction material, that area of the construction site shall be sealed off, and construction materials in that area shall not be disturbed until the San Joaquin kit fox has left the premises.

- To avoid accidental entrapment of San Joaquin kit or other animals during project construction, all steep excavation pits or trenches more than 2-feet deep should be covered at the end of each day with plywood or similar materials. If trenches and pits cannot be closed, escape ramps from earthen-fill or wooden planks shall be placed in the inside the pits and trenches. Additionally, all trenches or pits shall be examined for entrapped animals prior to filling.

- All vehicles within the project site shall observe a daytime speed of 20 miles per hour throughout the project area. Project construction shall be limited to the hours of 7:00 a.m. and 10:00 p.m. on any day except Sunday as per Section 10-109 of the City's Municipal.

Mitigation Measure BIO-2: Prior to project construction, a qualified biologist shall conduct pre-construction surveys for burrowing owl occupation at the project site within 30 days prior to construction. If burrowing owl is found, passive relocation can be used for any occupied burrow that does not have eggs or young. If eggs or young are present, contact the California Department of Fish and Wildlife for instructions on how to proceed.

Mitigation Measure BIO-3: If project construction activities occur during nesting season (between February 1 and August 31), a qualified biologist shall conduct pre-construction surveys for active migratory bird nests at the project site within 14 days of the onset of these activities. Should any active nests be discovered in or near proposed construction zones, the biologist shall identify a suitable construction-free buffer around the nest. This buffer shall be identified on the ground with flagging or fencing, and shall be maintained until the biologist has determined that the young have fledged.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?		X		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

DISCUSSION

A Cultural and Historical Resources Assessment[9] was prepared for the proposed project, which is included as Appendix D. The Cultural and Historical Resources Assessment included a records search at the California Historical Resources Information System (CHRIS) Southern San Joaquin Valley Information Center (SSJVIC) to identify whether there are any prior cultural resource studies or previously recorded cultural resources in the project area, additional background research, and a pedestrian field survey of the project area. The analysis in this Cultural Resources section is based on the results of the Cultural and Historical Resources Assessment.

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

A historical resource defined by CEQA includes one or more of the following criteria: 1) the resource is listed, or found eligible for listing in, the California Register of Historical Resources (CRHR); 2) listed in a local register of historical resources as defined by Public Resources Code (PRC) Section 5020.1(k); 3) identified as significant in a historical resources survey meeting the requirements of PRC Section 5024.1(g); or 4) determined to be a historical resource by the project's lead agency (PRC Section 21084.1; CEQA Guidelines Section 15064.(a)). Under CEQA, historical resources include built-environment resources and archaeological sites.

9 Peak & Associates. 2021. Cultural and Historical Resources Assessment for Vesting Tentative Tract Map 6352 - Barstow Truck Parking. APN: 505-070-44. October 19.

As discussed in the Cultural and Historical Resources Assessment, no historical resources were identified within or adjacent to the project site. Although no evidence of archeological deposits has been identified, there is a potential for unknown archaeological resources that qualify as a historical resource under CEQA to be discovered during construction. In addition, the City has determined that impacts to cultural resources could occur as a result of development within the City, and that unknown archaeological materials constituting historical resources have the potential to be present. Mitigation Measure CUL-1 requires that if unknown archaeological resources are discovered during construction, work in the area would halt, and a qualified historical resources specialist would be contacted and consulted regarding how to appropriately address the situation. This would minimize or eliminate any potential for a change to the significance of any discovered resources. Therefore, adherence to the requirements in Mitigation Measure CUL-1 would reduce potential impacts related to a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 to less than significant with mitigation.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

According to the State CEQA Guidelines, “When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource” (State CEQA Guidelines Section 15064.5(c)(1)). Those archaeological sites that do not qualify as historical resources shall be assessed to determine if these qualify as “unique archaeological resources” (California PRC Section 21083.2).

The Cultural and Historical Resources Assessment found that there were no associated archeological deposits observed during the field inspection and recordation and it is unlikely given the degree of ground disturbance in the project site that a buried, undiscovered deposit would be present. However, there is a potential for unknown archaeological resources to be discovered during construction. Mitigation Measure CUL-1 requires that if unknown archaeological resources are discovered during construction, work in the area would halt and a qualified archaeologist would be contacted and consulted regarding how to appropriately address the situation. This would minimize or eliminate any potential for an adverse change to the significance of any discovered archaeological resources. Therefore, adherence to the requirements in Mitigation Measure CUL-1 would reduce potential impacts to a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 to less than significant with mitigation.

c) Disturb any human remains, including those interred outside of formal cemeteries?

In the event the event that archaeological resources are identified during project activities, disturbance of human remains interred outside of formal cemeteries would result in a potentially significant impact. As discussed in the Cultural and Historical Resources

Assessment, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area suspected to overlie adjacent remains until the Fresno County Coroner has determined that the remains are not subject to any provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.

If the Fresno County Coroner determines that the remains are not subject to his or her authority and if the Coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC). After notification, the NAHC will follow the procedures outlined in Public Resources Code Section 5097.98, that include notification of most likely descendants (MLDs), and recommendations for treatment of the remains. The MLDs will have 24 hours after notification by the NAHC to make their recommendations (PRC Section 5097.98). Implementation of these procedures would minimize or eliminate potentially significant impacts related to the discovery of human remains. Therefore, adherence to the requirements in Mitigation Measure CUL-2 would reduce potential impacts to unknown human remains to less than significant with mitigation.

Mitigation Measures

Mitigation Measure CUL-1: In the event the event that archaeological resources are identified during project activities, work should be halted immediately within 50 feet of the find until a qualified professional archaeologist is contacted to assess the nature and significance of the find and determine if any additional study or treatment of the find is warranted. The archaeologist should develop proper mitigation measures required for the discovery per California Code of Regulations, Title 14, Chapter 3, Section 15064.5(f). Additional studies could include, but would not be limited to, collection and documentation of artifacts, documentation of the cultural resources on State of California Department of Parks and Recreation Series 523 forms, or subsurface testing. If determined appropriate by the qualified archaeologist, archaeological monitoring should commence and continue until grading and excavation are complete or until the monitoring archaeologist determines, based on field observations and in consultation with the qualified archaeologist, that there is little likelihood of encountering additional archaeological cultural resources. Archaeological monitoring may be reduced from full-time to part-time or spot-checking if determined appropriate by the qualified archaeologist based on monitoring results. Upon completion of any monitoring activities, the archaeologist should prepare a report to document the methods and results of monitoring activities. The final version of this report should be submitted to the Southern San Joaquin Valley Information Center.

Mitigation Measure CUL-2: In the event that human remains are unearthed during excavation and grading activities of any future development project, all activity shall cease immediately. Pursuant to Health and Safety Code (HSC) Section 7050.5, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98(a). If the remains are determined to be of Native American descent, the coroner shall within 24 hours notify the Native American Heritage Commission (NAHC). The NAHC shall then contact the most likely descendent of the deceased Native American, who shall then serve as the consultant on how to proceed with the remains. Pursuant to PRC Section 5097.98(b), upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. ENERGY – Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

DISCUSSION

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

The proposed project would increase the demand for electricity, natural gas, and gasoline. The discussion and analysis provided below is based on data included in the CalEEMod output, which is included in Appendix A.

Construction-Period Energy Use. The anticipated construction schedule assumes that the proposed project would be built over approximately 10 months. The proposed project would require grading, site preparation, and building activities during construction.

Construction of the proposed project would require energy for the transportation of construction materials, preparation of the site for demolition and grading activities, and construction activities. Petroleum fuels (e.g., diesel and gasoline) would be the primary sources of energy for these activities. Construction activities are not anticipated to result in an inefficient use of energy as gasoline and diesel fuel would be supplied by construction contractors who would conserve the use of their supplies to minimize their costs on the project. Energy usage on the project site during construction would be temporary in nature and would be relatively small in comparison to the State's available energy sources. Therefore, the proposed project would result in a less-than-significant impact during project construction.

Operational Energy Use. Energy use consumed by the proposed project would be associated with natural gas use, electricity consumption, and fuel used for vehicle and

truck trips associated with the project. Energy and natural gas consumption was estimated for the project using default energy intensities by land use type in CalEEMod. The proposed buildings would likely be constructed using the 2022 Title 24 standards; however, based on available modeling tools, the CalEEMod analysis of energy use assumed the construction of buildings based on the 2019 Title 24 standards which is a conservative analysis.

The Title 24 Building Energy Efficiency Standards ("Title 24 Standards") contain energy efficiency requirements for newly constructed buildings, additions to existing buildings, and alterations to existing buildings. The Title 24 Standards establish performance metrics in the form of an "energy budget" based on energy consumption per square foot of floor space. For this reason, the Title 24 Standards include both a prescriptive option, allowing builders to comply by using methods known to be efficient, and a performance option, allowing builders complete freedom in their designs provided the building achieves the same overall efficiency as an equivalent building using the prescriptive option. Reference appendices are adopted along with the Title 24 Standards containing data and various compliance tools to help builders achieve compliance. Electricity and natural gas usage estimates associated with the proposed project are shown in Table 5.

In addition, the proposed project would result in energy usage associated with gasoline and diesel to fuel project-related trips. Based on the CalEEMod analysis, the proposed project would result in approximately 1,116,764 vehicle miles traveled (VMT) per year. The average fuel economy for light-duty vehicles (autos, pickups, vans, and SUVs) in the United States has steadily increased from about 14.9 miles per gallon (mpg) in 1980 to 22.9 mpg in 2020.[10] The average fuel economy for heavy-duty trucks in the United States has also steadily increased, from 5.7 mpg in 2013 to a projected 8.0 mpg in 2021.[11] Therefore, using the average fuel economy estimates for 2020 the proposed project would result in the consumption of approximately 24,362 gallons of gasoline and 69,860 gallons of diesel.

Table 5 shows the estimated potential increased electricity and natural gas demand, and fuel consumption associated with the proposed project.

Table 5: Estimated Annual Energy Use of Proposed Project

Electricity Use (kWh per year)	Natural Gas Use (therms per year)	Fuel Consumption (gallons per year)	Fuel Consumption (gallons per year)
153,608	2,236	24,362	69,860

Source: LSA (November 2022).
kWh = kilowatt-hours

As shown in Table 5, the estimated potential increased electricity demand associated with the proposed project is 153,608 kilowatt-hours (kWh) per year. In 2020, California

[10] U.S. Department of Transportation (DOT). "Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles." Website: https://www.bts.dot.gov/bts/bts/content/average-fuel-efficiency-us-light-duty-vehicles (accessed November 2022).

[11] Ibid.

consumed approximately 279,510 gigawatt-hours (GWh) or 279,510,007,246 kWh.[12] Of this total, Fresno County consumed 8,017 GWh or 8,017,830,742 kWh.[13] Therefore, electricity demand associated with the proposed project would be less than 0.1 percent of Fresno County's total electricity demand.

The estimated potential increased natural gas demand associated with the proposed project is 2,236 therms per year, as shown in Table 5. In 2020, California consumed approximately 12,331,530,178 therms, while Fresno County consumed approximately 325 million therms or approximately 325,915,257 therms.[14] Therefore, natural gas demand associated with the proposed project would be less than 0.1 percent of Fresno County's total natural gas demand.

In addition, the proposed project would result in energy usage associated with gasoline and diesel to fuel project-related trips. As shown above in Table 5, vehicle trips associated with the proposed project would consume approximately 24,362 gallons of gasoline and 69,860 gallons of diesel fuel per year. Based on fuel consumption obtained from EMFAC2021, approximately 157 million gallons of diesel and approximately 375 million gallons of gasoline will be consumed from vehicle trips in Fresno County in 2022. Therefore, gasoline and diesel fuel demand generated by vehicle trips associated with the proposed project would be a minimal fraction of gasoline and diesel fuel consumption in California.

In addition, proposed new development would be constructed using energy efficient modern building materials and construction practices, and the proposed project also would be consistent with current Title 24 standards, as discussed above. The expected energy consumption during construction and operation of the proposed project would be consistent with typical usage rates for similar uses; however, energy consumption is largely a function of personal choice and the physical structure and layout of buildings.

PG&E is the private utility that would supply the proposed project's electricity and natural gas services. In 2021, a total of 50 percent of PG&E's delivered electricity came from renewable sources, including solar, wind, geothermal, small hydroelectric and various forms of bioenergy.[15] PG&E reached California's 2020 renewable energy goal in 2017, and is positioned to meet the State's 60 percent by 2030 renewable energy mandate set forth in Senate Bill (SB) 100. In addition, PG&E plans to continue to provide reliable service to their customers and upgrade their distribution systems as necessary to meet future demand.

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12 California Energy Commission (CEC), 2021. Energy Consumption Data Management Service. Electricity Consumption by County. Website: www.ecdms.energy.ca.gov/elecbycounty.aspx (accessed November 2022).

13 Ibid.

14 CEC, 2021. Energy Consumption Data Management Service. Gas Consumption by County. Website: www.ecdms.energy.ca.gov/gasbycounty.aspx (accessed November 2022).

15 PG&E, 2021. *Exploring Clean Energy Solutions*. https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page?WT.mc_id=Vanity_cleanenergy (accessed May 2022).

Therefore, the proposed project would result in a less-than-significant impact during project operation. As such, the proposed project would not result in a potential significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. No mitigation is required.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

In 2002, the Legislature passed Senate Bill 1389, which required the California Energy Commission (CEC) to develop an integrated energy plan every two years for electricity, natural gas, and transportation fuels, for the California Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero emission (ZE) vehicles and their infrastructure needs, and encouragement of urban designs that reduce VMT and accommodate pedestrian and bicycle access.

The most recently CEC adopted energy reports are the 2021 Integrated Energy Policy Report[16] and 2022 Integrated Energy Policy Report Update[17]. The Integrated Energy Policy Reports provide the results of the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining energy reliability and controlling costs. The Integrated Energy Policy Reports cover a broad range of topics, including implementation of Senate Bill 350, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency, transportation electrification, barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, the preliminary transportation energy demand forecast, renewable gas (in response to Senate Bill 1383), updates on Southern California electricity reliability, natural gas outlook, and climate adaptation and resiliency.

As indicated above, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. Because California's energy conservation planning actions are conducted at a regional level, and because the proposed project's total impact to regional energy supplies would be minor, the proposed project would not conflict with California's energy conservation plans as described in the CEC's Integrated Energy Policy Reports. In addition, as identified above, electricity and natural gas demand associated with the proposed project

[16] California Energy Commission, 2021. *2021 Integrated Energy Policy Report.* California Energy Commission. Docket # 21-IEPR-01.

[17] California Energy Commission, 2022. *2022 Integrated Energy Policy Report Update.* California Energy Commission. Docket # 22-IEPR-01.

would be less than 0.1 percent of Fresno County's total natural gas demand. Impacts would be less than significant, and no mitigation is required.

Mitigation Measures

The proposed project would not result in any potentially significant impacts related to energy, and no mitigation is required.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS – Would the project:				
a) Directly or Indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	

DISCUSSION

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Fault rupture is generally expected to occur along active fault traces that have exhibited signs of recent geological movement (i.e., 11,000 years). Alquist-Priolo Earthquake Fault Zones delineate areas around active faults with potential surface fault rupture hazards that would require specific geological investigations prior to approval of certain kinds of development within the delineated area. The project site is not located within an Alquist-Priolo Earthquake Fault Zone. In addition, no known active or potentially active faults or fault traces are located in the project vicinity. As a result, the proposed project would have no impact related to rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault would occur. No mitigation is required.

ii. Strong seismic ground shaking?

The City of Fresno is located in an area with historically low to moderate level of seismicity. However, strong ground shaking could occur within the project site during seismic events and occurrences have the possibility to result in significant impacts. Major seismic activity along the nearby Great Valley Fault Zone or the Nunez Fault, or other associated faults, could affect the project site through

strong seismic ground shaking. Strong seismic ground shaking could potentially cause structural damage to the proposed project. However, due to the distance to the known faults, hazards due to ground shaking would be minimal. In addition, compliance with the California Building Code (Title 24 CCR) would ensure that geotechnical design of the proposed project would minimize or eliminate potential impacts related to strong seismic ground shaking. Therefore, the project would not directly or indirectly cause substantial adverse effects related to strong seismic ground shaking. As such, the proposed project would have a less-than-significant impact. No mitigation is required.

iii. Seismic-related ground failure, including liquefaction?

Soil liquefaction is a phenomenon primarily associated with saturated soil layers located close to the ground surface. During ground shaking, these soils lose strength and acquire "mobility" sufficient to permit both horizontal and vertical movements. Soils that are most susceptible to liquefaction are clean, loose, uniformly graded, saturated, fine-grained sands that lie relatively close to the ground surface. However, loose sands that contain a significant amount of fines (silt and clay) may also liquefy. Based on the predicted seismic accelerations, and soil and groundwater conditions typically encountered in the region, general liquefaction potential is low in the City of Fresno. Additionally, compliance with the Fresno Municipal Code and the California Building Code would ensure potential impacts associated with seismic-related ground failure, including liquefaction, would not directly or indirectly cause substantial adverse effects. Therefore, the proposed project's impacts would be less than significant. No mitigation is required.

iv. Landslides?

A landslide generally occurs on relatively steep slopes and/or on slopes underlain by weak materials. The project site is located on a relatively flat area and is not located next to any hills. In general, the potential for land sliding or slope failure in Fresno is very low and the project site would not be susceptible to landslides. Therefore, the proposed project would not directly or indirectly cause substantial adverse effects by exposing people or structures to risk as a result of landslides. As such, the proposed project's impacts would be less than significant. No mitigation is required.

b) Result in substantial soil erosion or the loss of topsoil?

The total project site is 18.87 acres, which would be disturbed/developed during proposed grading and construction activities. Grading and earthmoving during project construction has the potential to result in erosion and loss of topsoil. Exposed soils could be entrained in stormwater runoff and transported off the project site. However, this impact would not be substantial because the project is required to comply with water quality control measures, which include preparation of a Stormwater Pollution Prevention Plan (SWPPP)

(refer to Section X, Hydrology and Water Quality). Although designed primarily to protect stormwater quality, the SWPPP would incorporate Best Management Practices (BMPs) to minimize erosion. Additional details regarding the SWPPP are provided in Section X, Hydrology and Water Quality, of this Initial Study. Impacts related to substantial soil erosion or the loss of topsoil would be less than significant. No mitigation is required.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

As described in discussion a) in this section, soils on the project site would not be subject to liquefaction, lateral spreading, or landslides. Additionally, the proposed project would be required to conform with the California Building Code, which would reduce risks related to unstable soils. Therefore, the proposed project would have a less-than-significant impact related to the potential to be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. No mitigation is required.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial direct or indirect risks to life or property?

Expansive soils are characterized by the potential for shrinking and swelling as the moisture content of the soil decreases and increases, respectively. Shrink-swell potential is influenced by the amount and type of clay minerals present and can be measured by the percent change of the soil volume. The project site is made up of Exeter sandy loam, a soil with relatively low clay content and shrink-swell potential.[18] Furthermore, compliance with the California Building Code requirements would ensure that geotechnical design of the proposed project would reduce potential impacts related to expansive soils to a less-than-significant level. As such, the risk of expansive soil affecting the proposed project is considered low. Impacts to expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial direct or indirect risks to life or property would be less than significant. No mitigation is required.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The project site would be served by a wastewater conveyance system maintained by the City of Fresno. Wastewater from the City's collection system is treated at the City's wastewater treatment plant. Development of the proposed project would not involve the use of septic tanks or alternative wastewater disposal systems. Therefore, the proposed

[18] Natural Resources Conservation Service. Web Soil Survey. Available online at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx (accessed November 2022).

project would have no impact related to soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No paleontological resources or unique geological features are known to exist within or near the project site, and the proposed project is not expected to alter or destroy a paleontological resource, site, or unique geologic feature. Furthermore, the proposed project would not require excavation to depths that have not already been disturbed by previous construction. Therefore, the proposed project is not expected to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Impacts would be considered less than significant. No mitigation is required.

Mitigation Measures

The proposed project would not result in any potentially significant impacts related to geology and soils, and no mitigation is required.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS – Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

DISCUSSION

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Greenhouse gas emissions (GHGs) are present in the atmosphere naturally, and are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. However, over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global climate change. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons
- Perfluorocarbons
- Sulfur Hexafluoride

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime").

The GWP of each gas is measured relative to CO_2, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e).

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse green-house gas emission impact if the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reduction the emissions of greenhouse gases.

Section 15064.4 of the *State CEQA Guidelines* states that: "A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project." In performing that analysis, the lead agency has discretion to determine whether to use a model or methodology to quantify GHG emissions, or to rely on a qualitative analysis or performance-based standards. In making a determination as to the significance of potential impacts, the lead agency then considers the extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting, whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project, and the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

Therefore, consistent with the *State CEQA Guidelines*, Section 15183.5, if a project is consistent with an adopted qualified Greenhouse Gas Reduction Strategy that meets the standards, it can be presumed that the project would not have significant GHG emission impacts.

The City of Fresno's GHG Reduction Plan was adopted in December 2014 to reduce local community GHG emissions to 1990 levels by the year 2020, consistent with the State objectives set forth in AB 32. The City's 2014 GHG Reduction Plan meets the requirements for a Qualified Greenhouse Gas Reduction Strategy and is designed to streamline environmental review of future development projects in the City, consistent with *State CEQA Guidelines* Section 15183.5.

The City of Fresno updated its 2014 GHG Reduction Plan in the year 2021 to conform with existing applicable State climate change policies and regulations to reduce local community GHG emissions to 40 percent below 1990 levels by the year 2030, consistent with the State objectives set by SB 32. The GHG Plan Update outlines strategies that the City will undertake to achieve its proportional share of GHG emission reductions. The GHG Reduction Plan Update includes a Consistency Checklist to help the City provide a streamlined review process for new development projects that are subject to discretionary review pursuant to CEQA. This analysis evaluates the proposed project's consistency with the City's GHG Reduction Plan Update.

The GHG Reduction Plan Update requires an analysis of GHG emissions to ensure that a change in land use designation would not result in a significant increase in GHG emissions compared to the existing land use designation. The proposed project would not require a change in the General Plan land use designation or the current zoning of the project site and would be consistent with the City's General Plan and Zoning Ordinance. Therefore, an analysis of the proposed project's estimated GHG emissions compared to maximum buildout of the existing designation would not be required.

As stated above, the GHG Reduction Plan Update includes a Consistency Checklist to help the City provide a streamlined review process for new development projects that are subject to discretionary review pursuant to CEQA. The project's Consistency Checklist is included in Appendix E. As shown in the Consistency Checklist, the proposed project would be consistent with the applicable strategies from the GHG Reduction Plan Update. Therefore, the proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant effect on the environment and impacts would be less than significant.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The SJVAPCD has adopted a Climate Change Action Plan (CCAP), which includes suggested best performance standards (BPS) for proposed development projects. However, the SJVAPCD's CCAP was adopted in 2009 and was prepared based on the State's 2020 GHG targets, which are now superseded by State policies (i.e., the 2019 California Green Building Code) and the 2030 GHG targets, established in SB 32. As discussed above, the proposed project is consistent with the City's GHG Reduction Plan Update.

In addition, the proposed project was analyzed for consistency with the goals of Executive Order (EO) B-30-15, SB 32, AB 197, and the Scoping Plan.

EO B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in EO B-30-15. CARB released the 2017 Scoping Plan to reflect the 2030 target set by EO B-30-15 and codified by SB 32. SB 32 keeps the State

on the path toward achieving the 2050 objective of reducing emissions to 80 percent below 1990 levels. The companion bill to SB 32, AB 197, provides additional direction to the CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 intended to provide easier public access to air emissions data that are collected by CARB was posted in December 2016.

The Scoping Plan contains GHG reduction measures that work towards reducing GHG emissions, consistent with the targets set by EO B-30-15 and codified by SB 32 and AB 197. The measures applicable to the proposed project include energy efficiency measures, water conservation and efficiency measures, and transportation and motor vehicle measures, as qualitatively discussed below.

Energy efficient measures are intended to maximize energy efficiency building and appliance standards, pursue additional efficiency efforts including new technologies and new policy and implementation mechanisms, and pursue comparable investment in energy efficiency from all retail providers of electricity in California. In addition, these measures are designed to expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. The proposed project would be required to comply with the latest Title 24 standards of the CCR, established by the CEC, regarding energy conservation and green building standards. Therefore, the proposed project would comply with applicable energy measures.

Water conservation and efficiency measures are intended to continue efficiency programs and use cleaner energy sources to move and treat water. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. As noted above, the proposed project would be required to comply with the latest Title 24 standards of the CCR, which includes a variety of different measures, including reduction of wastewater and water use. In addition, the proposed project would be designed to include drought tolerant landscaping. Therefore, the proposed project would not conflict with any of the water conservation and efficiency measures.

The goal of transportation and motor vehicle measures is to develop regional GHG emissions reduction targets for passenger vehicles. The second phase of Pavley standards will reduce GHG emissions from new cars by 34 percent from 2016 levels by 2025, resulting in a 3 percent decrease in average vehicle emissions for all vehicles by 2020. Vehicles traveling to the project site would comply with the Pavley II (LEV III) Advanced Clean Cars Program. Therefore, the proposed project would not conflict with the identified transportation and motor vehicle measures.

As such, the proposed project would comply with existing State regulations adopted to achieve the overall GHG emissions reduction goals identified in EO B 30 15, SB 32, AB 197, and would be consistent with applicable plans and programs designed to reduce GHG emissions. Therefore, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs and impacts would be less than significant. No mitigation is required.

Mitigation Measures

The proposed project would not result in any potentially significant impacts related to greenhouse gas emissions, and no mitigation is required.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIAL – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			X	

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

DISCUSSION

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Applicable laws and regulations ensure that transport, use, and disposal of hazardous materials do not create a significant hazard to the public or the environment. Therefore, a proposed project's routine transport, use, or disposal of hazardous materials is potentially significant if unusual circumstances are present, such as an unusually high frequency of use, use of an unusually large amount of hazardous substances, or use of particularly hazardous materials. Construction activities associated with the proposed project would involve the use of limited amounts of potentially hazardous materials, including but not limited to, solvents, paints, fuels, oils, and transmission fluids. However, all materials used during construction would be contained, stored, and handled in compliance with applicable standards and regulations established by the Department of Toxic Substances Control (DTSC), the USEPA, and the Occupational Safety and Health Administration (OSHA).

The proposed project would develop the project site with a truck parking facility with approximately 374 parking stalls, a 5,400 square-foot office/truck repair service center, a 5,400 square-foot truck wash facility, and associated infrastructure and circulation improvements. No uses utilizing large amounts of hazardous materials are anticipated to occur within the project site. Project operation would involve the use of small quantities of commercially available hazardous materials (e.g., paint, cleaning supplies, fuels) that could be potentially hazardous if handled improperly or ingested. However, these products are not considered acutely hazardous and are not generally considered unsafe. All storage, handling, and disposal of hazardous materials during project construction and operation would comply with applicable standards and regulations. The proposed uses would not generate significant amounts of any hazardous materials. The proposed project

would comply with all applicable laws and regulations related to the transport, use, or disposal of hazardous materials and no unusual circumstances are present. Therefore, the proposed project would have a less-than-significant impact to the public or the environment through the routine transport, use, or disposal of hazardous materials, and no mitigation is required.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

See discussion a) above. The proposed project would not result in a significant impact to the hazard to the public or the environment through a reasonably foreseeable upset or accident condition related to the release of hazardous materials. This impact would be considered less than significant. No mitigation is required.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

The closest existing schools include Teague Elementary school, located approximately 1.0-mile southeast of the project site, and Herndon-Barstow Elementary School, located approximately 1.05-mile northwest of the project site. As previously stated, no unusual circumstances are present. The proposed project would not result in the use or emission of substantial quantities of hazardous materials that would pose a human or environmental health risk. In addition, all materials would be handled, stored, and disposed of in accordance with applicable standards and regulations. Therefore, because the proposed project does not involve activities that would result in the emission of hazardous materials or acutely hazardous substances, implementation of the proposed project would result in a less-than-significant impact related to the potential to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. No mitigation is required.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

According to the DTSC EnviroStor database,[19] the project site is not located on a federal superfund site, State response site, voluntary cleanup site, school cleanup site, evaluation site, school investigation site, military evaluation site, tiered permit site, or corrective action site. The project site is not included on the list of hazardous materials

[19] California Department of Toxic Substances Control (DTSC). 2007. EnviroStor. Website: https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=fresno (accessed November 2022).

sites compiled pursuant to Government Code Section 65962.5.[20] As a result, no impact related to hazardous materials sites pursuant to Government Code Section 65962.5 would occur, and no mitigation is required.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

The nearest airports include the Sierra Sky Airport, located approximately 2.34 miles east of the project site, the Fresno Yosemite International Airport, located approximately 10.6 miles southeast of the project site, and the Fresno Chandler Executive Airport, located approximately 7.6 miles southeast of the project site. In addition, the nearest medical center helipads include the Saint Agnes Medical Center, located 7.6 miles northeast of the project site, and the Valley Children's Hospital located approximately 7.1 miles northeast of the project site. The project site is not located within 2 miles of any hospital heliport or any local airports. Therefore, project operations are not expected to pose a safety hazard to people working or visiting the project site. Therefore, the proposed project would result in a less-than-significant impact related to a safety hazard for people residing or working in the project area. No mitigation is required.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The proposed project would not result in any alterations of existing roadways. Therefore, the proposed project would not interfere with the implementation of or physically interfere with any adopted emergency response plans or emergency evacuation plan, and this impact would be less than significant. No mitigation is required.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Wildland fires occur in geographic areas that contain the types and conditions of vegetation, topography, weather, and structure density susceptible to risks associated with uncontrolled fires that can be started by lightning, improperly managed campfires, cigarettes, sparks from automobiles, and other ignition sources. According to the California Department of Forestry and Fire Protection (CAL FIRE) Very High Fire Hazard Severity Zone (VHFHSZ) Map for Fresno County, the project site is not located within a High or Very High Fire Hazard Severity Zone.[21] Therefore, the proposed project would

[20] California Environmental Protection Agency (CalEPA). 2018. Government Code Section 65962.5(a) Hazardous Waste and Substances Site List. Website: https://calepa.ca.gov/sitecleanup/corteselist/section-65962-5a/ (accessed November 2022).

[21] Cal Fire, 2007. *Fresno County Fire Hazard Severity Zones in LRA.* Kune. Available online at: https://osfm.fire.ca.gov/media/6673/fhszl06_1_map10.pdf (accessed November 2022).

not expose people or structures to a significant loss, injury or death involving wildland fires and the impacts would be less than significant. No mitigation is required.

Mitigation Measures

The proposed project would not result in any potentially significant impacts related to hazards and hazardous materials, and no mitigation is required.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would:			X	
i) Result in a substantial erosion or siltation on- or off-site;			X	
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site:			X	
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			X	
iv) impede or redirect flood flows?				X

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

DISCUSSION

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

The State Water Resources Control Board and nine Regional Water Quality Control Boards regulate the water quality of surface water and groundwater bodies throughout California. The proposed project is within the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB).

Construction. Pollutants of concern during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. During project construction, there would be an increased potential to expose soils to wind and water erosion, which could result in temporary minimal increases in sediment load in nearby water bodies.

Because the project would disturb greater than 1 acre of soil, it is required to comply with the State Water Resources Control Board's National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWG and 2012-0006-DWQ, NPDES No. CAS000002) (Construction General Permit). The project is also subject to Article 7, Urban Storm Water Quality Management and Discharge Control, Section 6-714, Requirement to Prevent, Control, and Reduce Storm Water Pollutants of the City's Municipal Code.

The Construction General Permit requires the preparation of a Storm Water Pollution Prevention Plan (SWPPP) and implementation of Construction Best Management Practices (BMPs). Construction BMPs would include, but not be limited to, erosion and sediment control, designed to minimize erosion and retain sediment on site, and good housekeeping practices to prevent spills, leaks, and discharge of construction debris and

waste into receiving waters. Section 6-714 of the City's Municipal Code also requires the implementation of BMPs to the maximum extent technologically and economically feasible to prevent and reduce pollutants from entering stormwater during construction. Therefore, adherence to the required SWPPP and the City's Municipal Code and implementation of construction BMPs, would reduce the potential for the discharge of pollutants into nearby water bodies during construction and impacts associated with the violation of water quality standards or waste discharge requirements would be less than significant.

During construction, it is likely that dewatering would be required. If groundwater is encountered during construction, the project would be required to obtain coverage under the California Regional Water Quality Control Board Central Valley Region National Pollution Discharge Elimination System Waste Discharge Requirements Limited Threat Discharges to Surface Water (Order R5-2022-0006, NPDES No. CAG995002). With adherence to the Waste Discharge Requirements pertaining to Limited Threat Discharges to Surface Water, project construction would not violate groundwater quality standards or waste discharge requirements and impacts would be less than significant.

Operation. Operation of the proposed project could result in surface water pollution associated with chemicals, liquid products, petroleum products (such as paints, solvents, and fuels), and waste that may be spilled or leaked and have the potential to be transported via runoff during periods of heavy precipitation into nearby water bodies. As discussed in the Project Description, the proposed truck washing facility would primarily utilize recycled water, with approximately 10 percent nonrecycled water. At the end of each truck wash, used water would be discharged to an underground tank to undergo a degerming/filtration process to be used again as part of the truck wash cycle. As such, truck washing activities are not expected to generate substantial runoff that would violate water quality standards or waste discharge requirements.

The City of Fresno operates under the California Regional Water Quality Control Board Central Valley Regional National Pollutant Discharge Elimination System Permit and Waste Discharge Requirements General Permit for Discharges from Municipal Separate Storm Sewer Systems (MS4) (Order No. R5-2016-0040-014, NPDES No. CAS0085324). Consistent with the City of Fresno's MS4 Permit, the project would implement storm water quality controls recommended in the Fresno-Clovis Storm Water Quality Management Construction and Post-Construction Guidelines. If applicable, the project would also be subject to the Statewide General Permit for Stormwater Discharges Associated with Industrial Activities (Order 2014-0057-DWQ as amended in 2015 and 2018) (Industrial General Permit) and would be required to develop and implement a storm water pollution prevention plan, eliminate non-stormwater discharges, conduct routine site inspections, train employees in permit compliance, sample storm water runoff and test if for pollutant indicators, and submit an annual report to the State Water Resources Control Board.

Adherence to the City of Fresno's MS4 Permit, including implementation of the Stormwater Management Post-Construction Guidelines, as specified in the Industrial General Permit, would reduce the potential for the discharge of pollutants during project

operations and impacts associated with the violation of water quality standards or waste discharge requirements would be less than significant.

Infiltration of stormwater could have the potential to affect groundwater quality. The majority of the project site would be impervious surface; and therefore, it is not expected that stormwater would infiltrate during project operations. Because stormwater would be collected and diverted to the storm drain system, there is not a direct path for pollutants to reach groundwater. Therefore, project operations would not violate groundwater quality standards or waste discharge requirements and impacts would be less than significant.

Conclusion. The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Therefore, the project's impacts would be less than significant. No mitigation is required.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

The City of Fresno overlies the Kings Subbasin, which is part of the greater San Joaquin Valley Groundwater Basin. Temporary dewatering from excavations could be necessary during construction. Construction-related dewatering would be temporary and limited to the area of excavations on the project site and would not substantially contribute to depletion of groundwater supplies. Operation of the project would not require groundwater extraction. Following project implementation, there would be an increase in impervious surface area. An increase in impervious surface area decreases infiltration, which can decrease the amount of water that is able to recharge the aquifer/groundwater. As discussed in the Project Description, FMFCD would provide flood control and urban storm water services to the project site. Stormwater from the project site would be drained through surface drainage infrastructure along West Barstow and North Contessa Avenue and redirected towards a nearby ponding basin. As such, the proposed project would connect to existing drainage facilities and would not substantially decrease any infiltration that currently may occur in the area. Therefore, the project would not impede the Central Valley Regional Water Quality Control Board's ability to manage groundwater. Thus, this project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project would impede sustainable management of the Kings Subbasin. Impacts would be less than significant, and no mitigation is required.

Additionally, as discussed below in Section XIX, Utilities and Service Systems, the City receives its water supply from groundwater and surface water. The City has indicated that groundwater wells, pump stations, recharge facilities, water treatment and distribution systems shall be expanded incrementally to mitigate increased water demands. One of the primary objectives of Fresno's future water supply plans detailed in the City's current Urban Water Management Plan (UWMP) is to balance groundwater operations through a host of strategies. Through careful planning, Fresno has designed a comprehensive plan to accomplish this objective by increasing surface water supplies and surface water

treatment facilities, intentional recharge, and conservation, thereby reducing groundwater pumping. The City continually monitors impacts of land use changes and development project proposals on water supply facilities by assigning fixed demand allocations to each parcel by land use as currently zoned or proposed to be rezoned.

The City relies on groundwater and surface water supplies to meet water demands. In 2006, Fresno updated its Metropolitan Water Resources Management Plan designed to ensure the Fresno metro area has a reliable water supply through 2050. The plan implements a conjunctive use program, combining groundwater, treated surface water, artificial recharge, and an enhanced water conservation program.

The General Plan policies require the City to maintain a comprehensive conservation program to help reduce per capita water usage, and includes conservation programs such as landscaping standards for drought tolerance, irrigation control devices, leak detection and retrofits, water audits, public education and implementing U.S. Bureau of Reclamation Best Management Practices for water conservation to maintain surface water entitlements.

The potable water demand projections in the City's UWMP are based on land use projections. The proposed project site is included in the land use area covered by the City's UWMP. In addition, the proposed project is consistent with the site's Business Park (BP) zoning and General Plan land use designation; therefore, it is assumed that demand for water was accounted for in the UWMP. In addition, as discussed in the Project Description, the proposed truck washing facility would primarily utilize recycled water, with approximately 10 percent nonrecycled water. There is no evidence, in consideration of the calculated project water demand, that such demand exceeds that estimated in the UWMP. The adequacy of the water supply for the project is thus consistent with the basis of the analysis of the City's water supply in the adopted UWMP.

Additionally, implementation of the Fresno General Plan policies, the Kings Basin Integrated Regional Water Management Plan, the City of Fresno UWMP, the Fresno-Area Regional Groundwater Management Plan, and the City of Fresno Metropolitan Water Resource Management Plan would address the issues of providing an adequate, reliable, and sustainable water supply for the proposed project. Impacts would be less than significant, and no mitigation is required.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on- or off-site?

During construction, excavated soil would be exposed and disturbed, drainage patterns would be temporarily altered, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. Additionally, during a storm event, soil erosion and siltation could occur at an accelerated

rate. As discussed previously, the Construction General Permit requires preparation of a SWPPP to identify construction BMPs to be implemented as part of the project to reduce impacts to water quality during construction, including those impacts associated with soil erosion and siltation. With compliance with the requirements in the Construction General Permit and implementation of the construction BMPs, and with compliance with the City's Municipal Code, construction impacts related to on- or off-site erosion or siltation would be less than significant.

The project would increase the amount of impervious surface, which would increase the volume of runoff during a storm, and which can more effectively transport sediments to receiving waters. At project completion, much of the project site would be impervious surface area and not prone to on-site erosion or siltation because no exposed soil would be present in these areas. The remaining portion of the site would consist of pervious surface area, which would contain landscaping that would minimize on-site erosion and siltation by stabilizing the soil. Additionally, the project applicant would be required to establish and maintain existing drainage patterns. Therefore, the proposed project would not alter the existing drainage pattern of the site or increase the rate or amount of surface runoff in a manner that would result in an impact related to substantial erosion or siltation on- or off-site.

Compliance with existing regulatory requirements would reduce or eliminate the proposed project's potential to substantially alter the existing drainage pattern of the site, which would ensure that the proposed project would not result in a significant impact related to substantial erosion or siltation on- or off-site. Impacts would be less than significant, and no mitigation is required.

ii. Substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?

During construction, soil would be disturbed and compacted, and drainage patterns would be temporarily altered, which can increase the volume and velocity of stormwater runoff and increase the potential for localized flooding compared to existing conditions. As discussed above, the Construction General Permit requires the preparation of a SWPPP and implementation of construction BMPs to control and direct surface runoff onsite. With adherence to the Construction General Permit, construction impacts related to altering the existing drainage pattern of the site or area or increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite would be less than significant.

While the project would permanently increase the impervious surface area, FMFCD would provide flood control and urban storm water services to the project site. Stormwater from the project site would be drained through surface drainage infrastructure along West Barstow and North Contessa Avenue and

redirected towards a nearby ponding basin. As such, the proposed project would connect to existing drainage facilities and would maintain the overall on-site drainage patterns and continue to direct surface water to catch basins that flow into the existing storm drains. Prior to the issuance of building permits, the applicant would be required to provide a stormwater improvement plan to the City to ensure that the stormwater system would be capable of handling a 25-year storm and that the drainage facilities conform to City requirements. Therefore, the project would not alter the existing drainage pattern of the site or area or increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site and impacts would be considered less than significant. No mitigation is required.

iii. Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Construction. The proposed project would result in an increase in impervious surfaces given that the project site would be mostly built out aside from planting areas located in the parking lot and the perimeter of the project site. However, compliance with pre-existing regulatory requirements, including compliance with the Construction General Permit and implementation of a SWPPP, would reduce or eliminate the potential for project construction to cause substantial additional polluted runoff or runoff in excess of existing or planned stormwater drainage systems. Therefore, construction would not result in additional sources of polluted runoff to be discharged to the storm drain system and impacts would be less than significant.

Operations. As discussed above, the proposed project would result in an increase in impervious surfaces; however, FMFCD would provide flood control and urban storm water services to the project site. Stormwater from the project site would be drained through surface drainage infrastructure along West Barstow and North Contessa Avenue and redirected towards a nearby ponding basin. As such, the proposed project would connect to existing drainage facilities ad would not be expected to create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. In addition, the proposed truck washing facility would primarily utilize recycled water, with approximately 10 percent nonrecycled water. As such, truck washing activities are not expected to generate substantial runoff. Further, compliance with existing regulatory requirements, including the MS4, as specified in the Industrial General Permit, would reduce or eliminate the potential for project operations to cause substantial additional polluted runoff or runoff in excess of existing or planned stormwater drainage systems. Therefore, project operations would not result in additional sources of polluted runoff to be discharged to the storm drain system and impacts would be less than significant. No mitigation is required

iv. Impede or redirect flood flows?

The proposed project is not located within the 100-year flood hazard area as mapped by the Federal Emergency Management Agency (FEMA).[22] Therefore, the proposed project would not impede or redirect potential flood flows, and the proposed project would have no impact. No mitigation is required.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

The project site is not located in flood hazard, tsunami, or seiche zones. Refer to discussion a) in Section IX, Hazards and Hazardous Materials regarding the use of hazardous materials within the project site. As a result, a less-than-significant impact would occur related to the release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. No mitigation is required.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The City is located within the Kings Subbasin, which is part of the larger San Joaquin Valley Groundwater Basin. The planning documents regarding water resources for the City include the City of Fresno UWMP and the City of Fresno Metropolitan Water Resources Management Plan. As noted above, the proposed project would be required to adhere to NPDES drainage control requirements during construction and operation as well as to FMFCD drainage control requirements. As a result, the proposed project would not include any other waste discharges that could conflict with the Basin Plan. Therefore, the proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan and impacts would be less than significant.

Mitigation Measures

The proposed project would not result in any potentially significant impacts related to hydrology and water quality, and no mitigation is required.

[22] Federal Emergency Management Agency, 2020. FEMA Flood Map Service Center: Search By Address. Available online at: https://msc.fema.gov/portal/search?AddressQuery#searchresultsanchor (accessed November 2022).

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

DISCUSSION

a) Physically divide an established community?

The physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying areas. For instance, the construction of an interstate highway through an existing community may constrain travel from one side of the community to another; similarly, such construction may also impair travel to areas outside of the community.

The proposed project would develop the currently vacant and undeveloped project site into a truck parking facility with an office/truck repair service center, a truck wash facility, and associated infrastructure and circulation improvements. The proposed project would not construct features that would divide an established community or remove means of access that would impair mobility in a community. Therefore, the proposed project would have no impact related to physically dividing an established community, and no mitigation is required.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The project site is designated Business Park in the City of Fresno General Plan. This land use designation is intended to accommodate multitenant commercial and office development. In addition, the project site is zoned in the City's Business Park (BP) district,

which is intended to provide a campus-type office professional environment that is well suited for large offices or multi-tenant buildings and accommodate and allow for the expansion of small businesses with limited outdoor storage.[23] The proposed project would introduce uses that are compatible with the zoning of the project site.

The project would not require a change the General Plan land use designation or the current zoning and would be consistent with the City's General Plan and Zoning Ordinance. Since the proposed project would be consistent with the City's General Plan and Zoning Ordinance, the project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect and therefore would result in no impact. No mitigation is required.

Mitigation Measures

The proposed project would not result in any potentially significant impacts related to land use and planning, and no mitigation is required.

23 City of Fresno. 2016. Fresno Municipal Code Chapter 15: Citywide Development Code. *Table 15-1302: Land Use Regulations—Employment Districts.* Website: https://www.fresno.gov/darm/wp-content/uploads/sites/10/2016/11/Complete_Code_March_2017.pdf (accessed November 2022).

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

DISCUSSION

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

The project site is located within an urban area and was previously used for agricultural activities and soil disposal. There are no known mineral resources within or in the vicinity of the project site. The principal area for mineral resources in the City of Fresno Planning Area is located along the San Joaquin River Corridor. The California Department of Mines and Geology classifies lands along the San Joaquin River Corridor as Mineral Resource Zones (MRZ) 1, MRZ 2, and MRZ-3. The project site is not located in the vicinity of the San Joaquin River Corridor and does not contain mineral resources. Furthermore, no mineral extraction operations occur in the project vicinity. Therefore, the proposed project would not result in the loss of availability of known mineral resources, and would result in no impact. No mitigation is required.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Please refer to the discussion for a). The proposed project would not result in the loss of availability of any known locally important mineral resource recovery sites. Therefore, the proposed project would result in no impact. No mitigation is required.

Mitigation Measures

The proposed project would not result in any potentially significant impacts related to mineral resources, and no mitigation is required.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE – Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X	

DISCUSSION

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?

Noise is usually defined as unwanted or disturbing sound.[24] Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. Several noise measurement scales exist that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. Sound levels in dB are

[24] City of Fresno, 2014. *Fresno General Plan. Chapter 9: Noise and Safety.* December 18. Website: https://www.fresno.gov/darm/wp-content/uploads/sites/10/2021/01/9-Noise-and-Safety-02-03-21.pdf (accessed May 2023)/

calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness; and similarly, each 10 dB decrease in sound level is perceived as half as loud. Sound intensity is normally measured through the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The A-weighted sound level is the basis for 24-hour sound measurements that better represent human sensitivity to sound at night.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq}, the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) based on dBA. CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m.[25] L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} are within one dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

A project would have a significant noise effect if it would substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of applicable regulatory agencies, including, as appropriate, the City of Fresno.

The City of Fresno addresses noise in the Noise Element of the General Plan and in Chapter 10, Article 1 (Noise Regulations), of the Fresno Municipal Code. Listed below are objectives and policies related to noise that are presented in the Noise Element of the General Plan. In addition, the Noise Element sets noise standards for transportation and stationary noise sources as shown in Table 6 and Table 7, below.

[25] City of Fresno, 2014. op. cit.

Table 6: Transportation (Non-Aircraft) Noise Sources

Noise-Sensitive Land Use[1]	Outdoor Activity Areas[2]	Interior Spaces	
	L_{dn}/CNEL, dB	L_{dn}/CNEL, dB	L_{eq} dB2
Residential	65	45	-
Transient Lodging	65	45	-
Hospitals, Nursing Homes	65	45	-
Theaters, Auditoriums, Music Halls	-	-	35
Churches, Meeting Halls	65	-	45
Office Buildings	-	-	45
Schools, Libraries, Museums	-	-	45

Source: City of Fresno General Plan (2014).

[1] Where the location of outdoor activity areas is unknown or is not applicable, the exterior noise level standard shall be applied to the property line of the receiving land use.

[2] As determined for a typical worst-case hour during periods of use.

CNEL = community noise equivalent level

dB = decibel(s)

L_{dn} = day-night average noise level

L_{eq} = equivalent continuous sound level

Table 7: Stationary Noise Sources

	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Hourly Equivalent Sound Level (L_{eq}), dBA	50	45
Maximum Sound Level (L_{max}), dBA	70	60

Source: City of Fresno General Plan (2014).

[1] The Planning and Development Director, on a case-by-case basis, may designate land uses other than those shown in this table to be noise-sensitive, and may require appropriate noise mitigation measures.

[2] As determined at outdoor activity areas. Where the location of outdoor activity areas is unknown or not applicable, the noise exposure standard shall be applied at the property line of the receiving land use. When ambient noise levels exceed or equal the levels in this table, mitigation shall only be required to limit noise to the ambient plus five dB.

dB = decibel(s)

dBA = A-weighted decibel(s)

L_{dn} = day-night average noise level

L_{eq} = equivalent continuous sound level

L_{max} = maximum A-weighted sound level

- **Policy NS-1-a: Desirable and Generally Acceptable Exterior Noise Environment.** Establish 65 dBA L_{dn} or CNEL as the standard for the desirable maximum average exterior noise levels for defined usable exterior areas of residential and noise-sensitive uses for noise, but designate 60 dBA L_{dn} or CNEL (measured at the property line) for noise generated by stationary sources impinging upon residential and noise-sensitive uses. Maintain 65 dBA L_{dn} or CNEL as the maximum average exterior noise levels for non-sensitive commercial land uses, and maintain 70 dBA L_{dn} or CNEL as maximum average exterior noise level for industrial land uses, both to be measured at the property line of parcels where noise is generated which may impinge on neighboring properties.

- **Policy NS-1-c: Generally Unacceptable Exterior Noise Exposure Range.** Establish the exterior noise exposure of greater than 65 dB L_{dn} or CNEL to be generally unacceptable for residential and other noise sensitive uses for noise

generated by sources in Policy NS-1-a, and study alternative less noise-sensitive uses for these areas if otherwise appropriate. Require appropriate noise reducing mitigation measures as determined by a site-specific acoustical analysis to comply with the generally desirable or generally acceptable exterior noise level and the required 45 dB interior noise level standards set in Table 6 as conditions of permit approval.

- **Policy NS-1-g:** Noise mitigation measures which help achieve the noise level targets of this plan include, but are not limited to, the following:

  - Façades with substantial weight and insulation;
  - Installation of sound-rated windows for primary sleeping and activity areas;
  - Installation of sound-rated doors for all exterior entries at primary sleeping and activity areas;
  - Greater building setbacks and exterior barriers;
  - Acoustic baffling of vents for chimneys, attic and gable ends;
  - Installation of mechanical ventilation systems that provide fresh air under closed window conditions.

- **NS-1-i Mitigation by New Development.** Require an acoustical analysis where new development of industrial, commercial, or other noise generating land uses (including transportation facilities such as roadways, railroads, and airports) may result in noise levels that exceed the noise level exposure criteria established by Tables 6 and 7 to determine impacts, and require developers to mitigate these impacts in conformance with Tables 6 and 7 as a condition of permit approval through appropriate means.

  Noise mitigation measures may include:

  - The screening of noise sources such as parking and loading facilities, outdoor activities, and mechanical equipment;
  - Providing increased setbacks for noise sources from adjacent dwellings;
  - Installation of walls and landscaping that serve as noise buffers;
  - Installation of soundproofing materials and double-glazed windows; and
  - Regulating operations, such as hours of operation, including deliveries and trash pickup.

Alternative acoustical designs that achieve the prescribed noise level reduction may be approved by the City, provided a qualified Acoustical Consultant submits information demonstrating that the alternative designs will achieve and maintain the specific targets for outdoor activity areas and interior spaces. As a last resort, developers may propose to construct noise walls along roadways when compatible with aesthetic concerns and neighborhood character. This would be a developer responsibility, with no City funding.

- **Policy NS-1-j: Significance Threshold.** Establish, as a threshold of significance for the City's environmental review process, that a significant increase in ambient noise levels is assumed if the project would increase noise levels in the immediate vicinity by 3 dB Ldn or CNEL or more above the ambient noise limits established in this General Plan Update.

Chapter 10, Article 1 (Noise Regulations), of the Fresno Municipal Code establishes excessive noise guidelines and exemptions. Section 10-109 states that construction noise is exempted from City noise regulations provided such work takes place between the hours of 7:00 a.m. and 10:00 p.m. on any day except Sunday.

Certain land uses are considered more sensitive to noise than others. Examples of these land uses include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The project site is bounded to the north by open space, to the east by industrial uses, to the south by commercial uses, and to the west by residential uses. The closest sensitive receptors include the single-family residences located approximately 70 feet west of the project site across North Contessa Avenue.

Based on the Acoustical Analysis[26] prepared for the proposed project (Appendix F), noise levels at the project site are approximately 68 dBA L_{dn}.

The following section describes how the short-term construction and long-term operational noise impacts of the proposed project would be less than significant with mitigation.

Short-Term (Construction) Noise Impacts. Project construction would result in short-term noise impacts on the nearby sensitive receptors. Maximum construction noise would be short-term, generally intermittent depending on the construction phase, and variable depending on receiver distance from the active construction zone. The duration of noise impacts generally would be from one day to several days depending on the phase of construction. The level and types of noise impacts that would occur during construction are described below.

Short-term noise impacts would occur during grading and site preparation activities. Table 8 lists typical construction equipment noise levels (L_{max}) recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a

[26] Vang Inc. Consulting Engineers, 2021. *Barstow Truck Parking Acoustical Analysis.* July 23.

noise receptor, obtained from the Federal Highway Administration (FHWA) Roadway Construction Noise Model. Construction-related short-term noise levels would be higher than existing ambient noise levels currently in the project area but would no longer occur once construction of the proposed project is completed.

Two types of short-term noise impacts could occur during construction of the proposed project. The first type involves construction crew commutes and the transport of construction equipment and materials to the site, which would incrementally increase noise levels on roads leading to the site. As shown in Table 8, there would be a relatively high single-event noise exposure potential at a maximum level of 84 dBA L_{max} with trucks passing at 50 feet.

The second type of short-term noise impact is related to noise generated during grading and construction on the project site. Construction is performed in discrete steps, or phases, each with its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

Table 8: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%)	Maximum Noise Level (L_{max}) at 50 Feet[1]
Backhoes	40	80
Compactor (ground)	20	80
Compressor	40	80
Cranes	16	85
Dozers	40	85
Dump Trucks	40	84
Excavators	40	85
Flat Bed Trucks	40	84
Forklift	20	85
Front-end Loaders	40	80
Graders	40	85
Impact Pile Drivers	20	95
Jackhammers	20	85
Pick-up Truck	40	55
Pneumatic Tools	50	85
Pumps	50	77
Rock Drills	20	85
Rollers	20	85
Scrapers	40	85
Tractors	40	84
Welder	40	73

Source: Roadway Construction Noise Model (FHWA 2006).
Note: Noise levels reported in this table are rounded to the nearest whole number.
[1] Maximum noise levels were developed based on Spec 721.560 from the Central Artery/Tunnel (CA/T) program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.
L_{max} = maximum instantaneous sound level

Table 8 lists maximum noise levels recommended for noise impact assessments for typical construction equipment, based on a distance of 50 feet between the equipment and a noise receptor. Typical noise levels range up to 88 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the project site, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

Construction details (e.g., construction fleet activities) are not yet known; therefore, this analysis assumes that scrapers, bulldozers, and water trucks/pickup trucks would be operating simultaneously during construction of the proposed project. As discussed above, noise levels associated with this equipment operating simultaneously would be approximately 88 dBA L_{max} at 50 feet.

As noted above, the closest sensitive receptors include the single-family residences located approximately 70 feet west of the project site across North Contessa Avenue. Based on a reduction in noise of 6 dBA per doubling of distance, there would be a decrease of approximately 3 dBA from the active construction area to the nearest residence from the baseline noise level of 88 dBA L_{max} at 50 feet. In addition, the western boundary of the project site is bordered by an existing 8-foot-high block wall, which would reduce noise levels at the receptor by approximately 10 dBA. Therefore, the closest off-site sensitive receptor may be subject to short-term construction noise reaching 75 dBA L_{max} (88 dBA L_{max} – 3 dBA – 10 dBA) when construction is occurring at the western property line. However, construction equipment would operate at various locations within the 18.87-acre project site and would only generate maximum noise levels when operations occur closest to the receptor.

However, Section 10-109 of the Municipal Code states that construction noise is exempted from City noise regulations provided such work takes place between the hours of 7:00 a.m. and 10:00 p.m. on any day except Sunday. To ensure that the project's potential construction-related noise impacts are less than significant, Mitigation Measure NOI-1 requires that construction occurs within the permitted hours and that all construction equipment, fixed or mobile, be equipped with properly operating and maintained mufflers consistent with manufacturers' standards, which would reduce the potential impacts associated with construction equipment. Additionally, Mitigation Measure NOI-1 requires the project to designate a "disturbance coordinator" at the City who would be responsible for responding to any local complaints about construction noise. These measures would ensure that the project's potential construction-related noise impacts are mitigated to less-than-significant levels.

With implementation of Mitigation Measure NOI-1, the proposed project would result in a less-than-significant impact associated with the generation of a substantial temporary

increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, State, or federal standards.

Long-Term (Operational) Noise Impacts. The following section addresses possible noise level increases in the project vicinity resulting from implementation of the proposed project, including mobile and stationary noise sources. Mobile noise sources include traffic noise. Stationary noise sources include parking lot and truck activities and noise associated with the truck wash facility. The City considers a 3 dBA increase to be a significant increase in ambient noise.

Traffic Noise*.* Motor vehicles with their distinctive noise characteristics are the dominant noise source in the project vicinity. The amount of noise varies according to many factors, such as volume of traffic, vehicle mix (percentage of cars and trucks), average traffic speed, and distance from the observer. Implementation of the proposed project would result in new daily trips on local roadways in the project site vicinity. A characteristic of sound is that a doubling of a noise source is required in order to result in a perceptible (3 dBA or greater) increase in the resulting noise level.
The proposed project would generate a total of 1,121 daily trips. The adjacent Barstow Avenue carries approximately 7,715 average daily trips and State Route (SR) 99 carries approximately 40,188 average daily trips.[27] Project trips would represent a small increase in noise levels, up to approximately 0.6 dBA CNEL along Barstow Avenue based on the following equation:

$$Change\ in\ (dBA) = 10 * \log_{10}\left(\frac{Current\ Volume}{\text{Future Volume}}\right)$$

In general, noise level changes of less than 5 dBA are not perceptible in an outdoor environment. Therefore, project daily trips would not result in a perceptible noise increase along any roadway segment in the project vicinity and would not result in a perceptible increase in traffic noise levels at receptors in the project vicinity. Additionally, the increased ambient noise of up to approximately 0.6 dBA CNEL along Barstow Avenue is less than the 3 dBA CNEL significance threshold established by City of Fresno's Policy NS-1-j. Therefore, the proposed project would result in a less-than-significant impact associated with the generation of a substantial permanent increase in ambient traffic noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, State, or federal standards.

Stationary Source Noise. Noise impacts associated with the long-term operation of the project must comply with the noise standards specified in the City's General Plan and Municipal Code, as described above. As indicated above, truck wash operations, vacuum stations, and parking activities associated with the project could affect the existing off-site land uses. A detailed noise analysis and discussion for each of these

[27] Vang Inc. Consulting Engineers, 2021. *Barstow Truck Parking Acoustical Analysis.* July 23.

stationary noise sources are provided below for the residences to the north, south, and west as well as the commercial use to the west.

Parking Lot and Truck Activities Noise. The proposed project would include truck and vehicle parking on the project site. Noise generated by truck activity would generate the highest maximum noise levels. Typical parking lot activities, such as people conversing or doors slamming, would generate noise levels of approximately 60 dBA to 70 dBA L_{max} at 50 feet, while truck activities would result in maximum noise levels that would generate a noise level of 75 dBA L_{max} at 50 feet based on measurements previously conducted by LSA.

As identified above, the closest sensitive receptors include the single-family residences located approximately 70 feet west of the project site across North Contessa Avenue. However, the most westerly parking stalls along North Contessa Avenue would be located approximately 100 feet from the nearest sensitive receptors. At 100 feet, there would be a decrease of 6 dBA due to the increased distance from the baseline noise level of 75 dBA L_{max} at 50 feet. In addition, the western boundary of the project site is bordered by an existing 8-foot-high block wall, which would reduce noise levels by approximately 10 dBA. Therefore, maximum noise levels generated by truck activities would be approximately 59 dBA L_{max} (75 dBA L_{max} – 6 dBA – 10 dBA) at the closest sensitive receptors. This noise level would not exceed the City's daytime (7:00 a.m. to 10:00 p.m.) noise level standard of 70 dBA L_{max} or nighttime (10:00 p.m. to 7:00 a.m.) noise level standard of 60 dBA L_{max}.

In addition, peak noise levels from truck parking activities would be intermittent and when averaged over one hour, these sources would not exceed the City's daytime (7:00 a.m. to 10:00 p.m.) noise level standard of 50 dBA L_{eq} or nighttime (10:00 p.m. to 7:00 a.m.) noise level standard of 45 dBA L_{eq}. Additionally, when averaged over the 24-hour period, noise would not cause an increase in noise levels of more than 3 dBA.

Truck Wash Facility Noise. The proposed project would include a truck wash facility, which would generate noise associated with dryers and vacuums. Based on noise level measurements conducted by LSA at a car wash, noise levels were estimated to have an average noise level of 40.7 dBA L_{eq} at a distance of 50 feet based and vacuum stations were estimated to have an average noise level of 53.5 dBA L_{eq} at a distance of 50 feet.

The closest sensitive receptors include the single-family residences located approximately 70 feet west of the project site across North Contessa Avenue. However, the truck wash building would be located over 400 feet west of the project site boundary. Therefore, the truck wash building would be located approximately 470 feet from the closest sensitive receptors. Based on a reduction in noise of 6 dBA per doubling of distance, there would be a decrease of approximately 19 dBA from the truck wash building to the nearest residence. Therefore, noise levels associated with the truck wash at the nearest residence would be approximately 21.7 dBA L_{eq}, and the vacuum stations would be approximately 34.5 dBA L_{eq}. In addition, the western boundary of the

project site is bordered by an existing 8-foot-high block wall, which would further reduce noise levels by approximately 10 dBA.

These sources would not exceed the City's daytime (7:00 a.m. to 10:00 p.m.) noise level standard of 50 dBA L_{eq} or nighttime (10:00 p.m. to 7:00 a.m.) noise level standard of 45 dBA L_{eq}. Additionally, noise levels at the project site are approximately 68 dBA L_{dn} and, when averaged over the 24-hour period, truck wash facility noise would not cause an increase in noise levels of more than 3 dBA. As such, the proposed project would result in a less-than-significant impact associated with the generation of a substantial permanent increase in ambient stationary source noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, State, or federal standards.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Vibration refers to groundborne noise and perceptible motion. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. Vibration energy propagates from a source, through intervening soil and rock layers, to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by the occupants as the motion of building surfaces, rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. The rumbling noise is caused by the vibrating walls, floors, and ceilings radiating sound waves. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of groundborne vibration are construction activities (e.g., pavement breaking and operating heavy-duty earthmoving equipment), and occasional traffic on rough roads. In general, groundborne vibration from standard construction practices is only a potential issue when within 25 feet of sensitive uses. Groundborne vibration levels from construction activities very rarely reach levels that can damage structures; however, these levels are perceptible near the active construction site. With the exception of old buildings built prior to the 1950s or buildings of historic significance, potential structural damage from heavy construction activities rarely occurs. When roadways are smooth, vibration from traffic (even heavy trucks) is rarely perceptible.

The nearby residential uses were built post-1950s and there are no historic structures in the project vicinity. In addition, the streets surrounding the project area are paved, smooth, and unlikely to cause significant groundborne vibration. In addition, the rubber tires and suspension systems of buses and other on-road vehicles make it unusual for on-road vehicles to cause groundborne noise or vibration problems. It is, therefore, assumed that no such vehicular vibration impacts would occur and, therefore, no vibration impact analysis of on-road vehicles is necessary. Therefore, once constructed, the proposed project would not contain uses that would generate groundborne vibration. This impact would be less than significant.

Construction Vibration. Construction of the proposed project could result in the generation of groundborne vibration. This construction vibration impact analysis discusses the level of human annoyance using vibration levels in VdB and will assess the potential for building damages using vibration levels in peak particle velocity (PPV) (in/sec) because vibration levels calculated in root-mean-square (RMS) are best for characterizing human response to building vibration, while vibration level in PPV is best used to characterize potential for damage. The Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment guidelines indicate that a vibration level up to 102 VdB (an equivalent to 0.5 in/sec in PPV) is considered safe for buildings consisting of reinforced concrete, steel, or timber (no plaster), and would not result in any construction vibration damage. For a non-engineered timber and masonry building, the construction vibration damage criterion is 94 VdB (0.2 in/sec in PPV).

Table 9 shows the PPV and VdB values at 25 feet from a construction vibration source. As shown in Table 9, bulldozers and other heavy-tracked construction equipment (except for pile drivers and vibratory rollers) generate approximately 87 VdB of groundborne vibration when measured at 25 feet, based on the Transit Noise and Vibration Impact Assessment.[28] At this level, groundborne vibration would result in potential annoyance to residents and workers but would not cause any damage to the buildings.

Table 9: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L_V at 25 feet	
	PPV (in/sec)	L_V (VdB)[1]
Pile Driver (Impact), Typical	0.644	104
Pile Driver (Sonic), Typical	0.170	93
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58
Pile Driver (Impact), Typical	0.644	104

Source: Transit Noise and Vibration Impact Assessment (FTA 2018).
Note: Noise levels reported in this table are rounded to the nearest whole number.
[1] RMS vibration velocity in decibels (VdB) is 1 µin/sec.
µin/sec = micro-inches per second
FTA = Federal Transit Administration
in/sec = inches per second
L_V = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

Construction vibration, similar to vibration from other sources, would not have any significant effects on outdoor activities (e.g., those outside of residences and commercial/ office buildings in the project vicinity). Outdoor site preparation for the proposed project is expected to include the use of bulldozers and loaded trucks. The greatest levels of vibration are anticipated to occur during the site preparation phase. All other phases are expected to result in lower vibration levels. The distance to the nearest buildings for

28 Federal Transit Administration (FTA), 2018. *Transit Noise and Vibration Impact Assessment*. September.

vibration impact analysis is measured between the nearest off-site buildings and the project boundary (assuming the construction equipment would be used at or near the project boundary) because vibration impacts occur normally within the buildings. The formula for vibration transmission is provided below.

$$L_vdB\ (D) = L_vdB\ (25\ ft) - 30\ Log\ (D/25)$$

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

As shown in Table 9, for typical construction activity, the equipment with the highest vibration generation potential is the large bulldozer, which would generate 87 VdB at 25 feet. The closest building to the project site includes the single-family residence located approximately 70 feet west of the project site across North Contessa Avenue. At 70 feet, this single-family residence would experience vibration levels of up to 81 VdB (0.044 PPV [in/sec]), which would not exceed the FTA threshold of 94 VdB (0.2 in/sec PPV) for non-engineered timber and masonry building damage when bulldozers and loaded trucks operate at or near the project construction boundary. Although construction vibration levels at surrounding uses would have the potential to result in annoyance, these vibration levels would no longer occur once construction of the project is completed and impacts would be considered less than significant. No mitigation is required.

c) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The nearest airports include the Sierra Sky Airport, located approximately 2.34 miles east of the project site, the Fresno Yosemite International Airport, located approximately 10.6 miles southeast of the project site, and the Fresno Chandler Executive Airport, located approximately 7.6 miles southeast of the project site. In addition, the nearest medical center helipads include the Saint Agnes Medical Center, located 7.6 miles northeast of the project site, and the Valley Children's Hospital located approximately 7.1 miles northeast of the project site. The project site is not located within 2 miles of any hospital heliport or any local airports. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels due to the proximity of a public airport. This impact would be less than significant. No mitigation is required.

Mitigation Measures

Mitigation Measure NOI-1: The project contractor shall implement the following measures during construction of the project:

- Equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.

- Place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the active project site.

- Locate equipment staging in areas that would create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active project site during all construction activities.

- Ensure that all general construction-related activities are restricted to between the hours of 7:00 a.m. and 10:00 p.m. Monday through Saturday. No construction shall occur on Sunday.

- Designate a “disturbance coordinator” at the City who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler) and would determine and implement measures to address the problem to the maximum extent feasible considering the economic, technological, and practical limitations.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING – Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

DISCUSSION

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The proposed project would include the construction of a truck parking facility, including an office/truck repair service center, a truck wash facility, and associated infrastructure and circulation improvements. The proposed project would not result in direct population growth as the use proposed is not residential and would not contribute to permanent residency on site. Further, the site is designated Business Park by the General Plan and would not generate growth beyond that anticipated in the General Plan. Therefore, the proposed project would not induce substantial unplanned population growth in an area, either directly or indirectly, and this impact would be considered less than significant. No mitigation is required.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No housing is currently present on the project site, and therefore, there are no people living on the project site that would be displaced by the proposed project. Therefore, there would be no impacts related to the displacement of substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere, and no mitigation is required.

Mitigation Measures

The proposed project would not result in any potentially significant impacts related to population and housing, and no mitigation is required.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES – Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?			X	
Police protection?			X	
Schools?				X
Parks?			X	
Other public facilities?			X	

DISCUSSION

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

i. Fire protection?

The City of Fresno Fire Department (FFD) would provide fire protection services to the proposed project. There are 23 FFD fire stations in Fresno, with the closest fire station, Fire Station 18, located approximately 0.7 miles northwest from the project site. Planned growth under the General Plan would increase calls for fire protection service in the City. The project is consistent with the site's General Plan designation and does not represent unplanned growth given that

the project site would be developed consistent with its land use and zoning designations. The project could result in an incremental increase in the demand for fire protection services as a result of additional employees to the project site. However, the proposed project would be required to comply with all applicable codes for fire safety and emergency access. In addition, the project applicant would be required to submit plans to the FFD for review and approval prior to the issuance of building permits to ensure the project would conform to applicable building codes.

The proposed project does not have any features that would create a potential for increased fire services beyond what would be necessary for other uses permitted under the City's zoning. The FFD would continue providing services to the project site and would not require additional firefighters to serve the proposed project. The construction of a new or expanded fire station would not be required. The proposed project would not result in a significant impact on the physical environment due to the incremental increase in demand for fire protection and life safety services. The incremental increase in demand for services is not expected to adversely affect existing responses times to the site or within the City. Therefore, construction and operation of the proposed project would have a less-than-significant impact on fire protection. No mitigation is required.

ii. Police protection?

The City of Fresno Police Department (FPD) provides police protection to the project site. The FPD headquarters are located at 2323 Mariposa Street, approximately 8.1 miles southeast from the project site. Planned growth under the General Plan would increase calls for police protection service in the City. The project is consistent with the site's General Plan designation and does not represent unplanned growth. The project could result in an incremental increase in the demand for police protection services. However, the proposed project does not have any features that would create a potential for increased police services beyond what would be necessary for other uses permitted under the City's zoning. The FPD would continue to provide services to the project site and would not require additional officers to serve the project site. The construction of new or expanded police facilities would not be required. Therefore, the proposed project would not result in a substantial adverse impact associated with the provision of additional police facilities or services, and impacts to police protection would represent a less-than-significant impact. No mitigation is required.

iii. Schools?

The proposed project would not generate student demand or otherwise impact school services given that there is no housing or a residential component. As such, there would be no impact related to schools.

iv. Parks?

Demand for parks generated by the project is within planned services levels of the City of Fresno Parks and Community Services Department. Due to the nature of the proposed truck parking facility uses, the proposed project does not have any features that would create a potential for increased park usage beyond what would be necessary for other uses permitted under the City's zoning. Therefore, impacts to parks would be less than significant.

v. Other public facilities?

The proposed project would not increase population, therefore, development of the proposed project would not increase demand for other public services, including libraries, community centers, and public health care facilities. Therefore, impacts to other public facilities would be less than significant.

Mitigation Measures

The proposed project would not result in any potentially significant impacts related to public services, and no mitigation is required.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. RECREATION - Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

DISCUSSION

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

The proposed project would include the construction of a truck parking facility, including an office/truck repair service center, and a truck wash facility and would not generate population growth that would result in an increase in the use of existing neighborhood and regional parks or other recreational facilities. Therefore, there would be no impact related to the increase in the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. No mitigation is required.

b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

The proposed project would not include or require the construction or expansion of existing public recreational facilities; therefore, development of the proposed project and associated recreational opportunities for use by users of the project site would not result in additional environmental effects beyond those described in this document. As a result, no impact would occur to recreational facilities and the proposed project would not require the construction or expansion of recreational facilities that might have an adverse physical

effect on the environment. No mitigation is required.

Mitigation Measures

The proposed project would not result in any potentially significant impacts related to recreational facilities, and no mitigation is required.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION – Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?			X	

DISCUSSION

The following discussion is based on the Traffic Impact Study (TIS)[29] and Vehicle Miles Traveled Analysis Memorandum[30] prepared for the proposed project, which are included as Appendix G and Appendix H, respectively.

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

While Levels of Service (LOS) analysis is no longer a criterion of significance for traffic impacts under CEQA, the City of Fresno General Plan includes policies that utilize LOS to determine project conditions of approval. As such, this analysis includes LOS impacts while vehicle miles traveled (VMT) impacts are discussed in Response b) below.

Based on the City of Fresno General Plan Mobility and Transportation Element, the City uses Traffic Impact Zone (TIZ) boundaries within the City to identify acceptable LOS for each TIZ. The study area is within TIZ III, which has an LOS standard of D. As such, an operational deficiency would occur when the project causes an unsatisfactory condition

[29] Vang Inc. Consulting Engineers, 2021. *Traffic Impact Study P 2021-01833 Barstow Truck Parking.* October 11.

[30] LSA, 2022. Barstow Truck Parking Facility Vehicle Miles Traveled Analysis Memorandum. May 4.

(deterioration from LOS A through D to LOS E or F) for intersections or when the project contributes to an existing or forecasted deficiency.

The TIS examined traffic operations in the vicinity of the proposed project under the following five scenarios:

- Existing Conditions;
- Existing plus Project Conditions;
- Near-term plus Project Conditions;
- Cumulative Year (2035) No Project Conditions; and
- Cumulative Year (2035) Plus Project Conditions

Traffic conditions were examined for the weekday daily, AM, and PM peak hour conditions. As identified in the TIS, the AM peak hour is defined as the one hour of highest traffic volumes occurring between 7:00 a.m. and 9:00 a.m. and the PM peak hour is the one hour of highest traffic volumes occurring between 4:00 p.m. and 6:00 p.m. The study area for the TIS included the following study intersections for the LOS and queuing analysis:

Intersections

1. North Veterans Blvd Avenue/West Barstow Avenue
2. North Polk Avenue/West Shaw Avenue
3. Barstow Avenue/ Proposed Driveway

Currently, Veterans/Barstow and Barstow/Driveway intersections are operating at LOS D or better. Polk/Shaw intersection is currently operating at LOS E during AM peak hour, and LOS F during PM peak hour.

Project Trip Generation. To assess potential impacts that the project may have on the surrounding roadway network, the first step was to determine project trip generation. Trip generation counts primary trips, which are vehicle trips that are generated for the primary purpose of using the development. These would mainly include employee, customer, service, and delivery trips. The proposed project's trip generation estimates are based on the Institute of Transportation Engineers (ITE) Trip Manual. The TIS analyzed the subject property under ITE Code 130 (Industrial Park). The City of Fresno allows analysis for Truck Parking Facility's to use the gross acreage under ITE Code 110 (General Light Industrial). ITE Code 130 generated higher AM and PM peak hour trips than ITE Code 110 and was allowed to be used for the analysis.

Applying the factors outlined in the ITE Trip Generation Manual, the proposed truck parking facility project would generate 1,121 average daily trips, including 151 vehicle trips during the AM peak hour and 157 vehicle trips during the PM peak hour.

Intersection Capacity Analysis. Based on the results of the TIS, under existing plus project conditions, Veterans/Barstow and Barstow/Driveway intersections would continue to operate at an acceptable LOS D or better. Polk/Shaw intersection would continue to operate at LOS E during AM peak hour, and LOS F during PM peak hour.

Under the near term plus project conditions, Veterans/Barstow and Barstow/Driveway intersections would continue to operate at an acceptable LOS D or better. Polk/Shaw intersection would continue to operate at LOS E during AM peak hour, and LOS F during PM peak hour.

Under cumulative plus project conditions Veterans/Barstow intersection would operate at LOS F during AM and PM peak hours. With additional lanes added on Shaw Avenue in the future, the Polk/Shaw intersection LOS would improve to LOS D during AM and F during PM.

A queuing analysis was conducted using Synchro 11 to determine the 95th percentile projected queue lengths to assess the adequacy of the turn lane storage lengths. Veterans/Barstow intersection would have deficiencies in the storage lengths for the east bound left, west bound left, west bound right, north bound left, north bound right, south bound left and south bound right turn lanes. Polk/Shaw intersection would continue have to deficiencies in the south bound left and west bound left turn lanes. The recommended storage lengths to accommodate the cumulative buildout is detailed in the TIS (Appendix G).

The proposed project would implement the following features: construct site frontage improvements along Barstow Avenue to include curb, gutter, and sidewalk and accommodations for bicycle facilities to be constructed in connection with the City of Fresno Active Transportation Plan, including Class II facilities along Barstow Avenue; provide adequate wayfinding, signage, and illumination on-site to optimize safety and to reduce conflicts among delivery trucks, motorists, cyclists, and pedestrians; the City shall continue to monitor traffic operations at all off-site intersections; provide adequate ingress and egress to and from the project site as represented in the Site Plan with driveways; and provide onsite bike racks/bike lockers and pedestrian accessibility to all proposed buildings and offsite sidewalk. In addition, the proposed project would be required to pay into applicable transportation fee programs, including the Fresno Major Street Impact (FMSI) Fee Program, Traffic Signal Mitigation Impact (TSMI) Fee Program, and Regional Transportation Mitigation Fee (RTMF) Program.

Summary. As described above, the addition of project traffic is not anticipated to exceed the City's level of significance threshold of LOS (LOS D or better). In addition, the project-related traffic would not result in a deficiency to existing transit, roadway, bicycle, and pedestrian facilities. Therefore, the proposed project would not conflict with any plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system or congestion management program. Impacts would be less than significant, and no mitigation is required.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Senate Bill (SB) 743 requires that relevant CEQA analysis of transportation impacts be conducted using a metric known as VMT instead of LOS. VMT measures how much actual auto travel (additional miles driven) a proposed project would create on California roads. If the project adds excessive car travel onto our roads, the project may cause a significant transportation impact.

The State CEQA Guidelines were amended to implement SB 743, by adding Section 15064.3. Among its provisions, Section 15064.3 confirms that, except with respect to transportation projects, a project's effect on automobile delay shall not constitute a significant environmental impact. Therefore, LOS measures of impacts on traffic facilities are no longer a relevant CEQA criterion for transportation impacts.

CEQA Guidelines Section 15064.3(b)(4) states that "[a] lead agency has discretion to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revision to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section."

On June 25, 2020, the City of Fresno adopted CEQA Guidelines for Vehicle Miles Traveled Thresholds, dated June 25, 2020, pursuant to Senate Bill 743 to be effective of July 1, 2020. The thresholds described therein are referred to herein as the City of Fresno VMT Thresholds. The City of Fresno VMT Thresholds document was prepared and adopted consistent with the requirements of CEQA Guidelines Sections 15064.3 and 15064.7. The December 2018 Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory) published by the Governor's Office of Planning and Research (OPR), was utilized as a reference and guidance document in the preparation of the Fresno VMT Thresholds.

The City's VMT Guidelines state that for projects which do not include residential, office, or retail uses, VMT per employee may be used as the metric for analysis purposes. Additionally, the guidelines define Fresno County (County) as the "region" for determining VMT thresholds for VMT per employee metric. As per the guidelines, projects which do not include residential, office, or retail uses and do not require a GPA will generate a significant VMT impact if the project VMT per employee exceeds the County's VMT per employee. Therefore, the project VMT per employee has been compared with the Fresno County VMT per employee to determine if the project will create a significant VMT impact.

Project VMT per employee was estimated using the Fresno Council of Governments' (COG's) Activity-Based Model (ABM), while the regional VMT per employee was obtained from the City's VMT Guidelines. The model's socioeconomic database under baseline

(2019) conditions was updated with the project land use. As discussed above, the City of Fresno allows analysis for Truck Parking Facility's to use the gross acreage under ITE Code 110 (General Light Industrial). However, ITE Code 130 generated higher AM and PM peak hour trips than ITE Code 110 and was allowed to be used for the analysis. As such, the ITE Trip Generation land use category "Industrial Park (LU Code 130)" was used for project trip generation. This land use category was used to convert project land use into model employment categories for the VMT analysis to be consistent with the traffic analysis, the land use conversion factors were used. Also, the land use conversion methodology resulted in a higher number of employees than the number of employees suggested in the operational statement.

The regional (Fresno County) VMT per employee, obtained from the City's VMT Guidelines is 25.6, while the project VMT per employee is 13.8. The project VMT per employee is 54 percent lower than the regional VMT per employee. Therefore, as per the City's VMT Guidelines, the project would not have a significant VMT impact. In conclusion, the project would result in a less than significant VMT impact and is consistent with CEQA Guidelines Section 15064.3(b). No mitigation is required.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Vehicular access to the project site would be provided via one driveway located on Barstow Avenue. A secondary emergency driveway would also be located on Barstow Avenue. The project driveways would be gated and stop controlled at the driveway approach. Therefore, vehicles exiting the project site from the project driveway must stop before they continue to merge on the neighboring circulation network.

The majority of traffic flow in the study area occurs on West Barstow Avenue. Project improvements to West Barstow Avenue include pavement widening, curb, gutter, street lighting, and pavement striping to accommodate an additional west bound traffic thru lane on Barstow Avenue. Specific improvements would include the extension of the pedestrian and bicycle facilities on Barstow Avenue to ensure connectivity of pedestrian and alternative transportation infrastructure in the study area. The proposed project would not include any sharp curves or other roadway design elements that would create dangerous conditions. In addition, the project design features would be required to comply with standards set by the City's General Plan and City Engineer. In addition, the proposed project would also be required to submit plans to the FFD for review and approval prior to the issuance of building permits to ensure there are no substantial hazards associated with the project design. Therefore, the proposed project would result in a less-than-significant impact related to hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment), and no mitigation is required.

d) Result in inadequate emergency access?

Emergency vehicles would have access to the project site via two driveways on West Barstow Avenue. Further, the proposed project's site plan would be subject to review and approval by the FFD to ensure the project includes adequate emergency access. In addition, as discussed in Section IX, Hazards and Hazardous Materials, project implementation would not physically interfere with emergency evacuation or the FFD access to and from the project site. Therefore, the proposed project would result in less-than-significant impacts related to inadequate emergency access, and no mitigation is required.

Mitigation Measures

The proposed project would not result in any potentially significant impacts related to transportation, and no mitigation is required.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. TRIBAL CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC section 5020.1(k), or,				X
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC section 5024.1. In applying the criteria set forth in subdivision (c) of PRC section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.				X

DISCUSSION

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

The State requires lead agencies to consider the potential effects of proposed projects and consult with California Native American tribes during the local planning process for the purpose of protecting Traditional Tribal Cultural Resources through the *State CEQA Guidelines*. Pursuant to PRC Section 21080.3.1, the lead agency shall begin consultation with the California Native American tribe that is traditionally and culturally affiliated with the geographical area of the proposed project. Such significant cultural resources are either sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe which is either on or eligible for inclusion in the California Register or local historic register, or, the lead agency, at its discretion, and support by substantial evidence, choose to treat the resources as a Tribal Cultural Resources (PRC Section 21074(a)(1-2)).

Additional information may also be available from the California NAHC's Sacred Lands File per PRC Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that PRC Section 21082.3(c) contains provisions specific to confidentiality.

AB 52, which became law January 1, 2015, requires that, as part of the CEQA review process, public agencies provide early notice of a project to California Native American Tribes to allow for consultation between the tribe and the public agency. The purpose of AB 52 is to provide the opportunity for public agencies and tribes to consult and consider potential impacts to Tribal Cultural Resources (TCRs), as defined by PRC Section 2107(a). Under AB 52, public agencies shall reach out to California Native American Tribes who have requested to be notified of projects in areas within or which may have been affiliated with their tribal geographic range. Pursuant to AB 52, the Table Mountain Rancheria Tribe and the Dumna Wo Wah Tribe were invited to consult under AB 52. A certified letter was mailed to the above-mentioned tribes on December 23, 2021. The 30-day comment period ended on January 24, 2022. Neither tribe requested consultation.

Based on the Cultural and Historical Resources Assessment[31] prepared for the proposed project by Peak & Associates, Inc., there are no known Native American resources in the project site that are listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k). Additionally,

31 Peak & Associates. 2021. Cultural and Historical Resources Assessment for Vesting Tentative Tract Map 6352 - Barstow Truck Parking. APN: 505-070-44. October 19.

no specific tribal cultural resources were identified in the project site as a result of Native American consultation conducted for the project per Assembly Bill 52.

As such, the project would not cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k). Impacts would be less than significant. No mitigation is required.

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Under invitations to consult under AB 52, no tribes requested consultation. The City, as lead agency, has not identified any potential tribal cultural resources at the project site. As such, the project would not cause a substantial adverse change in the significance of a tribal cultural resource pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. No mitigation is required.

Mitigation Measures

The proposed project would not result in any potentially significant impacts related to tribal cultural resources, and no mitigation is required.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effect?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

DISCUSSION

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

As identified in the Project Description, utilities required to serve the proposed project would include water, sanitary sewer, storm water drainage, electricity, natural gas, and telecommunications infrastructure.

Potable Water. The proposed project would require connection to existing 14-inch and 8-inch water mains located along West Barstow and North Contessa Avenue and 8-inch wastewater service lines located along West Barstow and North Contessa Avenue.

Short-term demand for water may occur during excavation, grading, and construction activities on site. Construction activities would require water primarily for dust mitigation purposes. Water from the existing potable water lines in the vicinity of the project site would be used. Overall, short-term construction activities would require minimal water and are not expected to have any adverse impacts on the existing water system or available water supplies. The proposed project would not require the construction of new or expanded water conveyance, treatment, or collection facilities with respect to construction activities.

Based on the nature of the proposed project, the project-generated increase in water demand would be minimal and would fall within the City's existing capacity and available supply. As such, the proposed project would not necessitate new or expanded water entitlements, and the City would be able to accommodate the increased demand for potable water. As such, the proposed project would not necessitate new or expanded water entitlements, and the City would be able to accommodate the increased demand for potable water.

Wastewater. Wastewater services would also be provided by the City. No significant increase in wastewater flows is anticipated as a result of construction activities on the project site. Sanitary services during construction would be provided by portable toilet facilities, which transport waste off site for treatment and disposal.

In addition, wastewater generation associated with the proposed project is not anticipated to exceed wastewater treatment requirements or exceed the available capacity to accommodate the increased wastewater flows from the proposed project. Further, as discussed in the Project Description, the proposed truck washing facility would primarily utilize recycled water, with approximately 10 percent nonrecycled water or approximately 7,000 to 10,000 gallons of potable water per month. At the end of each truck wash, used water would be discharged to an underground tank to undergo a degerming/filtration process to be used again as part of the truck wash cycle. As such, due to the nature of the proposed truck parking uses, the proposed project would not generate a substantial

amount of wastewater and would be adequately served by the capacity and the existing wastewater conveyance system. As such, the proposed project would not necessitate new or expanded water entitlements, and the City would be able to accommodate the increased demand for potable water.

Stormwater and Drainage Facilities. Impacts to storm drainage facilities have been previously discussed in Section X, Hydrology and Water Quality. The proposed project would result in the construction of new stormwater drainage facilities or the expansion of existing facilities. Specifically, the proposed project would include construction of a new curb and gutter along the proposed ingress and egress driveway for the project on West Barstow Avenue to connect to the City's existing stormwater system. However, the construction of such minor facilities would be constructed in conformance with City standards; therefore, its construction would not cause significant environmental effects.

Electricity, Natural Gas, and Telecommunication Facilities. Electric power, natural gas, and telecommunication facilities would require connections to the project site. However, because the project site is located within an urbanized area with existing facilities in close proximity, connection to these facilities would not cause significant environmental effects. As a result, the project would result in a less-than-significant impact related to the relocation or construction or new or expanded utilities.

Summary. The proposed project would not require or result in the relocation or construction of new or expanded facilities for water, wastewater treatment, storm drainage, electric power, natural gas, or telecommunications which could cause significant environmental effects. Impacts would be less than significant and no mitigation is required.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Refer to discussion b) of Section X, Hydrology and Water Quality. The City of Fresno Department of Public Utilities would supply water to the project site. Based on the City's 2020 Urban Water Management Plan (UWMP), the water supplies under normal conditions for the City from 2025 (329,030 Acre Feet (AF)/year) to 2045 (357,330 AF)/year) would be sufficient to cover the potable water demand (i.e., 136,504 AF by 2025 and 167,947 AF by 2045) for each normal year through 2045.[32] Additionally, water supplies for the city during single dry year and five dry year periods are predicted to be sufficient to accommodate potable water demand in the City through 2045.

The proposed project would introduce a truck parking facility, including an office/truck repair service center, and a truck wash facility and associated infrastructure into the project site. The project site is designated Business Park in the City's General Plan, and

32 City of Fresno. 2021. 2020 Urban Water Management Plan. Website: https://www.fresno.gov/publicutilities/wp-content/uploads/sites/16/2021/07/Fresno-2020-UWMP_Final_2021-07-21.pdf (accessed November 2022).

zoned within the City's Business Park (BP) district, which is intended to provide a campus-type office professional environment that is well suited for large offices or multi-tenant buildings and accommodate and allow for the expansion of small businesses with limited outdoor storage. The proposed project would introduce uses compatible with the zoning and land use designation of the project site. As such, the proposed project would be consistent with growth under the City's General Plan and would be accounted for in the City's UWMP projections. Therefore, the proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years, and impacts would be less than significant. No mitigation is required.

c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Refer to discussion a) above. Wastewater generation associated with the proposed project is not anticipated to exceed wastewater treatment requirements or exceed the available capacity to accommodate the increased wastewater flows from the proposed project. Further, as discussed in the Project Description, the proposed truck washing facility would primarily utilize recycled water, with approximately 10 percent nonrecycled water or approximately 7,000 to 10,000 gallons of potable water per month. Due to the nature of the proposed truck parking uses, the proposed project would not generate a substantial amount of wastewater and would be adequately served by the capacity and the existing wastewater conveyance system. In addition, the proposed project is not expected to exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board. As such, the proposed project would not result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments and impacts would be less than significant. No mitigation is required. In addition, the proposed project would be subject to the payment of any applicable connection charges and/or fees and extension of services in a manner that is compliant with the Department of Public Utilities standards, specifications, and policies. In addition, the proposed project is not expected to exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board. As such, impacts would be less than significant. No mitigation is required.

d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Garbage disposed of in the City of Fresno is taken to Cedar Avenue Recycling and Transfer Station. Once trash has been off-loaded at the transfer station, it is sorted, and non-recyclable solid waste is loaded onto large trucks and taken to the American Avenue Landfill located approximately 6 miles southwest of Kerman.

The American Avenue Landfill (i.e., American Avenue Disposal Site 10-AA-0009) has a maximum permitted capacity of 32,700,000 cubic yards and a remaining capacity of 29,358,535 cubic yards, with an estimated closure date of August 31, 2031. The maximum permitted throughput is 2,200 tons per day.

Other landfills within the County of Fresno include the Clovis Landfill (City of Clovis Landfill 10-AA-0004) with a remaining capacity of 7,740,000 cubic yards, a maximum permitted throughput of 2,000 tons per day, and an estimated closure date of April 30, 2047.[33] [34]

Based on estimates provided in CalEEMod, operation of the proposed project would generate approximately 41.26 tons of solid waste per year or approximately 0.11 tons of solid waste per day. Given the available capacity at the landfills, the additional solid waste generated by the proposed project is not anticipated to cause the facility to exceed its daily permitted capacity. As such, the project would be served by a landfill with sufficient capacity to accommodate the project's waste disposal needs. The proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals and impacts would be less than significant. No mitigation is required.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The proposed project would comply with CALGreen, the City's Construction and Demolition (C&D) Waste Management Guide, and with waste management policies and recommendations from the General Plan and the Greenhouse Gas Reduction Plan Update.[35] The proposed project would dispose of waste in accordance with applicable federal, state, and local recycling, reduction, and waste requirements and policies. Therefore, the proposed project would not conflict with federal, state, and local management and reduction statutes and regulations related to solid waste, and impacts would be less than significant. No mitigation is required.

Mitigation Measures

The proposed project would not result in any potentially significant impacts related to utilities and service systems, and no mitigation is required.

33 CalRecycle. SWIS Facility/Site Summary. American Avenue Disposal Site (10-AA-0009). Website: https://www2.calrecycle.ca.gov/SolidWaste/Site/Summary/352 (accessed November 2022).

34 CalRecycle. SWIS Facility/Site Summary. City Of Clovis Landfill (10-AA-0004). Website: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/4529?siteID=347 (accessed November 2022).

35 City of Fresno. 2021. Greenhouse Gas Reduction Plan Update. Website: https://www.fresno.gov/darm/wp-content/uploads/sites/10/2021/03/Link4AppendixGGHGRPUpdate.pdf (accessed November 2022).

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. WILDFIRE – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

DISCUSSION

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Wildland fires occur in geographic areas that contain the types and conditions of vegetation, topography, weather, and structure density susceptible to risks associated with uncontrolled fires that can be started by lightning, improperly managed campfires, cigarettes, sparks from automobiles, and other ignition sources. According to the

California Department of Forestry and Fire Protection (CAL FIRE) Very High Fire Hazard Severity Zone (VHFHSZ) Map for Fresno County, the project site is not located within a Very or High Fire Hazard Severity Zone.[36]

The proposed project would result in the construction of a truck parking facility and associated uses and infrastructure in an urban area of the City of Fresno. The proposed project would not result in the construction of any elements that may impair emergency access to the site or emergency evacuation in the project area. Emergency vehicles would have access to the project site via two driveways on West Barstow Avenue. Furthermore, the proposed project's site plan would be subject to review and approval by the FFD to ensure the project includes adequate emergency access. As a result, project implementation would not physically interfere with evacuation plans or FFD access to and from the project site. Moreover, since the project site is not located in or near a VHFHSZ nor is it located in or near a State Responsibility Area (SRA), potential impacts associated with emergency access described above would not pertain to wildfire and would more likely be associated with an urban fire or other emergency situations. Therefore, operation of the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan. There would be no impact and no mitigation would be required.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

As stated previously, the project site is not located in or near a VHFHSZ nor is it located in or near a SRA. Therefore, the proposed project would not exacerbate wildfire risks due to slope and prevailing winds, thereby exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. There would be no impact and no mitigation would be required.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Utility and infrastructure improvements included as part of the project are described in Section XIX, Utilities and in the Project Description. The project site is not located in or near a VHFHSZ nor is it located in or near an SRA. Utility installations would not exacerbate fire risk due to the location of the project site in an urban area outside of a designated fire hazard zone. Therefore, the proposed project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that would exacerbate fire risk or result in temporary or ongoing impacts to the environment. There would be no impact and no mitigation would be required.

[36] Cal Fire. *Fire Hazard Severity Zone Viewer.* Website: https://egis.fire.ca.gov/FHSZ/ (accessed August 2022).

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Landslides and other forms of mass wasting, including mud flows, debris flows, and soil slips, occur as soil moves downslope under the influence of gravity. Landslides are frequently triggered by intense rainfall or seismic shaking but can also occur as a result of erosion and downslope runoff caused by rain following a fire. As previously discussed in Section VII, Geology and Soils, the City of Fresno is located within an area that consists of mostly flat topography within the Central Valley. Accordingly, there is no risk of large landslides in the majority of the City. In addition, the project site is generally level and would not expose people or structures to potential substantial adverse effects associated with landslides. As discussed in Section X, Hydrology and Water Quality, the project would not alter the existing drainage pattern of the site or area or increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. Further, as stated previously, the project site is not located in or near a VHFHSZ nor is it located in or near a SRA. Therefore, the proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. There would be no impact and no mitigation would be required.

Mitigation Measures

The proposed project would not result in any potentially significant impacts related to wildfire, and no mitigation is required.

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		X		
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X		

DISCUSSION

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or

restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?

As discussed in Section IV, Biological Resources and Section V, Cultural Resources, with the incorporation of Mitigation Measures BIO-1 and BIO-2 and CUL-1 and CUL-2, development of the proposed project would not: (1) degrade the quality of the environment; (2) substantially reduce the habitat of a fish or wildlife species; (3) cause a fish or wildlife species population to drop below self-sustaining levels; (4) threaten to eliminate a plant or animal community; (5) reduce the number or restrict the range of a rare or endangered plant or animal; or (6) eliminate important examples of the major periods of California history. Therefore, this impact would be less than significant with mitigation incorporated.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

The proposed project's impacts would be individually limited and not cumulatively considerable due to the site-specific nature of the potential impacts. The potentially significant impacts that can be reduced to less-than-significant levels with implementation of recommended mitigation measures include the topics of Aesthetics, Biological Resources, Cultural Resources, and Noise. These impacts would primarily be related to construction-period activities, would be temporary in nature, and would not substantially contribute to any potential cumulative impacts associated with these topics.

Implementation of mitigation measures AES-1 through AES-4, BIO-1 through BIO-3, CUL-1 and CUL-2, and NOI-1 would ensure that the impacts of the project would be below established thresholds of significance. Since the proposed project would not result in any significant project-level impacts, the proposed project would not result in any significant impacts that would combine with the impacts of other cumulative projects to result in a cumulatively considerable impact on the environment as a result of project development. As such, this impact would be less than significant with mitigation incorporated.

For the topics of Agriculture and Forestry Resources, Air Quality, Energy, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, Recreation, Transportation, Utilities and Service Systems, and Wildlife, the project would have no impacts or less-than-significant impacts, and therefore, the project would not substantially contribute to any potential cumulative impacts for these topics.

As such, impacts would be less than significant with mitigation incorporated.

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

The proposed project's potential to result in environmental effects that could directly or indirectly impact human beings has been evaluated in this Initial Study. With implementation of the recommended mitigation measures, all environmental effects that could adversely affect human beings, either directly or indirectly, would be less than significant with mitigation incorporated.

APPENDIX A

CALEEMOD OUTPUT SHEETS

Barstow Truck Parking Facility Project - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Barstow Truck Parking Facility Project

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	433.00	Space	17.01	173,200.00	0
Automobile Care Center	10.80	1000sqft	1.86	10,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Parking spaces include truck and vehicle parking spaces. Automobile Care Center includes the 5,400 square-foot Office/Truck Repair Service Center and 5,400 square-foot Truck Wash facility.

Construction Phase - Construction of the proposed project is expected to occur over a period of 10 months starting in June 2023.

Vehicle Trips - The proposed project would generate approximately 1,121 average daily trips.

Fleet Mix - Assuming a total of 560 truck trips, including 8.8% LHDT1, 2.5% LHDT2, 18.6% MHDT, and 70.2% HHDT. Assuming the remaining trips would be 50% LDA, 25% LDT1, and 25% LDT2.

Construction Off-road Equipment Mitigation - Assuming implementation with SJVACPD Rule Regulation VIII measures and use of Tier 2 construction equipment.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	300.00	80.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	NumDays	20.00	100.00
tblConstructionPhase	NumDays	10.00	5.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	PhaseEndDate	11/15/2024	4/5/2024
tblConstructionPhase	PhaseEndDate	9/20/2024	10/27/2023
tblConstructionPhase	PhaseEndDate	7/28/2023	7/7/2023
tblConstructionPhase	PhaseEndDate	10/18/2024	3/15/2024
tblConstructionPhase	PhaseEndDate	6/16/2023	6/9/2023
tblConstructionPhase	PhaseStartDate	10/19/2024	3/18/2024
tblConstructionPhase	PhaseStartDate	7/29/2023	7/10/2023
tblConstructionPhase	PhaseStartDate	6/17/2023	6/12/2023
tblConstructionPhase	PhaseStartDate	9/21/2024	10/30/2023
tblFleetMix	HHD	0.02	0.35
tblFleetMix	LDA	0.52	0.25
tblFleetMix	LDT1	0.05	0.13
tblFleetMix	LDT2	0.18	0.01
tblFleetMix	LHD2	6.8290e-003	0.01
tblFleetMix	MCY	0.02	0.00
tblFleetMix	MDV	0.16	0.00
tblFleetMix	MH	2.9750e-003	0.00
tblFleetMix	MHD	0.01	0.35
tblFleetMix	OBUS	7.0700e-004	0.00
tblFleetMix	SBUS	1.4960e-003	0.00
tblFleetMix	UBUS	2.8900e-004	0.00
tblGrading	AcresOfGrading	60.00	90.00
tblGrading	AcresOfGrading	7.50	15.00
tblLandUse	LotAcreage	3.90	17.01
tblLandUse	LotAcreage	0.25	1.86
tblVehicleTrips	ST_TR	23.72	103.80
tblVehicleTrips	SU_TR	11.88	103.80
tblVehicleTrips	WD_TR	23.72	103.80

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1486	1.2787	1.4055	2.8000e-003	0.1980	0.0574	0.2553	0.0739	0.0534	0.1273	0.0000	246.8204	246.8204	0.0578	4.1300e-003	249.4972
2024	0.1535	0.2720	0.4273	6.8000e-004	4.2000e-003	0.0134	0.0176	1.1200e-003	0.0123	0.0134	0.0000	60.2458	60.2458	0.0180	9.0000e-005	60.7224
Maximum	**0.1535**	**1.2787**	**1.4055**	**2.8000e-003**	**0.1980**	**0.0574**	**0.2553**	**0.0739**	**0.0534**	**0.1273**	**0.0000**	**246.8204**	**246.8204**	**0.0578**	**4.1300e-003**	**249.4972**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1079	2.0514	1.6302	2.8000e-003	0.1980	0.0673	0.2653	0.0739	0.0673	0.1412	0.0000	246.8201	246.8201	0.0578	4.1300e-003	249.4969
2024	0.1514	0.5717	0.5008	6.8000e-004	4.2000e-003	0.0191	0.0233	1.1200e-003	0.0191	0.0202	0.0000	60.2457	60.2457	0.0180	9.0000e-005	60.7223
Maximum	**0.1514**	**2.0514**	**1.6302**	**2.8000e-003**	**0.1980**	**0.0673**	**0.2653**	**0.0739**	**0.0673**	**0.1412**	**0.0000**	**246.8201**	**246.8201**	**0.0578**	**4.1300e-003**	**249.4969**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**14.16**	**-69.16**	**-16.28**	**0.00**	**0.00**	**-22.17**	**-5.74**	**0.00**	**-31.46**	**-14.70**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**6-5-2023**	**9-4-2023**	0.7661	1.0925
2	**9-5-2023**	**12-4-2023**	0.4863	0.7768
3	**12-5-2023**	**3-4-2024**	0.3655	0.7009
4	**3-5-2024**	**6-4-2024**	0.1540	0.2026
		Highest	0.7661	1.0925

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0649	4.0000e-005	4.0700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.9300e-003	7.9300e-003	2.0000e-005	0.0000	8.4500e-003
Energy	1.2100e-003	0.0110	9.2100e-003	7.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	26.1424	26.1424	2.5300e-003	5.0000e-004	26.3538
Mobile	0.2289	3.4982	2.2773	0.0133	0.4867	0.0171	0.5038	0.1386	0.0163	0.1549	0.0000	1,272.0352	1,272.0352	0.0183	0.1778	1,325.4714
Waste						0.0000	0.0000		0.0000	0.0000	8.3754	0.0000	8.3754	0.4950	0.0000	20.7497
Water						0.0000	0.0000		0.0000	0.0000	0.3224	0.7104	1.0327	0.0332	8.0000e-004	2.1004
Total	**0.2950**	**3.5092**	**2.2906**	**0.0134**	**0.4867**	**0.0179**	**0.5047**	**0.1386**	**0.0171**	**0.1558**	**8.6978**	**1,298.8959**	**1,307.5936**	**0.5490**	**0.1791**	**1,374.6838**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0649	4.0000e-005	4.0700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.9300e-003	7.9300e-003	2.0000e-005	0.0000	8.4500e-003
Energy	1.2100e-003	0.0110	9.2100e-003	7.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	26.1424	26.1424	2.5300e-003	5.0000e-004	26.3538
Mobile	0.2289	3.4982	2.2773	0.0133	0.4867	0.0171	0.5038	0.1386	0.0163	0.1549	0.0000	1,272.0352	1,272.0352	0.0183	0.1778	1,325.4714
Waste						0.0000	0.0000		0.0000	0.0000	8.3754	0.0000	8.3754	0.4950	0.0000	20.7497
Water						0.0000	0.0000		0.0000	0.0000	0.3224	0.7104	1.0327	0.0332	8.0000e-004	2.1004
Total	**0.2950**	**3.5092**	**2.2906**	**0.0134**	**0.4867**	**0.0179**	**0.5047**	**0.1386**	**0.0171**	**0.1558**	**8.6978**	**1,298.8959**	**1,307.5936**	**0.5490**	**0.1791**	**1,374.6838**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/5/2023	6/9/2023	5	5	
2	Grading	Grading	6/12/2023	7/7/2023	5	20	
3	Building Construction	Building Construction	7/10/2023	10/27/2023	5	80	

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4	Paving	Paving	10/30/2023	3/15/2024	5	100	
5	Architectural Coating	Architectural Coating	3/18/2024	4/5/2024	5	15	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 90

Acres of Paving: 17.01

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 16,200; Non-Residential Outdoor: 5,400; Striped Parking Area: 10,392 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	76.00	30.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0531	0.0000	0.0531	0.0257	0.0000	0.0257	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6500e-003	0.0688	0.0456	1.0000e-004		3.1700e-003	3.1700e-003		2.9100e-003	2.9100e-003	0.0000	8.3627	8.3627	2.7000e-003	0.0000	8.4303
Total	**6.6500e-003**	**0.0688**	**0.0456**	**1.0000e-004**	**0.0531**	**3.1700e-003**	**0.0563**	**0.0257**	**2.9100e-003**	**0.0286**	**0.0000**	**8.3627**	**8.3627**	**2.7000e-003**	**0.0000**	**8.4303**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	9.0000e-005	1.0600e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2865	0.2865	1.0000e-005	1.0000e-005	0.2891
Total	**1.4000e-004**	**9.0000e-005**	**1.0600e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2865**	**0.2865**	**1.0000e-005**	**1.0000e-005**	**0.2891**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0531	0.0000	0.0531	0.0257	0.0000	0.0257	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0200e-003	0.0843	0.0574	1.0000e-004		2.3700e-003	2.3700e-003		2.3700e-003	2.3700e-003	0.0000	8.3627	8.3627	2.7000e-003	0.0000	8.4303
Total	**3.0200e-003**	**0.0843**	**0.0574**	**1.0000e-004**	**0.0531**	**2.3700e-003**	**0.0555**	**0.0257**	**2.3700e-003**	**0.0281**	**0.0000**	**8.3627**	**8.3627**	**2.7000e-003**	**0.0000**	**8.4303**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	9.0000e-005	1.0600e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2865	0.2865	1.0000e-005	1.0000e-005	0.2891
Total	**1.4000e-004**	**9.0000e-005**	**1.0600e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2865**	**0.2865**	**1.0000e-005**	**1.0000e-005**	**0.2891**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1079	0.0000	0.1079	0.0383	0.0000	0.0383	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0332	0.3452	0.2805	6.2000e-004		0.0142	0.0142		0.0131	0.0131	0.0000	54.5352	54.5352	0.0176	0.0000	54.9762
Total	**0.0332**	**0.3452**	**0.2805**	**6.2000e-004**	**0.1079**	**0.0142**	**0.1222**	**0.0383**	**0.0131**	**0.0514**	**0.0000**	**54.5352**	**54.5352**	**0.0176**	**0.0000**	**54.9762**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.0000e-004	4.7300e-003	1.0000e-005	1.6000e-003	1.0000e-005	1.6100e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.2732	1.2732	4.0000e-005	4.0000e-005	1.2850
Total	**6.2000e-004**	**4.0000e-004**	**4.7300e-003**	**1.0000e-005**	**1.6000e-003**	**1.0000e-005**	**1.6100e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.2732**	**1.2732**	**4.0000e-005**	**4.0000e-005**	**1.2850**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1079	0.0000	0.1079	0.0383	0.0000	0.0383	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0181	0.5124	0.3672	6.2000e-004		0.0133	0.0133		0.0133	0.0133	0.0000	54.5351	54.5351	0.0176	0.0000	54.9761
Total	**0.0181**	**0.5124**	**0.3672**	**6.2000e-004**	**0.1079**	**0.0133**	**0.1213**	**0.0383**	**0.0133**	**0.0516**	**0.0000**	**54.5351**	**54.5351**	**0.0176**	**0.0000**	**54.9761**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.0000e-004	4.7300e-003	1.0000e-005	1.6000e-003	1.0000e-005	1.6100e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.2732	1.2732	4.0000e-005	4.0000e-005	1.2850
Total	**6.2000e-004**	**4.0000e-004**	**4.7300e-003**	**1.0000e-005**	**1.6000e-003**	**1.0000e-005**	**1.6100e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.2732**	**1.2732**	**4.0000e-005**	**4.0000e-005**	**1.2850**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0629	0.5754	0.6498	1.0800e-003		0.0280	0.0280		0.0263	0.0263	0.0000	92.7219	92.7219	0.0221	0.0000	93.2733
Total	**0.0629**	**0.5754**	**0.6498**	**1.0800e-003**		**0.0280**	**0.0280**		**0.0263**	**0.0263**	**0.0000**	**92.7219**	**92.7219**	**0.0221**	**0.0000**	**93.2733**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2900e-003	0.0527	0.0158	2.4000e-004	7.9600e-003	3.4000e-004	8.2900e-003	2.3000e-003	3.2000e-004	2.6200e-003	0.0000	23.0791	23.0791	1.3000e-004	3.4700e-003	24.1175
Worker	9.4100e-003	6.1000e-003	0.0719	2.1000e-004	0.0243	1.2000e-004	0.0244	6.4600e-003	1.1000e-004	6.5700e-003	0.0000	19.3528	19.3528	5.8000e-004	5.5000e-004	19.5325
Total	**0.0107**	**0.0588**	**0.0877**	**4.5000e-004**	**0.0323**	**4.6000e-004**	**0.0327**	**8.7600e-003**	**4.3000e-004**	**9.1900e-003**	**0.0000**	**42.4319**	**42.4319**	**7.1000e-004**	**4.0200e-003**	**43.6500**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0432	0.9422	0.7150	1.0800e-003		0.0361	0.0361		0.0361	0.0361	0.0000	92.7218	92.7218	0.0221	0.0000	93.2732
Total	**0.0432**	**0.9422**	**0.7150**	**1.0800e-003**		**0.0361**	**0.0361**		**0.0361**	**0.0361**	**0.0000**	**92.7218**	**92.7218**	**0.0221**	**0.0000**	**93.2732**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2900e-003	0.0527	0.0158	2.4000e-004	7.9600e-003	3.4000e-004	8.2900e-003	2.3000e-003	3.2000e-004	2.6200e-003	0.0000	23.0791	23.0791	1.3000e-004	3.4700e-003	24.1175
Worker	9.4100e-003	6.1000e-003	0.0719	2.1000e-004	0.0243	1.2000e-004	0.0244	6.4600e-003	1.1000e-004	6.5700e-003	0.0000	19.3528	19.3528	5.8000e-004	5.5000e-004	19.5325
Total	**0.0107**	**0.0588**	**0.0877**	**4.5000e-004**	**0.0323**	**4.6000e-004**	**0.0327**	**8.7600e-003**	**4.3000e-004**	**9.1900e-003**	**0.0000**	**42.4319**	**42.4319**	**7.1000e-004**	**4.0200e-003**	**43.6500**

3.5 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2293	0.3281	5.1000e-004		0.0115	0.0115		0.0106	0.0106	0.0000	45.0605	45.0605	0.0146	0.0000	45.4248
Paving	0.0100					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0333**	**0.2293**	**0.3281**	**5.1000e-004**		**0.0115**	**0.0115**		**0.0106**	**0.0106**	**0.0000**	**45.0605**	**45.0605**	**0.0146**	**0.0000**	**45.4248**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0500e-003	6.8000e-004	7.9800e-003	2.0000e-005	2.7000e-003	1.0000e-005	2.7100e-003	7.2000e-004	1.0000e-005	7.3000e-004	0.0000	2.1485	2.1485	6.0000e-005	6.0000e-005	2.1685
Total	**1.0500e-003**	**6.8000e-004**	**7.9800e-003**	**2.0000e-005**	**2.7000e-003**	**1.0000e-005**	**2.7100e-003**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**2.1485**	**2.1485**	**6.0000e-005**	**6.0000e-005**	**2.1685**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0210	0.4526	0.3892	5.1000e-004		0.0150	0.0150		0.0150	0.0150	0.0000	45.0604	45.0604	0.0146	0.0000	45.4247
Paving	0.0100					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0310**	**0.4526**	**0.3892**	**5.1000e-004**		**0.0150**	**0.0150**		**0.0150**	**0.0150**	**0.0000**	**45.0604**	**45.0604**	**0.0146**	**0.0000**	**45.4247**

Barstow Truck Parking Facility Project - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0500e-003	6.8000e-004	7.9800e-003	2.0000e-005	2.7000e-003	1.0000e-005	2.7100e-003	7.2000e-004	1.0000e-005	7.3000e-004	0.0000	2.1485	2.1485	6.0000e-005	6.0000e-005	2.1685
Total	**1.0500e-003**	**6.8000e-004**	**7.9800e-003**	**2.0000e-005**	**2.7000e-003**	**1.0000e-005**	**2.7100e-003**	**7.2000e-004**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**2.1485**	**2.1485**	**6.0000e-005**	**6.0000e-005**	**2.1685**

3.5 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0272	0.2619	0.4022	6.3000e-004		0.0129	0.0129		0.0119	0.0119	0.0000	55.0730	55.0730	0.0178	0.0000	55.5183
Paving	0.0123					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0394**	**0.2619**	**0.4022**	**6.3000e-004**		**0.0129**	**0.0129**		**0.0119**	**0.0119**	**0.0000**	**55.0730**	**55.0730**	**0.0178**	**0.0000**	**55.5183**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	7.3000e-004	9.0100e-003	3.0000e-005	3.3000e-003	2.0000e-005	3.3100e-003	8.8000e-004	1.0000e-005	8.9000e-004	0.0000	2.5598	2.5598	7.0000e-005	7.0000e-005	2.5823
Total	**1.1800e-003**	**7.3000e-004**	**9.0100e-003**	**3.0000e-005**	**3.3000e-003**	**2.0000e-005**	**3.3100e-003**	**8.8000e-004**	**1.0000e-005**	**8.9000e-004**	**0.0000**	**2.5598**	**2.5598**	**7.0000e-005**	**7.0000e-005**	**2.5823**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0256	0.5532	0.4756	6.3000e-004		0.0183	0.0183		0.0183	0.0183	0.0000	55.0729	55.0729	0.0178	0.0000	55.5182
Paving	0.0123					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0379**	**0.5532**	**0.4756**	**6.3000e-004**		**0.0183**	**0.0183**		**0.0183**	**0.0183**	**0.0000**	**55.0729**	**55.0729**	**0.0178**	**0.0000**	**55.5182**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1800e-003	7.3000e-004	9.0100e-003	3.0000e-005	3.3000e-003	2.0000e-005	3.3100e-003	8.8000e-004	1.0000e-005	8.9000e-004	0.0000	2.5598	2.5598	7.0000e-005	7.0000e-005	2.5823
Total	**1.1800e-003**	**7.3000e-004**	**9.0100e-003**	**3.0000e-005**	**3.3000e-003**	**2.0000e-005**	**3.3100e-003**	**8.8000e-004**	**1.0000e-005**	**8.9000e-004**	**0.0000**	**2.5598**	**2.5598**	**7.0000e-005**	**7.0000e-005**	**2.5823**

3.6 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1112					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3600e-003	9.1400e-003	0.0136	2.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	1.9149	1.9149	1.1000e-004	0.0000	1.9176
Total	**0.1126**	**9.1400e-003**	**0.0136**	**2.0000e-005**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**1.9149**	**1.9149**	**1.1000e-004**	**0.0000**	**1.9176**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.0000e-004	2.4600e-003	1.0000e-005	9.0000e-004	0.0000	9.0000e-004	2.4000e-004	0.0000	2.4000e-004	0.0000	0.6981	0.6981	2.0000e-005	2.0000e-005	0.7043
Total	**3.2000e-004**	**2.0000e-004**	**2.4600e-003**	**1.0000e-005**	**9.0000e-004**	**0.0000**	**9.0000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**0.6981**	**0.6981**	**2.0000e-005**	**2.0000e-005**	**0.7043**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1112					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.5000e-004	0.0176	0.0137	2.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	1.9149	1.9149	1.1000e-004	0.0000	1.9176
Total	**0.1121**	**0.0176**	**0.0137**	**2.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**1.9149**	**1.9149**	**1.1000e-004**	**0.0000**	**1.9176**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.0000e-004	2.4600e-003	1.0000e-005	9.0000e-004	0.0000	9.0000e-004	2.4000e-004	0.0000	2.4000e-004	0.0000	0.6981	0.6981	2.0000e-005	2.0000e-005	0.7043
Total	**3.2000e-004**	**2.0000e-004**	**2.4600e-003**	**1.0000e-005**	**9.0000e-004**	**0.0000**	**9.0000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**0.6981**	**0.6981**	**2.0000e-005**	**2.0000e-005**	**0.7043**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Barstow Truck Parking Facility Project - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2289	3.4982	2.2773	0.0133	0.4867	0.0171	0.5038	0.1386	0.0163	0.1549	0.0000	1,272.0352	1,272.0352	0.0183	0.1778	1,325.4714
Unmitigated	0.2289	3.4982	2.2773	0.0133	0.4867	0.0171	0.5038	0.1386	0.0163	0.1549	0.0000	1,272.0352	1,272.0352	0.0183	0.1778	1,325.4714

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	1,121.04	1,121.04	1121.04	1,116,764	1,116,764
Parking Lot	0.00	0.00	0.00		
Total	1,121.04	1,121.04	1,121.04	1,116,764	1,116,764

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.250223	0.125112	0.012511	0.000000	0.025865	0.012489	0.350580	0.350580	0.000000	0.000000	0.000000	0.000000	0.000000
Parking Lot	0.515888	0.053153	0.175761	0.156529	0.025865	0.006829	0.014141	0.022504	0.000707	0.000289	0.023863	0.001496	0.002975

5.0 Energy Detail

Barstow Truck Parking Facility Project - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	14.2124	14.2124	2.3000e-003	2.8000e-004	14.3529
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	14.2124	14.2124	2.3000e-003	2.8000e-004	14.3529
NaturalGas Mitigated	1.2100e-003	0.0110	9.2100e-003	7.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	11.9300	11.9300	2.3000e-004	2.2000e-004	12.0009
NaturalGas Unmitigated	1.2100e-003	0.0110	9.2100e-003	7.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	11.9300	11.9300	2.3000e-004	2.2000e-004	12.0009

Barstow Truck Parking Facility Project - Fresno County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	223560	1.2100e-003	0.0110	9.2100e-003	7.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	11.9300	11.9300	2.3000e-004	2.2000e-004	12.0009
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.2100e-003**	**0.0110**	**9.2100e-003**	**7.0000e-005**		**8.3000e-004**	**8.3000e-004**		**8.3000e-004**	**8.3000e-004**	**0.0000**	**11.9300**	**11.9300**	**2.3000e-004**	**2.2000e-004**	**12.0009**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	223560	1.2100e-003	0.0110	9.2100e-003	7.0000e-005		8.3000e-004	8.3000e-004		8.3000e-004	8.3000e-004	0.0000	11.9300	11.9300	2.3000e-004	2.2000e-004	12.0009
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.2100e-003**	**0.0110**	**9.2100e-003**	**7.0000e-005**		**8.3000e-004**	**8.3000e-004**		**8.3000e-004**	**8.3000e-004**	**0.0000**	**11.9300**	**11.9300**	**2.3000e-004**	**2.2000e-004**	**12.0009**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	92988	8.6036	1.3900e-003	1.7000e-004	8.6887
Parking Lot	60620	5.6088	9.1000e-004	1.1000e-004	5.6643
Total		**14.2124**	**2.3000e-003**	**2.8000e-004**	**14.3529**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	92988	8.6036	1.3900e-003	1.7000e-004	8.6887
Parking Lot	60620	5.6088	9.1000e-004	1.1000e-004	5.6643
Total		**14.2124**	**2.3000e-003**	**2.8000e-004**	**14.3529**

6.0 Area Detail

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0649	4.0000e-005	4.0700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.9300e-003	7.9300e-003	2.0000e-005	0.0000	8.4500e-003
Unmitigated	0.0649	4.0000e-005	4.0700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.9300e-003	7.9300e-003	2.0000e-005	0.0000	8.4500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0111					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0534					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.8000e-004	4.0000e-005	4.0700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.9300e-003	7.9300e-003	2.0000e-005	0.0000	8.4500e-003
Total	**0.0649**	**4.0000e-005**	**4.0700e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**7.9300e-003**	**7.9300e-003**	**2.0000e-005**	**0.0000**	**8.4500e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0111					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0534					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.8000e-004	4.0000e-005	4.0700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.9300e-003	7.9300e-003	2.0000e-005	0.0000	8.4500e-003
Total	**0.0649**	**4.0000e-005**	**4.0700e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**7.9300e-003**	**7.9300e-003**	**2.0000e-005**	**0.0000**	**8.4500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.0327	0.0332	8.0000e-004	2.1004
Unmitigated	1.0327	0.0332	8.0000e-004	2.1004

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	1.01608 / 0.622756	1.0327	0.0332	8.0000e-004	2.1004
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**1.0327**	**0.0332**	**8.0000e-004**	**2.1004**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	1.01608 / 0.622756	1.0327	0.0332	8.0000e-004	2.1004
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**1.0327**	**0.0332**	**8.0000e-004**	**2.1004**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.3754	0.4950	0.0000	20.7497
Unmitigated	8.3754	0.4950	0.0000	20.7497

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	41.26	8.3754	0.4950	0.0000	20.7497
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**8.3754**	**0.4950**	**0.0000**	**20.7497**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	41.26	8.3754	0.4950	0.0000	20.7497
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**8.3754**	**0.4950**	**0.0000**	**20.7497**

9.0 Operational Offroad

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

HEALTH RISK ASSESSMENT

To: Sangha Carriers
Attn: Indy Sangha
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From: Johnson Johnson and Miller Air Quality Consulting Services
Contact: Richard Miller, Air Quality and Climate Change Specialist
rmiller.jjm.environmental@gmail.com
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Subject: Health Risk Assessment for the Barstow Truck Parking Project in Fresno, CA

Date: February 9, 2022

This Health Risk Assessment (HRA) was prepared to evaluate potential air quality impacts for operations of the Barstow Truck Parking Project (proposed project or project) located at 6050 W. Barstow Avenue in Fresno, California.

The purpose of this HRA is to assess potential elevated toxic air contaminant (TAC) concentrations and associated health impacts that could result from operations of the proposed project, consistent with guidelines and methodologies from San Joaquin Valley Air Pollution Control District (SJVAPCD), California Air Resources Board (CARB), Office of Environmental Health Hazard Assessment (OEHHA), and the U.S. Environmental Protection Agency (U.S. EPA). Consistent with the methods recommended in the appliable guidelines, this HRA evaluates the estimated excess lifetime cancer risk as well as Diesel Particulate Matter (DPM) that would be emitted by on-site operational activities, including and exhaust emissions that would be emitted from vehicle trips.

Health risks were estimated for sensitive receptors located within approximately ½-mile of the project boundary. Sensitive receptors are facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of sensitive receptors include schools, hospitals, and residential areas.

Project Location and Description

The 18.87-acre property is located at the northeast corner of West Barstow Avenue and North Contessa Avenue in Fresno, California. The Assessor Parcel Number (APN) associated with the project site is 505-070-44. This property is zoned Business Park (BP). The site is bordered by West Barstow Avenue to the south, low density residential to the east, and Highway 99 to the east and north.

The project consists of development of a truck parking lot with buildings for truck repair, office space, and truck car wash. Specifically, the project proposes: 374 truck parking stalls; 59 vehicle parking stalls, which includes four (4) electric vehicle charging station spaces and three (3) ADA accessible stalls; a 5,400-square-foot Auto/Truck Service Center; and a truck wash with two tunnels totaling 5,400 square feet.

The site plan for the proposed project is overlaid at the project location in Figure 1.

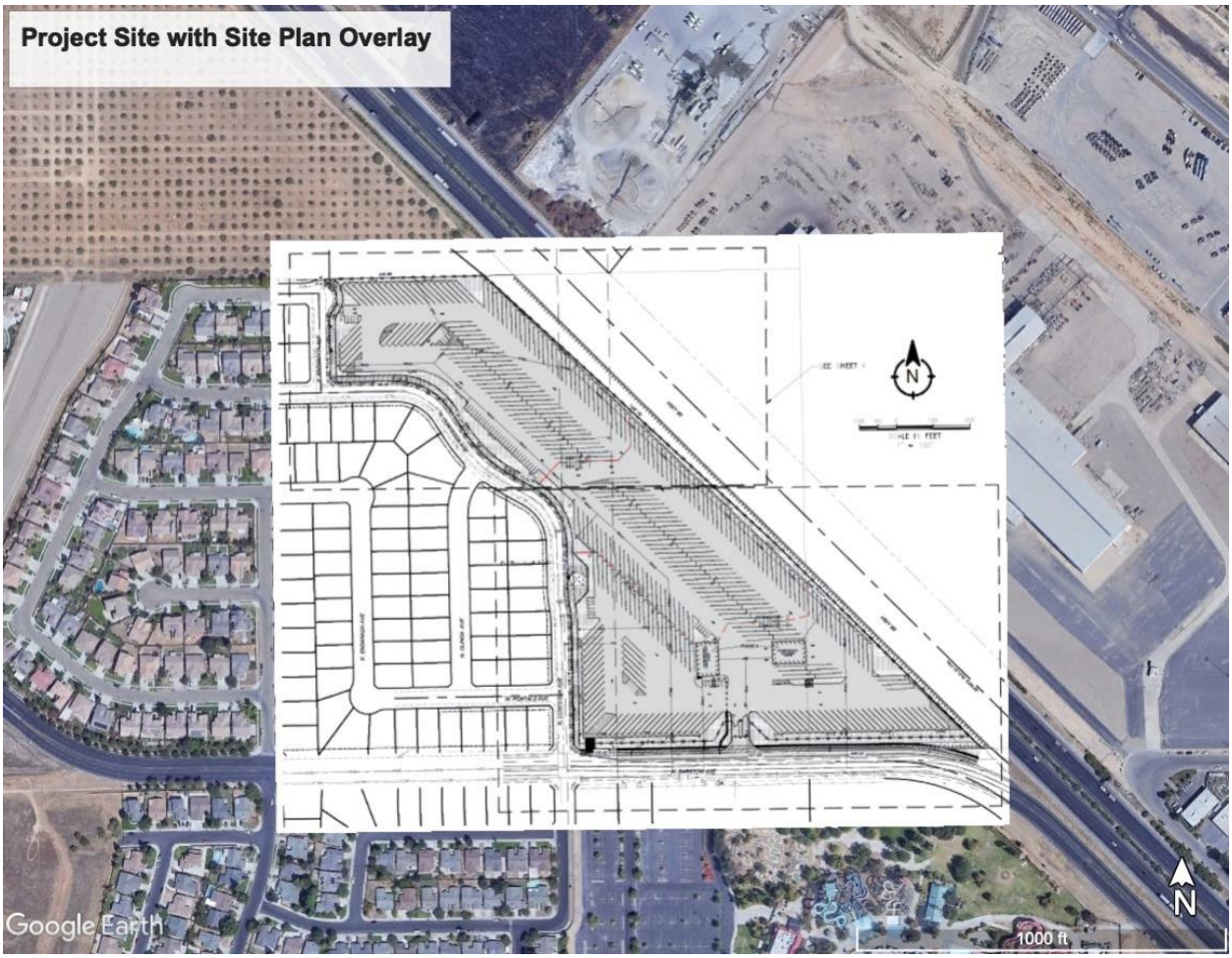

Figure 1 – Proposed Project Site Plan Overlay

Figure 2 shows the project site with a 1,000-foot buffer.

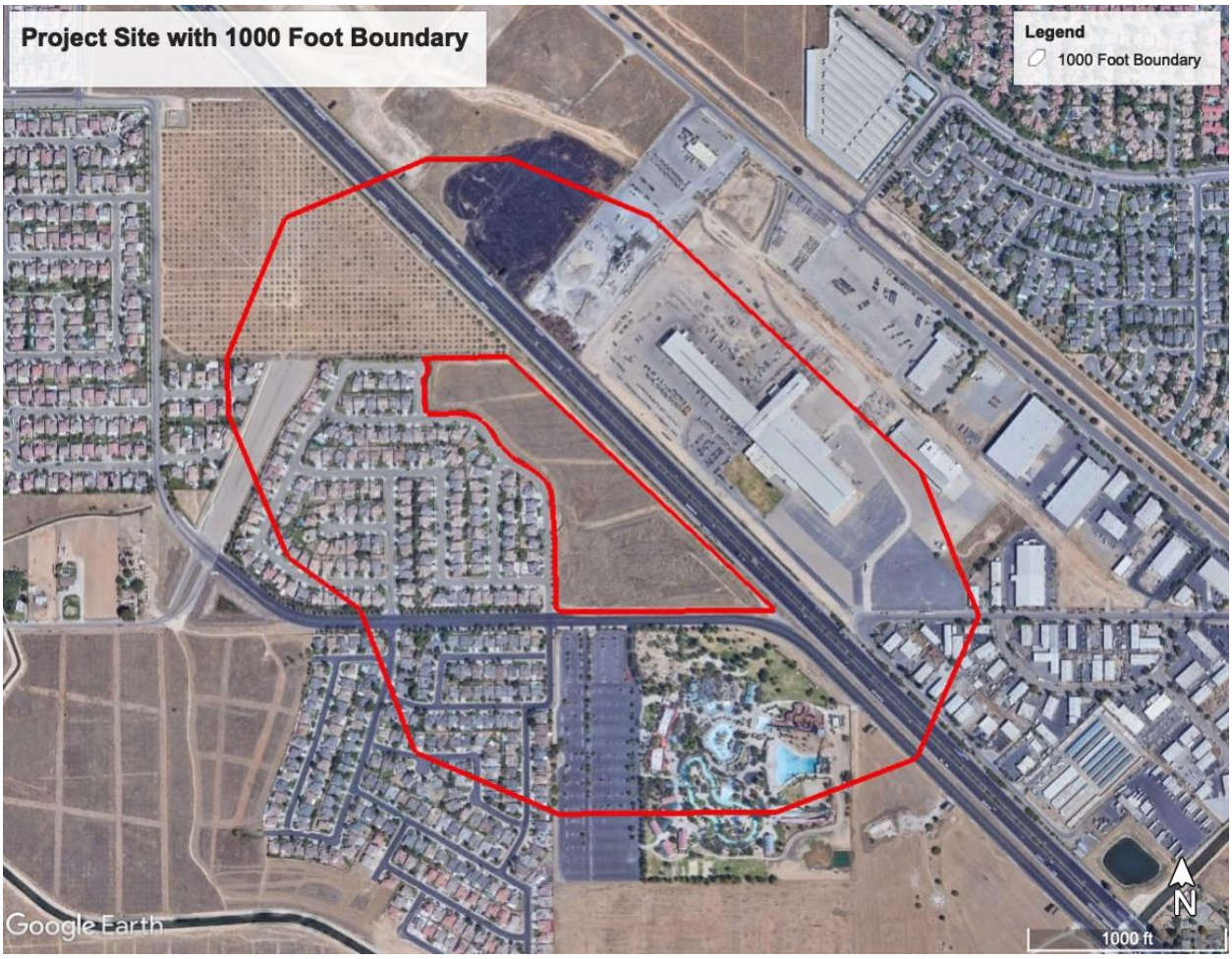

Figure 2 – Project Site with a 1,000-foot Buffer

Model Selection and Parameters

An air dispersion model is a mathematical formulation used to estimate the air quality impacts at specific locations (receptors) surrounding a source of emissions given the rate of emissions and prevailing meteorological conditions. The air dispersion model applied in this assessment was the United States Environmental Protection Agency (U.S. EPA) AERMOD (version 21112) air dispersion model. Specifically, AERMOD was used to estimate levels of air emissions at sensitive receptor locations from potential sources of project-generated TACs. The use of AERMOD provides a refined methodology for estimating construction impacts by utilizing long-term, measured representative meteorological data for the project site and a representative construction schedule.

The modeling analysis also considered the spatial distribution and elevation of each emitting source in relation to the sensitive receptors. Direction-dependent calculations were obtained by identifying the Universal Transverse Mercator (UTM) coordinates for each source location. Terrain elevations were obtained for the project site using the AERMAP model, the AERMOD terrain data pre-processor.

Specifically, National Elevation Dataset (NED) data for the area were obtained and included in the model runs to account for complex terrain. The air dispersion model assessment used meteorological data from the Fresno 93193 Station. The meteorological data used was preprocessed for use with AERMOD by the SJVAPCD and included data for the years 2013 to 2017; all years were used in the assessment. To evaluate the proposed project's localized impacts at the point of maximum impact, all receptors were placed within the breathing zone at 1.5 meters above ground level.

Emissions were assumed to occur over a 24-hour-per-day, 365 day-per-year averaging period. Detailed parameters and complete calculations are contained in Attachment A. Attachment A also includes a representation of the DPM modeling source parameters, including modeled on-site vehicle travel and vehicle idling locations.

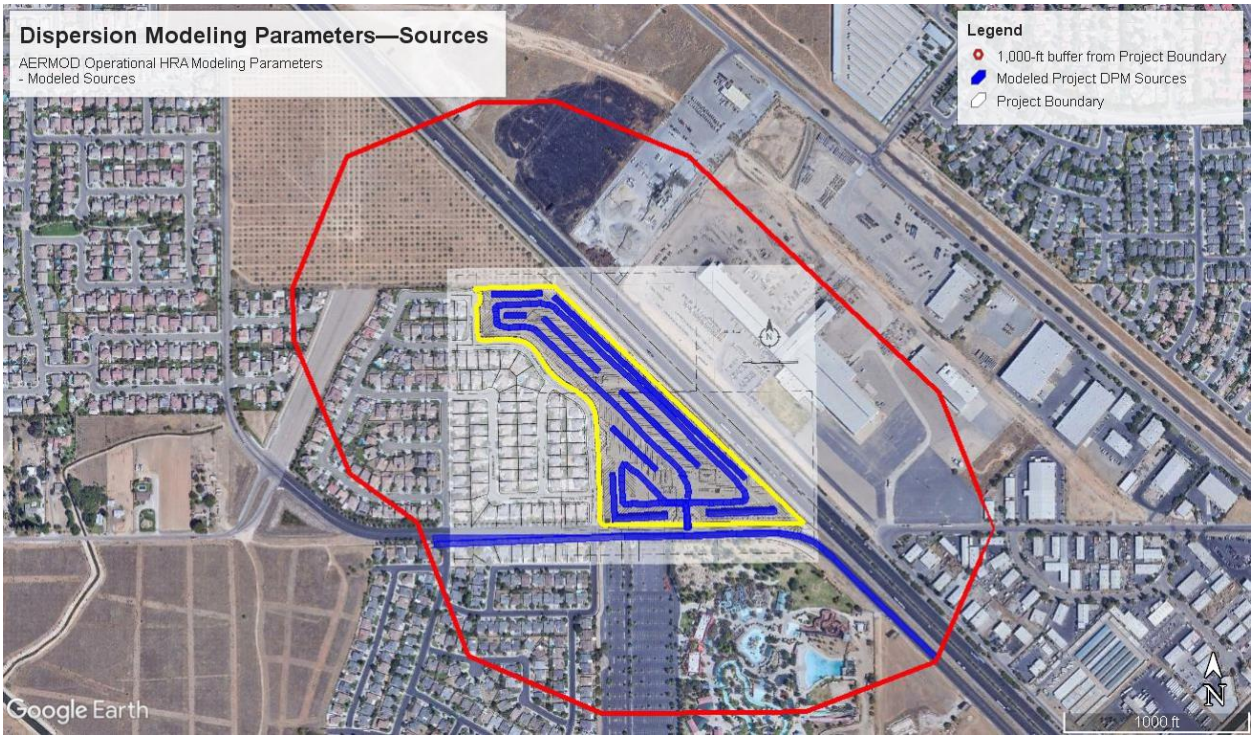

Figure 3 – Graphical Representation of Sources in Dispersion Modeling

Air Toxics Generated during Operations—DPM

The project would generate passenger vehicle and truck trips from visitors traveling to and from the project site. In addition to visiting trucks, the project would also be served with truck deliveries. The main source of DPM from the long-term operations of the proposed project would be from combustion of diesel fuel in diesel-powered engines in on-road trucks, while additional DPM would be emitted from TRUs. On-site motor vehicle emissions refer to DPM exhaust emissions from the motor vehicle traffic that would travel and idle within the project site each day.

Table 1 shows the vehicle trip generation based on the Barstow Truck Parking Traffic Impact Study prepared for the project.[1]

Table 1: Trip Generation

Project Component	ITE Land Use	Daily Trips
Proposed Truck Parking Lot	Industrial Park	1,121

Notes:
ITE = Institute of Transportation Engineers
Source: Vang Inc. Consulting Engineers (prepared for Sangha Carriers). 2021. Traffic Impact Study Barstow Truck Parking. October 11.

As shown in Table 1, the project is estimated to generate 1,121 daily trips. Based on project-specific information provided by the preparers of the Traffic Impact Analysis, it was assumed that half of all project trips would be generated by heavy trucks. The vehicle fleet mix for trucks would consist of Light-Heavy-Duty truck (LHDT), Medium-Heavy-Duty truck (MHDT), and Heavy-Heavy-Duty truck (HHDT). Emission factors are assigned to the expected vehicle mix as a function of vehicle age, vehicle class, speed, and fuel type. The operational fleet mix and daily diesel truck trips used to assess emissions from the proposed project are summarized below; the full calculations are included as part of Attachment A.

Table 2: Truck Vehicle Type Classification used to Estimate Emissions

Vehicle Type	Classification	Fleet Mix	Daily Trips	Number of Daily Diesel Trips
Trucks	LHDT1 (2-axle truck)	8.8%	49	23
	LHDT2 (2-axle truck)	2.5%	14	9
	MHDT (3-axle truck)	18.6%	104	104
	HHDT (4+ axle truck)	70.2%	393	393
	Truck Totals	**100.0%**	**560**	**529**

Notes:
LHDT = light-heavy duty trucks
MHDT = medium heavy duty trucks
HHDT = heavy-heavy duty trucks
Source: Attachment A.

Each operational emission source to be evaluated requires geometrical and emission release specifications for use in the air dispersion model. The emission source configurations applied in this assessment of operational DPM emissions are shown in Table 3.

[1] Vang Inc. Consulting Engineers (prepared for Sangha Carriers). 2021. Traffic Impact Study Barstow Truck Parking. October 11.

Table 3: Summary of Select Operational Emission Source Configurations

Emission Source Type	Relevant Assumptions
On-site Truck Traffic	• Configuration: line volume sources • Release height: 10.2 feet (3.1 meters) • Vehicle Speed: 5 mph • Vehicle types: heavy-heavy duty (HHDT), medium heavy duty (MHDT), and light-heavy duty (LHDT) trucks • Emission factors: EMFAC2017 • Daily Diesel Truck Trips per day: 560.5 trips
On-site Truck Idling	• Configuration: line volume source • Vehicle type: Heavy-duty diesel trucks (HHDT, MHDT and LHDT) • Emission factors: EMFAC 2017 • Number of Idling Diesel Vehicles per day: 264 vehicles
Off-site Traffic	• Configuration: line volume source • Travel links from the project to outlying areas within 1,000 feet of the project site were identified based on the site access points and emissions were estimated along each travel link. • Vehicle speeds: 25 mph (trucks) • Vehicle types: Heavy-duty diesel trucks (HHDT, MHDT and LHDT) • Emission factors: EMFAC 2017
Facility Operations	• 24 hours per day/365 days per year • Emissions to account for project trucks to be equipped with TRUs (based on California fleet averages) were included in the operational HRA
Source: Attachment A.	

Operational emissions for the proposed project were assessed assuming the first year of operations would occur in 2022. Exhaust emissions of DPM (as PM_{10} exhaust) were estimated using EMFAC 2017. The emission factors, AERMOD data, and emission estimation spreadsheets used to estimate motor vehicle DPM emissions during project operations are provided in Attachment A.

Transportation Refrigeration Units

As the proposed project would consist of a truck parking lot, it was assumed that some trucks making trips to and from the project site would be equipped with a Transportation Refrigeration Unit (TRU). The number of trucks equipped with TRUs was based on statewide inventory percentages that were then applied to the heavy-heavy duty and medium-heavy duty truck trips associated with the proposed project. For full calculations and assumptions, please refer to Attachment A.

Cancer Risk

The model was run to obtain annual average concentration in micrograms per cubic meter [µg/m3] at future on-site sensitive residential receptors. Consistent with SJVAPCD guidance, a health risk computation was performed to determine the risk of developing an excess cancer risk calculated on a 70-year exposure scenario. The chronic and carcinogenic health risk calculations are based on the

standardized equations contained in the U.S. EPA Human Health Evaluation Manual (1991) and the Office of Environmental Health Hazard Assessment (OEHHA) Guidance Manual (2015).[2,3]

Based on the OEHHA methodology, the residential inhalation cancer risk from the annual average DPM concentrations are calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor (ASF), the frequency of time spent at home (for residents only), and the exposure duration divided by averaging time, to yield the excess cancer risk. These factors are discussed in more detail below. Cancer risk must be separately calculated for specified age groups, because of age differences in sensitivity to carcinogens and age differences in intake rates (per kg body weight). Separate risk estimates for these age groups provide a health-protective estimate of cancer risk by accounting for greater susceptibility in early life, including both age-related sensitivity and amount of exposure.

Exposure through inhalation (Dose-air) is a function the breathing rate, the exposure frequency, and the concentration of a substance in the air. For residential exposure, the breathing rates are determined for specific age groups, so Dose-air is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. To estimate cancer risk, the dose was estimated by applying the following formula to each ground-level concentration:

$$\text{Dose-air} = (C_{air} * \{BR/BW\} * A * EF * 10^{-6})$$

Where:

Dose-air	=	dose through inhalation (mg/kg/day)
Cair	=	air concentration (µg/m³) from air dispersion model
{BR/BW}	=	daily breathing rate normalized to body weight (L/kg body weight – day) (361 L\kg BW-day for 3rd Trimester, 1,090 L/kg BW-day for 0<2 years, 861 L/kg BW-day for 2<9 years, 745 L/kg BW-day for 9<16 years, 335 L/kg BW-day for 16<30 years, and 290 L/kg BW-day 30<70 years)
A	=	Inhalation absorption factor (unitless [1])
EF	=	exposure frequency (unitless), days/365 days (0.96 [approximately 350 days per year])
10^{-6}	=	conversion factor (micrograms to milligrams, liters to cubic meters)

OEHHA developed ASFs to take into account the increased sensitivity to carcinogens during early-in-life exposure. In the absence of chemical-specific data, OEHHA recommends a default ASF of 10 for the third trimester to age 2 years, an ASF of 3 for ages 2 through 15 years to account for potential increased sensitivity to carcinogens during childhood and an ASF of 1 for ages 16 through 70 years.

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[2] U.S. Environmental Protection Agency (EPA). 1991. Human Health Evaluation Manual. Website: https://www.epa.gov/sites/default/files/2015-11/documents/defaultExposureParams.pdf. Accessed October 12, 2021.

[3] California Office of Environmental Health Hazards Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Website: http://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed November 13, 2021.

Fraction of time at home (FAH) during the day is used to adjust exposure duration and cancer risk from a specific facility's emissions, based on the assumption that exposure to the facility's emissions are not occurring away from home. The following FAH values were used in this assessment:

- From the third trimester to age <2 years: 100 percent (the OEHHA-recommended value is 85 percent of time is spent at home; however, 100 percent was assumed in order to present a conservative analysis);
- From age 2 through <16 years: 100 percent (the OEHHA-recommended value is 72 percent of time is spent at home; however, 100 percent was assumed in order to present a conservative analysis); and
- From age 16 years and greater: 73 percent (the OEHHA-recommended value is 73 percent of time is spent at home).

To estimate the cancer risk, the dose is multiplied by the cancer potency factor, the ASF, the exposure duration divided by averaging time, and the frequency of time spent at home (for residents only):

$Risk_{inh\text{-}res} = (Dose_{air} * CPH * ASF * ED/AT * FAH)$

Where:

$Risk_{inh\text{-}res}$	=	residential inhalation cancer risk (potential chances per million)
$Dose_{air}$	=	daily dose through inhalation (mg/kg-day)
CPF	=	inhalation cancer potency factor ($mg/kg\text{-}day^{-1}$)
ASF	=	age sensitivity factor for a specified age group (unitless)
ED	=	exposure duration (in years) for a specified age group
AT	=	averaging time of lifetime cancer risk (years)
FAH	=	fraction of time spent at home (unitless)

Chronic Non-Cancer Hazard

Non-cancer chronic impacts are calculated by dividing the annual average concentration by the Reference Exposure Level (REL) for that substance. The REL is defined as the concentration at which no adverse non-cancer health effects are anticipated. The following equation was used to determine the non-cancer risk:

Hazard Quotient = C_i/REL_i

Where:

C_i	=	Concentration in the air of substance i (annual average concentration in

$\mu g/m^3$)

REL_i = Chronic noncancer Reference Exposure Level for substance i ($\mu g/m^3$)

IMPACT ASSESSMENT

For reasons previously discussed, an analysis of TACs (including DPM) was performed using the EPA-approved AERMOD model. AERMOD version 21112 was used for this analysis. The full cumulative HRA is included as Attachment A of this memorandum.

Carcinogenic Risk

Results of the health risk analysis are summarized in Table 4. The complete operational HRA prepared for the proposed project, including calculations and AERMOD output data, are included in Attachment A of this memorandum.

Table 4: Summary of the Health Impacts from Operations of the Proposed Project (70-year Scenario)

Exposure Scenario	Maximum Cancer Risk (Risk per Million)	Chronic Non-Cancer Hazard Index
70-Year Exposure at the MER (from DPM Emissions)	15.75	0.0031
Applicable Threshold of Significance	**20**	**1**
Threshold Exceeded?	**No**	**No**

Notes:
MER = Maximally Exposed Receptor
DPM = Diesel Particulate Matter
Barstow Truck Parking Project Total DPM MER UTM: (241142.15, 4078609.95)
Source: Attachment A.

Notes Related to Assumptions Used in this Assessment

It should be noted that several assumptions were made in this analysis that support the statement that the results from this HRA represent a conservative estimate of health impacts. A notable assumption is listed below.

Exposure Assumptions. The estimated risks in this HRA are based primarily on a series of conservative assumptions related to predicted environmental concentrations, exposure, and chemical toxicity. Although it would be speculative to attempt to quantify the uncertainties associated with the assumptions made in this HRA, the use of conservative assumptions is results in higher estimates of exposure and associated health risks.

Attachments

Attachment A – Health Risk Assessment Calculations

ATTACHMENT A

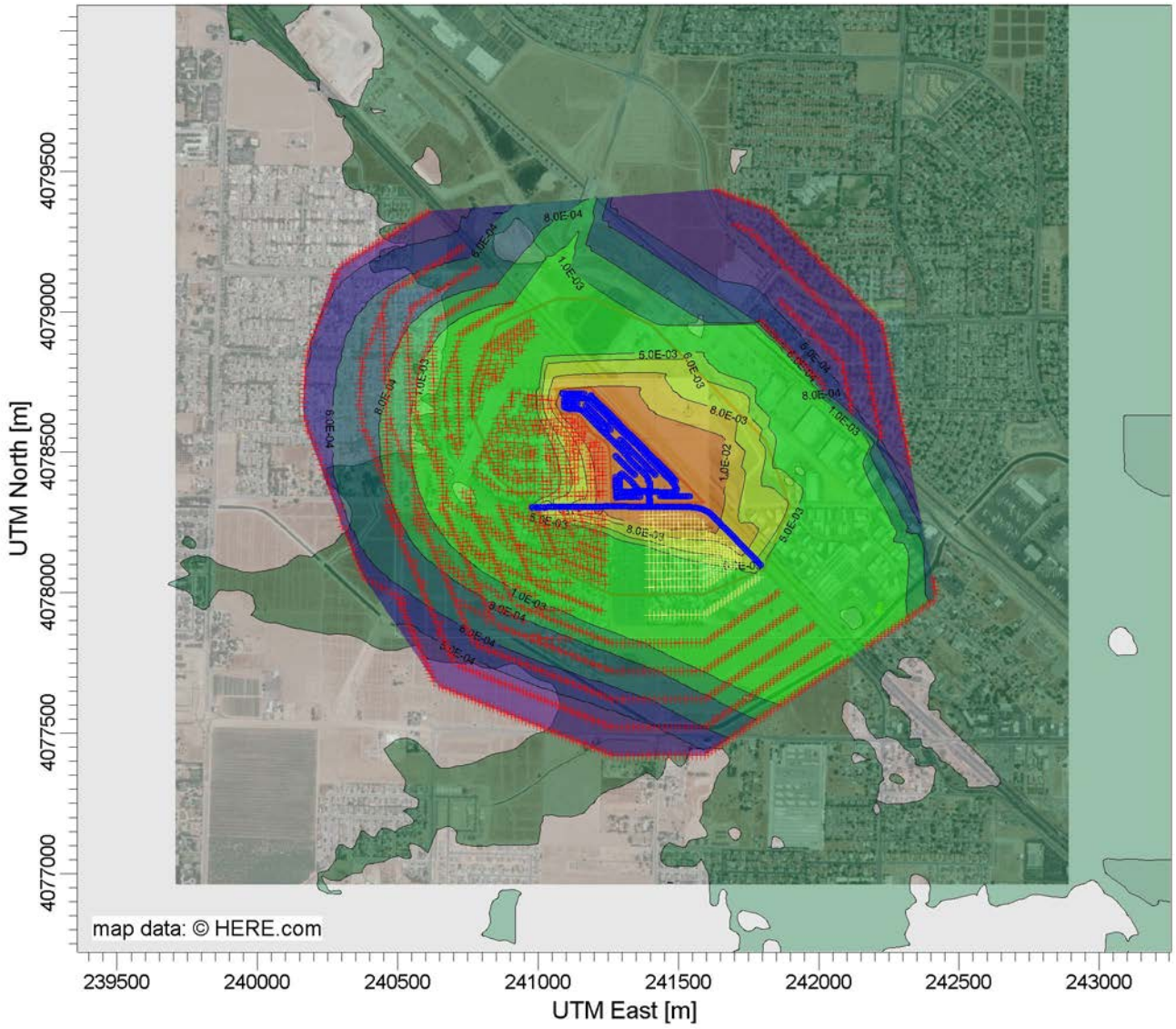
Health Risk Assessment

Health Risk Assessment

Parameters and Supporting Information

PROJECT TITLE:

Dispersion Concentration Trend and AERMOD Inputs
Graphical Representation of AERMOD Inputs

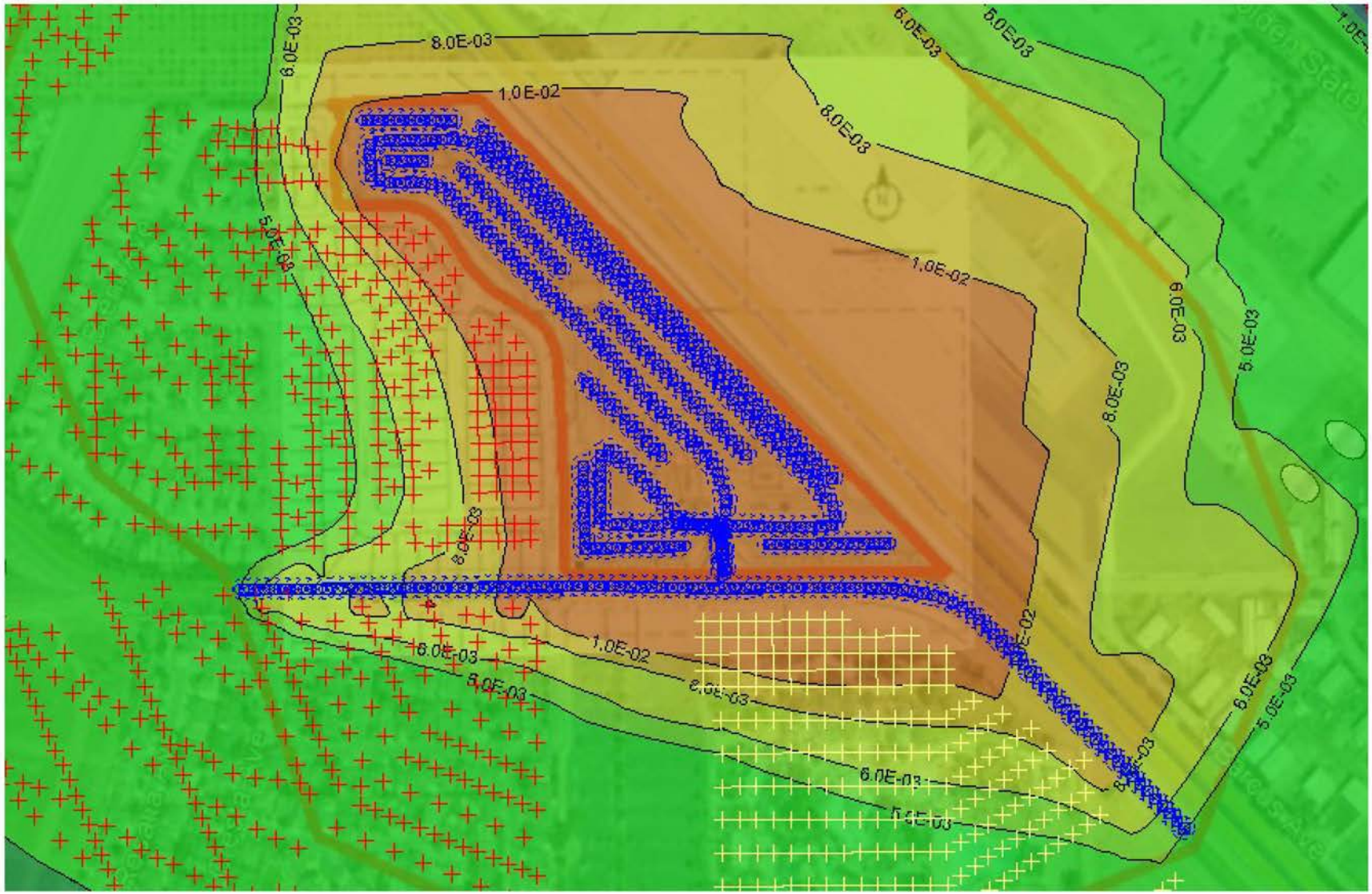


PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR SOURCE GROUP: ALL ug/m^3

Max: 1.9E-02 [ug/m^3] at (241439.69, 4078277.61)

3.0E-04 5.0E-04 6.0E-04 8.0E-04 1.0E-03 5.0E-03 6.0E-03 8.0E-03 1.0E-02 1.9E-02

COMMENTS:	SOURCES: **19**		
	RECEPTORS: **2268**		
	OUTPUT TYPE: **Concentration**	SCALE: 1:24,521 0 0.5 km	
	MAX: **1.9E-02 ug/m^3**	DATE: **2/5/2022**	PROJECT NO.:

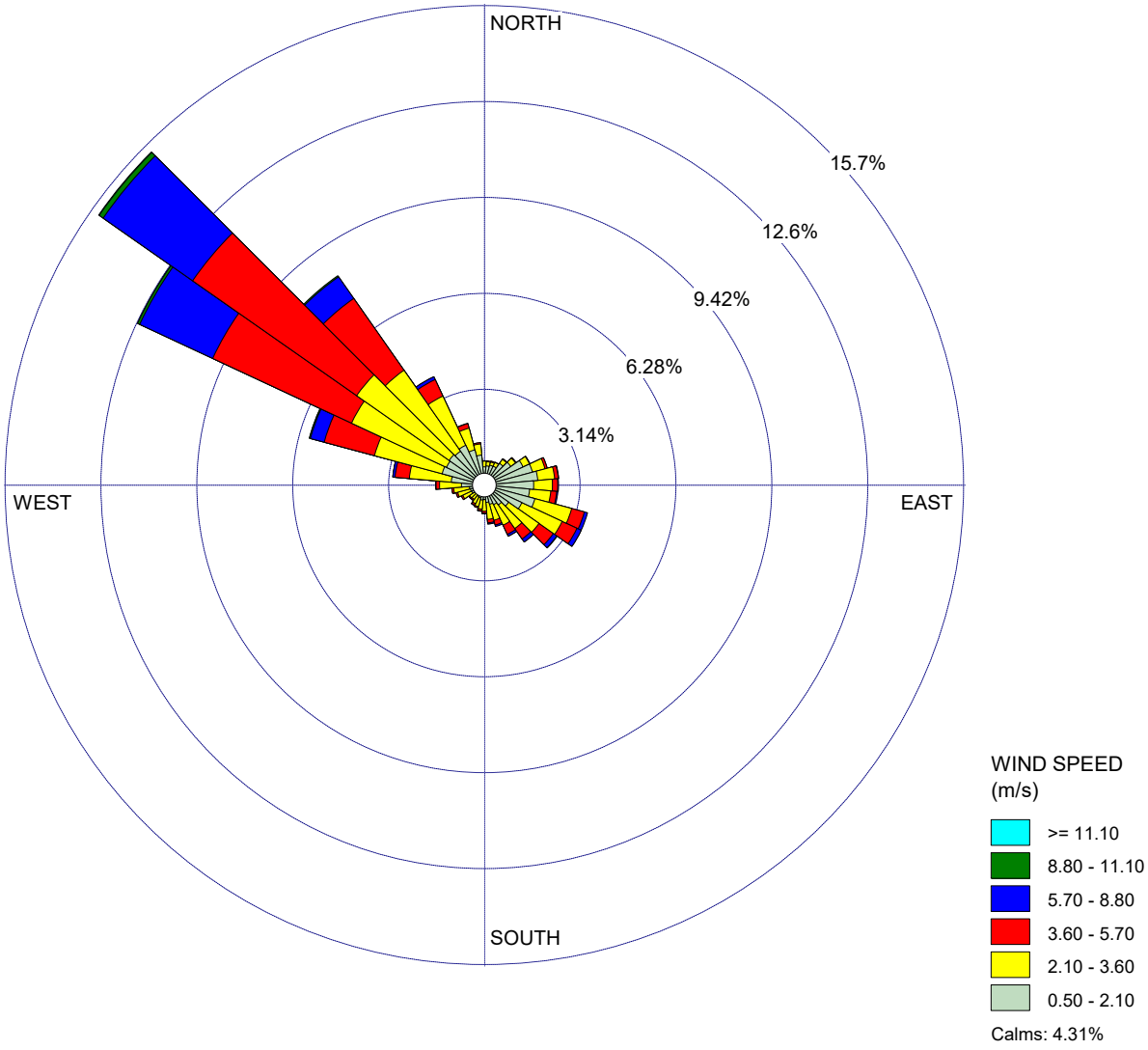

8.0E-03
1.0E-02
6.0E-03
5.0E-03
1.0E-02
8.0E-03
6.0E-03
5.0E-03
1.0E-02
8.0E-03
6.0E-03
5.0E-03
1.0E-02
8.0E-03
6.0E-03
5.0E-03

WIND ROSE PLOT:

Wind Rose - Station #93193 (Blowing From)

DISPLAY:

Wind Speed
Direction (blowing from)



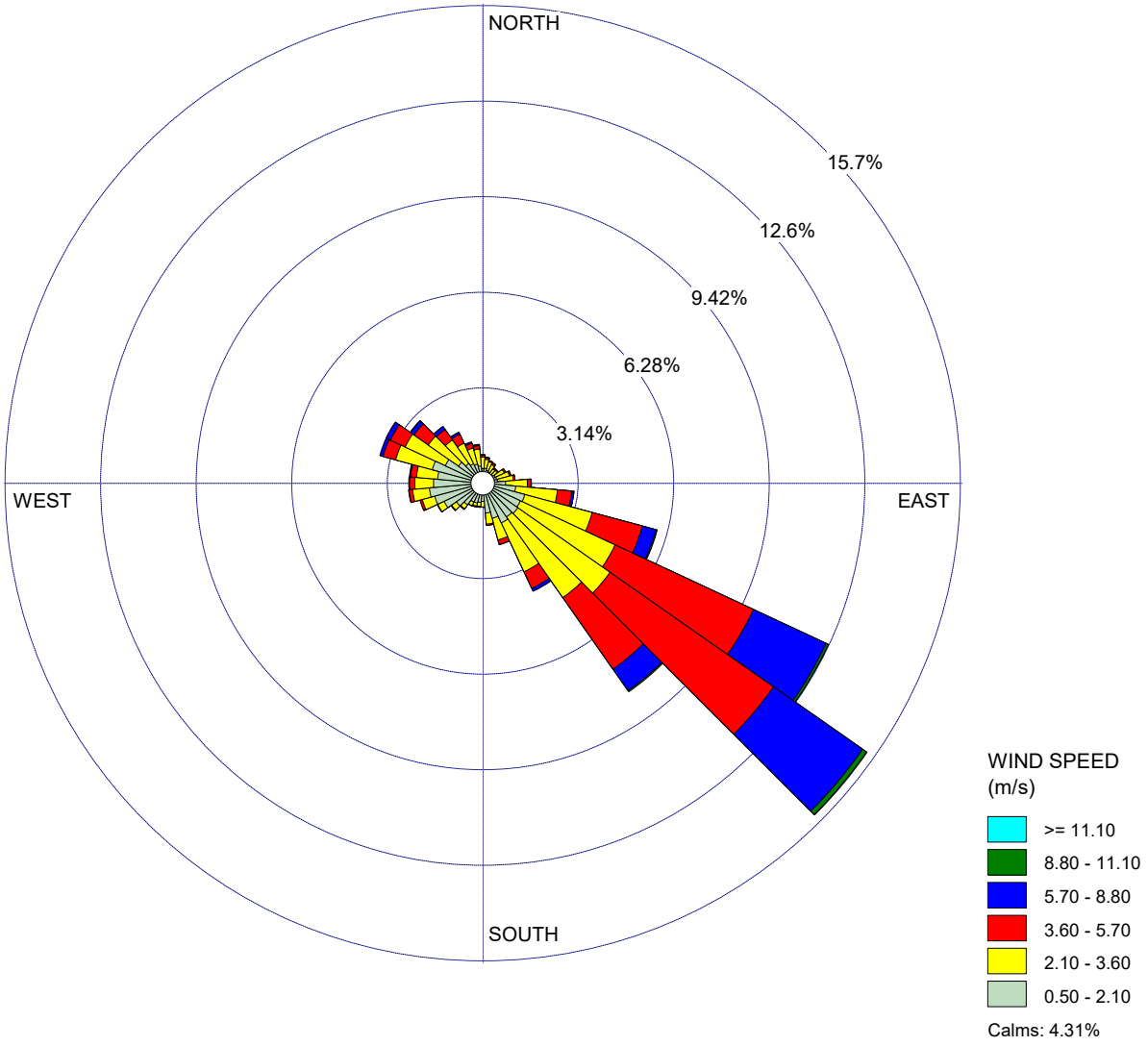
COMMENTS:	DATA PERIOD:		
	Start Date: 1/1/2013 - 00:00 **End Date: 12/31/2017 - 23:59**		
	CALM WINDS:	TOTAL COUNT:	
	4.31%	**43534 hrs.**	
	AVG. WIND SPEED:	DATE:	PROJECT NO.:
	2.95 m/s	**11/8/2021**	

WIND ROSE PLOT:

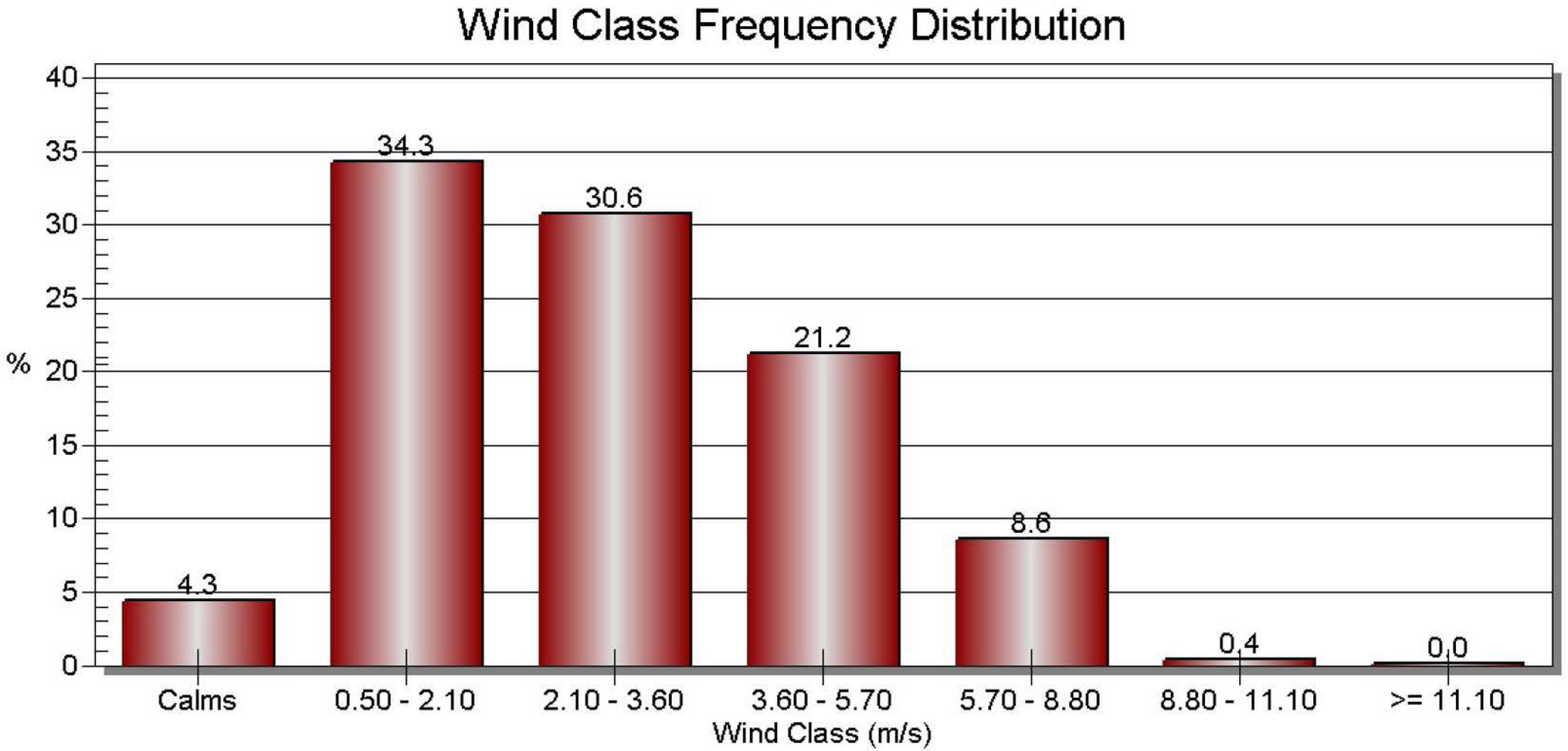
Wind Rose - Station #93193 (Flow Vector - Blowing To)

DISPLAY:

Wind Speed
Flow Vector (blowing to)

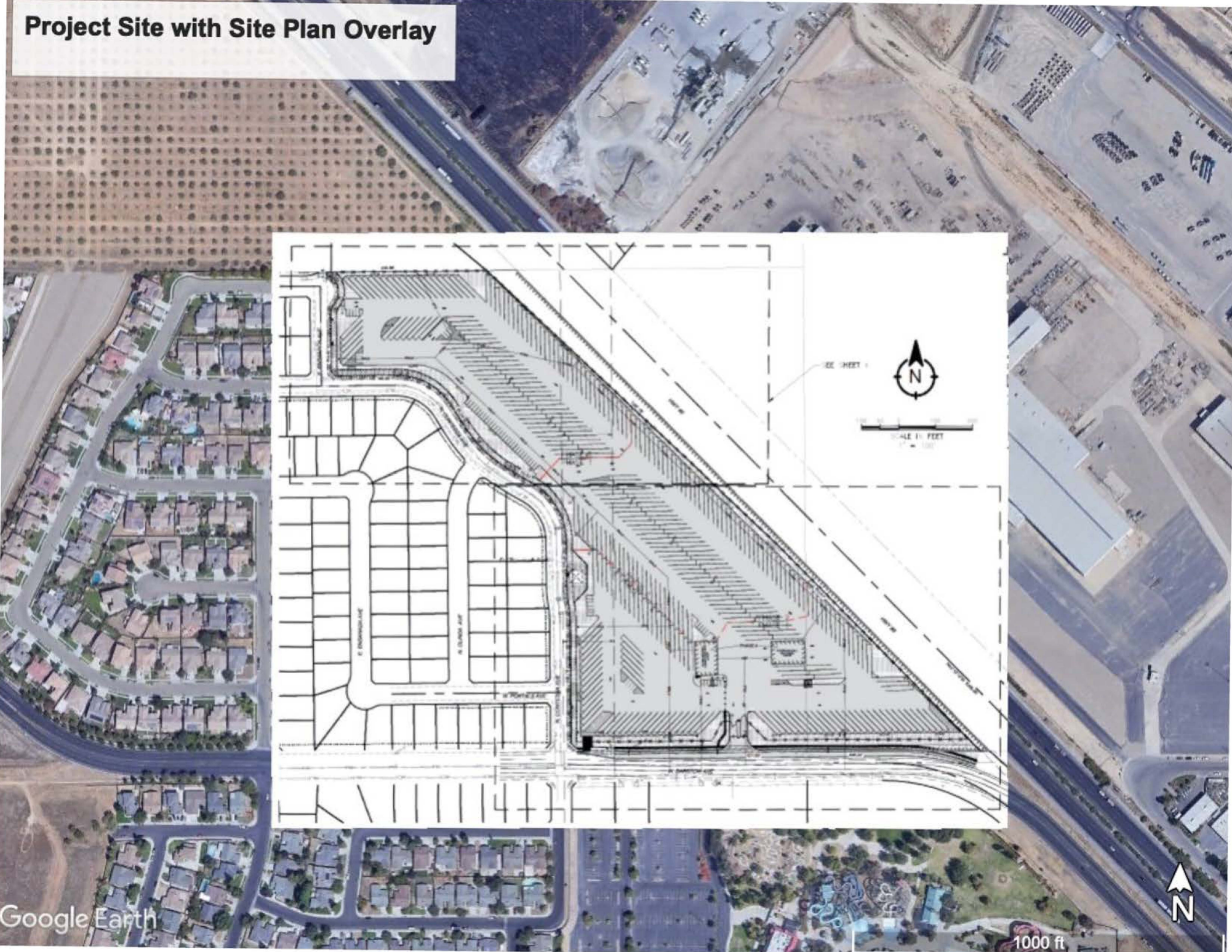


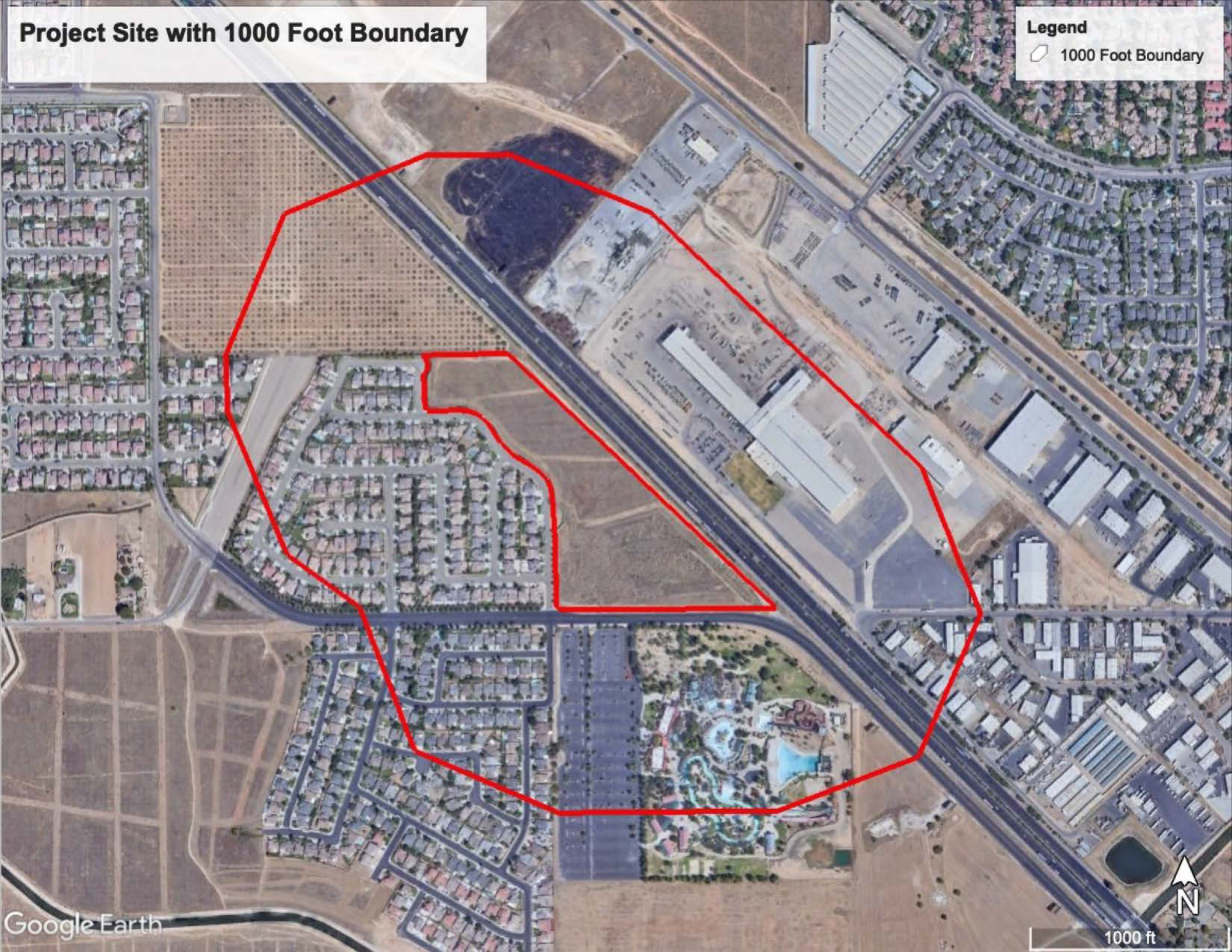
COMMENTS:	DATA PERIOD:		
	Start Date: 1/1/2013 - 00:00 **End Date: 12/31/2017 - 23:59**		
	CALM WINDS:	TOTAL COUNT:	
	4.31%	**43534 hrs.**	
	AVG. WIND SPEED:	DATE:	PROJECT NO.:
	2.95 m/s	**11/8/2021**	


Wind Class Frequency Distribution
40
35
30
25
%
20
15
10
5
0
34.3
30.6
21.2
8.6
4.3
0.4
0.0
Calms
0.50 - 2.10
2.10 - 3.60
3.60 - 5.70
5.70 - 8.80
8.80 - 11.10
>= 11.10
Wind Class (m/s)


Project Site with Site Boundary
Legend
Site Boundary
Google Earth
700 ft
N

Project Site with Site Plan Overlay




Project Site with 1000 Foot Boundary
Legend
1000 Foot Boundary
N
1000 ft
Google Earth


Location of Maximally Exposed Receptor
MER = Maximally Exposed Receptor
Legend
MER
MER
Brent Ave
W Wrenwood Ln
W Barstow Ave
W Barstow Ave
W Barstow Ave
W San Madele Ave
99
N
1000 ft
Google Earth

Health Risk Assessment

Barstow Truck Parking Project

Operational DPM

Barstow Truck Parking Project **DPM**

Emission Assumptions

Emission Factors

1) Truck Emissions

(1) EMFAC2017 for running emissions

(a) Calculations for	Fresno County
(b) Truck Mix	Overall fleet mix assumed 50% trucks based on project-specific info Fleet mix consistent with the buildout year CalEEMod run EMFAC to derive the number of diesel truck vehicles
(c) Truck Idle:	2 instances per daily trip (fueling + resting)
(d) Onsite Vehicle Travel Speed	5 mph for trucks
(e) Offsite Vehicle Travel Speed	25 mph for trucks

Traffic Allocation

1) Traffic distribution based on site layout identified in the site plan
2) Project-specific trip generation
3) Onsite travel emissions generated from diesel vehicles
4) Onsite idling emissions generated only by trucks

Emission Source Configuration

1) Project onsite truck traffic represented by a line source
2) Project onsite truck idling represented as line sources
3) Offsite vehicles represented by a line source

Onsite Vehicle Travel Segments

Segment	**Source ID**	**Segment Travel Distance (m)**
On-site Truck Travel Route 1	OnTruck1	1161.6
On-site Truck Travel Route 2	OnTruck2	377.0
Onsite Truck Idling		
On-site Idling – Location 1 (Trailer Parking)	Idle1	82.3
On-site Idling – Location 2 (Trailer Parking)	Idle2	432.7
On-site Idling – Location 3 (Trailer Parking)	Idle3	112.2
On-site Idling – Location 4 (Trailer Parking)	Idle4	158.4
On-site Idling – Location 5 (Trailer Parking)	Idle5	101.7
On-site Idling – Location 6 (Trailer Parking)	Idle6	35.6
On-site Idling – Location 7 (Trailer Parking)	Idle7	125.6
On-site Idling – Location 8 (Trailer Parking)	Idle8	176.7

Offsite Vehicle Travel Segments

Segment		**Segment Travel Distance (m)**
Off-site Travel	Rd1	897.2

Other Input Parameters

Facility Operations (hr/day):	24

Barstow Truck Parking Project Fleet Mix

	Cars	Trucks	Total Daily Trips
Daily Trips	561	560.5	**1,121**
Fleet Mix	50.0%	50.0%	100%

*50%/50% split between passenger vehicles and trucks based on project-specific estimates

Default Fresno County 2022														**Total**
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH	
	0.492212	0.031147	0.16982	0.1162	0.015815	0.004502	0.033398	0.126328	0.002363	0.001519	0.005062	0.001083	0.000594	1 0
Trucks Only														
	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH	
Default Trucks Only Fleet Mix	0	0	0	0	0.0158150	0.0045020	0.0333980	0.1263280	0	0	0	0	0	0.180043
Difference to be allocated	0.819957													
Truck Only Fleet Mix	0	0	0	0	0.0878401	0.0250051	0.1855001	0.7016546	0	0	0	0	0	1
Daily Truck Trips	0	0	0	0	49.2343912	14.0153797	103.972823	393.277406	0	0	0	0	0	560.5
HHDT and MHDT Truck Trips Only							103.972823	393.277406						497.2502

Barstow Truck Parking Project

Vehicle Fleet Mix

Total Daily Truck Trips		Trucks	Total Daily Truck Trips
(Trips/day)	Daily Trips	560.5	560.50
560.5	Fleet Mix	100.0%	100.0%

—

Vehicle Fleet	**Passenger Cars & Trucks**								
	Project Vehicle Mix	**EMFAC % Diesel**	**Total Number of Daily Trips**	**Number of Daily Diesel Trips**	**Number of Daily Non-Diesel Trips**	**Total Number of Daily Trips**	**% Diesel Trips**	**% Non-Diesel Trips**	**Total Trips**
LHDT1 (2 axle truck)	8.8%	46.2%	49	23	26	49.2	4.06%	4.73%	
LHDT2	2.5%	63.2%	14	9	5	14.0	1.58%	0.92%	
MHDT (3 axle truck)	18.6%	100.0%	104	104	0	104.0	18.55%	0.00%	
HHDT (4+ axle truck)	70.2%	100.0%	393	393	0	393.3	70.17%	0.00%	
Truck Subtotal	100.0%		560	529	32	560.5	94.35%	5.65%	100.00%
Total				529	32	560.5	94.35%	5.65%	100.00%

Truck fleet mix consistent with the project CalEEMod runs used in the Air Quality Analysis.
Assumed 100% diesel for MHDT and HHDT; % Diesel taken from EMFAC2017 for LHDT1, and LHDT2.

Barstow Truck Parking Project

Trip Distribution

Vehicle Allocation - Number of Daily Diesel Trips

Allocation of Building Trips

Percent Allocation - On-site Travel

50% On-site Travel – Route 1 (DSL trucks)
50% On-site Travel – Route 2 (DSL trucks)
100% Total Diesel Truck Trips

Segment - On-site Travel	Source ID	LDA	LDT1	LDT2	MDT	LHDT1	LHDT2	MHDT	HHDT	OBUS	UBUS	SBUS	MH	Total
On-site Truck Travel Route 1	OnTruck1	0.0	0.0	0.0	0.0	11.4	4.4	52.0	196.6	0.0	0.0	0.0	0.0	264.4
On-site Truck Travel Route 2	OnTruck2	0.0	0.0	0.0	0.0	11.4	4.4	52.0	196.6	0.0	0.0	0.0	0.0	264.4
Total Diesel Trucks	—	0	0	0	0	23	9	104	393	0	0	0	0	529

Percent Allocation of Trips - On-site Diesel Truck Idling

0.067173 On-site Idling – Location 1 (Trailer Parking)
0.353167 On-site Idling – Location 2 (Trailer Parking)
0.129285 On-site Idling – Location 4 (Trailer Parking)
0.083007 On-site Idling – Location 5 (Trailer Parking)
0.029056 On-site Idling – Location 6 (Trailer Parking)
0.102514 On-site Idling – Location 7 (Trailer Parking)
0.144221 On-site Idling – Location 8 (Trailer Parking)

100% Total Diesel Truck Trips (One occurrence per trip at fueling island and one occurrence at the rest area per trip)

Segment - On-site Truck Idle	Source ID	LDA	LDT1	LDT2	MDT	LHDT1	LHDT2	MHDT	HHDT	OBUS	UBUS	SBUS	MH	Total
On-site Idling – Location 1 (Trailer Parking)	Idle1	0.0	0.0	0.0	0.0	1.5	0.6	7.0	26.4	0.0	0.0	0.0	0.0	35.5
On-site Idling – Location 2 (Trailer Parking)	Idle2	0.0	0.0	0.0	0.0	8.0	3.1	36.7	138.9	0.0	0.0	0.0	0.0	186.8
On-site Idling – Location 3 (Trailer Parking)	Idle3	0.0	0.0	0.0	0.0	2.1	0.8	9.5	36.0	0.0	0.0	0.0	0.0	48.4
On-site Idling – Location 4 (Trailer Parking)	Idle4	0.0	0.0	0.0	0.0	2.9	1.1	13.4	50.8	0.0	0.0	0.0	0.0	68.4
On-site Idling – Location 5 (Trailer Parking)	Idle5	0.0	0.0	0.0	0.0	1.9	0.7	8.6	32.6	0.0	0.0	0.0	0.0	43.9
On-site Idling – Location 6 (Trailer Parking)	Idle6	0.0	0.0	0.0	0.0	0.7	0.3	3.0	11.4	0.0	0.0	0.0	0.0	15.4
On-site Idling – Location 7 (Trailer Parking)	Idle7	0.0	0.0	0.0	0.0	2.3	0.9	10.7	40.3	0.0	0.0	0.0	0.0	54.2
On-site Idling – Location 8 (Trailer Parking)	Idle8	0.0	0.0	0.0	0.0	3.3	1.3	15.0	56.7	0.0	0.0	0.0	0.0	76.3
Total Idling (Diesel Trucks Idling in Both Locations per Trip)	—	0	0	0	0	23	9	104	393	0	0	0	0	529

Barstow Truck Parking Project

Diesel Vehicle Emissions

Processes Modeled

Diesel vehicle exhaust
Diesel vehicle idling

Facility Operations

24 hrs/day, 52 weeks/year

Roadway Links Modeled

Link	Truck Type	Average Speed (mph)	Emission Factor (g/mi)	Trips per Daily (in and out)	Link Length (m)	Link Length (mi)	Ave Emissions Over Link (g/day)	Ave Emissions (lbs/day)	Average Emissions (g/sec)	Emissions for all Vehicles (g/sec)
OnTruck1	**LHDT1**	5	0.082	11.4	1161.6	0.72	6.712E-01	1.48E-03	7.768E-06	
	LHDT2	5	0.073	4.4	1161.6	0.72	2.325E-01	5.12E-04	2.691E-06	
	MHDT	5	0.064	52.0	1161.6	0.72	2.418E+00	5.33E-03	2.799E-05	
	HHDT	5	0.054	196.6	1161.6	0.72	7.607E+00	1.68E-02	8.805E-05	**1.26E-04**
OnTruck2	**LHDT1**	5	0.082	11.4	377	0.23	2.18E-01	4.80E-04	2.52E-06	
	LHDT2	5	0.073	4.4	377	0.23	7.55E-02	1.66E-04	8.73E-07	
	MHDT	5	0.064	52.0	377	0.23	7.85E-01	1.73E-03	9.08E-06	
	HHDT	5	0.054	196.6	377	0.23	2.47E+00	5.44E-03	2.86E-05	**4.11E-05**

Diesel Vehicle Emissions

Idling Emissions for Trucks (g/vehicle/day)

Emission Factors from EMFAC

Vehicle Class	Fuel	Vehicle Speed (mph)	DPM (g/vehicle/day)	Daily DSL Vehicle Trips	Daily DSL Vehicles
LHDT1	DSL	Idle	0.027854	23	11.4
LHDT2	DSL	Idle	0.027768	9	4.4
MHDT	DSL	Idle	0.015332	104	52.0
HHDT	DSL	Idle	0.037447	393	196.6
			Total	**529**	**264**

Diesel Truck Idling Emissions

Onsite Vehicle Travel Segments	Truck Type	DPM Emission Factor (g/vehicle/day)	Number Idling Vehicles (vehicles/day)	Emissions (g/day)	Emissions (lb/day)	Average Emissions (g/sec)	Total Emissions for all Vehicles (g/sec)
Idle1	**LHDT1**	0.028	1.5	4.25E-02	9.45E-04	4.92E-07	
	LHDT2	0.028	0.6	1.65E-02	3.64E-05	1.91E-07	
	MHDT	0.015	7.0	1.07E-01	2.36E-04	1.24E-06	
	HHDT	0.037	26.4	9.89E-01	2.18E-03	1.14E-05	**1.34E-05**
Idle2	**LHDT1**	0.028	8.0	2.24E-01	4.93E-04	2.59E-06	
	LHDT2	0.028	3.1	8.69E-02	1.91E-04	1.01E-06	
	MHDT	0.015	36.7	5.63E-01	1.24E-03	6.52E-06	
	HHDT	0.037	138.9	5.20E+00	1.15E-02	6.02E-05	**7.03E-05**
Idle3	**LHDT1**	0.028	2.1	5.80E-02	1.28E-04	6.71E-07	
	LHDT2	0.028	0.8	2.25E-02	4.96E-05	2.61E-07	
	MHDT	0.015	9.5	1.46E-01	3.22E-04	1.69E-06	
	HHDT	0.037	36.0	1.35E+00	2.97E-03	1.56E-05	**1.82E-05**
Idle4	**LHDT1**	0.028	2.9	8.19E-02	1.80E-04	9.48E-07	
	LHDT2	0.028	1.1	3.18E-02	7.01E-05	3.68E-07	
	MHDT	0.015	13.4	2.06E-01	4.54E-04	2.39E-06	
	HHDT	0.037	50.8	1.90E+00	4.19E-03	2.20E-05	**2.57E-05**

Idle5	**LHDT1**	0.028	1.9	5.26E-02	1.16E-04	6.08E-07	
	LHDT2	0.028	0.7	2.04E-02	4.50E-05	2.36E-07	
	MHDT	0.015	8.6	1.32E-01	2.91E-04	1.53E-06	
	HHDT	0.037	32.6	1.22E+00	2.69E-03	1.41E-05	**1.65E-05**
Idle6	**LHDT1**	0.028	0.7	1.84E-02	4.05E-05	2.13E-07	
	LHDT2	0.028	0.3	7.15E-03	1.57E-05	8.27E-08	
	MHDT	0.015	3.0	4.63E-02	1.02E-04	5.36E-07	
	HHDT	0.037	11.4	4.28E-01	9.43E-04	4.95E-06	**5.78E-06**
Idle7	**LHDT1**	0.028	2.3	6.49E-02	1.43E-04	7.51E-07	
	LHDT2	0.028	0.9	2.52E-02	5.55E-05	2.92E-07	
	MHDT	0.015	10.7	1.63E-01	3.60E-04	1.89E-06	
	HHDT	0.037	40.3	1.51E+00	3.33E-03	1.75E-05	**2.04E-05**
Idle8	**LHDT1**	0.028	3.3	9.13E-02	2.01E-04	1.06E-06	
	LHDT2	0.028	1.3	3.55E-02	7.81E-05	4.11E-07	
	MHDT	0.015	15.0	2.30E-01	5.06E-04	2.66E-06	
	HHDT	0.037	56.7	2.12E+00	4.68E-03	2.46E-05	**2.87E-05**

DPM 2022

EMFAC2017 Running Diesel Exhaust Emissions
in units of grams/mile

		Emission Factor (g/mi)			
		5 mph	**10 mph**	**25 mph**	**35 mph**
LHDT1	DSL	0.08	—	0.03	—
LHDT2	DSL	0.07	—	0.03	—
MHDT	DSL	0.06	—	0.03	—
HHDT	DSL	0.05	—	0.02	—

Idling Emissions for Trucks (Emission Factors from CalEEMod)
in units of grams/trip

CalEEMod.2020.4.0

Vehicle Class	**Fuel**	**Vehicle Speed (mph)**	**DPM (grams/trip)**
LHDT1	DSL	Idle	0.001023
LHDT2	DSL	Idle	0.001395
MHDT	DSL	Idle	0.001387
HHDT	DSL	Idle	0.003300

Idling Emissions for Trucks (Emission Factors from EMFAC)
g/vehicle/day

Vehicle Class	**Fuel**	**Vehicle Speed (mph)**	**DPM (g/vehicle/day)**
LHDT1	DSL	Idle	0.027854
LHDT2	DSL	Idle	0.027768
MHDT	DSL	Idle	0.015332
HHDT	DSL	Idle	0.037447

TRU Emissions

HHDT and MHDT Trucks Onsite per Day **249** vehicles

California TRU Inventory

	Cal Trailer	Cal Gen	OOS Trailer	OOS Gen	Total	Fraction	Project Site Trucks w/TRU
Trucks with TRUs Under 25 HP	6,000	1,500	55,000	10,000	72,500	0.3836	29
Trucks with TRUs Over 25 HP	28,000	3,500	70,000	15,000	116,500	0.6164	46
					189,000	1.000	75

Source: ARB ISOR Appendix H: Update to Inventory of Transportation Units. July 2021

Public Hearing to Consider the Proposed Amendments to the Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets, and Facilities Where TRUs Operate Initial Statement of Reasons, June 2021

Statewide Trucks All T6 and T7 Classes	623,136
Fraction of Trucks w/TRU	0.303

TRU use Onsite

	Time Onsite (hours)	HHD and MHD Trucks Onsite/Day	Trucks Onsite w/TRUs	TRU On Time	TRU Op Time/Day in Hours	Hours by TRUs under 25 Hp	Hours by TRUs over 25 HP	Check Sum	Fraction
TRU use during Parking/Rest	10	124.31	1	0.328	3.28	1.3	2.0	3.3	0.21184384
TRU use during other visits	0.5	124.31	74	0.328	12.20	4.7	7.5	12.2	0.78815616
		248.63	75		**15.48**	**5.9**	**9.5**	**15.5**	**1**

Assumed parking spaces could be for 10-hour mandatory rest period (assumed one truck w/TRU per day).
Assumed other trucks on-site for other uses for an average of 30 minutes.
TRU on time from ARB ISOR TRU Regulation Appendix H Emission Inventory

TRU Emission Factors

	PM2.5 g/bhp-hr	HP
TRUs Under 25 HP	0.12	24.8
TRUs Over 25 HP	0.02	34

Load Factors

Under 25 HP	0.46
Over 25 HP	0.46

Source: ARB 2021 MSEI - Documentation - Off-Road - Diesel Equipment 2017 Offroad Diesel Emission Factors
https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-documentation-road
Over 25 HP assumed to comply with Tier 4 Offroad Standard

TRU Emissions

	Trucks with TRUs	Total Engine Hours/Day	Emission Factor g/bhp-hr	HP	Load Factor	Emission (g/day)	Emission (g/year)	Emission (lbs/year)	Emissions (average g/sec)
TRUs Under 25 HP	29	5.9	0.12	24.8	0.46	8.13	2967.69	6.54	9.4105E-05
TRUs Over 25 HP	46	9.5	0.02	34	0.46	2.99	1089.64	2.40	3.4552E-05
	75	15.5				**11.12**	**4057.32**	**8.94**	**1.2866E-04**
g/lb conversion factor			0.00220						

Onsite Truck Idling Locations for TRU Emissions		**%**	**TRU**
On-site Idling – Location 1 (Trailer Parking)	82.3	0.067172706	8.6422E-06
On-site Idling – Location 2 (Trailer Parking)	432.7	0.35316683	4.5437E-05
On-site Idling – Location 3 (Trailer Parking)	112.2	0.091576885	1.1782E-05
On-site Idling – Location 4 (Trailer Parking)	158.4	0.129285015	1.6633E-05
On-site Idling – Location 5 (Trailer Parking)	101.7	0.083006856	1.0679E-05
On-site Idling – Location 6 (Trailer Parking)	35.6	0.029056481	3.7383E-06
On-site Idling – Location 7 (Trailer Parking)	125.6	0.102513875	1.3189E-05
On-site Idling – Location 8 (Trailer Parking)	176.7	0.144221352	1.8555E-05
Total	1225.2		1.2866E-04

Health Risk Assessment

Health Risk Calculations

Barstow Truck Parking Project Total DPM

Barstow Truck Parking Project Total DPM MER UTM:
241142.15, 4078609.95

X	Y	Operations 2022 Total DPM (ug/m3)	Operations 2025 Total DPM (ug/m3)	Operations 2030 Total DPM (ug/m3)	Operations 2040 Total DPM (ug/m3)	Operations 2050 Total DPM (ug/m3)
241142.15	4078609.95	1.5310E-02	1.5310E-02	1.5310E-02	1.5310E-02	1.5310E-02

Barstow Truck Parking Project Total DPM

70-year Lifetime Cancer Risk—DPM Operations

Barstow Truck Parking Project Total DPM MER UTM:241142.15, 4078609.95

	Operations 2022	Operations 2022	Operations 2023	Operations 2024	Operations 2025	Operations 2026	Operations 2027	Operations 2028	Operations 2029	Operations 2030	Operations 2031-2037	Operations 2038	Operations 2039	Operations 2040-2051	Operations 2052-2091	Total Years
Age	3rd Trimester	0-<1	1-<2	2-<3	3-<4	4-<5	5-<6	6-<7	7-<8	8-<9	9-<16	16-<17	17-<18	18-<30	30-<31	
DBR (liters/kg-day)	361	1,090	1,090	861	861	861	861	861	861	861	745	335	335	335	290	
ASF	10	10	10	3	3	3	3	3	3	3	3	1	1	1	1	
TAH	1	1	1	1	1	1	1	1	1	1	1	0.73	0.73	0.73	0.73	
Duration (years)	0.25	1	1	1	1	1	1	1	1	1	7	1	1	12	39.75	70
Frequency (days)	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	
Averaging time (days)	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	25550	
CPF (milligrans/kg-day)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	
Unit Risk Factor $(ug/m^3)^{-1}$	13.60	164.25	164.25	38.92	38.92	38.92	38.92	38.92	38.92	38.92	235.75	3.69	3.69	44.22	126.80	

Maximum DPM Concentration (ug/m3)

X	Y	2022 3rd Trimester	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031-2037	2038	2039	2040-2051	2052-2091
241142.15	4078609.95	1.5310E-02	1.5310E-02	1.5310E-02	1.5310E-02	1.5310E-02	1.5310E-02	1.5310E-02	1.5310E-02	1.5310E-02	1.5310E-02	1.5310E-02	1.5310E-02	1.5310E-02	1.5310E-02	1.5310E-02

Barstow Truck Parking Project Total DPM MER UTM:241142.15, 4078609.95

Annual Risk (risk/million)

X	Y	2022 3rd Trimester	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031-2037	2038	2039	2040-2051	2052-2091	Total
241142.15	4078609.95	0.2082	2.5146	2.5146	0.5959	0.5959	0.5959	0.5959	0.5959	0.5959	0.5959	3.6093	0.0564	0.0564	0.6770	1.9413	15.7492

Cancer Risk at MIR from DPM
15.75
Threshold of Significance
20
Exceeds threshold?
No

Barstow Truck Parking Project Total DPM

70-year Lifetime Cancer Risk—DPM Operations

Barstow Truck Parking Project Total DPM MER UTM:241142.15, 4078609.95

Estimates of Chronic Non-Cancer Hazard Index (CNCHI)
Unmitigated
Chronic Non-Cancer Hazard Index at the MIR
Barstow Truck Parking Project Total DPM MER UTM:241142.15, 4078609.95
Reference Exposure Level (REL) for DPM: 5 ug/m3
CNCHI = DPM/REL

X (m)	Y (m)	Maximum Annual Average DPM (ug/m3)	CNCHI
241142.15	4078609.95	0.015310	0.003062

Chronic Non-Cancer Hazard Index
0.003062
Threshold of Significance
1
Exceeds threshold?
No

Concentrations at Residential Receptors

Maximum Concentration

Concentration	0.01531	
UTM	241142.15	4078609.95

* AERMOD (21112): G:\Barstow\Barstow (V2)\Barstow (V2).isc 2/5/2022
* AERMET (18081): 1:32:13 PM
* MODELING OPTIONS USED: Reg DFAULT CONC ELEV FLGP OL URBAN ADJ_U*
* PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR SOURCE GROUP: ALL
* FOR A TOTAL OF 2268 RECEPTORS. (Of the 2,268 receptors modeled, 245 were non-residential and are not included here.)
* FORMAT: (3(1X,F13.5),3(1X,F8.2),2X,A6,2X,A8,2X,I8.8,2X,A8)

X	Y	AVERAGE CONC	ZELEV	ZHILL	ZFLAG	AVE	GRP	NUM YRS	NET ID	GROUP
241048.17	4078683.47	0.00902	92.42	92.42	1.5	ANNUAL	ALL	5		FENCEGRD
241034.03	4078685.49	0.00739	92.62	92.62	1.5	ANNUAL	ALL	5		FENCEGRD
241019.88	4078687.50	0.00628	92.6	92.6	1.5	ANNUAL	ALL	5		FENCEGRD
241005.47	4078684.65	0.00546	92.61	92.61	1.5	ANNUAL	ALL	5		FENCEGRD
240991.25	4078685.45	0.00484	92.56	92.56	1.5	ANNUAL	ALL	5		FENCEGRD
240992.72	4078699.39	0.00485	92.29	92.29	1.5	ANNUAL	ALL	5		FENCEGRD
240977.04	4078686.25	0.00435	92.56	92.56	1.5	ANNUAL	ALL	5		FENCEGRD
240978.58	4078701.41	0.00434	92.21	92.21	1.5	ANNUAL	ALL	5		FENCEGRD
240962.99	4078689.89	0.00395	92.5	92.5	1.5	ANNUAL	ALL	5		FENCEGRD
240964.43	4078703.42	0.00393	92.17	92.17	1.5	ANNUAL	ALL	5		FENCEGRD
240936.15	4078707.46	0.00331	92.14	92.14	1.5	ANNUAL	ALL	5		FENCEGRD
240906.37	4078696.94	0.00288	92.45	92.45	1.5	ANNUAL	ALL	5		FENCEGRD
240905.61	4078683.54	0.00291	92.41	92.41	1.5	ANNUAL	ALL	5		FENCEGRD
240907.86	4078711.50	0.00286	92.26	92.26	1.5	ANNUAL	ALL	5		FENCEGRD
240793.17	4078712.07	0.00184	90.86	90.86	1.5	ANNUAL	ALL	5		FENCEGRD
240792.30	4078696.63	0.00186	90.79	90.79	1.5	ANNUAL	ALL	5		FENCEGRD
240791.43	4078681.20	0.00187	90.51	90.51	1.5	ANNUAL	ALL	5		FENCEGRD
240794.72	4078727.64	0.00182	90.91	90.91	1.5	ANNUAL	ALL	5		FENCEGRD
240764.91	4078716.51	0.00168	90.83	90.83	1.5	ANNUAL	ALL	5		FENCEGRD
240764.08	4078701.89	0.00169	90.83	90.83	1.5	ANNUAL	ALL	5		FENCEGRD
240763.26	4078687.27	0.00171	90.63	90.63	1.5	ANNUAL	ALL	5		FENCEGRD
240766.44	4078731.67	0.00166	90.95	90.95	1.5	ANNUAL	ALL	5		FENCEGRD
240665.89	4078730.37	0.00127	90.48	90.48	1.5	ANNUAL	ALL	5		FENCEGRD
240665.04	4078715.20	0.00128	90.33	90.33	1.5	ANNUAL	ALL	5		FENCEGRD
240664.19	4078700.04	0.00128	90.32	90.32	1.5	ANNUAL	ALL	5		FENCEGRD
240663.34	4078684.87	0.00129	90.18	90.18	1.5	ANNUAL	ALL	5		FENCEGRD
240667.44	4078745.80	0.00126	90.43	90.43	1.5	ANNUAL	ALL	5		FENCEGRD
240566.89	4078744.32	0.001	89.6	89.6	1.5	ANNUAL	ALL	5		FENCEGRD
240566.01	4078728.81	0.001	89.45	89.45	1.5	ANNUAL	ALL	5		FENCEGRD
240565.14	4078713.30	0.00101	89.8	89.8	1.5	ANNUAL	ALL	5		FENCEGRD
240564.27	4078697.79	0.00102	89.9	89.9	1.5	ANNUAL	ALL	5		FENCEGRD
240563.40	4078682.28	0.00102	90	90	1.5	ANNUAL	ALL	5		FENCEGRD
240568.44	4078759.92	0.00099	89.92	89.92	1.5	ANNUAL	ALL	5		FENCEGRD
240467.88	4078758.32	0.00081	89.77	89.77	1.5	ANNUAL	ALL	5		FENCEGRD
240467.00	4078742.57	0.00082	89.31	89.31	1.5	ANNUAL	ALL	5		FENCEGRD
240466.11	4078726.83	0.00082	89.39	89.39	1.5	ANNUAL	ALL	5		FENCEGRD
240465.23	4078711.08	0.00082	89.66	89.66	1.5	ANNUAL	ALL	5		FENCEGRD
240464.34	4078695.33	0.00083	89.61	89.61	1.5	ANNUAL	ALL	5		FENCEGRD
240463.45	4078679.58	0.00083	89.59	89.59	1.5	ANNUAL	ALL	5		FENCEGRD
240469.45	4078774.05	0.00081	89.79	89.79	1.5	ANNUAL	ALL	5		FENCEGRD
240368.91	4078772.86	0.00068	89.3	89.3	1.5	ANNUAL	ALL	5		FENCEGRD
240368.07	4078757.93	0.00068	89.29	89.29	1.5	ANNUAL	ALL	5		FENCEGRD
240367.23	4078743.00	0.00068	89.28	89.28	1.5	ANNUAL	ALL	5		FENCEGRD
240366.39	4078728.07	0.00068	89.22	89.22	1.5	ANNUAL	ALL	5		FENCEGRD
240365.55	4078713.15	0.00069	89.11	89.11	1.5	ANNUAL	ALL	5		FENCEGRD
240364.71	4078698.22	0.00069	89.04	89.04	1.5	ANNUAL	ALL	5		FENCEGRD
240363.87	4078683.29	0.00069	88.99	88.99	1.5	ANNUAL	ALL	5		FENCEGRD
240363.03	4078668.36	0.00069	89.07	89.07	1.5	ANNUAL	ALL	5		FENCEGRD
240370.45	4078788.17	0.00068	89.27	89.27	1.5	ANNUAL	ALL	5		FENCEGRD
240170.90	4078800.89	0.0005	88.77	88.77	1.5	ANNUAL	ALL	5		FENCEGRD
240170.04	4078785.54	0.0005	88.31	88.31	1.5	ANNUAL	ALL	5		FENCEGRD
240169.17	4078770.18	0.0005	88.66	88.66	1.5	ANNUAL	ALL	5		FENCEGRD
240168.31	4078754.83	0.0005	88.84	88.84	1.5	ANNUAL	ALL	5		FENCEGRD
240167.45	4078739.48	0.0005	89.02	89.02	1.5	ANNUAL	ALL	5		FENCEGRD

240166.58	4078724.12	0.0005	89.27	89.27	1.5	ANNUAL	ALL	5	FENCEGRD
240165.72	4078708.77	0.0005	89.24	89.24	1.5	ANNUAL	ALL	5	FENCEGRD
240164.86	4078693.41	0.0005	89.23	89.23	1.5	ANNUAL	ALL	5	FENCEGRD
240163.99	4078678.06	0.0005	89.18	89.18	1.5	ANNUAL	ALL	5	FENCEGRD
240163.13	4078662.70	0.0005	89.16	89.16	1.5	ANNUAL	ALL	5	FENCEGRD
240172.45	4078816.42	0.00049	88.88	88.88	1.5	ANNUAL	ALL	5	FENCEGRD
241007.40	4078700.51	0.00549	92.26	92.26	1.5	ANNUAL	ALL	5	FENCEGRD
240825.29	4078736.93	0.00199	91.07	91.07	1.5	ANNUAL	ALL	5	FENCEGRD
240797.27	4078742.53	0.00181	91.09	91.09	1.5	ANNUAL	ALL	5	FENCEGRD
240769.26	4078748.13	0.00165	91.12	91.12	1.5	ANNUAL	ALL	5	FENCEGRD
240670.26	4078762.26	0.00125	90.33	90.33	1.5	ANNUAL	ALL	5	FENCEGRD
240572.20	4078781.87	0.00099	90.03	90.03	1.5	ANNUAL	ALL	5	FENCEGRD
240474.14	4078801.48	0.00081	89.81	89.81	1.5	ANNUAL	ALL	5	FENCEGRD
240376.08	4078821.09	0.00067	88.7	88.7	1.5	ANNUAL	ALL	5	FENCEGRD
240373.27	4078804.63	0.00067	89.04	89.04	1.5	ANNUAL	ALL	5	FENCEGRD
240179.97	4078860.32	0.00049	88.45	88.45	1.5	ANNUAL	ALL	5	FENCEGRD
240177.15	4078843.86	0.00049	88.46	88.46	1.5	ANNUAL	ALL	5	FENCEGRD
240878.66	4078799.55	0.00215	91.12	91.12	1.5	ANNUAL	ALL	5	FENCEGRD
240872.05	4078782.47	0.00218	91.14	91.14	1.5	ANNUAL	ALL	5	FENCEGRD
240865.44	4078765.39	0.0022	91.17	91.17	1.5	ANNUAL	ALL	5	FENCEGRD
240854.06	4078814.00	0.00192	91.1	91.1	1.5	ANNUAL	ALL	5	FENCEGRD
240847.15	4078796.13	0.00195	91.11	91.11	1.5	ANNUAL	ALL	5	FENCEGRD
240840.24	4078778.27	0.00197	91.16	91.16	1.5	ANNUAL	ALL	5	FENCEGRD
240833.32	4078760.40	0.00199	91.19	91.19	1.5	ANNUAL	ALL	5	FENCEGRD
240829.64	4078828.90	0.00173	91.12	91.12	1.5	ANNUAL	ALL	5	FENCEGRD
240822.95	4078811.59	0.00176	91.14	91.14	1.5	ANNUAL	ALL	5	FENCEGRD
240816.25	4078794.29	0.00178	91.17	91.17	1.5	ANNUAL	ALL	5	FENCEGRD
240809.55	4078776.98	0.00179	91.18	91.18	1.5	ANNUAL	ALL	5	FENCEGRD
240802.86	4078759.67	0.0018	91.18	91.18	1.5	ANNUAL	ALL	5	FENCEGRD
240805.07	4078843.41	0.00157	91.19	91.19	1.5	ANNUAL	ALL	5	FENCEGRD
240798.13	4078825.47	0.0016	91.22	91.22	1.5	ANNUAL	ALL	5	FENCEGRD
240791.19	4078807.54	0.00162	91.23	91.23	1.5	ANNUAL	ALL	5	FENCEGRD
240784.25	4078789.60	0.00164	91.18	91.18	1.5	ANNUAL	ALL	5	FENCEGRD
240777.31	4078771.67	0.00164	91.15	91.15	1.5	ANNUAL	ALL	5	FENCEGRD
240719.31	4078894.81	0.00117	90.29	90.29	1.5	ANNUAL	ALL	5	FENCEGRD
240712.26	4078876.59	0.0012	90.3	90.3	1.5	ANNUAL	ALL	5	FENCEGRD
240705.21	4078858.37	0.00121	90.34	90.34	1.5	ANNUAL	ALL	5	FENCEGRD
240698.16	4078840.15	0.00123	90.46	90.46	1.5	ANNUAL	ALL	5	FENCEGRD
240691.12	4078821.93	0.00124	90.57	90.57	1.5	ANNUAL	ALL	5	FENCEGRD
240684.07	4078803.71	0.00124	90.58	90.58	1.5	ANNUAL	ALL	5	FENCEGRD
240677.02	4078785.49	0.00124	90.44	90.44	1.5	ANNUAL	ALL	5	FENCEGRD
240633.65	4078946.47	0.00092	89.94	89.94	1.5	ANNUAL	ALL	5	FENCEGRD
240626.80	4078928.76	0.00094	89.94	89.94	1.5	ANNUAL	ALL	5	FENCEGRD
240619.95	4078911.04	0.00095	89.99	89.99	1.5	ANNUAL	ALL	5	FENCEGRD
240613.09	4078893.33	0.00096	89.97	89.97	1.5	ANNUAL	ALL	5	FENCEGRD
240606.24	4078875.62	0.00097	89.85	89.85	1.5	ANNUAL	ALL	5	FENCEGRD
240599.39	4078857.90	0.00098	89.65	89.65	1.5	ANNUAL	ALL	5	FENCEGRD
240592.53	4078840.19	0.00098	89.59	89.59	1.5	ANNUAL	ALL	5	FENCEGRD
240585.68	4078822.48	0.00098	89.7	89.7	1.5	ANNUAL	ALL	5	FENCEGRD
240578.83	4078804.77	0.00098	89.9	89.9	1.5	ANNUAL	ALL	5	FENCEGRD
240547.90	4078997.89	0.00075	89.71	89.71	1.5	ANNUAL	ALL	5	FENCEGRD
240540.96	4078979.95	0.00076	89.27	89.27	1.5	ANNUAL	ALL	5	FENCEGRD
240534.03	4078962.02	0.00078	89.59	89.59	1.5	ANNUAL	ALL	5	FENCEGRD
240527.09	4078944.09	0.00078	89.7	89.7	1.5	ANNUAL	ALL	5	FENCEGRD
240520.15	4078926.15	0.00079	89.86	89.86	1.5	ANNUAL	ALL	5	FENCEGRD
240513.21	4078908.22	0.0008	89.75	89.75	1.5	ANNUAL	ALL	5	FENCEGRD
240506.27	4078890.28	0.0008	89.35	89.35	1.5	ANNUAL	ALL	5	FENCEGRD
240499.33	4078872.35	0.0008	89.81	89.81	1.5	ANNUAL	ALL	5	FENCEGRD
240492.39	4078854.42	0.00081	89.82	89.82	1.5	ANNUAL	ALL	5	FENCEGRD
240485.45	4078836.48	0.00081	89.72	89.72	1.5	ANNUAL	ALL	5	FENCEGRD
240478.51	4078818.55	0.00081	89.83	89.83	1.5	ANNUAL	ALL	5	FENCEGRD
240462.16	4079049.33	0.00063	89.65	89.65	1.5	ANNUAL	ALL	5	FENCEGRD
240455.16	4079031.23	0.00064	89.74	89.74	1.5	ANNUAL	ALL	5	FENCEGRD
240448.16	4079013.14	0.00065	89.6	89.6	1.5	ANNUAL	ALL	5	FENCEGRD
240441.16	4078995.04	0.00065	89.42	89.42	1.5	ANNUAL	ALL	5	FENCEGRD
240434.15	4078976.95	0.00066	89.05	89.05	1.5	ANNUAL	ALL	5	FENCEGRD
240427.15	4078958.85	0.00067	89.18	89.18	1.5	ANNUAL	ALL	5	FENCEGRD
240420.15	4078940.76	0.00067	89.04	89.04	1.5	ANNUAL	ALL	5	FENCEGRD

240413.15	4078922.66	0.00067	89.17	89.17	1.5	ANNUAL	ALL	5	FENCEGRD
240406.15	4078904.56	0.00067	89.49	89.49	1.5	ANNUAL	ALL	5	FENCEGRD
240399.15	4078886.47	0.00068	89.66	89.66	1.5	ANNUAL	ALL	5	FENCEGRD
240392.15	4078868.37	0.00068	89.73	89.73	1.5	ANNUAL	ALL	5	FENCEGRD
240385.14	4078850.28	0.00067	89.43	89.43	1.5	ANNUAL	ALL	5	FENCEGRD
240290.74	4079152.37	0.00046	89.47	89.47	1.5	ANNUAL	ALL	5	FENCEGRD
240283.80	4079134.44	0.00047	89.43	89.43	1.5	ANNUAL	ALL	5	FENCEGRD
240276.86	4079116.50	0.00048	89.56	89.56	1.5	ANNUAL	ALL	5	FENCEGRD
240269.92	4079098.57	0.00048	89.67	89.67	1.5	ANNUAL	ALL	5	FENCEGRD
240262.98	4079080.64	0.00049	89.44	89.44	1.5	ANNUAL	ALL	5	FENCEGRD
240256.04	4079062.70	0.00049	89.25	89.25	1.5	ANNUAL	ALL	5	FENCEGRD
240249.10	4079044.77	0.00049	89.61	89.61	1.5	ANNUAL	ALL	5	FENCEGRD
240242.16	4079026.83	0.0005	89.67	89.67	1.5	ANNUAL	ALL	5	FENCEGRD
240235.23	4079008.90	0.0005	89.56	89.56	1.5	ANNUAL	ALL	5	FENCEGRD
240228.29	4078990.97	0.0005	89.4	89.4	1.5	ANNUAL	ALL	5	FENCEGRD
240221.35	4078973.03	0.0005	89.18	89.18	1.5	ANNUAL	ALL	5	FENCEGRD
240214.41	4078955.10	0.0005	89.43	89.43	1.5	ANNUAL	ALL	5	FENCEGRD
240207.47	4078937.16	0.0005	89.41	89.41	1.5	ANNUAL	ALL	5	FENCEGRD
240200.53	4078919.23	0.0005	89.38	89.38	1.5	ANNUAL	ALL	5	FENCEGRD
240193.59	4078901.29	0.0005	89.32	89.32	1.5	ANNUAL	ALL	5	FENCEGRD
240186.65	4078883.36	0.0005	89.16	89.16	1.5	ANNUAL	ALL	5	FENCEGRD
240770.98	4078661.13	0.00177	90.53	90.53	1.5	ANNUAL	ALL	5	FENCEGRD
240672.00	4078646.88	0.00135	90.63	90.63	1.5	ANNUAL	ALL	5	FENCEGRD
240573.02	4078632.63	0.00106	90.03	90.03	1.5	ANNUAL	ALL	5	FENCEGRD
240474.04	4078618.38	0.00086	89.61	89.61	1.5	ANNUAL	ALL	5	FENCEGRD
240375.06	4078604.13	0.00071	88.71	88.71	1.5	ANNUAL	ALL	5	FENCEGRD
240177.10	4078575.64	0.00051	88.82	88.82	1.5	ANNUAL	ALL	5	FENCEGRD
240994.08	4078666.33	0.00495	92.62	92.62	1.5	ANNUAL	ALL	5	FENCEGRD
240981.96	4078658.76	0.00451	92.58	92.58	1.5	ANNUAL	ALL	5	FENCEGRD
240957.73	4078643.63	0.00385	92.43	92.43	1.5	ANNUAL	ALL	5	FENCEGRD
240933.49	4078628.50	0.00337	92.02	92.02	1.5	ANNUAL	ALL	5	FENCEGRD
240909.26	4078613.37	0.00299	92.4	92.4	1.5	ANNUAL	ALL	5	FENCEGRD
240885.02	4078598.24	0.00269	92.1	92.1	1.5	ANNUAL	ALL	5	FENCEGRD
240860.78	4078583.11	0.00244	92.1	92.1	1.5	ANNUAL	ALL	5	FENCEGRD
240836.55	4078567.98	0.00223	92.49	92.49	1.5	ANNUAL	ALL	5	FENCEGRD
240642.66	4078446.93	0.00122	90.69	90.69	1.5	ANNUAL	ALL	5	FENCEGRD
240557.83	4078393.98	0.00098	90.79	90.79	1.5	ANNUAL	ALL	5	FENCEGRD
240473.01	4078341.02	0.0008	90.64	90.64	1.5	ANNUAL	ALL	5	FENCEGRD
240303.35	4078235.10	0.00057	89.91	89.91	1.5	ANNUAL	ALL	5	FENCEGRD
240951.29	4078678.39	0.00371	92.55	92.55	1.5	ANNUAL	ALL	5	FENCEGRD
240908.93	4078815.57	0.00226	91.14	91.14	1.5	ANNUAL	ALL	5	FENCEGRD
240902.36	4078662.25	0.0029	92.35	92.35	1.5	ANNUAL	ALL	5	FENCEGRD
240941.08	4078864.41	0.00202	91.15	91.15	1.5	ANNUAL	ALL	5	FENCEGRD
240929.64	4078857.36	0.00204	91.14	91.14	1.5	ANNUAL	ALL	5	FENCEGRD
240906.75	4078843.26	0.00204	91.15	91.15	1.5	ANNUAL	ALL	5	FENCEGRD
240883.87	4078829.16	0.00201	91.17	91.17	1.5	ANNUAL	ALL	5	FENCEGRD
240877.67	4078660.94	0.00261	92.11	92.11	1.5	ANNUAL	ALL	5	FENCEGRD
240878.11	4078647.50	0.00262	92.41	92.41	1.5	ANNUAL	ALL	5	FENCEGRD
240878.55	4078634.07	0.00264	92.41	92.41	1.5	ANNUAL	ALL	5	FENCEGRD
240985.58	4078920.85	0.00164	91.27	91.27	1.5	ANNUAL	ALL	5	FENCEGRD
240962.52	4078906.65	0.00171	91.28	91.28	1.5	ANNUAL	ALL	5	FENCEGRD
240951.00	4078899.55	0.00175	91.27	91.27	1.5	ANNUAL	ALL	5	FENCEGRD
240927.94	4078885.35	0.0018	91.23	91.23	1.5	ANNUAL	ALL	5	FENCEGRD
240904.89	4078871.15	0.00183	91.19	91.19	1.5	ANNUAL	ALL	5	FENCEGRD
240893.36	4078864.04	0.00183	91.18	91.18	1.5	ANNUAL	ALL	5	FENCEGRD
240870.31	4078849.84	0.00182	91.15	91.15	1.5	ANNUAL	ALL	5	FENCEGRD
240849.46	4078767.98	0.00207	91.19	91.19	1.5	ANNUAL	ALL	5	FENCEGRD
240849.90	4078754.45	0.00212	91.18	91.18	1.5	ANNUAL	ALL	5	FENCEGRD
240854.30	4078619.14	0.0024	92.42	92.42	1.5	ANNUAL	ALL	5	FENCEGRD
240854.74	4078605.61	0.0024	92.45	92.45	1.5	ANNUAL	ALL	5	FENCEGRD
240984.41	4078949.16	0.00144	91.51	91.51	1.5	ANNUAL	ALL	5	FENCEGRD
240972.81	4078942.02	0.00147	91.32	91.32	1.5	ANNUAL	ALL	5	FENCEGRD
240961.22	4078934.88	0.0015	91.29	91.29	1.5	ANNUAL	ALL	5	FENCEGRD
240949.63	4078927.74	0.00154	91.28	91.28	1.5	ANNUAL	ALL	5	FENCEGRD
240938.03	4078920.59	0.00156	91.29	91.29	1.5	ANNUAL	ALL	5	FENCEGRD
240926.44	4078913.45	0.00159	91.29	91.29	1.5	ANNUAL	ALL	5	FENCEGRD
240914.84	4078906.31	0.00161	91.28	91.28	1.5	ANNUAL	ALL	5	FENCEGRD
240903.25	4078899.16	0.00163	91.26	91.26	1.5	ANNUAL	ALL	5	FENCEGRD

240891.66	4078892.02	0.00164	91.22	91.22	1.5	ANNUAL	ALL	5	FENCEGRD
240880.06	4078884.88	0.00165	91.19	91.19	1.5	ANNUAL	ALL	5	FENCEGRD
240868.47	4078877.73	0.00166	91.17	91.17	1.5	ANNUAL	ALL	5	FENCEGRD
240856.87	4078870.59	0.00165	91.16	91.16	1.5	ANNUAL	ALL	5	FENCEGRD
240845.28	4078863.45	0.00164	91.15	91.15	1.5	ANNUAL	ALL	5	FENCEGRD
240833.69	4078856.31	0.00163	91.15	91.15	1.5	ANNUAL	ALL	5	FENCEGRD
240824.30	4078781.11	0.00187	91.17	91.17	1.5	ANNUAL	ALL	5	FENCEGRD
240971.67	4078970.34	0.0013	91.54	91.54	1.5	ANNUAL	ALL	5	FENCEGRD
240960.02	4078963.17	0.00133	91.33	91.33	1.5	ANNUAL	ALL	5	FENCEGRD
240948.37	4078955.99	0.00136	91.29	91.29	1.5	ANNUAL	ALL	5	FENCEGRD
240936.72	4078948.81	0.00139	91.3	91.3	1.5	ANNUAL	ALL	5	FENCEGRD
240925.07	4078941.63	0.00141	91.29	91.29	1.5	ANNUAL	ALL	5	FENCEGRD
240913.42	4078934.46	0.00144	91.3	91.3	1.5	ANNUAL	ALL	5	FENCEGRD
240901.77	4078927.28	0.00146	91.29	91.29	1.5	ANNUAL	ALL	5	FENCEGRD
240890.12	4078920.10	0.00148	91.27	91.27	1.5	ANNUAL	ALL	5	FENCEGRD
240878.47	4078912.93	0.00149	91.25	91.25	1.5	ANNUAL	ALL	5	FENCEGRD
240866.82	4078905.75	0.0015	91.24	91.24	1.5	ANNUAL	ALL	5	FENCEGRD
240855.17	4078898.57	0.00151	91.24	91.24	1.5	ANNUAL	ALL	5	FENCEGRD
240843.52	4078891.39	0.00151	91.25	91.25	1.5	ANNUAL	ALL	5	FENCEGRD
240831.87	4078884.22	0.00151	91.24	91.24	1.5	ANNUAL	ALL	5	FENCEGRD
240820.22	4078877.04	0.0015	91.21	91.21	1.5	ANNUAL	ALL	5	FENCEGRD
240808.57	4078869.86	0.00149	91.17	91.17	1.5	ANNUAL	ALL	5	FENCEGRD
240799.15	4078794.31	0.00169	91.19	91.19	1.5	ANNUAL	ALL	5	FENCEGRD
240909.15	4079033.43	0.00099	91.26	91.26	1.5	ANNUAL	ALL	5	FENCEGRD
240897.37	4079026.17	0.00101	91.14	91.14	1.5	ANNUAL	ALL	5	FENCEGRD
240885.59	4079018.91	0.00103	91.16	91.16	1.5	ANNUAL	ALL	5	FENCEGRD
240873.80	4079011.65	0.00105	91.21	91.21	1.5	ANNUAL	ALL	5	FENCEGRD
240862.02	4079004.39	0.00106	91.26	91.26	1.5	ANNUAL	ALL	5	FENCEGRD
240850.24	4078997.13	0.00108	91.27	91.27	1.5	ANNUAL	ALL	5	FENCEGRD
240838.45	4078989.87	0.00109	91.26	91.26	1.5	ANNUAL	ALL	5	FENCEGRD
240826.67	4078982.61	0.0011	91.21	91.21	1.5	ANNUAL	ALL	5	FENCEGRD
240814.89	4078975.35	0.00111	91.11	91.11	1.5	ANNUAL	ALL	5	FENCEGRD
240803.10	4078968.09	0.00112	91	91	1.5	ANNUAL	ALL	5	FENCEGRD
240791.32	4078960.84	0.00113	90.86	90.86	1.5	ANNUAL	ALL	5	FENCEGRD
240779.53	4078953.58	0.00114	90.73	90.73	1.5	ANNUAL	ALL	5	FENCEGRD
240767.75	4078946.32	0.00114	90.62	90.62	1.5	ANNUAL	ALL	5	FENCEGRD
240755.97	4078939.06	0.00114	90.52	90.52	1.5	ANNUAL	ALL	5	FENCEGRD
240744.18	4078931.80	0.00114	90.42	90.42	1.5	ANNUAL	ALL	5	FENCEGRD
240732.40	4078924.54	0.00113	90.35	90.35	1.5	ANNUAL	ALL	5	FENCEGRD
240720.62	4078917.28	0.00113	90.28	90.28	1.5	ANNUAL	ALL	5	FENCEGRD
240711.53	4078827.02	0.00129	90.69	90.69	1.5	ANNUAL	ALL	5	FENCEGRD
240711.98	4078813.19	0.00131	90.79	90.79	1.5	ANNUAL	ALL	5	FENCEGRD
240712.43	4078799.35	0.00134	90.8	90.8	1.5	ANNUAL	ALL	5	FENCEGRD
240712.88	4078785.52	0.00136	90.77	90.77	1.5	ANNUAL	ALL	5	FENCEGRD
240713.33	4078771.69	0.00138	90.71	90.71	1.5	ANNUAL	ALL	5	FENCEGRD
240713.78	4078757.85	0.0014	90.65	90.65	1.5	ANNUAL	ALL	5	FENCEGRD
240714.23	4078744.02	0.00142	90.61	90.61	1.5	ANNUAL	ALL	5	FENCEGRD
240714.68	4078730.19	0.00144	90.63	90.63	1.5	ANNUAL	ALL	5	FENCEGRD
240715.13	4078716.36	0.00145	90.76	90.76	1.5	ANNUAL	ALL	5	FENCEGRD
240715.58	4078702.52	0.00147	90.74	90.74	1.5	ANNUAL	ALL	5	FENCEGRD
240716.03	4078688.69	0.00149	90.65	90.65	1.5	ANNUAL	ALL	5	FENCEGRD
240716.48	4078674.86	0.0015	90.29	90.29	1.5	ANNUAL	ALL	5	FENCEGRD
240716.93	4078661.02	0.00151	90.5	90.5	1.5	ANNUAL	ALL	5	FENCEGRD
240717.38	4078647.19	0.00152	90.74	90.74	1.5	ANNUAL	ALL	5	FENCEGRD
240717.83	4078633.36	0.00153	90.78	90.78	1.5	ANNUAL	ALL	5	FENCEGRD
240718.28	4078619.52	0.00154	90.86	90.86	1.5	ANNUAL	ALL	5	FENCEGRD
240718.73	4078605.69	0.00155	90.83	90.83	1.5	ANNUAL	ALL	5	FENCEGRD
240719.18	4078591.86	0.00155	90.7	90.7	1.5	ANNUAL	ALL	5	FENCEGRD
240719.63	4078578.03	0.00155	90.42	90.42	1.5	ANNUAL	ALL	5	FENCEGRD
240720.08	4078564.19	0.00155	90.6	90.6	1.5	ANNUAL	ALL	5	FENCEGRD
240720.53	4078550.36	0.00156	90.9	90.9	1.5	ANNUAL	ALL	5	FENCEGRD
240720.98	4078536.53	0.00155	90.94	90.94	1.5	ANNUAL	ALL	5	FENCEGRD
240721.43	4078522.69	0.00155	90.97	90.97	1.5	ANNUAL	ALL	5	FENCEGRD
240846.19	4079096.24	0.00079	90.98	90.98	1.5	ANNUAL	ALL	5	FENCEGRD
240834.32	4079088.93	0.0008	90.85	90.85	1.5	ANNUAL	ALL	5	FENCEGRD
240822.46	4079081.62	0.00082	90.77	90.77	1.5	ANNUAL	ALL	5	FENCEGRD
240810.59	4079074.31	0.00083	90.75	90.75	1.5	ANNUAL	ALL	5	FENCEGRD
240798.72	4079067.00	0.00084	90.75	90.75	1.5	ANNUAL	ALL	5	FENCEGRD

240786.86	4079059.69	0.00085	90.74	90.74	1.5	ANNUAL	ALL	5	FENCEGRD
240774.99	4079052.38	0.00086	90.71	90.71	1.5	ANNUAL	ALL	5	FENCEGRD
240763.13	4079045.07	0.00087	90.66	90.66	1.5	ANNUAL	ALL	5	FENCEGRD
240751.26	4079037.76	0.00088	90.59	90.59	1.5	ANNUAL	ALL	5	FENCEGRD
240739.40	4079030.45	0.00088	90.54	90.54	1.5	ANNUAL	ALL	5	FENCEGRD
240727.53	4079023.14	0.00089	90.48	90.48	1.5	ANNUAL	ALL	5	FENCEGRD
240715.67	4079015.83	0.00089	90.42	90.42	1.5	ANNUAL	ALL	5	FENCEGRD
240703.80	4079008.52	0.0009	90.36	90.36	1.5	ANNUAL	ALL	5	FENCEGRD
240691.94	4079001.21	0.0009	90.29	90.29	1.5	ANNUAL	ALL	5	FENCEGRD
240680.07	4078993.90	0.0009	90.19	90.19	1.5	ANNUAL	ALL	5	FENCEGRD
240668.21	4078986.59	0.0009	89.95	89.95	1.5	ANNUAL	ALL	5	FENCEGRD
240656.34	4078979.28	0.0009	89.57	89.57	1.5	ANNUAL	ALL	5	FENCEGRD
240644.47	4078971.97	0.0009	89.46	89.46	1.5	ANNUAL	ALL	5	FENCEGRD
240632.61	4078964.66	0.00089	89.68	89.68	1.5	ANNUAL	ALL	5	FENCEGRD
240623.46	4078873.77	0.00101	90.01	90.01	1.5	ANNUAL	ALL	5	FENCEGRD
240623.92	4078859.85	0.00102	90.06	90.06	1.5	ANNUAL	ALL	5	FENCEGRD
240624.37	4078845.92	0.00104	89.83	89.83	1.5	ANNUAL	ALL	5	FENCEGRD
240624.82	4078831.99	0.00106	89.76	89.76	1.5	ANNUAL	ALL	5	FENCEGRD
240625.28	4078818.06	0.00107	90.02	90.02	1.5	ANNUAL	ALL	5	FENCEGRD
240625.73	4078804.13	0.00109	90.05	90.05	1.5	ANNUAL	ALL	5	FENCEGRD
240626.18	4078790.20	0.0011	90.02	90.02	1.5	ANNUAL	ALL	5	FENCEGRD
240626.64	4078776.27	0.00111	89.99	89.99	1.5	ANNUAL	ALL	5	FENCEGRD
240627.09	4078762.34	0.00113	90	90	1.5	ANNUAL	ALL	5	FENCEGRD
240627.54	4078748.41	0.00114	90.01	90.01	1.5	ANNUAL	ALL	5	FENCEGRD
240627.99	4078734.48	0.00115	89.97	89.97	1.5	ANNUAL	ALL	5	FENCEGRD
240628.45	4078720.56	0.00116	90.01	90.01	1.5	ANNUAL	ALL	5	FENCEGRD
240628.90	4078706.63	0.00117	90.05	90.05	1.5	ANNUAL	ALL	5	FENCEGRD
240629.35	4078692.70	0.00118	90.3	90.3	1.5	ANNUAL	ALL	5	FENCEGRD
240629.81	4078678.77	0.00119	90.42	90.42	1.5	ANNUAL	ALL	5	FENCEGRD
240630.26	4078664.84	0.0012	90.29	90.29	1.5	ANNUAL	ALL	5	FENCEGRD
240630.71	4078650.91	0.00121	90.01	90.01	1.5	ANNUAL	ALL	5	FENCEGRD
240631.17	4078636.98	0.00122	90.24	90.24	1.5	ANNUAL	ALL	5	FENCEGRD
240631.62	4078623.05	0.00122	90.41	90.41	1.5	ANNUAL	ALL	5	FENCEGRD
240632.07	4078609.12	0.00123	90.49	90.49	1.5	ANNUAL	ALL	5	FENCEGRD
240632.53	4078595.19	0.00123	90.49	90.49	1.5	ANNUAL	ALL	5	FENCEGRD
240632.98	4078581.26	0.00123	90.42	90.42	1.5	ANNUAL	ALL	5	FENCEGRD
240624.65	4078551.93	0.00121	90.38	90.38	1.5	ANNUAL	ALL	5	FENCEGRD
240635.25	4078511.62	0.00123	90.36	90.36	1.5	ANNUAL	ALL	5	FENCEGRD
240635.70	4078497.69	0.00123	90.69	90.69	1.5	ANNUAL	ALL	5	FENCEGRD
240636.15	4078483.76	0.00122	90.79	90.79	1.5	ANNUAL	ALL	5	FENCEGRD
240636.60	4078469.83	0.00122	90.88	90.88	1.5	ANNUAL	ALL	5	FENCEGRD
240782.99	4079158.91	0.00065	90.38	90.38	1.5	ANNUAL	ALL	5	FENCEGRD
240771.07	4079151.56	0.00066	90.62	90.62	1.5	ANNUAL	ALL	5	FENCEGRD
240759.15	4079144.22	0.00067	90.74	90.74	1.5	ANNUAL	ALL	5	FENCEGRD
240747.22	4079136.88	0.00068	90.74	90.74	1.5	ANNUAL	ALL	5	FENCEGRD
240735.30	4079129.53	0.00068	90.77	90.77	1.5	ANNUAL	ALL	5	FENCEGRD
240723.38	4079122.19	0.00069	90.47	90.47	1.5	ANNUAL	ALL	5	FENCEGRD
240711.46	4079114.84	0.0007	90.42	90.42	1.5	ANNUAL	ALL	5	FENCEGRD
240699.54	4079107.50	0.00071	90.33	90.33	1.5	ANNUAL	ALL	5	FENCEGRD
240687.62	4079100.15	0.00071	90.27	90.27	1.5	ANNUAL	ALL	5	FENCEGRD
240675.70	4079092.81	0.00072	90.13	90.13	1.5	ANNUAL	ALL	5	FENCEGRD
240663.78	4079085.47	0.00072	90.03	90.03	1.5	ANNUAL	ALL	5	FENCEGRD
240651.86	4079078.12	0.00073	89.97	89.97	1.5	ANNUAL	ALL	5	FENCEGRD
240639.94	4079070.78	0.00073	90.08	90.08	1.5	ANNUAL	ALL	5	FENCEGRD
240628.02	4079063.43	0.00074	90.04	90.04	1.5	ANNUAL	ALL	5	FENCEGRD
240616.10	4079056.09	0.00074	89.96	89.96	1.5	ANNUAL	ALL	5	FENCEGRD
240604.18	4079048.75	0.00074	89.79	89.79	1.5	ANNUAL	ALL	5	FENCEGRD
240592.26	4079041.40	0.00074	89.86	89.86	1.5	ANNUAL	ALL	5	FENCEGRD
240580.34	4079034.06	0.00074	89.98	89.98	1.5	ANNUAL	ALL	5	FENCEGRD
240568.42	4079026.71	0.00074	89.98	89.98	1.5	ANNUAL	ALL	5	FENCEGRD
240556.50	4079019.37	0.00074	89.91	89.91	1.5	ANNUAL	ALL	5	FENCEGRD
240544.58	4079012.03	0.00073	89.75	89.75	1.5	ANNUAL	ALL	5	FENCEGRD
240535.39	4078920.72	0.00082	89.89	89.89	1.5	ANNUAL	ALL	5	FENCEGRD
240535.84	4078906.72	0.00083	89.8	89.8	1.5	ANNUAL	ALL	5	FENCEGRD
240536.30	4078892.73	0.00084	89.45	89.45	1.5	ANNUAL	ALL	5	FENCEGRD
240536.75	4078878.74	0.00085	89.63	89.63	1.5	ANNUAL	ALL	5	FENCEGRD
240537.21	4078864.74	0.00087	89.82	89.82	1.5	ANNUAL	ALL	5	FENCEGRD
240537.66	4078850.75	0.00088	89.83	89.83	1.5	ANNUAL	ALL	5	FENCEGRD

240538.12	4078836.75	0.00089	89.8	89.8	1.5	ANNUAL	ALL	5	FENCEGRD
240538.57	4078822.76	0.0009	89.86	89.86	1.5	ANNUAL	ALL	5	FENCEGRD
240539.03	4078808.77	0.00091	89.9	89.9	1.5	ANNUAL	ALL	5	FENCEGRD
240539.48	4078794.77	0.00092	89.86	89.86	1.5	ANNUAL	ALL	5	FENCEGRD
240539.94	4078780.78	0.00093	89.85	89.85	1.5	ANNUAL	ALL	5	FENCEGRD
240540.39	4078766.79	0.00093	89.84	89.84	1.5	ANNUAL	ALL	5	FENCEGRD
240540.85	4078752.79	0.00094	89.75	89.75	1.5	ANNUAL	ALL	5	FENCEGRD
240541.31	4078738.80	0.00095	89.38	89.38	1.5	ANNUAL	ALL	5	FENCEGRD
240541.76	4078724.80	0.00096	89.54	89.54	1.5	ANNUAL	ALL	5	FENCEGRD
240542.22	4078710.81	0.00096	89.77	89.77	1.5	ANNUAL	ALL	5	FENCEGRD
240542.67	4078696.82	0.00097	89.86	89.86	1.5	ANNUAL	ALL	5	FENCEGRD
240543.13	4078682.82	0.00098	89.94	89.94	1.5	ANNUAL	ALL	5	FENCEGRD
240543.58	4078668.83	0.00098	89.85	89.85	1.5	ANNUAL	ALL	5	FENCEGRD
240544.04	4078654.83	0.00099	89.47	89.47	1.5	ANNUAL	ALL	5	FENCEGRD
240544.49	4078640.84	0.00099	89.59	89.59	1.5	ANNUAL	ALL	5	FENCEGRD
240544.95	4078626.85	0.001	89.91	89.91	1.5	ANNUAL	ALL	5	FENCEGRD
240545.40	4078612.85	0.001	89.95	89.95	1.5	ANNUAL	ALL	5	FENCEGRD
240545.86	4078598.86	0.001	89.94	89.94	1.5	ANNUAL	ALL	5	FENCEGRD
240546.31	4078584.87	0.00101	89.88	89.88	1.5	ANNUAL	ALL	5	FENCEGRD
240546.77	4078570.87	0.00101	89.48	89.48	1.5	ANNUAL	ALL	5	FENCEGRD
240547.22	4078556.88	0.00101	89.63	89.63	1.5	ANNUAL	ALL	5	FENCEGRD
240547.68	4078542.88	0.00101	89.93	89.93	1.5	ANNUAL	ALL	5	FENCEGRD
240548.13	4078528.89	0.00101	89.91	89.91	1.5	ANNUAL	ALL	5	FENCEGRD
240548.59	4078514.90	0.00101	89.54	89.54	1.5	ANNUAL	ALL	5	FENCEGRD
240549.04	4078500.90	0.001	90.05	90.05	1.5	ANNUAL	ALL	5	FENCEGRD
240549.50	4078486.91	0.001	90.49	90.49	1.5	ANNUAL	ALL	5	FENCEGRD
240549.96	4078472.91	0.001	90.75	90.75	1.5	ANNUAL	ALL	5	FENCEGRD
240550.41	4078458.92	0.001	90.8	90.8	1.5	ANNUAL	ALL	5	FENCEGRD
240550.87	4078444.93	0.00099	90.87	90.87	1.5	ANNUAL	ALL	5	FENCEGRD
240551.32	4078430.93	0.00099	90.89	90.89	1.5	ANNUAL	ALL	5	FENCEGRD
240551.78	4078416.94	0.00098	90.88	90.88	1.5	ANNUAL	ALL	5	FENCEGRD
240731.61	4079228.86	0.00054	90.34	90.34	1.5	ANNUAL	ALL	5	FENCEGRD
240719.65	4079221.49	0.00055	89.97	89.97	1.5	ANNUAL	ALL	5	FENCEGRD
240707.69	4079214.12	0.00055	89.99	89.99	1.5	ANNUAL	ALL	5	FENCEGRD
240695.73	4079206.75	0.00056	90.15	90.15	1.5	ANNUAL	ALL	5	FENCEGRD
240683.77	4079199.38	0.00057	90.25	90.25	1.5	ANNUAL	ALL	5	FENCEGRD
240671.81	4079192.02	0.00057	90.25	90.25	1.5	ANNUAL	ALL	5	FENCEGRD
240659.85	4079184.65	0.00058	90.28	90.28	1.5	ANNUAL	ALL	5	FENCEGRD
240647.89	4079177.28	0.00058	90.33	90.33	1.5	ANNUAL	ALL	5	FENCEGRD
240635.93	4079169.91	0.00059	90.3	90.3	1.5	ANNUAL	ALL	5	FENCEGRD
240623.97	4079162.54	0.00059	90.22	90.22	1.5	ANNUAL	ALL	5	FENCEGRD
240612.01	4079155.17	0.0006	90.12	90.12	1.5	ANNUAL	ALL	5	FENCEGRD
240600.05	4079147.80	0.0006	90.33	90.33	1.5	ANNUAL	ALL	5	FENCEGRD
240588.09	4079140.44	0.00061	90.33	90.33	1.5	ANNUAL	ALL	5	FENCEGRD
240576.13	4079133.07	0.00061	90.2	90.2	1.5	ANNUAL	ALL	5	FENCEGRD
240564.17	4079125.70	0.00061	89.91	89.91	1.5	ANNUAL	ALL	5	FENCEGRD
240552.21	4079118.33	0.00062	89.89	89.89	1.5	ANNUAL	ALL	5	FENCEGRD
240540.25	4079110.96	0.00062	89.93	89.93	1.5	ANNUAL	ALL	5	FENCEGRD
240528.29	4079103.59	0.00062	89.94	89.94	1.5	ANNUAL	ALL	5	FENCEGRD
240516.33	4079096.22	0.00062	89.82	89.82	1.5	ANNUAL	ALL	5	FENCEGRD
240504.37	4079088.86	0.00062	89.82	89.82	1.5	ANNUAL	ALL	5	FENCEGRD
240492.41	4079081.49	0.00062	89.7	89.7	1.5	ANNUAL	ALL	5	FENCEGRD
240480.45	4079074.12	0.00062	89.47	89.47	1.5	ANNUAL	ALL	5	FENCEGRD
240468.49	4079066.75	0.00062	89.26	89.26	1.5	ANNUAL	ALL	5	FENCEGRD
240446.85	4078981.81	0.00067	89.11	89.11	1.5	ANNUAL	ALL	5	FENCEGRD
240447.31	4078967.77	0.00068	89.31	89.31	1.5	ANNUAL	ALL	5	FENCEGRD
240447.76	4078953.73	0.00069	89.55	89.55	1.5	ANNUAL	ALL	5	FENCEGRD
240448.22	4078939.69	0.0007	89.64	89.64	1.5	ANNUAL	ALL	5	FENCEGRD
240448.68	4078925.65	0.00071	89.75	89.75	1.5	ANNUAL	ALL	5	FENCEGRD
240449.13	4078911.61	0.00072	89.71	89.71	1.5	ANNUAL	ALL	5	FENCEGRD
240449.59	4078897.57	0.00073	89.37	89.37	1.5	ANNUAL	ALL	5	FENCEGRD
240450.05	4078883.53	0.00073	89.42	89.42	1.5	ANNUAL	ALL	5	FENCEGRD
240450.50	4078869.49	0.00074	89.69	89.69	1.5	ANNUAL	ALL	5	FENCEGRD
240450.96	4078855.45	0.00075	89.72	89.72	1.5	ANNUAL	ALL	5	FENCEGRD
240451.42	4078841.41	0.00076	89.61	89.61	1.5	ANNUAL	ALL	5	FENCEGRD
240451.87	4078827.37	0.00076	89.49	89.49	1.5	ANNUAL	ALL	5	FENCEGRD
240452.33	4078813.32	0.00077	89.53	89.53	1.5	ANNUAL	ALL	5	FENCEGRD
240452.79	4078799.28	0.00078	89.56	89.56	1.5	ANNUAL	ALL	5	FENCEGRD

240453.24	4078785.24	0.00078	89.6	89.6	1.5	ANNUAL	ALL	5	FENCEGRD
240453.70	4078771.20	0.00079	89.64	89.64	1.5	ANNUAL	ALL	5	FENCEGRD
240454.16	4078757.16	0.00079	89.59	89.59	1.5	ANNUAL	ALL	5	FENCEGRD
240457.36	4078658.88	0.00082	89.16	89.16	1.5	ANNUAL	ALL	5	FENCEGRD
240457.81	4078644.84	0.00083	89.12	89.12	1.5	ANNUAL	ALL	5	FENCEGRD
240458.27	4078630.80	0.00083	89.48	89.48	1.5	ANNUAL	ALL	5	FENCEGRD
240458.73	4078616.76	0.00083	89.54	89.54	1.5	ANNUAL	ALL	5	FENCEGRD
240459.18	4078602.72	0.00084	89.53	89.53	1.5	ANNUAL	ALL	5	FENCEGRD
240459.64	4078588.68	0.00084	89.47	89.47	1.5	ANNUAL	ALL	5	FENCEGRD
240460.10	4078574.64	0.00084	89.13	89.13	1.5	ANNUAL	ALL	5	FENCEGRD
240460.55	4078560.60	0.00084	89.18	89.18	1.5	ANNUAL	ALL	5	FENCEGRD
240461.01	4078546.56	0.00084	89.48	89.48	1.5	ANNUAL	ALL	5	FENCEGRD
240461.47	4078532.51	0.00084	89.52	89.52	1.5	ANNUAL	ALL	5	FENCEGRD
240461.92	4078518.47	0.00084	89.41	89.41	1.5	ANNUAL	ALL	5	FENCEGRD
240462.38	4078504.43	0.00084	89.52	89.52	1.5	ANNUAL	ALL	5	FENCEGRD
240462.84	4078490.39	0.00084	89.88	89.88	1.5	ANNUAL	ALL	5	FENCEGRD
240463.29	4078476.35	0.00084	90.48	90.48	1.5	ANNUAL	ALL	5	FENCEGRD
240463.75	4078462.31	0.00083	90.73	90.73	1.5	ANNUAL	ALL	5	FENCEGRD
240464.21	4078448.27	0.00083	90.74	90.74	1.5	ANNUAL	ALL	5	FENCEGRD
240464.66	4078434.23	0.00083	90.87	90.87	1.5	ANNUAL	ALL	5	FENCEGRD
240465.12	4078420.19	0.00082	90.93	90.93	1.5	ANNUAL	ALL	5	FENCEGRD
240465.58	4078406.15	0.00082	90.89	90.89	1.5	ANNUAL	ALL	5	FENCEGRD
240466.03	4078392.11	0.00082	90.88	90.88	1.5	ANNUAL	ALL	5	FENCEGRD
240466.49	4078378.07	0.00081	90.94	90.94	1.5	ANNUAL	ALL	5	FENCEGRD
240466.95	4078364.03	0.00081	90.92	90.92	1.5	ANNUAL	ALL	5	FENCEGRD
240365.18	4078831.91	0.00066	88.77	88.77	1.5	ANNUAL	ALL	5	FENCEGRD
240371.13	4078648.92	0.0007	89.1	89.1	1.5	ANNUAL	ALL	5	FENCEGRD
240371.59	4078634.85	0.0007	89.1	89.1	1.5	ANNUAL	ALL	5	FENCEGRD
240372.05	4078620.77	0.00071	89.09	89.09	1.5	ANNUAL	ALL	5	FENCEGRD
240373.42	4078578.54	0.00071	89.05	89.05	1.5	ANNUAL	ALL	5	FENCEGRD
240611.42	4079358.02	0.0004	90.74	90.74	1.5	ANNUAL	ALL	5	FENCEGRD
240599.60	4079350.73	0.00041	90.87	90.87	1.5	ANNUAL	ALL	5	FENCEGRD
240587.77	4079343.44	0.00041	90.93	90.93	1.5	ANNUAL	ALL	5	FENCEGRD
240575.94	4079336.15	0.00041	90.93	90.93	1.5	ANNUAL	ALL	5	FENCEGRD
240564.11	4079328.87	0.00042	90.79	90.79	1.5	ANNUAL	ALL	5	FENCEGRD
240552.28	4079321.58	0.00042	90.12	90.12	1.5	ANNUAL	ALL	5	FENCEGRD
240540.45	4079314.29	0.00042	89.91	89.91	1.5	ANNUAL	ALL	5	FENCEGRD
240528.62	4079307.00	0.00043	90.13	90.13	1.5	ANNUAL	ALL	5	FENCEGRD
240516.79	4079299.72	0.00043	90.37	90.37	1.5	ANNUAL	ALL	5	FENCEGRD
240504.96	4079292.43	0.00044	90.5	90.5	1.5	ANNUAL	ALL	5	FENCEGRD
240493.14	4079285.14	0.00044	90.45	90.45	1.5	ANNUAL	ALL	5	FENCEGRD
240481.31	4079277.85	0.00044	90.37	90.37	1.5	ANNUAL	ALL	5	FENCEGRD
240469.48	4079270.57	0.00045	90.31	90.31	1.5	ANNUAL	ALL	5	FENCEGRD
240457.65	4079263.28	0.00045	90.28	90.28	1.5	ANNUAL	ALL	5	FENCEGRD
240445.82	4079255.99	0.00045	90.02	90.02	1.5	ANNUAL	ALL	5	FENCEGRD
240433.99	4079248.70	0.00045	89.7	89.7	1.5	ANNUAL	ALL	5	FENCEGRD
240422.16	4079241.42	0.00045	89.68	89.68	1.5	ANNUAL	ALL	5	FENCEGRD
240410.33	4079234.13	0.00046	89.6	89.6	1.5	ANNUAL	ALL	5	FENCEGRD
240398.50	4079226.84	0.00046	89.45	89.45	1.5	ANNUAL	ALL	5	FENCEGRD
240386.68	4079219.55	0.00046	89.04	89.04	1.5	ANNUAL	ALL	5	FENCEGRD
240374.85	4079212.27	0.00046	89.33	89.33	1.5	ANNUAL	ALL	5	FENCEGRD
240363.02	4079204.98	0.00046	89.48	89.48	1.5	ANNUAL	ALL	5	FENCEGRD
240351.19	4079197.69	0.00046	89.13	89.13	1.5	ANNUAL	ALL	5	FENCEGRD
240339.36	4079190.40	0.00046	88.95	88.95	1.5	ANNUAL	ALL	5	FENCEGRD
240327.53	4079183.11	0.00046	88.98	88.98	1.5	ANNUAL	ALL	5	FENCEGRD
240315.70	4079175.83	0.00046	89.26	89.26	1.5	ANNUAL	ALL	5	FENCEGRD
240303.87	4079168.54	0.00046	89.31	89.31	1.5	ANNUAL	ALL	5	FENCEGRD
240268.84	4079132.79	0.00046	89.4	89.4	1.5	ANNUAL	ALL	5	FENCEGRD
240295.49	4078313.50	0.00059	89.83	89.83	1.5	ANNUAL	ALL	5	FENCEGRD
240295.95	4078299.62	0.00059	89.84	89.84	1.5	ANNUAL	ALL	5	FENCEGRD
240296.40	4078285.73	0.00058	89.86	89.86	1.5	ANNUAL	ALL	5	FENCEGRD
240296.85	4078271.85	0.00058	89.85	89.85	1.5	ANNUAL	ALL	5	FENCEGRD
240297.30	4078257.96	0.00057	89.83	89.83	1.5	ANNUAL	ALL	5	FENCEGRD
241792.45	4078967.04	0.00058	93.67	93.67	1.5	ANNUAL	ALL	5	FENCEGRD
241802.98	4078956.44	0.00058	93.93	93.93	1.5	ANNUAL	ALL	5	FENCEGRD
241813.52	4078945.85	0.00058	93.92	93.92	1.5	ANNUAL	ALL	5	FENCEGRD
241824.05	4078935.25	0.00058	93.91	93.91	1.5	ANNUAL	ALL	5	FENCEGRD
241834.59	4078924.66	0.00058	93.91	93.91	1.5	ANNUAL	ALL	5	FENCEGRD

241845.12	4078914.07	0.00058	93.95	93.95	1.5	ANNUAL	ALL	5	FENCEGRD
241855.66	4078903.47	0.00058	93.94	93.94	1.5	ANNUAL	ALL	5	FENCEGRD
241866.19	4078892.88	0.00058	93.84	93.84	1.5	ANNUAL	ALL	5	FENCEGRD
241876.73	4078882.28	0.00058	93.6	93.6	1.5	ANNUAL	ALL	5	FENCEGRD
241887.26	4078871.69	0.00058	93.81	93.81	1.5	ANNUAL	ALL	5	FENCEGRD
241897.80	4078861.10	0.00057	93.89	93.89	1.5	ANNUAL	ALL	5	FENCEGRD
241908.33	4078850.50	0.00057	94	94	1.5	ANNUAL	ALL	5	FENCEGRD
241918.87	4078839.91	0.00057	93.94	93.94	1.5	ANNUAL	ALL	5	FENCEGRD
241929.40	4078829.31	0.00057	93.73	93.73	1.5	ANNUAL	ALL	5	FENCEGRD
241939.94	4078818.72	0.00057	93.78	93.78	1.5	ANNUAL	ALL	5	FENCEGRD
241950.47	4078808.12	0.00056	93.92	93.92	1.5	ANNUAL	ALL	5	FENCEGRD
241961.01	4078797.53	0.00056	93.95	93.95	1.5	ANNUAL	ALL	5	FENCEGRD
241971.54	4078786.94	0.00056	93.99	93.99	1.5	ANNUAL	ALL	5	FENCEGRD
241982.08	4078776.34	0.00056	93.91	93.91	1.5	ANNUAL	ALL	5	FENCEGRD
241992.62	4078765.75	0.00056	93.63	93.63	1.5	ANNUAL	ALL	5	FENCEGRD
242003.15	4078755.15	0.00055	93.64	93.64	1.5	ANNUAL	ALL	5	FENCEGRD
242013.69	4078744.56	0.00055	93.87	93.87	1.5	ANNUAL	ALL	5	FENCEGRD
241863.35	4079037.55	0.00046	93.82	93.82	1.5	ANNUAL	ALL	5	FENCEGRD
241873.89	4079026.96	0.00046	93.85	93.85	1.5	ANNUAL	ALL	5	FENCEGRD
241884.42	4079016.36	0.00046	93.42	93.42	1.5	ANNUAL	ALL	5	FENCEGRD
241894.96	4079005.77	0.00046	93.32	93.32	1.5	ANNUAL	ALL	5	FENCEGRD
241905.49	4078995.17	0.00046	93.41	93.41	1.5	ANNUAL	ALL	5	FENCEGRD
241916.03	4078984.58	0.00046	93.44	93.44	1.5	ANNUAL	ALL	5	FENCEGRD
241926.56	4078973.99	0.00046	93.47	93.47	1.5	ANNUAL	ALL	5	FENCEGRD
241937.10	4078963.39	0.00046	93.29	93.29	1.5	ANNUAL	ALL	5	FENCEGRD
241947.64	4078952.80	0.00046	93.27	93.27	1.5	ANNUAL	ALL	5	FENCEGRD
241958.17	4078942.20	0.00046	93.76	93.76	1.5	ANNUAL	ALL	5	FENCEGRD
241968.71	4078931.61	0.00046	93.88	93.88	1.5	ANNUAL	ALL	5	FENCEGRD
241979.24	4078921.01	0.00046	93.93	93.93	1.5	ANNUAL	ALL	5	FENCEGRD
241989.78	4078910.42	0.00046	93.59	93.59	1.5	ANNUAL	ALL	5	FENCEGRD
242000.31	4078899.83	0.00046	93.29	93.29	1.5	ANNUAL	ALL	5	FENCEGRD
242010.85	4078889.23	0.00045	93.91	93.91	1.5	ANNUAL	ALL	5	FENCEGRD
242021.38	4078878.64	0.00045	93.93	93.93	1.5	ANNUAL	ALL	5	FENCEGRD
242031.92	4078868.04	0.00045	93.91	93.91	1.5	ANNUAL	ALL	5	FENCEGRD
242042.45	4078857.45	0.00045	93.82	93.82	1.5	ANNUAL	ALL	5	FENCEGRD
242052.99	4078846.85	0.00045	93.66	93.66	1.5	ANNUAL	ALL	5	FENCEGRD
242063.52	4078836.26	0.00045	93.54	93.54	1.5	ANNUAL	ALL	5	FENCEGRD
242074.06	4078825.67	0.00044	93.67	93.67	1.5	ANNUAL	ALL	5	FENCEGRD
242084.59	4078815.07	0.00044	93.88	93.88	1.5	ANNUAL	ALL	5	FENCEGRD
241741.47	4079293.64	0.00035	92.81	92.81	1.5	ANNUAL	ALL	5	FENCEGRD
241727.79	4079299.12	0.00036	92.82	92.82	1.5	ANNUAL	ALL	5	FENCEGRD
241714.10	4079304.60	0.00036	92.8	92.8	1.5	ANNUAL	ALL	5	FENCEGRD
241700.41	4079310.08	0.00036	92.74	92.74	1.5	ANNUAL	ALL	5	FENCEGRD
241755.16	4079288.17	0.00035	92.72	92.72	1.5	ANNUAL	ALL	5	FENCEGRD
241765.70	4079277.57	0.00036	92.85	92.85	1.5	ANNUAL	ALL	5	FENCEGRD
241776.23	4079266.98	0.00036	92.93	92.93	1.5	ANNUAL	ALL	5	FENCEGRD
241786.77	4079256.38	0.00036	93.05	93.05	1.5	ANNUAL	ALL	5	FENCEGRD
241797.30	4079245.79	0.00036	93.13	93.13	1.5	ANNUAL	ALL	5	FENCEGRD
241807.84	4079235.19	0.00036	93.24	93.24	1.5	ANNUAL	ALL	5	FENCEGRD
241818.37	4079224.60	0.00036	93.35	93.35	1.5	ANNUAL	ALL	5	FENCEGRD
241828.91	4079214.01	0.00037	93.5	93.5	1.5	ANNUAL	ALL	5	FENCEGRD
241839.44	4079203.41	0.00037	93.6	93.6	1.5	ANNUAL	ALL	5	FENCEGRD
241849.98	4079192.82	0.00037	93.6	93.6	1.5	ANNUAL	ALL	5	FENCEGRD
241860.51	4079182.22	0.00037	93.43	93.43	1.5	ANNUAL	ALL	5	FENCEGRD
241871.05	4079171.63	0.00037	93.78	93.78	1.5	ANNUAL	ALL	5	FENCEGRD
241881.58	4079161.03	0.00037	93.84	93.84	1.5	ANNUAL	ALL	5	FENCEGRD
241892.12	4079150.44	0.00037	93.97	93.97	1.5	ANNUAL	ALL	5	FENCEGRD
241902.66	4079139.85	0.00037	94.09	94.09	1.5	ANNUAL	ALL	5	FENCEGRD
241913.19	4079129.25	0.00037	94.05	94.05	1.5	ANNUAL	ALL	5	FENCEGRD
241923.73	4079118.66	0.00037	93.82	93.82	1.5	ANNUAL	ALL	5	FENCEGRD
241934.26	4079108.06	0.00038	93.8	93.8	1.5	ANNUAL	ALL	5	FENCEGRD
241944.80	4079097.47	0.00037	94.03	94.03	1.5	ANNUAL	ALL	5	FENCEGRD
241955.33	4079086.88	0.00038	94.14	94.14	1.5	ANNUAL	ALL	5	FENCEGRD
241965.87	4079076.28	0.00037	94.41	94.41	1.5	ANNUAL	ALL	5	FENCEGRD
241976.40	4079065.69	0.00037	94.51	94.51	1.5	ANNUAL	ALL	5	FENCEGRD
241986.94	4079055.09	0.00037	94.52	94.52	1.5	ANNUAL	ALL	5	FENCEGRD
241997.47	4079044.50	0.00037	94.49	94.49	1.5	ANNUAL	ALL	5	FENCEGRD
242008.01	4079033.90	0.00037	94.46	94.46	1.5	ANNUAL	ALL	5	FENCEGRD

242018.54	4079023.31	0.00037	94.38	94.38	1.5	ANNUAL	ALL	5	FENCEGRD
242029.08	4079012.72	0.00037	94.25	94.25	1.5	ANNUAL	ALL	5	FENCEGRD
242039.61	4079002.12	0.00037	94.15	94.15	1.5	ANNUAL	ALL	5	FENCEGRD
242050.15	4078991.53	0.00037	94.07	94.07	1.5	ANNUAL	ALL	5	FENCEGRD
242060.68	4078980.93	0.00037	94.03	94.03	1.5	ANNUAL	ALL	5	FENCEGRD
242071.22	4078970.34	0.00037	93.96	93.96	1.5	ANNUAL	ALL	5	FENCEGRD
242081.75	4078959.74	0.00037	93.95	93.95	1.5	ANNUAL	ALL	5	FENCEGRD
242092.29	4078949.15	0.00037	93.91	93.91	1.5	ANNUAL	ALL	5	FENCEGRD
242102.83	4078938.56	0.00037	93.69	93.69	1.5	ANNUAL	ALL	5	FENCEGRD
242113.36	4078927.96	0.00037	93.88	93.88	1.5	ANNUAL	ALL	5	FENCEGRD
242123.90	4078917.37	0.00037	94.07	94.07	1.5	ANNUAL	ALL	5	FENCEGRD
242134.43	4078906.77	0.00037	94.04	94.04	1.5	ANNUAL	ALL	5	FENCEGRD
242144.97	4078896.18	0.00036	94.02	94.02	1.5	ANNUAL	ALL	5	FENCEGRD
242155.50	4078885.59	0.00036	93.94	93.94	1.5	ANNUAL	ALL	5	FENCEGRD
241812.28	4079364.20	0.0003	93.12	93.12	1.5	ANNUAL	ALL	5	FENCEGRD
241798.48	4079369.72	0.0003	92.81	92.81	1.5	ANNUAL	ALL	5	FENCEGRD
241784.69	4079375.24	0.0003	92.88	92.88	1.5	ANNUAL	ALL	5	FENCEGRD
241770.89	4079380.77	0.0003	93.15	93.15	1.5	ANNUAL	ALL	5	FENCEGRD
241757.10	4079386.29	0.0003	93.19	93.19	1.5	ANNUAL	ALL	5	FENCEGRD
241743.31	4079391.81	0.00031	92.69	92.69	1.5	ANNUAL	ALL	5	FENCEGRD
241729.51	4079397.33	0.00031	92.46	92.46	1.5	ANNUAL	ALL	5	FENCEGRD
241715.72	4079402.86	0.00031	91.95	91.95	1.5	ANNUAL	ALL	5	FENCEGRD
241701.93	4079408.38	0.00031	92.12	92.12	1.5	ANNUAL	ALL	5	FENCEGRD
241688.13	4079413.90	0.00031	92.29	92.29	1.5	ANNUAL	ALL	5	FENCEGRD
241674.34	4079419.42	0.00031	92.08	92.08	1.5	ANNUAL	ALL	5	FENCEGRD
241660.54	4079424.94	0.00031	91.58	91.58	1.5	ANNUAL	ALL	5	FENCEGRD
241646.75	4079430.47	0.00031	91.57	91.57	1.5	ANNUAL	ALL	5	FENCEGRD
241632.96	4079435.99	0.00031	91.63	91.63	1.5	ANNUAL	ALL	5	FENCEGRD
241826.07	4079358.68	0.0003	93.2	93.2	1.5	ANNUAL	ALL	5	FENCEGRD
241836.60	4079348.08	0.0003	93.23	93.23	1.5	ANNUAL	ALL	5	FENCEGRD
241847.14	4079337.49	0.0003	93.17	93.17	1.5	ANNUAL	ALL	5	FENCEGRD
241857.67	4079326.90	0.0003	93.08	93.08	1.5	ANNUAL	ALL	5	FENCEGRD
241868.21	4079316.30	0.0003	92.71	92.71	1.5	ANNUAL	ALL	5	FENCEGRD
241878.75	4079305.71	0.00031	92.91	92.91	1.5	ANNUAL	ALL	5	FENCEGRD
241889.28	4079295.11	0.00031	92.59	92.59	1.5	ANNUAL	ALL	5	FENCEGRD
241899.82	4079284.52	0.00031	91.55	91.55	1.5	ANNUAL	ALL	5	FENCEGRD
241910.35	4079273.92	0.00031	92.22	93.34	1.5	ANNUAL	ALL	5	FENCEGRD
241920.89	4079263.33	0.00031	93.33	93.33	1.5	ANNUAL	ALL	5	FENCEGRD
241931.42	4079252.74	0.00031	93.56	93.56	1.5	ANNUAL	ALL	5	FENCEGRD
241941.96	4079242.14	0.00031	93.63	93.63	1.5	ANNUAL	ALL	5	FENCEGRD
241952.49	4079231.55	0.00031	93.47	93.47	1.5	ANNUAL	ALL	5	FENCEGRD
241963.03	4079220.95	0.00031	93.82	93.82	1.5	ANNUAL	ALL	5	FENCEGRD
241973.56	4079210.36	0.00031	93.95	93.95	1.5	ANNUAL	ALL	5	FENCEGRD
241984.10	4079199.77	0.00031	94.04	94.04	1.5	ANNUAL	ALL	5	FENCEGRD
241994.63	4079189.17	0.00031	94.22	94.22	1.5	ANNUAL	ALL	5	FENCEGRD
242005.17	4079178.58	0.00031	94.19	94.19	1.5	ANNUAL	ALL	5	FENCEGRD
242015.70	4079167.98	0.00031	94.11	94.11	1.5	ANNUAL	ALL	5	FENCEGRD
242026.24	4079157.39	0.00031	93.89	93.89	1.5	ANNUAL	ALL	5	FENCEGRD
242036.77	4079146.79	0.00031	94.17	94.17	1.5	ANNUAL	ALL	5	FENCEGRD
242047.31	4079136.20	0.00031	94.4	94.4	1.5	ANNUAL	ALL	5	FENCEGRD
242057.84	4079125.61	0.00031	94.46	94.46	1.5	ANNUAL	ALL	5	FENCEGRD
242068.38	4079115.01	0.00031	94.62	94.62	1.5	ANNUAL	ALL	5	FENCEGRD
242078.92	4079104.42	0.00031	94.66	94.66	1.5	ANNUAL	ALL	5	FENCEGRD
242089.45	4079093.82	0.00031	94.53	94.53	1.5	ANNUAL	ALL	5	FENCEGRD
242099.99	4079083.23	0.00031	94.38	94.38	1.5	ANNUAL	ALL	5	FENCEGRD
242110.52	4079072.63	0.00031	94.63	94.63	1.5	ANNUAL	ALL	5	FENCEGRD
242121.06	4079062.04	0.00031	94.79	94.79	1.5	ANNUAL	ALL	5	FENCEGRD
242131.59	4079051.45	0.00031	94.72	94.72	1.5	ANNUAL	ALL	5	FENCEGRD
242142.13	4079040.85	0.00031	94.43	94.43	1.5	ANNUAL	ALL	5	FENCEGRD
242152.66	4079030.26	0.00031	94.24	94.24	1.5	ANNUAL	ALL	5	FENCEGRD
242163.20	4079019.66	0.00031	94.1	94.1	1.5	ANNUAL	ALL	5	FENCEGRD
242173.73	4079009.07	0.00031	94.03	94.03	1.5	ANNUAL	ALL	5	FENCEGRD
242184.27	4078998.48	0.00031	94.15	94.15	1.5	ANNUAL	ALL	5	FENCEGRD
242194.80	4078987.88	0.00031	94.17	94.17	1.5	ANNUAL	ALL	5	FENCEGRD
242205.34	4078977.29	0.00031	93.82	93.82	1.5	ANNUAL	ALL	5	FENCEGRD
242215.87	4078966.69	0.00031	93.63	93.63	1.5	ANNUAL	ALL	5	FENCEGRD
242226.41	4078956.10	0.00031	93.64	93.64	1.5	ANNUAL	ALL	5	FENCEGRD
241603.74	4077829.64	0.00146	91.52	91.52	1.5	ANNUAL	ALL	5	FENCEGRD

241615.81	4077837.79	0.00154	91.47	91.47	1.5	ANNUAL	ALL	5	FENCEGRD
241627.89	4077845.93	0.00161	91.55	91.55	1.5	ANNUAL	ALL	5	FENCEGRD
241639.97	4077854.08	0.00169	91.74	91.74	1.5	ANNUAL	ALL	5	FENCEGRD
241652.04	4077862.23	0.00178	91.93	91.93	1.5	ANNUAL	ALL	5	FENCEGRD
241664.12	4077870.37	0.00186	92.08	92.08	1.5	ANNUAL	ALL	5	FENCEGRD
241676.20	4077878.52	0.00195	92.03	92.03	1.5	ANNUAL	ALL	5	FENCEGRD
241688.27	4077886.67	0.00203	91.96	91.96	1.5	ANNUAL	ALL	5	FENCEGRD
241700.35	4077894.81	0.00212	92.08	92.08	1.5	ANNUAL	ALL	5	FENCEGRD
241712.43	4077902.96	0.00221	92	92	1.5	ANNUAL	ALL	5	FENCEGRD
241724.50	4077911.11	0.0023	91.35	91.35	1.5	ANNUAL	ALL	5	FENCEGRD
241736.58	4077919.25	0.00239	91.09	91.09	1.5	ANNUAL	ALL	5	FENCEGRD
241748.65	4077927.40	0.00247	90.77	91.92	1.5	ANNUAL	ALL	5	FENCEGRD
241760.73	4077935.55	0.00256	90.89	92.29	1.5	ANNUAL	ALL	5	FENCEGRD
241772.81	4077943.70	0.00264	91.17	91.73	1.5	ANNUAL	ALL	5	FENCEGRD
241784.88	4077951.84	0.00273	91.54	91.54	1.5	ANNUAL	ALL	5	FENCEGRD
241796.96	4077959.99	0.00281	92.13	92.13	1.5	ANNUAL	ALL	5	FENCEGRD
241809.04	4077968.14	0.00289	92.42	92.42	1.5	ANNUAL	ALL	5	FENCEGRD
241821.11	4077976.28	0.00298	92.51	92.51	1.5	ANNUAL	ALL	5	FENCEGRD
241833.19	4077984.43	0.00306	92.5	92.5	1.5	ANNUAL	ALL	5	FENCEGRD
241845.27	4077992.58	0.00314	92.65	92.65	1.5	ANNUAL	ALL	5	FENCEGRD
241857.34	4078000.72	0.0032	92.73	92.73	1.5	ANNUAL	ALL	5	FENCEGRD
241591.66	4077821.49	0.0014	91.44	91.44	1.5	ANNUAL	ALL	5	FENCEGRD
241576.78	4077821.39	0.00136	91.34	91.34	1.5	ANNUAL	ALL	5	FENCEGRD
241561.89	4077821.29	0.00133	91.29	91.29	1.5	ANNUAL	ALL	5	FENCEGRD
241547.01	4077821.19	0.0013	91.44	91.44	1.5	ANNUAL	ALL	5	FENCEGRD
241532.12	4077821.08	0.00126	91.41	91.41	1.5	ANNUAL	ALL	5	FENCEGRD
241517.24	4077820.98	0.00123	91.51	91.51	1.5	ANNUAL	ALL	5	FENCEGRD
241502.36	4077820.88	0.0012	91.4	91.4	1.5	ANNUAL	ALL	5	FENCEGRD
241487.47	4077820.78	0.00117	91.17	91.17	1.5	ANNUAL	ALL	5	FENCEGRD
241472.59	4077820.68	0.00114	91.14	91.14	1.5	ANNUAL	ALL	5	FENCEGRD
241457.70	4077820.58	0.00112	91.01	91.01	1.5	ANNUAL	ALL	5	FENCEGRD
241442.82	4077820.47	0.00109	90.87	90.87	1.5	ANNUAL	ALL	5	FENCEGRD
241427.94	4077820.37	0.00107	90.85	90.85	1.5	ANNUAL	ALL	5	FENCEGRD
241413.05	4077820.27	0.00105	90.87	90.87	1.5	ANNUAL	ALL	5	FENCEGRD
241398.17	4077820.17	0.00102	90.85	90.85	1.5	ANNUAL	ALL	5	FENCEGRD
241383.28	4077820.07	0.001	90.72	90.72	1.5	ANNUAL	ALL	5	FENCEGRD
241368.40	4077819.96	0.00098	91.02	91.02	1.5	ANNUAL	ALL	5	FENCEGRD
241353.51	4077819.86	0.00097	91.19	91.19	1.5	ANNUAL	ALL	5	FENCEGRD
241338.63	4077819.76	0.00095	91.37	91.37	1.5	ANNUAL	ALL	5	FENCEGRD
241323.75	4077819.66	0.00093	91.49	91.49	1.5	ANNUAL	ALL	5	FENCEGRD
241308.86	4077819.56	0.00092	91.59	91.59	1.5	ANNUAL	ALL	5	FENCEGRD
241293.98	4077819.46	0.0009	91.67	91.67	1.5	ANNUAL	ALL	5	FENCEGRD
241279.09	4077819.35	0.00089	91.75	91.75	1.5	ANNUAL	ALL	5	FENCEGRD
241264.21	4077819.25	0.00087	91.72	91.72	1.5	ANNUAL	ALL	5	FENCEGRD
241604.58	4077729.75	0.00105	91.46	91.46	1.5	ANNUAL	ALL	5	FENCEGRD
241616.82	4077738.01	0.0011	91.53	91.53	1.5	ANNUAL	ALL	5	FENCEGRD
241629.06	4077746.26	0.00115	91.56	91.56	1.5	ANNUAL	ALL	5	FENCEGRD
241641.29	4077754.52	0.0012	91.65	91.65	1.5	ANNUAL	ALL	5	FENCEGRD
241653.53	4077762.77	0.00126	91.66	91.66	1.5	ANNUAL	ALL	5	FENCEGRD
241665.77	4077771.03	0.00131	91.72	91.72	1.5	ANNUAL	ALL	5	FENCEGRD
241678.01	4077779.28	0.00137	91.79	91.79	1.5	ANNUAL	ALL	5	FENCEGRD
241690.24	4077787.54	0.00144	91.92	91.92	1.5	ANNUAL	ALL	5	FENCEGRD
241702.48	4077795.79	0.0015	92.11	92.11	1.5	ANNUAL	ALL	5	FENCEGRD
241714.72	4077804.05	0.00156	92.34	92.34	1.5	ANNUAL	ALL	5	FENCEGRD
241726.96	4077812.30	0.00163	92.47	92.47	1.5	ANNUAL	ALL	5	FENCEGRD
241739.19	4077820.56	0.00169	92.46	92.46	1.5	ANNUAL	ALL	5	FENCEGRD
241751.43	4077828.82	0.00176	92.48	92.48	1.5	ANNUAL	ALL	5	FENCEGRD
241763.67	4077837.07	0.00183	92.54	92.54	1.5	ANNUAL	ALL	5	FENCEGRD
241775.91	4077845.33	0.00189	92.52	92.52	1.5	ANNUAL	ALL	5	FENCEGRD
241788.14	4077853.58	0.00196	92.61	92.61	1.5	ANNUAL	ALL	5	FENCEGRD
241800.38	4077861.84	0.00202	92.64	92.64	1.5	ANNUAL	ALL	5	FENCEGRD
241812.62	4077870.09	0.00208	92.72	92.72	1.5	ANNUAL	ALL	5	FENCEGRD
241824.86	4077878.35	0.00215	92.84	92.84	1.5	ANNUAL	ALL	5	FENCEGRD
241837.09	4077886.60	0.0022	92.74	92.74	1.5	ANNUAL	ALL	5	FENCEGRD
241849.33	4077894.86	0.00226	92.67	92.67	1.5	ANNUAL	ALL	5	FENCEGRD
241861.57	4077903.12	0.00231	92.67	92.67	1.5	ANNUAL	ALL	5	FENCEGRD
241873.81	4077911.37	0.00236	92.66	92.66	1.5	ANNUAL	ALL	5	FENCEGRD
241886.04	4077919.63	0.0024	92.66	92.66	1.5	ANNUAL	ALL	5	FENCEGRD

241898.28	4077927.88	0.00243	92.67	92.67	1.5	ANNUAL	ALL	5	FENCEGRD
241910.52	4077936.14	0.00245	92.75	92.75	1.5	ANNUAL	ALL	5	FENCEGRD
241922.76	4077944.39	0.00246	92.78	92.78	1.5	ANNUAL	ALL	5	FENCEGRD
242016.56	4078730.08	0.00056	93.97	93.97	1.5	ANNUAL	ALL	5	FENCEGRD
241592.34	4077721.49	0.00101	91.39	91.39	1.5	ANNUAL	ALL	5	FENCEGRD
241577.46	4077721.39	0.00099	91.41	91.41	1.5	ANNUAL	ALL	5	FENCEGRD
241562.58	4077721.29	0.00096	91.3	91.3	1.5	ANNUAL	ALL	5	FENCEGRD
241547.69	4077721.19	0.00094	91.32	91.32	1.5	ANNUAL	ALL	5	FENCEGRD
241532.81	4077721.09	0.00092	91.26	91.26	1.5	ANNUAL	ALL	5	FENCEGRD
241517.92	4077720.98	0.0009	91.41	91.41	1.5	ANNUAL	ALL	5	FENCEGRD
241503.04	4077720.88	0.00088	91.4	91.4	1.5	ANNUAL	ALL	5	FENCEGRD
241488.16	4077720.78	0.00086	91.38	91.38	1.5	ANNUAL	ALL	5	FENCEGRD
241473.27	4077720.68	0.00085	91.33	91.33	1.5	ANNUAL	ALL	5	FENCEGRD
241458.39	4077720.58	0.00083	91.24	91.24	1.5	ANNUAL	ALL	5	FENCEGRD
241443.50	4077720.48	0.00081	91.21	91.21	1.5	ANNUAL	ALL	5	FENCEGRD
241428.62	4077720.37	0.0008	91.14	91.14	1.5	ANNUAL	ALL	5	FENCEGRD
241413.74	4077720.27	0.00078	91.07	91.07	1.5	ANNUAL	ALL	5	FENCEGRD
241398.85	4077720.17	0.00077	91.05	91.05	1.5	ANNUAL	ALL	5	FENCEGRD
241383.97	4077720.07	0.00076	91.03	91.03	1.5	ANNUAL	ALL	5	FENCEGRD
241369.08	4077719.97	0.00074	90.99	90.99	1.5	ANNUAL	ALL	5	FENCEGRD
241354.20	4077719.86	0.00073	90.94	90.94	1.5	ANNUAL	ALL	5	FENCEGRD
241339.31	4077719.76	0.00072	90.94	90.94	1.5	ANNUAL	ALL	5	FENCEGRD
241324.43	4077719.66	0.00071	90.95	90.95	1.5	ANNUAL	ALL	5	FENCEGRD
241309.55	4077719.56	0.0007	91.01	91.01	1.5	ANNUAL	ALL	5	FENCEGRD
241294.66	4077719.46	0.00069	91.16	91.16	1.5	ANNUAL	ALL	5	FENCEGRD
241279.78	4077719.36	0.00068	91.17	91.17	1.5	ANNUAL	ALL	5	FENCEGRD
241264.89	4077719.25	0.00067	91.12	91.12	1.5	ANNUAL	ALL	5	FENCEGRD
241605.15	4077629.67	0.00079	91.89	91.89	1.5	ANNUAL	ALL	5	FENCEGRD
241617.27	4077637.85	0.00082	91.81	91.81	1.5	ANNUAL	ALL	5	FENCEGRD
241629.39	4077646.03	0.00086	91.84	91.84	1.5	ANNUAL	ALL	5	FENCEGRD
241641.52	4077654.21	0.00089	91.92	91.92	1.5	ANNUAL	ALL	5	FENCEGRD
241653.64	4077662.38	0.00093	91.92	91.92	1.5	ANNUAL	ALL	5	FENCEGRD
241665.76	4077670.56	0.00097	91.97	91.97	1.5	ANNUAL	ALL	5	FENCEGRD
241677.88	4077678.74	0.001	92.02	92.02	1.5	ANNUAL	ALL	5	FENCEGRD
241690.00	4077686.92	0.00105	92.1	92.1	1.5	ANNUAL	ALL	5	FENCEGRD
241702.13	4077695.10	0.00109	92.2	92.2	1.5	ANNUAL	ALL	5	FENCEGRD
241714.25	4077703.27	0.00113	92.31	92.31	1.5	ANNUAL	ALL	5	FENCEGRD
241726.37	4077711.45	0.00118	92.4	92.4	1.5	ANNUAL	ALL	5	FENCEGRD
241738.49	4077719.63	0.00123	92.47	92.47	1.5	ANNUAL	ALL	5	FENCEGRD
241750.62	4077727.81	0.00128	92.48	92.48	1.5	ANNUAL	ALL	5	FENCEGRD
241762.74	4077735.98	0.00133	92.48	92.48	1.5	ANNUAL	ALL	5	FENCEGRD
241774.86	4077744.16	0.00138	92.47	92.47	1.5	ANNUAL	ALL	5	FENCEGRD
241786.98	4077752.34	0.00143	92.49	92.49	1.5	ANNUAL	ALL	5	FENCEGRD
241799.10	4077760.52	0.00148	92.54	92.54	1.5	ANNUAL	ALL	5	FENCEGRD
241811.23	4077768.69	0.00153	92.58	92.58	1.5	ANNUAL	ALL	5	FENCEGRD
241823.35	4077776.87	0.00158	92.66	92.66	1.5	ANNUAL	ALL	5	FENCEGRD
241835.47	4077785.05	0.00163	92.74	92.74	1.5	ANNUAL	ALL	5	FENCEGRD
241847.59	4077793.23	0.00167	92.73	92.73	1.5	ANNUAL	ALL	5	FENCEGRD
241859.71	4077801.40	0.00172	92.8	92.8	1.5	ANNUAL	ALL	5	FENCEGRD
241871.84	4077809.58	0.00177	92.87	92.87	1.5	ANNUAL	ALL	5	FENCEGRD
241883.96	4077817.76	0.00181	92.85	92.85	1.5	ANNUAL	ALL	5	FENCEGRD
241896.08	4077825.94	0.00185	92.86	92.86	1.5	ANNUAL	ALL	5	FENCEGRD
241908.20	4077834.12	0.00189	92.87	92.87	1.5	ANNUAL	ALL	5	FENCEGRD
241920.32	4077842.29	0.00192	92.89	92.89	1.5	ANNUAL	ALL	5	FENCEGRD
241932.45	4077850.47	0.00195	92.92	92.92	1.5	ANNUAL	ALL	5	FENCEGRD
241944.57	4077858.65	0.00197	92.91	92.91	1.5	ANNUAL	ALL	5	FENCEGRD
241956.69	4077866.83	0.00199	92.93	92.93	1.5	ANNUAL	ALL	5	FENCEGRD
241968.81	4077875.00	0.00199	92.92	92.92	1.5	ANNUAL	ALL	5	FENCEGRD
241980.93	4077883.18	0.002	92.88	92.88	1.5	ANNUAL	ALL	5	FENCEGRD
242118.76	4078642.96	0.00052	93.78	93.78	1.5	ANNUAL	ALL	5	FENCEGRD
242115.91	4078657.30	0.00051	94.05	94.05	1.5	ANNUAL	ALL	5	FENCEGRD
242113.07	4078671.65	0.0005	94.21	94.21	1.5	ANNUAL	ALL	5	FENCEGRD
242110.22	4078685.99	0.0005	94.2	94.2	1.5	ANNUAL	ALL	5	FENCEGRD
242107.37	4078700.33	0.00049	93.89	93.89	1.5	ANNUAL	ALL	5	FENCEGRD
242104.52	4078714.67	0.00048	93.73	93.73	1.5	ANNUAL	ALL	5	FENCEGRD
242101.68	4078729.02	0.00048	93.58	93.58	1.5	ANNUAL	ALL	5	FENCEGRD
242098.83	4078743.36	0.00047	93.56	93.56	1.5	ANNUAL	ALL	5	FENCEGRD
242095.98	4078757.70	0.00047	93.53	93.53	1.5	ANNUAL	ALL	5	FENCEGRD

242093.14	4078772.04	0.00046	93.58	93.58	1.5	ANNUAL	ALL	5	FENCEGRD
242090.29	4078786.39	0.00045	93.71	93.71	1.5	ANNUAL	ALL	5	FENCEGRD
242087.44	4078800.73	0.00045	93.87	93.87	1.5	ANNUAL	ALL	5	FENCEGRD
241593.03	4077621.50	0.00076	91.83	91.83	1.5	ANNUAL	ALL	5	FENCEGRD
241578.14	4077621.39	0.00075	91.76	91.76	1.5	ANNUAL	ALL	5	FENCEGRD
241563.26	4077621.29	0.00073	91.68	91.68	1.5	ANNUAL	ALL	5	FENCEGRD
241548.38	4077621.19	0.00072	91.64	91.64	1.5	ANNUAL	ALL	5	FENCEGRD
241533.49	4077621.09	0.0007	91.59	91.59	1.5	ANNUAL	ALL	5	FENCEGRD
241518.61	4077620.99	0.00069	91.55	91.55	1.5	ANNUAL	ALL	5	FENCEGRD
241503.72	4077620.89	0.00068	91.52	91.52	1.5	ANNUAL	ALL	5	FENCEGRD
241488.84	4077620.78	0.00067	91.48	91.48	1.5	ANNUAL	ALL	5	FENCEGRD
241473.96	4077620.68	0.00065	91.4	91.4	1.5	ANNUAL	ALL	5	FENCEGRD
241459.07	4077620.58	0.00064	91.32	91.32	1.5	ANNUAL	ALL	5	FENCEGRD
241444.19	4077620.48	0.00063	91.18	91.18	1.5	ANNUAL	ALL	5	FENCEGRD
241429.30	4077620.38	0.00062	90.97	90.97	1.5	ANNUAL	ALL	5	FENCEGRD
241414.42	4077620.27	0.00061	91.04	91.04	1.5	ANNUAL	ALL	5	FENCEGRD
241399.54	4077620.17	0.0006	91.01	91.01	1.5	ANNUAL	ALL	5	FENCEGRD
241384.65	4077620.07	0.00059	91.05	91.05	1.5	ANNUAL	ALL	5	FENCEGRD
241369.77	4077619.97	0.00059	90.99	90.99	1.5	ANNUAL	ALL	5	FENCEGRD
241354.88	4077619.87	0.00058	90.94	90.94	1.5	ANNUAL	ALL	5	FENCEGRD
241340.00	4077619.77	0.00057	90.83	90.83	1.5	ANNUAL	ALL	5	FENCEGRD
241325.11	4077619.66	0.00056	90.8	90.8	1.5	ANNUAL	ALL	5	FENCEGRD
241310.23	4077619.56	0.00056	90.78	90.78	1.5	ANNUAL	ALL	5	FENCEGRD
241295.35	4077619.46	0.00055	90.87	90.87	1.5	ANNUAL	ALL	5	FENCEGRD
241280.46	4077619.36	0.00054	91.01	91.01	1.5	ANNUAL	ALL	5	FENCEGRD
241265.58	4077619.26	0.00054	90.79	90.79	1.5	ANNUAL	ALL	5	FENCEGRD
241605.95	4077529.75	0.00062	92.07	92.07	1.5	ANNUAL	ALL	5	FENCEGRD
241618.19	4077538.01	0.00064	91.99	91.99	1.5	ANNUAL	ALL	5	FENCEGRD
241630.42	4077546.27	0.00066	91.94	91.94	1.5	ANNUAL	ALL	5	FENCEGRD
241642.66	4077554.52	0.00069	91.86	91.86	1.5	ANNUAL	ALL	5	FENCEGRD
241654.90	4077562.78	0.00071	91.81	91.81	1.5	ANNUAL	ALL	5	FENCEGRD
241667.14	4077571.03	0.00074	91.63	91.63	1.5	ANNUAL	ALL	5	FENCEGRD
241679.37	4077579.29	0.00077	91.8	91.8	1.5	ANNUAL	ALL	5	FENCEGRD
241691.61	4077587.54	0.0008	92	92	1.5	ANNUAL	ALL	5	FENCEGRD
241703.85	4077595.80	0.00083	92.13	92.13	1.5	ANNUAL	ALL	5	FENCEGRD
241716.09	4077604.05	0.00086	91.05	91.05	1.5	ANNUAL	ALL	5	FENCEGRD
241728.32	4077612.31	0.00089	89.65	92.19	1.5	ANNUAL	ALL	5	FENCEGRD
241740.56	4077620.57	0.00092	89.6	89.6	1.5	ANNUAL	ALL	5	FENCEGRD
241752.80	4077628.82	0.00096	89.33	92.19	1.5	ANNUAL	ALL	5	FENCEGRD
241765.04	4077637.08	0.001	90.13	92.34	1.5	ANNUAL	ALL	5	FENCEGRD
241777.27	4077645.33	0.00104	91.8	92.34	1.5	ANNUAL	ALL	5	FENCEGRD
241789.51	4077653.59	0.00107	92.37	92.37	1.5	ANNUAL	ALL	5	FENCEGRD
241801.75	4077661.84	0.00111	92.45	92.45	1.5	ANNUAL	ALL	5	FENCEGRD
241813.99	4077670.10	0.00115	92.51	92.51	1.5	ANNUAL	ALL	5	FENCEGRD
241826.22	4077678.35	0.00119	92.61	92.61	1.5	ANNUAL	ALL	5	FENCEGRD
241838.46	4077686.61	0.00123	92.66	92.66	1.5	ANNUAL	ALL	5	FENCEGRD
241850.70	4077694.86	0.00127	92.69	92.69	1.5	ANNUAL	ALL	5	FENCEGRD
241862.94	4077703.12	0.00131	92.71	92.71	1.5	ANNUAL	ALL	5	FENCEGRD
241875.17	4077711.38	0.00135	92.76	92.76	1.5	ANNUAL	ALL	5	FENCEGRD
241887.41	4077719.63	0.00139	92.8	92.8	1.5	ANNUAL	ALL	5	FENCEGRD
241899.65	4077727.89	0.00143	92.85	92.85	1.5	ANNUAL	ALL	5	FENCEGRD
241911.89	4077736.14	0.00147	92.78	92.78	1.5	ANNUAL	ALL	5	FENCEGRD
241924.12	4077744.40	0.0015	92.75	92.75	1.5	ANNUAL	ALL	5	FENCEGRD
241936.36	4077752.65	0.00153	92.77	92.77	1.5	ANNUAL	ALL	5	FENCEGRD
241948.60	4077760.91	0.00156	92.81	92.81	1.5	ANNUAL	ALL	5	FENCEGRD
241960.84	4077769.16	0.00159	92.83	92.83	1.5	ANNUAL	ALL	5	FENCEGRD
241973.07	4077777.42	0.00162	92.86	92.86	1.5	ANNUAL	ALL	5	FENCEGRD
241985.31	4077785.68	0.00164	92.89	92.89	1.5	ANNUAL	ALL	5	FENCEGRD
241997.55	4077793.93	0.00165	92.93	92.93	1.5	ANNUAL	ALL	5	FENCEGRD
242009.79	4077802.19	0.00167	92.96	92.96	1.5	ANNUAL	ALL	5	FENCEGRD
242022.02	4077810.44	0.00167	92.95	92.95	1.5	ANNUAL	ALL	5	FENCEGRD
242034.26	4077818.70	0.00168	93.02	93.02	1.5	ANNUAL	ALL	5	FENCEGRD
242221.61	4078552.56	0.00048	93.87	93.87	1.5	ANNUAL	ALL	5	FENCEGRD
242218.74	4078567.04	0.00047	93.95	93.95	1.5	ANNUAL	ALL	5	FENCEGRD
242215.86	4078581.52	0.00047	93.63	93.63	1.5	ANNUAL	ALL	5	FENCEGRD
242212.99	4078596.00	0.00046	93.65	93.65	1.5	ANNUAL	ALL	5	FENCEGRD
242210.11	4078610.48	0.00045	93.94	93.94	1.5	ANNUAL	ALL	5	FENCEGRD
242207.24	4078624.96	0.00045	93.98	93.98	1.5	ANNUAL	ALL	5	FENCEGRD

242204.37	4078639.44	0.00044	94.04	94.04	1.5	ANNUAL	ALL	5	FENCEGRD
242201.49	4078653.92	0.00044	94.02	94.02	1.5	ANNUAL	ALL	5	FENCEGRD
242198.62	4078668.40	0.00043	93.98	93.98	1.5	ANNUAL	ALL	5	FENCEGRD
242195.74	4078682.88	0.00043	93.58	93.58	1.5	ANNUAL	ALL	5	FENCEGRD
242192.87	4078697.35	0.00042	93.43	93.43	1.5	ANNUAL	ALL	5	FENCEGRD
242189.99	4078711.83	0.00042	93.73	93.73	1.5	ANNUAL	ALL	5	FENCEGRD
242187.12	4078726.31	0.00041	93.84	93.84	1.5	ANNUAL	ALL	5	FENCEGRD
242184.24	4078740.79	0.00041	93.81	93.81	1.5	ANNUAL	ALL	5	FENCEGRD
242181.37	4078755.27	0.0004	93.55	93.55	1.5	ANNUAL	ALL	5	FENCEGRD
242178.50	4078769.75	0.0004	93.29	93.29	1.5	ANNUAL	ALL	5	FENCEGRD
242175.62	4078784.23	0.00039	93.36	93.36	1.5	ANNUAL	ALL	5	FENCEGRD
242172.75	4078798.71	0.00039	93.45	93.45	1.5	ANNUAL	ALL	5	FENCEGRD
242169.87	4078813.19	0.00039	93.5	93.5	1.5	ANNUAL	ALL	5	FENCEGRD
242167.00	4078827.67	0.00038	93.61	93.61	1.5	ANNUAL	ALL	5	FENCEGRD
242164.12	4078842.15	0.00038	93.75	93.75	1.5	ANNUAL	ALL	5	FENCEGRD
242161.25	4078856.63	0.00037	93.86	93.86	1.5	ANNUAL	ALL	5	FENCEGRD
242158.38	4078871.11	0.00037	93.91	93.91	1.5	ANNUAL	ALL	5	FENCEGRD
241593.71	4077521.50	0.0006	91.35	91.35	1.5	ANNUAL	ALL	5	FENCEGRD
241578.83	4077521.40	0.00059	91.29	91.29	1.5	ANNUAL	ALL	5	FENCEGRD
241563.94	4077521.30	0.00058	91.24	91.24	1.5	ANNUAL	ALL	5	FENCEGRD
241549.06	4077521.19	0.00057	91.18	91.18	1.5	ANNUAL	ALL	5	FENCEGRD
241534.18	4077521.09	0.00056	91.17	91.17	1.5	ANNUAL	ALL	5	FENCEGRD
241519.29	4077520.99	0.00055	91.11	91.11	1.5	ANNUAL	ALL	5	FENCEGRD
241504.41	4077520.89	0.00054	91.07	91.07	1.5	ANNUAL	ALL	5	FENCEGRD
241489.52	4077520.79	0.00053	91.04	91.04	1.5	ANNUAL	ALL	5	FENCEGRD
241474.64	4077520.68	0.00052	91.02	91.02	1.5	ANNUAL	ALL	5	FENCEGRD
241459.76	4077520.58	0.00052	90.97	90.97	1.5	ANNUAL	ALL	5	FENCEGRD
241444.87	4077520.48	0.00051	90.96	90.96	1.5	ANNUAL	ALL	5	FENCEGRD
241429.99	4077520.38	0.0005	90.93	90.93	1.5	ANNUAL	ALL	5	FENCEGRD
241415.10	4077520.28	0.00049	91.06	91.06	1.5	ANNUAL	ALL	5	FENCEGRD
241400.22	4077520.18	0.00049	91.56	91.56	1.5	ANNUAL	ALL	5	FENCEGRD
241385.34	4077520.07	0.00048	91.07	91.07	1.5	ANNUAL	ALL	5	FENCEGRD
241370.45	4077519.97	0.00048	90.78	90.78	1.5	ANNUAL	ALL	5	FENCEGRD
241355.57	4077519.87	0.00047	90.63	90.63	1.5	ANNUAL	ALL	5	FENCEGRD
241340.68	4077519.77	0.00047	90.58	90.58	1.5	ANNUAL	ALL	5	FENCEGRD
241325.80	4077519.67	0.00046	90.56	90.56	1.5	ANNUAL	ALL	5	FENCEGRD
241310.91	4077519.56	0.00046	90.53	90.53	1.5	ANNUAL	ALL	5	FENCEGRD
241296.03	4077519.46	0.00045	90.53	90.53	1.5	ANNUAL	ALL	5	FENCEGRD
241281.15	4077519.36	0.00045	90.55	90.55	1.5	ANNUAL	ALL	5	FENCEGRD
241266.26	4077519.26	0.00044	90.56	90.56	1.5	ANNUAL	ALL	5	FENCEGRD
241606.73	4077429.82	0.0005	89.84	89.84	1.5	ANNUAL	ALL	5	FENCEGRD
241619.05	4077438.14	0.00051	89.9	89.9	1.5	ANNUAL	ALL	5	FENCEGRD
241631.38	4077446.45	0.00053	89.9	89.9	1.5	ANNUAL	ALL	5	FENCEGRD
241643.71	4077454.77	0.00055	89.93	89.93	1.5	ANNUAL	ALL	5	FENCEGRD
241656.04	4077463.09	0.00056	90.23	90.23	1.5	ANNUAL	ALL	5	FENCEGRD
241668.37	4077471.40	0.00058	90.8	90.8	1.5	ANNUAL	ALL	5	FENCEGRD
241680.70	4077479.72	0.0006	91.37	91.37	1.5	ANNUAL	ALL	5	FENCEGRD
241693.03	4077488.04	0.00063	91.47	91.47	1.5	ANNUAL	ALL	5	FENCEGRD
241705.36	4077496.36	0.00065	91.01	91.01	1.5	ANNUAL	ALL	5	FENCEGRD
241717.68	4077504.67	0.00067	90.74	90.74	1.5	ANNUAL	ALL	5	FENCEGRD
241730.01	4077512.99	0.00069	90.86	90.86	1.5	ANNUAL	ALL	5	FENCEGRD
241742.34	4077521.31	0.00072	91.15	91.15	1.5	ANNUAL	ALL	5	FENCEGRD
241754.67	4077529.62	0.00074	91.52	91.52	1.5	ANNUAL	ALL	5	FENCEGRD
241767.00	4077537.94	0.00077	91.84	91.84	1.5	ANNUAL	ALL	5	FENCEGRD
241779.33	4077546.26	0.0008	92.06	92.06	1.5	ANNUAL	ALL	5	FENCEGRD
241791.66	4077554.58	0.00083	92.21	92.21	1.5	ANNUAL	ALL	5	FENCEGRD
241803.99	4077562.89	0.00086	92.22	92.22	1.5	ANNUAL	ALL	5	FENCEGRD
241816.32	4077571.21	0.00089	92.11	92.11	1.5	ANNUAL	ALL	5	FENCEGRD
241828.64	4077579.53	0.00092	91.98	91.98	1.5	ANNUAL	ALL	5	FENCEGRD
241840.97	4077587.84	0.00095	91.77	91.77	1.5	ANNUAL	ALL	5	FENCEGRD
241853.30	4077596.16	0.00098	91.57	91.57	1.5	ANNUAL	ALL	5	FENCEGRD
241865.63	4077604.48	0.00101	91.58	91.58	1.5	ANNUAL	ALL	5	FENCEGRD
241877.96	4077612.80	0.00105	91.83	91.83	1.5	ANNUAL	ALL	5	FENCEGRD
241890.29	4077621.11	0.00108	91.27	91.27	1.5	ANNUAL	ALL	5	FENCEGRD
241902.62	4077629.43	0.00111	90.79	90.79	1.5	ANNUAL	ALL	5	FENCEGRD
241914.95	4077637.75	0.00114	90.77	90.77	1.5	ANNUAL	ALL	5	FENCEGRD
241927.27	4077646.06	0.00117	90.57	90.57	1.5	ANNUAL	ALL	5	FENCEGRD
241939.60	4077654.38	0.0012	90.43	90.43	1.5	ANNUAL	ALL	5	FENCEGRD

241951.93	4077662.70	0.00123	90.43	90.43	1.5	ANNUAL	ALL	5	FENCEGRD
241964.26	4077671.02	0.00126	90.48	90.48	1.5	ANNUAL	ALL	5	FENCEGRD
241976.59	4077679.33	0.00129	90.59	90.59	1.5	ANNUAL	ALL	5	FENCEGRD
241988.92	4077687.65	0.00132	90.66	91.39	1.5	ANNUAL	ALL	5	FENCEGRD
242001.25	4077695.97	0.00134	90.78	91.77	1.5	ANNUAL	ALL	5	FENCEGRD
242013.58	4077704.28	0.00136	90.83	90.83	1.5	ANNUAL	ALL	5	FENCEGRD
242025.91	4077712.60	0.00138	91.01	91.01	1.5	ANNUAL	ALL	5	FENCEGRD
242038.23	4077720.92	0.0014	91.09	91.42	1.5	ANNUAL	ALL	5	FENCEGRD
242050.56	4077729.24	0.00141	91.06	91.75	1.5	ANNUAL	ALL	5	FENCEGRD
242062.89	4077737.55	0.00142	91.04	91.66	1.5	ANNUAL	ALL	5	FENCEGRD
242075.22	4077745.87	0.00143	91.02	91.02	1.5	ANNUAL	ALL	5	FENCEGRD
242087.55	4077754.19	0.00143	91.16	92.47	1.5	ANNUAL	ALL	5	FENCEGRD
242099.88	4077762.50	0.00143	92.5	92.5	1.5	ANNUAL	ALL	5	FENCEGRD
242173.85	4077812.41	0.00136	90.38	90.38	1.5	ANNUAL	ALL	5	FENCEGRD
242186.18	4077820.72	0.00133	90.4	90.4	1.5	ANNUAL	ALL	5	FENCEGRD
242198.51	4077829.04	0.00131	90.48	90.48	1.5	ANNUAL	ALL	5	FENCEGRD
242210.84	4077837.36	0.00128	90.46	90.46	1.5	ANNUAL	ALL	5	FENCEGRD
242223.17	4077845.68	0.00125	90.3	90.3	1.5	ANNUAL	ALL	5	FENCEGRD
242235.50	4077853.99	0.00122	90.3	90.3	1.5	ANNUAL	ALL	5	FENCEGRD
242247.82	4077862.31	0.00119	90.36	90.36	1.5	ANNUAL	ALL	5	FENCEGRD
242260.15	4077870.63	0.00116	90.42	90.42	1.5	ANNUAL	ALL	5	FENCEGRD
242272.48	4077878.94	0.00112	90.45	90.45	1.5	ANNUAL	ALL	5	FENCEGRD
242284.81	4077887.26	0.00109	90.44	90.44	1.5	ANNUAL	ALL	5	FENCEGRD
242297.14	4077895.58	0.00105	90.46	90.46	1.5	ANNUAL	ALL	5	FENCEGRD
242309.47	4077903.90	0.00102	90.5	90.5	1.5	ANNUAL	ALL	5	FENCEGRD
242321.80	4077912.21	0.00099	90.45	90.45	1.5	ANNUAL	ALL	5	FENCEGRD
242334.13	4077920.53	0.00095	90.4	90.4	1.5	ANNUAL	ALL	5	FENCEGRD
242346.45	4077928.85	0.00092	90.4	90.4	1.5	ANNUAL	ALL	5	FENCEGRD
242358.78	4077937.16	0.00089	90.45	90.45	1.5	ANNUAL	ALL	5	FENCEGRD
242371.11	4077945.48	0.00086	90.53	90.53	1.5	ANNUAL	ALL	5	FENCEGRD
242383.44	4077953.80	0.00083	90.57	90.57	1.5	ANNUAL	ALL	5	FENCEGRD
242395.77	4077962.12	0.0008	90.56	90.56	1.5	ANNUAL	ALL	5	FENCEGRD
242408.10	4077970.43	0.00077	90.56	90.56	1.5	ANNUAL	ALL	5	FENCEGRD
242417.53	4077993.34	0.00073	90.65	90.65	1.5	ANNUAL	ALL	5	FENCEGRD
242414.64	4078007.92	0.00072	90.64	90.64	1.5	ANNUAL	ALL	5	FENCEGRD
242411.74	4078022.51	0.00071	90.7	90.7	1.5	ANNUAL	ALL	5	FENCEGRD
242408.84	4078037.10	0.00071	90.97	90.97	1.5	ANNUAL	ALL	5	FENCEGRD
242405.95	4078051.69	0.0007	91.55	91.55	1.5	ANNUAL	ALL	5	FENCEGRD
242324.87	4078460.13	0.00045	94.07	94.07	1.5	ANNUAL	ALL	5	FENCEGRD
242321.97	4078474.72	0.00044	93.93	93.93	1.5	ANNUAL	ALL	5	FENCEGRD
242319.07	4078489.30	0.00044	94.16	94.16	1.5	ANNUAL	ALL	5	FENCEGRD
242316.18	4078503.89	0.00043	94.33	94.33	1.5	ANNUAL	ALL	5	FENCEGRD
242313.28	4078518.48	0.00042	94.32	94.32	1.5	ANNUAL	ALL	5	FENCEGRD
242310.39	4078533.07	0.00042	94.25	94.25	1.5	ANNUAL	ALL	5	FENCEGRD
242307.49	4078547.65	0.00041	94.21	94.21	1.5	ANNUAL	ALL	5	FENCEGRD
242304.60	4078562.24	0.00041	94.01	94.01	1.5	ANNUAL	ALL	5	FENCEGRD
242301.70	4078576.83	0.0004	93.83	93.83	1.5	ANNUAL	ALL	5	FENCEGRD
242298.80	4078591.42	0.0004	93.99	93.99	1.5	ANNUAL	ALL	5	FENCEGRD
242295.91	4078606.00	0.00039	94.18	94.18	1.5	ANNUAL	ALL	5	FENCEGRD
242293.01	4078620.59	0.00039	94.18	94.18	1.5	ANNUAL	ALL	5	FENCEGRD
242290.12	4078635.18	0.00038	94.17	94.17	1.5	ANNUAL	ALL	5	FENCEGRD
242287.22	4078649.77	0.00038	94.07	94.07	1.5	ANNUAL	ALL	5	FENCEGRD
242284.32	4078664.35	0.00038	93.98	93.98	1.5	ANNUAL	ALL	5	FENCEGRD
242281.43	4078678.94	0.00037	93.88	93.88	1.5	ANNUAL	ALL	5	FENCEGRD
242278.53	4078693.53	0.00037	93.77	93.77	1.5	ANNUAL	ALL	5	FENCEGRD
242275.64	4078708.11	0.00036	93.65	93.65	1.5	ANNUAL	ALL	5	FENCEGRD
242272.74	4078722.70	0.00036	93.3	93.3	1.5	ANNUAL	ALL	5	FENCEGRD
242269.85	4078737.29	0.00036	93.49	93.49	1.5	ANNUAL	ALL	5	FENCEGRD
242266.95	4078751.88	0.00035	93.52	93.52	1.5	ANNUAL	ALL	5	FENCEGRD
242264.05	4078766.46	0.00035	93.37	93.37	1.5	ANNUAL	ALL	5	FENCEGRD
242261.16	4078781.05	0.00035	93.24	93.24	1.5	ANNUAL	ALL	5	FENCEGRD
242258.26	4078795.64	0.00034	93.17	93.17	1.5	ANNUAL	ALL	5	FENCEGRD
242255.37	4078810.23	0.00034	93.19	93.19	1.5	ANNUAL	ALL	5	FENCEGRD
242252.47	4078824.81	0.00034	93.19	93.19	1.5	ANNUAL	ALL	5	FENCEGRD
242249.58	4078839.40	0.00033	93.31	93.31	1.5	ANNUAL	ALL	5	FENCEGRD
242246.68	4078853.99	0.00033	93.42	93.42	1.5	ANNUAL	ALL	5	FENCEGRD
242243.78	4078868.57	0.00033	93.55	93.55	1.5	ANNUAL	ALL	5	FENCEGRD
242240.89	4078883.16	0.00032	93.66	93.66	1.5	ANNUAL	ALL	5	FENCEGRD

242237.99	4078897.75	0.00032	93.78	93.78	1.5	ANNUAL	ALL	5	FENCEGRD
242235.10	4078912.34	0.00031	93.87	93.87	1.5	ANNUAL	ALL	5	FENCEGRD
242232.20	4078926.92	0.00031	93.97	93.97	1.5	ANNUAL	ALL	5	FENCEGRD
242229.30	4078941.51	0.00031	93.74	93.74	1.5	ANNUAL	ALL	5	FENCEGRD
241594.40	4077421.50	0.00048	89.82	89.82	1.5	ANNUAL	ALL	5	FENCEGRD
241579.51	4077421.40	0.00047	89.86	89.86	1.5	ANNUAL	ALL	5	FENCEGRD
241564.63	4077421.30	0.00047	89.86	89.86	1.5	ANNUAL	ALL	5	FENCEGRD
241549.74	4077421.20	0.00046	89.85	89.85	1.5	ANNUAL	ALL	5	FENCEGRD
241534.86	4077421.09	0.00045	89.93	89.93	1.5	ANNUAL	ALL	5	FENCEGRD
241519.98	4077420.99	0.00045	90.3	90.3	1.5	ANNUAL	ALL	5	FENCEGRD
241505.09	4077420.89	0.00044	90.54	90.54	1.5	ANNUAL	ALL	5	FENCEGRD
241490.21	4077420.79	0.00044	90.33	90.33	1.5	ANNUAL	ALL	5	FENCEGRD
241475.32	4077420.69	0.00043	90.09	90.09	1.5	ANNUAL	ALL	5	FENCEGRD
241460.44	4077420.58	0.00042	89.96	89.96	1.5	ANNUAL	ALL	5	FENCEGRD
241445.56	4077420.48	0.00042	90.13	90.13	1.5	ANNUAL	ALL	5	FENCEGRD
241430.67	4077420.38	0.00041	90.35	90.35	1.5	ANNUAL	ALL	5	FENCEGRD
241415.79	4077420.28	0.00041	90.25	90.25	1.5	ANNUAL	ALL	5	FENCEGRD
241400.90	4077420.18	0.0004	90.28	90.28	1.5	ANNUAL	ALL	5	FENCEGRD
241386.02	4077420.08	0.0004	90.5	90.5	1.5	ANNUAL	ALL	5	FENCEGRD
241371.14	4077419.97	0.0004	90.4	90.4	1.5	ANNUAL	ALL	5	FENCEGRD
241356.25	4077419.87	0.00039	90.36	90.36	1.5	ANNUAL	ALL	5	FENCEGRD
241341.37	4077419.77	0.00039	90.36	90.36	1.5	ANNUAL	ALL	5	FENCEGRD
241326.48	4077419.67	0.00038	90.39	90.39	1.5	ANNUAL	ALL	5	FENCEGRD
241311.60	4077419.57	0.00038	90.42	90.42	1.5	ANNUAL	ALL	5	FENCEGRD
241296.71	4077419.46	0.00038	90.42	90.42	1.5	ANNUAL	ALL	5	FENCEGRD
241281.83	4077419.36	0.00037	90.45	90.45	1.5	ANNUAL	ALL	5	FENCEGRD
241266.95	4077419.26	0.00037	90.48	90.48	1.5	ANNUAL	ALL	5	FENCEGRD
241231.54	4078346.66	0.01177	92.93	92.93	1.5	ANNUAL	ALL	5	FENCEGRD
241231.19	4078360.72	0.01212	92.73	92.73	1.5	ANNUAL	ALL	5	FENCEGRD
241230.50	4078388.84	0.01271	93	93	1.5	ANNUAL	ALL	5	FENCEGRD
241230.16	4078402.90	0.01284	93.03	93.03	1.5	ANNUAL	ALL	5	FENCEGRD
241229.81	4078416.96	0.01285	93.03	93.03	1.5	ANNUAL	ALL	5	FENCEGRD
241229.47	4078431.02	0.01283	93.09	93.09	1.5	ANNUAL	ALL	5	FENCEGRD
241229.13	4078445.08	0.01289	93.1	93.1	1.5	ANNUAL	ALL	5	FENCEGRD
241228.78	4078459.14	0.01307	93.09	93.09	1.5	ANNUAL	ALL	5	FENCEGRD
241228.44	4078473.20	0.01339	93.09	93.09	1.5	ANNUAL	ALL	5	FENCEGRD
241228.09	4078487.26	0.01381	93.09	93.09	1.5	ANNUAL	ALL	5	FENCEGRD
241227.75	4078501.32	0.01439	93.02	93.02	1.5	ANNUAL	ALL	5	FENCEGRD
241217.26	4078346.31	0.01044	93.06	93.06	1.5	ANNUAL	ALL	5	FENCEGRD
241216.91	4078360.37	0.01057	92.78	92.78	1.5	ANNUAL	ALL	5	FENCEGRD
241216.22	4078388.49	0.01094	93.1	93.1	1.5	ANNUAL	ALL	5	FENCEGRD
241215.88	4078402.55	0.01109	93.13	93.13	1.5	ANNUAL	ALL	5	FENCEGRD
241215.53	4078416.61	0.01118	93.13	93.13	1.5	ANNUAL	ALL	5	FENCEGRD
241215.19	4078430.67	0.01125	93.19	93.19	1.5	ANNUAL	ALL	5	FENCEGRD
241214.84	4078444.73	0.01135	93.21	93.21	1.5	ANNUAL	ALL	5	FENCEGRD
241214.50	4078458.79	0.01152	93.21	93.21	1.5	ANNUAL	ALL	5	FENCEGRD
241214.15	4078472.85	0.01177	93.19	93.19	1.5	ANNUAL	ALL	5	FENCEGRD
241213.81	4078486.91	0.01212	93.18	93.18	1.5	ANNUAL	ALL	5	FENCEGRD
241213.47	4078500.97	0.01261	93.14	93.14	1.5	ANNUAL	ALL	5	FENCEGRD
241216.68	4078288.11	0.01116	92.41	92.41	1.5	ANNUAL	ALL	5	FENCEGRD
241231.06	4078274.18	0.0092	92.09	92.09	1.5	ANNUAL	ALL	5	FENCEGRD
241202.98	4078345.96	0.00947	93.01	93.01	1.5	ANNUAL	ALL	5	FENCEGRD
241202.63	4078360.02	0.00944	92.78	92.78	1.5	ANNUAL	ALL	5	FENCEGRD
241201.94	4078388.14	0.00965	93.08	93.08	1.5	ANNUAL	ALL	5	FENCEGRD
241201.60	4078402.20	0.00978	93.11	93.11	1.5	ANNUAL	ALL	5	FENCEGRD
241201.25	4078416.26	0.00989	93.13	93.13	1.5	ANNUAL	ALL	5	FENCEGRD
241200.91	4078430.32	0.01	93.2	93.2	1.5	ANNUAL	ALL	5	FENCEGRD
241200.56	4078444.38	0.01012	93.25	93.25	1.5	ANNUAL	ALL	5	FENCEGRD
241200.22	4078458.44	0.01027	93.26	93.26	1.5	ANNUAL	ALL	5	FENCEGRD
241199.87	4078472.50	0.01049	93.26	93.26	1.5	ANNUAL	ALL	5	FENCEGRD
241199.53	4078486.56	0.01078	93.25	93.25	1.5	ANNUAL	ALL	5	FENCEGRD
241199.18	4078500.62	0.0112	93.19	93.19	1.5	ANNUAL	ALL	5	FENCEGRD
241236.18	4078257.88	0.00757	91.74	91.74	1.5	ANNUAL	ALL	5	FENCEGRD
241188.69	4078345.61	0.00872	93.03	93.03	1.5	ANNUAL	ALL	5	FENCEGRD
241188.35	4078359.67	0.00857	92.79	92.79	1.5	ANNUAL	ALL	5	FENCEGRD
241187.66	4078387.79	0.00866	92.98	92.98	1.5	ANNUAL	ALL	5	FENCEGRD
241187.32	4078401.85	0.00876	93.01	93.01	1.5	ANNUAL	ALL	5	FENCEGRD
241186.97	4078415.91	0.00888	92.97	92.97	1.5	ANNUAL	ALL	5	FENCEGRD

241186.63	4078429.97	0.00899	93.02	93.02	1.5	ANNUAL	ALL	5	FENCEGRD
241186.28	4078444.03	0.00912	93.04	93.04	1.5	ANNUAL	ALL	5	FENCEGRD
241185.94	4078458.09	0.00927	93.07	93.07	1.5	ANNUAL	ALL	5	FENCEGRD
241185.59	4078472.15	0.00946	93.11	93.11	1.5	ANNUAL	ALL	5	FENCEGRD
241185.25	4078486.21	0.00971	93.12	93.12	1.5	ANNUAL	ALL	5	FENCEGRD
241184.90	4078500.27	0.01006	93.12	93.12	1.5	ANNUAL	ALL	5	FENCEGRD
241190.72	4078281.47	0.00937	92.25	92.25	1.5	ANNUAL	ALL	5	FENCEGRD
241213.19	4078252.86	0.00677	91.83	91.83	1.5	ANNUAL	ALL	5	FENCEGRD
241237.28	4078243.19	0.00648	91.76	91.76	1.5	ANNUAL	ALL	5	FENCEGRD
241174.41	4078345.26	0.00811	93.01	93.01	1.5	ANNUAL	ALL	5	FENCEGRD
241174.07	4078359.32	0.00789	92.78	92.78	1.5	ANNUAL	ALL	5	FENCEGRD
241176.01	4078282.11	0.00918	92.3	92.3	1.5	ANNUAL	ALL	5	FENCEGRD
241186.13	4078258.99	0.00681	91.92	91.92	1.5	ANNUAL	ALL	5	FENCEGRD
241202.91	4078242.73	0.00596	92.15	92.15	1.5	ANNUAL	ALL	5	FENCEGRD
241226.34	4078233.34	0.00575	92.17	92.17	1.5	ANNUAL	ALL	5	FENCEGRD
241160.13	4078344.91	0.00761	92.96	92.96	1.5	ANNUAL	ALL	5	FENCEGRD
241159.79	4078358.97	0.00732	92.77	92.77	1.5	ANNUAL	ALL	5	FENCEGRD
241143.42	4078290.61	0.01023	92.47	92.47	1.5	ANNUAL	ALL	5	FENCEGRD
241149.00	4078277.87	0.00812	92.3	92.3	1.5	ANNUAL	ALL	5	FENCEGRD
241154.57	4078265.13	0.00686	92	92	1.5	ANNUAL	ALL	5	FENCEGRD
241160.15	4078252.39	0.00599	91.93	91.93	1.5	ANNUAL	ALL	5	FENCEGRD
241165.73	4078239.65	0.00533	92.2	92.2	1.5	ANNUAL	ALL	5	FENCEGRD
241184.22	4078221.74	0.00474	92.23	92.23	1.5	ANNUAL	ALL	5	FENCEGRD
241197.13	4078216.56	0.00468	92.12	92.12	1.5	ANNUAL	ALL	5	FENCEGRD
241210.04	4078211.38	0.00462	92	92	1.5	ANNUAL	ALL	5	FENCEGRD
241222.94	4078206.20	0.00456	91.99	91.99	1.5	ANNUAL	ALL	5	FENCEGRD
241235.85	4078201.03	0.00451	91.71	91.71	1.5	ANNUAL	ALL	5	FENCEGRD
241131.57	4078344.21	0.00682	92.96	92.96	1.5	ANNUAL	ALL	5	FENCEGRD
241131.22	4078358.27	0.00645	92.79	92.79	1.5	ANNUAL	ALL	5	FENCEGRD
241130.53	4078386.39	0.00622	92.78	92.78	1.5	ANNUAL	ALL	5	FENCEGRD
241130.19	4078400.45	0.00621	92.95	92.95	1.5	ANNUAL	ALL	5	FENCEGRD
241129.84	4078414.51	0.00625	92.97	92.97	1.5	ANNUAL	ALL	5	FENCEGRD
241129.50	4078428.57	0.00632	92.94	92.94	1.5	ANNUAL	ALL	5	FENCEGRD
241129.16	4078442.63	0.00641	92.99	92.99	1.5	ANNUAL	ALL	5	FENCEGRD
241128.81	4078456.69	0.00652	92.99	92.99	1.5	ANNUAL	ALL	5	FENCEGRD
241128.47	4078470.75	0.00664	93.01	93.01	1.5	ANNUAL	ALL	5	FENCEGRD
241128.12	4078484.81	0.00679	93.05	93.05	1.5	ANNUAL	ALL	5	FENCEGRD
241127.78	4078498.87	0.00698	93.03	93.03	1.5	ANNUAL	ALL	5	FENCEGRD
241119.61	4078279.06	0.00785	92.42	92.42	1.5	ANNUAL	ALL	5	FENCEGRD
241130.21	4078254.84	0.00577	91.92	91.92	1.5	ANNUAL	ALL	5	FENCEGRD
241140.82	4078230.62	0.00464	92.33	92.33	1.5	ANNUAL	ALL	5	FENCEGRD
241163.70	4078201.47	0.00388	91.97	91.97	1.5	ANNUAL	ALL	5	FENCEGRD
241188.24	4078191.63	0.00381	91.78	91.78	1.5	ANNUAL	ALL	5	FENCEGRD
241212.78	4078181.79	0.00375	91.56	91.56	1.5	ANNUAL	ALL	5	FENCEGRD
241237.32	4078171.94	0.00369	91.79	91.79	1.5	ANNUAL	ALL	5	FENCEGRD
241103.01	4078343.51	0.00622	92.9	92.9	1.5	ANNUAL	ALL	5	FENCEGRD
241102.66	4078357.57	0.00579	92.74	92.74	1.5	ANNUAL	ALL	5	FENCEGRD
241101.97	4078385.69	0.00548	92.54	92.54	1.5	ANNUAL	ALL	5	FENCEGRD
241101.63	4078399.75	0.00544	92.59	92.59	1.5	ANNUAL	ALL	5	FENCEGRD
241101.28	4078413.81	0.00545	92.65	92.65	1.5	ANNUAL	ALL	5	FENCEGRD
241100.94	4078427.87	0.00549	92.61	92.61	1.5	ANNUAL	ALL	5	FENCEGRD
241100.59	4078441.93	0.00556	92.55	92.55	1.5	ANNUAL	ALL	5	FENCEGRD
241100.25	4078455.99	0.00564	92.58	92.58	1.5	ANNUAL	ALL	5	FENCEGRD
241099.90	4078470.05	0.00574	92.53	92.53	1.5	ANNUAL	ALL	5	FENCEGRD
241099.56	4078484.11	0.00586	92.53	92.53	1.5	ANNUAL	ALL	5	FENCEGRD
241099.21	4078498.17	0.00601	92.46	92.46	1.5	ANNUAL	ALL	5	FENCEGRD
241086.41	4078288.93	0.00908	92.43	92.43	1.5	ANNUAL	ALL	5	FENCEGRD
241092.06	4078276.05	0.00711	92.32	92.32	1.5	ANNUAL	ALL	5	FENCEGRD
241097.70	4078263.16	0.00594	92.08	92.08	1.5	ANNUAL	ALL	5	FENCEGRD
241103.34	4078250.28	0.00515	92.11	92.11	1.5	ANNUAL	ALL	5	FENCEGRD
241108.98	4078237.40	0.00456	92.38	92.38	1.5	ANNUAL	ALL	5	FENCEGRD
241114.62	4078224.52	0.00412	92.38	92.38	1.5	ANNUAL	ALL	5	FENCEGRD
241120.26	4078211.64	0.00376	92.16	92.16	1.5	ANNUAL	ALL	5	FENCEGRD
241125.90	4078198.76	0.00347	92	92	1.5	ANNUAL	ALL	5	FENCEGRD
241144.60	4078180.64	0.00321	91.6	91.6	1.5	ANNUAL	ALL	5	FENCEGRD
241157.65	4078175.41	0.00319	91.66	91.66	1.5	ANNUAL	ALL	5	FENCEGRD
241170.70	4078170.17	0.00318	91.72	91.72	1.5	ANNUAL	ALL	5	FENCEGRD
241183.75	4078164.94	0.00316	91.79	91.79	1.5	ANNUAL	ALL	5	FENCEGRD

241196.80	4078159.70	0.00315	91.52	91.52	1.5	ANNUAL	ALL	5	FENCEGRD
241209.85	4078154.47	0.00313	91.6	91.6	1.5	ANNUAL	ALL	5	FENCEGRD
241222.91	4078149.23	0.00311	91.95	91.95	1.5	ANNUAL	ALL	5	FENCEGRD
241235.96	4078144.00	0.00309	91.92	91.92	1.5	ANNUAL	ALL	5	FENCEGRD
241074.44	4078342.81	0.00572	92.88	92.88	1.5	ANNUAL	ALL	5	FENCEGRD
241074.10	4078356.87	0.00526	92.7	92.7	1.5	ANNUAL	ALL	5	FENCEGRD
241073.75	4078370.93	0.00502	92.33	92.33	1.5	ANNUAL	ALL	5	FENCEGRD
241073.41	4078384.99	0.00489	92.29	92.29	1.5	ANNUAL	ALL	5	FENCEGRD
241073.06	4078399.05	0.00483	92.3	92.3	1.5	ANNUAL	ALL	5	FENCEGRD
241072.72	4078413.11	0.00482	92.32	92.32	1.5	ANNUAL	ALL	5	FENCEGRD
241072.37	4078427.17	0.00484	92.31	92.31	1.5	ANNUAL	ALL	5	FENCEGRD
241072.03	4078441.23	0.00488	92.31	92.31	1.5	ANNUAL	ALL	5	FENCEGRD
241071.69	4078455.29	0.00494	92.29	92.29	1.5	ANNUAL	ALL	5	FENCEGRD
241071.34	4078469.35	0.00502	92.3	92.3	1.5	ANNUAL	ALL	5	FENCEGRD
241071.00	4078483.41	0.00511	92.33	92.33	1.5	ANNUAL	ALL	5	FENCEGRD
241070.65	4078497.47	0.00523	92.28	92.28	1.5	ANNUAL	ALL	5	FENCEGRD
241062.84	4078276.83	0.00677	92.37	92.37	1.5	ANNUAL	ALL	5	FENCEGRD
241073.69	4078252.06	0.00485	91.93	91.93	1.5	ANNUAL	ALL	5	FENCEGRD
241084.54	4078227.29	0.00387	92.25	92.25	1.5	ANNUAL	ALL	5	FENCEGRD
241095.39	4078202.52	0.00327	92.05	92.05	1.5	ANNUAL	ALL	5	FENCEGRD
241106.24	4078177.75	0.00285	91.72	91.72	1.5	ANNUAL	ALL	5	FENCEGRD
241124.21	4078160.33	0.00268	92.01	92.01	1.5	ANNUAL	ALL	5	FENCEGRD
241136.76	4078155.29	0.00268	92.01	92.01	1.5	ANNUAL	ALL	5	FENCEGRD
241149.31	4078150.26	0.00268	91.99	91.99	1.5	ANNUAL	ALL	5	FENCEGRD
241161.86	4078145.23	0.00268	92.06	92.06	1.5	ANNUAL	ALL	5	FENCEGRD
241174.41	4078140.19	0.00267	91.95	91.95	1.5	ANNUAL	ALL	5	FENCEGRD
241186.96	4078135.16	0.00267	91.8	91.8	1.5	ANNUAL	ALL	5	FENCEGRD
241199.51	4078130.13	0.00266	91.39	91.39	1.5	ANNUAL	ALL	5	FENCEGRD
241212.06	4078125.09	0.00265	91.65	91.65	1.5	ANNUAL	ALL	5	FENCEGRD
241224.61	4078120.06	0.00264	91.87	91.87	1.5	ANNUAL	ALL	5	FENCEGRD
241237.16	4078115.03	0.00263	91.86	91.86	1.5	ANNUAL	ALL	5	FENCEGRD
241045.88	4078342.11	0.00528	92.87	92.87	1.5	ANNUAL	ALL	5	FENCEGRD
241045.53	4078356.17	0.00479	92.85	92.85	1.5	ANNUAL	ALL	5	FENCEGRD
241045.19	4078370.23	0.00453	92.81	92.81	1.5	ANNUAL	ALL	5	FENCEGRD
241044.85	4078384.29	0.00439	92.77	92.77	1.5	ANNUAL	ALL	5	FENCEGRD
241044.50	4078398.35	0.00432	92.74	92.74	1.5	ANNUAL	ALL	5	FENCEGRD
241044.16	4078412.41	0.00429	92.71	92.71	1.5	ANNUAL	ALL	5	FENCEGRD
241043.81	4078426.47	0.0043	92.66	92.66	1.5	ANNUAL	ALL	5	FENCEGRD
241043.47	4078440.53	0.00432	92.67	92.67	1.5	ANNUAL	ALL	5	FENCEGRD
241043.12	4078454.59	0.00437	92.67	92.67	1.5	ANNUAL	ALL	5	FENCEGRD
241042.78	4078468.65	0.00443	92.58	92.58	1.5	ANNUAL	ALL	5	FENCEGRD
241042.43	4078482.71	0.0045	92.57	92.57	1.5	ANNUAL	ALL	5	FENCEGRD
241042.09	4078496.77	0.00458	92.55	92.55	1.5	ANNUAL	ALL	5	FENCEGRD
241023.28	4078301.26	0.00746	92.31	92.31	1.5	ANNUAL	ALL	5	FENCEGRD
241033.81	4078277.19	0.00622	92.32	92.32	1.5	ANNUAL	ALL	5	FENCEGRD
241044.35	4078253.13	0.00439	92.3	92.3	1.5	ANNUAL	ALL	5	FENCEGRD
241054.89	4078229.07	0.00353	92.18	92.18	1.5	ANNUAL	ALL	5	FENCEGRD
241065.43	4078205.00	0.00302	91.84	91.84	1.5	ANNUAL	ALL	5	FENCEGRD
241075.97	4078180.94	0.00266	91.72	91.72	1.5	ANNUAL	ALL	5	FENCEGRD
241086.51	4078156.88	0.00237	92.1	92.1	1.5	ANNUAL	ALL	5	FENCEGRD
241103.97	4078139.95	0.00226	92.06	92.06	1.5	ANNUAL	ALL	5	FENCEGRD
241128.35	4078130.17	0.00228	91.99	91.99	1.5	ANNUAL	ALL	5	FENCEGRD
241152.73	4078120.40	0.00229	91.96	91.96	1.5	ANNUAL	ALL	5	FENCEGRD
241177.11	4078110.62	0.00229	91.83	91.83	1.5	ANNUAL	ALL	5	FENCEGRD
241201.50	4078100.84	0.00228	91.35	91.35	1.5	ANNUAL	ALL	5	FENCEGRD
241225.88	4078091.06	0.00227	91.82	91.82	1.5	ANNUAL	ALL	5	FENCEGRD
241017.32	4078341.41	0.00484	92.56	92.56	1.5	ANNUAL	ALL	5	FENCEGRD
241016.97	4078355.47	0.00436	92.52	92.52	1.5	ANNUAL	ALL	5	FENCEGRD
241016.63	4078369.53	0.0041	92.46	92.46	1.5	ANNUAL	ALL	5	FENCEGRD
241016.28	4078383.59	0.00396	92.41	92.41	1.5	ANNUAL	ALL	5	FENCEGRD
241015.94	4078397.65	0.00389	92.38	92.38	1.5	ANNUAL	ALL	5	FENCEGRD
241015.59	4078411.71	0.00386	92.29	92.29	1.5	ANNUAL	ALL	5	FENCEGRD
241015.25	4078425.77	0.00385	92.28	92.28	1.5	ANNUAL	ALL	5	FENCEGRD
240994.94	4078300.04	0.00607	92.12	92.12	1.5	ANNUAL	ALL	5	FENCEGRD
241000.44	4078287.49	0.00643	92.01	92.01	1.5	ANNUAL	ALL	5	FENCEGRD
241005.93	4078274.94	0.00491	91.95	91.95	1.5	ANNUAL	ALL	5	FENCEGRD
241011.43	4078262.39	0.00411	92.06	92.06	1.5	ANNUAL	ALL	5	FENCEGRD
241016.93	4078249.83	0.00362	92.16	92.16	1.5	ANNUAL	ALL	5	FENCEGRD

241022.42	4078237.28	0.00328	92.14	92.14	1.5	ANNUAL	ALL	5	FENCEGRD
241027.92	4078224.73	0.00302	92.18	92.18	1.5	ANNUAL	ALL	5	FENCEGRD
241033.42	4078212.18	0.00281	92.24	92.24	1.5	ANNUAL	ALL	5	FENCEGRD
241038.91	4078199.63	0.00264	92.14	92.14	1.5	ANNUAL	ALL	5	FENCEGRD
241044.41	4078187.08	0.00249	91.79	91.79	1.5	ANNUAL	ALL	5	FENCEGRD
241049.91	4078174.53	0.00236	91.86	91.86	1.5	ANNUAL	ALL	5	FENCEGRD
241055.40	4078161.98	0.00224	92.12	92.12	1.5	ANNUAL	ALL	5	FENCEGRD
241060.90	4078149.43	0.00213	92.13	92.13	1.5	ANNUAL	ALL	5	FENCEGRD
241066.40	4078136.88	0.00203	92.1	92.1	1.5	ANNUAL	ALL	5	FENCEGRD
241084.61	4078119.23	0.00195	91.93	91.93	1.5	ANNUAL	ALL	5	FENCEGRD
241097.33	4078114.13	0.00196	91.74	91.74	1.5	ANNUAL	ALL	5	FENCEGRD
241110.04	4078109.02	0.00197	91.61	91.61	1.5	ANNUAL	ALL	5	FENCEGRD
241122.76	4078103.92	0.00197	91.5	91.5	1.5	ANNUAL	ALL	5	FENCEGRD
241135.48	4078098.82	0.00198	91.72	91.72	1.5	ANNUAL	ALL	5	FENCEGRD
241148.19	4078093.72	0.00198	91.93	91.93	1.5	ANNUAL	ALL	5	FENCEGRD
241160.91	4078088.62	0.00199	91.92	91.92	1.5	ANNUAL	ALL	5	FENCEGRD
241173.63	4078083.52	0.00199	91.77	91.77	1.5	ANNUAL	ALL	5	FENCEGRD
241186.35	4078078.42	0.00199	91.64	91.64	1.5	ANNUAL	ALL	5	FENCEGRD
241199.06	4078073.32	0.00198	91.31	91.31	1.5	ANNUAL	ALL	5	FENCEGRD
241211.78	4078068.22	0.00198	91.62	91.62	1.5	ANNUAL	ALL	5	FENCEGRD
241224.50	4078063.12	0.00198	91.84	91.84	1.5	ANNUAL	ALL	5	FENCEGRD
241237.21	4078058.02	0.00198	91.83	91.83	1.5	ANNUAL	ALL	5	FENCEGRD
240988.41	4078354.77	0.00389	92.42	92.42	1.5	ANNUAL	ALL	5	FENCEGRD
240987.38	4078396.95	0.0035	92.45	92.45	1.5	ANNUAL	ALL	5	FENCEGRD
240987.03	4078411.01	0.00346	92.48	92.48	1.5	ANNUAL	ALL	5	FENCEGRD
240986.69	4078425.07	0.00346	92.44	92.44	1.5	ANNUAL	ALL	5	FENCEGRD
240986.34	4078439.13	0.00347	92.37	92.37	1.5	ANNUAL	ALL	5	FENCEGRD
240985.65	4078467.25	0.00353	92.07	92.07	1.5	ANNUAL	ALL	5	FENCEGRD
240985.31	4078481.31	0.00357	92.45	92.45	1.5	ANNUAL	ALL	5	FENCEGRD
240984.96	4078495.37	0.00361	92.56	92.56	1.5	ANNUAL	ALL	5	FENCEGRD
240966.24	4078299.65	0.00428	92.29	92.29	1.5	ANNUAL	ALL	5	FENCEGRD
240976.96	4078275.17	0.00362	92.07	92.07	1.5	ANNUAL	ALL	5	FENCEGRD
240987.68	4078250.69	0.00305	91.81	91.81	1.5	ANNUAL	ALL	5	FENCEGRD
240998.40	4078226.21	0.00268	91.77	91.77	1.5	ANNUAL	ALL	5	FENCEGRD
241009.12	4078201.73	0.0024	91.84	91.84	1.5	ANNUAL	ALL	5	FENCEGRD
241019.85	4078177.25	0.00218	91.94	91.94	1.5	ANNUAL	ALL	5	FENCEGRD
241030.57	4078152.77	0.002	92.17	92.17	1.5	ANNUAL	ALL	5	FENCEGRD
241041.29	4078128.29	0.00183	92.12	92.12	1.5	ANNUAL	ALL	5	FENCEGRD
241064.41	4078098.84	0.0017	91.79	91.79	1.5	ANNUAL	ALL	5	FENCEGRD
241089.21	4078088.89	0.00172	92.02	92.02	1.5	ANNUAL	ALL	5	FENCEGRD
241114.02	4078078.94	0.00173	91.7	91.7	1.5	ANNUAL	ALL	5	FENCEGRD
241138.82	4078068.99	0.00174	91.79	91.79	1.5	ANNUAL	ALL	5	FENCEGRD
241163.63	4078059.04	0.00175	91.86	91.86	1.5	ANNUAL	ALL	5	FENCEGRD
241188.43	4078049.09	0.00175	91.57	91.57	1.5	ANNUAL	ALL	5	FENCEGRD
241213.23	4078039.14	0.00175	91.63	91.63	1.5	ANNUAL	ALL	5	FENCEGRD
241238.04	4078029.20	0.00174	91.78	91.78	1.5	ANNUAL	ALL	5	FENCEGRD
240959.85	4078354.07	0.00337	92.5	92.5	1.5	ANNUAL	ALL	5	FENCEGRD
240945.10	4078357.42	0.00309	92.55	92.55	1.5	ANNUAL	ALL	5	FENCEGRD
240958.81	4078396.25	0.00314	92.54	92.54	1.5	ANNUAL	ALL	5	FENCEGRD
240958.47	4078410.31	0.00312	92.63	92.63	1.5	ANNUAL	ALL	5	FENCEGRD
240958.12	4078424.37	0.00311	92.54	92.54	1.5	ANNUAL	ALL	5	FENCEGRD
240957.78	4078438.43	0.00312	92.43	92.43	1.5	ANNUAL	ALL	5	FENCEGRD
240957.09	4078466.55	0.00317	92.07	92.07	1.5	ANNUAL	ALL	5	FENCEGRD
240956.74	4078480.61	0.0032	92.47	92.47	1.5	ANNUAL	ALL	5	FENCEGRD
240956.40	4078494.67	0.00324	92.54	92.54	1.5	ANNUAL	ALL	5	FENCEGRD
240866.43	4078296.83	0.00199	92.14	92.14	1.5	ANNUAL	ALL	5	FENCEGRD
240871.96	4078284.22	0.00199	92	92	1.5	ANNUAL	ALL	5	FENCEGRD
240877.48	4078271.61	0.00198	91.86	91.86	1.5	ANNUAL	ALL	5	FENCEGRD
240883.00	4078259.00	0.00195	91.69	91.69	1.5	ANNUAL	ALL	5	FENCEGRD
240888.52	4078246.38	0.00192	91.94	91.94	1.5	ANNUAL	ALL	5	FENCEGRD
240894.05	4078233.77	0.00188	91.9	91.9	1.5	ANNUAL	ALL	5	FENCEGRD
240899.57	4078221.16	0.00184	91.67	91.67	1.5	ANNUAL	ALL	5	FENCEGRD
240905.09	4078208.55	0.00179	91.63	91.63	1.5	ANNUAL	ALL	5	FENCEGRD
240910.62	4078195.94	0.00174	91.93	91.93	1.5	ANNUAL	ALL	5	FENCEGRD
240916.14	4078183.33	0.00169	92.04	92.04	1.5	ANNUAL	ALL	5	FENCEGRD
240921.66	4078170.72	0.00164	92.07	92.07	1.5	ANNUAL	ALL	5	FENCEGRD
240927.19	4078158.11	0.00159	92.06	92.06	1.5	ANNUAL	ALL	5	FENCEGRD
240932.71	4078145.50	0.00154	91.99	91.99	1.5	ANNUAL	ALL	5	FENCEGRD

240938.23	4078132.89	0.0015	91.93	91.93	1.5	ANNUAL	ALL	5	FENCEGRD
240943.75	4078120.28	0.00145	91.68	91.68	1.5	ANNUAL	ALL	5	FENCEGRD
240949.28	4078107.66	0.0014	91.37	91.37	1.5	ANNUAL	ALL	5	FENCEGRD
240954.80	4078095.05	0.00136	91.53	91.53	1.5	ANNUAL	ALL	5	FENCEGRD
240960.32	4078082.44	0.00132	91.8	91.8	1.5	ANNUAL	ALL	5	FENCEGRD
240965.85	4078069.83	0.00128	91.8	91.8	1.5	ANNUAL	ALL	5	FENCEGRD
240971.37	4078057.22	0.00124	91.67	91.67	1.5	ANNUAL	ALL	5	FENCEGRD
240976.89	4078044.61	0.0012	91.41	91.41	1.5	ANNUAL	ALL	5	FENCEGRD
240995.19	4078026.87	0.00117	91.25	91.25	1.5	ANNUAL	ALL	5	FENCEGRD
241007.97	4078021.75	0.00117	91.24	91.24	1.5	ANNUAL	ALL	5	FENCEGRD
241020.75	4078016.62	0.00118	91.32	91.32	1.5	ANNUAL	ALL	5	FENCEGRD
241033.53	4078011.50	0.00118	91.44	91.44	1.5	ANNUAL	ALL	5	FENCEGRD
241046.30	4078006.37	0.00118	91.52	91.52	1.5	ANNUAL	ALL	5	FENCEGRD
241059.08	4078001.25	0.00118	91.62	91.62	1.5	ANNUAL	ALL	5	FENCEGRD
241071.86	4077996.12	0.00119	91.7	91.7	1.5	ANNUAL	ALL	5	FENCEGRD
241084.64	4077991.00	0.00119	91.71	91.71	1.5	ANNUAL	ALL	5	FENCEGRD
241097.41	4077985.87	0.00119	91.75	91.75	1.5	ANNUAL	ALL	5	FENCEGRD
241110.19	4077980.75	0.00119	91.79	91.79	1.5	ANNUAL	ALL	5	FENCEGRD
241122.97	4077975.62	0.00119	91.79	91.79	1.5	ANNUAL	ALL	5	FENCEGRD
241135.75	4077970.50	0.00119	91.76	91.76	1.5	ANNUAL	ALL	5	FENCEGRD
241148.53	4077965.37	0.00119	91.78	91.78	1.5	ANNUAL	ALL	5	FENCEGRD
241161.30	4077960.25	0.00119	91.66	91.66	1.5	ANNUAL	ALL	5	FENCEGRD
241174.08	4077955.12	0.00119	91.12	91.12	1.5	ANNUAL	ALL	5	FENCEGRD
241186.86	4077950.00	0.00119	91.51	91.51	1.5	ANNUAL	ALL	5	FENCEGRD
241199.64	4077944.87	0.00119	91.75	91.75	1.5	ANNUAL	ALL	5	FENCEGRD
241212.42	4077939.75	0.00119	91.71	91.71	1.5	ANNUAL	ALL	5	FENCEGRD
241225.19	4077934.62	0.00119	91.73	91.73	1.5	ANNUAL	ALL	5	FENCEGRD
240860.91	4078309.44	0.00199	91.78	91.78	1.5	ANNUAL	ALL	5	FENCEGRD
240859.53	4078365.68	0.00212	92.71	92.71	1.5	ANNUAL	ALL	5	FENCEGRD
240928.24	4078354.26	0.00284	92.65	92.65	1.5	ANNUAL	ALL	5	FENCEGRD
240891.34	4078361.30	0.00239	92.63	92.63	1.5	ANNUAL	ALL	5	FENCEGRD
240907.24	4078358.75	0.00256	92.64	92.64	1.5	ANNUAL	ALL	5	FENCEGRD
240858.15	4078421.92	0.0022	92.74	92.74	1.5	ANNUAL	ALL	5	FENCEGRD
240857.81	4078435.98	0.00221	92.79	92.79	1.5	ANNUAL	ALL	5	FENCEGRD
240857.46	4078450.04	0.00223	92.75	92.75	1.5	ANNUAL	ALL	5	FENCEGRD
240857.12	4078464.10	0.00225	92.71	92.71	1.5	ANNUAL	ALL	5	FENCEGRD
240856.77	4078478.16	0.00227	92.63	92.63	1.5	ANNUAL	ALL	5	FENCEGRD
240856.43	4078492.22	0.00228	92.63	92.63	1.5	ANNUAL	ALL	5	FENCEGRD
240766.57	4078294.14	0.00145	92.62	92.62	1.5	ANNUAL	ALL	5	FENCEGRD
240772.19	4078281.30	0.00144	92.62	92.62	1.5	ANNUAL	ALL	5	FENCEGRD
240777.82	4078268.46	0.00144	92.44	92.44	1.5	ANNUAL	ALL	5	FENCEGRD
240783.44	4078255.61	0.00143	92.17	92.17	1.5	ANNUAL	ALL	5	FENCEGRD
240789.07	4078242.77	0.00142	91.99	91.99	1.5	ANNUAL	ALL	5	FENCEGRD
240794.69	4078229.92	0.0014	91.93	91.93	1.5	ANNUAL	ALL	5	FENCEGRD
240800.32	4078217.08	0.00139	91.75	91.75	1.5	ANNUAL	ALL	5	FENCEGRD
240805.94	4078204.23	0.00137	91.58	91.58	1.5	ANNUAL	ALL	5	FENCEGRD
240811.57	4078191.39	0.00134	91.26	91.26	1.5	ANNUAL	ALL	5	FENCEGRD
240817.19	4078178.54	0.00132	91.35	91.35	1.5	ANNUAL	ALL	5	FENCEGRD
240822.82	4078165.70	0.00129	91.78	91.78	1.5	ANNUAL	ALL	5	FENCEGRD
240828.44	4078152.86	0.00127	91.98	91.98	1.5	ANNUAL	ALL	5	FENCEGRD
240834.07	4078140.01	0.00124	91.98	91.98	1.5	ANNUAL	ALL	5	FENCEGRD
240839.69	4078127.17	0.00121	91.92	91.92	1.5	ANNUAL	ALL	5	FENCEGRD
240845.32	4078114.32	0.00118	91.86	91.86	1.5	ANNUAL	ALL	5	FENCEGRD
240850.94	4078101.48	0.00115	91.7	91.7	1.5	ANNUAL	ALL	5	FENCEGRD
240856.57	4078088.63	0.00112	91.4	91.4	1.5	ANNUAL	ALL	5	FENCEGRD
240862.19	4078075.79	0.0011	91.51	91.51	1.5	ANNUAL	ALL	5	FENCEGRD
240867.82	4078062.94	0.00107	91.8	91.8	1.5	ANNUAL	ALL	5	FENCEGRD
240873.44	4078050.10	0.00104	91.84	91.84	1.5	ANNUAL	ALL	5	FENCEGRD
240879.07	4078037.26	0.00101	91.86	91.86	1.5	ANNUAL	ALL	5	FENCEGRD
240884.69	4078024.41	0.00099	91.87	91.87	1.5	ANNUAL	ALL	5	FENCEGRD
240890.32	4078011.57	0.00096	91.85	91.85	1.5	ANNUAL	ALL	5	FENCEGRD
240895.95	4077998.72	0.00094	91.61	91.61	1.5	ANNUAL	ALL	5	FENCEGRD
240901.57	4077985.88	0.00091	91.41	91.41	1.5	ANNUAL	ALL	5	FENCEGRD
240907.20	4077973.03	0.00089	91.52	91.52	1.5	ANNUAL	ALL	5	FENCEGRD
240925.84	4077954.97	0.00087	91.83	91.83	1.5	ANNUAL	ALL	5	FENCEGRD
240938.85	4077949.75	0.00087	91.67	91.67	1.5	ANNUAL	ALL	5	FENCEGRD
240951.86	4077944.53	0.00088	91.61	91.61	1.5	ANNUAL	ALL	5	FENCEGRD
240964.88	4077939.31	0.00088	91.15	91.15	1.5	ANNUAL	ALL	5	FENCEGRD

240977.89	4077934.09	0.00088	91.11	91.11	1.5	ANNUAL	ALL	5	FENCEGRD
240990.91	4077928.87	0.00088	91.14	91.14	1.5	ANNUAL	ALL	5	FENCEGRD
241003.92	4077923.65	0.00088	91.13	91.13	1.5	ANNUAL	ALL	5	FENCEGRD
241016.94	4077918.43	0.00088	91.06	91.06	1.5	ANNUAL	ALL	5	FENCEGRD
241029.95	4077913.21	0.00088	91.13	91.13	1.5	ANNUAL	ALL	5	FENCEGRD
241042.97	4077907.99	0.00088	91.15	91.15	1.5	ANNUAL	ALL	5	FENCEGRD
241055.98	4077902.77	0.00088	91.31	91.31	1.5	ANNUAL	ALL	5	FENCEGRD
241068.99	4077897.55	0.00088	91.36	91.36	1.5	ANNUAL	ALL	5	FENCEGRD
241082.01	4077892.33	0.00088	91.47	91.47	1.5	ANNUAL	ALL	5	FENCEGRD
241095.02	4077887.11	0.00088	91.55	91.55	1.5	ANNUAL	ALL	5	FENCEGRD
241108.04	4077881.89	0.00088	91.58	91.58	1.5	ANNUAL	ALL	5	FENCEGRD
241121.05	4077876.67	0.00088	91.68	91.68	1.5	ANNUAL	ALL	5	FENCEGRD
241134.07	4077871.45	0.00088	91.69	91.69	1.5	ANNUAL	ALL	5	FENCEGRD
241147.08	4077866.23	0.00088	91.68	91.68	1.5	ANNUAL	ALL	5	FENCEGRD
241160.09	4077861.01	0.00088	91.73	91.73	1.5	ANNUAL	ALL	5	FENCEGRD
241173.11	4077855.79	0.00088	91.69	91.69	1.5	ANNUAL	ALL	5	FENCEGRD
241186.12	4077850.57	0.00088	91.39	91.39	1.5	ANNUAL	ALL	5	FENCEGRD
241199.14	4077845.35	0.00088	91.19	91.19	1.5	ANNUAL	ALL	5	FENCEGRD
241212.15	4077840.13	0.00088	91.63	91.63	1.5	ANNUAL	ALL	5	FENCEGRD
241225.17	4077834.91	0.00088	91.73	91.73	1.5	ANNUAL	ALL	5	FENCEGRD
241238.18	4077829.69	0.00087	91.67	91.67	1.5	ANNUAL	ALL	5	FENCEGRD
241251.20	4077824.47	0.00087	91.69	91.69	1.5	ANNUAL	ALL	5	FENCEGRD
240760.94	4078306.99	0.00145	92.56	92.56	1.5	ANNUAL	ALL	5	FENCEGRD
240760.60	4078321.05	0.00147	90.53	92.58	1.5	ANNUAL	ALL	5	FENCEGRD
240760.25	4078335.11	0.00146	85.61	92.69	1.5	ANNUAL	ALL	5	FENCEGRD
240759.91	4078349.17	0.00147	85.01	92.81	1.5	ANNUAL	ALL	5	FENCEGRD
240759.56	4078363.23	0.00153	89.01	90.55	1.5	ANNUAL	ALL	5	FENCEGRD
240666.49	4078291.93	0.00113	91.78	91.78	1.5	ANNUAL	ALL	5	FENCEGRD
240672.02	4078279.32	0.00113	91.96	91.96	1.5	ANNUAL	ALL	5	FENCEGRD
240677.54	4078266.71	0.00113	92.07	92.07	1.5	ANNUAL	ALL	5	FENCEGRD
240683.06	4078254.09	0.00112	92.13	92.13	1.5	ANNUAL	ALL	5	FENCEGRD
240688.58	4078241.48	0.00112	92.16	92.16	1.5	ANNUAL	ALL	5	FENCEGRD
240694.11	4078228.87	0.00111	92.22	92.22	1.5	ANNUAL	ALL	5	FENCEGRD
240699.63	4078216.26	0.0011	92.07	92.07	1.5	ANNUAL	ALL	5	FENCEGRD
240705.15	4078203.65	0.00109	91.91	91.91	1.5	ANNUAL	ALL	5	FENCEGRD
240710.68	4078191.04	0.00108	91.81	91.81	1.5	ANNUAL	ALL	5	FENCEGRD
240716.20	4078178.43	0.00107	91.73	91.73	1.5	ANNUAL	ALL	5	FENCEGRD
240721.72	4078165.82	0.00105	91.66	91.66	1.5	ANNUAL	ALL	5	FENCEGRD
240727.25	4078153.21	0.00104	91.64	91.64	1.5	ANNUAL	ALL	5	FENCEGRD
240732.77	4078140.60	0.00102	91.6	91.6	1.5	ANNUAL	ALL	5	FENCEGRD
240738.29	4078127.99	0.00101	91.65	91.65	1.5	ANNUAL	ALL	5	FENCEGRD
240743.81	4078115.37	0.00099	91.71	91.71	1.5	ANNUAL	ALL	5	FENCEGRD
240749.34	4078102.76	0.00097	91.8	91.8	1.5	ANNUAL	ALL	5	FENCEGRD
240754.86	4078090.15	0.00095	91.83	91.83	1.5	ANNUAL	ALL	5	FENCEGRD
240760.38	4078077.54	0.00094	91.63	91.63	1.5	ANNUAL	ALL	5	FENCEGRD
240765.91	4078064.93	0.00092	91.11	91.11	1.5	ANNUAL	ALL	5	FENCEGRD
240771.43	4078052.32	0.0009	91.26	91.26	1.5	ANNUAL	ALL	5	FENCEGRD
240776.95	4078039.71	0.00088	91.81	91.81	1.5	ANNUAL	ALL	5	FENCEGRD
240782.47	4078027.10	0.00086	91.97	91.97	1.5	ANNUAL	ALL	5	FENCEGRD
240788.00	4078014.49	0.00084	91.82	91.82	1.5	ANNUAL	ALL	5	FENCEGRD
240793.52	4078001.88	0.00082	91.32	91.32	1.5	ANNUAL	ALL	5	FENCEGRD
240799.04	4077989.27	0.00081	91.38	91.38	1.5	ANNUAL	ALL	5	FENCEGRD
240804.57	4077976.66	0.00079	91.78	91.78	1.5	ANNUAL	ALL	5	FENCEGRD
240810.09	4077964.04	0.00077	91.65	91.65	1.5	ANNUAL	ALL	5	FENCEGRD
240815.61	4077951.43	0.00076	91.14	91.14	1.5	ANNUAL	ALL	5	FENCEGRD
240821.14	4077938.82	0.00074	90.79	90.79	1.5	ANNUAL	ALL	5	FENCEGRD
240826.66	4077926.21	0.00072	90.76	90.76	1.5	ANNUAL	ALL	5	FENCEGRD
240832.18	4077913.60	0.00071	90.87	90.87	1.5	ANNUAL	ALL	5	FENCEGRD
240837.70	4077900.99	0.00069	91.13	91.13	1.5	ANNUAL	ALL	5	FENCEGRD
240856.01	4077883.25	0.00068	91.28	91.28	1.5	ANNUAL	ALL	5	FENCEGRD
240868.78	4077878.13	0.00068	91.29	91.29	1.5	ANNUAL	ALL	5	FENCEGRD
240881.56	4077873.00	0.00068	91.31	91.31	1.5	ANNUAL	ALL	5	FENCEGRD
240894.34	4077867.88	0.00069	91.39	91.39	1.5	ANNUAL	ALL	5	FENCEGRD
240907.12	4077862.75	0.00069	91.44	91.44	1.5	ANNUAL	ALL	5	FENCEGRD
240919.89	4077857.63	0.00069	91.5	91.5	1.5	ANNUAL	ALL	5	FENCEGRD
240932.67	4077852.50	0.00069	91.58	91.58	1.5	ANNUAL	ALL	5	FENCEGRD
240945.45	4077847.38	0.00069	91.59	91.59	1.5	ANNUAL	ALL	5	FENCEGRD
240958.23	4077842.25	0.00069	91.68	91.68	1.5	ANNUAL	ALL	5	FENCEGRD

240971.01	4077837.13	0.00069	91.63	91.63	1.5	ANNUAL	ALL	5	FENCEGRD
240983.78	4077832.00	0.00069	91.63	91.63	1.5	ANNUAL	ALL	5	FENCEGRD
240996.56	4077826.88	0.00069	91.43	91.43	1.5	ANNUAL	ALL	5	FENCEGRD
241009.34	4077821.75	0.00069	91.39	91.39	1.5	ANNUAL	ALL	5	FENCEGRD
241022.12	4077816.63	0.00069	91.33	91.33	1.5	ANNUAL	ALL	5	FENCEGRD
241034.89	4077811.50	0.00069	91.2	91.2	1.5	ANNUAL	ALL	5	FENCEGRD
241047.67	4077806.38	0.00069	91.09	91.09	1.5	ANNUAL	ALL	5	FENCEGRD
241060.45	4077801.25	0.00069	91.07	91.07	1.5	ANNUAL	ALL	5	FENCEGRD
241073.23	4077796.13	0.00069	91.02	91.02	1.5	ANNUAL	ALL	5	FENCEGRD
241086.01	4077791.00	0.00069	91.06	91.06	1.5	ANNUAL	ALL	5	FENCEGRD
241098.78	4077785.88	0.00069	91.13	91.13	1.5	ANNUAL	ALL	5	FENCEGRD
241111.56	4077780.75	0.00069	91.26	91.26	1.5	ANNUAL	ALL	5	FENCEGRD
241124.34	4077775.63	0.00069	91.36	91.36	1.5	ANNUAL	ALL	5	FENCEGRD
241137.12	4077770.50	0.00068	91.47	91.47	1.5	ANNUAL	ALL	5	FENCEGRD
241149.89	4077765.38	0.00068	91.52	91.52	1.5	ANNUAL	ALL	5	FENCEGRD
241162.67	4077760.25	0.00068	91.62	91.62	1.5	ANNUAL	ALL	5	FENCEGRD
241175.45	4077755.13	0.00068	91.49	91.49	1.5	ANNUAL	ALL	5	FENCEGRD
241188.23	4077750.00	0.00068	91.13	91.13	1.5	ANNUAL	ALL	5	FENCEGRD
241201.01	4077744.88	0.00068	91.51	91.51	1.5	ANNUAL	ALL	5	FENCEGRD
241213.78	4077739.75	0.00068	91.71	91.71	1.5	ANNUAL	ALL	5	FENCEGRD
241226.56	4077734.63	0.00068	91.71	91.71	1.5	ANNUAL	ALL	5	FENCEGRD
241239.34	4077729.50	0.00067	91.46	91.46	1.5	ANNUAL	ALL	5	FENCEGRD
241252.12	4077724.38	0.00067	91.18	91.18	1.5	ANNUAL	ALL	5	FENCEGRD
240660.97	4078304.54	0.00113	91.64	91.64	1.5	ANNUAL	ALL	5	FENCEGRD
240660.63	4078318.60	0.00115	91.43	91.43	1.5	ANNUAL	ALL	5	FENCEGRD
240660.28	4078332.66	0.00116	91.27	91.27	1.5	ANNUAL	ALL	5	FENCEGRD
240659.94	4078346.72	0.00118	91.12	91.12	1.5	ANNUAL	ALL	5	FENCEGRD
240659.59	4078360.78	0.00119	90.94	90.94	1.5	ANNUAL	ALL	5	FENCEGRD
240659.25	4078374.84	0.00121	90.66	90.66	1.5	ANNUAL	ALL	5	FENCEGRD
240658.90	4078388.90	0.00121	89.52	90.39	1.5	ANNUAL	ALL	5	FENCEGRD
240658.56	4078402.96	0.00122	87.46	91.1	1.5	ANNUAL	ALL	5	FENCEGRD
240658.21	4078417.02	0.00122	86.22	91.1	1.5	ANNUAL	ALL	5	FENCEGRD
240657.87	4078431.08	0.00123	86.15	91.1	1.5	ANNUAL	ALL	5	FENCEGRD
240657.52	4078445.14	0.00124	87.03	91.06	1.5	ANNUAL	ALL	5	FENCEGRD
240657.18	4078459.20	0.00126	88.8	91	1.5	ANNUAL	ALL	5	FENCEGRD
240656.83	4078473.26	0.00128	89.98	89.98	1.5	ANNUAL	ALL	5	FENCEGRD
240566.60	4078289.31	0.00092	90.8	90.8	1.5	ANNUAL	ALL	5	FENCEGRD
240572.19	4078276.53	0.00092	90.93	90.93	1.5	ANNUAL	ALL	5	FENCEGRD
240577.79	4078263.76	0.00092	91.15	91.15	1.5	ANNUAL	ALL	5	FENCEGRD
240583.38	4078250.98	0.00091	91.41	91.41	1.5	ANNUAL	ALL	5	FENCEGRD
240588.98	4078238.20	0.00091	91.65	91.65	1.5	ANNUAL	ALL	5	FENCEGRD
240594.57	4078225.43	0.00091	91.86	91.86	1.5	ANNUAL	ALL	5	FENCEGRD
240600.17	4078212.65	0.0009	92.01	92.01	1.5	ANNUAL	ALL	5	FENCEGRD
240605.77	4078199.87	0.0009	92.1	92.1	1.5	ANNUAL	ALL	5	FENCEGRD
240611.36	4078187.10	0.00089	92.17	92.17	1.5	ANNUAL	ALL	5	FENCEGRD
240616.96	4078174.32	0.00088	92.11	92.11	1.5	ANNUAL	ALL	5	FENCEGRD
240622.55	4078161.54	0.00088	92.05	92.05	1.5	ANNUAL	ALL	5	FENCEGRD
240628.15	4078148.77	0.00087	91.95	91.95	1.5	ANNUAL	ALL	5	FENCEGRD
240633.74	4078135.99	0.00086	91.87	91.87	1.5	ANNUAL	ALL	5	FENCEGRD
240639.34	4078123.21	0.00085	91.82	91.82	1.5	ANNUAL	ALL	5	FENCEGRD
240644.93	4078110.44	0.00083	91.82	91.82	1.5	ANNUAL	ALL	5	FENCEGRD
240650.53	4078097.66	0.00082	91.87	91.87	1.5	ANNUAL	ALL	5	FENCEGRD
240656.13	4078084.88	0.00081	91.87	91.87	1.5	ANNUAL	ALL	5	FENCEGRD
240661.72	4078072.11	0.0008	91.81	91.81	1.5	ANNUAL	ALL	5	FENCEGRD
240667.32	4078059.33	0.00078	91.7	91.7	1.5	ANNUAL	ALL	5	FENCEGRD
240672.91	4078046.55	0.00077	91.58	91.58	1.5	ANNUAL	ALL	5	FENCEGRD
240678.51	4078033.77	0.00076	91.41	91.41	1.5	ANNUAL	ALL	5	FENCEGRD
240684.10	4078021.00	0.00074	91.26	91.26	1.5	ANNUAL	ALL	5	FENCEGRD
240689.70	4078008.22	0.00073	91.18	91.18	1.5	ANNUAL	ALL	5	FENCEGRD
240695.29	4077995.44	0.00072	91.16	91.16	1.5	ANNUAL	ALL	5	FENCEGRD
240700.89	4077982.67	0.0007	91.15	91.15	1.5	ANNUAL	ALL	5	FENCEGRD
240706.49	4077969.89	0.00069	91.1	91.1	1.5	ANNUAL	ALL	5	FENCEGRD
240712.08	4077957.11	0.00068	91.01	91.01	1.5	ANNUAL	ALL	5	FENCEGRD
240717.68	4077944.34	0.00066	91.12	91.12	1.5	ANNUAL	ALL	5	FENCEGRD
240723.27	4077931.56	0.00065	91.02	91.02	1.5	ANNUAL	ALL	5	FENCEGRD
240728.87	4077918.78	0.00064	90.93	90.93	1.5	ANNUAL	ALL	5	FENCEGRD
240734.46	4077906.01	0.00063	90.84	90.84	1.5	ANNUAL	ALL	5	FENCEGRD
240740.06	4077893.23	0.00062	90.95	90.95	1.5	ANNUAL	ALL	5	FENCEGRD

240745.66	4077880.45	0.0006	91.11	91.11	1.5	ANNUAL	ALL	5	FENCEGRD
240751.25	4077867.68	0.00059	90.35	90.35	1.5	ANNUAL	ALL	5	FENCEGRD
240756.85	4077854.90	0.00058	91.26	91.26	1.5	ANNUAL	ALL	5	FENCEGRD
240762.44	4077842.12	0.00057	90.9	90.9	1.5	ANNUAL	ALL	5	FENCEGRD
240768.04	4077829.35	0.00056	90.82	90.82	1.5	ANNUAL	ALL	5	FENCEGRD
240786.58	4077811.38	0.00055	90.76	90.76	1.5	ANNUAL	ALL	5	FENCEGRD
240799.53	4077806.18	0.00055	90.71	90.71	1.5	ANNUAL	ALL	5	FENCEGRD
240812.47	4077800.99	0.00055	90.62	90.62	1.5	ANNUAL	ALL	5	FENCEGRD
240825.42	4077795.80	0.00055	90.54	90.54	1.5	ANNUAL	ALL	5	FENCEGRD
240838.36	4077790.61	0.00055	90.45	90.45	1.5	ANNUAL	ALL	5	FENCEGRD
240851.31	4077785.41	0.00056	90.39	90.39	1.5	ANNUAL	ALL	5	FENCEGRD
240864.25	4077780.22	0.00056	90.31	90.31	1.5	ANNUAL	ALL	5	FENCEGRD
240877.20	4077775.03	0.00056	90.26	90.26	1.5	ANNUAL	ALL	5	FENCEGRD
240890.15	4077769.84	0.00056	90.22	90.22	1.5	ANNUAL	ALL	5	FENCEGRD
240903.09	4077764.64	0.00056	90.16	90.16	1.5	ANNUAL	ALL	5	FENCEGRD
240916.04	4077759.45	0.00056	90.11	90.11	1.5	ANNUAL	ALL	5	FENCEGRD
240928.98	4077754.26	0.00056	90.09	90.09	1.5	ANNUAL	ALL	5	FENCEGRD
240941.93	4077749.07	0.00056	90.12	90.12	1.5	ANNUAL	ALL	5	FENCEGRD
240954.88	4077743.87	0.00056	90.17	90.17	1.5	ANNUAL	ALL	5	FENCEGRD
240967.82	4077738.68	0.00056	90.24	90.24	1.5	ANNUAL	ALL	5	FENCEGRD
240980.77	4077733.49	0.00056	90.26	90.26	1.5	ANNUAL	ALL	5	FENCEGRD
240993.71	4077728.30	0.00056	90.26	90.26	1.5	ANNUAL	ALL	5	FENCEGRD
241006.66	4077723.10	0.00056	90.25	90.25	1.5	ANNUAL	ALL	5	FENCEGRD
241019.61	4077717.91	0.00056	90.21	90.21	1.5	ANNUAL	ALL	5	FENCEGRD
241032.55	4077712.72	0.00056	90.2	90.2	1.5	ANNUAL	ALL	5	FENCEGRD
241045.50	4077707.53	0.00055	90.18	90.18	1.5	ANNUAL	ALL	5	FENCEGRD
241058.44	4077702.34	0.00055	90.2	90.2	1.5	ANNUAL	ALL	5	FENCEGRD
241071.39	4077697.14	0.00055	90.23	90.23	1.5	ANNUAL	ALL	5	FENCEGRD
241084.34	4077691.95	0.00055	90.29	90.29	1.5	ANNUAL	ALL	5	FENCEGRD
241097.28	4077686.76	0.00055	90.39	90.39	1.5	ANNUAL	ALL	5	FENCEGRD
241110.23	4077681.57	0.00055	90.54	90.54	1.5	ANNUAL	ALL	5	FENCEGRD
241123.17	4077676.37	0.00055	90.73	90.73	1.5	ANNUAL	ALL	5	FENCEGRD
241136.12	4077671.18	0.00055	90.98	90.98	1.5	ANNUAL	ALL	5	FENCEGRD
241149.07	4077665.99	0.00055	91.37	91.37	1.5	ANNUAL	ALL	5	FENCEGRD
241162.01	4077660.80	0.00055	91.38	91.38	1.5	ANNUAL	ALL	5	FENCEGRD
241174.96	4077655.60	0.00055	91.45	91.45	1.5	ANNUAL	ALL	5	FENCEGRD
241187.90	4077650.41	0.00054	91.14	91.14	1.5	ANNUAL	ALL	5	FENCEGRD
241200.85	4077645.22	0.00054	90.94	90.94	1.5	ANNUAL	ALL	5	FENCEGRD
241213.79	4077640.03	0.00054	90.76	90.76	1.5	ANNUAL	ALL	5	FENCEGRD
241226.74	4077634.83	0.00054	90.38	90.38	1.5	ANNUAL	ALL	5	FENCEGRD
241239.69	4077629.64	0.00054	90.64	90.64	1.5	ANNUAL	ALL	5	FENCEGRD
241252.63	4077624.45	0.00054	90.48	90.48	1.5	ANNUAL	ALL	5	FENCEGRD
240561.00	4078302.09	0.00092	90.71	90.71	1.5	ANNUAL	ALL	5	FENCEGRD
240560.66	4078316.15	0.00093	90.68	90.68	1.5	ANNUAL	ALL	5	FENCEGRD
240560.31	4078330.21	0.00094	90.63	90.63	1.5	ANNUAL	ALL	5	FENCEGRD
240559.97	4078344.27	0.00095	90.6	90.6	1.5	ANNUAL	ALL	5	FENCEGRD
240559.62	4078358.33	0.00096	90.63	90.63	1.5	ANNUAL	ALL	5	FENCEGRD
240559.28	4078372.39	0.00097	90.7	90.7	1.5	ANNUAL	ALL	5	FENCEGRD
240466.55	4078287.03	0.00076	90.44	90.44	1.5	ANNUAL	ALL	5	FENCEGRD
240472.08	4078274.42	0.00076	90.45	90.45	1.5	ANNUAL	ALL	5	FENCEGRD
240477.60	4078261.80	0.00076	90.56	90.56	1.5	ANNUAL	ALL	5	FENCEGRD
240483.12	4078249.19	0.00076	90.72	90.72	1.5	ANNUAL	ALL	5	FENCEGRD
240488.64	4078236.58	0.00076	90.95	90.95	1.5	ANNUAL	ALL	5	FENCEGRD
240494.17	4078223.97	0.00076	91.26	91.26	1.5	ANNUAL	ALL	5	FENCEGRD
240499.69	4078211.36	0.00076	91.56	91.56	1.5	ANNUAL	ALL	5	FENCEGRD
240505.21	4078198.75	0.00075	91.82	91.82	1.5	ANNUAL	ALL	5	FENCEGRD
240510.74	4078186.14	0.00075	91.99	91.99	1.5	ANNUAL	ALL	5	FENCEGRD
240516.26	4078173.53	0.00075	92.09	92.09	1.5	ANNUAL	ALL	5	FENCEGRD
240521.78	4078160.92	0.00074	92.13	92.13	1.5	ANNUAL	ALL	5	FENCEGRD
240527.31	4078148.31	0.00074	92.09	92.09	1.5	ANNUAL	ALL	5	FENCEGRD
240532.83	4078135.70	0.00073	92.05	92.05	1.5	ANNUAL	ALL	5	FENCEGRD
240538.35	4078123.09	0.00072	91.97	91.97	1.5	ANNUAL	ALL	5	FENCEGRD
240543.87	4078110.47	0.00072	91.91	91.91	1.5	ANNUAL	ALL	5	FENCEGRD
240549.40	4078097.86	0.00071	91.86	91.86	1.5	ANNUAL	ALL	5	FENCEGRD
240554.92	4078085.25	0.0007	91.82	91.82	1.5	ANNUAL	ALL	5	FENCEGRD
240560.44	4078072.64	0.00069	91.78	91.78	1.5	ANNUAL	ALL	5	FENCEGRD
240565.97	4078060.03	0.00068	91.7	91.7	1.5	ANNUAL	ALL	5	FENCEGRD
240571.49	4078047.42	0.00067	91.63	91.63	1.5	ANNUAL	ALL	5	FENCEGRD

240577.01	4078034.81	0.00066	91.57	91.57	1.5	ANNUAL	ALL	5	FENCEGRD
240582.53	4078022.20	0.00065	91.53	91.53	1.5	ANNUAL	ALL	5	FENCEGRD
240588.06	4078009.59	0.00065	91.52	91.52	1.5	ANNUAL	ALL	5	FENCEGRD
240593.58	4077996.98	0.00064	91.49	91.49	1.5	ANNUAL	ALL	5	FENCEGRD
240599.10	4077984.37	0.00063	91.47	91.47	1.5	ANNUAL	ALL	5	FENCEGRD
240604.63	4077971.75	0.00062	91.43	91.43	1.5	ANNUAL	ALL	5	FENCEGRD
240610.15	4077959.14	0.00061	91.39	91.39	1.5	ANNUAL	ALL	5	FENCEGRD
240615.67	4077946.53	0.0006	91.36	91.36	1.5	ANNUAL	ALL	5	FENCEGRD
240621.20	4077933.92	0.00059	91.32	91.32	1.5	ANNUAL	ALL	5	FENCEGRD
240626.72	4077921.31	0.00058	91.24	91.24	1.5	ANNUAL	ALL	5	FENCEGRD
240632.24	4077908.70	0.00057	91.14	91.14	1.5	ANNUAL	ALL	5	FENCEGRD
240637.76	4077896.09	0.00056	91.03	91.03	1.5	ANNUAL	ALL	5	FENCEGRD
240643.29	4077883.48	0.00055	91.07	91.07	1.5	ANNUAL	ALL	5	FENCEGRD
240648.81	4077870.87	0.00054	90.78	90.78	1.5	ANNUAL	ALL	5	FENCEGRD
240654.33	4077858.26	0.00053	90.41	90.41	1.5	ANNUAL	ALL	5	FENCEGRD
240659.86	4077845.65	0.00052	90.85	90.85	1.5	ANNUAL	ALL	5	FENCEGRD
240665.38	4077833.03	0.00051	90.65	90.65	1.5	ANNUAL	ALL	5	FENCEGRD
240670.90	4077820.42	0.0005	90.64	90.64	1.5	ANNUAL	ALL	5	FENCEGRD
240676.42	4077807.81	0.00049	90.62	90.62	1.5	ANNUAL	ALL	5	FENCEGRD
240681.95	4077795.20	0.00049	90.59	90.59	1.5	ANNUAL	ALL	5	FENCEGRD
240687.47	4077782.59	0.00048	90.51	90.51	1.5	ANNUAL	ALL	5	FENCEGRD
240692.99	4077769.98	0.00047	90.4	90.4	1.5	ANNUAL	ALL	5	FENCEGRD
240698.52	4077757.37	0.00046	90.24	90.24	1.5	ANNUAL	ALL	5	FENCEGRD
240716.82	4077739.63	0.00046	89.96	89.96	1.5	ANNUAL	ALL	5	FENCEGRD
240729.60	4077734.51	0.00046	89.87	89.87	1.5	ANNUAL	ALL	5	FENCEGRD
240742.37	4077729.38	0.00046	89.76	89.76	1.5	ANNUAL	ALL	5	FENCEGRD
240755.15	4077724.26	0.00046	89.63	89.63	1.5	ANNUAL	ALL	5	FENCEGRD
240767.93	4077719.13	0.00046	89.55	89.55	1.5	ANNUAL	ALL	5	FENCEGRD
240780.71	4077714.01	0.00046	89.51	89.51	1.5	ANNUAL	ALL	5	FENCEGRD
240793.48	4077708.88	0.00046	89.48	89.48	1.5	ANNUAL	ALL	5	FENCEGRD
240806.26	4077703.76	0.00046	89.42	89.42	1.5	ANNUAL	ALL	5	FENCEGRD
240819.04	4077698.63	0.00046	89.36	89.36	1.5	ANNUAL	ALL	5	FENCEGRD
240831.82	4077693.51	0.00046	89.3	89.3	1.5	ANNUAL	ALL	5	FENCEGRD
240844.60	4077688.38	0.00046	89.25	89.25	1.5	ANNUAL	ALL	5	FENCEGRD
240857.37	4077683.26	0.00046	89.19	89.19	1.5	ANNUAL	ALL	5	FENCEGRD
240870.15	4077678.13	0.00046	89.12	89.12	1.5	ANNUAL	ALL	5	FENCEGRD
240882.93	4077673.01	0.00046	89.06	89.06	1.5	ANNUAL	ALL	5	FENCEGRD
240895.71	4077667.88	0.00046	89.04	89.04	1.5	ANNUAL	ALL	5	FENCEGRD
240908.48	4077662.76	0.00046	89.08	89.08	1.5	ANNUAL	ALL	5	FENCEGRD
240921.26	4077657.63	0.00046	89.08	89.08	1.5	ANNUAL	ALL	5	FENCEGRD
240934.04	4077652.51	0.00046	89.04	89.04	1.5	ANNUAL	ALL	5	FENCEGRD
240946.82	4077647.38	0.00046	89.02	89.02	1.5	ANNUAL	ALL	5	FENCEGRD
240959.60	4077642.26	0.00046	89.01	89.01	1.5	ANNUAL	ALL	5	FENCEGRD
240972.37	4077637.13	0.00046	89.03	89.03	1.5	ANNUAL	ALL	5	FENCEGRD
240985.15	4077632.01	0.00046	89.06	89.06	1.5	ANNUAL	ALL	5	FENCEGRD
240997.93	4077626.88	0.00046	89.13	89.13	1.5	ANNUAL	ALL	5	FENCEGRD
241010.71	4077621.76	0.00046	89.2	89.2	1.5	ANNUAL	ALL	5	FENCEGRD
241023.48	4077616.63	0.00046	89.29	89.29	1.5	ANNUAL	ALL	5	FENCEGRD
241036.26	4077611.51	0.00046	89.4	89.4	1.5	ANNUAL	ALL	5	FENCEGRD
241049.04	4077606.38	0.00046	89.56	89.56	1.5	ANNUAL	ALL	5	FENCEGRD
241061.82	4077601.26	0.00046	89.73	89.73	1.5	ANNUAL	ALL	5	FENCEGRD
241074.60	4077596.13	0.00046	89.97	89.97	1.5	ANNUAL	ALL	5	FENCEGRD
241087.37	4077591.01	0.00046	90.23	90.23	1.5	ANNUAL	ALL	5	FENCEGRD
241100.15	4077585.88	0.00045	90.77	90.77	1.5	ANNUAL	ALL	5	FENCEGRD
241112.93	4077580.76	0.00045	91.08	91.08	1.5	ANNUAL	ALL	5	FENCEGRD
241125.71	4077575.63	0.00045	91.16	91.16	1.5	ANNUAL	ALL	5	FENCEGRD
241138.48	4077570.51	0.00045	91.21	91.21	1.5	ANNUAL	ALL	5	FENCEGRD
241151.26	4077565.38	0.00045	91.25	91.25	1.5	ANNUAL	ALL	5	FENCEGRD
241164.04	4077560.26	0.00045	91.25	91.25	1.5	ANNUAL	ALL	5	FENCEGRD
241176.82	4077555.13	0.00045	91.2	91.2	1.5	ANNUAL	ALL	5	FENCEGRD
241189.60	4077550.01	0.00045	91.16	91.16	1.5	ANNUAL	ALL	5	FENCEGRD
241202.37	4077544.88	0.00045	91.02	91.02	1.5	ANNUAL	ALL	5	FENCEGRD
241215.15	4077539.76	0.00045	90.8	90.8	1.5	ANNUAL	ALL	5	FENCEGRD
241227.93	4077534.63	0.00045	90.68	90.68	1.5	ANNUAL	ALL	5	FENCEGRD
241240.71	4077529.51	0.00044	90.61	90.61	1.5	ANNUAL	ALL	5	FENCEGRD
241253.48	4077524.38	0.00044	90.57	90.57	1.5	ANNUAL	ALL	5	FENCEGRD
240461.03	4078299.64	0.00076	90.45	90.45	1.5	ANNUAL	ALL	5	FENCEGRD
240460.69	4078313.70	0.00077	90.5	90.5	1.5	ANNUAL	ALL	5	FENCEGRD

240460.34	4078327.76	0.00078	90.61	90.61	1.5	ANNUAL	ALL	5	FENCEGRD
240494.96	4077991.44	0.00056	91.51	91.51	1.5	ANNUAL	ALL	5	FENCEGRD
240500.54	4077978.70	0.00055	91.5	91.5	1.5	ANNUAL	ALL	5	FENCEGRD
240506.12	4077965.96	0.00055	91.48	91.48	1.5	ANNUAL	ALL	5	FENCEGRD
240511.70	4077953.22	0.00054	91.44	91.44	1.5	ANNUAL	ALL	5	FENCEGRD
240517.28	4077940.48	0.00053	91.38	91.38	1.5	ANNUAL	ALL	5	FENCEGRD
240522.86	4077927.74	0.00052	91.32	91.32	1.5	ANNUAL	ALL	5	FENCEGRD
240528.44	4077915.00	0.00051	91.28	91.28	1.5	ANNUAL	ALL	5	FENCEGRD
240534.02	4077902.26	0.00051	91.23	91.23	1.5	ANNUAL	ALL	5	FENCEGRD
240539.60	4077889.52	0.0005	91.21	91.21	1.5	ANNUAL	ALL	5	FENCEGRD
240545.18	4077876.78	0.00049	91.18	91.18	1.5	ANNUAL	ALL	5	FENCEGRD
240550.76	4077864.04	0.00048	90.39	90.39	1.5	ANNUAL	ALL	5	FENCEGRD
240556.34	4077851.30	0.00048	90.75	90.75	1.5	ANNUAL	ALL	5	FENCEGRD
240561.92	4077838.56	0.00047	90.4	90.4	1.5	ANNUAL	ALL	5	FENCEGRD
240567.49	4077825.82	0.00046	90.18	90.18	1.5	ANNUAL	ALL	5	FENCEGRD
240573.07	4077813.08	0.00045	90.05	90.05	1.5	ANNUAL	ALL	5	FENCEGRD
240578.65	4077800.34	0.00045	90.01	90.01	1.5	ANNUAL	ALL	5	FENCEGRD
240584.23	4077787.60	0.00044	90.01	90.01	1.5	ANNUAL	ALL	5	FENCEGRD
240589.81	4077774.86	0.00043	89.99	89.99	1.5	ANNUAL	ALL	5	FENCEGRD
240595.39	4077762.13	0.00043	89.86	89.86	1.5	ANNUAL	ALL	5	FENCEGRD
240600.97	4077749.39	0.00042	89.63	89.63	1.5	ANNUAL	ALL	5	FENCEGRD
240606.55	4077736.65	0.00041	89.31	89.31	1.5	ANNUAL	ALL	5	FENCEGRD
240612.13	4077723.91	0.00041	88.96	88.96	1.5	ANNUAL	ALL	5	FENCEGRD
240617.71	4077711.17	0.0004	88.62	88.62	1.5	ANNUAL	ALL	5	FENCEGRD
240623.29	4077698.43	0.0004	88.29	88.29	1.5	ANNUAL	ALL	5	FENCEGRD
240628.87	4077685.69	0.00039	88	88	1.5	ANNUAL	ALL	5	FENCEGRD
240647.35	4077667.77	0.00038	87.81	87.81	1.5	ANNUAL	ALL	5	FENCEGRD
240660.26	4077662.59	0.00038	87.83	87.83	1.5	ANNUAL	ALL	5	FENCEGRD
240673.17	4077657.42	0.00039	87.86	87.86	1.5	ANNUAL	ALL	5	FENCEGRD
240686.08	4077652.24	0.00039	87.87	87.87	1.5	ANNUAL	ALL	5	FENCEGRD
240698.99	4077647.06	0.00039	87.9	87.9	1.5	ANNUAL	ALL	5	FENCEGRD
240711.89	4077641.88	0.00039	87.92	87.92	1.5	ANNUAL	ALL	5	FENCEGRD
240724.80	4077636.71	0.00039	87.95	87.95	1.5	ANNUAL	ALL	5	FENCEGRD
240737.71	4077631.53	0.00039	87.98	87.98	1.5	ANNUAL	ALL	5	FENCEGRD
240750.62	4077626.35	0.00039	88.01	88.01	1.5	ANNUAL	ALL	5	FENCEGRD
240763.53	4077621.18	0.00039	88.05	88.05	1.5	ANNUAL	ALL	5	FENCEGRD
240776.44	4077616.00	0.00039	88.09	88.09	1.5	ANNUAL	ALL	5	FENCEGRD
240789.34	4077610.82	0.00039	88.09	88.09	1.5	ANNUAL	ALL	5	FENCEGRD
240802.25	4077605.64	0.00039	88.09	88.09	1.5	ANNUAL	ALL	5	FENCEGRD
240815.16	4077600.47	0.00039	88.11	88.11	1.5	ANNUAL	ALL	5	FENCEGRD
240828.07	4077595.29	0.00039	88.17	88.17	1.5	ANNUAL	ALL	5	FENCEGRD
240840.98	4077590.11	0.00039	88.24	88.24	1.5	ANNUAL	ALL	5	FENCEGRD
240853.88	4077584.93	0.00039	88.31	88.31	1.5	ANNUAL	ALL	5	FENCEGRD
240866.79	4077579.76	0.00039	88.35	88.35	1.5	ANNUAL	ALL	5	FENCEGRD
240879.70	4077574.58	0.00039	88.39	88.39	1.5	ANNUAL	ALL	5	FENCEGRD
240892.61	4077569.40	0.00039	88.42	88.42	1.5	ANNUAL	ALL	5	FENCEGRD
240905.52	4077564.23	0.00039	88.47	88.47	1.5	ANNUAL	ALL	5	FENCEGRD
240918.43	4077559.05	0.00039	88.5	88.5	1.5	ANNUAL	ALL	5	FENCEGRD
240931.33	4077553.87	0.00039	88.58	88.58	1.5	ANNUAL	ALL	5	FENCEGRD
240944.24	4077548.69	0.00039	88.66	88.66	1.5	ANNUAL	ALL	5	FENCEGRD
240957.15	4077543.52	0.00039	88.77	88.77	1.5	ANNUAL	ALL	5	FENCEGRD
240970.06	4077538.34	0.00039	88.92	88.92	1.5	ANNUAL	ALL	5	FENCEGRD
240982.97	4077533.16	0.00039	89.11	89.11	1.5	ANNUAL	ALL	5	FENCEGRD
240995.87	4077527.98	0.00039	89.34	89.34	1.5	ANNUAL	ALL	5	FENCEGRD
241008.78	4077522.81	0.00039	89.54	89.54	1.5	ANNUAL	ALL	5	FENCEGRD
241021.69	4077517.63	0.00039	89.76	89.76	1.5	ANNUAL	ALL	5	FENCEGRD
241034.60	4077512.45	0.00039	90	90	1.5	ANNUAL	ALL	5	FENCEGRD
241047.51	4077507.27	0.00039	90.15	90.15	1.5	ANNUAL	ALL	5	FENCEGRD
241060.42	4077502.10	0.00038	90.27	90.27	1.5	ANNUAL	ALL	5	FENCEGRD
241073.32	4077496.92	0.00038	90.33	90.33	1.5	ANNUAL	ALL	5	FENCEGRD
241086.23	4077491.74	0.00038	90.53	90.53	1.5	ANNUAL	ALL	5	FENCEGRD
241099.14	4077486.57	0.00038	90.8	90.8	1.5	ANNUAL	ALL	5	FENCEGRD
241112.05	4077481.39	0.00038	90.95	90.95	1.5	ANNUAL	ALL	5	FENCEGRD
241124.96	4077476.21	0.00038	91.04	91.04	1.5	ANNUAL	ALL	5	FENCEGRD
241137.86	4077471.03	0.00038	91.1	91.1	1.5	ANNUAL	ALL	5	FENCEGRD
241150.77	4077465.86	0.00038	91.1	91.1	1.5	ANNUAL	ALL	5	FENCEGRD
241163.68	4077460.68	0.00038	91.2	91.2	1.5	ANNUAL	ALL	5	FENCEGRD
241176.59	4077455.50	0.00038	91.18	91.18	1.5	ANNUAL	ALL	5	FENCEGRD

241189.50	4077450.32	0.00038	91.12	91.12	1.5	ANNUAL	ALL	5	FENCEGRD
241202.41	4077445.15	0.00038	91.26	91.26	1.5	ANNUAL	ALL	5	FENCEGRD
241215.31	4077439.97	0.00037	91.09	91.09	1.5	ANNUAL	ALL	5	FENCEGRD
241228.22	4077434.79	0.00037	90.7	90.7	1.5	ANNUAL	ALL	5	FENCEGRD
241241.13	4077429.62	0.00037	90.51	90.51	1.5	ANNUAL	ALL	5	FENCEGRD
241254.04	4077424.44	0.00037	90.48	90.48	1.5	ANNUAL	ALL	5	FENCEGRD
240856.31	4078506.51	0.0023	92.59	92.59	1.5	ANNUAL	ALL	5	FENCEGRD
240674.19	4078361.14	0.00123	91.01	91.01	1.5	ANNUAL	ALL	5	FENCEGRD
240577.17	4078336.91	0.00098	90.64	90.64	1.5	ANNUAL	ALL	5	FENCEGRD
240480.15	4078312.69	0.0008	90.51	90.51	1.5	ANNUAL	ALL	5	FENCEGRD
241143.86	4078448.57	0.00701	92.96	92.96	1.5	ANNUAL	ALL	5	FENCEGRD
240928.63	4078282.91	0.00261	92.22	92.22	1.5	ANNUAL	ALL	5	FENCEGRD
240847.27	4078224.76	0.00159	92.23	92.23	1.5	ANNUAL	ALL	5	FENCEGRD
240765.91	4078166.62	0.00115	91.56	91.56	1.5	ANNUAL	ALL	5	FENCEGRD
240684.55	4078108.48	0.00089	91.78	91.78	1.5	ANNUAL	ALL	5	FENCEGRD
241218.63	4078517.15	0.01415	92.99	92.99	1.5	ANNUAL	ALL	5	FENCEGRD
241115.23	4078440.00	0.00595	92.73	92.73	1.5	ANNUAL	ALL	5	FENCEGRD
240913.89	4078304.40	0.00253	92.18	92.18	1.5	ANNUAL	ALL	5	FENCEGRD
240830.25	4078249.67	0.00161	91.32	91.32	1.5	ANNUAL	ALL	5	FENCEGRD
240818.93	4078267.17	0.00161	91.41	91.41	1.5	ANNUAL	ALL	5	FENCEGRD
240744.89	4078197.50	0.00117	91.76	91.76	1.5	ANNUAL	ALL	5	FENCEGRD
240755.17	4078182.15	0.00116	91.64	91.64	1.5	ANNUAL	ALL	5	FENCEGRD
240734.15	4078214.15	0.00118	91.95	91.95	1.5	ANNUAL	ALL	5	FENCEGRD
240659.77	4078144.99	0.00091	91.76	91.76	1.5	ANNUAL	ALL	5	FENCEGRD
240669.36	4078130.66	0.0009	91.77	91.77	1.5	ANNUAL	ALL	5	FENCEGRD
240649.36	4078161.12	0.00092	91.84	91.84	1.5	ANNUAL	ALL	5	FENCEGRD
240564.58	4078108.10	0.00074	91.99	91.99	1.5	ANNUAL	ALL	5	FENCEGRD
240977.72	4078108.38	0.00149	91.8	91.8	1.5	ANNUAL	ALL	5	FENCEGRD
240924.70	4078023.60	0.00104	91.46	91.46	1.5	ANNUAL	ALL	5	FENCEGRD
240871.67	4077938.81	0.00079	91.08	91.08	1.5	ANNUAL	ALL	5	FENCEGRD
241146.92	4078342.06	0.00731	92.93	92.93	1.5	ANNUAL	ALL	5	FENCEGRD
241112.14	4078263.72	0.00617	92.08	92.08	1.5	ANNUAL	ALL	5	FENCEGRD
241030.98	4078080.93	0.00149	91.83	91.83	1.5	ANNUAL	ALL	5	FENCEGRD
240990.40	4077989.53	0.00104	91.5	91.5	1.5	ANNUAL	ALL	5	FENCEGRD
240949.82	4077898.14	0.00078	90.77	90.77	1.5	ANNUAL	ALL	5	FENCEGRD
241207.01	4078535.69	0.01423	92.77	92.77	1.5	ANNUAL	ALL	5	FENCEGRD
241199.77	4078523.38	0.01235	93.15	93.15	1.5	ANNUAL	ALL	5	FENCEGRD
241182.99	4078516.68	0.0105	93.14	93.14	1.5	ANNUAL	ALL	5	FENCEGRD
241144.07	4078406.97	0.00671	92.88	92.88	1.5	ANNUAL	ALL	5	FENCEGRD
240995.52	4078098.46	0.00148	91.95	91.95	1.5	ANNUAL	ALL	5	FENCEGRD
241012.43	4078089.76	0.00148	92.12	92.12	1.5	ANNUAL	ALL	5	FENCEGRD
240960.61	4078117.11	0.00148	91.45	91.45	1.5	ANNUAL	ALL	5	FENCEGRD
240936.81	4078016.38	0.00104	91.78	91.78	1.5	ANNUAL	ALL	5	FENCEGRD
240954.21	4078007.43	0.00104	91.84	91.84	1.5	ANNUAL	ALL	5	FENCEGRD
240971.61	4077998.49	0.00104	91.75	91.75	1.5	ANNUAL	ALL	5	FENCEGRD
240909.88	4078030.94	0.00104	91.59	91.59	1.5	ANNUAL	ALL	5	FENCEGRD
240886.44	4077930.02	0.00078	90.87	90.87	1.5	ANNUAL	ALL	5	FENCEGRD
240904.21	4077920.88	0.00078	90.76	90.76	1.5	ANNUAL	ALL	5	FENCEGRD
240921.97	4077911.75	0.00078	90.9	90.9	1.5	ANNUAL	ALL	5	FENCEGRD
240859.15	4077944.76	0.00078	91.13	91.13	1.5	ANNUAL	ALL	5	FENCEGRD
241187.20	4078531.05	0.01159	93.15	93.15	1.5	ANNUAL	ALL	5	FENCEGRD
241142.03	4078493.78	0.00749	93.02	93.02	1.5	ANNUAL	ALL	5	FENCEGRD
241143.36	4078474.65	0.00727	93.01	93.01	1.5	ANNUAL	ALL	5	FENCEGRD
241116.65	4078423.86	0.0059	92.79	92.79	1.5	ANNUAL	ALL	5	FENCEGRD
240967.77	4078232.01	0.00244	92.19	92.19	1.5	ANNUAL	ALL	5	FENCEGRD
240984.79	4078220.45	0.00245	91.69	91.69	1.5	ANNUAL	ALL	5	FENCEGRD
240949.16	4078245.63	0.00243	92.11	92.11	1.5	ANNUAL	ALL	5	FENCEGRD
240906.76	4078152.81	0.0015	91.99	91.99	1.5	ANNUAL	ALL	5	FENCEGRD
240887.80	4078166.68	0.0015	91.52	91.52	1.5	ANNUAL	ALL	5	FENCEGRD
240845.65	4078073.68	0.00106	91.5	91.5	1.5	ANNUAL	ALL	5	FENCEGRD
240826.43	4078087.72	0.00107	91.84	91.84	1.5	ANNUAL	ALL	5	FENCEGRD
240831.01	4077963.01	0.00079	91.65	91.65	1.5	ANNUAL	ALL	5	FENCEGRD
240775.16	4078000.92	0.0008	91.19	91.19	1.5	ANNUAL	ALL	5	FENCEGRD
240642.33	4077850.85	0.00052	90.72	90.72	1.5	ANNUAL	ALL	5	FENCEGRD
241155.36	4078541.42	0.00962	92.87	92.87	1.5	ANNUAL	ALL	5	FENCEGRD
241144.52	4078532.12	0.00854	92.94	92.94	1.5	ANNUAL	ALL	5	FENCEGRD
241145.60	4078510.02	0.00797	93.01	93.01	1.5	ANNUAL	ALL	5	FENCEGRD
241133.67	4078522.82	0.00771	92.99	92.99	1.5	ANNUAL	ALL	5	FENCEGRD

241122.83	4078513.52	0.00704	92.87	92.87	1.5	ANNUAL	ALL	5	FENCEGRD
241111.98	4078504.22	0.0065	92.56	92.56	1.5	ANNUAL	ALL	5	FENCEGRD
241060.39	4078434.14	0.00462	92.61	92.61	1.5	ANNUAL	ALL	5	FENCEGRD
240974.15	4078359.26	0.00357	92.45	92.45	1.5	ANNUAL	ALL	5	FENCEGRD
240898.23	4078294.18	0.00227	92.19	92.19	1.5	ANNUAL	ALL	5	FENCEGRD
240912.78	4078280.31	0.00236	92.08	92.08	1.5	ANNUAL	ALL	5	FENCEGRD
240927.33	4078266.44	0.00242	91.83	91.83	1.5	ANNUAL	ALL	5	FENCEGRD
240822.31	4078229.09	0.0015	91.63	91.63	1.5	ANNUAL	ALL	5	FENCEGRD
240836.86	4078215.22	0.00151	91.93	91.93	1.5	ANNUAL	ALL	5	FENCEGRD
240851.42	4078201.35	0.00152	92.15	92.15	1.5	ANNUAL	ALL	5	FENCEGRD
240865.97	4078187.48	0.00151	92	92	1.5	ANNUAL	ALL	5	FENCEGRD
240808.31	4078243.87	0.00149	91.65	91.65	1.5	ANNUAL	ALL	5	FENCEGRD
240746.39	4078164.00	0.0011	91.64	91.64	1.5	ANNUAL	ALL	5	FENCEGRD
240760.94	4078150.13	0.0011	91.6	91.6	1.5	ANNUAL	ALL	5	FENCEGRD
240775.50	4078136.26	0.0011	91.55	91.55	1.5	ANNUAL	ALL	5	FENCEGRD
240790.05	4078122.40	0.00109	91.19	91.19	1.5	ANNUAL	ALL	5	FENCEGRD
240804.60	4078108.53	0.00108	91.87	91.87	1.5	ANNUAL	ALL	5	FENCEGRD
240732.39	4078178.79	0.0011	91.65	91.65	1.5	ANNUAL	ALL	5	FENCEGRD
240670.47	4078098.92	0.00085	91.9	91.9	1.5	ANNUAL	ALL	5	FENCEGRD
240685.03	4078085.05	0.00085	91.85	91.85	1.5	ANNUAL	ALL	5	FENCEGRD
240699.58	4078071.18	0.00084	91.76	91.76	1.5	ANNUAL	ALL	5	FENCEGRD
240714.13	4078057.31	0.00084	91.55	91.55	1.5	ANNUAL	ALL	5	FENCEGRD
240728.68	4078043.44	0.00083	91.34	91.34	1.5	ANNUAL	ALL	5	FENCEGRD
240743.23	4078029.57	0.00082	91.22	91.22	1.5	ANNUAL	ALL	5	FENCEGRD
240757.79	4078015.70	0.00081	90.94	90.94	1.5	ANNUAL	ALL	5	FENCEGRD
240594.56	4078033.83	0.00068	91.58	91.58	1.5	ANNUAL	ALL	5	FENCEGRD
240525.91	4077961.81	0.00055	91.43	91.43	1.5	ANNUAL	ALL	5	FENCEGRD
241164.12	4078553.48	0.01104	92.79	92.79	1.5	ANNUAL	ALL	5	FENCEGRD
241135.85	4078544.38	0.00848	92.98	92.98	1.5	ANNUAL	ALL	5	FENCEGRD
241123.96	4078536.46	0.00762	92.81	92.81	1.5	ANNUAL	ALL	5	FENCEGRD
241112.07	4078528.54	0.00693	92.49	92.49	1.5	ANNUAL	ALL	5	FENCEGRD
241100.18	4078520.63	0.00635	92.44	92.44	1.5	ANNUAL	ALL	5	FENCEGRD
241057.09	4078482.23	0.00479	92.56	92.56	1.5	ANNUAL	ALL	5	FENCEGRD
241028.83	4078473.13	0.0042	92.46	92.46	1.5	ANNUAL	ALL	5	FENCEGRD
240973.88	4078403.15	0.00331	92.63	92.63	1.5	ANNUAL	ALL	5	FENCEGRD
240942.57	4078397.27	0.00295	92.61	92.61	1.5	ANNUAL	ALL	5	FENCEGRD
240933.69	4078409.80	0.00285	92.69	92.69	1.5	ANNUAL	ALL	5	FENCEGRD
240799.15	4078255.97	0.00149	91.31	91.31	1.5	ANNUAL	ALL	5	FENCEGRD
241166.95	4078574.19	0.01334	92.55	92.55	1.5	ANNUAL	ALL	5	FENCEGRD
241155.52	4078565.62	0.01116	92.85	92.85	1.5	ANNUAL	ALL	5	FENCEGRD
241144.09	4078557.05	0.00961	92.95	92.95	1.5	ANNUAL	ALL	5	FENCEGRD
241127.62	4078555.20	0.00843	92.97	92.97	1.5	ANNUAL	ALL	5	FENCEGRD
241070.48	4078512.33	0.00537	92.29	92.29	1.5	ANNUAL	ALL	5	FENCEGRD
241155.23	4078592.64	0.01428	92.49	92.49	1.5	ANNUAL	ALL	5	FENCEGRD
241142.75	4078585.70	0.01171	92.79	92.79	1.5	ANNUAL	ALL	5	FENCEGRD
241135.87	4078568.66	0.00966	92.97	92.97	1.5	ANNUAL	ALL	5	FENCEGRD
241117.78	4078571.81	0.00858	92.76	92.76	1.5	ANNUAL	ALL	5	FENCEGRD
241110.90	4078554.78	0.00755	92.5	92.5	1.5	ANNUAL	ALL	5	FENCEGRD
241101.59	4078542.95	0.00684	92.37	92.37	1.5	ANNUAL	ALL	5	FENCEGRD
241092.81	4078557.93	0.00685	92.39	92.39	1.5	ANNUAL	ALL	5	FENCEGRD
241060.96	4078527.01	0.00529	92.38	92.38	1.5	ANNUAL	ALL	5	FENCEGRD
241035.99	4078513.13	0.00458	92.5	92.5	1.5	ANNUAL	ALL	5	FENCEGRD
240916.69	4078435.15	0.0027	92.46	92.46	1.5	ANNUAL	ALL	5	FENCEGRD
240829.66	4078385.98	0.00195	92.78	92.78	1.5	ANNUAL	ALL	5	FENCEGRD
240844.83	4078378.80	0.00203	92.7	92.7	1.5	ANNUAL	ALL	5	FENCEGRD
240818.12	4078405.21	0.00191	92.62	92.62	1.5	ANNUAL	ALL	5	FENCEGRD
240742.51	4078337.01	0.00138	84.89	92.69	1.5	ANNUAL	ALL	5	FENCEGRD
240730.72	4078356.61	0.00138	85.3	92.69	1.5	ANNUAL	ALL	5	FENCEGRD
240648.93	4078297.93	0.0011	91.48	91.48	1.5	ANNUAL	ALL	5	FENCEGRD
240567.29	4078240.46	0.00088	91.52	91.52	1.5	ANNUAL	ALL	5	FENCEGRD
240578.82	4078222.70	0.00088	91.83	91.83	1.5	ANNUAL	ALL	5	FENCEGRD
240555.92	4078259.42	0.00088	91.13	91.13	1.5	ANNUAL	ALL	5	FENCEGRD
240791.28	4078270.51	0.0015	91.95	91.95	1.5	ANNUAL	ALL	5	FENCEGRD
241142.15	4078609.95	0.01531	92.48	92.48	1.5	ANNUAL	ALL	5	FENCEGRD
241130.04	4078602.38	0.01218	92.69	92.69	1.5	ANNUAL	ALL	5	FENCEGRD
241123.53	4078585.83	0.00984	92.81	92.81	1.5	ANNUAL	ALL	5	FENCEGRD
241105.81	4078587.23	0.00859	92.72	92.72	1.5	ANNUAL	ALL	5	FENCEGRD
241099.31	4078570.68	0.00752	92.51	92.51	1.5	ANNUAL	ALL	5	FENCEGRD

241081.59	4078572.08	0.00676	92.53	92.53	1.5	ANNUAL	ALL	5	FENCEGRD
241069.48	4078564.50	0.00612	92.47	92.47	1.5	ANNUAL	ALL	5	FENCEGRD
241050.86	4078540.38	0.0052	92.01	92.01	1.5	ANNUAL	ALL	5	FENCEGRD
241026.64	4078525.23	0.00449	92.46	92.46	1.5	ANNUAL	ALL	5	FENCEGRD
240972.58	4078503.90	0.00348	92.57	92.57	1.5	ANNUAL	ALL	5	FENCEGRD
240794.20	4078137.57	0.00114	91.2	91.2	1.5	ANNUAL	ALL	5	FENCEGRD
240734.19	4078057.58	0.00086	91.51	91.51	1.5	ANNUAL	ALL	5	FENCEGRD
241121.85	4078620.04	0.01406	92.43	92.43	1.5	ANNUAL	ALL	5	FENCEGRD
241116.36	4078606.86	0.0111	92.64	92.64	1.5	ANNUAL	ALL	5	FENCEGRD
241055.90	4078461.81	0.00464	92.57	92.57	1.5	ANNUAL	ALL	5	FENCEGRD
240948.45	4078166.10	0.00172	91.96	91.96	1.5	ANNUAL	ALL	5	FENCEGRD
240909.98	4078073.80	0.00118	91.85	91.85	1.5	ANNUAL	ALL	5	FENCEGRD
240896.52	4078079.41	0.00117	91.9	91.9	1.5	ANNUAL	ALL	5	FENCEGRD
240871.51	4077981.49	0.00087	91.45	91.45	1.5	ANNUAL	ALL	5	FENCEGRD
240858.05	4077987.10	0.00087	91.38	91.38	1.5	ANNUAL	ALL	5	FENCEGRD
240819.58	4077894.80	0.00067	91.11	91.11	1.5	ANNUAL	ALL	5	FENCEGRD
241028.85	4078041.37	0.00129	91.82	91.82	1.5	ANNUAL	ALL	5	FENCEGRD
241015.39	4078043.61	0.00127	91.76	91.76	1.5	ANNUAL	ALL	5	FENCEGRD
241012.44	4077942.73	0.00094	91.57	91.57	1.5	ANNUAL	ALL	5	FENCEGRD
240998.98	4077944.97	0.00093	91.4	91.4	1.5	ANNUAL	ALL	5	FENCEGRD
240996.02	4077844.08	0.00072	91.24	91.24	1.5	ANNUAL	ALL	5	FENCEGRD
240982.56	4077846.32	0.00071	91.61	91.61	1.5	ANNUAL	ALL	5	FENCEGRD
241099.31	4078621.18	0.01092	92.39	92.39	1.5	ANNUAL	ALL	5	FENCEGRD
241084.74	4078621.18	0.00939	92.36	92.36	1.5	ANNUAL	ALL	5	FENCEGRD
241070.16	4078621.18	0.0082	92.33	92.33	1.5	ANNUAL	ALL	5	FENCEGRD
241099.31	4078606.90	0.00941	92.62	92.62	1.5	ANNUAL	ALL	5	FENCEGRD
241084.74	4078606.90	0.00831	92.63	92.63	1.5	ANNUAL	ALL	5	FENCEGRD
241070.16	4078606.90	0.00742	92.61	92.61	1.5	ANNUAL	ALL	5	FENCEGRD
241084.74	4078592.61	0.00759	92.72	92.72	1.5	ANNUAL	ALL	5	FENCEGRD
241070.16	4078592.61	0.00687	92.67	92.67	1.5	ANNUAL	ALL	5	FENCEGRD
241113.89	4078478.33	0.00623	92.7	92.7	1.5	ANNUAL	ALL	5	FENCEGRD
241113.89	4078392.61	0.00575	92.7	92.7	1.5	ANNUAL	ALL	5	FENCEGRD
241070.16	4078235.47	0.00399	91.86	91.86	1.5	ANNUAL	ALL	5	FENCEGRD
241084.74	4078135.47	0.00211	92.1	92.1	1.5	ANNUAL	ALL	5	FENCEGRD
241113.89	4078035.47	0.00145	91.42	91.42	1.5	ANNUAL	ALL	5	FENCEGRD
241099.31	4078035.47	0.00142	91.75	91.75	1.5	ANNUAL	ALL	5	FENCEGRD
241084.74	4078035.47	0.00138	91.83	91.83	1.5	ANNUAL	ALL	5	FENCEGRD
241070.16	4078035.47	0.00135	92.04	92.04	1.5	ANNUAL	ALL	5	FENCEGRD
241113.89	4077935.47	0.00104	91.49	91.49	1.5	ANNUAL	ALL	5	FENCEGRD
241099.31	4077935.47	0.00102	91.76	91.76	1.5	ANNUAL	ALL	5	FENCEGRD
241084.74	4077935.47	0.001	91.8	91.8	1.5	ANNUAL	ALL	5	FENCEGRD
241070.16	4077935.47	0.00098	91.78	91.78	1.5	ANNUAL	ALL	5	FENCEGRD
241113.89	4077835.47	0.00079	91.72	91.72	1.5	ANNUAL	ALL	5	FENCEGRD
241099.31	4077835.47	0.00078	91.78	91.78	1.5	ANNUAL	ALL	5	FENCEGRD
241084.74	4077835.47	0.00077	91.75	91.75	1.5	ANNUAL	ALL	5	FENCEGRD
241070.16	4077835.47	0.00076	91.72	91.72	1.5	ANNUAL	ALL	5	FENCEGRD
241056.39	4078594.31	0.00633	92.65	92.65	1.5	ANNUAL	ALL	5	FENCEGRD
241065.47	4078578.71	0.00629	92.6	92.6	1.5	ANNUAL	ALL	5	FENCEGRD
241051.70	4078566.13	0.00558	92.53	92.53	1.5	ANNUAL	ALL	5	FENCEGRD
241054.33	4078508.21	0.00494	92.5	92.5	1.5	ANNUAL	ALL	5	FENCEGRD
241030.29	4078395.91	0.00411	92.53	92.53	1.5	ANNUAL	ALL	5	FENCEGRD
241031.97	4078367.20	0.00437	92.64	92.64	1.5	ANNUAL	ALL	5	FENCEGRD
241037.33	4078238.18	0.00357	92.24	92.24	1.5	ANNUAL	ALL	5	FENCEGRD
241004.50	4078240.90	0.00308	91.88	91.88	1.5	ANNUAL	ALL	5	FENCEGRD
240994.39	4078141.73	0.00174	92.18	92.18	1.5	ANNUAL	ALL	5	FENCEGRD
241013.33	4078140.17	0.00181	92.19	92.19	1.5	ANNUAL	ALL	5	FENCEGRD
241032.28	4078138.60	0.00188	92.16	92.16	1.5	ANNUAL	ALL	5	FENCEGRD
240991.36	4078041.98	0.00122	91.6	91.6	1.5	ANNUAL	ALL	5	FENCEGRD
241043.89	4078037.64	0.0013	92.08	92.08	1.5	ANNUAL	ALL	5	FENCEGRD
241029.60	4077938.82	0.00095	91.65	91.65	1.5	ANNUAL	ALL	5	FENCEGRD
241043.12	4077937.70	0.00096	91.72	91.72	1.5	ANNUAL	ALL	5	FENCEGRD
241056.64	4077936.59	0.00097	91.78	91.78	1.5	ANNUAL	ALL	5	FENCEGRD
241011.06	4077840.35	0.00072	91.2	91.2	1.5	ANNUAL	ALL	5	FENCEGRD
241030.76	4077838.73	0.00073	91.57	91.57	1.5	ANNUAL	ALL	5	FENCEGRD
241050.46	4077837.10	0.00074	91.7	91.7	1.5	ANNUAL	ALL	5	FENCEGRD
241047.33	4078614.88	0.00654	92.32	92.32	1.5	ANNUAL	ALL	5	FENCEGRD
241028.70	4078614.43	0.00572	92.31	92.31	1.5	ANNUAL	ALL	5	FENCEGRD
241041.00	4078603.06	0.00594	92.59	92.59	1.5	ANNUAL	ALL	5	FENCEGRD

241015.32	4078611.96	0.00519	92.37	92.37	1.5	ANNUAL	ALL	5	FENCEGRD
241025.54	4078596.41	0.00527	92.57	92.57	1.5	ANNUAL	ALL	5	FENCEGRD
241042.64	4078586.70	0.00565	92.65	92.65	1.5	ANNUAL	ALL	5	FENCEGRD
241000.47	4078613.50	0.00476	92.3	92.3	1.5	ANNUAL	ALL	5	FENCEGRD
241006.82	4078596.19	0.00473	92.55	92.55	1.5	ANNUAL	ALL	5	FENCEGRD
241019.63	4078584.34	0.00493	92.56	92.56	1.5	ANNUAL	ALL	5	FENCEGRD
240986.75	4078611.96	0.00438	92.33	92.33	1.5	ANNUAL	ALL	5	FENCEGRD
240993.52	4078593.49	0.00438	92.54	92.54	1.5	ANNUAL	ALL	5	FENCEGRD
241003.74	4078577.94	0.00447	92.55	92.55	1.5	ANNUAL	ALL	5	FENCEGRD
241020.85	4078568.23	0.00477	92.45	92.45	1.5	ANNUAL	ALL	5	FENCEGRD
241037.95	4078558.51	0.00509	92.38	92.38	1.5	ANNUAL	ALL	5	FENCEGRD
240972.05	4078613.08	0.00405	92.28	92.28	1.5	ANNUAL	ALL	5	FENCEGRD
240978.52	4078595.45	0.00407	92.52	92.52	1.5	ANNUAL	ALL	5	FENCEGRD
240984.98	4078577.82	0.00408	92.49	92.49	1.5	ANNUAL	ALL	5	FENCEGRD
240998.02	4078565.76	0.00425	92.48	92.48	1.5	ANNUAL	ALL	5	FENCEGRD
240943.57	4078612.84	0.0035	92.29	92.29	1.5	ANNUAL	ALL	5	FENCEGRD
240950.10	4078595.03	0.00355	92.46	92.46	1.5	ANNUAL	ALL	5	FENCEGRD
240956.63	4078577.22	0.00357	92.54	92.54	1.5	ANNUAL	ALL	5	FENCEGRD
240963.16	4078559.41	0.00359	92.4	92.4	1.5	ANNUAL	ALL	5	FENCEGRD
240919.43	4078600.74	0.00311	92.5	92.5	1.5	ANNUAL	ALL	5	FENCEGRD
240926.01	4078582.81	0.00315	92.54	92.54	1.5	ANNUAL	ALL	5	FENCEGRD
240932.58	4078564.88	0.00318	92.47	92.47	1.5	ANNUAL	ALL	5	FENCEGRD
240949.07	4078531.86	0.00328	92.32	92.32	1.5	ANNUAL	ALL	5	FENCEGRD
240965.68	4078522.43	0.00346	92.45	92.45	1.5	ANNUAL	ALL	5	FENCEGRD
240987.82	4078509.86	0.00372	92.5	92.5	1.5	ANNUAL	ALL	5	FENCEGRD
241026.56	4078487.86	0.00424	92.44	92.44	1.5	ANNUAL	ALL	5	FENCEGRD
240884.32	4078618.58	0.0027	91.97	91.97	1.5	ANNUAL	ALL	5	FENCEGRD
240895.33	4078588.57	0.00279	92.66	92.66	1.5	ANNUAL	ALL	5	FENCEGRD
240901.93	4078570.56	0.00283	92.55	92.55	1.5	ANNUAL	ALL	5	FENCEGRD
240915.14	4078534.54	0.00289	92.27	92.27	1.5	ANNUAL	ALL	5	FENCEGRD
240927.30	4078513.38	0.00296	92.55	92.55	1.5	ANNUAL	ALL	5	FENCEGRD
240943.98	4078503.90	0.00312	92.58	92.58	1.5	ANNUAL	ALL	5	FENCEGRD
240971.78	4078488.12	0.00341	92.54	92.54	1.5	ANNUAL	ALL	5	FENCEGRD
240872.23	4078573.62	0.00254	92.06	92.06	1.5	ANNUAL	ALL	5	FENCEGRD
240886.09	4078535.84	0.0026	92.34	92.34	1.5	ANNUAL	ALL	5	FENCEGRD
240893.02	4078516.95	0.00263	92.56	92.56	1.5	ANNUAL	ALL	5	FENCEGRD
240897.63	4078504.36	0.00264	92.58	92.58	1.5	ANNUAL	ALL	5	FENCEGRD
240911.61	4078491.44	0.00275	92.54	92.54	1.5	ANNUAL	ALL	5	FENCEGRD
240929.10	4078481.50	0.0029	92.47	92.47	1.5	ANNUAL	ALL	5	FENCEGRD
240850.51	4078554.95	0.00233	92.08	92.08	1.5	ANNUAL	ALL	5	FENCEGRD
240857.42	4078536.11	0.00236	92.3	92.3	1.5	ANNUAL	ALL	5	FENCEGRD
240871.24	4078498.43	0.00241	92.66	92.66	1.5	ANNUAL	ALL	5	FENCEGRD
240875.84	4078485.87	0.00242	92.62	92.62	1.5	ANNUAL	ALL	5	FENCEGRD
240889.78	4078472.99	0.00252	92.51	92.51	1.5	ANNUAL	ALL	5	FENCEGRD
240826.47	4078542.59	0.00214	92.47	92.47	1.5	ANNUAL	ALL	5	FENCEGRD
240833.37	4078523.79	0.00216	92.18	92.18	1.5	ANNUAL	ALL	5	FENCEGRD
240840.26	4078504.99	0.00219	92.31	92.31	1.5	ANNUAL	ALL	5	FENCEGRD
240873.76	4078451.23	0.00235	92.62	92.62	1.5	ANNUAL	ALL	5	FENCEGRD
240891.17	4078441.35	0.00248	92.51	92.51	1.5	ANNUAL	ALL	5	FENCEGRD
240926.00	4078421.57	0.00277	92.61	92.61	1.5	ANNUAL	ALL	5	FENCEGRD
240765.72	4078630.33	0.00177	90.86	90.86	1.5	ANNUAL	ALL	5	FENCEGRD
240807.02	4078517.72	0.00198	92.49	92.49	1.5	ANNUAL	ALL	5	FENCEGRD
240813.90	4078498.96	0.00201	92.41	92.41	1.5	ANNUAL	ALL	5	FENCEGRD
240820.78	4078480.19	0.00203	92.19	92.19	1.5	ANNUAL	ALL	5	FENCEGRD
240827.67	4078461.42	0.00204	92.75	92.75	1.5	ANNUAL	ALL	5	FENCEGRD
240840.34	4078439.36	0.0021	92.84	92.84	1.5	ANNUAL	ALL	5	FENCEGRD
240875.11	4078419.62	0.00232	92.77	92.77	1.5	ANNUAL	ALL	5	FENCEGRD
240892.49	4078409.75	0.00245	92.71	92.71	1.5	ANNUAL	ALL	5	FENCEGRD
240909.88	4078399.88	0.00261	92.65	92.65	1.5	ANNUAL	ALL	5	FENCEGRD
240927.26	4078390.01	0.00278	92.5	92.5	1.5	ANNUAL	ALL	5	FENCEGRD
240665.74	4078630.28	0.00133	90.53	90.53	1.5	ANNUAL	ALL	5	FENCEGRD
240672.68	4078611.36	0.00136	90.79	90.79	1.5	ANNUAL	ALL	5	FENCEGRD
240679.62	4078592.44	0.00139	90.68	90.68	1.5	ANNUAL	ALL	5	FENCEGRD
240678.71	4078555.09	0.00139	90.72	90.72	1.5	ANNUAL	ALL	5	FENCEGRD
240691.18	4078560.91	0.00144	90.6	90.6	1.5	ANNUAL	ALL	5	FENCEGRD
240695.81	4078548.29	0.00145	90.79	90.79	1.5	ANNUAL	ALL	5	FENCEGRD
240702.75	4078529.37	0.00147	90.87	90.87	1.5	ANNUAL	ALL	5	FENCEGRD
240709.69	4078510.45	0.00149	91.1	91.1	1.5	ANNUAL	ALL	5	FENCEGRD

240716.62	4078491.53	0.00151	90.48	90.48	1.5	ANNUAL	ALL	5	FENCEGRD
240945.19	4078271.87	0.00275	92.02	92.02	1.5	ANNUAL	ALL	5	FENCEGRD
240962.71	4078261.92	0.00288	91.78	91.78	1.5	ANNUAL	ALL	5	FENCEGRD
240570.27	4078617.94	0.00106	90.13	90.13	1.5	ANNUAL	ALL	5	FENCEGRD
240577.11	4078599.29	0.00108	90.22	90.22	1.5	ANNUAL	ALL	5	FENCEGRD
240583.94	4078580.65	0.0011	90.12	90.12	1.5	ANNUAL	ALL	5	FENCEGRD
240590.78	4078562.00	0.00111	89.79	89.79	1.5	ANNUAL	ALL	5	FENCEGRD
240597.62	4078543.35	0.00113	90.3	90.3	1.5	ANNUAL	ALL	5	FENCEGRD
240604.46	4078524.70	0.00115	90.12	90.12	1.5	ANNUAL	ALL	5	FENCEGRD
240611.30	4078506.05	0.00116	89.9	89.9	1.5	ANNUAL	ALL	5	FENCEGRD
240618.14	4078487.41	0.00117	90.75	90.75	1.5	ANNUAL	ALL	5	FENCEGRD
240629.53	4078456.33	0.00119	90.93	90.93	1.5	ANNUAL	ALL	5	FENCEGRD
240638.65	4078431.46	0.0012	90.91	90.91	1.5	ANNUAL	ALL	5	FENCEGRD
240672.84	4078338.22	0.00121	91.28	91.28	1.5	ANNUAL	ALL	5	FENCEGRD
240679.68	4078319.57	0.0012	91.58	91.58	1.5	ANNUAL	ALL	5	FENCEGRD
240693.47	4078306.82	0.00122	92.02	92.02	1.5	ANNUAL	ALL	5	FENCEGRD
240710.75	4078297.01	0.00126	92.41	92.41	1.5	ANNUAL	ALL	5	FENCEGRD
240728.02	4078287.21	0.0013	92.53	92.53	1.5	ANNUAL	ALL	5	FENCEGRD
240745.29	4078277.40	0.00134	92.46	92.46	1.5	ANNUAL	ALL	5	FENCEGRD
240762.56	4078267.59	0.00138	92.47	92.47	1.5	ANNUAL	ALL	5	FENCEGRD
240860.44	4078212.02	0.0016	92.11	92.11	1.5	ANNUAL	ALL	5	FENCEGRD
240877.71	4078202.21	0.00163	92.02	92.02	1.5	ANNUAL	ALL	5	FENCEGRD
240894.99	4078192.41	0.00165	91.55	91.55	1.5	ANNUAL	ALL	5	FENCEGRD
240935.29	4078169.52	0.00169	92.04	92.04	1.5	ANNUAL	ALL	5	FENCEGRD
240958.32	4078156.45	0.0017	91.6	91.6	1.5	ANNUAL	ALL	5	FENCEGRD
240975.59	4078146.64	0.00171	91.96	91.96	1.5	ANNUAL	ALL	5	FENCEGRD
240563.43	4078643.32	0.00103	89.61	89.61	1.5	ANNUAL	ALL	5	FENCEGRD
240477.19	4078599.05	0.00087	89.65	89.65	1.5	ANNUAL	ALL	5	FENCEGRD
240484.08	4078580.28	0.00088	89.51	89.51	1.5	ANNUAL	ALL	5	FENCEGRD
240490.96	4078561.52	0.00089	89.27	89.27	1.5	ANNUAL	ALL	5	FENCEGRD
240497.84	4078542.75	0.00091	89.72	89.72	1.5	ANNUAL	ALL	5	FENCEGRD
240504.72	4078523.98	0.00092	89.56	89.56	1.5	ANNUAL	ALL	5	FENCEGRD
240511.61	4078505.21	0.00093	89.74	89.74	1.5	ANNUAL	ALL	5	FENCEGRD
240518.49	4078486.44	0.00094	90.51	90.51	1.5	ANNUAL	ALL	5	FENCEGRD
240525.37	4078467.67	0.00095	90.8	90.8	1.5	ANNUAL	ALL	5	FENCEGRD
240532.25	4078448.91	0.00095	90.82	90.82	1.5	ANNUAL	ALL	5	FENCEGRD
240580.43	4078317.53	0.00097	90.77	90.77	1.5	ANNUAL	ALL	5	FENCEGRD
240587.31	4078298.76	0.00097	90.87	90.87	1.5	ANNUAL	ALL	5	FENCEGRD
240594.19	4078279.99	0.00096	91.06	91.06	1.5	ANNUAL	ALL	5	FENCEGRD
240601.08	4078261.22	0.00096	91.38	91.38	1.5	ANNUAL	ALL	5	FENCEGRD
240611.46	4078245.42	0.00096	91.68	91.68	1.5	ANNUAL	ALL	5	FENCEGRD
240628.84	4078235.55	0.00098	91.92	91.92	1.5	ANNUAL	ALL	5	FENCEGRD
240646.23	4078225.68	0.001	92.03	92.03	1.5	ANNUAL	ALL	5	FENCEGRD
240663.61	4078215.81	0.00102	92.1	92.1	1.5	ANNUAL	ALL	5	FENCEGRD
240681.00	4078205.94	0.00104	92	92	1.5	ANNUAL	ALL	5	FENCEGRD
240779.50	4078150.01	0.00114	91.52	91.52	1.5	ANNUAL	ALL	5	FENCEGRD
240808.48	4078133.56	0.00116	91.62	91.62	1.5	ANNUAL	ALL	5	FENCEGRD
240825.86	4078123.69	0.00117	91.99	91.99	1.5	ANNUAL	ALL	5	FENCEGRD
240866.42	4078100.66	0.00118	91.41	91.41	1.5	ANNUAL	ALL	5	FENCEGRD
240883.81	4078090.79	0.00118	91.9	91.9	1.5	ANNUAL	ALL	5	FENCEGRD
240924.37	4078067.76	0.00119	91.56	91.56	1.5	ANNUAL	ALL	5	FENCEGRD
240941.75	4078057.89	0.00118	91.28	91.28	1.5	ANNUAL	ALL	5	FENCEGRD
240959.14	4078048.02	0.00118	91.31	91.31	1.5	ANNUAL	ALL	5	FENCEGRD
240386.48	4078573.74	0.00073	89.25	89.25	1.5	ANNUAL	ALL	5	FENCEGRD
240393.39	4078554.88	0.00074	89.34	89.34	1.5	ANNUAL	ALL	5	FENCEGRD
240398.00	4078542.31	0.00074	89.36	89.36	1.5	ANNUAL	ALL	5	FENCEGRD
240404.92	4078523.46	0.00075	89.27	89.27	1.5	ANNUAL	ALL	5	FENCEGRD
240411.83	4078504.60	0.00076	89.39	89.39	1.5	ANNUAL	ALL	5	FENCEGRD
240418.74	4078485.75	0.00077	89.65	89.65	1.5	ANNUAL	ALL	5	FENCEGRD
240425.66	4078466.89	0.00078	90.35	90.35	1.5	ANNUAL	ALL	5	FENCEGRD
240430.27	4078454.32	0.00078	90.65	90.65	1.5	ANNUAL	ALL	5	FENCEGRD
240437.18	4078435.47	0.00079	90.92	90.92	1.5	ANNUAL	ALL	5	FENCEGRD
240444.10	4078416.61	0.00079	90.94	90.94	1.5	ANNUAL	ALL	5	FENCEGRD
240451.01	4078397.76	0.0008	91.03	91.03	1.5	ANNUAL	ALL	5	FENCEGRD
240487.89	4078297.19	0.0008	90.48	90.48	1.5	ANNUAL	ALL	5	FENCEGRD
240492.49	4078284.62	0.0008	90.48	90.48	1.5	ANNUAL	ALL	5	FENCEGRD
240499.41	4078265.77	0.0008	90.66	90.66	1.5	ANNUAL	ALL	5	FENCEGRD
240506.32	4078246.91	0.00079	91.01	91.01	1.5	ANNUAL	ALL	5	FENCEGRD

240510.93	4078234.34	0.00079	91.27	91.27	1.5	ANNUAL	ALL	5	FENCEGRD
240517.85	4078215.49	0.00078	91.65	91.65	1.5	ANNUAL	ALL	5	FENCEGRD
240698.19	4078088.21	0.00087	91.85	91.85	1.5	ANNUAL	ALL	5	FENCEGRD
240715.66	4078078.30	0.00087	91.78	91.78	1.5	ANNUAL	ALL	5	FENCEGRD
240750.59	4078058.46	0.00088	91.53	91.53	1.5	ANNUAL	ALL	5	FENCEGRD
240797.16	4078032.02	0.00089	91.83	91.83	1.5	ANNUAL	ALL	5	FENCEGRD
240814.62	4078022.11	0.00089	91.72	91.72	1.5	ANNUAL	ALL	5	FENCEGRD
240832.09	4078012.19	0.00089	91.24	91.24	1.5	ANNUAL	ALL	5	FENCEGRD
240849.55	4078002.28	0.00089	91.48	91.48	1.5	ANNUAL	ALL	5	FENCEGRD
240721.80	4077966.85	0.0007	90.89	90.89	1.5	ANNUAL	ALL	5	FENCEGRD
240739.32	4077956.90	0.0007	90.8	90.8	1.5	ANNUAL	ALL	5	FENCEGRD
240756.85	4077946.95	0.0007	90.84	90.84	1.5	ANNUAL	ALL	5	FENCEGRD
240774.37	4077937.00	0.0007	90.69	90.69	1.5	ANNUAL	ALL	5	FENCEGRD
240791.90	4077927.05	0.0007	90.68	90.68	1.5	ANNUAL	ALL	5	FENCEGRD
240809.42	4077917.09	0.0007	90.73	90.73	1.5	ANNUAL	ALL	5	FENCEGRD
240165.72	4078630.33	0.0005	89.1	89.1	1.5	ANNUAL	ALL	5	FENCEGRD
240172.61	4078611.57	0.00051	89.02	89.02	1.5	ANNUAL	ALL	5	FENCEGRD
240179.49	4078592.80	0.00052	88.86	88.86	1.5	ANNUAL	ALL	5	FENCEGRD
240188.67	4078567.77	0.00052	88.55	88.55	1.5	ANNUAL	ALL	5	FENCEGRD
240195.55	4078549.00	0.00053	88.72	88.72	1.5	ANNUAL	ALL	5	FENCEGRD
240202.43	4078530.24	0.00054	88.99	88.99	1.5	ANNUAL	ALL	5	FENCEGRD
240209.31	4078511.47	0.00054	88.94	88.94	1.5	ANNUAL	ALL	5	FENCEGRD
240216.19	4078492.70	0.00055	89.1	89.1	1.5	ANNUAL	ALL	5	FENCEGRD
240223.08	4078473.93	0.00055	89.43	89.43	1.5	ANNUAL	ALL	5	FENCEGRD
240229.96	4078455.16	0.00056	89.62	89.62	1.5	ANNUAL	ALL	5	FENCEGRD
240236.84	4078436.39	0.00056	89.89	89.89	1.5	ANNUAL	ALL	5	FENCEGRD
240243.72	4078417.63	0.00057	90.08	90.08	1.5	ANNUAL	ALL	5	FENCEGRD
240248.31	4078405.11	0.00057	90.06	90.06	1.5	ANNUAL	ALL	5	FENCEGRD
240255.19	4078386.34	0.00057	90.03	90.03	1.5	ANNUAL	ALL	5	FENCEGRD
240262.08	4078367.58	0.00057	89.82	89.82	1.5	ANNUAL	ALL	5	FENCEGRD
240268.96	4078348.81	0.00058	89.76	89.76	1.5	ANNUAL	ALL	5	FENCEGRD
240275.84	4078330.04	0.00058	89.79	89.79	1.5	ANNUAL	ALL	5	FENCEGRD
240314.84	4078223.69	0.00058	89.97	89.97	1.5	ANNUAL	ALL	5	FENCEGRD
240321.72	4078204.92	0.00057	90.04	90.04	1.5	ANNUAL	ALL	5	FENCEGRD
240328.61	4078186.15	0.00057	90.2	90.2	1.5	ANNUAL	ALL	5	FENCEGRD
240335.49	4078167.38	0.00057	90.58	90.58	1.5	ANNUAL	ALL	5	FENCEGRD
240340.08	4078154.87	0.00057	90.7	90.7	1.5	ANNUAL	ALL	5	FENCEGRD
240346.96	4078136.10	0.00056	91.06	91.06	1.5	ANNUAL	ALL	5	FENCEGRD
240353.84	4078117.33	0.00056	91.32	91.32	1.5	ANNUAL	ALL	5	FENCEGRD
240360.72	4078098.56	0.00055	91.59	91.59	1.5	ANNUAL	ALL	5	FENCEGRD
240367.61	4078079.79	0.00054	91.64	91.64	1.5	ANNUAL	ALL	5	FENCEGRD
240374.49	4078061.03	0.00054	91.51	91.51	1.5	ANNUAL	ALL	5	FENCEGRD
240388.37	4078048.19	0.00054	91.46	91.46	1.5	ANNUAL	ALL	5	FENCEGRD
240405.76	4078038.32	0.00054	91.46	91.46	1.5	ANNUAL	ALL	5	FENCEGRD
240423.14	4078028.45	0.00054	91.43	91.43	1.5	ANNUAL	ALL	5	FENCEGRD
240440.52	4078018.58	0.00055	91.45	91.45	1.5	ANNUAL	ALL	5	FENCEGRD
240457.91	4078008.71	0.00055	91.46	91.46	1.5	ANNUAL	ALL	5	FENCEGRD
240475.29	4077998.84	0.00055	91.47	91.47	1.5	ANNUAL	ALL	5	FENCEGRD
240515.85	4077975.81	0.00056	91.46	91.46	1.5	ANNUAL	ALL	5	FENCEGRD
240654.93	4077896.85	0.00057	91.05	91.05	1.5	ANNUAL	ALL	5	FENCEGRD
240782.41	4077824.47	0.00056	90.8	90.8	1.5	ANNUAL	ALL	5	FENCEGRD
241048.78	4078655.61	0.00829	92.34	92.34	1.5	ANNUAL	ALL	5	FENCEGRD
241034.50	4078655.19	0.00699	92.63	92.63	1.5	ANNUAL	ALL	5	FENCEGRD
241020.22	4078654.77	0.00606	92.63	92.63	1.5	ANNUAL	ALL	5	FENCEGRD
241005.94	4078654.35	0.00536	92.58	92.58	1.5	ANNUAL	ALL	5	FENCEGRD
240962.73	4078665.80	0.00399	92.56	92.56	1.5	ANNUAL	ALL	5	FENCEGRD
240763.19	4078647.22	0.00174	90.78	90.78	1.5	ANNUAL	ALL	5	FENCEGRD
240762.44	4078672.64	0.00172	90.35	90.35	1.5	ANNUAL	ALL	5	FENCEGRD
240662.86	4078657.00	0.00131	90.3	90.3	1.5	ANNUAL	ALL	5	FENCEGRD
240562.53	4078666.77	0.00102	89.89	89.89	1.5	ANNUAL	ALL	5	FENCEGRD
240800.76	4078410.47	0.00181	92.78	92.78	1.5	ANNUAL	ALL	5	FENCEGRD
240785.25	4078423.40	0.00175	92.76	92.76	1.5	ANNUAL	ALL	5	FENCEGRD
240770.48	4078441.12	0.0017	92.75	92.75	1.5	ANNUAL	ALL	5	FENCEGRD
240783.04	4078464.75	0.00179	92.63	92.63	1.5	ANNUAL	ALL	5	FENCEGRD
240797.44	4078487.28	0.0019	92.57	92.57	1.5	ANNUAL	ALL	5	FENCEGRD

** CONCUNIT ug/ m^3

** DEPUNIT g/m^ 2

APPENDIX C

BIOLOGICAL RESOURCES ASSESSMENT

BIOLOGICAL RESOURCE ASSESSMENT
BARSTOW TRUCK PARKING
N. CONTESSA & W. BARSTOW AVENUE
FRESNO, CA
APN 505-070-44

Prepared For:
Vang, Inc. Consulting Engineers

September 2021

BIOLOGICAL RESOURCE ASSESSMENT
BARSTOW TRUCK PARKING
N. CONTESSA & W. BARSTOW AVENUE
FRESNO, CA
APN 505-070-44

Prepared For:

Vang Inc., Consulting Engineers

Prepared By:

ARGONAUT ECOLOGICAL CONSULTING, INC.

2377 Gold Meadow Way, Suite 100
Gold River, CA 95670

September 9, 2021

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Attachment B: USFWS Standard Recommendations for Protection of Endangered San Joaquin Kit Fox Prior To and During Construction.

1.0 EXECUTIVE SUMMARY AND INTRODUCTION

EXECUTIVE SUMMARY

Argonaut Ecological, Inc. conducted a biological evaluation of a proposed development of a parcel located at the northeast corner of N. Contessa and W. Barstow Avenue, immediately west of Highway 99 in Fresno. The Study Area is made up of one parcel (18.87 acres). The biological evaluation focused on mapping existing habitat types based on a field review and reviewing public and commercial databases, aerial photographs (current and historical), and other published information and available data. The evaluation included assessing the types of habitats present and sensitive species associated with those habitats.

The Study Area lies in the southwest quarter of Township 13 South, Range 19 East, mapped on the Herndon USGS topographic quadrangle (Figure 1). The property is 18.87 acres and bounded by vacant land on the north, residential housing on the west, W. Barstow Avenue (and Island Water Park on the south, and Highway 99 Caltrans right-of-way on the east.

The Study Area does not support habitat for special status species, and the likelihood of species presence is low because of recurring site disturbance. There are no waters of the U.S. or wetlands within the Study Area. There is a portion of an old ditch that is not connected to any waters offsite.

1.1 INTRODUCTION

The project proponent ("Project") proposes to develop the site with a truck parking facility. The project will be built out in phases. The first three phases will buildout a total of 392 truck parking stalls. The fourth, and last phase, a portion of the site will be developed with an office/truck repair facility, a truck wash, and a total of 4 electric vehicle charging stalls. During the final phase a total of 18 truck parking stalls will be removed to accommodate phase 4 improvements, thus leaving a remainder of 374 truck parking stalls. At full buildout, 1.3% of the state will be built out with the buildings, 86.9% will consist of parking stalls, and 13.8 % of the site will be landscaped.

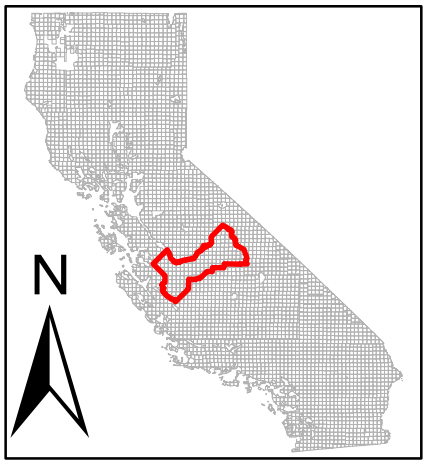
1.2 STUDY OBJECTIVES

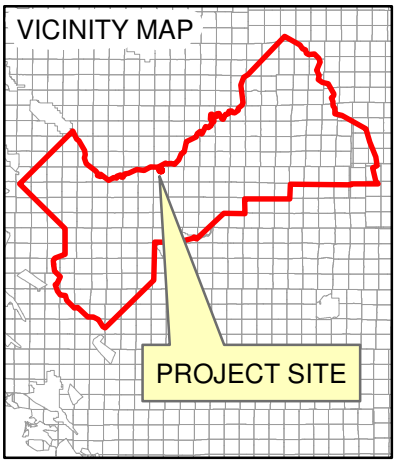
This report provides an overall assessment of the biological resources present within and adjacent to the Study Area, describes the area's biological characteristics, and evaluates the Study Area's likelihood to support sensitive biological resources (such as wetlands, creeks/drainages, and special status species). This evaluation used available literature, aerial photography, historic topographic and aerial maps, and multiple site visits. For purposes of this study, wetland habitat includes those areas possibly considered to be "waters of the U.S." as defined by the U.S. Army Corps of Engineers (Army Corps) and/or Waters of the State of California. As described in Section 1.2.1, wetlands are a subset of "Waters of the U.S." under the Federal Clean Water Act.

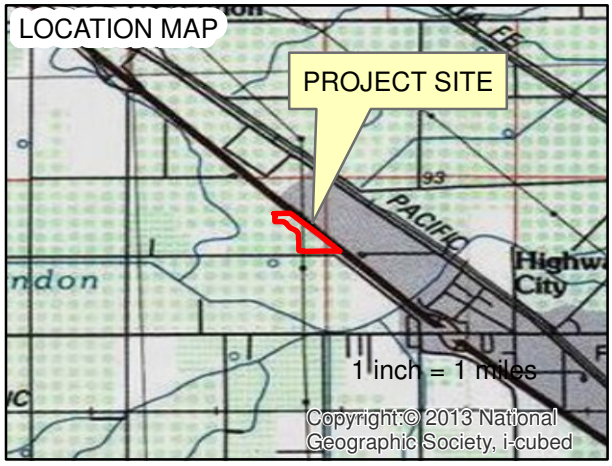
VICINITY AND LOCATION MAP

PROJECT:Barstow Truck Park

PROJECT LOCATION: Part of Sections 9, & 10, T. 13S., R.19E., Mount Diablo Base and Meridian
Fresno County California,







Legend

APPROXIMATE BOUNDARY (18.87 AC.)

400 200 0 400 Feet

1 in = 400 ft

ARGONAUT ECOLOGICAL CONSULTING, INC.

Date: 9/10/2021

This report assesses the Project's potential effects on biological resources and evaluates whether any associated regulatory approvals or permits are required. This report also assesses any potential impacts site development may have on protected habitat, species protected by the Federal Endangered Species Act, or those protected under the California Environmental Quality Act or California Endangered Species Act.

1.3 REGULATORY JURISDICTION AND BACKGROUND

Several agencies share regulatory jurisdiction over biological resources. The following is a brief description of the primary agencies and their respective jurisdiction.

Wetland Protection

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (Army Corps) and the U.S. Environmental Protection Agency regulate the placement of fill into the Waters of the U.S. under Section 404 of the Federal Clean Water Act and Section 10 of the Rivers and Harbor Act. Wetlands are a type of Waters of the U.S. For this purpose, the term "Waters of the U.S." is legally defined under Section 404 of the Federal Clean Water Act and includes interstate streams, creeks, and adjacent wetlands. The Army Corps defines wetlands as "*those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*" (Environmental Laboratory 1987). In California, seasonally inundated areas that meet the criteria of all three wetland parameters (soils, hydrology, and vegetation), as defined in the recently issued Wetland Delineation Manual for the Arid West (USACE 2006), are also considered jurisdictional wetlands.

Since 2001, several U.S. Supreme Court rulings regarding the regulation of isolated, intrastate waters by the Army Corps have limited the scope of federal jurisdiction under the Federal Clean Water Act and excluded many California wetlands from federal regulation.

In December 2019, the U.S. Environmental Protection Agency and the U.S. Army published the final rule to repeal the 2015 Clean Water Rule. The "Clean Water Rule" clarified what constitutes waters of the U.S., and presumably, more precisely define and make permitting more predictable, thus less costly and more straightforward.

After several challenges to the "Clean Water Rule," a revised rule became effective on June 22, 2020, when the U.S. Environmental Protection Agency (EPA) and the Department of the Army published the Navigable Waters Protection Rule, including a revised definition of "waters of the United States" under the Clean Water Act. The Navigable Waters Protection Rule regulates the nation's navigable waters and the core tributary systems that provide perennial or intermittent flow into them. On June 19, 2020, the District Court for the District of Colorado stayed the effective date of the Rules, but only in Colorado.

California State Water Resources Control Board

Since 1993, California has had a Wetlands Conservation Policy (a.k.a., the Executive Order W-51 59-93) and is commonly referred to as the *No Net Loss policy* for wetlands. This order establishes a state mandate for developing and adopting a policy framework and strategy to protect the state's wetland ecosystems. The policy was to be implemented voluntarily and was expressly not to be implemented on a "project-by-project" basis (See EO W-59-93, Section III).

In 2020 California adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. The State definition of wetland differs from the Federal definition in that the state definition includes areas with no vegetation, assuming the other criteria are met. Wetlands of the State include 1) natural wetlands, 2) wetlands created by modification of water of the state (at any point in history), and 3) artificial wetlands that meet specific criteria. The State definition only exempts a few types of waters. Examples of water features excluded from the state's definition include industrial or municipal wastewater, certain types of stormwater treatment facilities, agricultural crop irrigation, industrial processing or cooling, and fields flooded for rice growing.

Listed Protected Species and Habitat Protection

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) implements the Migratory Bird Treaty Act (16 USC Section 703-711), Bald and Golden Eagle Protection Act (16 United States Code [USC] Section 668), and Federal Endangered Species Act (FESA; 16 USC § 153 *et seq.)*.

The **Migratory Bird Treaty Act (MBTA**) was first enacted in 1918 to protect migratory birds between the United States and Great Britain (acting on behalf of Canada). The MBTA makes it illegal for anyone to take, possess, import, transport, purchase, barter, or offer for sale or purchase any migratory birds, nests, or eggs unless a federal agency has issued a permit. The USFWS has statutory authority and responsibility for enforcing the MBTA. The MBTA was reformed in 2004 to include all species native to the U.S. or its territories, which occur due to natural biological or ecological processes (70 FR 12710, March 15, 2005). The Act does not include non-native species whose occurrences in the U.S. are solely the result of intentional or unintentional human introduction. The USFWS maintains a list of bird species not protected under the MBTA.

In January 2021, the USFWS published a new rule in the Federal Register. Under the rule change, the unintentional killing of migratory birds does not violate the MBTA. Only the intentional "pursuing, hunting, taking, capturing, killing, or attempting to do the same ... directed at migratory birds, their nests, or their eggs" would be illegal under the changes.

The **Federal Endangered Species Act** prohibits "take" "of any federally listed wildlife species (the destruction of federally listed plants on private property is not prohibited and does not require a permit)**.** "Take" under the federal definition means to harass, harm, pursue, hunt, shoot, wound,

kill, trap, capture, or collect, or to attempt to engage in any such conduct. "Candidate species" do not have the full protection of FESA. However, the USFWS advises project applicants that it is prudent to address these species since they could be elevated to "listed status" before completion of projects with long planning or development schedules. "Incidental take" is harm or death that may occur during the implementation of an otherwise lawful activity.

Projects that would result in "take" "of any federally-listed threatened or endangered species can obtain authorization from the USFWS through either Section 7 (interagency consultation) or Section 10(a) (incidental take permit) of FESA. The authorization process determines if a project would jeopardize a listed species' continued existence and what mitigation measures would be required to avoid jeopardizing the species.

An Incidental Take Permit or Take Permit is required when an activity would either kill, harm, harass, or interrupt a listed species' breeding or nesting. The ESA definition of "harm" is somewhat less definitive since it includes ubiquitous activities. In 1999 the USFWS published in the Federal Register a clarification of the term "harm" as it applies to the ESA. As stated, the final rule defined the term "harm" "to include any act which causes actual harm (kills or injures fish or wildlife) and emphasizes that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.

The USFWS cannot require or compel a landowner to obtain an Incidental Take permit, especially under Section 10. On April 25, 2018, the USFWS issued a guidance memorandum intended to help the USFWS' Regional Directors clarify the appropriate trigger for an incidental take permit (ITP) under the Endangered Species Act (ESA). While this guidance was directed internally to USFWS staff to determine whether project-related habitat modification is likely to result in "take" of a listed species, it also provides a tool for project proponents to decide whether to seek an ITP. The guidance emphasizes that the decision to pursue an ITP is the project proponent's choice to make and is not up to the USFWS. Further, the guidance recognizes that the biological, legal, and economic risk assessment regarding seeking an ITP belongs to the private party.

The guidance also clarifies that habitat modification, in and of itself, does not constitute "take" unless three components of "harm" are met. Thus, to find that habitat modification constitutes an incidental take of listed species, the following questions must all be answered in the affirmative:

- Is the modification of habitat significant?
- Does that modification also significantly impair an essential behavior pattern of a listed species?
- Is the significant modification of the habitat likely to result in the actual killing or injury of wildlife?

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) is a Trustee Agency and is responsible under CEQA to review and provide recommendations on projects that could impact plant and wildlife resources. Under the Fish and Game Code Section 1802, the CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary

for biologically sustainable populations. The California Fish and Game Code also provides authority for the CDFW to regulate projects that could result in the "take" of any species listed by the state as threatened or endangered (Section 2081). CDFW also has authority over all state streams, as described below.

Perennial and intermittent streams also fall under the jurisdiction of CDFW according to Sections 1601-1603 of the Fish and Game Code (Streambed Alteration Agreements). CDFW's jurisdictional extent includes work within the stream zone, including the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream, or lake. Before issuing a 1601 or 1603 Streambed Alteration Agreement, the CDFW must demonstrate compliance with CEQA. In most cases, CDFW relies on the CEQA review performed by the local lead agency. However, in cases where no CEQA review was required for the project, CDFW would act as the lead agency under CEQA.

The CDFW also has authority for the protection of state-listed species issues under Section 2081 Incidental Take Permit if a project has the potential to negatively affect state-protected plant or animal species or their habitats, either directly or indirectly. Protected species include those "listed" by the state as endangered or threatened. There are other species protection categories besides listed species, including "fully protected" and California Species of Special Concern (CSC). Adverse impacts to species that are "fully protected" are prohibited.

Under the California Fish & Game Code (FGC Section 3503), "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird…" Birds of prey (falcons, hawks, owls, and eagles) get extra protection under the law (FGC Section 3503.5).

As is the case with USFWS, CDFW does not have the authority to require a landowner to apply for an Incidental Take Permit (ITP) authorizing take. Instead, the landowner has the legal obligation to avoid any take of state-listed species if it does not seek an ITP. That said, CDFW (and USFWS) can initiate an enforcement action if they believe that an illegal take has occurred or will occur.

California Endangered Species Act

The California Endangered Species Act (CESA) protects candidate plants and animal species and those listed under CESA as rare, threatened, or endangered. This Act prohibits the take of any such species unless authorized. Section 2081 authorizes the state to issue incidental take permits. The state definition of taking applies only to acts that result in the death of or adverse impacts to protected species. The CAESA mirrors the federal regulation as it relates to "take"; however, there is no state equivalent definition of "harm" or "harass." Incidental take is also not defined by the CAESA statute or regulation. Unlike the federal ESA, CAESA does qualify that incidental take" "is not prohibited "if it is the result of an act that occurs on a farm or ranch in the course of an otherwise lawful routine and ongoing agricultural activity." Where disagreement occurs (and in some cases, this has been the subject of court cases) is in the common understanding of "routine and ongoing agricultural activity."

California Environmental Quality Act

The CEQA Guidelines require a review of projects to determine their environmental effects and identify mitigation for significant effects. The Guidelines state an effect may be significant if it affects rare and endangered species. Section 15380 of the Guidelines defines *rare* to include listed species and allows agencies to consider rare species other than those designated as State or Federal threatened or endangered, but that meet the standards for rare under the Federal or State endangered species acts. On this basis, plants designated as rare by non-regulatory organizations (e.g., California Native Plant Society), species of special concern as defined by CDFW, candidate species as defined by USFWS, and other designations need to be considered in CEQA analyses.

Land Use Entitlements

City of Fresno

The Study Area falls within the City of Fresno. The City is responsible for all local land-use decisions within its jurisdiction and CEQA compliance. As the lead agency under CEQA, the City will consider other responsible agencies' recommendations during the CEQA review. The Study Area is located within a zoning designation of business park.

2.0 RESOURCES CONSULTED AND METHODS

The following section describes the methods used to assess the Study Area and includes data review and evaluation, field studies, and aerial photograph interpretations.

2.1 DATA AND LITERATURE REVIEW

Documents and sources of information used to prepare this evaluation include the following:

- U.S. Department of Agriculture, Natural Resources Conservation Service, Soil Survey of Fresno Area (Soils mapper).
- Aerial photography (Google Earth®, Bing®, and historic aerials).
- California Department of Fish and Wildlife, California Natural Diversity Database (CNDDB/RareFind - Recent version with updates)
- Fresno County Farmland Mapping and Monitoring Program (FMMP) 1984-2014.
- U.S. Fish and Wildlife Service, Information for Planning Consultation (IPAC)
- U.S. Fish and Wildlife Service, National Wetland Inventory Map
- U.S. Geological Survey, Historical Topographic Map, Clovis Quadrangle, 1919, University of Texas, Austin, Perry-Castañeda Map Collection
- Henry Madden Library, Fresno State University. Historical Aerial Photography collection dating back to 1957

Before conducting a site review, the California Natural Diversity Database/ RareFind (CNDDB) and the USFWS IPAC were consulted to determine the species potentially present within the Study Area based on location. The purpose of the review was to determine the likelihood of special status species being present on the site based on the site's distance from documented species occurrences and the presence or absence of habitat types utilized by such species. The CNDDB includes records of reported observations for special status plant and animal species and is queried based on a search radius of USGS quadrangle maps. Before conducting the fieldwork, high-resolution aerial photographs were also reviewed to determine if any areas on the site appear to support the presence of Waters of the U.S.

2.2 AERIAL PHOTOGRAPHY AND WETLAND MAPPING

Historical aerial photographs dating back to the 1930s of the Study Area were reviewed to identify site features and determine land-use changes over time. Also reviewed were wetland mapping and the aerial photographs to determine if the Study Area recently supported wetlands.

2.3 FIELD INVESTIGATION

A site investigation was performed on July 19, 2021 and again in August 2021. The majority of Study Area was walked, and all habitat features were mapped. Soils, vegetation, and drainage patterns within the Study Area were inspected to determine the habitat present and the habitat's suitability for species of concern. Photographs are included in Attached A.

3.0 RESULTS AND CONCLUSIONS

Section 3.1, below, describes the physical features (i.e., land use, soils, vegetation, hydrology, etc.) and the study area's biological features. The physical components and land use strongly influence the types of plants and animals present. This section also describes the habitats present and the specific biological resources observed during the site review.

Section 3.2 presents our conclusions, and Section 3.3 contains recommended avoidance and minimization measures to avoid potential impacts.

The following is not an exhaustive inventory of plants and animals present. Instead, the discussion provides sufficient information to identify biological resources present that are considered unique, sensitive, or protected by current law and the potential impacts on those resources due to site development**.**

3.1 PHYSICAL RESOURCES AND ELEMENTS

Climate

The Study Area climate is typical of the central San Joaquin Valley, with summers that are long, hot, and dry, and winters that are cool and mild. In the winter, rainfall averages approximately 10.9 inches per year, falling mainly between November and April (Western Regional Climate Center, 2004). During the 2019/2020 rainy season (Oct-May), the total rainfall was below average at 8.9 inches, as recorded at Fresno State University, Fresno. The rainfall total for the 2020/2021 rainy season to date (Oct – February 2021) is 4.62 inches, with the majority of the rainfall occurring in January 2021.

Topography

The property outlined in red in the historic (1919) topographic map (right, Figure 2), lies within the San Joaquin Valley and is fairly flat remaining around 305 feet above sea level throughout the site. However, currently the site topography has been modified by dumping of soil piles (likely associated with construction around the Study Area (See Attachment A: Photographs). In 1919, the rail line ran along the future alignment of Highway 99.

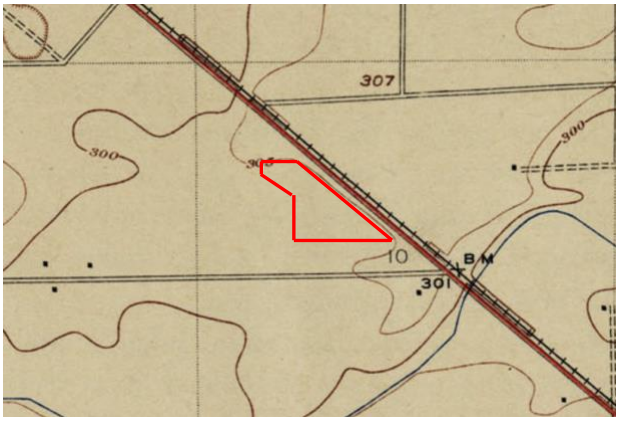


Figure 2 1919 USGS Topographic Map of the Study Area

Land Use

The surrounding lands also support a combination fallow land, commercial (Island Water Park to the south), and dense residential on the west. Highway 99 is located on the eastern boundary. The site appears to have been first put into agricultural production in the 1960 and remained in production until 2002 when the site was planted in since that time. The Study Area was still in agricultural production (orchard) in early 2002 (see photo right) and there was a farm buildings. In later 2002, most of the orchards were removed and only a few orchard trees remained.

Figure 3 – Study Area Circa 2002

The Study Area is a vacant/fallow farmland with access roads and is heavily disturbed by placement of soil piles on the southern half of the Study Area. The entire site has been disturbed/graded periodically. The northern half of the Study area is nearly flat and fallow. There is a block wall along the length of the western site boundary that separates the Study Area from an existing residential subdivision.

Habitat

There are several California habitat classification systems. The majority of these classification systems were designed to describe natural communities and do not have established classifications for disturbed or agricultural habitats. The California Guide to Wildlife Habitat Relationship System (CWHR) was developed to support habitat conservation and management, land use planning, impact assessment, education, and research involving terrestrial vertebrates in California and is used within California CNDDB Biogeographic Information and Observation System (BIOS). This evaluation generally uses the CWHR/BIOS habitat classification and includes a description of the ruderal habitat commonly used in environmental evaluations performed under CEQA.

The Study Area is made up of former orchards that were removed around 2002 and the site appears to be graded and used for dirt disposal over the years. All former buildings were removed. The site has reestablished with a mixture of non-native forbs and weedy species (wild oats, dove weed, perennial rye grass, Jimpson weed, storks-bill, mustard, etc.). The southern half of the Study Area has dozens (at least a hundred or more)

soils piles (from dumping) that are vegetated with non-native grasses and weeds (see photo, right). The northern half of the Study Area is more level and has numerous excavated pits, access roads, trails, and waste debris. Most of the habitat within the northern half of the Study Area would be characterized as non-native grassland & ruderal habitat with a similar species composition as the southern half.

Waters/Wetland

According to the National Wetland Inventory, there are no wetlands or drainage features within reviewing the National Wetland Inventory Map (NWI) This was confirmed during the site review. There is a segment of an old ditch along the eastern edge of the Study Area (adjacent to an existing access road) but portions have been filled in. This feature has no connection to any other drainage features outside the Study Area.

Figure 4 – National Wetland Inventory Map

Special Status Species

A search of the California Natural Diversity Database (CNDDB) and the U.S. Fish and Wildlife IPAC databases were reviewed to determine which special status species could be present within the Study Area. There is no critical habitat for any listed species within or in the vicinity of the Study Area. Figure 5 shows the nearest records of recorded species. Table 2 summarizes the species identified in the CNDDB and by the U.S. Fish and Wildlife Service that would have the highest likelihood of being present based on habitat requirements.

Birds:

There is no suitable nesting habitat for **Swainson's hawk** within or adjacent to the Study Area. There are no large trees that could be used for nesting. The site could be used for foraging by the species.

The site supports suitable habitat for the ground-nesting burrowing owl. **Burrowing owls** rely on ground burrowing mammals for nesting cavities (such as ground squirrels) and there is an extensive ground squirrel population within the Study Area. No CNDDB records for the species within or near the Study Area exist, but that doesn't rule out possible occupation. No evidence of current occupation was found, but that does not preclude future nesting/occupation.

Mammals and other Species:

The Study Area appears only to support potential suitable for one species, **American badger**. The species requires friable soils to create dens. No evidence of current occupation was observed, but this does not preclude occupation in the future.

There is one CNDDB record for San Joaquin kit fox immediately north of the Study Area. This record is from 1939 when an individual was found dead along Highway 99. San Joaquin kit fox could forage within the Study Area, especially given the high prey population (ground squirrels). However, because of the recurring disturbance and proximity to adjacent residential areas (and pets), it is unlikely the species would reside on the site. There were no dens present within the Study Area at the time of the field review.

San Joaquin pocket mouse has no Federal or State listing status. The species occurs within the Central Valley and portions of the foothills. The species was previously identified on the CDFW List of Concern (Third Priority) but was removed. It is considered a sensitive species and has the current designation of S2: Imperiled – At high risk of extirpation in the state due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors and S3: Vulnerable – At moderate risk of extirpation in the state due to a somewhat restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors (CDFW 2020). The species prefers sandy habitat (wind drift) at the top of ridges. The recorded species shown in Figure X was found in 1924.

Valley elderberry longhorn beetle is associated with blue elderberry shrubs. No host plants are located within the Study Area. The species is federally listed as Threatened, but the U.S. Fish

and Wildlife Service has determined that the species' range does not include Fresno and Madera Counties.[1] The USFWS does not require consultation for VELB in Fresno or Madera Counties.

[1] 79 FR 55874. September 17, 2014. Endangerd and Threatened Wildlife Plants; Withdrawl of the Proposed Rule to Remove the Valley Elderberry Longhorn Beetle from the Federal List of Endangered and Threatened Widlife Proposed rule; withdrawl. U.S. Fish and Widlife Service, Department of the Interior.

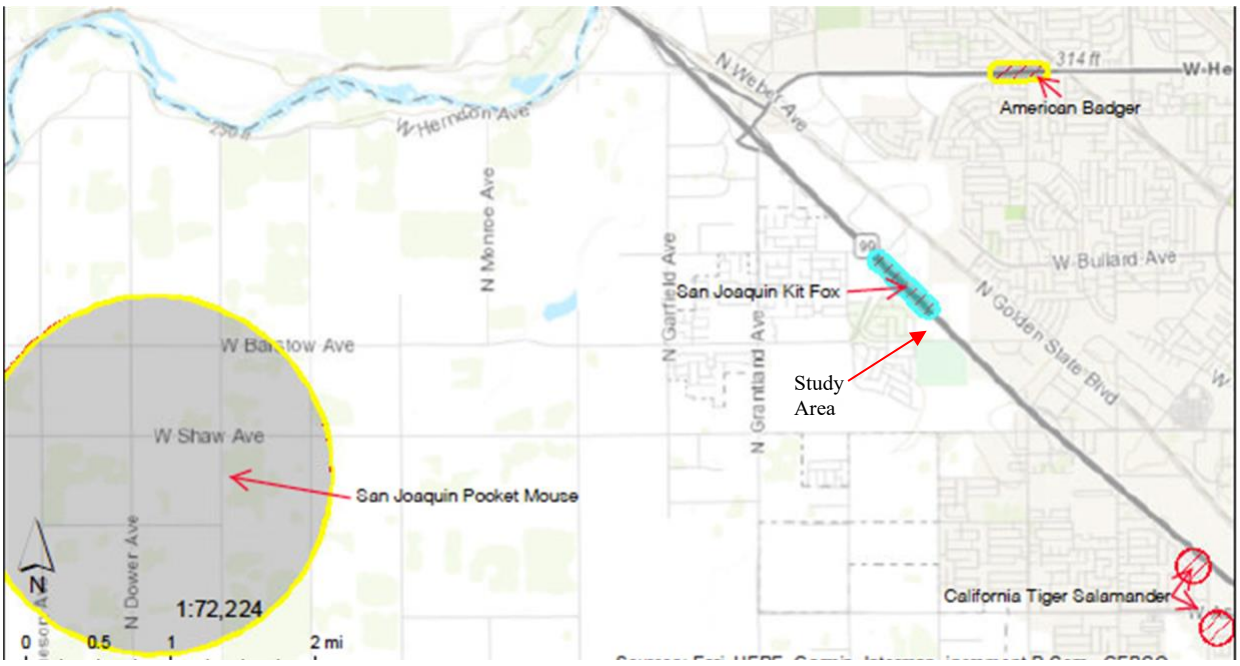


Figure 5
CNDDB BIOS Records In Vicinity of the Study Area

Table 1
Special Status Species Summary For Study Area

Common Name	Scientific Name	Status[1]	Effects[2]	Occurrence in the Study Area[3]
Birds				
Swainson's hawk	*Buteo swainsoni*	CT	NA	**Absent.** No nesting habitat present. Species may use the site for foraging.
Burrowing owl	*Athene cunicularia*	BCC	MA	**Likely Absent**. Suitable habitat present within the study area (suitable ground cover, burrows and prey base). No evidence of occupation was observed but could not rule out occupation.
Mammals & Other Wildlife				
San Joaquin pocket mouse	*Perognathus inornatus*	--, --	NL	**Absent**. Species require a land surface with hummocks as sites for its extensive but shallow burrow system and a suitable compactness substrate to permit burrowing. Record from 1924 and located four miles southwest. No evidence to support species potentially present.
San Joaquin kit fox	*Vulpes macrotis mutica*	CT, FE	NL	**Absent.** Record from 1993 when one (dead) kit fox was found adjacent to Highway 99 north of the Study Area. Although potential prey base may be present, the frequent disturbance from humans (kids, dogs, etc., from the adjacent neighborhood) likely precludes occupation. No potential denning sites were observed during the field review. Species could occasionally forage on the site
American badger	*Taxidea taxus*	--/--	MA	**Absent**. Some suitable habitat
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	--/FT	NA	**Absent.** No host plants present within the Study Area. The species range does not include Fresno and Madera Counties.
Plants				
Hairy Ocutt grass	*Ocuttia pilosa*	CE, FE	NA	**Absent**. Found in Valley grassland habitat. The study area does not support grassland habitat. Habitat appears to be routinely disturbed by (ag, dumping, dirt bikes).

1 Status= Listing of special status species, unless otherwise indicated
- CE: California listed as Endangered
- CT: California listed as Threatened
- FE: Federally listed as Endangered
- FT: Federally listed as Threatened

2 Effects = Effect determination
- NA: No Affect
- NL: Not likely to Affect
- MA: May Affect, not likely to adversely affect

3 Definition Of Occurrence Indicators
- Present/Potentially: Species recorded in the area
- Absent/Likely Absent: Species not recorded in the study area and

CNDDB = California Natural Diversity Database provided by CDFG

3.3 CONCLUSIONS AND RECOMMENTIONS

- The Study Area was put into agricultural production since at least the 1960 and was taken out of projection (orchards) around 2002s. All buildings were removed, and the site supports a mixture of non-native grasses and weeds.

- There are no waters of the U.S./waters of the State within the Study Area. There were no historic drainages/creeks within the Study Area. There is a short segment of agricultural ditch that still remains. The ditch is not connected to any offsite drainages/creeks.

- The Study Area is highly disturbed, and the southern half has dozens of soil piles (dumping) that support a dense ground squirrel population.

- There are no potential raptor nesting trees (or any trees) within the Study Area.

- The Study Area could support ground nesting burrowing owl because of the presence of a ground squirrel population; however, no evidence of burrowing owl occupation was observed during the site review. There is no habitat within the Study Area that could support species of special concern.

- The Study Area supports some potential foraging habitat for San Joaquin kit fox but there is no denning habitat present. Although unlikely, San Joaquin kit fox would use the area for hunting and could use the site for denning in the future.

RECOMMENDATIONS

The following measures are recommended to minimize any potential impact to burrowing owl and San Joaquin fox during construction.

1. Implement the standard recommendation developed by the U.S. Fish and Wildlife Service for protection of San Joaquin kit fox prior to and during ground disturbance (Sacramento FWS, January 2011 – See Attachment B). The primary requirements include:

    - Provide a construction worker-training program prior to construction to education the crew as to the potential to encountered SJKF within the Study Area. The project shall be developed by a biologist and can be present either in person or via an electronic presentation. The presentation should also include information of the possible presence of burrowing owl and American badger and measures to be taken to avoid impacts to individuals present.

    - No pets (such as dogs) should be permitted on the project site to prevent harassment or mortality of kit foxes.

- All food-related trash such a wrappers and food scraps should be disposed of in securely closed contains and removed at least once a week to prevent attracting kit fox.

- At the start of construction each day, all stored pipes, culverts, or similar structures with a diameter of 4-inches or greater should be inspected for fit foxes before the structure/pipe is moved or buried or capped. If a kit fox is found within the structure, allow the fox to move on its own and the pipe should not be moved until the kit fox has left.

- To prevent inadvertent entrapment of kit fox or other animals during construction, all evacuated, steep-wallked holes or trenches more than 2-feet deep should be covered at the end of each day with plywood or similar materials. If trenches cannot be clovsed, create an escape ramp from earhen-fill or wooden plants. Inspect all trenches or holes for animals trapped prior to filling.

- Project vehicles should observe a daytime speed of 20-mph throughout the project area. SJKF tends to be most active at night, thus nightime construction should be minimized to the extent possible.

2. Conduct a pre-construction survey for burrowing owl occupation within 30 days prior to construction. If burrowing owl is found, passive relocation can be used for any occupied burrow that does not have eggs or young. If eggs or young are present, contact the California Department of Fish and Wildlife for instructions on how to proceed.

Attachment A: Photographs

Location: Truck Parking
Photograph Date: August 20, 2021

Photograph No. 1

Direction: South

Description: View of Study Area, looking south toward Water Park

Photograph No. 2

Direction: North

Description: View of Study Area showing vegetated soil piles

Location: Truck Parking
Photograph Date: August 20, 2021

Photograph No. 3
Tract 6201

Direction: West

Description:
View looking west along access road within Study Area

Photograph No. 4
Tract 6201

Direction: Northwest

Description:
View of existing access road within soil piles

Location: Truck Parking
Photograph Date: August 20, 2021

Photograph No. 5

Direction: North

View along west wall (residential homes west of the wall)

Photograph No. 6
Direction: North
View along west wall (residential homes west of the wall)

Location: Truck Parking
Photograph Date: August 20, 2021

Photograph No. 7
Direction: Northeast
View looking at northern half of Study Area

Attachment B: USFWS Standard Recommendations for San Joaquin Kit Fox

U.S. FISH AND WILDLIFE SERVICE
STANDARDIZED RECOMMENDATIONS
FOR PROTECTION OF THE SAN JOAQUIN KIT FOX
PRIOR TO OR DURING GROUND DISTURBANCE

Prepared by the Sacramento Fish and Wildlife Office
June 1999

INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act). Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Formal authorization for the project may be required under either section 7 or section 10 of the Act. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). Such protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

All surveys, den destructions, and monitoring described in this document must be conducted by a qualified biologist. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, biologist(s) must be able to identify coyote, red fox, gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount.

SMALL PROJECTS

Small projects are considered to be those projects with small foot prints such as an individual in-fill oil well, communication tower, or bridge repair. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a

future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features, and make recommendations on situating the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then preconstruction surveys should be conducted.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, and assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol).

Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities. If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.

If take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping dens (active or inactive). Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project, and those requirements supersede any requirements found in this document.

EXCLUSION ZONES

The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances. The following radii are minimums, and if they cannot be followed the Service must be contacted:

Potential den	50 feet
Known den	100 feet
Natal/pupping den (occupied and unoccupied)	Service must be contacted
Atypical den	50 feet

Known den: To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

Potential and Atypical dens: Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Construction and other project activities should be prohibited or greatly restricted within these exclusion zones. Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited within the exclusion zones.

DESTRUCTION OF DENS

Disturbance to all San Joaquin kit fox dens should be avoided to the maximum extent possible. Protection provided by kit fox dens for use as shelter, escape, cover, and reproduction is vital to the survival of the species. Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection. **Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service**.

Natal/pupping dens: Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

Known Dens: Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use. If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities. The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgement of the biologist, the animal has escaped from the partially destroyed den.

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then destruction shall cease and the Service shall be notified immediately.

CONSTRUCTION AND OPERATIONAL REQUIREMENTS

Habitat subject to permanent and temporary construction disturbances and other types of project-related disturbance should be minimized. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting project goals to be achieved. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be

included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a 20-mph speed limit in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. To the extent possible, night-time construction should be minimized. Off-road traffic outside of designated project areas should be prohibited.

2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under number 13 of this section must be followed.

3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in closed containers and removed at least once a week from a construction or project site.

5. No firearms shall be allowed on the project site.

6. To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets should be permitted on project sites.

7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control

must be conducted, zinc phosphide should be used because of proven lower risk to kit fox.

8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped individual. The representative will be identified during the employee education program. The representative's name and telephone number shall be provided to the Service.

9. An employee education program should be conducted for any project that has expected impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and agency personnel involved in the project. The program should include the following: a description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the above-mentioned people and anyone else who may enter the project site.

10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but that after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for advice.

12. Any contractor, employee, or military or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or biologist.

13. The Sacramento Fish and Wildlife Office and CDFG will be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during

project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers given below. The CDFG contact is Mr. Ron Schlorff at 1416 9th Street, Sacramento, California 95814, (916) 654-4262.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms ”active” and “inactive” when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species’ range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

APPENDIX D

CULTURAL AND HISTORICAL RESOURCES ASSESSMENT

Cultural and Historical Resources Assessment

Vesting Tentative Tract Map 6352-Barstow Truck Parking

APN: 505-070-44

18.87 Acres

Introduction

Peak & Associates, Inc. conducted a cultural resource review of a Project Area at W. Barstow and N. Contessa Avenues in Fresno, California, proposed for use as a truck parking area. This report summarizes the results of this study for prehistoric and historic period cultural resources.

Study Area

The Project Area is highly disturbed area that was formerly part of an orchard, with no buildings or structures present. The Project Area lies adjacent to Highway 99 (on the northeast), W. Barstow Avenue to the south, a residential neighborhood bounded by N. Contessa lies to the west, and agricultural land on the north. The residential neighborhood dates to 2005-2006.

The Project Area lies in Sections 9 and 10, Township 13 South, Range 19 East, mapped on the Herndon 7.5' USGS topographic quadrangle (1964).

Literature Review

A record search for the Project Area and a ¼-mile radius has been conducted through the Southern San Joaquin Valley Information Center of the California Historical Resources Information System (Records Search File No.: 21-394, Appendix 1). The search identified that there have been three previous surveys of portions of the Project Area (SSJVIC FR-2408, 02431, and 02454), all conducted more than ten years ago.

Two sites have been recorded in the project area: P-10-006130 and 006640, both of which are transmission lines crossing the Project Area on a north/south alignment, with neither power line considered to be eligible for the California Register of Historical Resources. One resource has been recoded within the ¼-mile search radius: the Epstein Canal (P-10-005829), also not considered eligible for the California Register. Three other cultural resource surveys have been conducted in the region (see Appendix 1).

The older Herndon USGS topographic map from 1923 has been reviewed, with the map showing no evidence of buildings or historic land use in the past.

Field Study

A field survey has been undertaken by Peak & Associates of the Project Area, using complete coverage with transects 5 meters in width. All vegetation consists of introduced grasses. About half of the Project Area has been recently burned, and much of the land is covered by piles of dumped soils and construction materials. Some areas were easy to inspect due to scraping for fire suppression. There is a small fig orchard remnant at the north end.

There is no evidence of either prehistoric or historic period cultural resources.

Conclusions and Recommendations

The Project Area contains no evidence of cultural resources. It is unlikely prehistoric sites could be present as this area lies at some distance from a natural water source.

No historic building has ever existed in the Project Area and the current buildings in the neighborhood surrounding the site are less than 45 years old.

Although unlikely, there is always a possibility that a prehistoric or historic site may exist in the Project Area and be obscured by vegetation, siltation or historic activities, leaving no surface evidence. If artifacts, exotic rock, shell or bone are uncovered during the construction, work should stop in that area immediately. A qualified archeologist should be contacted to examine and evaluate the deposit, and determine the need for further measures such as avoidance. Native American groups would be contacted as necessary.

Discovery of Human Remains

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area suspected to overlie adjacent remains until the Fresno County Coroner has determined that the remains are not subject to any provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.

If the Fresno County Coroner determines that the remains are not subject to his or her authority and if the County Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC).

After notification, the NAHC will follow the procedures outlines in Public Resources Code Section 5097.98. that include notifications of the most likely descendants (MLDs), and recommendations

for the treatment of the remains. The MLDs will have 48 hours after notification by the NAHC to make their recommendations (PRC Section 5097.98).

APPENDIX 1

SSJVIC RECORDS SEARCH

California Historical Resources Information System

Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

10/18/2021

Robert Gerry
Peak & Associates, Inc.
3941 Park Drive, Ste 30-329
El Dorado Hills, CA 95762

Re: Barstow Truck Parking
Records Search File No.: 21-394

The Southern San Joaquin Valley Information Center received your record search request for the project area referenced above, located on the Herndon USGS 7.5' quad. The following reflects the results of the records search for the project area and the 0.25 mile radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☒ custom GIS maps ☐ GIS data

Resources within project area:	P-10-006130, 006640
Resources within 0.25 mile radius:	P-10-005829
Reports within project area:	FR-02408, 02431, 02454
Reports within 0.25 mile radius:	FR-00302, 00760, 02305

Resource Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed
OHP Built Environment Resources Directory:	☒ enclosed	☐ not requested	☐ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☒ not requested	☐ nothing listed

Caltrans Bridge Survey: Not available at SSJVIC; please see https://dot.ca.gov/programs/environmental-analysis/cultural-studies/california-historical-bridges-tunnels

Ethnographic Information: Not available at SSJVIC

Historical Literature: Not available at SSJVIC

Historical Maps: Not available at SSJVIC; please see http://historicalmaps.arcgis.com/usgs/

Local Inventories: Not available at SSJVIC

GLO and/or Rancho Plat Maps: Not available at SSJVIC; please see http://www.glorecords.blm.gov/search/default.aspx#searchTabIndex=0&searchByTypeIndex=1 and/or http://www.oac.cdlib.org/view?docId=hb8489p15p;developer=local;style=oac4;doc.view=items

Shipwreck Inventory: Not available at SSJVIC; please see https://www.slc.ca.gov/shipwrecks/

Soil Survey Maps: Not available at SSJVIC; please see http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

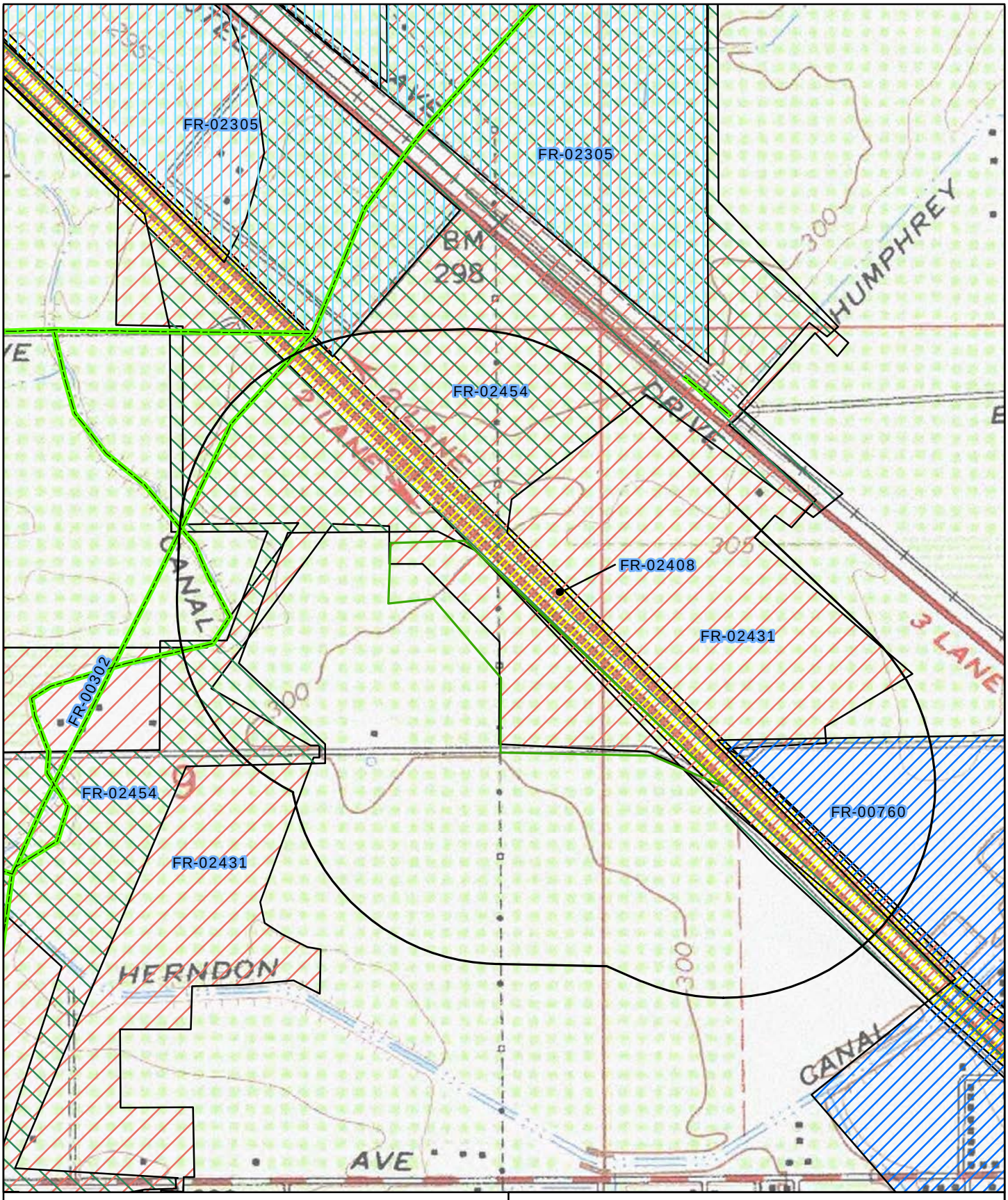
Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Jeremy E. David
Assistant Coordinator



May depict confidential cultural resource locations.
Do not distribute.

Project Area

Record Search radius

0 0.05 0.1 0.2 Miles

0 0.075 0.15 0.3 Kilometers

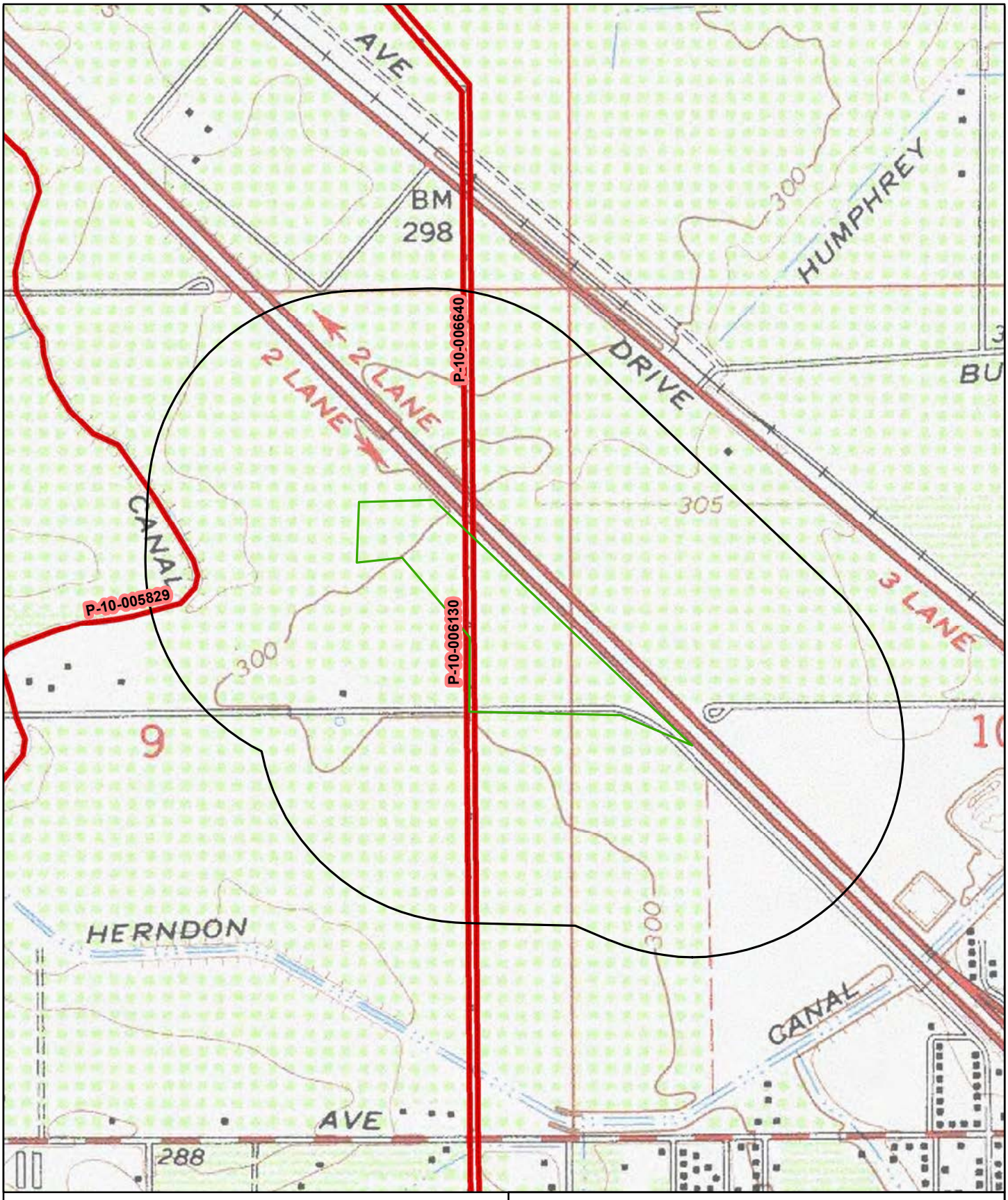
N

Reports Map
SSJV Information Center Record Search 21-394
Requester: Robert Gerry, Peak & Associates, Inc.
Project Name: Barstow Truck Parking
USGS 7.5' Quad(s): Herndon
County: Fresno

Report List

SSJVIC Record Search 21-394

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
FR-00302		1994	Bissonnette, Linda Dick	Grantland Avenue Sewer Trunk and herndon Expressway Cultural Resources Assessment	Cultural Resources Consultng	
FR-00760		1974	Varner, Dudley M.	Highway City Sewer Project (Improvement Dist. #166)	California Department of Transportation	
FR-02305		2008	Baloian, Randy and Nettles, Wendy M.	Cultural Resources Investigations for the Proposed El Paseo Development in Northwest Fresno, Fresno County, California.	Applied EarthWorks	
FR-02408	Caltrans - 06-FRE/MAD 99 PM 26.6/30.7 & 30.3/31.6, 0.0/1.7; E.A. 06-442600	2008	Lanner, David	Archaeological Survey Report for the Island Park and North Fresno Six Lane Expansion in Fresno County and Madera County	California Department of Transportation	10-005648
FR-02408A		2008	Deocampo, Daniel	First Supplemental Extended Phase I Report Geoarchaeological Investigations for the Island Park Six-Lane Project, Fresno and Madera Counties, California	Pacific Legacy	
FR-02408B		2007	Deocampo, Daniel	Final Extended Phase I Report Geoarchaeological Investigations for the Island Park Six-Lane Project, Fresno and Madera Counties, California	Pacific Legacy	
FR-02408C		2008	Vallejo, Philip	Historical Resource Evaluation Report Island Park Six-Lane Project, Fresno and Madera Counties, California	Cal Trans	
FR-02408D		2008	Lanner, David	Historic Property Survey Report Proposed Highway 99 Six-Lane Expansion, Fresno County and Madera County, California	Cal Trans	
FR-02431		2010	Hibma, Michael	Historical Resources Evaluation Rerot for the Veterans Boulevard/State Route 99 Interchange and Grade Separations Project, Fresno, Fresno County, California	LSA Associates, Inc.	10-005720, 10-005721, 10-005816, 10-005829, 10-006002, 10-006003, 10-006004, 10-006005, 10-006006, 10-006007, 10-006008, 10-006009, 10-006010, 10-006128, 10-006129, 10-006131
FR-02454		2010	Whitehouse, John and Blind, Heather	Historic Property Survey Report for the Veterans Boulevard/State Route 99 Interchange and Grade Separations Project, Fresno, Fresno County, California, Caltrans District 6, EA#06-OH3600	California Department of Transportation	



May depict confidential cultural resource locations.
Do not distribute.

0 0.05 0.1 0.2 Miles

0 0.075 0.15 0.3 Kilometers

N

Project Area

Record Search radius

Resource Map
SSJV Information Center Record Search 21-394
Requester: Robert Gerry, Peak & Associates, Inc.
Project Name: Barstow Truck Parking
USGS 7.5' Quad(s): Herndon
County: Fresno

Resource List

SSJVIC Record Search 21-394

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-10-005829		Resource Name - Epstein Canal; Resource Name - Fresno Irrigation District; OTIS Resource Number - 516414; OHP Property Number - 182181	Building	Historic	HP20	2008 (Jon L. Brady, J&R Environmental Services); 2010 (Michael Hibma, Jennifer Redmond, LSA Associates, Inc.)	FR-02431
P-10-006130	CA-FRE-003609H	Resource Name - Herndon-Kearney Transmission Line; OTIS Resource Number - 516415; OHP Property Number - 182182	Structure	Historic	HP11	2010 (Jennifer Redmond, LSA Associates, Inc.); 2020 (Carlos van Onna, Applied EarthWorks, Inc.)	FR-03028
P-10-006640	CA-FRE-003776H	Other - AE-3043-BE-056; Resource Name - Gates-Gregg 230 kV Transmission Line	Structure	Historic	HP11	2015 (Katie Asselin, Applied EarthWorks, Inc.); 2020 (Carlos van Onna, Applied EarthWorks, Inc.)	FR-02769, FR-03028

APPENDIX E

GREENHOUSE GAS REDUCTION PLAN UPDATE CONSISTENCY CHECKLIST

Fresno Greenhouse Gas (GHG) Reduction Plan Update – CEQA Project Consistency Checklist

INTRODUCTION

The City of Fresno updated its 2014 Greenhouse Gas (GHG) Reduction Plan (the Plan) in the year 2021 to conform with existing applicable State climate change policies and regulations. The GHG Plan Update outlines strategies that the City will undertake to achieve its proportional share of GHG emission reductions. The purpose of this GHG Reduction Plan Update Consistency Checklist (Checklist) is to help the City provide a streamlined review process for new development projects that are subject to discretionary review pursuant to the California Environmental Quality Act (CEQA) Guidelines Section 15183.5.

This Checklist has been developed as part of the GHG Plan Update implementation and monitoring process and will support the achievement of individual GHG reduction strategies as well as the City's overall GHG reduction goals. In addition, this Checklist will further the City's sustainability goals and policies that encourage sustainable development and aim to conserve and reduce the consumption of resources, such as energy and water. Projects that meet the requirements of this Checklist will be deemed to be consistent with the Fresno GHG Reduction Plan Update and will be found to have a less than significant contribution to cumulative GHG (i.e., the project's incremental contribution to cumulative GHG effects is not cumulatively considerable), pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b). Projects that do not meet the requirements in this Checklist will be deemed to be inconsistent with the Fresno GHG Reduction Plan Update and must prepare a project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions and incorporation of the measures in this Checklist to the extent feasible. This GHG Checklist can be updated to reflect adoption of new GHG reduction strategies or to comply with any changes and updates in the Plan or local, State or federal regulations. Note that not all the measures in the checklist are applicable to all projects. The projects should comply with applicable measures from the checklist.

1. Project Information	
Contact Information	
Project No./Name:	Barstow Truck Parking Facility Project
Address:	6050 W. Barstow Ave Fresno, CA
Applicant Name/Co:	Inderjit "Indy" Sangha
Contact Information:	Sangha Carriers
	5812 W Bedford Ave
	Fresno, CA 93722
Project Information	
1. What is the Site acreage of the Project?	18.87
2. Identify all Applicable Proposed Land uses:	Truck parking facility with repair center and wash
a. Residential (Indicate number of single-family units)	
b. Residential (Indicate number of multi-family units)	
c. Commercial (total square footage)	
d. Industrial (total square footage)	10,800 square feet
e. Other (describe)	374 truck parking stalls and 59 vehicle parking stalls
3. Is the project or a portion of the project located in a transit priority area? (Y/N)	No
4. Provide a brief description of the project proposed:	Development Permit Application No. P21-01833 was filed by Sangha Carrier (Project Applicant). The Project Applicant proposes to construct a truck parking facility with approximately 374 parking stalls, a 5,400 square-foot Office/Truck Repair Service Center, a 5,400 square-foot Truck Wash facility and associated infrastructure and circulation improvements on the approximately 18.87-acre project site.

2. Determining Land Use Consistency		
Checklist Item		
As the first step in determining the consistency with the GHG Reduction Plan for discretionary development projects, this section allows the City to determine the project's consistency with the land use assumptions used in the GHG Reduction Plan.		
	Yes	**No**
1. Is the proposed project consistent with the approved General Plan, Specific Plan, and Community Plan planned land use and zoning designations? If the answer is **Yes**, then proceed to the GHG Plan Update Consistency Checklist. If the answer is **No**, then proceed to question 2.	X	
2. If the proposed project is not consistent with the approved planned land use and zoning designation(s), then provide estimated GHG project emissions under both existing and proposed designation(s) for comparison. Compare the maximum buildout of the existing designation with the maximum buildout of the proposed designation. If the estimated project emissions at maximum buildout of the proposed designation(s) **is equivalent to or less than** the estimated project emissions at maximum buildout of the existing designation(s), then in accordance with the City's Significance Determination Thresholds, the project's GHG impact is less than significant. If there is a proposed development project associated with this plan amendment and or rezone then complete the GHG Plan Update Consistency Checklist and incorporate applicable measures, otherwise there is no further step required. If the estimated project emission at maximum buildout of the proposed designation(s) is **greater than** the estimated project emissions at maximum buildout of the existing designation(s), then in accordance with the City's Significance Determination Thresholds, the project's GHG impact is significant. The project must either show consistency with applicable GP objectives and policies (provide applicable GP objectives and policies here) or provide analysis and measures to incorporate into the project to bring the GHG emissions to a level that is less than or equal to the estimated project emission at maximum buildout of the existing designation(s) unless the decision-maker finds that a measure is infeasible in accordance with CEQA Guidelines Section 15091. If there is a proposed development project associated with this plan amendment and or rezone then complete the GHG Plan Update Consistency Checklist and incorporate applicable measures, otherwise there is no further step required.		

3. Greenhouse Gas (GHG) Reduction Plan Update - CEQA Project Consistency Checklist

GHG Reduction Plan Update consistency review involves the evaluation of project consistency with the applicable strategies of the GHG Reduction Plan Update. The GHG reduction strategies identified in the GHG Reduction Plan Update relies upon the General Plan and additional local measures as the basis of the development related strategies to reduce GHG emissions. This checklist is developed based on the key local GHG reduction strategies and actions identified in the GHG Reduction Plan Update that are applicable to proposed development projects. Note that not all strategies listed below will apply to all projects. For example, not all projects will meet mixed-use related policies of the General Plan, because not all projects are required to be mixed use.

Checklist Item (Check the appropriate box and provide an explanation for your answer)	Relevant General Plan Policy	Yes	No	Not Applicable (NA)	Explanation
1: Land Use and Transportation Demand Strategies					
a. Does the project include mixed-use, development? For GHG Reduction Plan consistency, mixed-use development is defined as pedestrian-friendly development that blends two or more residential, commercial, cultural, or institutional, uses, one of which must be residential	Policy UF-1-c, LU-3-b, Objective-UF 12, UF-12-a, UF-12-b, UF-12-d, Policy RC-2-a			X	The proposed project does not include mixed-use development and does not include residential uses.
b. Is the project high density? For GHG Reduction Plan consistency, is the project developed at 12 units per acre or higher?	LU-5-f			X	The proposed project does not include residential uses.
c. Is the project infill development, pursuant to the General Plan definition of location within the City limits as of December 31, 2012?	LU-2-a, Objective-12, UF-12-a, UF-12-b, UF-12-d	X			The project site is within City limits, surrounded by industrial, commercial, and residential uses.
d. Does the project implement pedestrian bicycle, and transit linkages with surrounding land uses and neighborhoods? For GHG Reduction Plan consistency, the project must include all sidewalks, paths, trails, and facilities required by the General Plan and Active Transportation Plan, as implemented through the Fresno Municipal Code and project conditions of approval.	Policy UF-1-c, UF-12-e, Policy RC-2-a, Objective MT-4,5,6, Policy MT-4-c, Policy MT-6-a, Policy POSS-7-h Objective MT 8, Policies MT-8-a, MT-8-b	X			The project would provide complete streets for all roadway improvements.
e. If the project includes mixed-use or high density development, is it located within ½ mile of a High Quality Transit Area as defined in the City's CEQA Guidelines for Vehicle Miles Traveled? Or, is the project located within 500 feet of an existing or planned transit stop?	Policy UF-12-a, UF-12-b, LU-3-b, Objective MT 8, Policies MT-8-a, MT-8-b			X	The proposed project does not include mixed-use or high density development.
f. Will the project accommodate a large employer (over 100 employees) and will it implement trip reduction programs such as increasing transit use, carpooling, vanpooling, bicycling, or other measures to reduce vehicle miles traveled pursuant to San Joaquin Valley Air Pollution Control District Rule 9410? See the SJVAPCD website for details: https://www.valleyair.org/rules/currntrules/r9410.pdf	Policy MT-8-b, Objective MT-9, Policy MT-10-c, San Joaquin Valley Air Pollution Control District Rule 9410			X	The project would not have over 100 employees.

Checklist Item (Check the appropriate box and provide an explanation for your answer)	Relevant General Plan Policy	Yes	No	Not Applicable (NA)	Explanation
g. If the project includes modifications to the transportation network, do those improvements meet the requirements of the City of Fresno's Complete Streets Policy, adopted in October 2019? According to the policy, a complete street is a transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users - including bicyclists, pedestrians, transit vehicles, trucks, and motorists - appropriate to the function and context of the facility while connecting to a larger transportation network. See City of Fresno website for details: https://www.fresno.gov/publicworks/wp-content/uploads/sites/17/2019/10/Complete-Streets-091119.pdf	MT-1-g, MT-1-h	X			The project would provide complete streets for all roadway improvements.
h. Does the project have a less than significant VMT impact, either through satisfying screening criteria or mitigating VMT impacts, pursuant to the City's adopted VMT thresholds? See City of Fresno website for details: https://www.fresno.gov/darm/wp-content/uploads/sites/10/2021/01/CEQA-Guidelines-for-Vehicle-Miles-Traveled-Final-Adopted-Version.pdf	MT-2-b, MT-2-c	X			The proposed project has a less than significant VMT impact.
2: Electric Vehicle Strategies					
a. For new multi-family dwelling units with parking, does the project provide EV charging spaces capable of supporting future EV supply equipment (EV capable) at 10% of the parking spaces per 2019 California Green Building Standards Code (CALGREEN, Title 24, Part 11), Section 4.106.4	Policy RC-8-j			X	The proposed project would not include multi-family residential uses.
b. For new commercial buildings, does project provide EV charging spaces capable of supporting EV capable spaces at 4% to 10% of the parking spaces per 2019 California Green Building Standards Code (CALGREEN, Title 24, Part 11), Section 5.106.5.3	Policy RC-8-j			X	The proposed project would not include commercial uses.
3: Energy Conservation Strategies					
a. Does the project meet or exceed mandatory state building energy codes? If yes, does the project follow any other GreenPoint ratings such as LEED, Energy Star or others? If yes, indicate level of certification-Silver, gold, platinum if applicable?	Policy RC-5-c, Objective RC-8, Policy RC 8-a	X			The project would meet the latest CalGreen standards and include cool roof materials but would not follow other GreenPoint ratings.
b. For commercial projects, does the project achieve net zero emissions electricity? Mark NA if project will be permitted before 2030. Mark Yes if voluntary. Add source and capacity in explanation.	Additional Recommended GHG Plan Measure, supports Objective RC-8			X	The project does not include commercial uses and would be permitted before 2030.

Checklist Item (Check the appropriate box and provide an explanation for your answer)	Relevant General Plan Policy	Yes	No	Not Applicable (NA)	Explanation
4: Water Conservation Strategies					
a. Does the project meet or exceed the mandatory outdoor water use measures of the 2019 California Green Building Standards Code (CALGREEN, Title 24, Part 11), Section 4.304? If the project exceeds CalGreen Code mandatory measures provide methods in excess of requirements in the explanation. Examples include outdoor water conservation measures such as; drought tolerant landscaping plants, compliant irrigation systems, xeriscape, replacing turf etc. Provide the conservation measure that the project will include in the explanation.	Objective RC-7, Policy RC-7-a, RC-7-h	X			The project would meet the latest CalGreen standards.
b. Does the project meet or exceed the mandatory indoor water use measures of the 2019 California Green Building Standards Code (CALGREEN, Title 24, Part 11), Section 4.303? If the project exceeds CalGreen Code, mandatory measures provide methods in excess of requirements in the explanation. Examples may include water conserving devices and systems such as water leak detection system, hot water pipe insulation, pressure reducing valves, energy efficient appliances such as Energy Star Certified dishwashers, washing machines, dual flush toilets, point of use and/or tankless water heaters.	Objective RC-7, Policy RC-7-a, RC-7-e	X			The project would meet the latest CalGreen standards.
5: Waste Diversion and Recycling Strategies					
a. Does the project implement techniques of solid waste segregation, disposal and reduction, such as recycling, composting, waste to energy technology, and/or waste separation, to reduce the volume of solid wastes that must be sent to landfill facilities?	Policy PU-9-a, RC-11-a	X			The proposed project would be consistent with the CalRecycle Waste Diversion and Recycling Mandate.
b. During construction will the project recycle construction and demolition waste?	Policy RC-11-a	X			The proposed project would recycle construction waste.
c. Does the project provide recycling canisters in public areas where trashcans are also provided?	Policy RC-11-a	X			The proposed project would provide recycling canisters.

Note: The GHG reduction strategies included in this checklist are based on the GHG reduction strategies identified in the Chapter 5 of the GHG Reduction Plan Update.

APPENDIX F

ACOUSTICAL ANALYSIS

VICE

Barstow Truck Parking
Acoustical Analysis

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July 23, 2021

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VICE

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List of Abbreviated Terms

CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
dB	Decibels
FHWA	Federal Highway Administration
Hz	Hertz
kHz	Kilohertz
L_{dn}	Day-Night Level
L_{eq}	Equivalent Sound Level
$L_{eq(h)}$	Equivalent Sound Level over one hour
L_{max}	Maximum Sound Level
L_{min}	Minimum Sound Level
LOS	Level of Service
L_{xx}	Percentile-Exceeded Sound Level
mPa	micro-Pascals
mph	miles per hour
NAC	noise abatement criteria
NADR	Noise Abatement Decision Report
NEPA	National Environmental Policy Act
NSR	Noise Study Report
Protocol	Caltrans Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects
SPL	sound pressure level
TeNS	Caltrans' Technical Noise Supplement
TNM 3.0	FHWA Traffic Noise Model Version 3.0

ACOUSTICAL TERMINOLOGY AND DEFINITIONS

The following terminology has been used for purposes of this report:

Ambient Noise Level: The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

CNEL: Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7 p.m. to 10p.m. and ten decibels to sound levels in the night before 7 a.m. and after 10 p.m.

Decibel, dBA: A unit for describing the amplitude of sound, equal to 10 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro pascals (20 micro-newtons per square meter).

DNL/Ldn: Day/Night Average Sound Level. The Ldn is a measure of the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the Leq. The Ldn is calculated by averaging the Leq's for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 P.M. to 7:00 A.M.), by 10 dBA to account for the increased sensitivity of people to noises that occur at night.

Leq: Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. Leq is typically computed over 1, 8 and 24-hour sample periods.

Leq(h): The hourly value of Leq.

Lmax: The maximum noise level recorded during a noise event Ln: The sound level exceeded "n" percent of the time during a sample interval (L90, L50, L10, etc.). L10 equals the level exceeded 10 percent of the time.

Ln(h): The hourly value of Ln.

Noise Exposure Contours: Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.

SEL or SENEL: Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to the duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micro pascals and the reference duration of one second

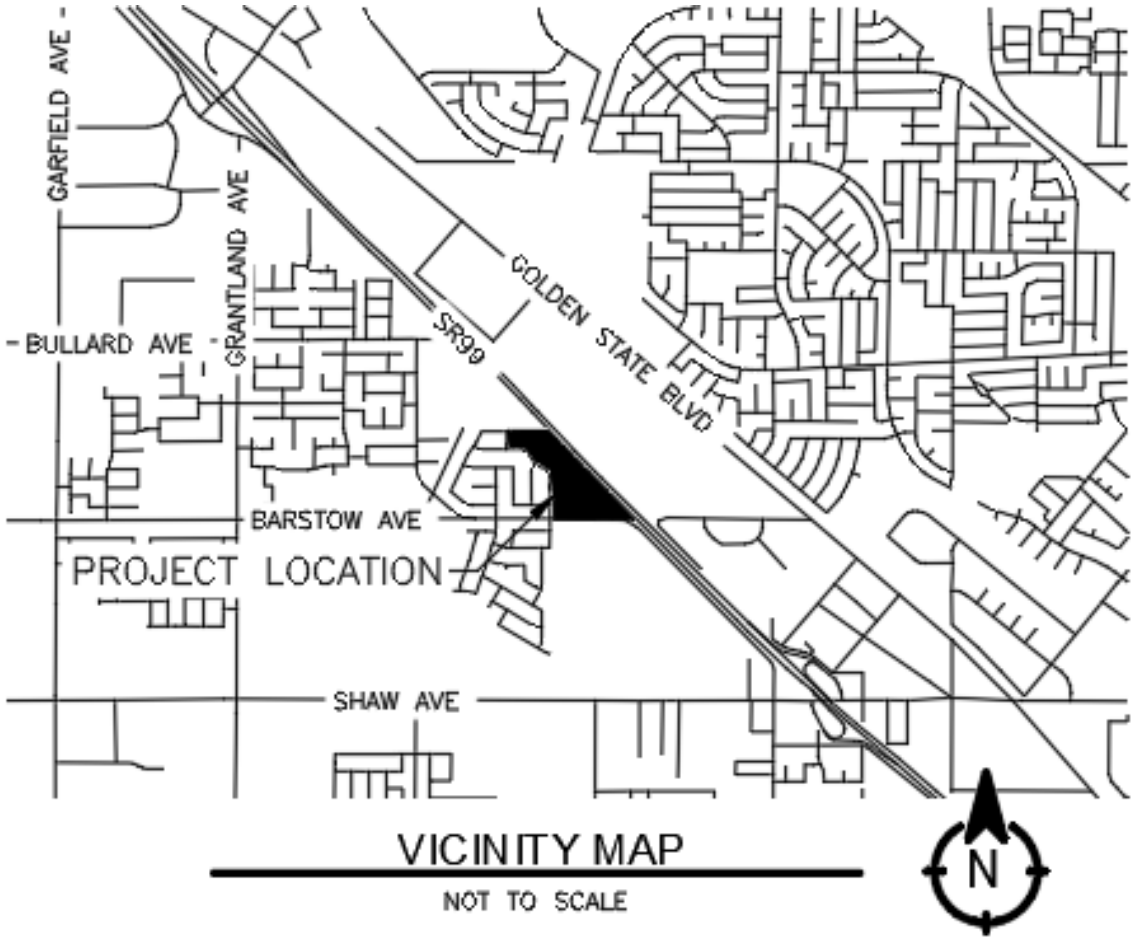
Sound Level: The sound pressure level in decibels as measured on a sound level meter using the A-weighing filter network. The A-weighing filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

1.0 Introduction

The proposed project, Barstow Truck Parking, consist of a truck parking facility located on the northeast corner of Barstow Ave and Contessa Ave, identified as APN 505-070-44, as shown in Figure 1. Barstow Avenue is considered a Collector roadway. The project proposes a truck parking facility with a future truck repair with an office, and truck wash. The offices are considered noise sensitive land uses. Therefore, City of Fresno has required an acoustical analysis to determine if noise from Barstow Ave will exceed the City's standards, and to determine the extent of noise mitigation that will be required.

All sound levels reported in this analysis are A-weighted sound pressure levels in decibels (dB). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighted sound levels, as they correlate well with public reaction to noise.

Figure 1 – Site Location



2.0 Noise Scales

Human response to sound is highly individualized. Annoyance is the most common issue regarding community noise. The percentage of people claiming to be annoyed by noise will generally increase with the environmental sound level. However, many factors will also influence people's response to noise. The factors can include the character of the noise, the variability of the sound level, the presence of tones or impulses, and the time of day of the occurrence. Additionally, non-acoustical factors, such as the person's opinion of the noise source, the ability to adapt to the noise, the attitude towards the source and those associated with it, and the predictability of the noise, will all influence people's response. As such, response to noise varies widely from one person to another and with any particular noise, individual responses will range from "not annoyed" to "highly annoyed."

Sound is described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dBA higher than another is judged to be twice as loud, and 20 dBA higher four times as loud, and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Examples of various sound levels in different environments are illustrated on Exhibit 4, Common Environmental Noise Levels.

Many methods have been developed for evaluating community noise to account for, among other things:

- The variation of noise levels over time;
- The influence of periodic individual loud events; and
- The community response to changes in the community noise environment.

Numerous methods have been developed to measure sound over a period of time; refer to Table 1, Noise Descriptors.

Table 1 -Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft) at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. November, 2009.

3.0 Laws, Ordinances, Regulations, and Standards

Land uses deemed sensitive by the State of California (State) include schools, hospitals, rest homes, and long-term care and mental care facilities. Many jurisdictions also consider residential uses particularly noise-sensitive because families and individuals expect to use time in the home for rest and relaxation, and noise can interfere with those activities. Some jurisdictions may also identify other uses noise-sensitive uses such as churches, libraries, and parks. Land uses that are relatively insensitive to noise include office, commercial, and retail developments. There is a range of insensitive noise receptors that include uses that generate significant noise levels and that typically have a low level of human occupancy. This noise analysis was conducted in accordance with Federal, State, and local criteria described in the following sections.

3.1 California Environmental Quality Act (CEQA)

CEQA was enacted in 1970 and requires that all known environmental effects of a project be analyzed, including environmental noise impacts. Under CEQA, a project has a potentially significant impact if the project exposes people to noise levels in excess of standards established in the local general plan or noise ordinance. Additionally, under CEQA, a project has a potentially significant impact if the project creates a substantial increase in the ambient noise levels in the project vicinity above levels existing without the project. If a project has a potentially significant impact, mitigation measures must be considered. If mitigation measures to reduce the impact to less than significant are not feasible due to economic, social, environmental, legal, or other conditions, the most feasible mitigation measures must be considered.

3.2 City of Fresno General Plan

The City of Fresno Noise Element identifies various maximum exterior noise exposures for outdoor activity areas for various land uses. The proposed project lies within the city boundaries and therefore is required to conform to City of Fresno noise ordinance, refer to **Table *2***.

Table 2 - Maximum Allowable Noise Exposure

Land Use [1]	Outdoor Activity Areas Ldn/ CNEL dB [2]	Interior Spaces	
		Ldn dB	Leq dB [2]
Residential	65	45	---
Transient Lodging	65	45	---
Hospitals Nursing Homes	65	45	---
Theaters, Auditoriums, Music Halls	---	---	35
Churches, Meeting Halls	65	---	45
Office Buildings	---	---	45
School, Libraries, Museums	---	---	45

Source: City of Fresno, *FRESNO General Plan*, December 18, 2014.
Notes:
1. Where the location of outdoor activity areas is unknown or is not applicable, the exterior noise level standard shall be applied to the property line of the receiving land use.
2. As determined for a typical worst-case hour during periods of use.

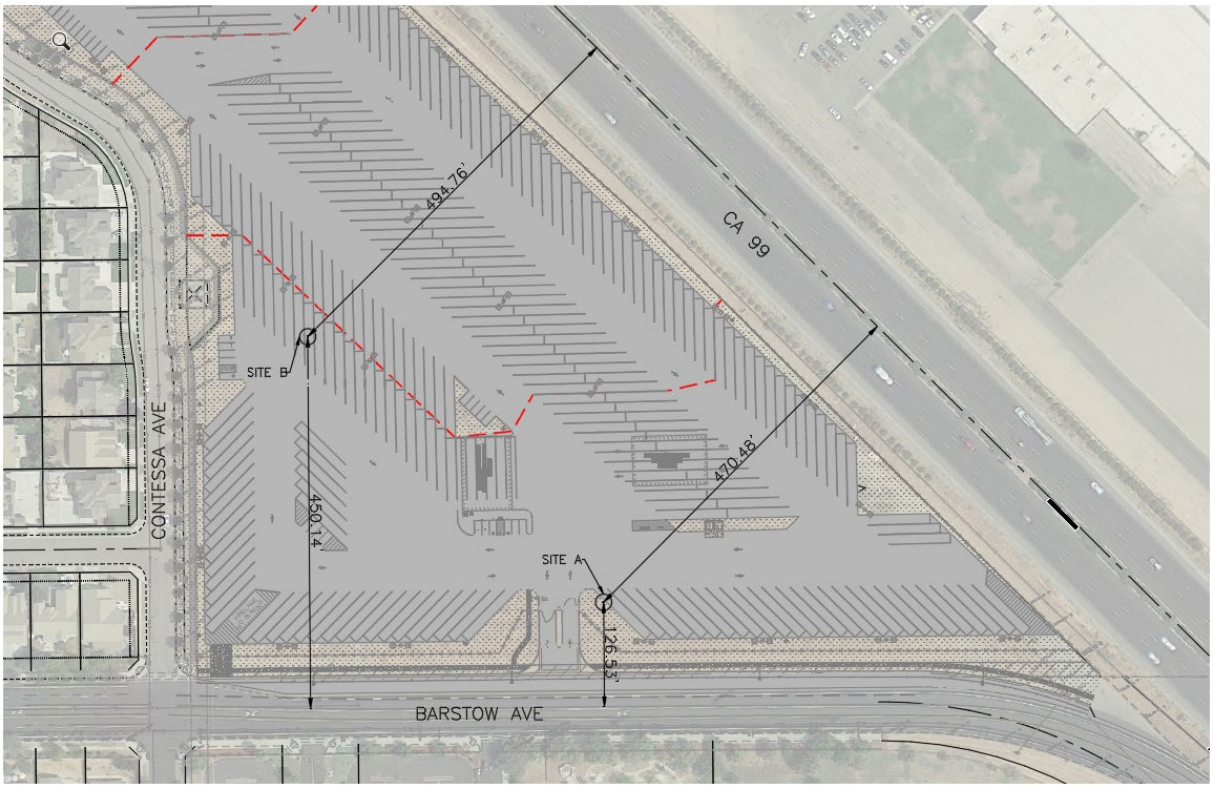
4.0 Methodology and Existing Conditions

4.1 Field Measurements

Sound level meters and sound level analyzers measure sound levels. Section 772.11(d) (3) of 23 CFR 772 calls for the use of an integrating sound level meter or analyzer, which automatically measures Leq. Components of an SLM include: a microphone with preamplifier, an amplifier, frequency weighting, input gain control, time averaging, and an output indicator or display. The accuracy of an SLM is characterized by its "class." There are three types of SLMs available: class 0, 1, and 2. Class 0 SLMs are designed for laboratory reference purposes, where the highest precision is required. Class 1 SLMs are designed for precision field measurements and research. Either class 1 or class 2 SLMs are acceptable for use in traffic noise analyses in conformance with FHWA guidelines.

Noise monitoring equipment used for the ambient noise survey consisted of a Reed Instruments R8080 Sound Level Meter/Data Logger. The monitoring equipment complies with applicable requirements of the American National Standards Institute (ANSI) for Type 2 (precision) sound level meters. The instrumentation was calibrated prior to and after each use with a Reed Instruments R8090 Sound Level Calibrator to ensure the accuracy of the measurements. The microphone was located on a tripod approximately five feet above the ground. The noise monitoring sites was located at approximately 150 feet from the center of the road so that the hills on the site would not interfere with the noise measurement.

Figure 2 – Site Map



4.2 FHWA Traffic Noise Model

In March 1998, the Federal Highway Administration (FHWA) released the Traffic Noise Model, Version 1.0 (FHWA TNM). It was developed as a means for aiding compliance with policies and procedures under FHWA regulations. Since its release in March 1998, Version 1.0a was released in March 1999, Version 1.0b in August 1999, Version 1.1 in September 2000, Version 2.0 in June 2002, Version 2.1 in March 2003 and the current version, Version 2.5 in April 2004. Version 3.0 was released in February 2020. The latest version TNM 3.0 was utilized to determine the noise resulting from vehicular activity along the surrounding roadways.

TNM is a state-of-the-art computer program used for predicting noise impacts in the vicinity of highways. It uses advances in personal computer hardware and software to improve upon the accuracy and ease of modeling highway noise, including the design of effective, cost-efficient noise barriers.

- TNM contains the following components:
- Modeling of five standard vehicle types, including automobiles, medium trucks, heavy trucks, buses, and motorcycles, as well as user-defined vehicles;
- Modeling of both constant-flow and interrupted-flow traffic using a 1994/1995 field measured data base;
- Modeling of the effects of different pavement types, as well as the effects of graded roadways;
- Sound level computations based on a one-third octave-band data base and algorithms;
- Graphically-interactive noise barrier design and optimization;
- Attenuation over/through rows of buildings and dense vegetation;
- Multiple diffraction analysis;
- Parallel barrier analysis; and
- Contour analysis, including sound level contours, barrier insertion loss contours, and sound-level difference contours.

5.0 Acoustical Analysis

5.1 Project Site Noise Exposure

Barstow Avenue runs along the southern boundary of the project site, and State Route 99 (SR-99) runs along the eastern boundary of the project site. Contessa Avenue, an existing dirt berm and block wall runs along the western boundary of the project site.

In order to determine the ambient noise levels within the project area, 24 hour noise measurements were taken by VICE on May 10, 2021 thru May 11, 2021. The detailed results of the field measurements are provided in Appendix A. The noise measurement sites were representative of typical existing noise exposure within project site and are shown on Figure 2. One-minute interval measurements were taken at each site, between 3:00 p.m. May 10, 2021 and 12:00 p.m. May 11, 2021. A summary of the noise measurements for each site are shown in Table 3, below. The Ldn for both sites are 68 and 63. For the purposes of this report the existing Ldn for this site is 68 dBA.

Table 3 – Summary of Noise Measurements

Site	Location	Lmax [1]	Lmin [1]	L_{DN} [2]
A	West side +150 feet from centerline of Barstow Avenue	43	88	68
B	South side +150 feet from centerline of Barstow Avenue	43	70	63

1 Based on SEL
2 Includes 10 decibel penalty from 10:00 P.M. to 7:00 A.M.

5.2 Predicted Traffic Noise Levels

The traffic data along Alluvial Avenue was obtained from Fresno Council of Governments (FresnoCOG). A doubling of existing traffic volumes would increase the existing DNL by 3 decibels. Table 4 shows the 2019 and future 2035 average daily trips (ADTs) for Barstow Avenue and HWY 99 according to the FresnoCOG's traffic data and models. The traffic volumes on HWY 99 are anticipated to increase by 90%, which would result in a decrease the existing Ldn by 2.7 decibel to 70 dBA by 2035. For the purpose of the report cumulative Ldn will be 70 dBA.

Table 4 – Predicted Traffic Noise Levels

Roadway	2019 ADT	2035 ADT	% Increase	dBA Increase	2035 Ldn
Barstow Ave	7723	4892	-37%	-1.1 dBA	67 dBA
Hwy 99	40188	76388	90%	2.70 dBA	70 dBA

Outdoor activity areas for the proposed commercial project is recommended to be 65 dBA or less. Based on the modeling results, some areas would exceed the 65 dBA without implementation of mitigation measures.

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5.2 Noise Mitigation

5.2.1 Exterior Noise Exposure and Mitigation

The City of Fresno Noise Element sets 65 dB DNL or less as the acceptability criterion for exterior noise levels for non-sensitive commercial land uses, and 70 dBA DNL, as the 65 dB DNL or less as the acceptability criterion for exterior noise levels for industrial land uses.

The project proposes a future truck repair building with office spaces. The proposed

To mitigate traffic noise exposure the project developer has proposed that a 6' high good neighbor vinyl fence be constructed along the southern boundary of the project site. The good neighbor fence is intended to provide acoustical shielding to reduce the amount of noise from Barstow Avenue.

A sound wall barrier insertion was modeled using TNM 3.0 to calculate the insertion loss (noise reduction) provided by the proposed good neighbor fence. The model calculates the insertion loss of a wall of given height based on the effective height of the noise source, height of the receiver, distance from the receiver to the wall, and distance from the noise source to the wall. The standard height of a residential receiver is five feet above the building pad elevation.

Based upon the above-described assumptions and method of analysis, the noise level insertion loss values for sound walls of various heights were calculated. The calculations indicated that a sound wall and landscape berm with a combined height of 7 feet, above the crown of the Barstow Avenue would be required to reduce noise exposure by 7 dBA, to 63 dBA at closest proposed office building. The good neighbor fence should be continuous without gaps or openings along Barstow Ave.

5.2.1 Interior Noise Exposure and Mitigation

The City of Fresno's interior noise level standard is 45 dB DNL. In order to satisfy the City's interior noise level standard at the first-floor level, and assuming that a sound wall will be constructed to reduce exterior noise exposure to a maximum of 63.0 dB DNL, the proposed construction of the first floor will need to be capable of providing an outdoor-to-indoor noise level reduction (NLR) of approximately 18 dB (63-45=18).

A specific analysis of interior noise levels was not performed. However, the future truck repair building and carwash will be built using steel frame construction. Therefore the construction methods complying with current building code requirements will reduce exterior noise levels by a least 20-25 dB, if windows and doors are closed. This will be sufficient for compliance with the City's 45 dB DNL interior standard, provided the above-described good neighbor fence are implemented.

6.0 Conclusions and Recommendations

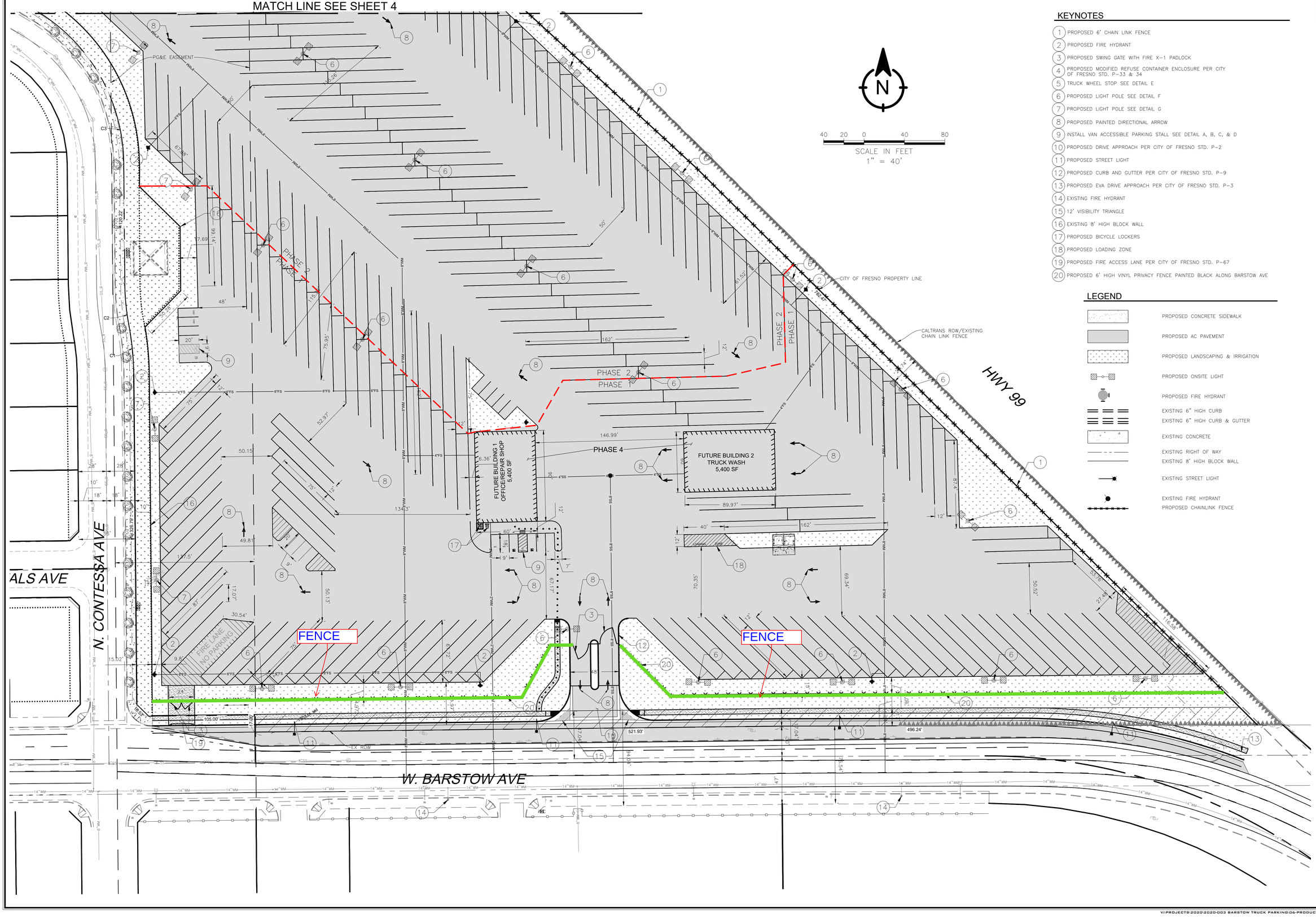
Barstow Truck Parking will comply with the exterior and interior noise level requirements of the City of Fresno provided the following mitigation measures are incorporated into the final project design.

1. A good neighbor fence and landscape berm with a combined height of 7 feet, above the crown of the Barstow Avenue. The good neighbor fence should be continuous without gaps or openings along Barstow Avenue, refer to Figure 3.

The conclusions and recommendations of this acoustical analysis are based upon the best information available at the time the analysis was prepared concerning the proposed site plan, project grading, building construction and road traffic. Any significant changes in these factors will require a reevaluation of the findings of this report.

Figure 3 – Good Neighbor Fence Location Map

MATCH LINE SEE SHEET 4



KEYNOTES

1. PROPOSED 6' CHAIN LINK FENCE
2. PROPOSED FIRE HYDRANT
3. PROPOSED SWING GATE WITH FIRE X-1 PADLOCK
4. PROPOSED MODIFIED REFUSE CONTAINER ENCLOSURE PER CITY OF FRESNO STD. P-33 & 34
5. TRUCK WHEEL STOP SEE DETAIL E
6. PROPOSED LIGHT POLE SEE DETAIL F
7. PROPOSED LIGHT POLE SEE DETAIL G
8. PROPOSED PAINTED DIRECTIONAL ARROW
9. INSTALL VAN ACCESSIBLE PARKING STALL SEE DETAIL A, B, C, & D
10. PROPOSED DRIVE APPROACH PER CITY OF FRESNO STD. P-2
11. PROPOSED STREET LIGHT
12. PROPOSED CURB AND GUTTER PER CITY OF FRESNO STD. P-9
13. PROPOSED EVA DRIVE APPROACH PER CITY OF FRESNO STD. P-3
14. EXISTING FIRE HYDRANT
15. 12' VISIBILITY TRIANGLE
16. EXISTING 8' HIGH BLOCK WALL
17. PROPOSED BICYCLE LOCKERS
18. PROPOSED LOADING ZONE
19. PROPOSED FIRE ACCESS LANE PER CITY OF FRESNO STD. P-67
20. PROPOSED 6' HIGH VINYL PRIVACY FENCE PAINTED BLACK ALONG BARSTOW AVE

LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED AC PAVEMENT
- PROPOSED LANDSCAPING & IRRIGATION
- PROPOSED ONSITE LIGHT
- PROPOSED FIRE HYDRANT
- EXISTING 6" HIGH CURB
- EXISTING 6" HIGH CURB & GUTTER
- EXISTING CONCRETE
- EXISTING RIGHT OF WAY
- EXISTING 8' HIGH BLOCK WALL
- EXISTING STREET LIGHT
- EXISTING FIRE HYDRANT
- PROPOSED CHAINLINK FENCE

REVISIONS

NO.	DATE	BY

2491 ALLUVIAL AVE
CLOVIS, CA 93619
(559) 775-0023
FAX (559) 775-0016
WWW.VICE-ENGR.COM

VICE
VANG INC. CONSULTING ENGINEERS

BARSTOW TRUCK PARKING

SITE PLAN

CITY OF FRESNO CALIFORNIA

DATE: 5/6/2021

PROJ. ENGR: LSV

PROJ. MNGR: KYV

PREPARED FOR:
INDY SANGHA
SANGHA CARRIERS
5812 BEDFORD AVE
FRESNO, CA 93722

REGISTERED PROFESSIONAL ENGINEER
KHENG YING VANG
NO. C-63824
CIVIL
STATE OF CALIFORNIA

SHEET NO. 3 / 4

PROJECT NUMBER 20-003

5/7/2021 10:08 AM

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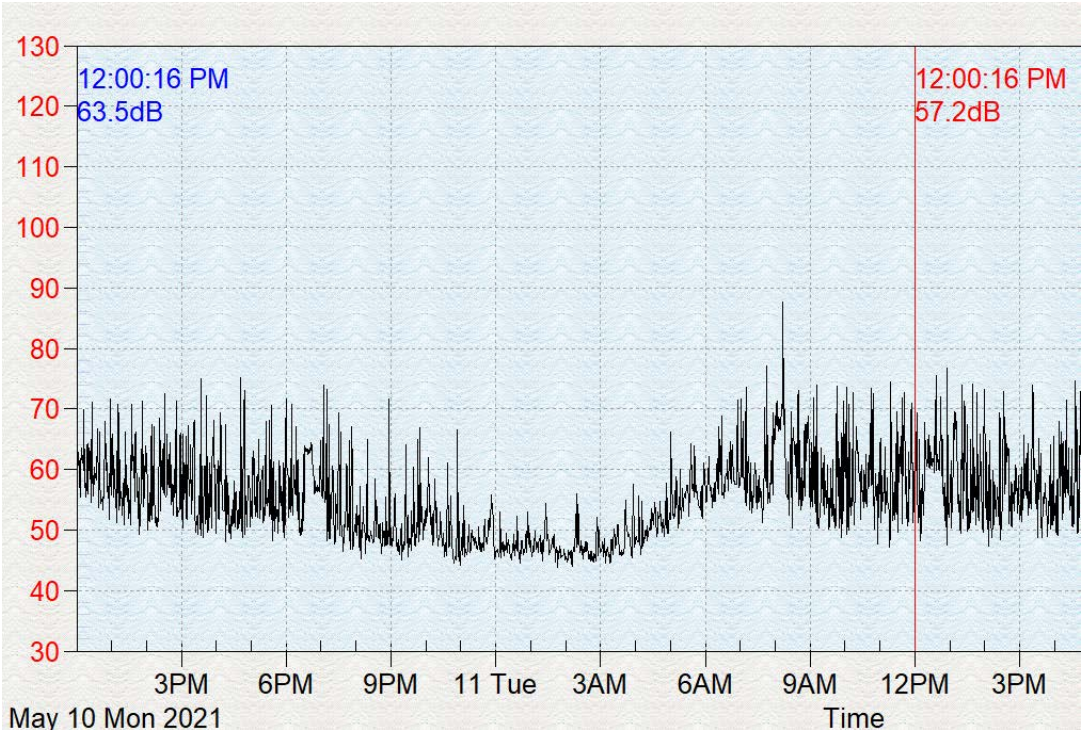
Appendix A: Noise Measurement Data Sheets

Site A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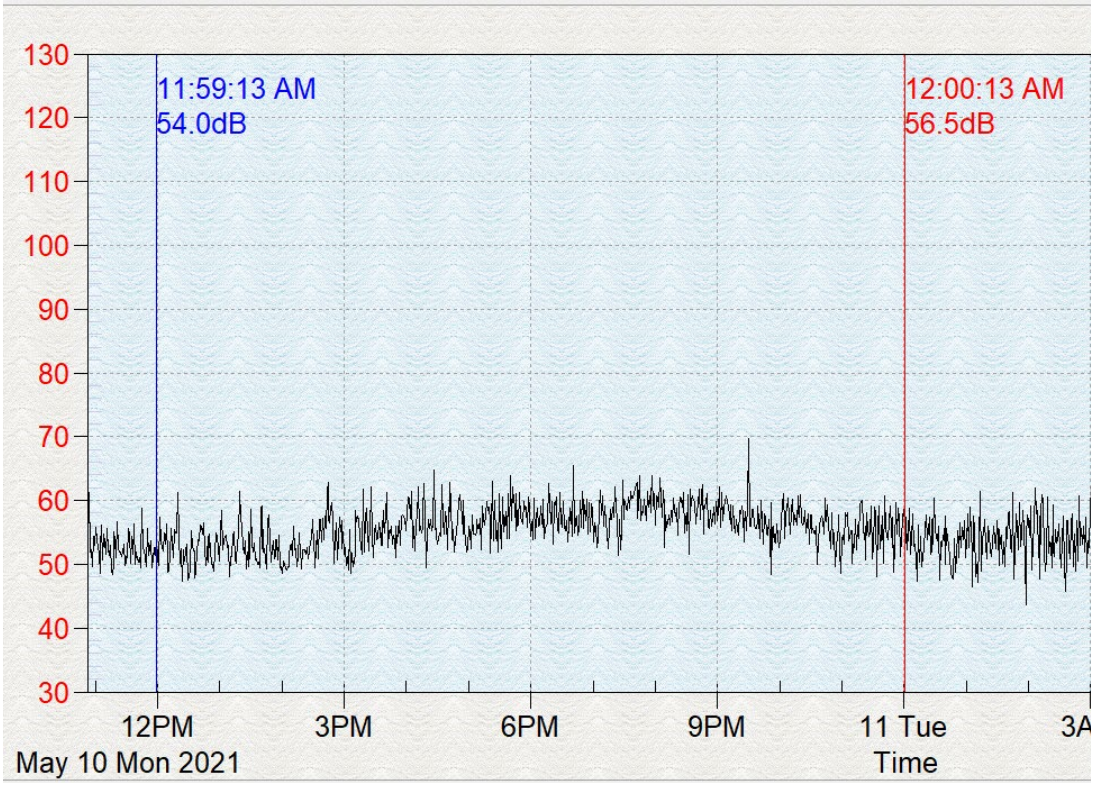
100
90
80
70
60
50
40
30
3PM
6PM
9PM
11 Tue
3AM
6AM
9AM
12PM
3PM
May 10 Mon 2021
Time

Site B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56.5dB
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110
100
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30
12PM
3PM
6PM
9PM
11 Tue
3A
May 10 Mon 2021
Time

Site A

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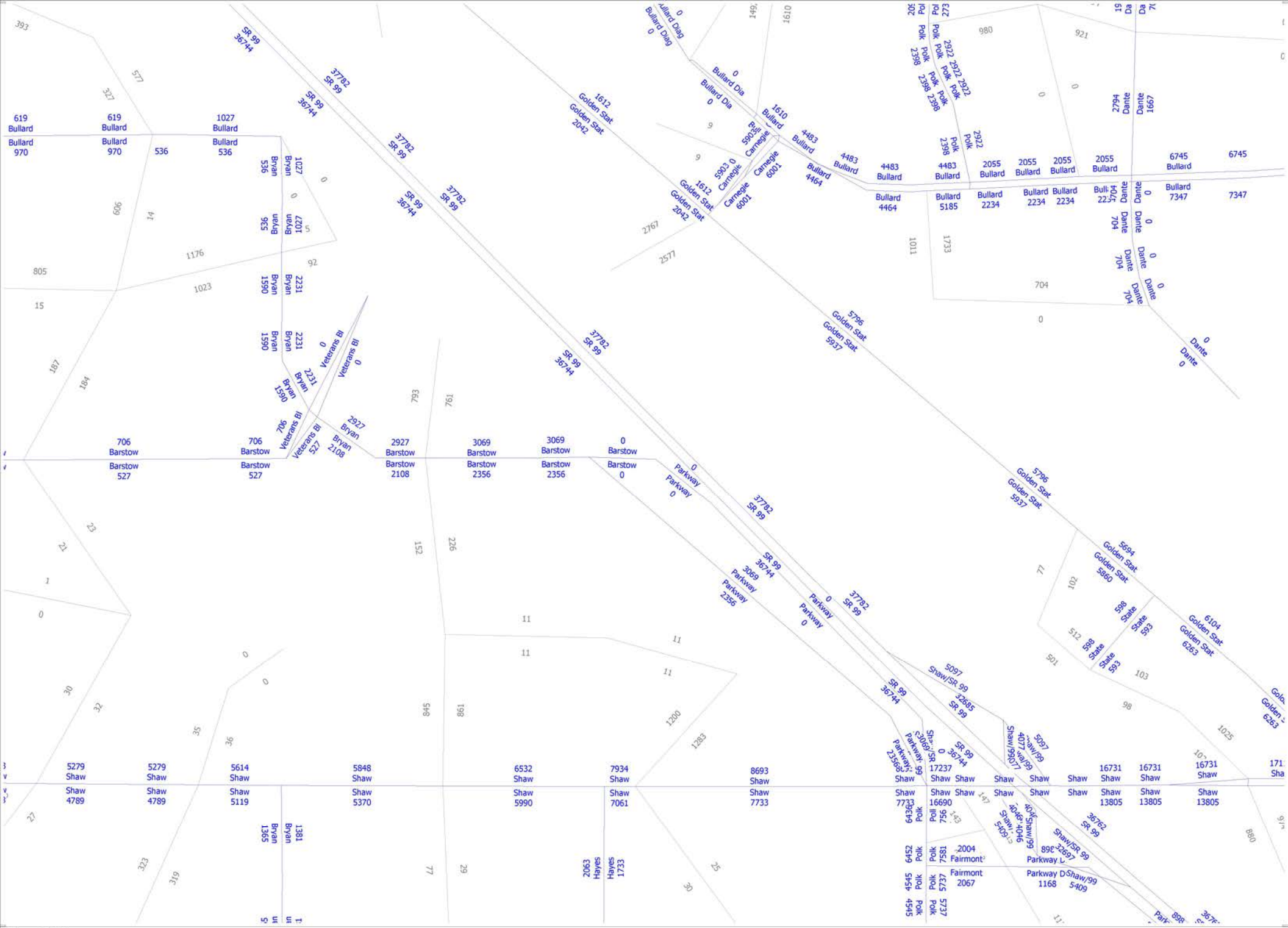
Appendix B: FresnoCOG Traffic Models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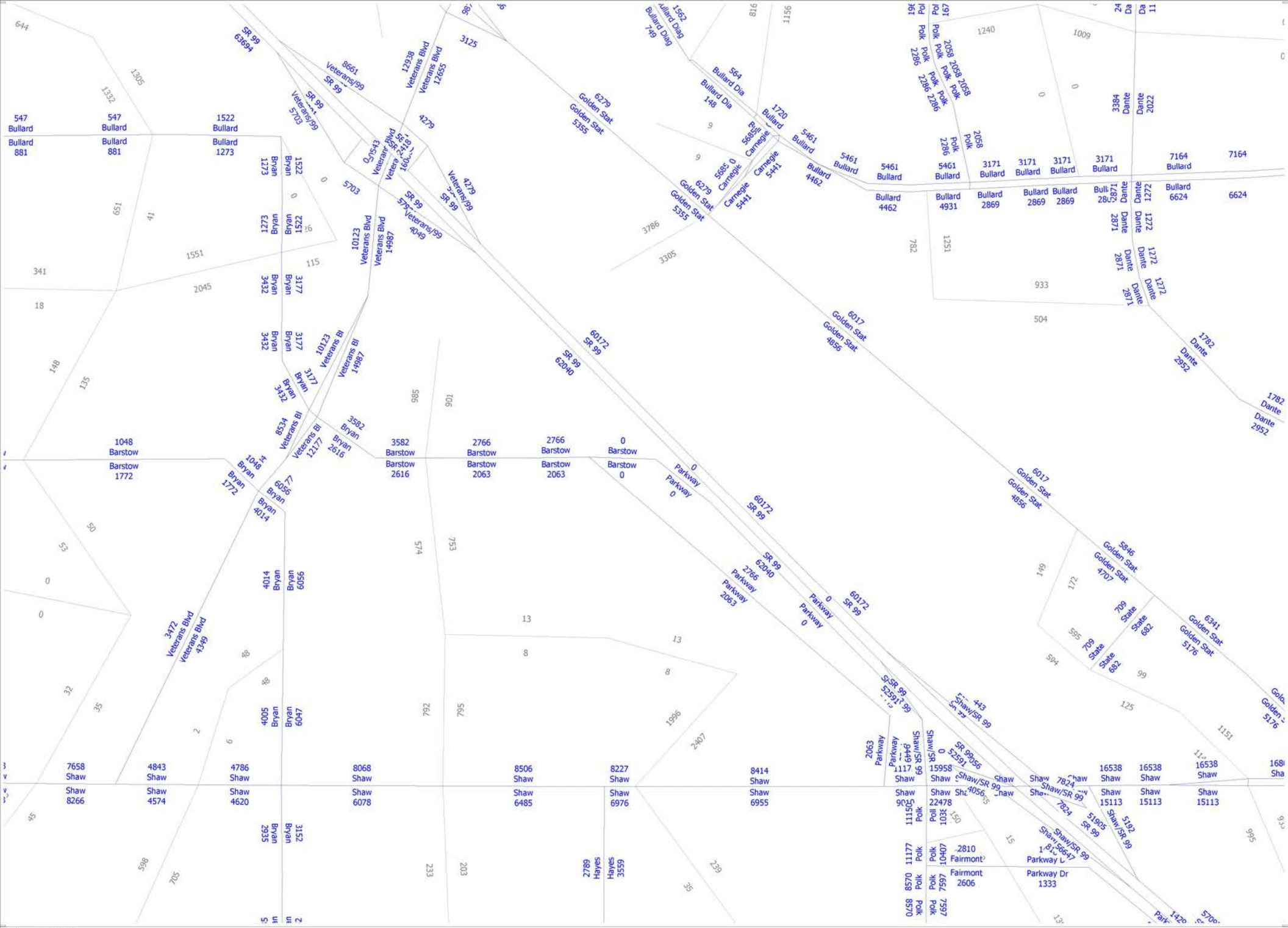
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APPENDIX G

TRAFFIC IMPACT STUDY

Traffic Impact Study
P 2021-01833
Barstow Truck Parking

Prepared For:

Indy Sangha
Sangha Carriers
4582 W. Jacquelyn Ave Ste 103
Fresno, CA 93722

Prepared by:

Kheng Vang, PE 63824, TE
Vang Inc. Consulting Engineers
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Date:
October 11, 2021

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Table of Contents

Figures

Tables

Appendices

1.0 Summary

Vang Inc. Consulting Engineers prepared the Transportation Impact Study for the Barstow Truck Parking P21-01833 located at 6050 W. Barstow Ave to examine the impacts of the development on the surrounding transportation network. The development would be located on a 18.87-acre site in the northeast corner of West Barstow Avenue and North Contessa Avenue in Fresno, California. The project site has a General Plan land use designation and zoning identifies as Business Park (BP). The site is bordered by W. Barstow Avenue to the south, low density residential to the east, and Highway 99 to the east and north. The project consists of the construction and development of a truck parking facility with 5,400 sf of Auto/Truck Service Center, and 5,400 sf of truck wash with two tunnels. The project proposes 374 truck parking stalls; 59 vehicle parking stalls, of which 4 will be electric vehicle charging station, and 3 are ADA accessible stalls.

Caltrans and City of Fresno Traffic Engineering Department was consulted for the scope of the study. The following intersections were identified for Level of Service and Queuing analysis:

1. North Veterans Blvd Avenue/West Barstow Avenue
2. North Polk Avenue and West Shaw Avenue
3. Barstow/ Proposed Driveway

The following study scenarios were identified, pursuant to the City of Fresno TIS guidelines:

Existing Conditions
Existing Plus Project Conditions
Near-Term Plus Project Conditions
2035 Cumulative
2035 Cumulative Plus Project Conditions

Table 1 shows the intersection Level of Service (LOS) based on Highway Capacity Manual (HCM) 6th Edition methodologies.

Table 1: Intersection Level of Service

Intersection	Time Period	Existing	Existing Plus Project	Near Term Plus Project	Cumulative	Cumulative Plus Project
1: Veterans/Barstow	AM PM	C (25.4) C (29.5)	C (26.5) C (27.9)	C (28.1) C (28.7)	**F (307.5)** **F (258.2)**	**F (321.8)** **F (263.7)**
2: Polk/Shaw	**AM** **PM**	**E (64.5)** **F (116)**	**E (66.1)** **F (125.6)**	**E (67)** **F (126.4)**	D (40.5) E (63.1)	D (43.1) F (280)
3: Barstow/Driveway	AM PM	A (0) B (13.1)	B (12.8) C (17.9)	B (12.9) C (18.1)	A (0) B (13.0)	C (16.5) C (17.4)

LOS (Delay: Seconds Per Vehicle)
Overall intersection (Signalized[1] & TWSC[2]) | Worst Movement (TWSC[3])
Bold Indicates un-acceptable LOS (Level of Service)
Sources: Synchro 11, Highway Capacity Manual (6th Edition)

Table 2 shows the 95th percentile queue lengths based on HCM 6th Edition methodologies.

Table 2 : Queuing

	Existing Storage Length (ft)		Queuing AM	Queuing PM	Queuing AM	Queuing PM	Queuing AM	Queuing PM	Queuing AM	Queuing PM	Suggested Storage Length (ft)
			Existing		Existing Plus Project		Near Term Plus Project		Cumulative Plus Project		
1: Veterans/ Barstow	EBL	(180)	0	7	0	7	0	7	**#1282**	**#968**	**500**
	EBT	*	125	108	126	109	126	109	48	49	
	EBR	(180)	0	0	0	0	0	0	73	81	**180**
	WBL	(270)	42	88	48	97	48	97	**#445**	**#426**	**500**
	WBT	*	129	142	130	144	130	144	66	61	
	WBR	*	0	0	0	0	0	0	**#680**	**284**	**500**
	NBL	(250)	7	7	7	7	7	7	**#541**	**#547**	**500**
	NBT	*	0	0	0	0	33	26	#1569	#1109	
	NBR	(250)	0	0	0	0	0	0	66	81	**250**
	SBL	(250)	0	0	43	10	48	12	**#496**	**#765**	**500**
	SBT	*	0	0	0	0	22	29	**465**	**#1169**	
	SBR	(250)	0	0	0	0	0	0	124	**#524**	**500**
2: Polk/ Shaw	EBL	(160)	54	38	62	39	62	39	63	42	**160**
	EBT	*	247	162	247	162	247	162	#283	195	
	EBR	(100)	0	0	0	0	0	0	0	0	
	WBL	(160)	**#270**	**#442**	**#270**	**#442**	**#270**	**#442**	**#245**	**#372**	**400**
	WBT	*	#435	#550	#435	#550	#435	#550	205	286	
	WBR	*	0	53	40	55	41	57	0	0	**50**
	NBL	(100)	40	33	40	33	40	33	40	38	**100**
	NBT	*	102	105	114	121	117	122	102	136	
	NBR	*									
	SBL	(100)	**#254**	**#191**	**#275**	**#295**	**#281**	**#306**	**#256**	**#284**	**300**
	SBT	*	87	72	89	298	89	82	87	89	
	SBR	*									
3. Barstow/ Driveway	EBT		0	0	0	0	0	0	0	0	
	EBR		0	0	0	0	0	0	0	0	
	EBL		0	0	0	5	0	25	0	5	**50**
	WBL		0	0	0	0	0	0	0	0	
	WBR		0	0	0	0	0	0	0	0	
	NBL		0	0	0	0	0	0	0	0	
	NBR		0	0	0	0	0	0	0	0	
	SBL		0	0	5	35	5	0	7.5	32.5	**50**
	SBR		0	0	0	0	0	0	0	0	

95th Percentile Queue Length in Feet
Source: Synchro 11
Bold 95th percentile volume exceeds capacity | # queue length may be longer | m Volume for 95th percentile is metered by upstream signal | * represents very long storage length (typically greater than 500 feet) | [#] future suggested improvement (#) existing storage length | {#} build-out storage length

Scenario-specific results are as follows:

Existing:

Veterans/Barstow and Barstow/Driveway intersections are operating at LOS D or better. Polk/Shaw intersection is currently operating at LOS E during AM peak hour, and LOS F during PM peak hour. Storage lengths are adequate to accommodate the existing queues at Veterans/Barstow intersection. Polk/Shaw intersection currently has deficiencies in the SBL and WBL turn lanes

Existing Plus Project:

Table 4 shows the vehicle trip generation based on the Institute of Transportation Engineers (ITE) Trip Generation Ninth Edition (2012). With these project trips added to the existing volumes, Veterans/Barstow and Barstow/Driveway intersections would continue operating at LOS D or better. Polk/Shaw intersection would continue operating at LOS E during AM peak hour, and LOS F during PM peak hour. Storage lengths are adequate to accommodate the proposed queues at Veterans/Barstow intersection. Polk/Shaw intersection would continue to has deficiencies in the SBL and WBL turn lanes.

The total annual un-mitigated VMT for this project is 237,001 and the total annual mitigated VMT is **71,100** utilizing CALEEMOD version 2016.3.2, for detailed analysis refer to Appendix F. The project has an 30% reduction in VMT, which exceeds the City's 13% threshold.

Table 3 : Project Trip Generation

Land Use	Code	Quantity	Weekday	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Industrial Park	130	18.31	**1121**	125	26	**151**	32	125	**157**
Net New Trips			**1121**	125	26	**151**	32	125	**157**

Source: Institute of Transportation Engineers Trip Generation, Tenth Edition (2017)
Institute of Transportation Engineers Trip Generation Handbook, Second Edition (2017)
NCHRP (2012)

Near-Term Plus Project:

Table 5 shows the list of approved projects. This list was developed in consultation with the City of Fresno Planning and Traffic Engineering Department. These projects, projected to come online by the project-opening year of 2022, are reflected in the analysis. With the approved near term trips and the proposed project trips added to the existing traffic volumes, Veterans/Barstow and Barstow/Driveway intersections would continue to operate at an acceptable LOS D or better. Polk/Shaw intersection would continue to operate at LOS E during AM peak hour, and LOS F during PM peak hour. Storage lengths are adequate to accommodate the proposed queues at Veterans/Barstow intersection. Polk/Shaw intersection would continue to has deficiencies in the SBL and WBL turn lanes.

Table 4: Approved Pending Projects Trip Generation

Project Name	Land Use (Code)	Quantity	Weekday	AM Peak Hour	PM Peak Hour
P18-01437 Mini-warehouse	151	120 Storage Units	198	13	23
P18-02196 Daycare	565	4,704 sf	224	52	53
P19-04593 Convenience Market and Gas Station	945	8 fueling positions	1643	100	112
P19-04593 Shopping Center	820	2250 sf	272	7	27
P19-04593 Fast Food Restaurant w/ Drive thru	934	700 sf	330	28	23
P20-00942 APTS	220	180 Dwelling Units	1318	83	101
P20-00378 Convenience Market and Gas Station	945	8 fueling positions	1643	100	112
P20-00378 Shopping Center	820	7200 sf	272	7	27
P20-00378 Fast Food Restaurant w/ Drive thru	934	3600 sf	1695	145	118
P20-00378 Fast Food Restaurant w/o Drive thru	933	700 sf	242	18	20
Unadjusted Volume			7591	544	592
Internal Capture Trips			0	0	0
Pass-By-Trips[1]			0	119	125
Total Trip Reductions			**0**	**119**	**125**
Volume Added to Adjacent Streets			**7591**	**425**	**467**

Sources: Institute of Transportation Engineers, Trip Generation, Tenth Edition (2017), Fresno COG (2021)
SFD: Single-Family Development; MFR: Multi-Family Residential; MFD: Multi-Family Development
[1] Parcels 2, 3, and 4 of Tract 5298 generate Pass-by Trips based on ITE Trip Generation Handbook rates, but was capped at 30%.

Cumulative Plus Project:

Veterans/Barstow intersection would operate at LOS F during AM and PM peak hours. With additional lanes added on Shaw Avenue in the future, the Polk/Shaw intersection LOS would improve to LOS D during AM and F during PM. The Barstow Driveway intersection would continue to operate at an acceptable LOS D or better. Veterans/Barstow intersection would have deficiencies in the storage lengths for the EBL, WBL, WBR, NBL, NBR, SBL, and SBR turn lanes. Polk/Shaw intersection would continue have to deficiencies in the SBL and WBL turn lanes.

Mitigation Measures:

It is recommended the project implement the following improvements:

1. Construct site frontage improvements along Barstow Avenue to include curb, gutter, and sidewalk and accommodations for bicycle facilities to be constructed in connection with the City of Fresno Active Transportation Plan. These include Class II facilities along Barstow Avenue.

2. Provide adequate wayfinding, signage, and illumination on-site to optimize safety and to reduce conflicts among delivery trucks, motorists, cyclists, and pedestrians.
3. The City shall continue to monitor traffic operations at all off-site intersections.
4. Provide adequate ingress and egress to and from the project site as represented in the Site Plan with driveways.
5. Provide onsite bike racks/bike lockers and pedestrian accessibility to all proposed buildings and offsite sidewalk.

In addition the project shall pay into applicable transportation fee programs. These include a Fresno Major Street Impact (FMSI) Fee, a Traffic Signal Mitigation Impact (TSMI) Fee, and a Regional Transportation Mitigation Fee (RTMF). The FMSI Fee will be calculated and assessed during the building permit process. The RTMF will be calculated and assessed by Fresno COG.

2.0 Introduction

This transportation impact report presents the results of a transportation impact study for the proposed Barstow Truck Parking P21-01833 located at 6050 W. Barstow Ave. The project consists of The project consists of the construction and development of a truck parking facility with 5,400 sf of Auto/Truck Service Center, and 5,400 sf of truck wash with two tunnels. The project proposes 374 truck parking stalls; 59 vehicle parking stalls This report is prepared according to the City of Fresno Traffic Impact Study Report Guidelines (February 2, 2009). The study examines the development's impacts on the surrounding City of Fresno transportation network. The City of Fresno is the lead agency under the California Environmental Quality Act (CEQA).

2.1 Scope

Per correspondence with the City of Fresno Traffic Engineering Department, the following intersections were identified for Level of Service and Queuing analysis:

1. North Veterans Blvd Avenue/West Barstow Avenue
2. North Polk Avenue and West Shaw Avenue
3. Barstow/ Proposed Driveway

The following study scenarios were identified pursuant to the City of Fresno TIS Guidelines:

Existing Conditions
Existing Plus Project Conditions
Near-Term Plus Project Conditions
2035 Cumulative
2035 Cumulative Plus Project Conditions

The Fresno General Plan 2035 took effect on January 18, 2015. Therefore, this document is used as the basis for the mitigated operational analysis. The proposed project is consistent with the land designation called in the 2035 Fresno General Plan.

Figure 1 is a Vicinity Map showing the locations of the site, the transportation network, and the study intersections.

2.2 Level of Service Standards

Level of Service (LOS) is a qualitative measure of transportation flow conditions and their perceptions by transportation system users. Vehicle LOS at intersections and along roadway segments is scaled from "A" (free flow) to "F" (congested, stop and go) according to the Transportation Research Board's (TRB's) Highway Capacity Manual 6th Edition.

Specific Vehicle LOS characteristics are defined in terms of average vehicle delay (seconds per vehicle) for un-signalized and signalized intersections as follows:

A (0-10.0 sec. for un-signalized and signalized)
B (10.1–15.0 sec. for un-signalized, 10.0-20.0 sec. for signalized)
C (15.1-25.0 sec. for un-signalized, 20.1-35.0 sec. for signalized)
D (25.1-35.0 sec. for un-signalized, 35.1-55.0 sec. for signalized)
E (35.1 to 50.0 sec. for un-signalized, 55.1-80.0 sec. for signalized)
F (50.1+ sec. for un-signalized, 80.1+ sec. for signalized)

The "Mobility and Transportation" element of the City of Fresno General Plan 2035 breaks down the City of Fresno into four Traffic Impact Zones (TIZ's) on General Plan Figure MT-4. The project study area lies within TIZ-III (Near or outside City Limits, but within Sphere of Influence). The Vehicle Level of Service standard for TIZ-III is "D" or better.

2.3 Project Description

The proposed project is located on a 18.87-acre parcel in the northeast corner of West Barstow Avenue and North Contessa Avenue in Fresno, California. The Assessor Parcel Number (APN) is 505-070-44. This property is zoned Business Park (BP). The site is bordered by W. Barstow Avenue to the south, low density residential to the east, and Highway 99 to the east and north.

The project proposes to construct a truck parking facility with 5,400 sf of Auto/Truck Service Center, and 5,400 sf of truck wash with two tunnels. The project proposes 374 truck parking stalls; 59 vehicle parking stalls, of which 4 will be electric vehicle charging station, and 3 are ADA accessible stalls.

Figure 2 is a site plan layout showing the configuration of the site, the on-site access drive aisles and connections to the surrounding City of Fresno transportation network. The project proposes one main entrance onto West Barstow Avenue and a secondary emergency vehicle only access onto Barstow Avenue. The site access and on-site circulation system was reviewed and deemed safe and compliant with standard transportation planning practices. Motorists would be able to circulate both clockwise and counterclockwise around the parking lots. Pedestrian access is provided by a series of sidewalks and walkways connecting all the proposed buildings and offsite sidewalk along Barstow Ave. Bicycle racks/lockers are provided onsite to encourage multi-modal access to the project site. Additionally, the circulation throughout the site was designed for minimized conflicts with bicyclists, pedestrians, and other motorists.

3.0 Existing Conditions

3.1 Transportation Setting

The project study area is in the northwest area of the City of Fresno. This study area includes the primary roadways of West Barstow Avenue (Collector), North Veterans Blvd (Super Arterial), and West Shaw Avenue (Arterial) that comprise the study intersections. There are portions of existing sidewalks and Class II bike lanes along Barstow Avenue.

The City of Fresno General Plan (2035) Chapter 4 (Mobility and Transportation) reinforces the value of "comprehensive connectivity" with especially strong emphasis on boosting the connectivity of the pedestrian and bicycle networks to facilitate the ability to access neighborhoods, shopping destinations, academic institutions, and recreation opportunities by alternative modes to the private automobile.

The Fresno City Council approved the City's Active Transportation Plan (ATP) on March 2, 2017. This ATP describes the characteristics of the City's bicycle and pedestrian network. This network consists of Class I (paths), II (lanes), and III (routes) bicycle facilities as well as 1,984 miles of sidewalks. The bicycle network has seen significant expansions between 6th Edition and 2016. Class I facilities have increased from 14 to 38 miles. Class II facilities have increased from 226 to 431 miles. Class III facilities have increased from 14 to 22 miles. The League of America Bicyclists designated the City of Fresno as a "Bronze" Bicycle Friendly Community with the low percentage of total bicycle network mileage to total road network mileage and the low percentage of the City's transportation budget spent on bicycling as the two primary factors preventing the network from achieving the higher "Silver" designation.

Figure 33 of the ATP shows the following bicycle network characteristics in the study area. Existing Class II facilities are provided along Barstow Avenue, N. Bryan Avenue, N, Veterans Blvd.

Figure 35 of the Active Transportation Plan classifies key portions of the bicycle network by perceived levels of traffic stress among bicyclists. This Level of Traffic Stress (LTS) is scaled from 1 ("all riders feel safe") to 4 (only the "strong and fearless" riders feel safe). Barstow Avenue and Bryan Avenue are designated as LTS 4 in the project site vicinity. The Active Transportation Plan calls for improvements along Barstow to improve these LTS designations.

Figure 48 of the ATP identifies a Class I trail along the Herndon Canal between SR 99 and Garfield Avenue. The ATP also identifies existing and Planned Class II bike lanes along Barstow and Veterans Blvd.

Existing sidewalk facilities surrounding the project will allow the nearby residents to access the project via the pedestrian facilities. There is an existing sidewalk on Barstow Ave and along Contessa Avenue. There is existing sidewalk on the south side of Barstow Ave.

Fresno Area Express (FAX) is the primary transit service provider within the City of Fresno.

While FAX currently does not provide transit service in the immediate study area, the FAX System Map (2021) shows Route 12 serving Island Water Park approximately 0.8 miles northeast of the project site. Characteristics of FAX Route 12 are as follows:

> **FAX Route 12** (Brawley) runs north south on Brawley/Parkway between Shaw Avenue and Clinton Avenue. Service is provided at 30-minute intervals on weekdays and weekends. Stops along FAX Route 12 provide access to Routes 9, 20, 39, and 41. Points of interest served by Route 12 include Water Park, Brawley/Shaw Shopping Centers, Clovis Adult School.

General Plan Figure MT-1 identifies functional classifications for primary study area roadways. These roadways were also observed during field investigations. Roadway characteristics are as follows:

> **West Barstow Avenue** is planned as a four-lane collector roadway with continuous two way left turn lane between Bryan Avenue and N. Island Water Park Dr. A posted speed limit of 40 MPH was observed along this roadway.
>
> **N. Polk Avenue** - Polk Ave turns into N Island Water Park Dr. Polk Avenue is planned as a two-lane collector roadway with continuous two way left turn lane.
>
> **West Shaw Avenue** is planned as a divided four-lane arterial roadway. Portions of W Shaw Avenue was fully built out with pavement, curb, gutter, sidewalk, and streetlighting.
>
> **Veterans Blvd** is planned as a divided six-lane Super Arterial roadway between Herndon Avenue and Gettysburg Avenue. A posted speed limit of 35 MPH. Only a portion of Veterans Blvd has been constructed between SR 99 and Barstow Avenue. A posted speed limit of 40 MPH was observed along this roadway. The portion from Barstow Avenue to Shaw Avenue is currently under construction and is anticipated to be open by the spring of 2022.

Fresno General Plan Table 4-1 describes the multi-modal roadway characteristics of arterials and collectors as follows:

Collectors typically have 2 to 4 travel lanes, bike lanes, and sidewalks to accommodate pedestrians. Barstow Ave adjacent to the project is currently one lane in each direction separated by a continuous two way left turn lane, with plans for expansion as the surround region develops further and the General Plan gets further implemented. While Polk Avenue has paved shoulders, none are specifically designated for bicycle use. There are no sidewalks along Grantland Avenue adjacent to the project.

The following intersections to be analyzed were field verified. The following characteristics were noted:

1 **Veterans Blvd./Barstow** is a four-legged un-signalized intersection with the all way stop

control. The north of Veterans is barricaded/closed off top traffic. Upon completion of construction this intersection will be fully signalized.

2 **Shaw/Polk** is a four-legged signalized intersection.

3 **Barstow/Driveway** is a four-legged un-signalized intersection, with two way stop control on the driveways.

Figure 3 shows the Existing Conditions including roadway and intersection lane configurations, roadway speed limits, and intersection controls for the two study intersections. Figure 4 shows the Existing (2021) Traffic Volumes obtained from manual AM (7:00-9:00) and PM (4:00-6:00) peak hour turning movement counts. These counts were conducted by Metro Traffic Data, Inc. at both Polk/Shaw and Barstow/Driveway intersections on Thursday, August 26, 2021. Veterans/Barstow intersection is currently under construction, therefore recent counts were not able to be collected. Counts for Veterans/Barstow were used from a prior TIS, the counts were conducted by Metro Traffic Data, Inc. on Wednesday, October 16, 2019. Refer to Appendix A for detailed traffic count data.

3.2 Operational Analysis

The operational analysis was conducted according to the City of Fresno Traffic Impact Study Report Guidelines (February 2, 2009) to evaluate compliance with City of Fresno requirements under existing without project conditions.

The Level of Service (LOS) for intersections (signalized, All Way Stop, and Two Way Stop) was analyzed using Synchro 11 based on Highway Capacity Manual 6th Edition methodologies.

- Green Time, Yellow Time, and Flashing Don't Walk time was obtained from the City of Fresno and Caltrans for existing signalized intersections.
- Green times and cycle lengths are optimized based on volumes.
- Yellow times are based on CA MUTCD requirements based on posted speed.
- Flashing Don't Walk times are based on a walking speed of 3.5 feet per second and total distance from ramp to ramp.
- Peak Hour Factor (PHF) is based on actual intersection counts.

Veterans/Barstow and Barstow/Driveway intersections are operating at LOS D or better. Polk/Shaw intersection is currently operating at LOS E during AM peak hour, and LOS F during PM peak hour, refer to Table 1 for summary of intersection LOS.

3.3 Queuing Analysis

A Queuing Analysis was conducted on Synchro based on 95th percentile queue lengths to assess the adequacy of the turn lane storage lengths. This analysis determines whether the turn storage lengths are adequate (turning movements) and gauges the ability for motorists to access these turn lanes from the through lanes (through movements). Shorter through queue lengths allow motorists to access the turn lanes and clear the intersection in fewer cycles. Storage lengths are adequate to accommodate the existing queues at Veterans/Barstow intersection. Polk/Shaw

intersection currently has deficiencies in the SBL and WBL turn lanes, refer to Table 2 for summary of queuing analysis. It is recommended this lane be constructed to accommodate the cumulative buildout.

4.0 Project Impacts

4.1 Trip Generation

The project generates primary trips, which are defined as vehicle trips that are generated for the primary purpose of using the development. These would mainly include employee, customer, service, and delivery trips made via the automobile. These would not include trips made by transit, bicycle, or on foot. These trips made by alternative transportation modes are initially expected to be relatively low due to the project's location along the urban fringe. As such future bicycle facilities will be expanded within the study area as called for in the Active Transportation Plan. This would ultimately would increase the number of transit, bicycle, and pedestrian trips, thereby decreasing the number of trips made by the private automobiles.

These primary vehicle trips are based on rates in the Institute of Transportation Engineers (ITE) *Trip Generation, Ninth Edition* (2012) for Industrial park ITE Code 130.

Internal captured trips are that are shared among on-site land uses. In essence the trip is generated by the project, and then visits multiple land uses during the same trip, therefore should not be counted twice for the entire site, and a reduction should be provided for these internally captured trips. The National Cooperative Highway Research Program (NCHRP) *Report 684 Enhancing Internal Trip Capture Estimation for Mixed-Use Developments* methodology was selected over the ITE *Trip Generation Handbook Second Edition* (June 2004) methodology for calculating these deductions due to improved accuracy (12-13% average absolute error for NCHRP versus 56-59% average absolute error for ITE). For the purposes of the report, no internal trip reductions will be utilized.

Pass-by trips are trips not generated by the project and therefore are already on the roadway and makes an intermediate stop on their way to a primary destination. For the purposes of this report, no Pass-by trips will be utilized.

Net new vehicle trips are those trips that are actually added to the transportation network by the development. They are calculated by subtracting the internal captured and pass-by trips from the base trip generation (primary trips). According to Table 4, the project would generate **2,058** net new weekday, **92** net new AM peak hour, and **102** net new PM peak hour trips. The projects Trip Distribution are shown on Figure 5.

4.2 Trip Distribution

Site trips would primarily be a combination of: employee trips, trucks accessing the site for repairs, washing and truck parking (ingress and egress), service deliveries, and passenger car to and from truck parking lots.

Figure 5 shows the Net New Trip Assignments obtained from the Project Trip Generation and the Trip Distribution. Project trips were distributed based on utilization of the TurnsW32 software. TurnsW32 utilizes complex algorithms to balance traffic volumes entering, and exiting the

intersection.

4.3 SB 743 VMT Analysis

Senate Bill 743 (SB 743) was approved September 27, 2013, and statewide implementation is targeted for July 1, 2020. SB 743 requires land use projects under CEQA analyze the projects impacts and mitigation measures based on Vehicle Miles Traveled (VMT). This report provides a quantitative analysis of VMT utilizing CALEEMOD version 2016.3.2. The total annual un-mitigated VMT for this project is 237,001 and the total annual mitigated VMT is **71,100** utilizing CALEEMOD version 2016.3.2, for detailed analysis refer to Appendix F. The project has an 30% reduction in VMT, which exceeds the City's 13% threshold.

5.0 Existing Plus Project Conditions

5.1 Transportation Setting

The project proposes one main entrance onto West Barstow Avenue and a secondary emergency vehicle only access onto Barstow Avenue.

Project improvements to West Barstow Avenue include pavement widening, curb, gutter, street lighting, and pavement striping to accommodate an additional WBT thru lane on Barstow Avenue. Specific improvements would include the extension of the pedestrian and bicycle facilities on the north side of Barstow Avenue to connect with the proposed onsite buildings site. Other on site recommendations to reduce vehicular travel would be to install onsite bike racks/bike lockers, and pedestrian paths to accommodate and encourage bicyclist and pedestrian visitors.

The improvements listed above would also be in conformance with the Active Transportation Plan. The implementation of the City's Active Transportation Plan has strong multi-modal implications for the development study area. Specifically, the implementation of active transportation infrastructure (sidewalks, Class I and Class II bicycle facilities) along Barstow Avenue and Veterans Blvd. Additionally, the proposed onsite pedestrian and bicycle facilities along with build out of the Active Transportation Plan infrastructure will encourage multimodal utilization of the project site. The residents within the existing and future single and multi-family land uses within the project vicinity would be able to capitalize on the expanded active transportation infrastructure.

5.2 Operational Analysis

Veterans/Barstow and Barstow/Driveway intersections would continue operating at LOS D or better. Polk/Shaw intersection would continue operating at LOS E during AM peak hour, and LOS F during PM peak hour, refer to Table 1 for summary of intersection LOS.

5.3 Queuing Analysis

A queuing analysis was conducted using Synchro 11 to determine the 95th percentile projected queue lengths to assess the adequacy of the turn lane storage lengths. Storage lengths are adequate to accommodate the proposed queues at Veterans/Barstow intersection. Polk/Shaw intersection would continue to has deficiencies in the SBL and WBL turn lanes. It is recommended this lane be constructed to accommodate the cumulative buildout.

6.0 Near-Term Plus Project Conditions

6.1 Transportation Setting

The Near-Term 2021 plus project analysis includes those trips associated with the approved and pending projects that are projects to come online by the time of the opening of the Johnny Quik development along with the those trips to be generated by the development itself. The list of approved and pending projects are summarized below. Figure 8 shows the location of these approved projects.

- P 20-01815 California 99 Self Storage
- P 20-00942 Westbridge Apartments (172 unit MFR)
- P 19-04593 Johnny Quik Gas Station (Barstow/Grantland)
- P 20-00378 Johnny Quik Gas Station (Shaw/Hayes)
- P 18-02196 Brighten Academy Daycare

This list was developed in coordination with the City of Fresno and communicated to Fresno COG for inclusion in the travel demand modeling runs. The combined trip generation is 7,581 weekday, 425 AM, and 467 PM peak hour trips.

Figure 9 shows the near term plus project intersection conditions. **Figure 10** shows the near term plus project traffic volumes.

6.2 Operational Analysis

Veterans/Barstow and Barstow/Driveway intersections would continue to operate at an acceptable LOS D or better. Polk/Shaw intersection would continue to operate at LOS E during AM peak hour, and LOS F during PM peak hour, refer to Table 1 for summary of intersection LOS.

6.3 Queuing Analysis

A queuing analysis was conducted using Synchro 11 to determine the 95th percentile projected queue lengths to assess the adequacy of the turn lane storage lengths. Storage lengths are adequate to accommodate the proposed queues at Veterans/Barstow intersection. Polk/Shaw intersection would continue to has deficiencies in the SBL and WBL turn lanes. It is recommended this lane be constructed to accommodate the cumulative buildout.

7.0 Cumulative Conditions

7.1 Transportation Setting

Revisions to the overall City of Fresno transportation network would be online by 2035, which includes completion of Veterans Blvd interchange and extension of Veterans Blvd from Herndon Avenue to Gettysburg Avenue, and the extension of Barstow/Keats to Veterans Blvd, east of Grantland Avenue. The Veterans Blvd improvements from Herndon Avenue to Shaw Avenue is anticipated to be completed by Spring 2022. The completion Veterans Blvd interchange will dramatically change the traffic patterns in the project vicinity. Vehicular traffic will be diverted from existing roadways, such as Shaw interchange to Veterans Blvd interchange.

The ongoing implementation of AB 32 calling for the reduction in Greenhouse Gas emissions would encourage the use of less polluting modes of polluting of transportation to the private automobile (regional and intercity rail, mass transit) including active transportation modes (walking and bicycling). The ongoing implementation of SB 375 would encourage urban infill to boost density and reduce vehicle trip lengths. Specifically the increase in density would be more amenable to robust mass transit use under cumulative conditions than under existing and near-term conditions.

Additionally, the implementation of robust connectivity improvements in the City's pedestrian and bicycle networks as noted in the near-term discussion, and as recommended in both the General Plan (2035) and the Active Transportation Plan, would increase the attractiveness of bicycle, pedestrian, and transit modes for accessing employment, shopping, and recreational opportunities.

Based on the above-referenced considerations, traffic volumes in selected locations could potentially decrease relative to near-term conditions. However, as directed by the City, the analysis is based on increases in traffic volumes in most locations. Therefore, the analysis is conservative.

Figure 11 shows the intersection conditions, lane configurations and traffic controls. Figure 12 identifies the traffic volumes used in the analysis. The volumes reflect the revised transportation network elements and associated traffic pattern revisions, and cumulative developments expected to come online by the full build-out of the 2035 General Plan. These were calculated based on data obtained from Fresno COG travel demand model using the increment method (avoiding negative growth) and TURNSW32. By this time all planned multi-modal transportation infrastructure should be in place in conjunction with the project site improvements to provide the local residents with the luxury of healthy lifestyles through encouraging bicycling or walking, while facilitating first and last mile connections to the transportation network.

7.2 Operational Analysis

The Cumulative Level of Service was calculated using Synchro 11 (Appendix D) based on Highway Capacity Manual 6th Edition methodologies using the following assumptions:

- Green times and cycle lengths are optimized based on volumes.
- Yellow times are based on CA MUTCD requirements based on current posted speed.
- Flashing Don't Walk times are based on a walking speed of 3.5 feet per second.
    - Example: 6-Lane Arterial configuration = 110 feet
      110 feet / 3.5 (feet/sec) = 32 seconds
- Peak Hour Factor is based on HCM default of 0.92.

Veterans/Barstow intersection would operate at LOS F during AM and PM peak hours. With additional lanes added on Shaw Avenue in the future, the Polk/Shaw intersection LOS would improve to LOS D during AM and F during PM. The Barstow Driveway intersection would continue to operate at an acceptable LOS D or better. Refer to Table 1 for summary of intersection LOS.

7.3 Queuing Analysis

A queuing analysis was conducted using Synchro 11 to determine the 95th percentile projected queue lengths to assess the adequacy of the turn lane storage lengths. Veterans/Barstow intersection would have deficiencies in the storage lengths for the EBL, WBL, WBR, NBL, NBR, SBL, and SBR turn lanes. Polk/Shaw intersection would continue have to deficiencies in the SBL and WBL turn lanes. The recommended storage lengths to accommodate the cumulative buildout is shown on Table 2.

8.0 Cumulative Plus Project Conditions

8.1 Transportation Setting

Figure 9 shows the cumulative plus project intersection conditions. **Figure 10** shows the near term plus project traffic volumes.

8.2 Operational Analysis

Veterans/Barstow and Barstow/Driveway intersections would continue to operate at an acceptable LOS D or better for existing, existing plus project, and near term plus project scenarios. Polk/Shaw intersection would continue to operate at LOS E during AM peak hour, and LOS F during PM peak hour for existing, existing plus project, and near term plus project scenarios. Refer to Table 1 for summary of intersection LOS.

In 2035 Veterans/Barstow intersection would operate at LOS F during AM and PM peak hours. With additional lanes added on Shaw Avenue in the future, the Polk/Shaw intersection LOS would improve to LOS D during AM and F during PM.

8.3 Queuing Analysis

A queuing analysis was conducted using Synchro 11 to determine the 95th percentile projected queue lengths to assess the adequacy of the turn lane storage lengths. Veterans/Barstow intersection would have deficiencies in the storage lengths for the EBL, WBL, WBR, NBL, NBR, SBL, and SBR turn lanes. Polk/Shaw intersection would continue have to deficiencies in the SBL and WBL turn lanes. The recommended storage lengths to accommodate the cumulative buildout is shown on Table 2.

9.0 Conclusions and Recommendations

9.1 Summary of Impacts

The Transportation Impact Study for the Barstow Truck Parking Parking P21-01833 located at 6050 W. Barstow Ave was prepared to examine the multi-modal transportation impacts of the proposed development on the surrounding transportation network, and recommend measures to mitigate significant impacts.

Under existing plus project conditions, Veterans/Barstow and Barstow/Driveway intersections would continue to operate at an acceptable LOS D or better. Polk/Shaw intersection would continue to operate at LOS E during AM peak hour, and LOS F during PM peak hour

Under the near term plus project conditions, Veterans/Barstow and Barstow/Driveway intersections would continue to operate at an acceptable LOS D or better. Polk/Shaw intersection would continue to operate at LOS E during AM peak hour, and LOS F during PM peak hour.

Under Cumulative plus project conditions Veterans/Barstow intersection would operate at LOS F during AM and PM peak hours. With additional lanes added on Shaw Avenue in the future, the Polk/Shaw intersection LOS would improve to LOS D during AM and F during PM.

A queuing analysis was conducted using Synchro 11 to determine the 95th percentile projected queue lengths to assess the adequacy of the turn lane storage lengths. Veterans/Barstow intersection would have deficiencies in the storage lengths for the EBL, WBL, WBR, NBL, NBR, SBL, and SBR turn lanes. Polk/Shaw intersection would continue have to deficiencies in the SBL and WBL turn lanes. The recommended storage lengths to accommodate the cumulative buildout is shown on Table 2.

9.2 Recommendations

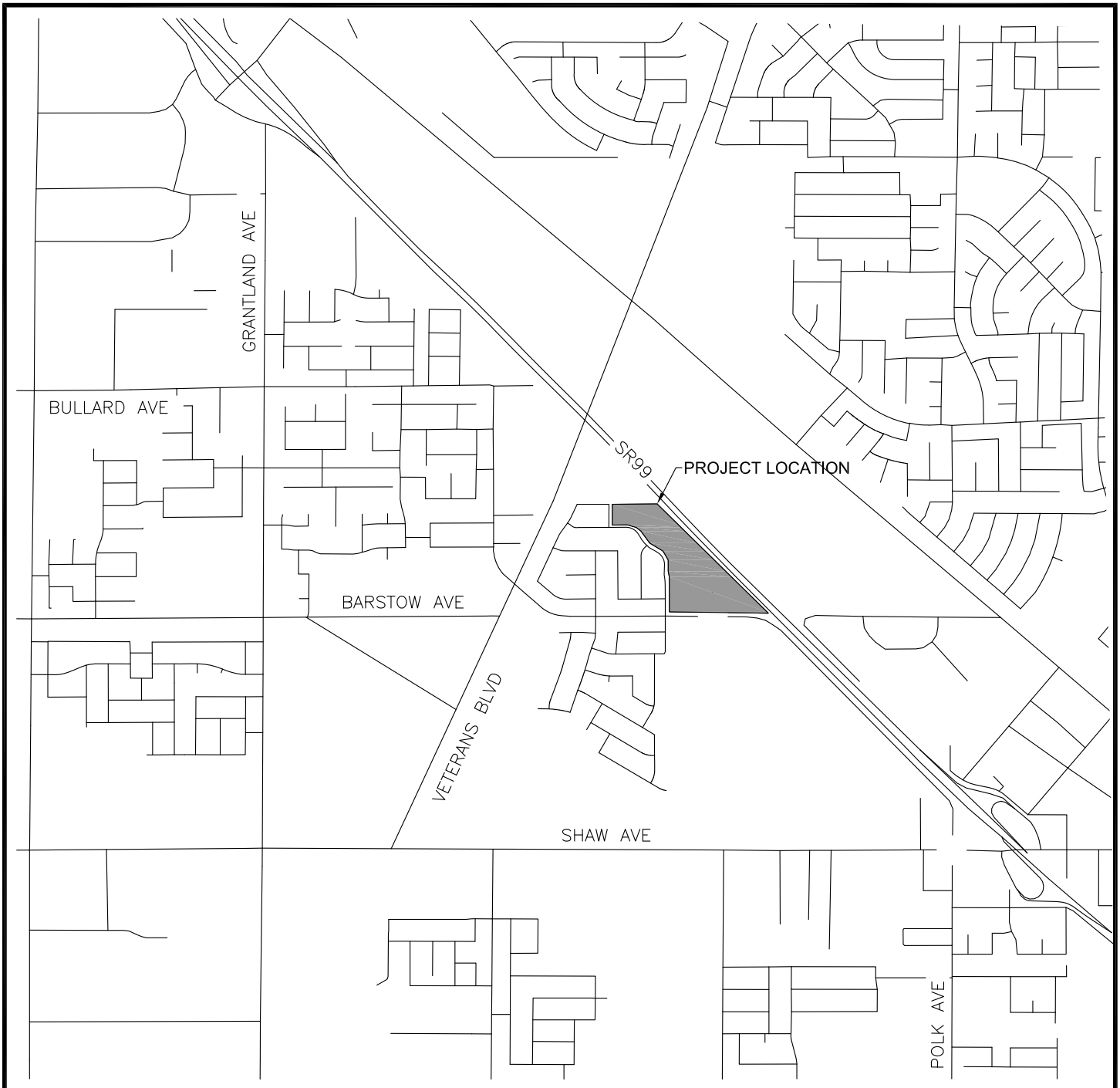
It is recommended the project implement the following improvements:

1. Construct site frontage improvements along Barstow Avenue to include curb, gutter, and sidewalk and accommodations for bicycle facilities to be constructed in connection with the City of Fresno Active Transportation Plan. These include Class II facilities along Barstow Avenue.
2. Provide adequate wayfinding, signage, and illumination on-site to optimize safety and to reduce conflicts among delivery trucks, motorists, cyclists, and pedestrians.
3. The City shall continue to monitor traffic operations at all off-site intersections.
4. Provide adequate ingress and egress to and from the project site as represented in the Site Plan with driveways.
5. Provide onsite bike racks/bike lockers and pedestrian accessibility to all proposed buildings and offsite sidewalk.

In addition the project shall pay into applicable transportation fee programs. These include a

Fresno Major Street Impact (FMSI) Fee, a Traffic Signal Mitigation Impact (TSMI) Fee, and a Regional Transportation Mitigation Fee (RTMF). The FMSI Fee will be calculated and assessed during the building permit process. The RTMF will be calculated and assessed by Fresno COG.

Figure 1 – Vicinity Map



NOT TO SCALE

VICE
VANG INC. CONSULTING ENGINEERS

BARSTOW TRUCK PARKING
VICINITY MAP

PREPARED FOR: SANGHA CARRIERS

DATE: 10/8/2021

PROJECT: 20-003

FIGURE 1

10/11/2021 12:04 PM

V:\PROJECTS\2020\2020-003 BARSTOW TRUCK PARKING\03-PROJECT REPORTS\TIS\20-003 TRAFFIC VOLUMES.DWG

Figure 2 – Site Plan

TRUCK PARKING
N. CONTESSA AVE. & W. BARSTOW AVE.
FRESNO, CALIFORNIA

GENERAL NOTES:

1. APPROVAL OF THIS SPECIAL PERMIT MAY BECOME NULL AND VOID IN THE EVENT THAT DEVELOPMENT IS NOT COMPLETED IN ACCORDANCE WITH ALL THE CONDITIONS AND REQUIREMENTS IMPOSED ON THIS SPECIAL PERMIT, THE ZONING ORDINANCE, AND ALL PUBLIC WORKS STANDARDS AND SPECIFICATIONS. THIS SPECIAL PERMIT IS GRANTED, AND THE CONDITIONS IMPOSED, BASED UPON THE OPERATION STATEMENT PROVIDED BY THE APPLICANT. THE OPERATION STATEMENT IS MATERIAL TO THE ISSUANCE OF THIS SPECIAL PERMIT. UNLESS THE CONDITIONS OF APPROVAL SPECIFICALLY REQUIRE OPERATION INCONSISTENT WITH THE OPERATION STATEMENT, A NEW OR REVISED SPECIAL PERMIT IS REQUIRED IF THE OPERATION OF THIS ESTABLISHMENT CHANGES OR BECOMES INCONSISTENT WITH THE OPERATION STATEMENT. FAILURE TO OPERATE IN ACCORDANCE WITH THE CONDITIONS AND REQUIREMENTS IMPOSED MAY RESULT IN REVOCATION OF THE SPECIAL PERMIT OR ANY OTHER ENFORCEMENT REMEDY AVAILABLE UNDER THE LAW. THE DEVELOPMENT AND RESOURCE MANAGEMENT DEPARTMENT SHALL NOT ASSUME RESPONSIBILITY FOR ANY DELETIONS OR OMISSIONS RESULTING FROM THE SPECIAL PERMIT REVIEW PROCESS OR FOR ADDITIONS OR ALTERATIONS TO CONSTRUCTION PLANS NOT SPECIFICALLY SUBMITTED AND REVIEWED AND APPROVED PURSUANT TO THIS SPECIAL PERMIT OR SUBSEQUENT AMENDMENTS OR REVISIONS.

2. NO USES OF LAND, BUILDINGS, OR STRUCTURES OTHER THAN THOSE SPECIFICALLY APPROVED PURSUANT TO THIS SITE PLAN SHALL BE PERMITTED.

3. DEVELOPMENT SHALL TAKE PLACE IN ACCORDANCE WITH THE STANDARDS, SPECIFICATIONS, AND STANDARD DRAWINGS OF THE CITY OF FRESNO PUBLIC WORKS DEPARTMENT.

4. DEVELOPMENT SHALL TAKE PLACE IN ACCORDANCE WITH ALL CITY, COUNTY, STATE AND FEDERAL LAWS AND REGULATIONS.

5. OWNERS AND PERSONS HAVING OWNERSHIP INTEREST IN BUSINESSES OPERATING IN THE CITY OF FRESNO (INCLUDING LEASING OUT ANY COMMERCIAL OR INDUSTRIAL PROPERTY, OR RENTING OUT FOUR OR MORE DWELLING UNITS) ARE REQUIRED BY THE FRESNO MUNICIPAL CODE TO OBTAIN A BUSINESS TAX CERTIFICATE. CONTACT THE CITY OF FRESNO FINANCE DEPARTMENT'S BUSINESS TAX DIVISION AT (559) 621-6880 FOR MORE INFORMATION.

6. ALL PROPOSED BUILDING(S) OR STRUCTURE(S) CONSTRUCTED ON THE PROPERTY MUST COMPLY WITH THE PREVAILING CALIFORNIA BUILDING CODE STANDARDS.

7. ANY BUILDING MODIFICATIONS AND/OR ADDITIONS NOT INCLUDED WITH THIS APPLICATION ARE NOT APPROVED WITH THIS SPECIAL PERMIT AND WOULD BE SUBJECT TO A NEW SPECIAL PERMIT.

8. FOR PROJECTS INITIATED IN RESPONSE TO CODE ENFORCEMENT ACTION, THE EXERCISE OF RIGHTS GRANTED BY THIS SPECIAL PERMIT MUST BE COMMENCED BY SIX MONTHS. COMPLETION OF THE PROJECT, INCLUDING IMPROVEMENTS, SHALL OCCUR BY 12 MONTHS.

9. TEMPORARY FENCES TO SECURE PROJECTS UNDER CONSTRUCTION ARE ALLOWED. ANY TEMPORARY FENCE SHALL BE ADEQUATELY SECURED AND CONSTRUCTED TO PREVENT OVERTURNING DUE TO WIND, VANDALISM, AND/OR CASUAL CONTACT BY THE GENERAL PUBLIC. THE CONSTRUCTION SHALL BE PERFORMED IN SUCH A MANNER AS TO MINIMIZE ANY POTENTIAL SAFETY HAZARD, WHICH MAY OCCUR AS A RESULT OF IMPROPER FENCE INSTALLATION OR DAMAGE TO THE FENCE.

10. FUTURE FENCES SHALL BE REVIEWED AND APPROVED BY THE DEVELOPMENT AND RESOURCE MANAGEMENT DEPARTMENT PRIOR TO INSTALLATION.

11. NO STRUCTURES OF ANY KIND (INCLUDING SIGNS AND/OR FENCES) MAY BE INSTALLED OR MAINTAINED WITHIN THE REQUIRED-LANDSCAPED AREAS. NO EXPOSED UTILITY BOXES, TRANSFORMERS, METERS, PIPING (EXCEPTING THE BACKFLOW PREVENTION DEVICE), ETC., ARE ALLOWED TO BE LOCATED IN THE LANDSCAPE AREAS OR SETBACKS OR ON THE STREET FRONTAGES OF THE BUILDINGS. ALL TRANSFORMERS, ETC., SHALL BE SHOWN ON THE SITE PLAN. THE BACKFLOW DEVICE SHALL BE SCREENED BY LANDSCAPING OR SUCH OTHER MEANS AS MAY BE APPROVED.

12. PROVIDE SHADE CALCULATIONS ON THE LANDSCAPE PLAN FOR PARKING LOT SHADING IN ACCORDANCE WITH THE ATTACHED DEVELOPMENT DEPARTMENT, PERFORMANCE STANDARDS FOR PARKING LOT SHADING, INCLUDING TREE SPECIES AND TREE COUNTS.

13. DISPERSE TREES OVER THE PARKING LOT AREA TO PROVIDE 50 PERCENT SHADING OF THE PARKING AREA SURFACE WITHIN 15 YEARS. (THIS REQUIREMENT MAY BE REDUCED TO 40 PERCENT FOR EXISTING DEVELOPMENT IF IT IS DEMONSTRATED THAT THE CONSTRAINTS OF AN EXISTING SITE WOULD MAKE IT IMPOSSIBLE TO MEET THE NORMAL STANDARDS.) TREES SHALL ALSO BE PLANTED IN THE REQUIRED LANDSCAPED AREA ALONG THE PERIPHERY OF THE DEVELOPMENT IN ORDER TO SHADE AND ENHANCE ADJACENT PROPERTY AND PUBLIC RIGHTS-OF-WAY. REFER TO THE ATTACHED "PERFORMANCE STANDARDS FOR PARKING LOT SHADING," FOR THE TREE LIST AND FURTHER DETAILS.

14. TREES SHALL BE MAINTAINED IN GOOD HEALTH. HOWEVER, TREES MAY NOT BE TRIMMED OR PRUNED TO REDUCE THE NATURAL HEIGHT OR OVERALL CROWN OF THE TREE, EXCEPT AS NECESSARY FOR THE HEALTH OF THE TREE AND PUBLIC SAFETY; OR AS MAY OTHERWISE BE APPROVED BY THE DEVELOPMENT AND RESOURCE MANAGEMENT DEPARTMENT.

15. LANDSCAPING MUST BE IN PLACE BEFORE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY. A HOLD ON OCCUPANCY SHALL BE PLACED ON THE PROPOSED DEVELOPMENT UNTIL SUCH TIME THAT LANDSCAPING HAS BEEN APPROVED AND VERIFIED FOR PROPER INSTALLATION BY THE DEVELOPMENT SERVICES DIVISION. (INCLUDE THIS NOTE ON THE SITE AND LANDSCAPE PLANS.)

16. LANDSCAPING MUST BE IN PLACE BEFORE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY. A HOLD ON OCCUPANCY SHALL BE PLACED ON THE PROPOSED DEVELOPMENT UNTIL SUCH TIME THAT LANDSCAPING HAS BEEN APPROVED AND VERIFIED FOR PROPER INSTALLATION BY THE DEVELOPMENT SERVICES DIVISION.

17. PRIOR TO FINAL INSPECTION, A WRITTEN CERTIFICATION, SIGNED BY A LANDSCAPE PROFESSIONAL APPROVED BY THE DIRECTOR, SHALL BE SUBMITTED STATING THAT THE REQUIRED LANDSCAPING AND IRRIGATION SYSTEM WAS INSTALLED IN ACCORDANCE WITH THE LANDSCAPING AND IRRIGATION PLANS APPROVED BY THE DEVELOPMENT SERVICES DIVISION, DEVELOPMENT DEPARTMENT.

18. FUTURE TENANT IMPROVEMENTS SHALL BE REVIEWED AND APPROVED BY THE DEVELOPMENT AND RESOURCE MANAGEMENT DEPARTMENT TO ENSURE THAT ADEQUATE OFF-STREET PARKING IS PROVIDED.

19. THE PARKING LOT DESIGN MUST ACCOMMODATE THE PROVISION OF TREES IN ACCORDANCE WITH THE ATTACHED PARKING LOT SHADING POLICY.

20. A MINIMUM NUMBER OF ACCESSIBLE PARKING STALLS ARE REQUIRED FOR THE PROPOSED PROJECT PER STATE OF CALIFORNIA BUILDING CODE, "DEVELOPMENT REQUIREMENTS FOR HANDICAPPED ACCESSIBILITY."

21. ALL ACCESSIBLE STALLS SHALL BE MARKED WITH THE INTERNATIONAL SYMBOL OF SPACES AND A WARNING THAT VEHICLES IN VIOLATION OF SECTION 10-1017 OF THE MUNICIPAL CODE SHALL BE TOWED AWAY. THE INTERNATIONAL SYMBOL AND TOW-AWAY WARNING SHALL BE POSTED CONSPICUOUSLY ON SEVEN-FOOT POLES. (INCLUDE THIS NOTE ON THE SITE PLAN.)

22. ALL ACCESSIBLE PARKING STALLS SHALL BE PLACED ADJACENT TO FACILITY ACCESS RAMPS OR IN STRATEGIC AREAS WHERE THE HANDICAPPED SHALL NOT HAVE TO WHEEL OR WALK BEHIND PARKED VEHICLES WHILE TRAVELING TO OR FROM ACCESSIBLE PARKING STALLS AND RAMPS. (INCLUDE THIS NOTE ON THE SITE PLAN.)

23. LIGHTING WHERE PROVIDED TO ILLUMINATE PARKING, SALES OR DISPLAY AREAS SHALL BE HOODED AND SO ARRANGED AND CONTROLLED SO AS NOT TO CAUSE A NUISANCE EITHER TO HIGHWAY TRAFFIC OR TO THE LIVING ENVIRONMENT. THE AMOUNT OF LIGHT SHALL BE PROVIDED ACCORDING TO THE STANDARDS OF THE DEPARTMENT OF PUBLIC WORKS. DEPICT ALL PROPOSED LIGHTS ON THE SITE PLAN.

24. BICYCLE PARKING SPACES SHALL BE SUPPLIED AT A RATE OF 10% OF THE AUTOMOBILE SPACES PROVIDED PURSUANT TO SECTION 12-306-I-2.1C OF THE FRESNO MUNICIPAL CODE (FMC). BICYCLE PARKING SPACES SHALL EACH CONSIST OF ONE SLOT IN A BIKE RACK. THEY SHALL BE GROUPED IN RACKS WHICH ALLOW FOUR FEET OF CLEARANCE ON ALL SIDES. THERE SHALL BE ADEQUATE SPACE BETWEEN RACK SLOTS TO PARK, LOCK, AND REMOVE BICYCLES. BICYCLE PARKING SPACES AND THE REQUIRED FOUR-FOOT CLEARANCE SHALL BE PROTECTED FROM MOTOR VEHICLE ENCROACHMENT BY MEANS OF FIXED BARRIERS NOT LESS THAN SIX INCHES OR MORE THAN THREE IN HEIGHT. BICYCLE PARKING SPACES SHALL NOT ENCROACH INTO PEDESTRIAN WAYS, LANDSCAPED AREAS, OR OTHER REQUIRED OPEN SPACES, AND SHALL BE LOCATED PROXIMAL TO STRUCTURES.

25. ALL GENERAL PROVISIONS OF SECTION 12-306-I OF THE FMC SHALL APPLY TO ALL PARKING AREAS.

26. ALL FUTURE SIGNS SHALL BE ARCHITECTURALLY COMPATIBLE WITH THE PROPOSED BUILDING(S). PROVIDE A SET OF DRAWINGS, WITH DESCRIPTIVE INFORMATION, INCLUDING, MATERIALS, DESIGN AND COLORS TO ALLOW FOR A PRELIMINARY ASSESSMENT OF THE FUTURE SIGNAGE. IT IS RECOMMENDED THAT YOU PROVIDE A COPY OF THE SIGNAGE EARLY IN THE PROJECT PROCESS TO ALLOW FOR STAFF COMMENT.

27. SIGNS, OTHER THAN DIRECTIONAL SIGNS, IF APPLICABLE, ARE NOT APPROVED FOR INSTALLATION AS PART OF THIS SPECIAL PERMIT. (INCLUDE THIS NOTE ON THE SITE PLAN.)

28. ALL PROPOSED SIGNS SHALL CONFORM TO THE CURRENT SIGN ORDINANCE. APPLICATIONS FOR A SIGN PERMIT AND REQUIREMENTS FOR SUBMITTAL ARE AVAILABLE AT THE DEVELOPMENT AND RESOURCE MANAGEMENT DEPARTMENT'S PUBLIC FRONT COUNTER.

29. WINDOW SIGNS ARE LIMITED TO FOUR SQUARE FEET IN AREA, PROVIDING INFORMATION ABOUT HOURS OF OPERATION AND EMERGENCY, SALE OR RENTAL INFORMATION ONLY. EXTERIOR SIGNAGE SUCH AS BANNERS, FLAGS AND PENNANTS ARE PROHIBITED. HOWEVER, SPECIAL EVENT BANNER SIGNS ARE PERMITTED FOR 30 DAYS IF APPROVED BY THE DEVELOPMENT AND RESOURCE MANAGEMENT DEPARTMENT, ATTACHED TO THE BUILDING, AND NOT EXCEEDING 32 SQUARE FEET IN AREA.

30. PERMANENT WINDOW SIGNS OVER SIX SQUARE FEET IN AREA CAN BE SUBMITTED FOR APPROVAL UNDER A SIGN REVIEW APPLICATION.

31. NOISE LEVELS SHALL NOT EXCEED THE DECIBEL LEVELS DESCRIBED IN SECTION 10-102.B OF THE FMC AT ANYTIME, MEASURED AT THE NEAREST SUBJECT PROPERTY LINE.

32. THERE SHALL BE ADEQUATE VEHICULAR ACCESS FROM A DEDICATED AND IMPROVED STREET OR ALLEY TO OFF-STREET PARKING AND LOADING FACILITIES ON THE PROPERTY REQUIRING OFF-STREET PARKING AND LOADING. VEHICULAR AND/OR PEDESTRIAN ACCESS SHALL BE PROVIDED AND SHALL REMAIN CLEAR AT ALL TIMES.

33. THE ADDRESS LISTED IN THE CONDITIONS OF APPROVAL IS THE 'OFFICIAL ADDRESS' GIVEN TO THE BUILDING. IF YOU WOULD LIKE SEPARATE SUITE OR UNIT NUMBERS FOR A BUILDING, PROVIDE A FLOOR PLAN AND CONTACT THE CITY OF FRESNO DEVELOPMENT AND RESOURCE MANAGEMENT DEPARTMENT FOR 'OFFICIAL ADDRESSES'. ONLY THOSE ADDRESSES ASSIGNED BY THE CITY OF FRESNO WILL BE RECOGNIZED AS 'OFFICIAL ADDRESSES'. THE UNITED STATES POST OFFICE WILL ONLY RECOGNIZE ADDRESSES ASSIGNED BY THE CITY OF FRESNO. IF A NON-OFFICIAL ADDRESS IS GIVEN TO A BUILDING AND OR/SEPARATE SUITES, THE CITY OF FRESNO HAS THE AUTHORITY TO CHARGE A FEE AND HAVE THOSE ADDRESSES CORRECTED. IN ADDITION, THE UNITED STATES POST OFFICE WILL CEASE MAIL DELIVERY TO THOSE ADDRESSES THAT ARE NOT 'OFFICIAL ADDRESSES'.

34. ALL PROJECTS, INCLUDING PROJECTS THAT INVOLVE LESS THAN ONE ACRE OF PROPERTY, ARE REQUIRED TO COMPLY WITH THE CITY OF FRESNO'S URBAN STORM WATER QUALITY MANAGEMENT AND DISCHARGE CONTROL ORDINANCE, FMC CHAPTER 6, ARTICLE 7 (FMC SECTIONS 6-701 ET SEQ.)

35. SCREEN ALL ROOF-MOUNTED EQUIPMENT FROM THE VIEW OF PUBLIC RIGHTS-OF-WAY. DEPICT ALL MECHANICAL EQUIPMENT ON SITE PLAN AND ELEVATIONS.

36. IF ARCHAEOLOGICAL AND/OR ANIMAL FOSSIL MATERIAL IS ENCOUNTERED DURING PROJECT SURVEYING, GRADING, EXCAVATING, OR CONSTRUCTION, WORK SHALL STOP IMMEDIATELY. (INCLUDE THIS NOTE ON THE SITE PLAN.)

37. IF THERE ARE SUSPECTED HUMAN REMAINS, THE FRESNO COUNTY CORONER SHALL BE IMMEDIATELY CONTACTED. IF THE REMAINS OR OTHER ARCHAEOLOGICAL MATERIAL IS POSSIBLY NATIVE AMERICAN IN ORIGIN, THE NATIVE AMERICAN HERITAGE COMMISSION (PHONE: (916) 653-4082) SHALL BE IMMEDIATELY CONTACTED, AND THE CALIFORNIA ARCHAEOLOGICAL INVENTORY/SOUTHERN SAN JOAQUIN VALLEY INFORMATION CENTER (PHONE: (805) 644-2289) SHALL BE CONTACTED TO OBTAIN A REFERRAL LIST OF RECOGNIZED ARCHAEOLOGISTS. AN ARCHEOLOGICAL ASSESSMENT SHALL BE CONDUCTED FOR THE PROJECT, THE SITE SHALL BE FORMALLY RECORDED, AND RECOMMENDATIONS MADE TO THE CITY AS TO ANY FURTHER SITE INVESTIGATION OR SITE AVOIDANCE/PRESERVATION. (INCLUDE THIS NOTE ON THE SITE PLAN.)

38. IF ANIMAL FOSSILS ARE UNCOVERED, THE MUSEUM OF PALEONTOLOGY, U.C. BERKELEY SHALL BE CONTACTED TO OBTAIN A REFERRAL LIST OF RECOGNIZED PALEONTOLOGISTS. AN ASSESSMENT SHALL BE CONDUCTED BY A PALEONTOLOGIST AND, IF THE PALEONTOLOGIST DETERMINES THE MATERIAL TO BE SIGNIFICANT, IT SHALL BE PRESERVED. (INCLUDE THIS NOTE ON THE SITE PLAN.)

39. CONNECTION TO A MUNICIPAL WATER SYSTEM IS REQUIRED UNLESS APPROVED MEASURES ARE INCLUDED IN THE PROJECT CONDITIONS OF APPROVAL FOR AN ALTERNATIVE WATER SUPPLY.

40. CONNECTION TO A MUNICIPAL CITY OF FRESNO SEWER SYSTEM IS REQUIRED UNLESS APPROVED MEASURES ARE INCLUDED IN THE PROJECT CONDITIONS FOR ALTERNATIVE WASTEWATER TREATMENT FACILITIES.

41. CITY OF FRESNO WATER AND SEWER CONNECTION CHARGE OBLIGATIONS APPLICABLE TO THIS PROJECT WILL BE COMPUTED DURING THE BUILDING CONSTRUCTION PLAN CHECK PROCESS AND SHALL BE PAYABLE AT TIME OF ISSUANCE OF BUILDING PERMIT UNLESS OTHER ARRANGEMENTS HAVE BEEN APPROVED TO DEFER SUCH PAYMENTS TO A LATER DATE. FOR INFORMATION RELATING TO WATER AND SEWER SERVICE REQUIREMENTS AND CONNECTION CHARGES, CONTACT FRANK SABURIT AT (559)621-8277.

42. OPEN STREET CUTS ARE NOT PERMITTED; ALL UTILITY CONNECTIONS MUST BE BORED.

43. CROSS-CONNECTION CONTROL. A BACKFLOW PREVENTION DEVICE MAY BE REQUIRED ON THE WATER SERVICE. CONTACT THE DEPARTMENT OF PUBLIC UTILITIES, WATER DIVISION (559) 621-5300 FOR REQUIREMENTS RELATING TO APPROVED DEVICES, LOCATIONS, TESTING AND ACCEPTANCE. THIS REQUIREMENT MUST BE SATISFIED PRIOR TO FINAL OCCUPANCY.

44. THIS PROJECT WAS REVIEWED BY THE FIRE DEPARTMENT ONLY FOR REQUIREMENTS RELATED TO WATER SUPPLY, FIRE HYDRANTS, AND FIRE APPARATUS ACCESS TO THE BUILDING(S) ON SITE. REVIEW FOR COMPLIANCE WITH FIRE AND LIFE SAFETY REQUIREMENTS FOR THE BUILDING INTERIOR AND ITS INTENDED USE ARE REVIEWED BY BOTH THE FIRE DEPARTMENT AND THE BUILDING AND SAFETY SECTION OF THE DEVELOPMENT AND RESOURCE MANAGEMENT WHEN A SUBMITTAL FOR BUILDING PLAN REVIEW IS MADE AS REQUIRED BY THE CALIFORNIA BUILDING CODE BY THE ARCHITECT OR ENGINEER OF RECORD FOR THE BUILDING.

45. OUTDOOR STORAGE OF MATERIALS, INCLUDING ISO CONTAINERS, IS PROHIBITED. ALL MATERIALS SHALL BE STORED WITHIN A COMPLETELY ENCLOSED BUILDING, UNLESS APPROVED BY THE DEVELOPMENT AND RESOURCE MANAGEMENT DEPARTMENT. (INCLUDE THIS NOTE ON THE SITE PLAN)

46. IF VIDEO SURVEILLANCE CAMERAS ARE REQUIRED OR INSTALLED, PROVIDE SIGNS UNDER THE SURVEILLANCE CAMERAS WHICH NOTIFY THE PUBLIC THAT THE SUBJECT PROPERTY IS MONITORED BY VIDEO SURVEILLANCE.

47. NOTICE TO PROJECT APPLICANT: IN ACCORDANCE WITH THE PROVISIONS OF GOVERNMENT CODE SECTION 66020(D)(1), THE IMPOSITION OF FEES, DEDICATION, RESERVATIONS OR EXACTIONS FOR THIS PROJECT ARE SUBJECT TO PROTEST BY THE PROJECT APPLICANT AT THE TIME OF APPROVAL OR CONDITIONAL APPROVAL OF THE DEVELOPMENT OR WITHIN 90 DAYS AFTER THE DATE OF IMPOSITION OF FEES, DEDICATIONS, RESERVATION, OR EXACTIONS IMPOSED ON THE DEVELOPMENT PROJECT. THIS NOTICE DOES NOT APPLY TO THOSE FEES, DEDICATIONS, RESERVATIONS, OR EXACTIONS WHICH WERE PREVIOUSLY IMPOSED AND DULY NOTICED; OR, WHERE NO NOTICE WAS PREVIOUSLY REQUIRED UNDER THE PROVISIONS OF GOVERNMENT CODE SECTION 66020(D)(1) IN EFFECT BEFORE JANUARY 1, 1997.

48. CITYWIDE DEVELOPMENT IMPACT FEES

A) TRAFFIC SIGNAL CHARGE (FMC SECTION 12-4.1101 TO 12-4.1103) THIS PROJECT SHALL PAY ITS TRAFFIC SIGNAL MITIGATION IMPACT FEE AT THE TIME OF BUILDING PERMIT BASED ON THE TRIP GENERATION RATE(S) AS SET FORTH IN THE LATEST EDITION OF THE ITE GENERATION MANUAL. REFER TO THE ADOPTED MASTER FEE SCHEDULE FOR FEE RATE. THIS FEE SHALL BE PAID AT TIME OF BUILDING PERMIT.
B) FIRE FACILITIES FEE (FMC SECTION 12-4.901 TO 12-4.906) (BASED ON BUILDING SQUARE FOOTAGE, OR RESIDENTIAL UNITS)
C) POLICE FACILITIES FEE (FMC SECTION 12-4.801 TO 12-4.806) (BASED ON BUILDING SQUARE FOOTAGE, OR RESIDENTIAL UNITS)
D) PARKS FACILITIES FEE (FMC SECTION 12-4.701 TO 12-4.706) (BASED ON THE NUMBER OF RESIDENTIAL UNITS)

49. CITYWIDE REGIONAL AND NEW GROWTH MAJOR STREET IMPACT FEES (FMC SECTION 12-4.1006)

A) STREET IMPACT FEES SHALL BE DUE AND PAYABLE AT THE TIME OF BUILDING PERMIT ISSUANCE UNLESS OTHERWISE REQUIRED BY STATE LAW.
B) STREET IMPACT FEES WILL BE A CONDITION ON ALL DEVELOPMENT ENTITLEMENTS GRANTED.
C) NEW CONSTRUCTION ON VACANT PARCELS SHALL BE CALCULATED ON A NET ACREAGE (ADJUSTED ACRE BASIS) OF THE ENTIRE PROPERTY SUBJECT TO THE DEVELOPMENT ENTITLEMENT BASED UPON PLANNED LAND USE. NOTWITHSTANDING, FEES SHALL BE BASED UPON ACTUAL LAND USE FOR DEVELOPMENTS IN THE C-M ZONE DISTRICT AND FOR DEVELOPMENT PROJECTS DEVELOPED INCONSISTENT WITH THE PLAN LAND USE.
D) NEW CONSTRUCTION ON PROPERTY THAT IS PARTIALLY DEVELOPED, STREET IMPACT FEES WILL BE APPLIED TO THE INCREMENTAL INCREASE PROPORTIONATE TO THE RESPECTIVE FLOOR TO AREA RATIOS (25% FOR COMMERCIAL AND 40% FOR INDUSTRIAL). IN NO CASE SHALL ANYONE PAY MORE THAN THE AMOUNT OF THE TOTAL NET ACREAGE OF THE PARCEL MULTIPLIED BY THE APPLICABLE FEE RATE.
E) REUSE BEING MORE INTENSIVE THAT THE ORIGINAL USE, THE DEVELOPER SHALL BE REQUIRED TO PAY THE DIFFERENCE BETWEEN THE CURRENT AMOUNT OF THE STREET IMPACT FEE OBLIGATION FOR THE OLD USE AND THE CURRENT AMOUNT OF THE STREET IMPACT FEE OBLIGATION FOR THE NEW USE.

50. FRESNO COUNTY FACILITY IMPACT FEE

FRESNO COUNTY ADOPTED A FACILITIES IMPACT FEE, BUT THE REQUIREMENT TO PAY THIS FEE WAS SUBSEQUENTLY SUSPENDED BY FRESNO COUNTY. IF THE FEE HAS BEEN REINSTATED AT THE TIME OF ISSUANCE OF BUILDING PERMITS FOR THIS PROJECT, OR AN ALTERNATIVE FEE SYSTEM HAS BEEN ADOPTED BY FRESNO COUNTY, PROOF OF PAYMENT OR PAYMENT OF THIS FEE WILL BE REQUIRED FOR ISSUANCE OF BUILDING PERMITS.

51. REGIONAL TRANSPORTATION MITIGATION FEE (RTMF)

PAY THE RTMF FEE TO THE JOINT POWERS AGENCY LOCATED AT 2035 TULARE STREET, SUITE 201, FRESNO, CA 93721; (559) 233-4148, EXT. 200; WWW.FRESNOCOG.ORG. PROVIDE PROOF OF PAYMENT OR EXEMPTION PRIOR TO ISSUANCE OF BUILDING PERMITS.

52. SCHOOL FEES

SCHOOL FEES MUST BE PAID, IF REQUIRED, PRIOR TO THE ISSUANCE OF BUILDING PERMITS. CONTACT CENTRAL UNIFIED SCHOOL DISTRICT. PROVIDE PROOF OF PAYMENT (OR NO FEE REQUIRED) PRIOR TO THE ISSUANCE OF BUILDING PERMITS.

53. FRESNO METROPOLITAN FLOOD CONTROL DISTRICT (FMFCD) FEES

A) A FMFCD DEVELOPMENT FEE IS REQUIRED FOR REVIEW OF PROPOSED DEVELOPMENT PROJECTS, INCLUDING APPLICATIONS FOR PLAN AMENDMENTS, REZONES, SPECIAL PERMITS, SUBDIVISIONS, AND GRADING PLANS. THIS FEE IS BASED ON PROJECT ACREAGE AND MUST BE PAID DIRECTLY TO FMFCD IN ORDER FOR THAT AGENCY TO REVIEW PROJECTS AND PROVIDE A NOTICE OF REQUIREMENTS. FOR MORE INFORMATION, CONTACT FRESNO METROPOLITAN FLOOD CONTROL DISTRICT AT (559) 456-3292.
B) FMFCD DRAINAGE FEES ARE DUE, IF REQUIRED, PRIOR TO ISSUANCE OF BUILDING PERMITS AND ARE PAYABLE AT THE RATE IN PLACE AT THE TIME OF BUILDING PERMIT ISSUANCE. UNPAID DRAINAGE FEE OBLIGATIONS THAT WERE UNPAID FOR A PRIOR PROJECT AT THE SITE OF A NEW PROJECT MUST BE SATISFIED BY THE DEVELOPER OF THE NEW PROJECT. DRAINAGE FEES MAY BE PAID AT THE DEVELOPMENT AND RESOURCE MANAGEMENT DEPARTMENT PRIOR TO, OR AT THE TIME OF BUILDING PERMIT ISSUANCE. THEY MAY ALSO BE PAID DIRECTLY TO FMFCD, AND PROOF OF PAYMENT PROVIDED TO THE CITY, IN ORDER TO OBTAIN CONSTRUCTION PERMITS.

54. SEWER CONNECTION CHARGES (FMC SECTION 6-304(A)). THE FOLLOWING SEWER CONNECTION CHARGES MAY BE REQUIRED AND WILL BE PAYABLE AT THE FEE RATE LISTED IN THE MASTER FEE SCHEDULE AT THE TIME PAYMENT IS DUE. NEW SEWER CONNECTION CHARGES ADOPTED BY THE COUNCIL PRIOR TO THE ISSUANCE OF BUILDING PERMITS MAY ALSO BE APPLIED.

A) LATERAL SEWER CHARGE (BASED ON PROPERTY FRONTAGE TO A DEPTH OF 100')
B) OVERSIZE SEWER CHARGE (BASED ON PROPERTY FRONTAGE TO A DEPTH OF 100')

EFFECTIVE JANUARY 9, 1999, ORDINANCE NO. 98-97 ALSO AMENDED CERTAIN SEWER CONNECTION CHARGES. FRESNO MUNICIPAL CODE ARTICLE 15, SECTION 12 PROVIDES PROPERTY OWNERS THE INCENTIVES AND DELETES CERTAIN SEWER CONNECTION CHARGES PURSUANT TO THE SIMPLE TIERED EQUITY PROGRAM (STEP) AND THE EMPLOYMENT DEVELOPMENT PROGRAM (EDP). FOR ADDITIONAL INFORMATION ON THE STEP AND EDP, CONTACT THE DEPARTMENT OF PUBLIC UTILITIES, ADMINISTRATION DIVISION AT (559) 621-8600.

55. WATER CONNECTION CHARGES: (FMC SECTIONS 6-507 TO 6-513). THE FOLLOWING WATER CONNECTION CHARGES MAY BE REQUIRED AND WILL BE PAYABLE AT THE FEE RATE LISTED IN THE MASTER FEE SCHEDULE AT THE TIME PAYMENT IS DUE. NEW WATER CONNECTION CHARGES ADOPTED BY THE COUNCIL PRIOR TO ISSUANCE OF BUILDING PERMITS MAY ALSO BE APPLIED.

A) FRONTAGE CHARGE (BASED ON PROPERTY FRONTAGE)
B) TRANSMISSION GRID MAIN CHARGE (BASED ON ACREAGE)
C) TRANSMISSION GRID MAIN BOND DEBT SERVICES CHARGE (BASED ON ACREAGE)
D) UGM WATER SUPPLY FEE (BASED ON LIVING UNITS, LIVING UNIT EQUIVALENTS OR ACREAGE)
E) WELLHEAD TREATMENT FEE (BASED ON LIVING UNITS OR LIVING UNIT EQUIVALENTS)
F) RECHARGE FEE (BASED ON LIVING UNITS OR LIVING UNIT EQUIVALENTS)
G) 1994 BOND DEBT SERVICE CHARGE (BASED ON LIVING UNITS OR LIVING UNIT EQUIVALENTS)
H) SERVICE CHARGES (BASED ON SERVICE SIZE REQUIRED BY APPLICANT)
I) METER CHARGES (BASED ON SERVICE NEED)

56. DEFERMENT OF THE PAYMENT OF CITYWIDE DEVELOPMENT IMPACT FEES FOR FIRE, POLICE, PARKS, STREETS, AND TRAFFIC SIGNALS IS AVAILABLE FOR PROJECTS LOCATED WITHIN THE DOWNTOWN PRIORITY AREAS IN ACCORDANCE WITH THE PROVISIONS OF CITY OF FRESNO RESOLUTIONS NOS. 2009-265 AND 2010-19.

57. 2 WORKING DAYS BEFORE COMMENCING EXCAVATION OPERATIONS WITHIN THE STREET RIGHT-OF-WAY AND/OR UTILITY EASEMENTS. ALL EXISTING UNDERGROUND FACILITIES SHALL HAVE BEEN LOCATED BY UNDERGROUND SERVICES ALERT (USA). CALL 1-800-642-2444

58. UNDERGROUND ALL EXISTING OFFSITE OVERHEAD UTILITIES WITHIN THE LIMITS OF THIS SITE/MAP AS PER FMC SECTION 15-2017, AND RES. NO. 78-522/88-229

59. REPAIR ALL DAMAGED AND/OR OFF-GRADE CONCRETE STREET IMPROVEMENTS AS DETERMINED BY THE CONSTRUCTION MANAGEMENT ENGINEER PRIOR TO OCCUPANCY

60. ANY SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR RESET BY A PERSON LICENSE TO PRACTICE LAND SURVEYING IN THE STATE OF CALIFORNIA

61. DEED(S) OF EASEMENT(S) FOR THE REQUIRED DEDICATION(S) SHALL BE PREPARED BY THE OWNER/DEVELOPER'S ENGINEER AND SUBMITTED TO THE CITY WITH VERIFICATION OF OWNERSHIP PRIOR TO ISSUANCE OF BUILDING PERMITS AND/OR VACATIONS.

LEGAL DESCRIPTION

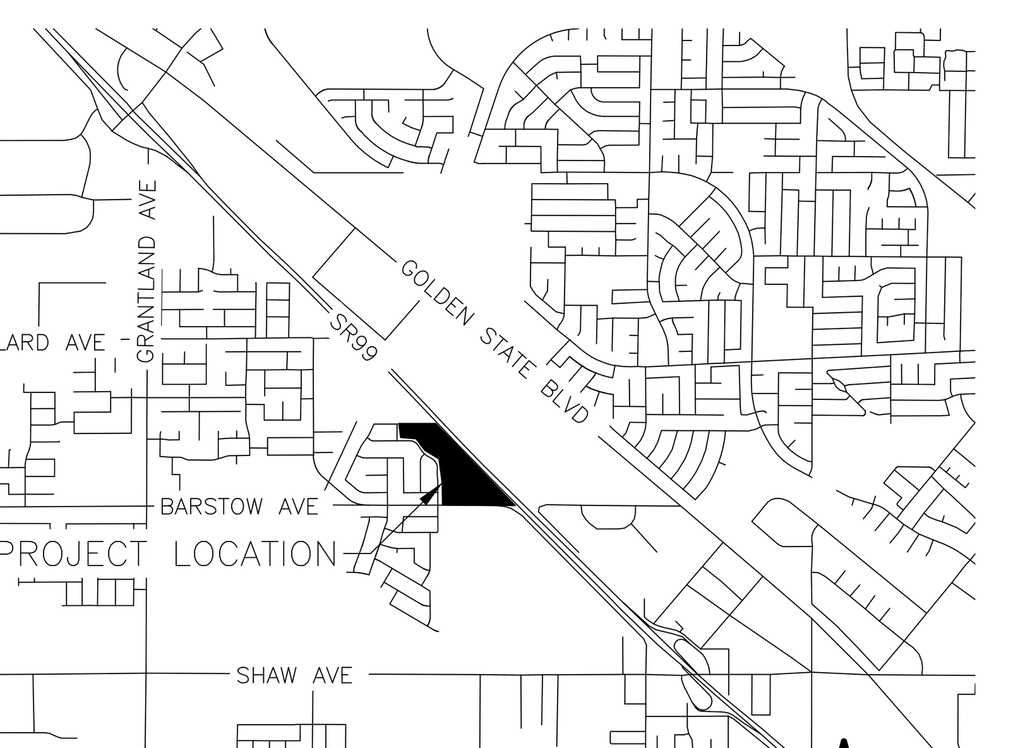
THOSE PORTIONS OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF SECTION 9, AND THE SOUTH HALF OF THE NORTHWEST QUARTER OF SECTION 10, TOWNSHIP 13 SOUTH, RANGE 19 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE CITY OF FRESNO, COUNTY OF FRESNO, STATE OF CALIFORNIA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE EAST QUARTER CORNER OF SAID SECTION 9; THENCE SOUTH 89° 21'13" WEST, ALONG THE SOUTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9, A DISTANCE OF 521.80 FEET; THENCE NORTH 00° 38'47" WEST, PERPENDICULAR TO LAST DESCRIBED LINE, A DISTANCE OF 47.00 FEET; THENCE SOUTH 89° 21'13" WEST PARALLEL WITH AND 47.00 FEET NORTH OF THE SOUTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9, A DISTANCE OF 105.00 FEET; THENCE NORTH 45° 35'02" WEST, A DISTANCE OF 16.53 FEET; THENCE NORTH 00° 31'17" WEST, A DISTANCE OF 326.79 FEET TO THE POINT OF CURVATURE OF A TANGENT CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 278.00 FEET; THENCE NORTHERLY ALONG SAID TANGENT CURVE, THROUGH A CENTRAL ANGLE OF 10° 15' 47", AN ARC DISTANCE OF 49.80 FEET TO THE POINT OF CURVATURE OF A REVERSE CURVE CONCAVE EASTERLY AND HAVING A RADIUS OF 222.00 FEET; THENCE NORTHERLY ALONG SAID REVERSE CURVE, THROUGH A CENTRAL ANGLE OF 10° 15'47", AN ARC DISTANCE OF 39.77 FEET; THENCE NORTH 00° 31'17" WEST, A DISTANCE OF 120.22 FEET TO THE POINT OF CURVATURE OF A TANGENT CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 178.00 FEET; THENCE NORTHWESTERLY ALONG SAID TANGENT CURVE, THROUGH A CENTRAL ANGLE OF 60° 27'27", AN ARC DISTANCE OF 187.82 FEET; THENCE NORTH 60° 58'44" WEST, A DISTANCE OF 63.82 FEET TO THE POINT OF CURVATURE OF A TANGENT CURVE CONCAVE NORTHEASTERLY AND HAVING A RADIUS OF 372.00 FEET; THENCE NORTHWESTERLY ALONG SAID TANGENT CURVE, THROUGH A CENTRAL ANGLE OF 28° 34'26", AN ARC DISTANCE OF 185.52 FEET; THENCE NORTH 32° 24'18" WEST, A DISTANCE OF 55.04 FEET TO THE POINT OF CURVATURE OF A TANGENT CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 178.00 FEET; THENCE NORTHWESTERLY ALONG SAID TANGENT CURVE, THROUGH A CENTRAL ANGLE OF 58° 14'29", AN ARC DISTANCE OF 180.94 FEET; THENCE SOUTH 89° 21'13" WEST, A DISTANCE OF 166.46 FEET; THENCE NORTH 45° 38'47" WEST, A DISTANCE OF 12.30 FEET; THENCE NORTH 00° 38'47" WEST, A DISTANCE OF 152.42 FEET TO THE POINT OF CURVATURE OF A TANGENT CURVE CONCAVE SOUTHEASTERLY AND HAVING A RADIUS OF 50.00 FEET; THENCE NORTHEASTERLY ALONG SAID TANGENT CURVE, THROUGH A CENTRAL ANGLE OF 38° 44'22", AN ARC DISTANCE OF 33.81 FEET TO THE POINT OF CURVATURE OF A REVERSE CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 50.00 FEET; THENCE NORTHERLY AND WESTERLY ALONG SAID REVERSE CURVE, THROUGH A CENTRAL ANGLE OF 111° 16'55", AN ARC DISTANCE OF 97.11 FEET; THENCE NORTH 00° 38'47" WEST, A DISTANCE OF 4.36 FEET TO A POINT ON THE NORTH LINE OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF SAID SECTION 9; THENCE NORTH 89° 28'02" EAST, ALONG SAID NORTH LINE, A DISTANCE OF 517.05 FEET TO THE POINT OF INTERSECTION OF SAID NORTH LINE WITH THE SOUTHWESTERLY BOUNDARY OF THAT CERTAIN STRIP OF LAND GRANTED TO THE STATE OF CALIFORNIA FOR FREEWAY, BY DEED RECORDED NOVEMBER 7, 1958 IN BOOK 4134, PAGE 44 OF OFFICIAL RECORDS; THENCE SOUTH 45° 13'15" EAST, ALONG SAID SOUTHWESTERLY BOUNDARY, A DISTANCE OF 1852.90 FEET TO A POINT ON THE SOUTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 10; THENCE SOUTH 89° 51'35" WEST, ALONG SAID SOUTH LINE, A DISTANCE OF 526.19 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THAT PORTION OF THE PARCEL AS DESCRIBED TO THE CITY OF FRESNO, A MUNICIPAL CORPORATION, IN THAT CERTAIN GRANT DEED RECORDED OCTOBER 03, 2007 AS INSTRUMENT NO. 2007-0184364, OFFICIAL RECORDS OF FRESNO COUNTY. SAID PARCEL BEING WITHIN THE NORTHEAST QUARTER OF SECTION 9 AND THE NORTHWEST QUARTER OF SECTION 10 OF TOWNSHIP 13 SOUTH, RANGE 19 EST, MOUNT DIABLO BASE AND MERIDIAN, SAID PORTION BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE POINT OF INTERSECTION OF A LINE PARALLEL WITH AND 30.00 FEET NORTH OF THE SOUTH LINE OF SAID NORTHWEST QUARTER OF SECTION 10, ALSO BEING THE NORTH RIGHT-OF WAY LINE OF WEST BARSTOW AVENUE AS CONVEYED FOR A PUBLIC ROAD, RECORDED NOVEMBER 05, 1904 IN VOLUME 328 OF DEEDS AT PAGE 11, RECORDS OF FRESNO COUNTY, WITH THE SOUTHWESTERLY RIGHT-OF-WAY OF STATE ROUTE 99, AS DESCRIBED IN THE INDIVIDUAL GRANT DEED RECORDED NOVEMBER 07, 1958 IN BOOK 4134 AT PAGES 44 THROUGH 47, RECORDS OF FRESNO COUNTY; THENCE ALONG SAID PARALLEL LINE, NORTH 89°40'38" WEST, 24.77 FEET; THENCE DEPARTING SAID PARALLEL LINE, NORTH 44°44'52" WEST, 782.71 FEET; THENCE NORTH 46°55'01" WEST, 1,067.78 FEET TO THE NORTH LINE OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF SECTION 9; THENCE ALONG SAID NORTH LINE, NORTH 89°52'14" EAST, 81.02 FEET TO SAID SOUTHWESTERLY RIGHT-OF WAY LINE; THENCE ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE, SOUTH 44°45'19" EAST, 1,810.35 FEET TO THE POINT OF BEGINNING.

SAID PARCEL IS A PORTION OF THE REMEMBER LOT OF TRACT MAP NO. 5224, RECORDED MAY 20, 2005 IN VOLUME 72 OF PLATS AT PAGES 66 THROUGH 69, FRESNO COUNTY RECORDS.



VICINITY MAP
NOT TO SCALE

PROJECT INFO:

PROJECT LOCATION: NORTHEAST CORNER OF BARSTOW AVE AND CONTESSA AVE
FRESNO, CA 93728

APN: 505-070-44

PROJECT OWNER: INDY SANGHA
SANGHA CARRIERS
FRESNO, CA 93722

A.P.N. #: 505-070-44
GENERAL PLAN DESIGNATION: COMMERCIAL BUSINESS PARK (CBP)
ZONING: BP
PROJECT SITE AREA = 18.87 AC
NET ACREAGE AFTER ROW DEDICATION = 18.31 AC

PHASE 1 INFO:
PHASE 1 AREA TO BE DEVELOPED: 7.61 ACRES
PARKING SPACES PROVIDED= 9 STALLS
EV STALLS PROVIDED= 2 STALLS
EV STALLS REQUIRED= 0 STALLS
HANDICAP PARKING SPACES PROVIDED= 1 STALLS
HANDICAP PARKING SPACES REQUIRED= 1 STALLS
TRUCK/TRACTOR PARKING STALLS PROVIDED= 132 STALLS

PHASE 2 INFO:
PHASE 2 AREA TO BE DEVELOPED: 5.0 ACRES
PARKING SPACES PROVIDED= 5 STALLS
TOTAL VEHICLE PARKING STALLS PROVIDED = 9 + 5 = 14 STALLS
HANDICAP PARKING SPACES PROVIDED= 1 STALLS
HANDICAP PARKING SPACES REQUIRED= 1 STALLS
TRUCK/TRACTOR PARKING STALLS PROVIDED= 138 STALLS
TOTAL STALLS PROVIDED= 138 + 132= 270 STALLS

PARKING CALCULATION (PHASE 3):
PHASE 3 AREA TO BE DEVELOPED: 5.7 ACRES
PARKING SPACES PROVIDED= 39 STALLS
TOTAL VEHICLE PARKING STALLS PROVIDED= 14 + 39 = 53 STALLS
HANDICAP PARKING SPACES PROVIDED= 3 STALLS
HANDICAP PARKING SPACES REQUIRED= 3 STALLS
TRUCK/TRACTOR PARKING STALLS PROVIDED= 122 STALLS
TOTAL STALLS PROVIDED= 138 + 132 + 122 = 392 STALLS

PHASE 4 INFO:
PHASE 4 AREA TO BE RE-DEVELOPED: 1.3 ACRES
BUILDING 1 (OFFICE/TRUCK REPAIR) = 5,400 SF
BUILDING 1 OFFICE SPACE = 1,800 SF
SHOP REPAIR (4 BAY) = 3,600 SF
BUILDING 2 (TRUCK WASH 2 - TUNNEL) = 5,400 SF
REQUIRED PARKING STALLS = 1,800 SF / 250 SF = 7.2 STALLS
VEHICLE STALLS PROVIDED = 6 STALLS
TOTAL VEHICLE STALLS PROVIDED = 53 + 6 = 59 STALLS
EV STALLS PROVIDED= 2 STALLS
TOTAL EV STALLS PROVIDED= 2 + 2 = 4
EV STALLS REQUIRED= 4 STALLS
TRUCK/TRACTOR PARKING STALLS REMOVED= 18 STALLS
TOTAL STALLS PROVIDED= 391 - 18 = 374 STALLS

BUILDING COVERAGE = 10,800 SF / 797,583.6 SF = 1.3%
PAVED AREA = 693,195.1623 SF / 797,583.6 SF = 86.9%
LANSCAPED AREA = 110,180.7411 SF / 797,583.6 SF = 13.8%

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(559) 775-0023
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VICE
VANG INC. CONSULTING ENGINEERS

BARSTOW TRUCK PARKING
SITE PLAN
CITY OF FRESNO CALIFORNIA

DATE: 5/6/2021

PROJ. ENGR: LSV

PROJ. MNGR: KYV

PREPARED FOR:
INDY SANGHA
SANGHA CARRIERS
5812 BEDFORD AVE
FRESNO, CA 93722

REGISTERED PROFESSIONAL ENGINEER
KHENG YING VANG
NO. C-63824
CIVIL
STATE OF CALIFORNIA

SHEET NO. 1 / 4

PROJECT NUMBER 20-003

5/7/2021 9:08 AM

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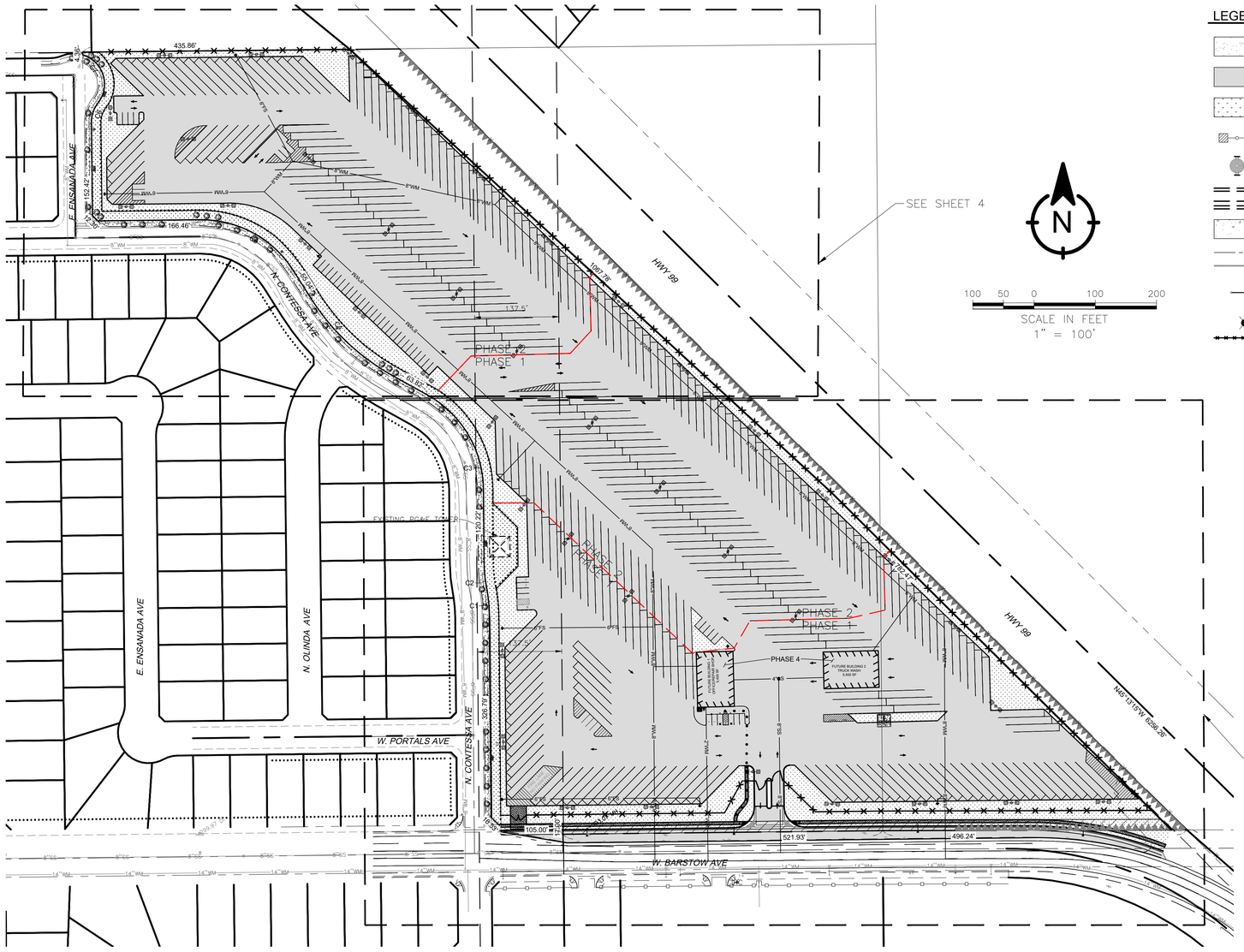
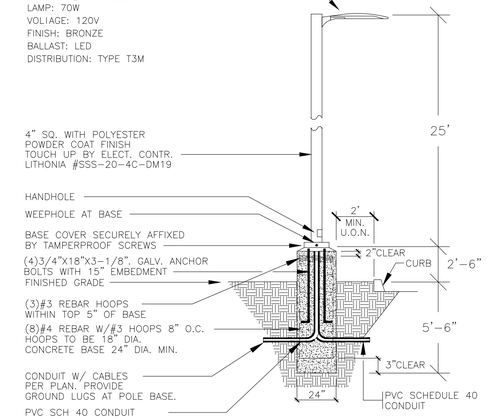


LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED AC PAVEMENT
- PROPOSED LANDSCAPING & IRRIGATION
- PROPOSED ONSITE LIGHT
- PROPOSED FIRE HYDRANT
- EXISTING 6" HIGH CURB
- EXISTING 6" HIGH CURB & GUTTER
- EXISTING CONCRETE
- EXISTING RIGHT OF WAY
- EXISTING 8' HIGH BLOCK WALL
- EXISTING STREET LIGHT
- EXISTING FIRE HYDRANT
- PROPOSED CHAINLINK FENCE

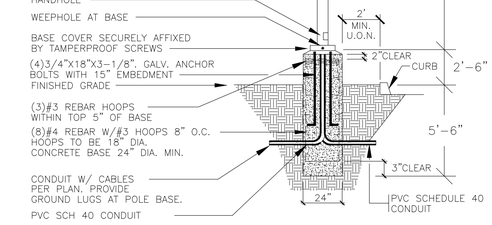
CURVE DATA			
SEGMENT	RADIUS	DELTA	LENGTH
C1	278.00'	10°15'47"	49.80'
C2	222.00'	10°15'47"	39.77'
C3	178.00'	60°27'27"	187.82'
C4	372.00'	28°34'26"	185.52'
C5	178.00'	58°14'29"	180.94'
C6	50.00'	38°44'22"	33.81'
C7	50.00'	111°16'55"	97.11'

1 SINGLE LUMINAIRE
LITHONIA #DSX1-LED-P2-40K-T3M-MVOLT DDBXD
LAMP: 70W
VOLTAGE: 120V
FINISH: BRONZE
BALLAST: LED
DISTRIBUTION: TYPE T3M

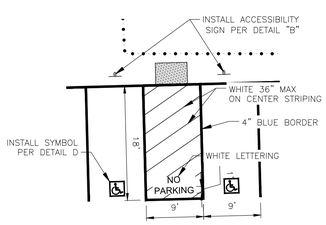


F PARKING LOT LIGHTING LUMINAIRE 25' TYP.
NOT TO SCALE

1 SINGLE LUMINAIRE
LITHONIA #DSX1-LED-P2-40K-T3M-MVOLT DDBXD
LAMP: 70W
VOLTAGE: 120V
FINISH: BRONZE
BALLAST: LED
DISTRIBUTION: TYPE T3M



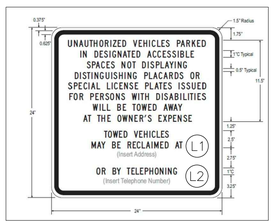
G PARKING LOT LIGHTING LUMINAIRE 16' TYP.
NOT TO SCALE



A TYPICAL VAN CCESSIBLE PARKING STALL
NOT TO SCALE

NOTES:
1. THE CLEAR HEIGHT OF THE LOWEST PORTION OF THE LOWEST SIGN ON THE POLE SHALL BE A MINIMUM OF 80 INCHES ABOVE THE GROUND.
2. THE TOP SIGN SHALL BE REFLECTORIZED AND A MINIMUM OF 24" x 12" AND SHALL CONSIST OF THE INTERNATIONAL SYMBOL OF ACCESSIBILITY IN WHITE ON A DARK BLUE BACKGROUND.
3. THE VAN ACCESSIBLE SPACE SHALL BE THE WESTERN STALL, AS INDICATED ON THE PLAN.
4. THE SIGNAGE SHALL COMPLY WITH ALL REQUIREMENTS SET FORTH IN THE 2019 CBC, 2018 MUTCD CALIFORNIA SUPPLEMENT.

B SIGN AND SYMBOLS OF ACCESSIBILITY
NOT TO SCALE

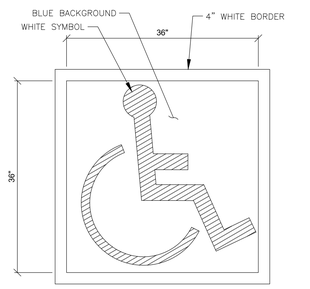


L1 TOWED VEHICLES MAY BE RECLAIMED BY CONTACTING THE CITY OF FRESNO POLICE DEPARTMENT, 2323 MARIPOSA STREET

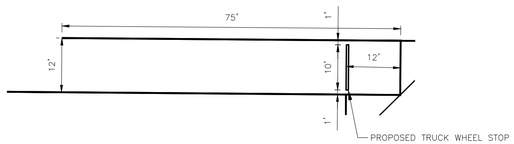
L2 OR BY TELEPHONING 559-621-7000.

NOTES:
1. THE CLEAR HEIGHT OF THE LOWEST PORTION OF THE SIGN SHALL BE A MINIMUM OF 80 INCHES ABOVE THE GROUND.
2. THE SIGN SHALL NOT BE LESS THAN 24" BY 24" IN SIZE WITH LETTERING NOT LESS THAN 1" IN HEIGHT, WHICH CLEARLY AND CONSPICUOUSLY STATES THE TEXT SHOWN ABOVE.
3. THE SIGN SHALL HAVE A DARK BLUE BACKGROUND WITH WHITE LETTERING.
4. THE BLANK SPACES SHOWN ABOVE ARE TO BE FILLED IN WITH THE APPROPRIATE INFORMATION AS A PERMANENT PART OF THE SIGN.
5. EXISTING SIGNAGE NOT IN COMPLIANCE WITH THIS DETAIL SHALL BE REPLACED PER THIS DETAIL.
6. THE SIGNAGE SHALL COMPLY WITH ALL REQUIREMENTS SET FORTH IN THE 2019 CBC, 2018 MUTCD CALIFORNIA SUPPLEMENT.

C ACCESSIBLE ENTRY SIGN



D INTERNATIONAL SYMBOL OF ACCESSIBILITY



E TYPICAL TRACTOR/TRAILER PARKING STALL
NOT TO SCALE

REVISIONS

NO.	DATE	BY

2491 ALLUVIAL AVE
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(559) 775-0023
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VICE
VANG INC. CONSULTING ENGINEERS

BARSTOW TRUCK PARKING

SITE PLAN

CITY OF FRESNO CALIFORNIA

DATE: 5/6/2021

PROJ. ENGR: LSV

PROJ. MNGR: KYV

PREPARED FOR:
INDY SANGHA
SANGHA CARRIERS
5812 BEDFORD AVE
FRESNO, CA 93722

REGISTERED PROFESSIONAL ENGINEER
KHENG YING YANG
NO. C-63824
CIVIL
STATE OF CALIFORNIA

SHEET NO. 2 / 4

PROJECT NUMBER 20-003

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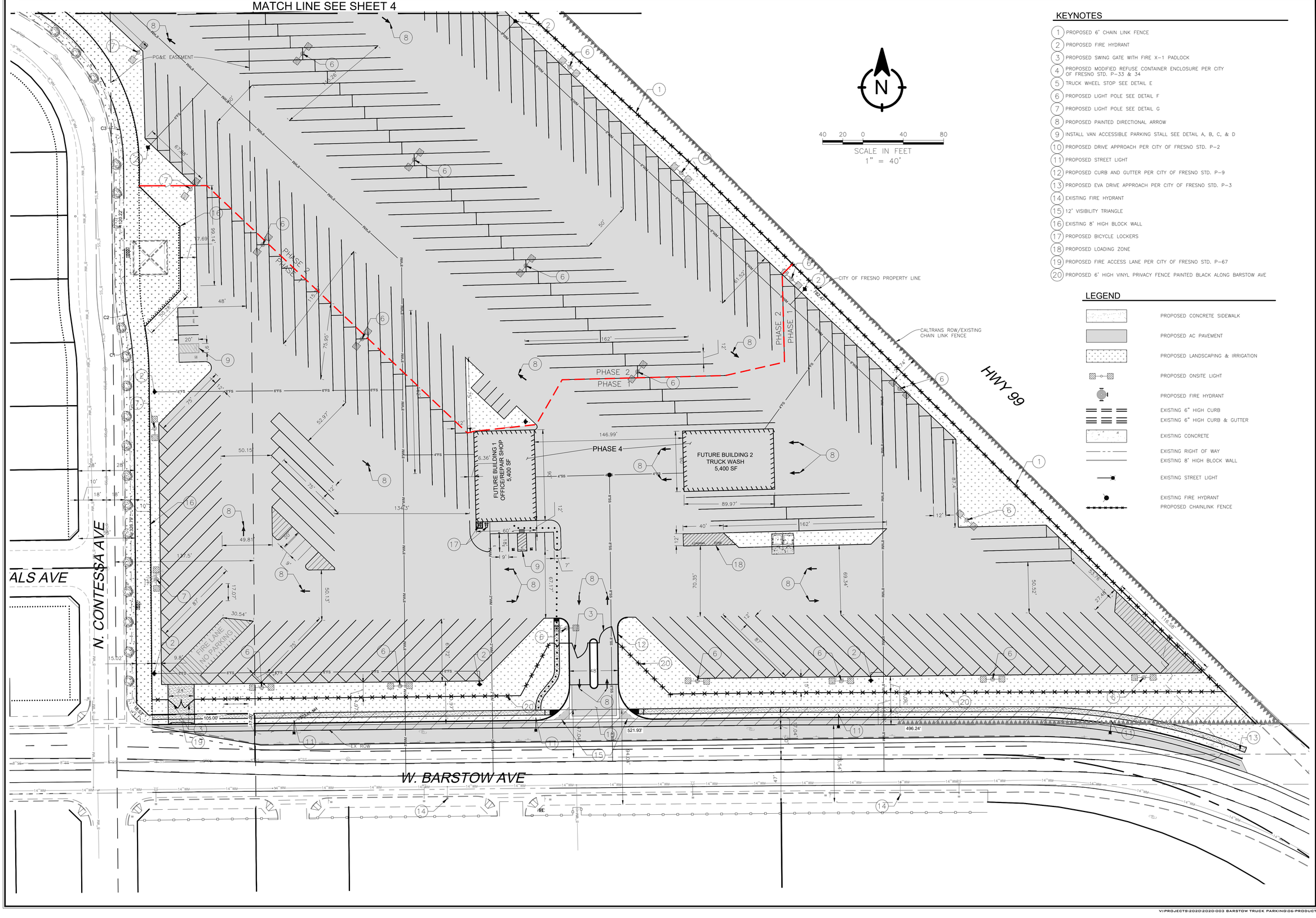
MATCH LINE SEE SHEET 4



KEYNOTES

1. PROPOSED 6' CHAIN LINK FENCE
2. PROPOSED FIRE HYDRANT
3. PROPOSED SWING GATE WITH FIRE X-1 PADLOCK
4. PROPOSED MODIFIED REFUSE CONTAINER ENCLOSURE PER CITY OF FRESNO STD. P-33 & 34
5. TRUCK WHEEL STOP SEE DETAIL E
6. PROPOSED LIGHT POLE SEE DETAIL F
7. PROPOSED LIGHT POLE SEE DETAIL G
8. PROPOSED PAINTED DIRECTIONAL ARROW
9. INSTALL VAN ACCESSIBLE PARKING STALL SEE DETAIL A, B, C, & D
10. PROPOSED DRIVE APPROACH PER CITY OF FRESNO STD. P-2
11. PROPOSED STREET LIGHT
12. PROPOSED CURB AND GUTTER PER CITY OF FRESNO STD. P-9
13. PROPOSED EVA DRIVE APPROACH PER CITY OF FRESNO STD. P-3
14. EXISTING FIRE HYDRANT
15. 12' VISIBILITY TRIANGLE
16. EXISTING 8' HIGH BLOCK WALL
17. PROPOSED BICYCLE LOCKERS
18. PROPOSED LOADING ZONE
19. PROPOSED FIRE ACCESS LANE PER CITY OF FRESNO STD. P-67
20. PROPOSED 6' HIGH VINYL PRIVACY FENCE PAINTED BLACK ALONG BARSTOW AVE

LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED AC PAVEMENT
- PROPOSED LANDSCAPING & IRRIGATION
- PROPOSED ONSITE LIGHT
- PROPOSED FIRE HYDRANT
- EXISTING 6" HIGH CURB
- EXISTING 6" HIGH CURB & GUTTER
- EXISTING CONCRETE
- EXISTING RIGHT OF WAY
- EXISTING 8' HIGH BLOCK WALL
- EXISTING STREET LIGHT
- EXISTING FIRE HYDRANT
- PROPOSED CHAINLINK FENCE

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BARSTOW TRUCK PARKING

SITE PLAN

CITY OF FRESNO CALIFORNIA

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PROJECT NUMBER 20-003

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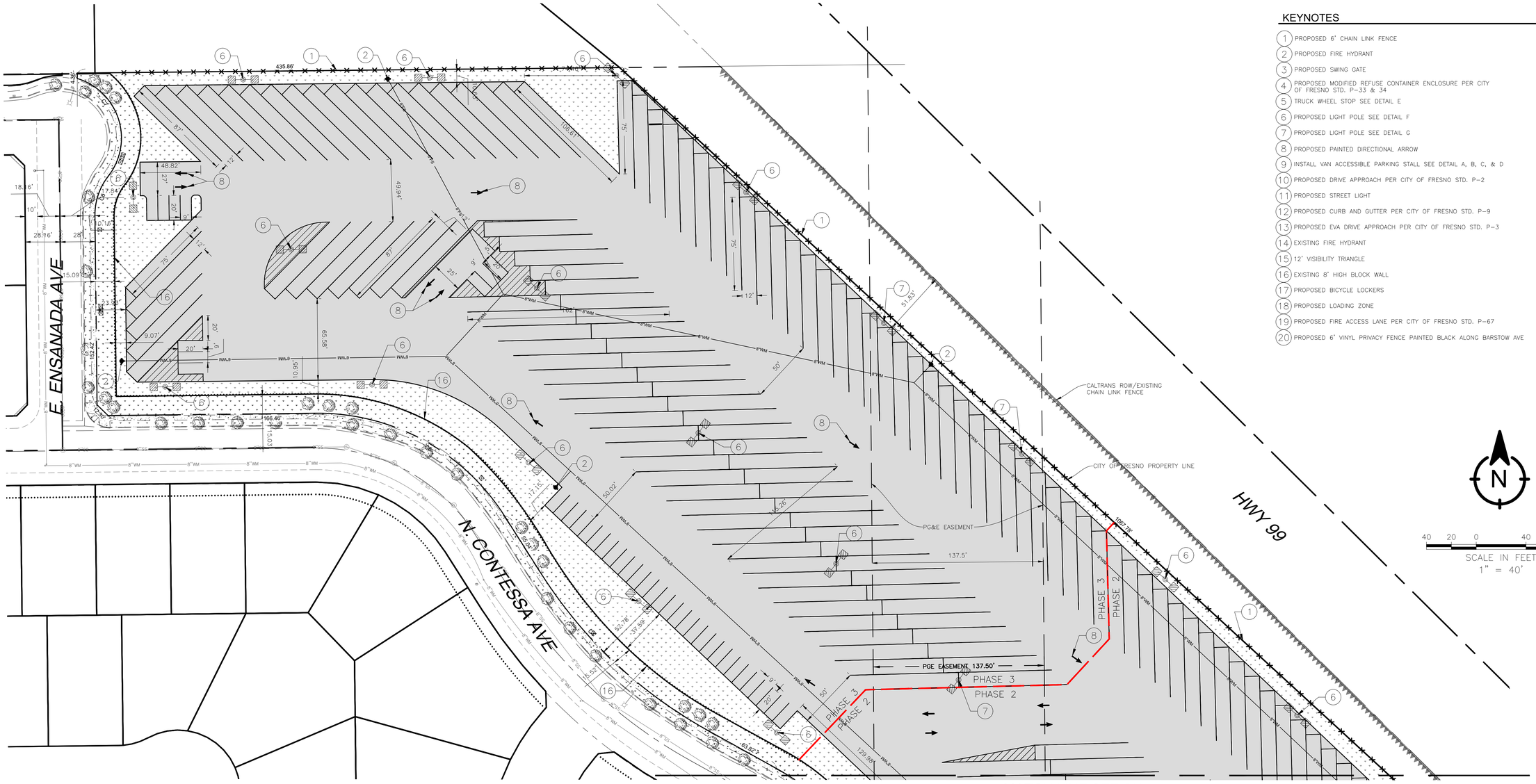

MATCH LINE SEE SHEET 3

KEYNOTES

1. PROPOSED 6' CHAIN LINK FENCE
2. PROPOSED FIRE HYDRANT
3. PROPOSED SWING GATE
4. PROPOSED MODIFIED REFUSE CONTAINER ENCLOSURE PER CITY OF FRESNO STD. P-33 & 34
5. TRUCK WHEEL STOP SEE DETAIL E
6. PROPOSED LIGHT POLE SEE DETAIL F
7. PROPOSED LIGHT POLE SEE DETAIL G
8. PROPOSED PAINTED DIRECTIONAL ARROW
9. INSTALL VAN ACCESSIBLE PARKING STALL SEE DETAIL A, B, C, & D
10. PROPOSED DRIVE APPROACH PER CITY OF FRESNO STD. P-2
11. PROPOSED STREET LIGHT
12. PROPOSED CURB AND GUTTER PER CITY OF FRESNO STD. P-9
13. PROPOSED EVA DRIVE APPROACH PER CITY OF FRESNO STD. P-3
14. EXISTING FIRE HYDRANT
15. 12' VISIBILITY TRIANGLE
16. EXISTING 8' HIGH BLOCK WALL
17. PROPOSED BICYCLE LOCKERS
18. PROPOSED LOADING ZONE
19. PROPOSED FIRE ACCESS LANE PER CITY OF FRESNO STD. P-67
20. PROPOSED 6' VINYL PRIVACY FENCE PAINTED BLACK ALONG BARSTOW AVE

LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED AC PAVEMENT
- PROPOSED LANDSCAPING & IRRIGATION
- PROPOSED ONSITE LIGHT
- PROPOSED FIRE HYDRANT
- EXISTING 6" HIGH CURB
- EXISTING 6" HIGH CURB & GUTTER
- EXISTING CONCRETE
- EXISTING RIGHT OF WAY
- EXISTING 8' HIGH BLOCK WALL
- EXISTING STREET LIGHT
- EXISTING FIRE HYDRANT
- PROPOSED CHAINLINK FENCE

REVISIONS

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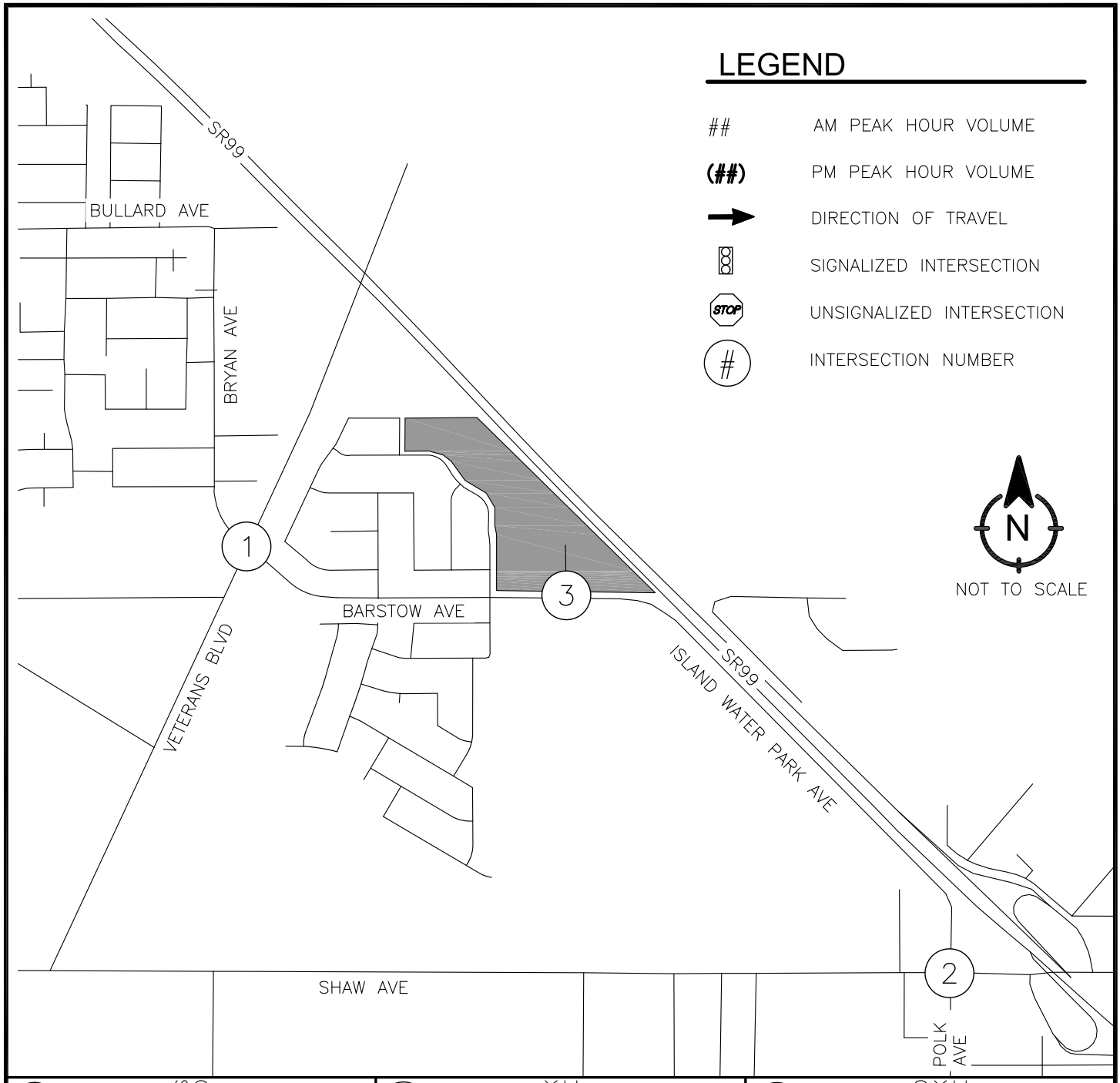
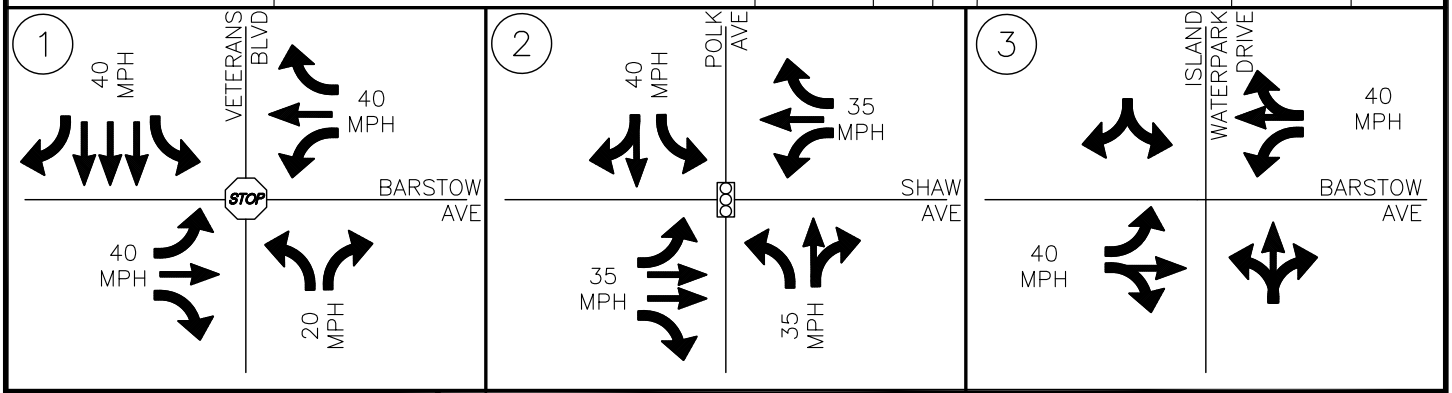
V:\PROJECTS\2020\2020-003 BARSTOW TRUCK PARKING\06-PRODUCTION PLANS\20-003 SITE PLAN.DWG

Figure 3 – Existing Conditions





VICE
Vang Inc. Consulting Engineers

BARSTOW TRUCK PARKING
EXISTING 2021 TRAFFIC CONDITIONS

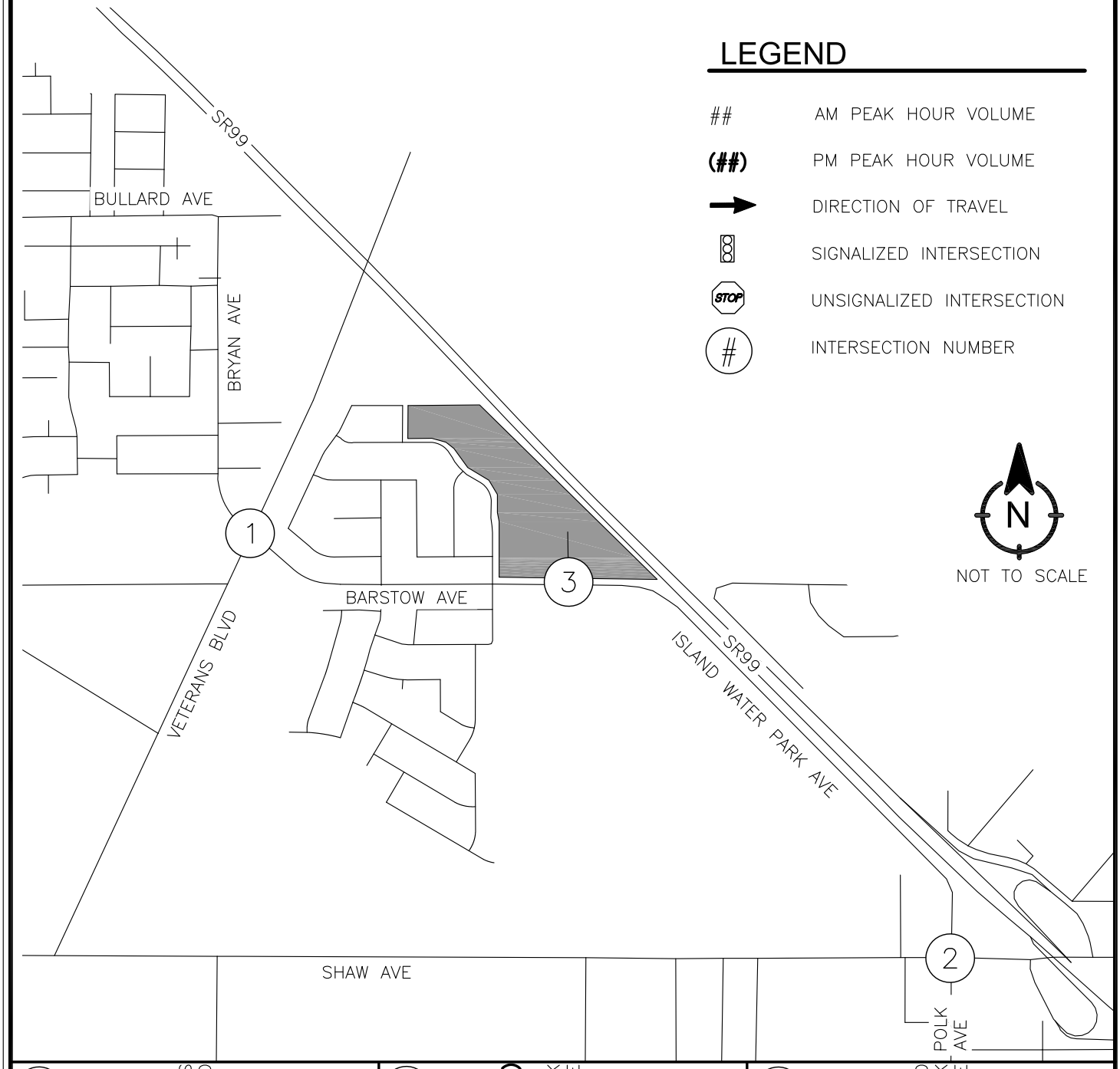
PREPARED FOR: SANGHA CARRIERS
DATE: 10/8/2021
PROJECT: 20-003

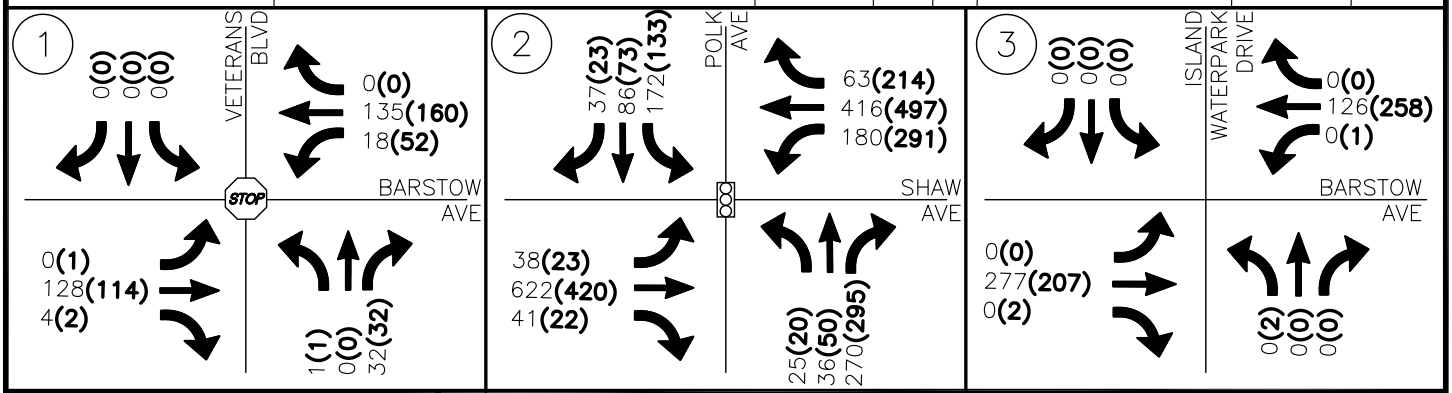
FIGURE 3

10/11/2021 12:06 PM

V:\PROJECTS\2020\2020-003 BARSTOW TRUCK PARKING\03-PROJECT REPORTS\TIS\20-003 TRAFFIC VOLUMES.DWG

Figure 4 – Existing Traffic Volume



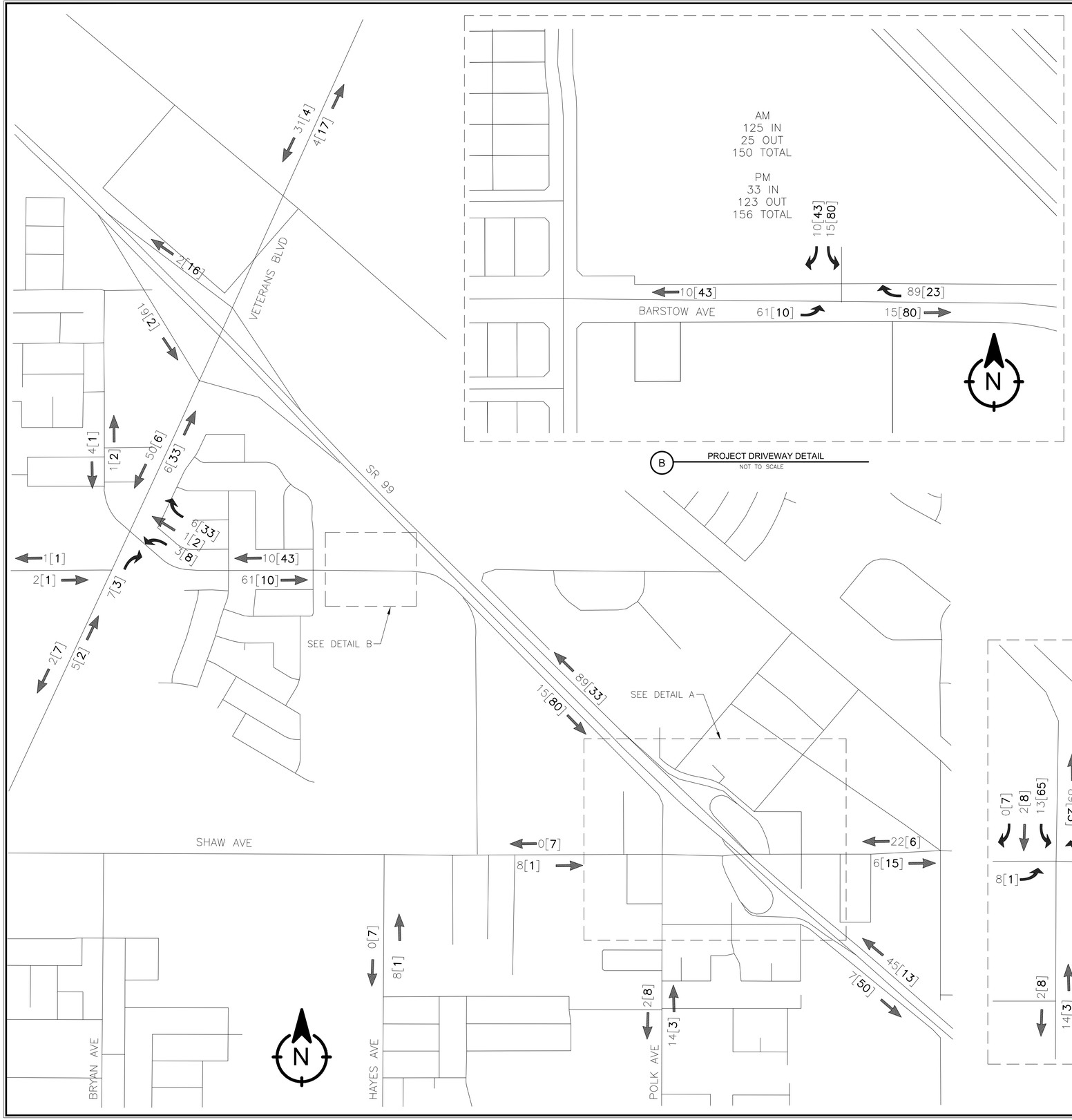


VICE Vang Inc. Consulting Engineers	BARSTOW TRUCK PARKING EXISTING 2021 TRAFFIC VOLUME	PREPARED FOR: SANGHA CARRIERS DATE: 10/8/2021 PROJECT: 20-003	FIGURE 4

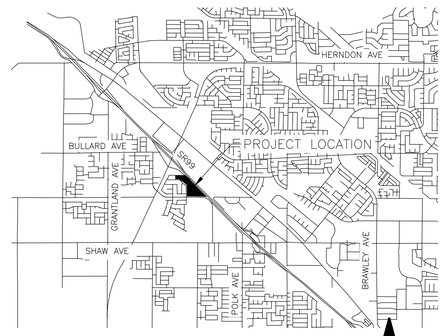
10/11/2021 12:07 PM

V:\PROJECTS\2020\2020-003 BARSTOW TRUCK PARKING\03-PROJECT REPORTS\TIS\20-003 TRAFFIC VOLUMES.DWG

Figure 5 - Project Trip Distribution



B PROJECT DRIVEWAY DETAIL
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

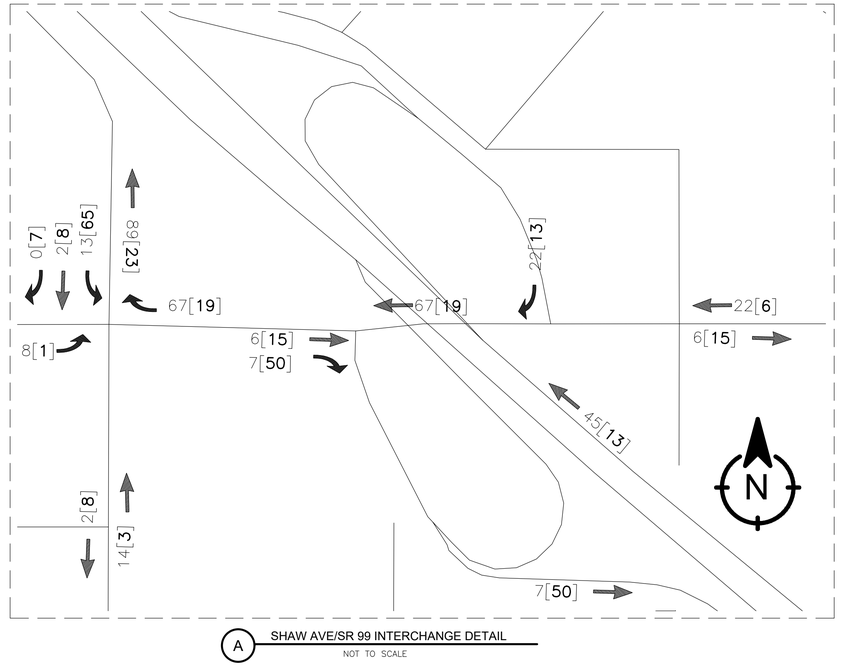
Know what's below. Call before you dig.

LEGEND

XX	AM TRIPS
[XX]	PM TRIPS
<XX>	PASSBY AM
<<XX>>	PASSBY PM

PROJECT INFO:

PROJECT LOCATION:	NORTHEAST CORNER OF BARSTOW AVE AND CONTESSA AVE IN FRESNO, CA
A.P.N.	505-070-44
PROJECT OWNER:	INDY SANGHA SANGHA CARRIERS 5812 BEDFORD AVE FRESNO, CA 93722



A SHAW AVE/SR 99 INTERCHANGE DETAIL
NOT TO SCALE

REVISIONS

NO.	DATE	BY

2491 ALLUVIAL AVE
CLOVIS, CA 93619
(559) 775-0023
FAX: (559) 775-0016
WWW.VICE-ENGR.COM

VICE
VANG INC. CONSULTING ENGINEERS

BARSTOW TRUCK PARKING

TRIP GENERATION/
TRIP DISTRIBUTION

CITY OF FRESNO

DATE: 9/10/2021

PROJ. ENGR: LSV

PROJ. MNGR: KYV

PREPARED FOR:
INDY SANGHA
SANGHA CARRIERS
5812 BEDFORD AVE
FRESNO, CA 93722

REGISTERED PROFESSIONAL ENGINEER
KYENG YING VANG
NO. C-63824
CIVIL
STATE OF CALIFORNIA

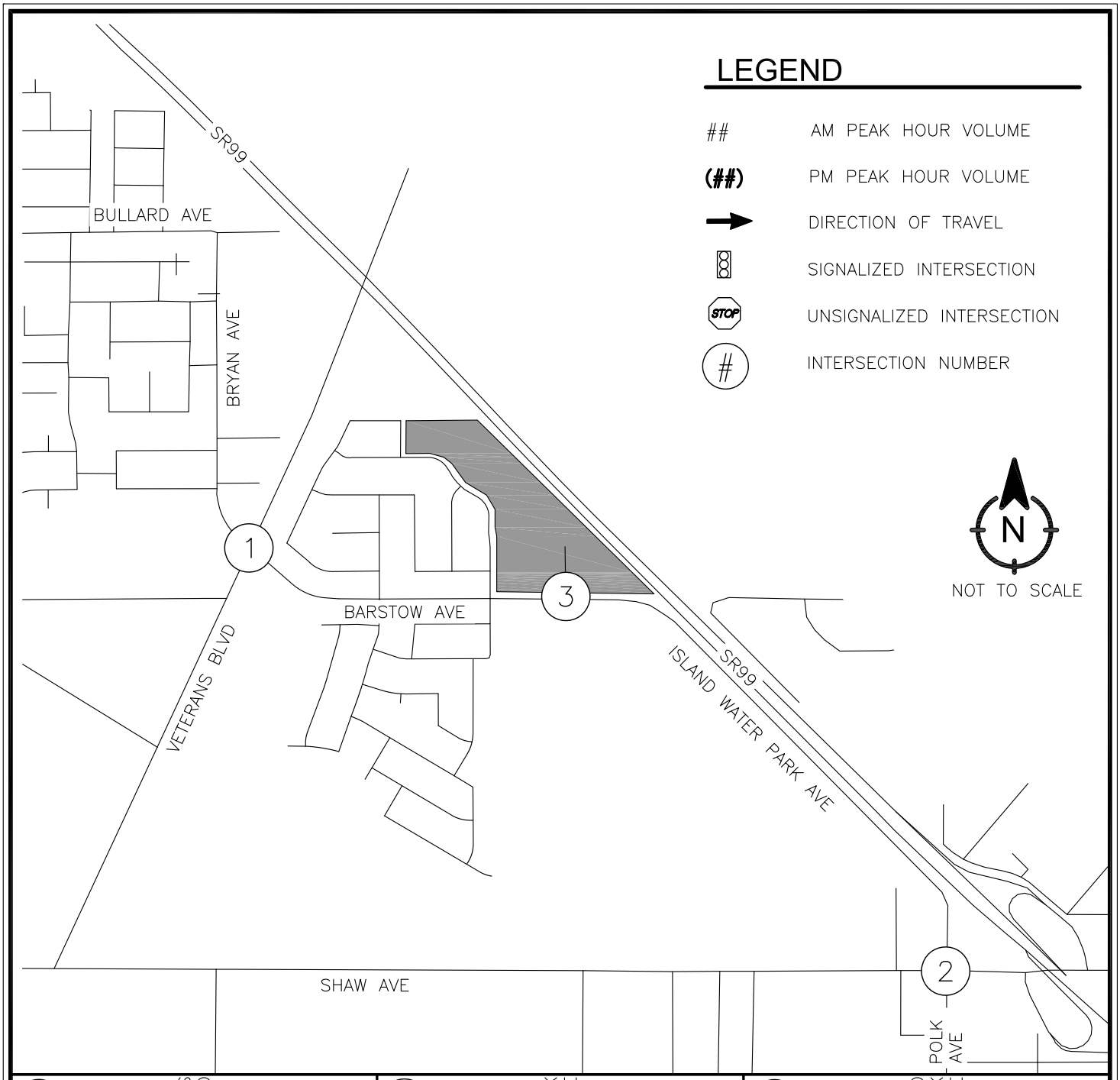
SHEET NO.
1 / 1

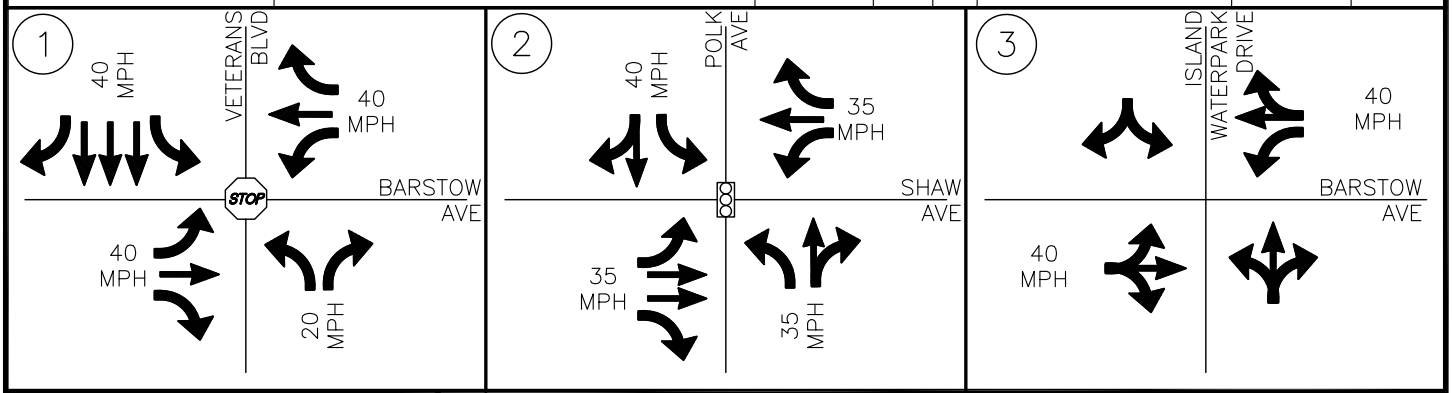
PROJECT NUMBER
20-003

10/1/2021 1:24:2 PM

V:\PROJECTS\2020\2020-003 BARSTOW TRUCK PARKING\03-PROJECT REPORTS\TIS\20-003 TRIP GENERATION.DWG

Figure 6 – Existing Plus Project Conditions





VICE
Vang Inc. Consulting Engineers

BARSTOW TRUCK PARKING

EXISTING 2021 + PROJECT TRAFFIC CONDITIONS

PREPARED FOR: SANGHA CARRIERS

DATE: 10/8/2021

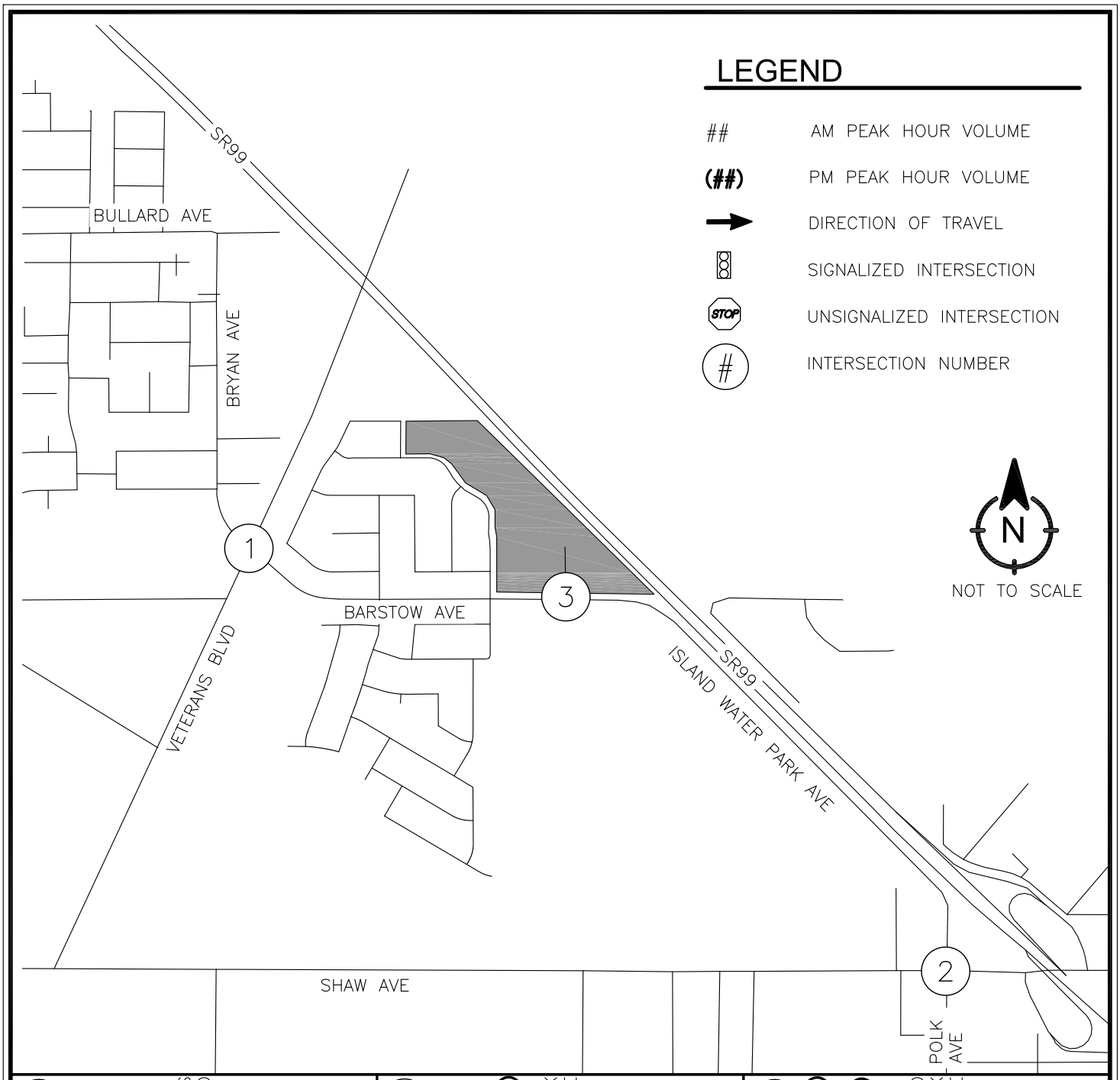
PROJECT: 20-003

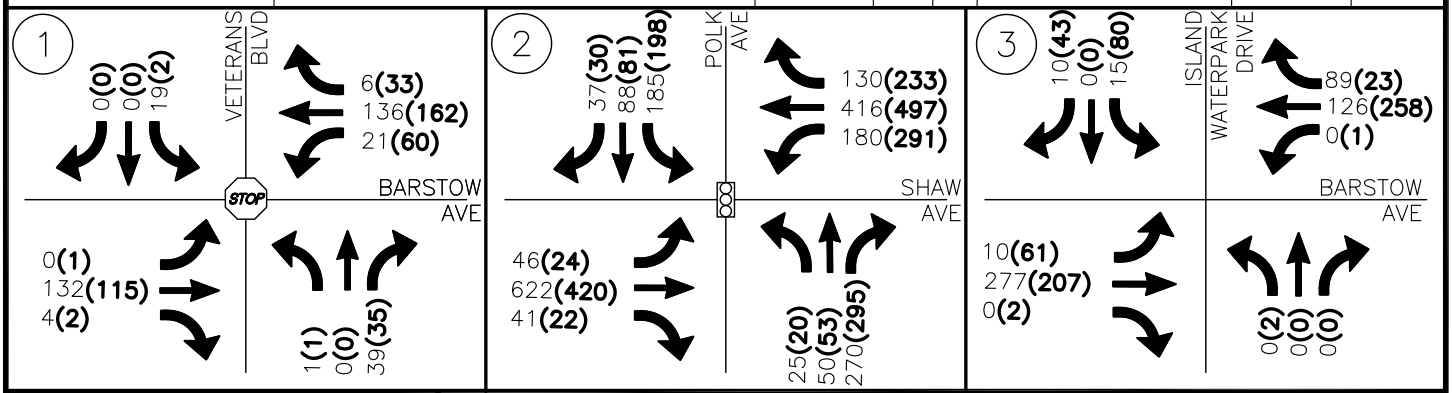
FIGURE 6

10/11/2021 12:08 PM

V:\PROJECTS\2020\2020-003 BARSTOW TRUCK PARKING\03-PROJECT REPORTS\TIS\20-003 TRAFFIC VOLUMES.DWG

Figure 7 – Existing Plus Project Traffic Volumes

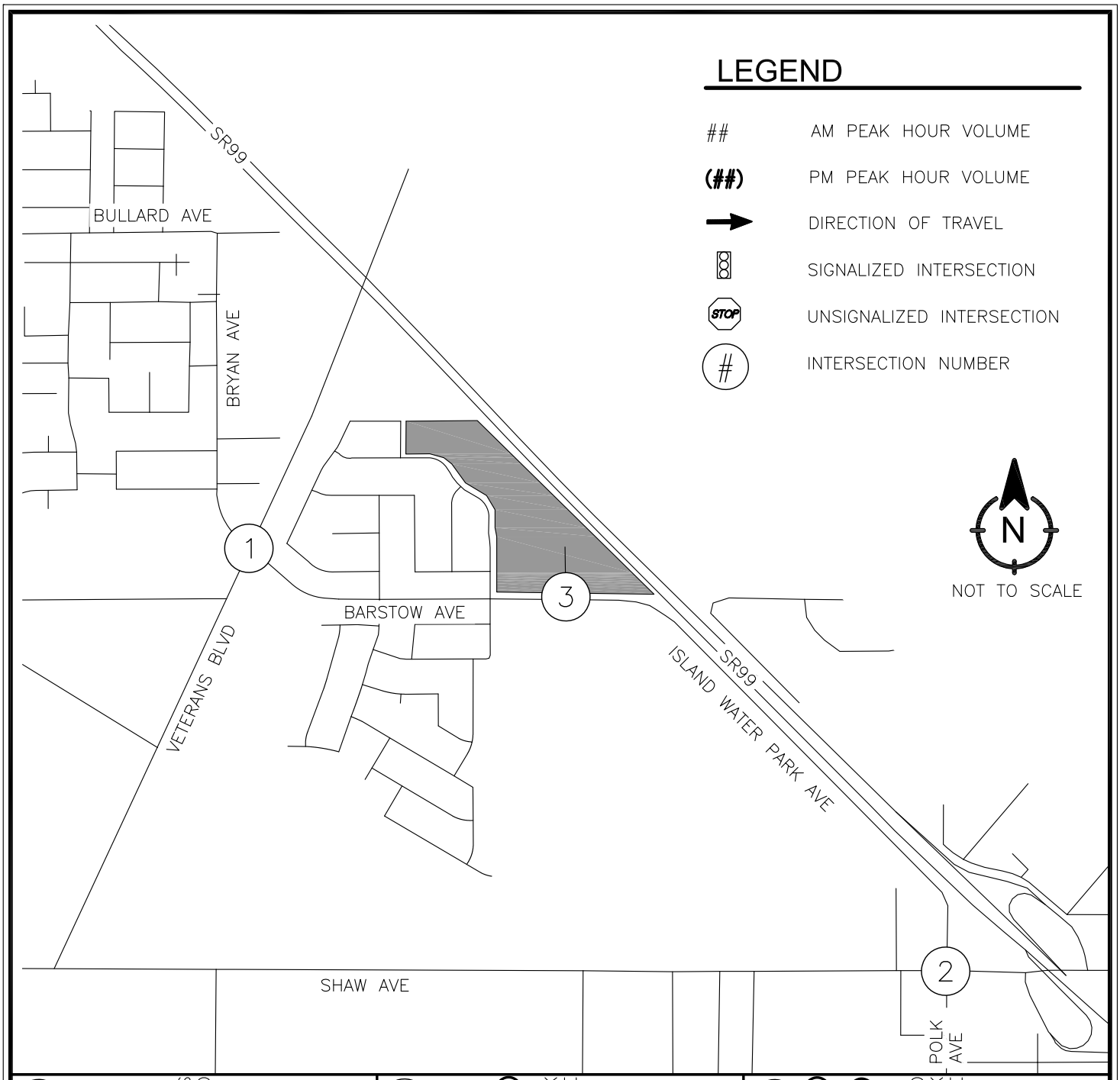


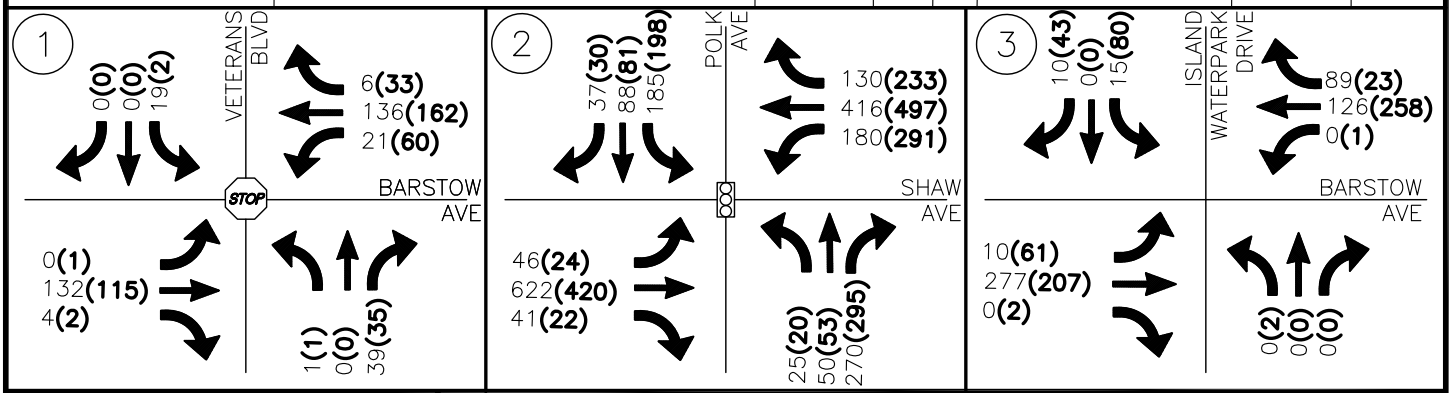


VICE Vang Inc. Consulting Engineers	**BARSTOW TRUCK PARKING** EXISTING 2021 + PROJECT TRAFFIC VOLUME	PREPARED FOR: SANGHA CARRIERS DATE: 10/8/2021 PROJECT: 20-003	FIGURE 7

10/11/2021 12:08 PM

V:\PROJECTS\2020\2020-003 BARSTOW TRUCK PARKING\03-PROJECT REPORTS\TIS\20-003 TRAFFIC VOLUMES.DWG



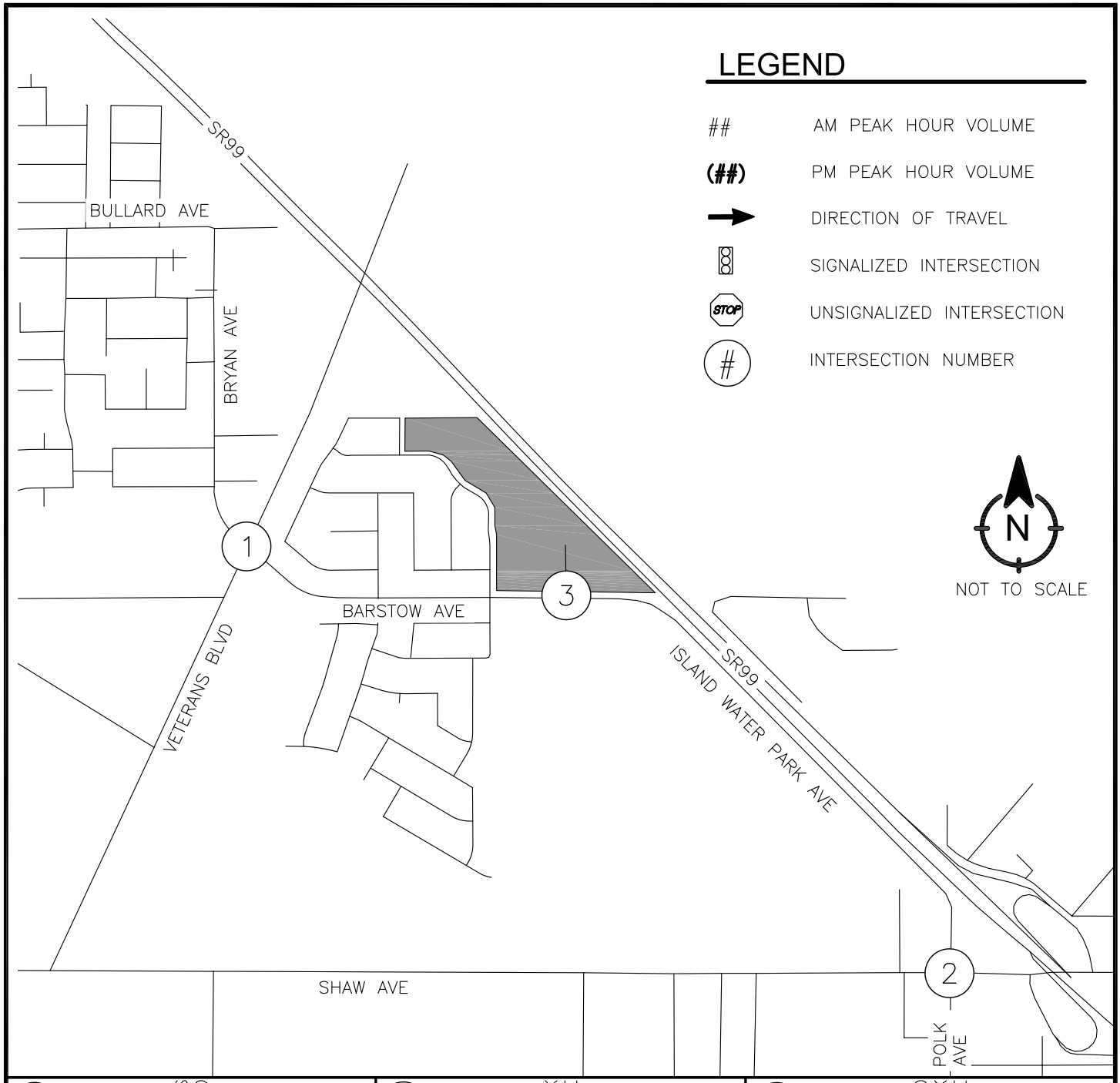


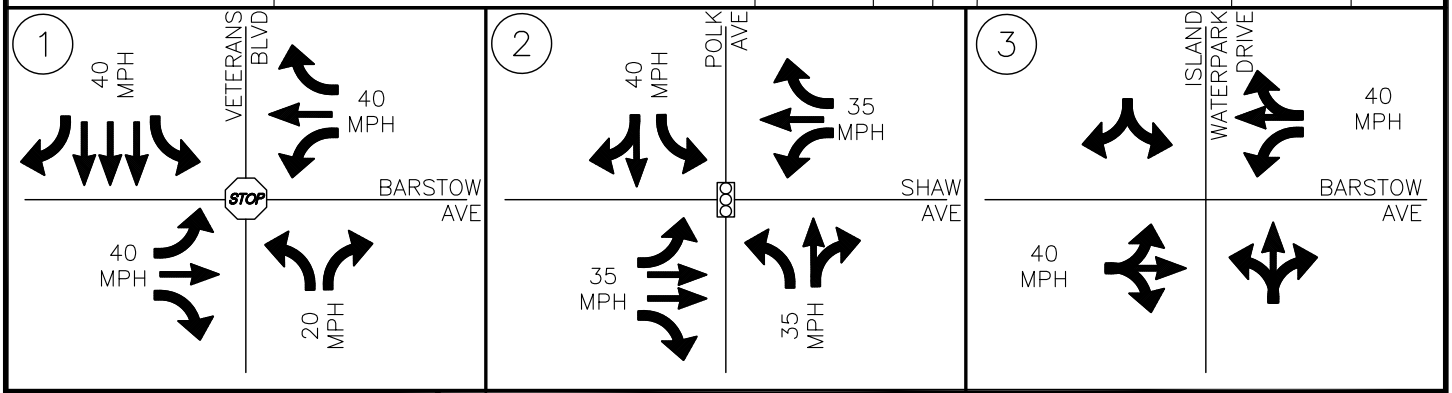
VICE Vang Inc. Consulting Engineers	**BARSTOW TRUCK PARKING** EXISTING 2021 + PROJECT TRAFFIC VOLUME	PREPARED FOR: SANGHA CARRIERS DATE: 10/8/2021 PROJECT: 20-003	FIGURE 7

10/11/2021 12:08 PM

V:\PROJECTS\2020\2020-003 BARSTOW TRUCK PARKING\03-PROJECT REPORTS\TIS\20-003 TRAFFIC VOLUMES.DWG

Figure 9 – Near Term Plus Project Intersection Conditions





VICE
Vang Inc. Consulting Engineers

BARSTOW TRUCK PARKING
NEAR TERM + PROJECT TRAFFIC CONDITIONS

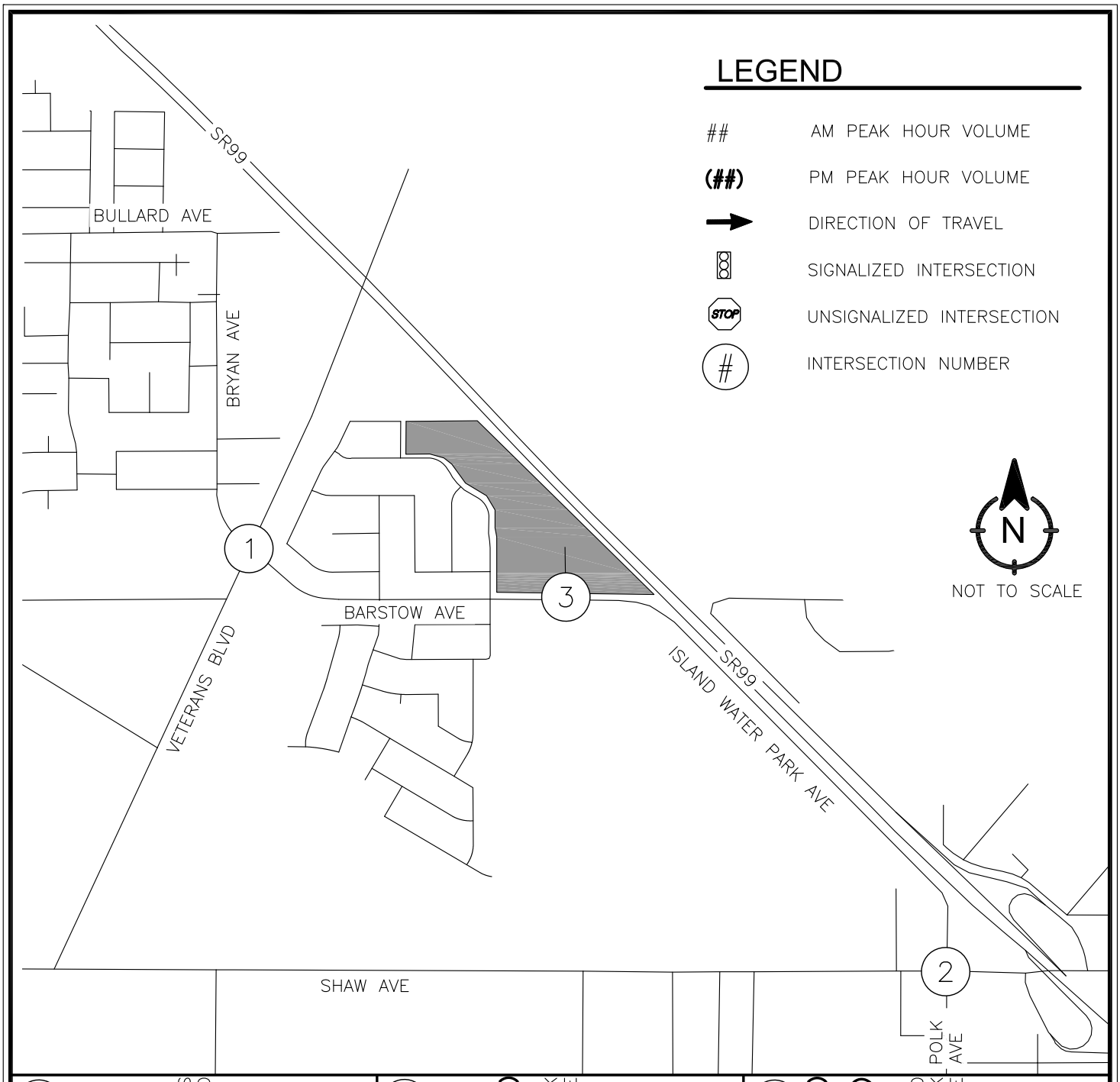
PREPARED FOR: SANGHA CARRIERS
DATE: 10/8/2021
PROJECT: 20-003

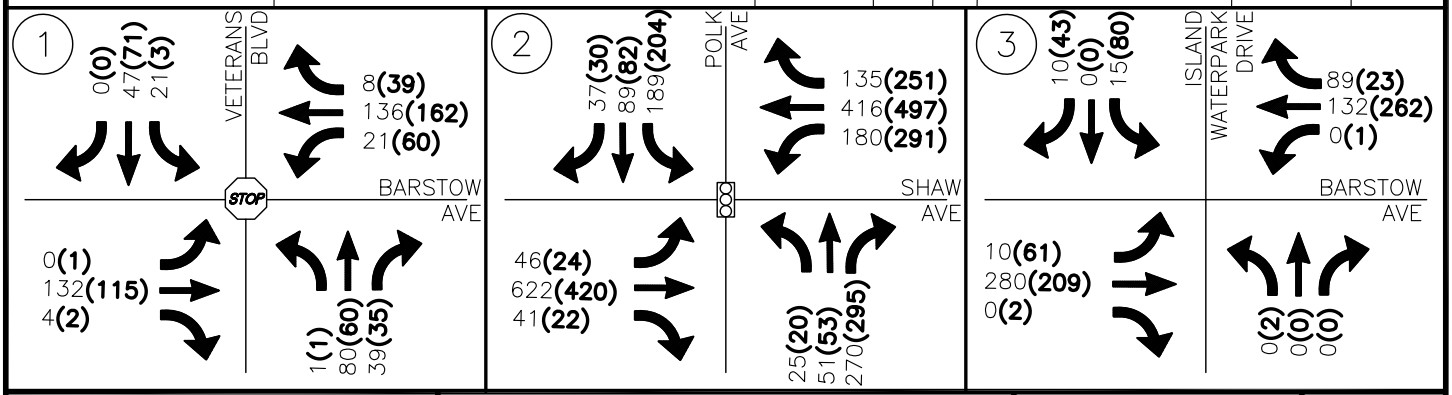
FIGURE 9

10/11/2021 12:09 PM

V:\PROJECTS\2020\2020-003 BARSTOW TRUCK PARKING\03-PROJECT REPORTS\TIS\20-003 TRAFFIC VOLUMES.DWG

Figure 10 – Near Term Plus Project Traffic Volumes





VICE
Vang Inc. Consulting Engineers

BARSTOW TRUCK PARKING
NEAR TERM + PROJECT TRAFFIC VOLUME

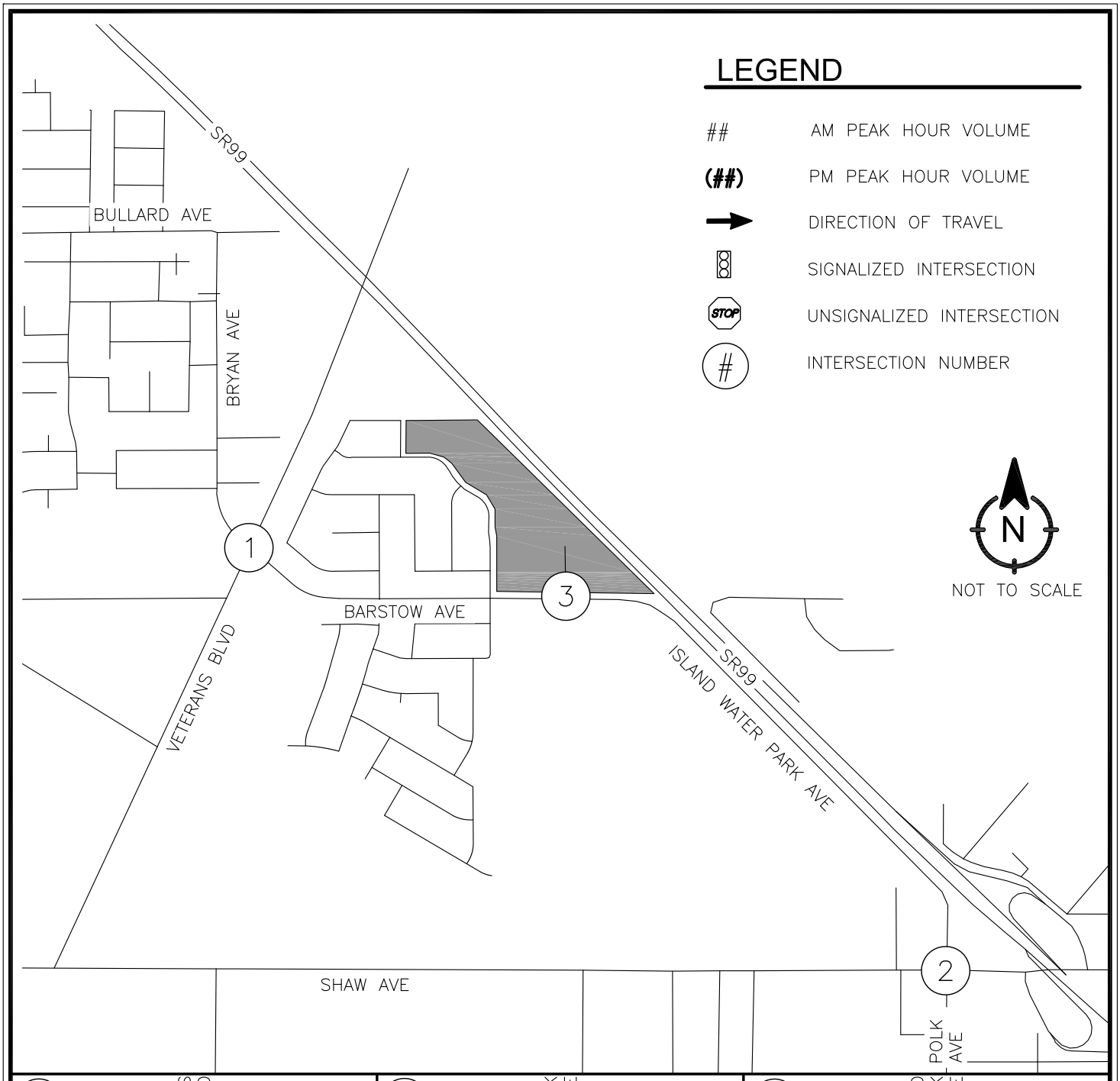
PREPARED FOR: SANGHA CARRIERS
DATE: 10/8/2021
PROJECT: 20-003

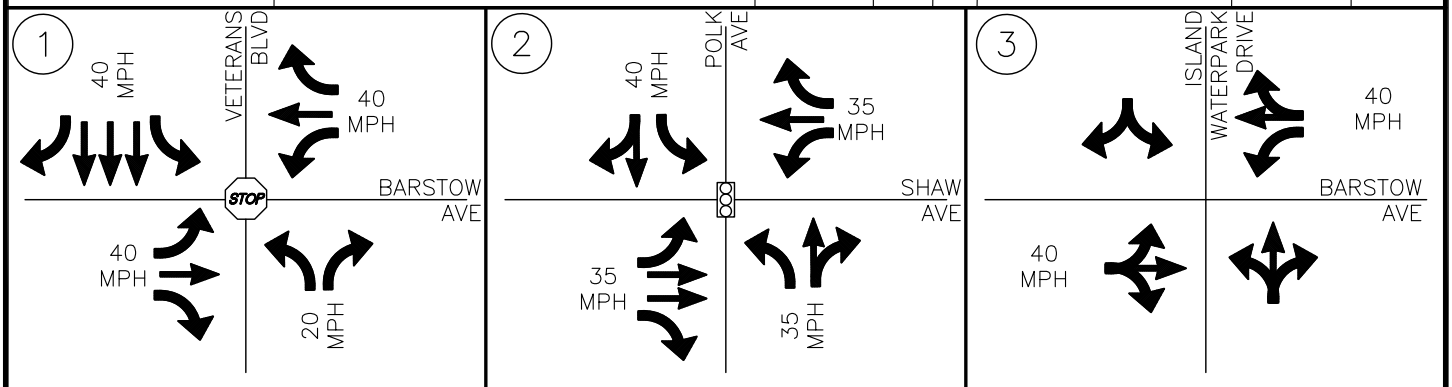
FIGURE 10

10/11/2021 12:09 PM

V:\PROJECTS\2020\2020-003 BARSTOW TRUCK PARKING\03-PROJECT REPORTS\TIS\20-003 TRAFFIC VOLUMES.DWG

Figure 11 – Cumulative Intersection Conditions





VICE
Vang Inc. Consulting Engineers

BARSTOW TRUCK PARKING
2035 + PROJECT TRAFFIC CONDITIONS

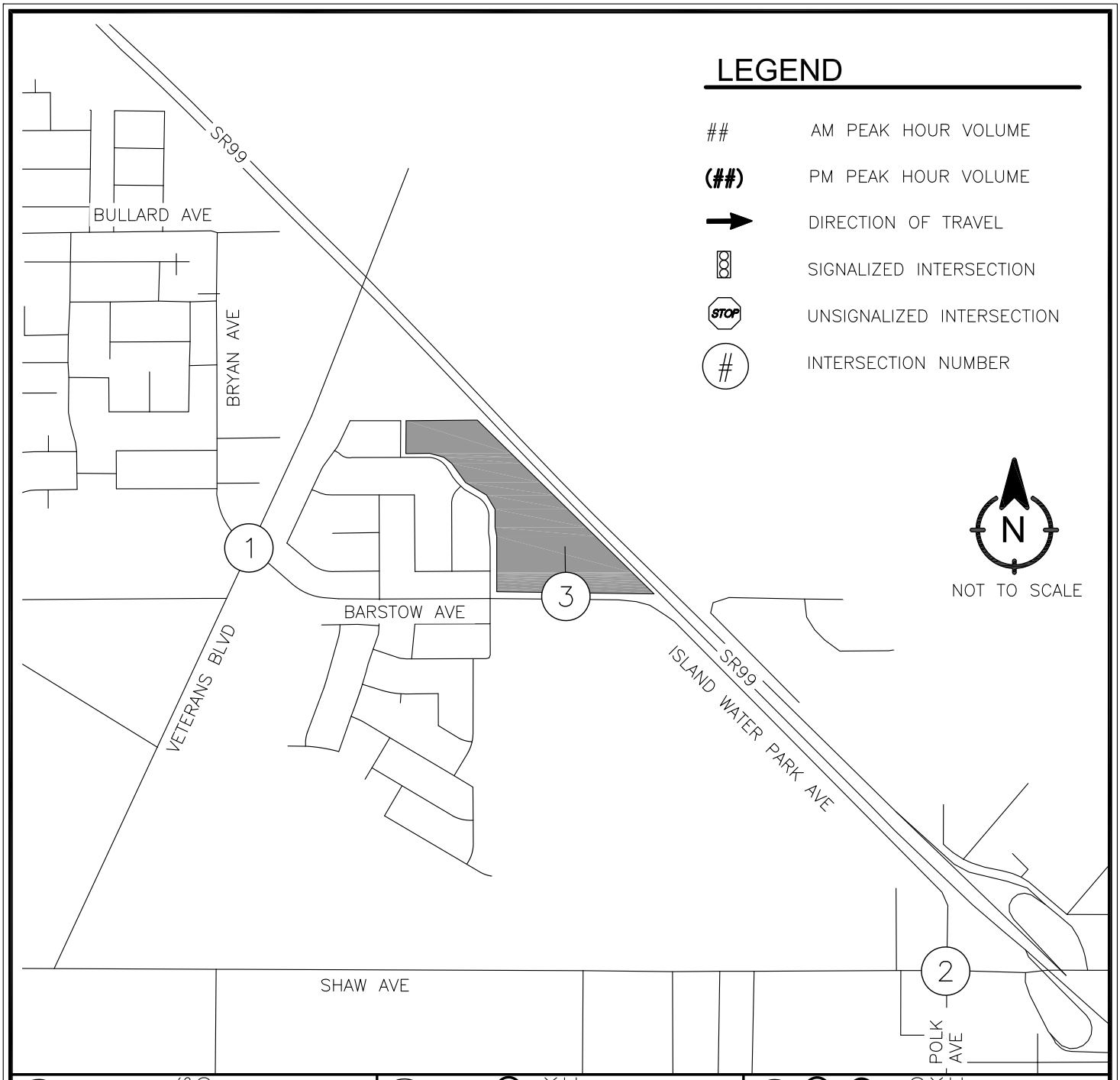
PREPARED FOR: SANGHA CARRIERS
DATE: 10/8/2021
PROJECT: 20-003

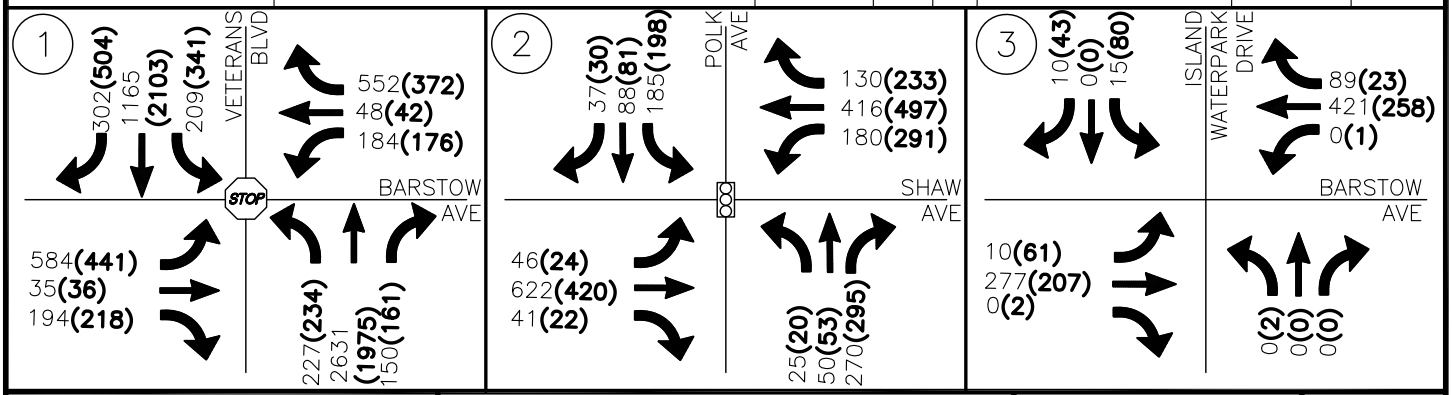
FIGURE 11

10/11/2021 12:10 PM

V:\PROJECTS\2020\2020-003 BARSTOW TRUCK PARKING\03-PROJECT REPORTS\TIS\20-003 TRAFFIC VOLUMES.DWG

Figure 12 – Cumulative Plus Project Traffic Volumes





VICE Vang Inc. Consulting Engineers	BARSTOW TRUCK PARKING 2035 + PROJECT TRAFFIC VOLUME	PREPARED FOR: SANGHA CARRIERS DATE: 10/8/2021 PROJECT: 20-003	FIGURE 12

10/11/2021 12:10 PM

V:\PROJECTS\2020\2020-003 BARSTOW TRUCK PARKING\03-PROJECT REPORTS\TIS\20-003 TRAFFIC VOLUMES.DWG

Appendix A: Traffic Counts

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

VICE
2491 Alluvial Ave Ste 15
Clovis, CA 93611

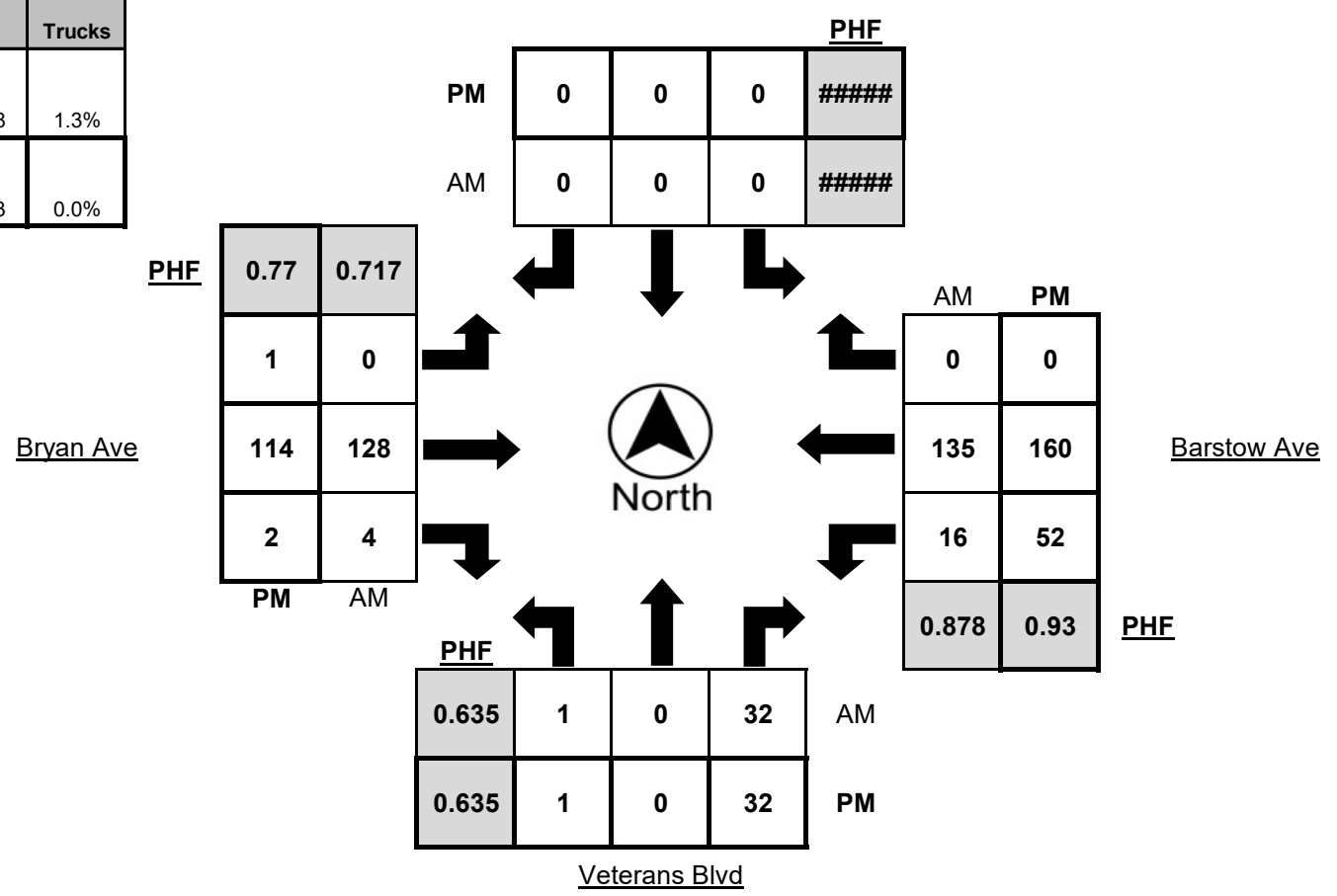
LOCATION Veterans Blvd @ Barstow Ave / Bryan Ave
LATITUDE 36.8163
COUNTY Fresno
LONGITUDE -119.9068
COLLECTION DATE Wednesday, October 16, 2019
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	2	0	6	0	0	0	0	0	0	39	1	0	11	30	0	0
7:15 AM - 7:30 AM	0	0	13	0	0	0	0	0	0	36	1	1	1	27	0	1
7:30 AM - 7:45 AM	0	0	13	0	0	0	0	0	0	29	1	1	4	31	0	0
7:45 AM - 8:00 AM	1	0	5	0	0	0	0	0	0	24	1	0	6	30	0	0
8:00 AM - 8:15 AM	0	0	8	1	0	0	0	0	0	30	1	0	3	40	0	1
8:15 AM - 8:30 AM	0	0	6	0	0	0	0	0	0	45	1	0	3	34	0	1
8:30 AM - 8:45 AM	0	0	8	0	0	0	0	0	0	29	0	0	6	18	0	1
8:45 AM - 9:00 AM	0	0	5	0	0	0	0	0	0	17	0	0	5	17	0	0
TOTAL	**3**	**0**	**64**	**1**	**0**	**0**	**0**	**0**	**0**	**249**	**6**	**2**	**39**	**227**	**0**	**4**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	1	0	8	0	0	0	0	0	2	21	1	1	5	22	0	1
4:15 PM - 4:30 PM	1	0	2	0	0	0	0	0	0	20	0	0	13	27	0	0
4:30 PM - 4:45 PM	0	0	2	0	0	0	0	0	0	35	0	1	7	33	0	1
4:45 PM - 5:00 PM	0	0	3	0	0	0	0	0	0	26	1	0	8	37	0	0
5:00 PM - 5:15 PM	0	0	13	0	0	0	0	0	1	24	0	0	11	37	0	0
5:15 PM - 5:30 PM	1	0	6	0	0	0	0	0	0	26	1	0	14	43	0	0
5:30 PM - 5:45 PM	0	0	8	0	0	0	0	0	0	27	0	0	10	45	0	0
5:45 PM - 6:00 PM	0	0	5	0	0	0	0	0	0	37	1	0	17	35	0	0
TOTAL	**3**	**0**	**47**	**0**	**0**	**0**	**0**	**0**	**3**	**216**	**4**	**2**	**85**	**279**	**0**	**2**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:30 AM - 8:30 AM	1	0	32	1	0	0	0	0	0	128	4	1	16	135	0	2
5:00 PM - 6:00 PM	1	0	32	0	0	0	0	0	1	114	2	0	52	160	0	0

	PHF	Trucks
AM	0.888	1.3%
PM	0.953	0.0%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

VICE
2491 Alluvial Ave Ste 15
Clovis, CA 93611

LOCATION Veterans Blvd @ Barstow Ave / Bryan Ave

LATITUDE 36.8163

COUNTY Fresno

LONGITUDE -119.9068

COLLECTION DATE Wednesday, October 16, 2019

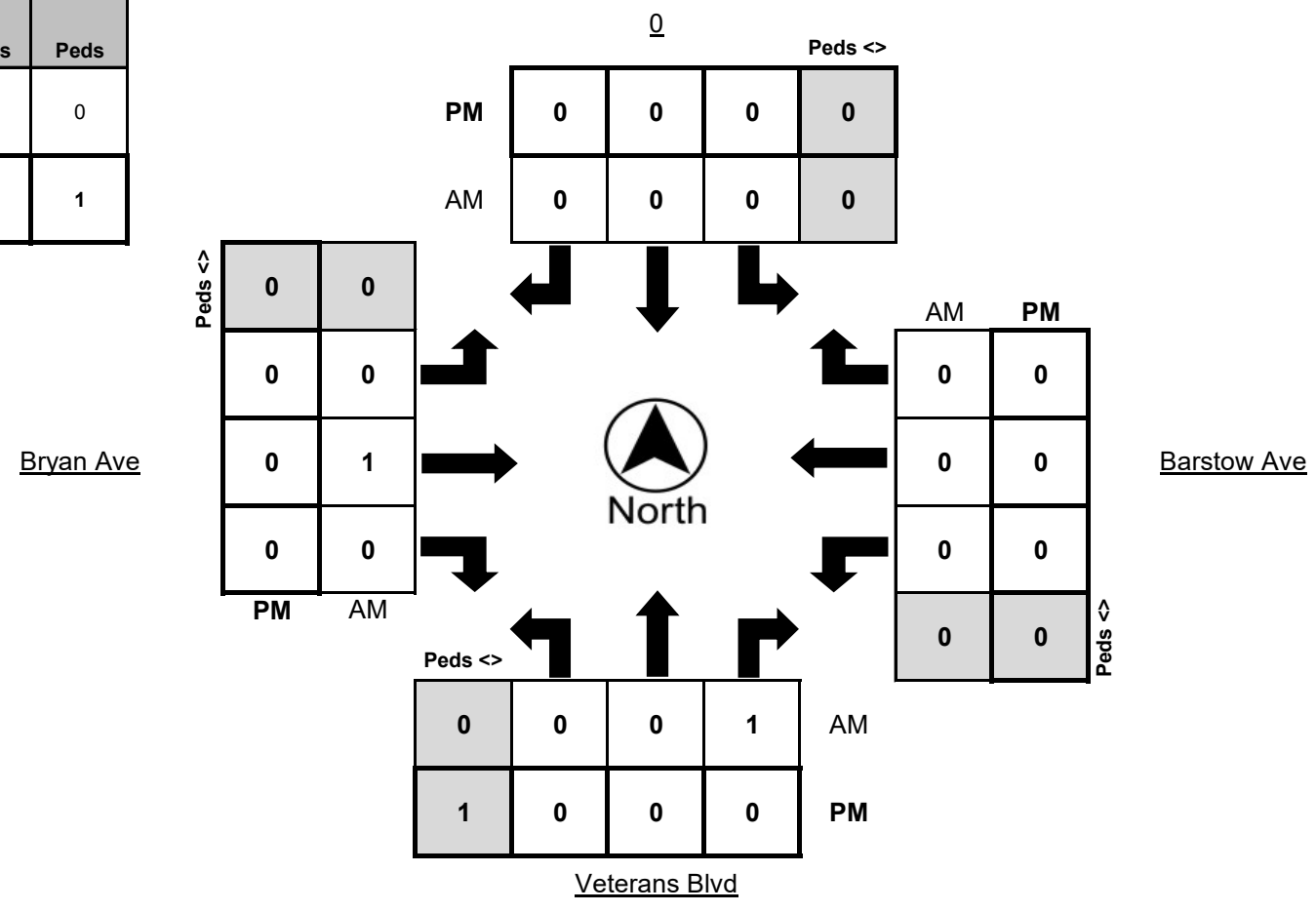
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:30 AM - 8:30 AM	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	2	0
PM Peak Total	0	1



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

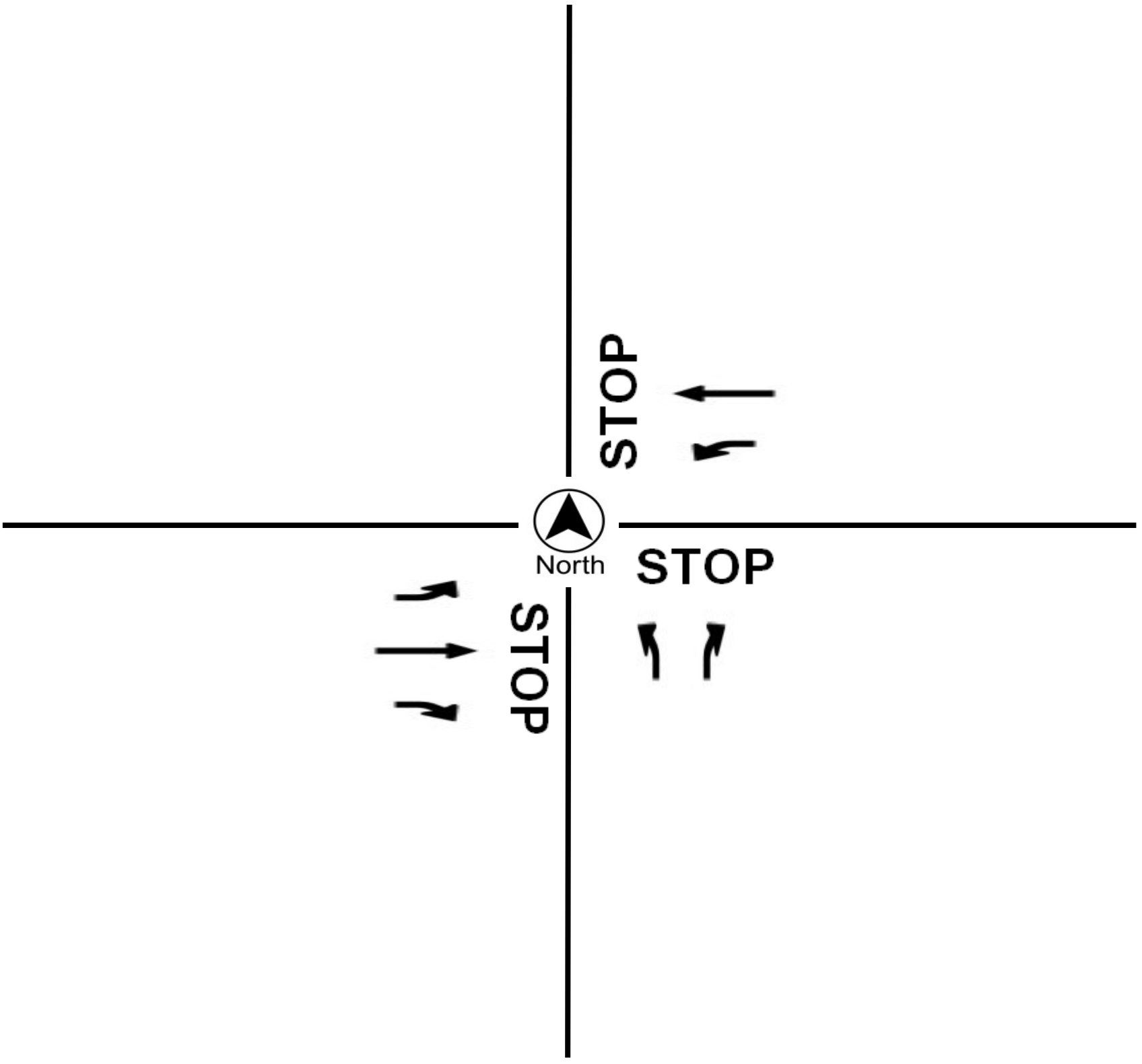
Turning Movement Report

Prepared For:

VICE
2491 Alluvial Ave Ste 15
Clovis, CA 93611

LOCATION	Veterans Blvd @ Barstow Ave / Bryan Ave	**N/S STREET**	Veterans Blvd
COUNTY	Fresno	**E/W STREET**	Bryan Ave / Barstow Ave
COLLECTION DATE	Wednesday, October 16, 2019	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	All-Way Stop

COMMENTS



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

24 Hour Count Report

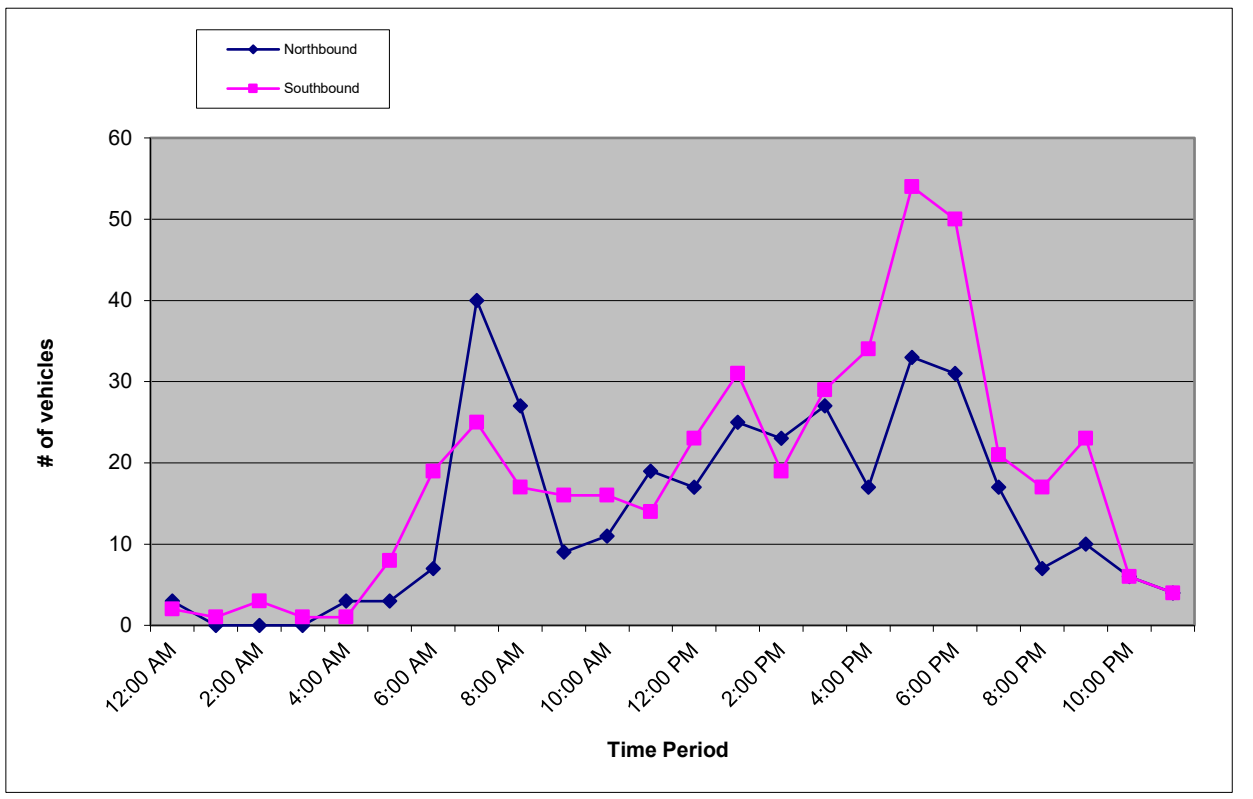
Prepared For: **VICE**
2491 Alluvial Ave Ste 15
Clovis, CA 93611

STREET Vetrans Blvd
SEGMENT South of Barstow Ave
COLLECTION DATE Wednesday, October 16, 2019
NUMBER OF LANES 2

LATITUDE 36.8162917
LONGITUDE -119.9067576
WEATHER Clear

	Northbound					Southbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	2	0	1	0	**3**	1	1	0	0	**2**	**5**
1:00 AM	0	0	0	0	**0**	0	0	1	0	**1**	**1**
2:00 AM	0	0	0	0	**0**	2	1	0	0	**3**	**3**
3:00 AM	0	0	0	0	**0**	0	0	1	0	**1**	**1**
4:00 AM	1	0	1	1	**3**	0	1	0	0	**1**	**4**
5:00 AM	0	1	1	1	**3**	2	2	1	3	**8**	**11**
6:00 AM	2	1	2	2	**7**	3	2	5	9	**19**	**26**
7:00 AM	8	13	13	6	**40**	11	2	5	7	**25**	**65**
8:00 AM	8	6	8	5	**27**	3	4	5	5	**17**	**44**
9:00 AM	3	1	3	2	**9**	5	4	4	3	**16**	**25**
10:00 AM	5	3	1	2	**11**	2	2	7	5	**16**	**27**
11:00 AM	3	6	5	5	**19**	3	3	3	5	**14**	**33**
12:00 PM	4	4	3	6	**17**	4	10	5	4	**23**	**40**
1:00 PM	1	6	8	10	**25**	10	6	11	4	**31**	**56**
2:00 PM	4	4	9	6	**23**	3	6	5	5	**19**	**42**
3:00 PM	4	11	5	7	**27**	6	7	6	10	**29**	**56**
4:00 PM	9	3	2	3	**17**	5	13	7	9	**34**	**51**
5:00 PM	13	7	8	5	**33**	11	15	10	18	**54**	**87**
6:00 PM	9	7	7	8	**31**	11	12	17	10	**50**	**81**
7:00 PM	7	2	2	6	**17**	8	5	6	2	**21**	**38**
8:00 PM	2	1	3	1	**7**	2	7	5	3	**17**	**24**
9:00 PM	2	1	4	3	**10**	7	5	8	3	**23**	**33**
10:00 PM	0	2	3	1	**6**	2	1	0	3	**6**	**12**
11:00 PM	1	2	0	1	**4**	3	0	1	0	**4**	**8**
Total	**43.9%**				**339**	**56.1%**				**434**	
	773										

AM%	**31.7%**	**AM Peak**	**65**	**7:00 am to 8:00 am**	**AM P.H.F.**	**0.86**
PM%	**68.3%**	**PM Peak**	**87**	**5:00 pm to 6:00 pm**	**PM P.H.F.**	**0.91**



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

24 Hour Count Report

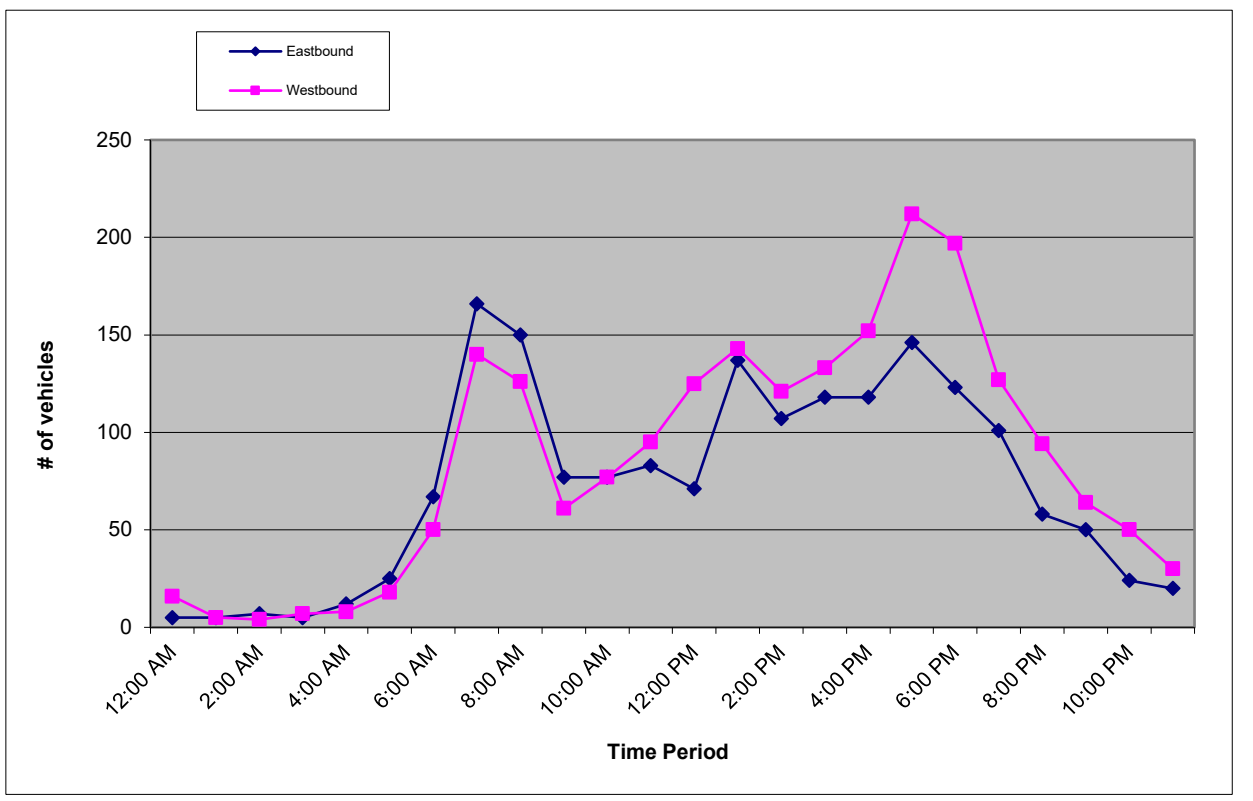
Prepared For: **VICE**
2491 Alluvial Ave Ste 15
Clovis, CA 93611

STREET Barstow Ave
SEGMENT East of Veterans Blvd
COLLECTION DATE Wednesday, October 16, 2019
NUMBER OF LANES 4

LATITUDE 36.8162917
LONGITUDE -119.9067576
WEATHER Clear

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	2	0	1	2	**5**	4	4	4	4	**16**	**21**
1:00 AM	3	1	0	1	**5**	1	1	3	0	**5**	**10**
2:00 AM	3	2	2	0	**7**	1	3	0	0	**4**	**11**
3:00 AM	2	0	3	0	**5**	3	1	3	0	**7**	**12**
4:00 AM	2	5	3	2	**12**	2	3	0	3	**8**	**20**
5:00 AM	4	1	10	10	**25**	2	6	4	6	**18**	**43**
6:00 AM	11	13	23	20	**67**	7	9	14	20	**50**	**117**
7:00 AM	46	49	42	29	**166**	41	28	35	36	**140**	**306**
8:00 AM	39	51	38	22	**150**	43	37	24	22	**126**	**276**
9:00 AM	15	24	21	17	**77**	15	19	14	13	**61**	**138**
10:00 AM	22	24	17	14	**77**	26	18	17	16	**77**	**154**
11:00 AM	24	17	19	23	**83**	17	22	25	31	**95**	**178**
12:00 PM	20	15	20	16	**71**	33	38	24	30	**125**	**196**
1:00 PM	17	23	51	46	**137**	39	32	42	30	**143**	**280**
2:00 PM	21	22	34	30	**107**	26	38	21	36	**121**	**228**
3:00 PM	22	34	26	36	**118**	24	27	40	42	**133**	**251**
4:00 PM	30	22	37	29	**118**	27	40	40	45	**152**	**270**
5:00 PM	37	32	35	42	**146**	48	57	55	52	**212**	**358**
6:00 PM	42	23	31	27	**123**	49	49	57	42	**197**	**320**
7:00 PM	34	27	19	21	**101**	45	29	28	25	**127**	**228**
8:00 PM	15	12	14	17	**58**	25	33	20	16	**94**	**152**
9:00 PM	15	10	15	10	**50**	28	12	14	10	**64**	**114**
10:00 PM	7	7	6	4	**24**	20	8	9	13	**50**	**74**
11:00 PM	7	10	1	2	**20**	14	7	5	4	**30**	**50**
Total	**46.0%**				**1752**	**54.0%**				**2055**	
	3807										

AM%	**33.8%**	**AM Peak**	**312**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.89**
PM%	**66.2%**	**PM Peak**	**364**	**5:15 pm to 6:15 pm**	**PM P.H.F.**	**0.97**



Metro Traffic Data Inc.
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Hanford, CA 93230

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24 Hour Count Report

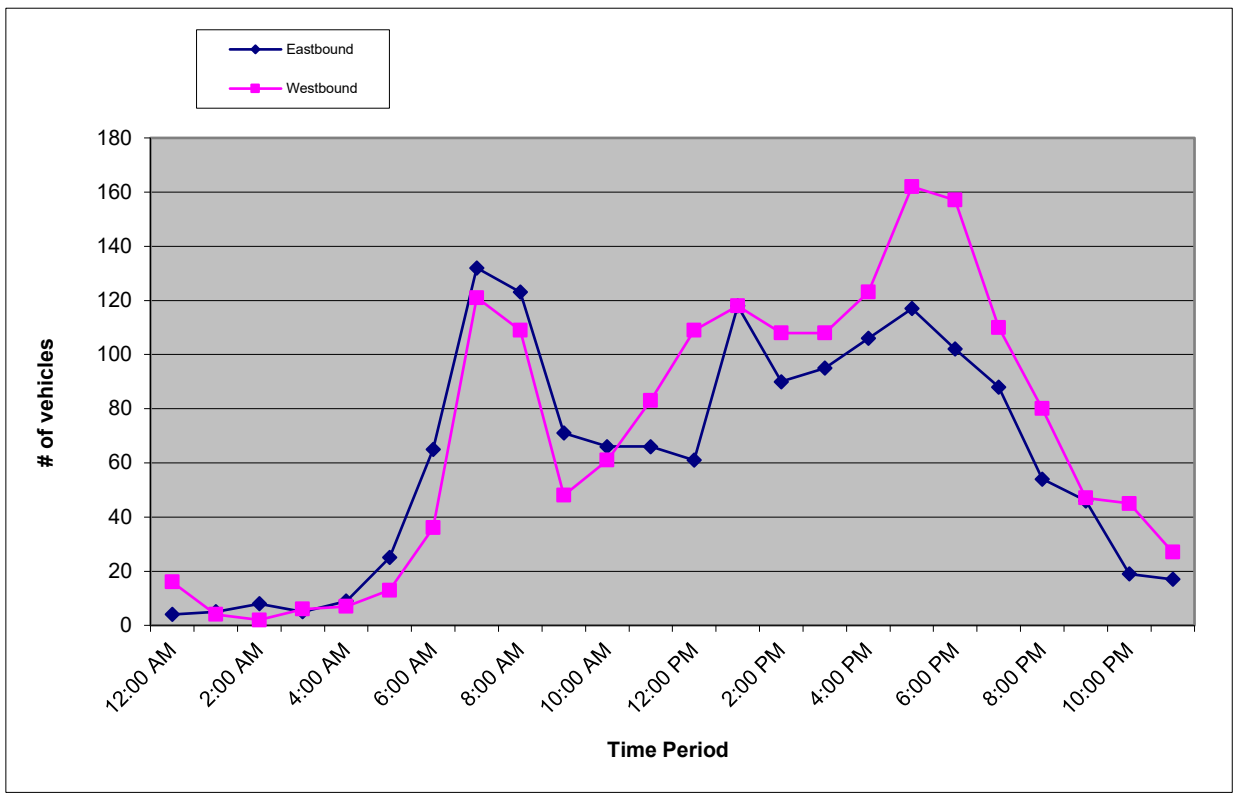
Prepared For: **VICE**
2491 Alluvial Ave Ste 15
Clovis, CA 93611

STREET Bryan Ave
SEGMENT West of Veterans Blvd
COLLECTION DATE Wednesday, October 16, 2019
NUMBER OF LANES 2

LATITUDE 36.8162917
LONGITUDE -119.9067576
WEATHER Clear

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	1	0	1	2	**4**	4	3	5	4	**16**	**20**
1:00 AM	3	1	0	1	**5**	1	1	2	0	**4**	**9**
2:00 AM	4	2	2	0	**8**	0	2	0	0	**2**	**10**
3:00 AM	2	0	3	0	**5**	3	1	2	0	**6**	**11**
4:00 AM	1	5	2	1	**9**	2	2	0	3	**7**	**16**
5:00 AM	5	0	10	10	**25**	1	4	4	4	**13**	**38**
6:00 AM	10	12	23	20	**65**	5	7	11	13	**36**	**101**
7:00 AM	40	37	30	25	**132**	32	27	31	31	**121**	**253**
8:00 AM	31	46	29	17	**123**	40	34	18	17	**109**	**232**
9:00 AM	14	23	18	16	**71**	12	15	10	11	**48**	**119**
10:00 AM	17	21	16	12	**66**	24	16	10	11	**61**	**127**
11:00 AM	22	12	14	18	**66**	15	20	22	26	**83**	**149**
12:00 PM	18	13	19	11	**61**	31	30	21	27	**109**	**170**
1:00 PM	16	19	46	37	**118**	29	28	34	27	**118**	**236**
2:00 PM	18	21	26	25	**90**	24	35	17	32	**108**	**198**
3:00 PM	19	25	20	31	**95**	19	22	33	34	**108**	**203**
4:00 PM	24	20	35	27	**106**	25	28	33	37	**123**	**229**
5:00 PM	25	27	27	38	**117**	38	44	45	35	**162**	**279**
6:00 PM	35	20	28	19	**102**	40	41	44	32	**157**	**259**
7:00 PM	28	25	18	17	**88**	38	24	23	25	**110**	**198**
8:00 PM	13	12	11	18	**54**	23	27	15	15	**80**	**134**
9:00 PM	13	11	15	7	**46**	21	9	10	7	**47**	**93**
10:00 PM	7	5	4	3	**19**	18	7	10	10	**45**	**64**
11:00 PM	6	8	2	1	**17**	11	7	5	4	**27**	**44**
Total	**46.7%**				**1492**	**53.3%**				**1700**	
	3192										

AM%	**34.0%**	**AM Peak**	**268**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.84**
PM%	**66.0%**	**PM Peak**	**291**	**5:15 pm to 6:15 pm**	**PM P.H.F.**	**0.97**



Metro Traffic Data Inc.
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Hanford, CA 93230

800-975-6938 Phone/Fax
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Turning Movement Report

Prepared For:

VICE
2491 Alluvial Ave Ste 15
Clovis, CA 93611

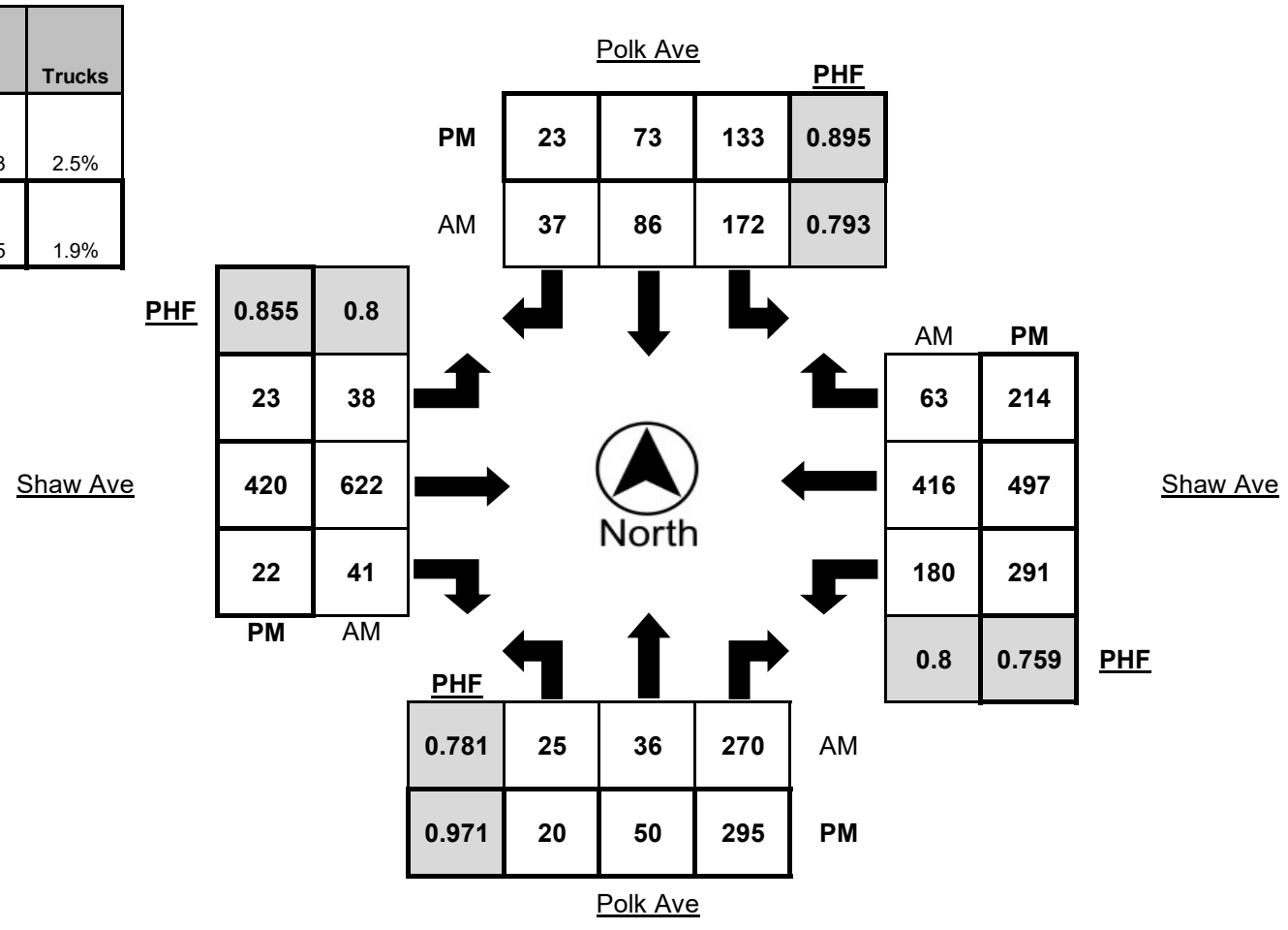
LOCATION Shaw Ave @ Polk Ave
LATITUDE 36.8081
COUNTY Fresno
LONGITUDE -119.8895
COLLECTION DATE Thursday, August 26, 2021
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	12	8	86	2	38	38	17	2	7	144	13	7	47	142	17	3
7:15 AM - 7:30 AM	6	11	52	1	45	19	12	2	15	173	14	6	45	91	10	4
7:30 AM - 7:45 AM	4	8	61	2	44	15	6	1	10	201	8	8	22	87	19	1
7:45 AM - 8:00 AM	3	9	71	2	45	14	2	1	6	104	6	4	66	96	17	4
8:00 AM - 8:15 AM	5	11	73	0	39	10	8	1	6	124	7	9	51	87	22	5
8:15 AM - 8:30 AM	4	8	71	2	46	19	8	3	4	118	5	2	64	73	26	6
8:30 AM - 8:45 AM	2	12	89	5	33	7	6	1	5	116	6	5	60	69	16	2
8:45 AM - 9:00 AM	1	14	68	2	41	9	3	0	1	88	3	4	49	50	27	2
TOTAL	**37**	**81**	**571**	**16**	**331**	**131**	**62**	**11**	**54**	**1068**	**62**	**45**	**404**	**695**	**154**	**27**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	6	14	86	1	20	15	10	5	3	108	7	6	66	129	45	12
4:15 PM - 4:30 PM	4	9	66	1	26	21	5	2	4	88	7	7	75	108	42	6
4:30 PM - 4:45 PM	0	17	78	2	25	14	3	1	3	111	8	12	53	94	49	3
4:45 PM - 5:00 PM	6	7	72	5	37	22	5	1	3	94	6	8	93	168	69	8
5:00 PM - 5:15 PM	5	14	74	2	31	21	7	0	7	114	7	4	82	131	60	2
5:15 PM - 5:30 PM	3	13	77	2	31	17	6	0	6	88	4	2	68	89	42	1
5:30 PM - 5:45 PM	6	16	72	0	34	13	5	0	7	124	5	1	48	109	43	3
5:45 PM - 6:00 PM	5	10	88	2	33	30	8	0	9	82	6	2	67	149	61	0
TOTAL	**35**	**100**	**613**	**15**	**237**	**153**	**49**	**9**	**42**	**809**	**50**	**42**	**552**	**977**	**411**	**35**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 8:00 AM	25	36	270	7	172	86	37	6	38	622	41	25	180	416	63	12
4:45 PM - 5:45 PM	20	50	295	9	133	73	23	1	23	420	22	15	291	497	214	14

	PHF	Trucks
AM	0.873	2.5%
PM	0.885	1.9%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

VICE
2491 Alluvial Ave Ste 15
Clovis, CA 93611

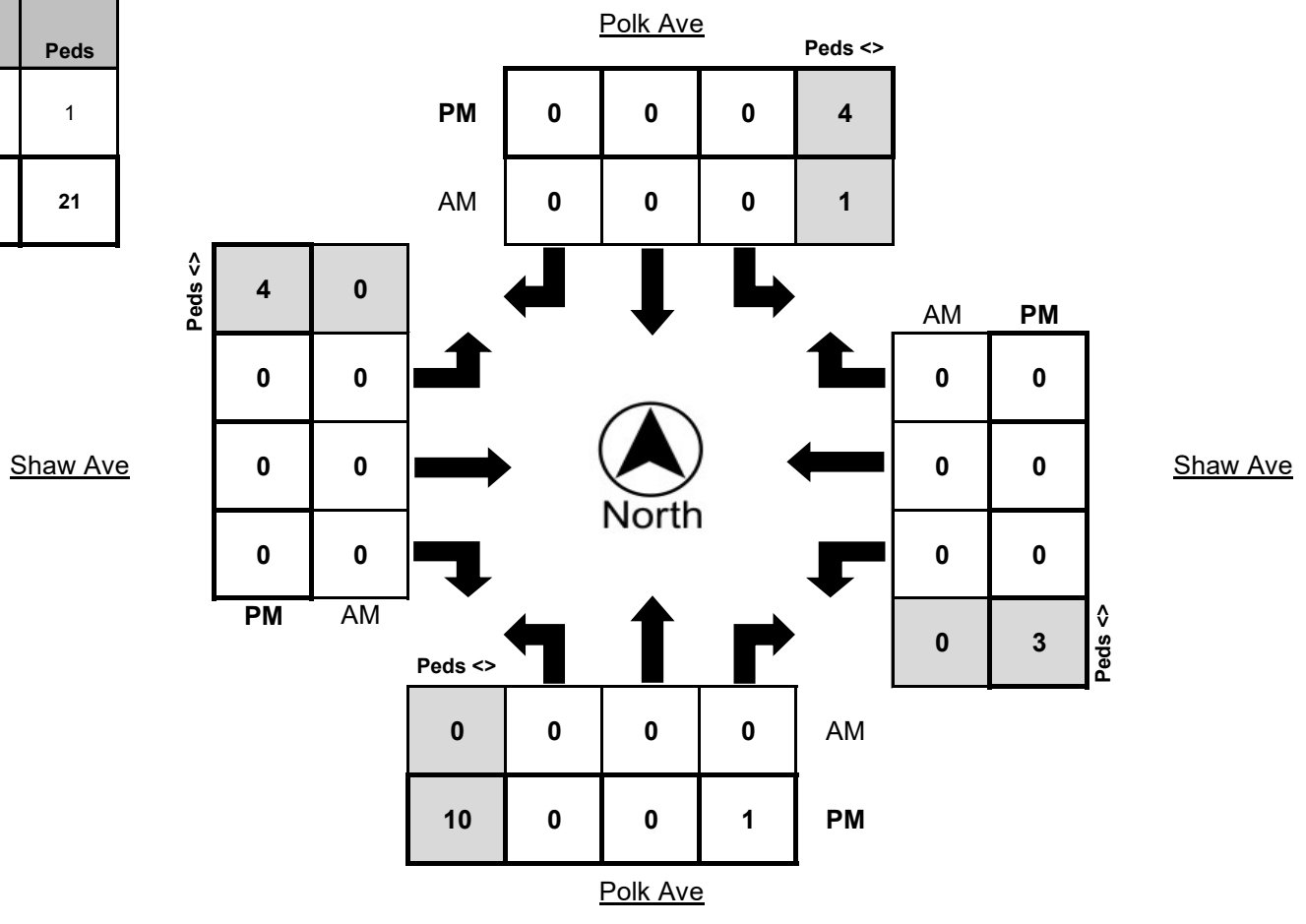
LOCATION Shaw Ave @ Polk Ave
LATITUDE 36.8081
COUNTY Fresno
LONGITUDE -119.8895
COLLECTION DATE Thursday, August 26, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	1	4	0	0	0	3	0	0	0	2	0	0	0	4
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0
TOTAL	**0**	**0**	**1**	**5**	**0**	**0**	**0**	**13**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**4**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 8:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:45 PM	0	0	1	4	0	0	0	10	0	0	0	3	0	0	0	4

	Bikes	Peds
AM Peak Total	0	1
PM Peak Total	1	21



Metro Traffic Data Inc.
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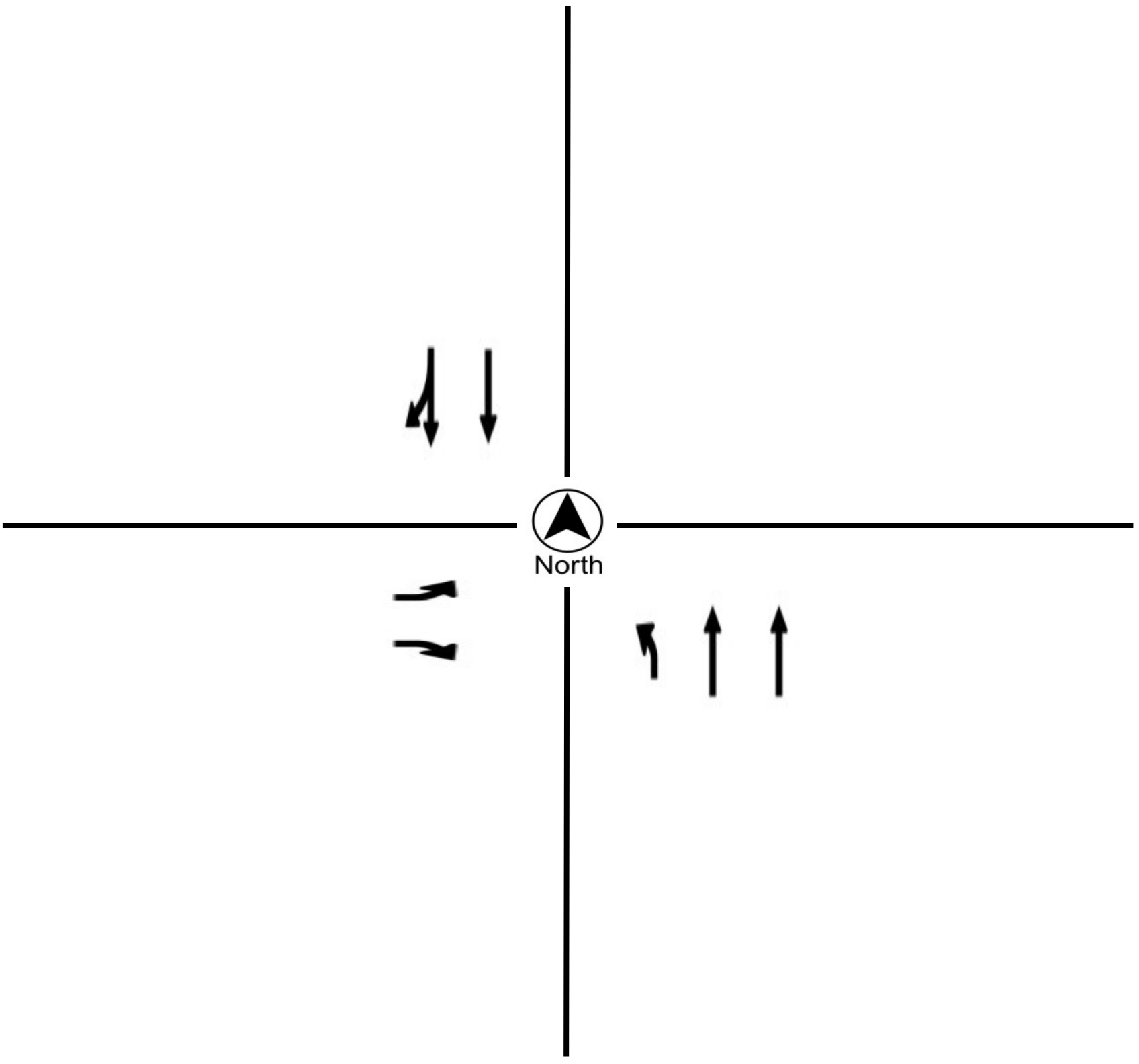
Turning Movement Report

Prepared For:

VICE
2491 Alluvial Ave Ste 15
Clovis, CA 93611

LOCATION	Shaw Ave @ Polk Ave	**N/S STREET**	Polk Ave
COUNTY	Fresno	**E/W STREET**	Shaw Ave
COLLECTION DATE	Thursday, August 26, 2021	**WEATHER**	Clear
CYCLE TIME	111 Seconds	**CONTROL TYPE**	Signal

COMMENTS All approaches have protected left turns.



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24 Hour Count Report

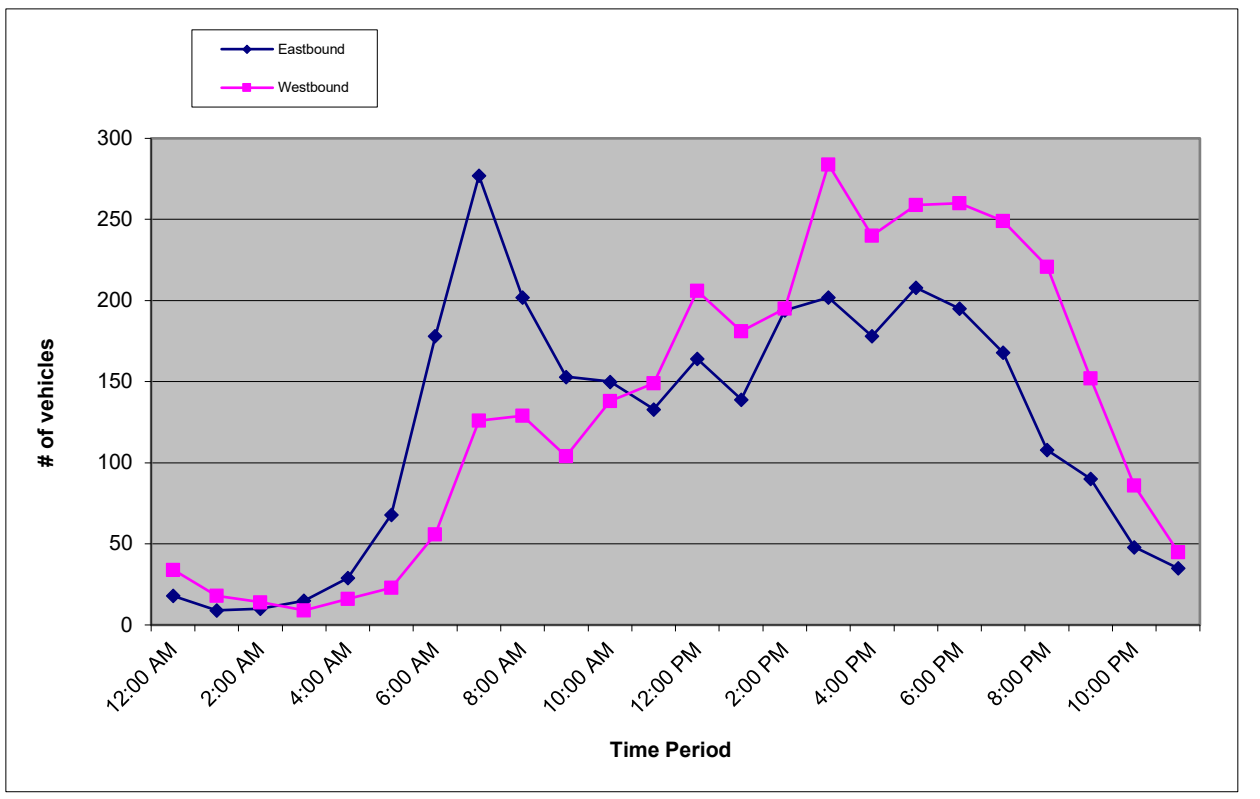
Prepared For: **VICE**
2491 Alluvial Ave Ste 15
Clovis, CA 93611

STREET Barstow Ave
SEGMENT Approx. 500' east of Contessa Ave
COLLECTION DATE Thursday, August 26, 2021
NUMBER OF LANES 3

LATITUDE 36.815315°
LONGITUDE -119.898991°
WEATHER Clear

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	7	3	4	4	**18**	12	11	5	6	**34**	**52**
1:00 AM	2	5	2	0	**9**	3	6	3	6	**18**	**27**
2:00 AM	3	1	5	1	**10**	2	5	3	4	**14**	**24**
3:00 AM	3	2	4	6	**15**	4	0	1	4	**9**	**24**
4:00 AM	2	8	5	14	**29**	4	2	3	7	**16**	**45**
5:00 AM	12	16	14	26	**68**	5	8	2	8	**23**	**91**
6:00 AM	20	34	50	74	**178**	9	13	16	18	**56**	**234**
7:00 AM	98	67	57	55	**277**	29	35	35	27	**126**	**403**
8:00 AM	57	56	45	44	**202**	32	33	27	37	**129**	**331**
9:00 AM	40	42	37	34	**153**	18	30	24	32	**104**	**257**
10:00 AM	41	40	35	34	**150**	39	27	31	41	**138**	**288**
11:00 AM	35	27	32	39	**133**	41	32	37	39	**149**	**282**
12:00 PM	48	36	34	46	**164**	46	53	69	38	**206**	**370**
1:00 PM	36	29	45	29	**139**	43	46	49	43	**181**	**320**
2:00 PM	43	49	49	53	**194**	49	43	40	63	**195**	**389**
3:00 PM	41	51	58	52	**202**	66	82	65	71	**284**	**486**
4:00 PM	37	48	35	58	**178**	56	53	59	72	**240**	**418**
5:00 PM	49	53	45	61	**208**	75	57	59	68	**259**	**467**
6:00 PM	46	58	49	42	**195**	58	67	66	69	**260**	**455**
7:00 PM	42	46	48	32	**168**	66	69	57	57	**249**	**417**
8:00 PM	32	23	26	27	**108**	71	53	50	47	**221**	**329**
9:00 PM	25	22	29	14	**90**	39	37	52	24	**152**	**242**
10:00 PM	14	15	14	5	**48**	32	22	13	19	**86**	**134**
11:00 PM	10	10	9	6	**35**	10	15	10	10	**45**	**80**
Total	**48.2%**				**2971**	**51.8%**				**3194**	
	6165										

AM%	**33.4%**	**AM Peak**	**413**	**6:45 am to 7:45 am**	**AM P.H.F.**	**0.81**
PM%	**66.6%**	**PM Peak**	**486**	**3:00 pm to 4:00 pm**	**PM P.H.F.**	**0.91**



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

VICE
2491 Alluvial Ave Ste 15
Clovis, CA 93611

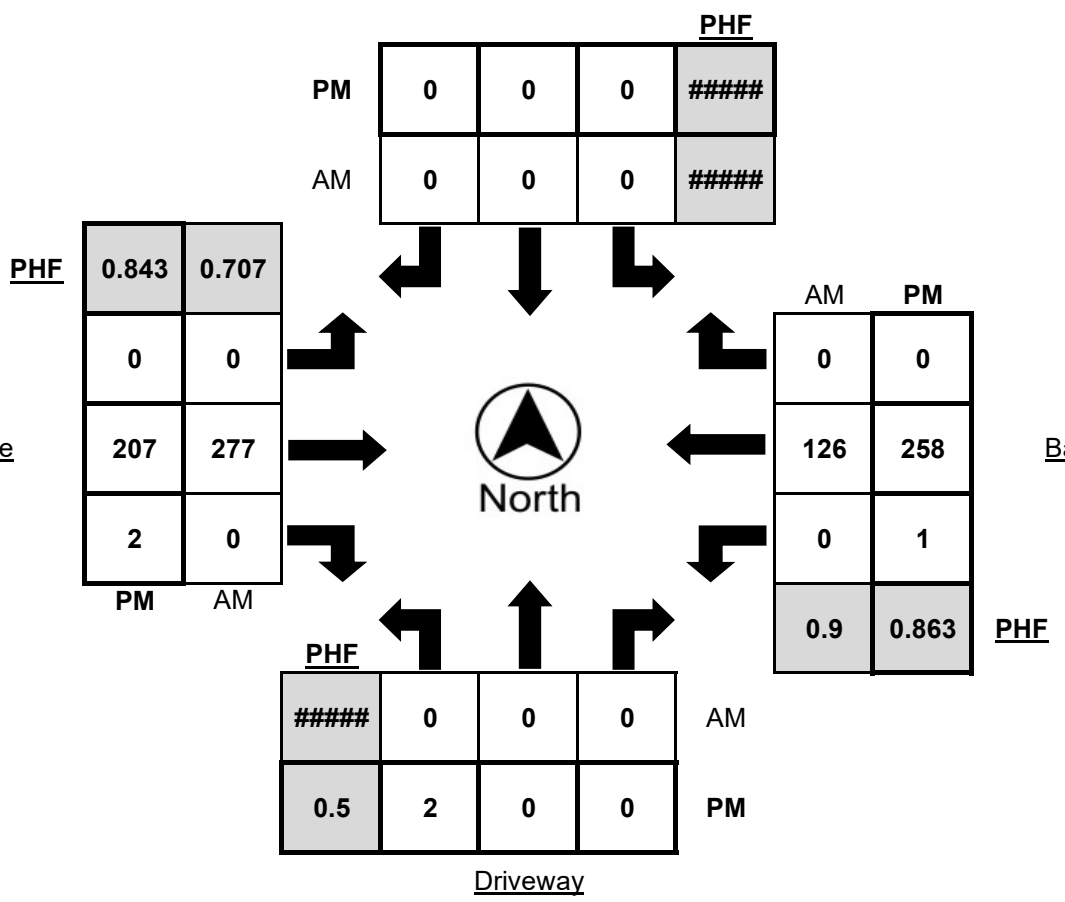
LOCATION Barstow Ave @ Driveway
LATITUDE 36.8153
COUNTY Fresno
LONGITUDE -119.8994
COLLECTION DATE Thursday, August 26, 2021
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	98	0	0	0	29	0	1
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	67	0	2	0	35	0	1
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	57	0	0	0	35	0	1
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	55	0	0	0	27	0	3
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	57	0	1	0	32	0	1
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	56	0	2	0	33	0	2
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	45	0	1	0	27	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	44	0	1	1	36	0	3
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**479**	**0**	**7**	**1**	**254**	**0**	**12**

	Northbound				Southbound				Eastbound				Westbound			
Time	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	37	0	3	0	56	0	4
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	48	0	1	0	53	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	35	0	1	0	59	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	58	0	0	0	72	0	0
5:00 PM - 5:15 PM	1	0	0	0	0	0	0	0	0	49	1	0	0	75	0	1
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	53	0	1	0	57	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	44	0	0	1	58	0	0
5:45 PM - 6:00 PM	1	0	0	0	0	0	0	0	0	61	1	0	0	68	0	0
TOTAL	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**385**	**2**	**6**	**1**	**498**	**0**	**5**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	277	0	2	0	126	0	6
5:00 PM - 6:00 PM	2	0	0	0	0	0	0	0	0	207	2	1	1	258	0	1

	PHF	Trucks
AM	0.793	2.0%
PM	0.897	0.4%



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Turning Movement Report

Prepared For:

VICE
2491 Alluvial Ave Ste 15
Clovis, CA 93611

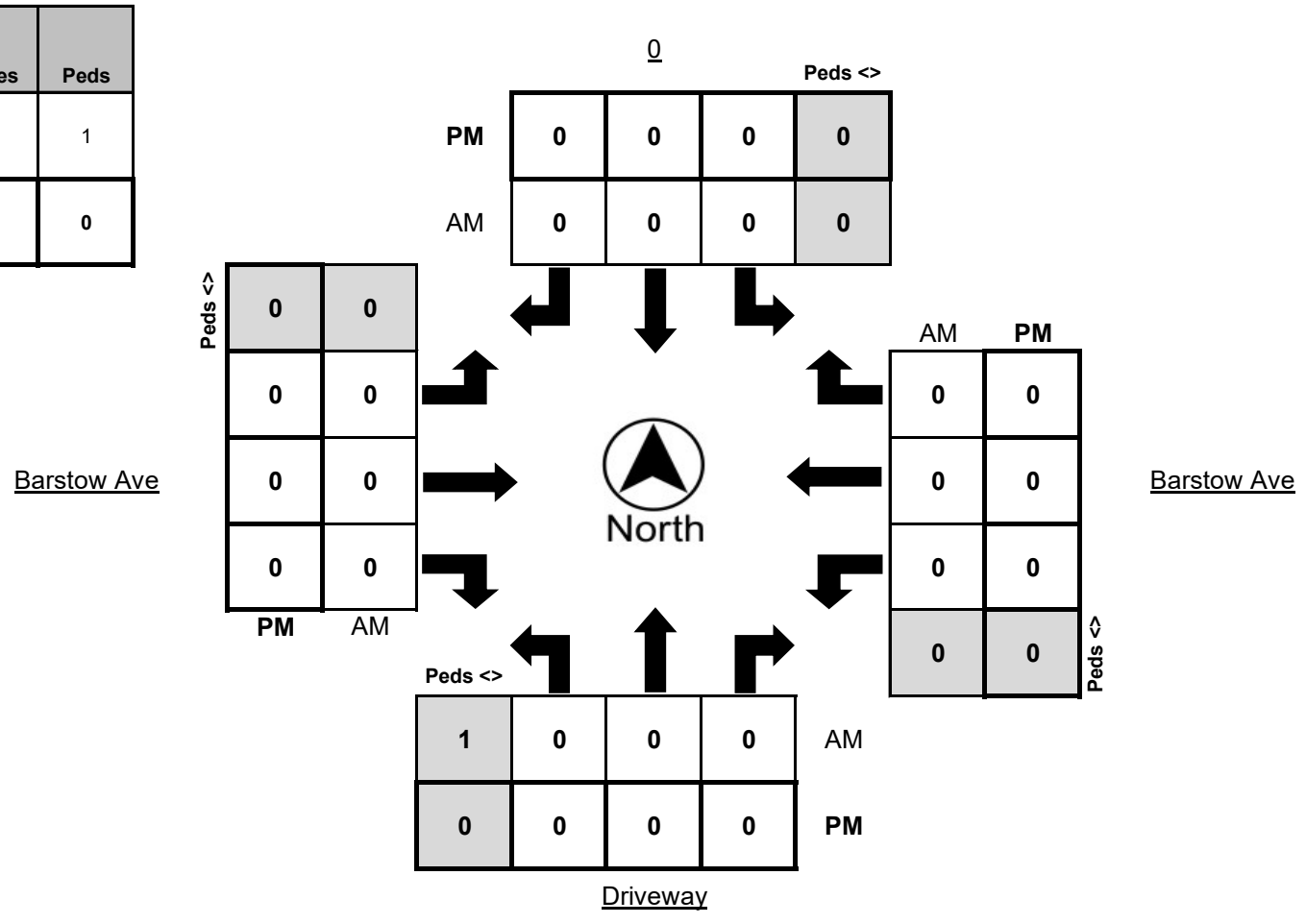
LOCATION Barstow Ave @ Driveway
LATITUDE 36.8153
COUNTY Fresno
LONGITUDE -119.8994
COLLECTION DATE Thursday, August 26, 2021
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	0	1
PM Peak Total	0	0



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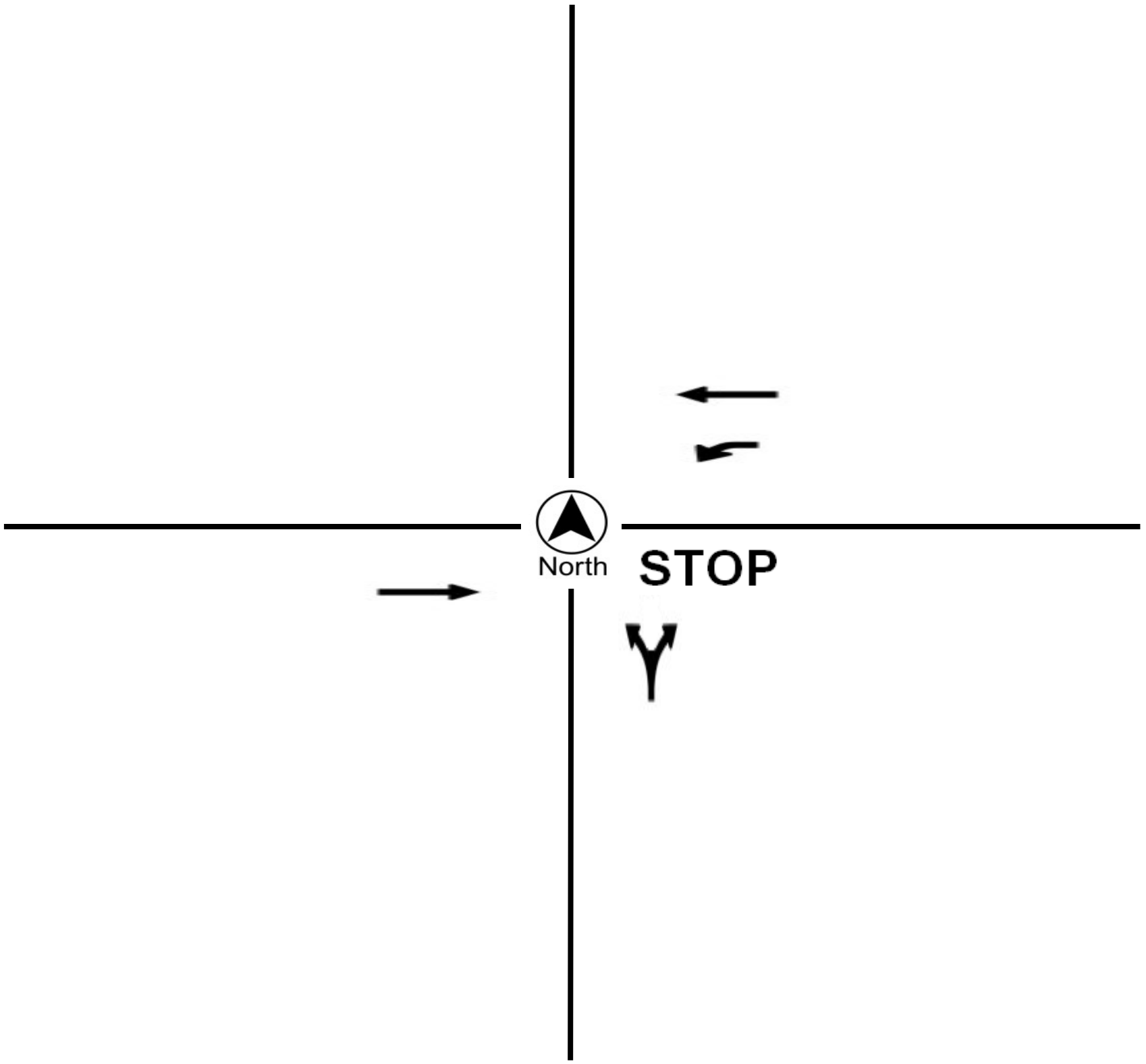
Turning Movement Report

Prepared For:

VICE
2491 Alluvial Ave Ste 15
Clovis, CA 93611

LOCATION	Barstow Ave @ Driveway	**N/S STREET**	Driveway
COUNTY	Fresno	**E/W STREET**	Barstow Ave
COLLECTION DATE	Thursday, August 26, 2021	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	One-Way Stop

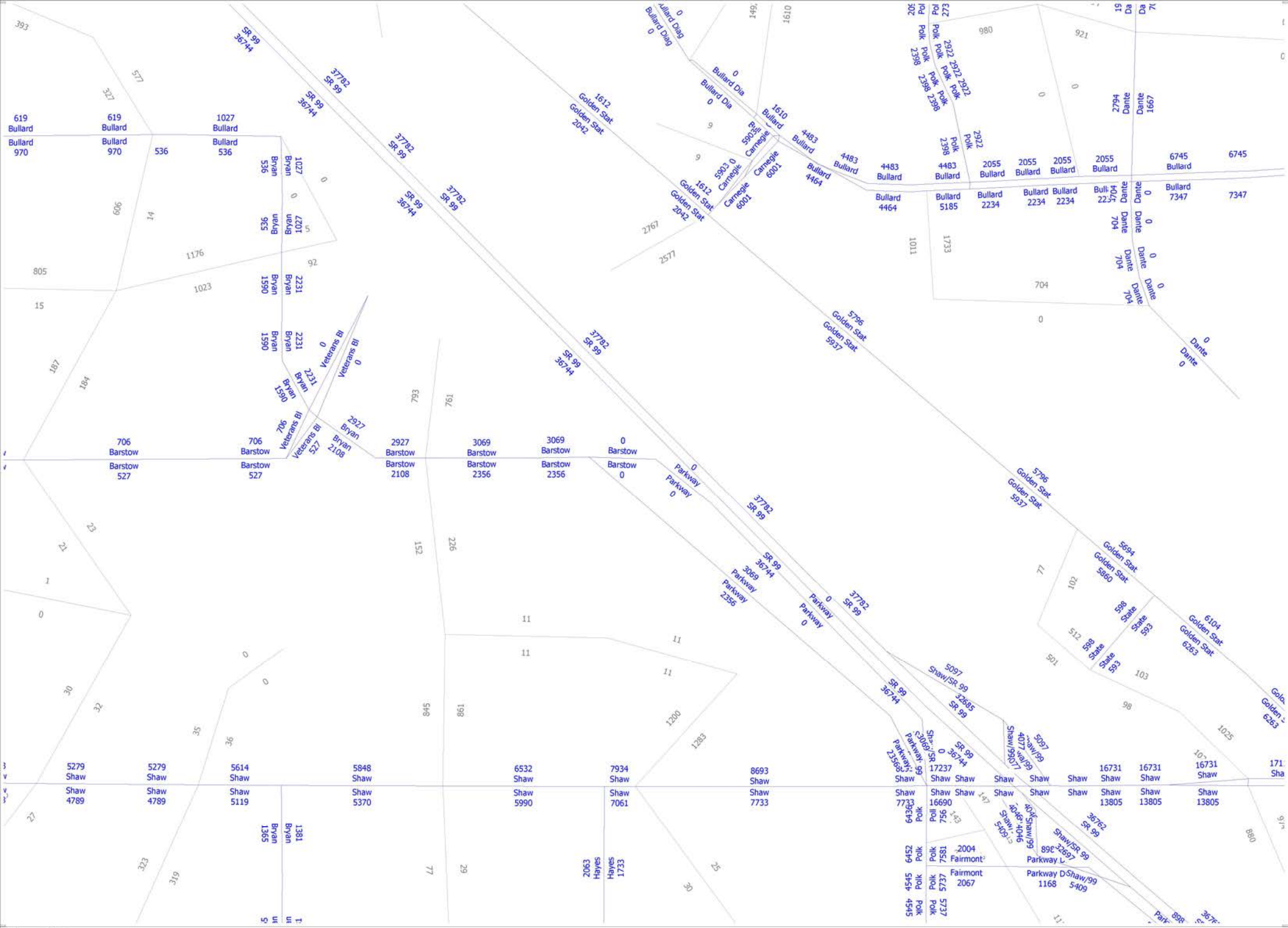
COMMENTS

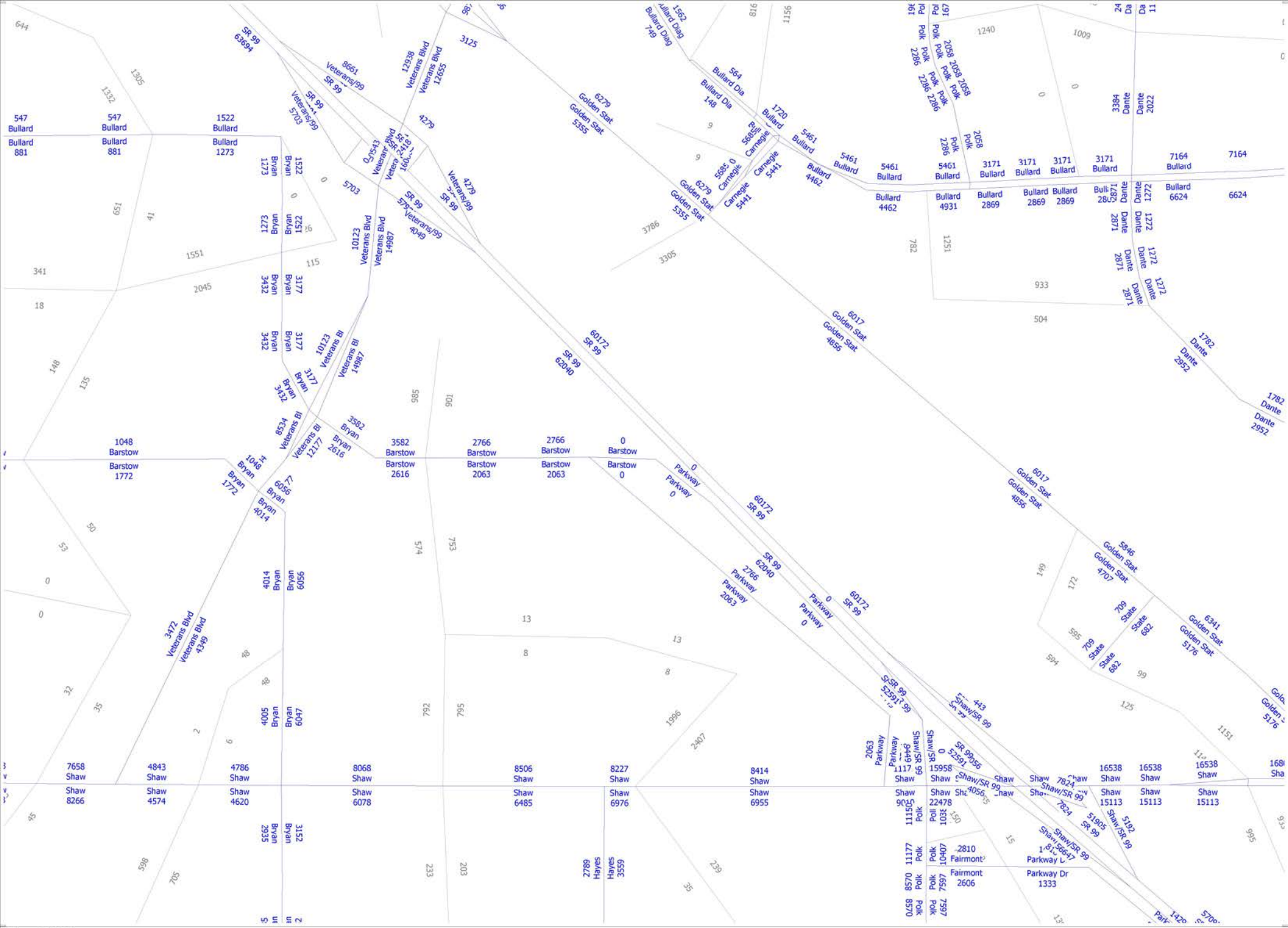


Appendix B: Fresno COG Travel Demand Model Output

Legend

FC19	:	Existing Scenario
FC35	:	Cumulative Scenario
_1	:	Denotes zoomed in project area
_2	:	Denotes zoomed out region area (HWY interchanges)
PP	:	Plus Project
Pending	:	Pending Projects
SZA	:	Select Zone Analysis


Year 2019
ADT
cube
(Licensed to San Joaquin Valley Regional Planning Age)


Year 2035
ADT
cube
(Licensed to San Joaquin Valley Regional Planning Age)

Appendix C: Correspondence

From: Padilla, Dave@DOT <dave.padilla@dot.ca.gov>
Sent: Friday, September 10, 2021 1:54 PM
To: kenvang@vice-engr.com
Subject: RE: Fresno County CUP 3697 TIS scope of work

Hello Ken,

Our apologies for overlooking at this request.

Please add Cumulative 2035 Plus No Project scenario. In addition, just note that any changes or proposed improvements to the State intersection will need an ICE report. The rest of the SOW seems reasonable.

Thank you,

David Padilla
Branch Chief, Transportation Planning
Caltrans District 6 Office
1352 W. Olive Avenue
Fresno, CA 93778-2616
(559) 905-9371
Email: dave.padilla@dot.ca.gov

From: kenvang@vice-engr.com <kenvang@vice-engr.com>
Sent: Wednesday, July 28, 2021 1:19 PM
To: Padilla, Dave@DOT <dave.padilla@dot.ca.gov>
Subject: Fresno County CUP 3697 TIS scope of work

Dave, we have been retained to prepare the TIS for CUP 3697 for the proposed gas station at NWC of Lassen (SR 269)/Dorris (SR 198).

Please see attached TIS scoping letter, and Site Plan.

In summary we are proposing the following:

Trip generation below:

Vehicle Trip Generation

Land Use	Building SF	Code	Unit	Average Weekday Rate	Average Weekday In	Average Weekday Out	Average Weekday Total	AM Peak Hour Rate	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour Rate	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Convenience Market with Gasoline Pumps	3816	945			50%	50%			51%	49%			51%	49%	
Trip Generation per Fueling Position			12	205.4	1232	1232	**2464**	12.47	77	73	**150**	13.99	86	82	**168**
Pass-By Trips [2]								15%	12.0	11.0	**23**	15%	12.0	12.0	**24**
Fast Food Restaurant w/o drive thru	984	933			50%	50%			60%	40%			50%	50%	
Trip Generation per 1,000 sf of leasable area			0.98	346.2	171	170	**341**	25.1	15	10	**25**	28.34	14	14	**28**
Pass-By Trips [2]								0%	0.0	0.0	**0**	0%	0.0	0.0	**0**
Total Unadjusted Volume					1403	1402	**2805**		92	83	**175**		100	96	**196**
Internal Trip Capture [1]					0	0	**0**		0	0	**0**		0	0	**0**
Pass-By Trips [2]					0	0	**0**	15%	12	11	**23**	15%	12	12	**24**
Total Trip Adjustments/Reductions					0	0	**0**		12	11	**23**		12	12	**24**
Total Net New Trips added to adjecent Streets					1403	1402	**2805**		80	72	**152**		88	84	**172**

15% pass by trip reduction for Gas station.

Intersections to be included in analyses

1. Lassen Avenue/Dorris Avenue
2. Lassen Avenue/Private Road

Scenarios to be Analyzed
The intersection Level of Service (LOS) analysis will be performed for the above intersections, based on the 2010 Highway Capacity Manual (HCM). The scenarios to be evaluated shall be per the City of Fresno's TIS Guidelines.

A. Existing (2021)
B. Existing Plus Project
C. Cumulative 2035 Plus Project

Intersection Queuing Analysis/Traffic Signal Warrant Analysis
VICE will perform intersection, site access queuing analysis and provide recommended left turn storage lengths at the intersections, indicated above and proposed project driveways/accesses. The will be performed for the above intersections, based on the 2010 Highway Capacity Manual (HCM). VICE will analyze traffic signal warrants (8 hr, 4 hr, and peak hour) for the above intersections, pursuant to CAMUTCD and SWITRS.

Please let me know if you have any questions, comments or are in concurrence with the scope,

Best Regards,

Ken Vang, PE,TE
Principal
VANG INC CONSULTING ENGINEERS
2491 Alluvial Ave Ste#15
Clovis, CA 93611
Bus (559) 775-0023
Fax (559) 775-0016
www.vice-engr.com

From: Thomas Veatch <Thomas.Veatch@fresno.gov>
Sent: Tuesday, September 7, 2021 2:41 PM
To: kenvang@vice-engr.com; Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>
Cc: Jill Gormley <Jill.Gormley@fresno.gov>; 'indy sangha' <sanghaindy@gmail.com>; Phillip Siegrist <Phillip.Siegrist@fresno.gov>
Subject: RE: P21-01833 Barstow Truck Parking TIS scoping Letter

Hi Ken,
Sorry I've been out sick up until today. You will need to include the VMT analysis in the Initial Study.

The IS will go through review by me and then I will facilitate its review through the City Attorney's office prior to the IS being posted for public comment.

From: Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>
Sent: Tuesday, August 24, 2021 5:02 PM
To: kenvang@vice-engr.com; Thomas Veatch <Thomas.Veatch@fresno.gov>
Cc: Jill Gormley <Jill.Gormley@fresno.gov>; 'indy sangha' <sanghaindy@gmail.com>
Subject: RE: P21-01833 Barstow Truck Parking TIS scoping Letter

Ken,

Traffic will accept the October 2019 counts due to the fact that there are new detour routes in the area for ongoing projects that would not accurately depict existing conditions.

Let me know if you have any questions.

Thanks,

Harmanjit Dhaliwal, PE
Supervising Professional Engineer

City of FRESNO
Public Works Department
Traffic Operations & Planning Division
2600 Fresno Street, Room 4064
Fresno, CA 93721
Ph: (559) 621-8694
Harmanjit.Dhaliwal@fresno.gov

From: kenvang@vice-engr.com <kenvang@vice-engr.com>
Sent: Tuesday, August 24, 2021 4:22 PM
To: Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>; Thomas Veatch <Thomas.Veatch@fresno.gov>
Cc: Jill Gormley <Jill.Gormley@fresno.gov>; 'indy sangha' <sanghaindy@gmail.com>
Subject: RE: P21-01833 Barstow Truck Parking TIS scoping Letter

Harman, I just left a message on your phone. But I thought I would followup with an email. Since Barstow/Veterans is currently under construction.

I would like to propose using the counts we did back in October 2019. Its coming up on 2 years, but its also pre-covid. So these traffic counts are probably higher than it is now.

What are your thoughts? Do you have any recent counts from other TIS is in the area that we can use?

Best Regards,

Ken Vang, PE,TE
Principal
VANG INC CONSULTING ENGINEERS
2491 Alluvial Ave Ste#15
Clovis, CA 93611
Bus (559) 775-0023
Fax (559) 775-0016
www.vice-engr.com

From: Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>
Sent: Wednesday, August 18, 2021 4:57 PM
To: kenvang@vice-engr.com; Thomas Veatch <Thomas.Veatch@fresno.gov>
Cc: Jill Gormley <Jill.Gormley@fresno.gov>; 'indy sangha' <sanghaindy@gmail.com>
Subject: RE: P21-01833 Barstow Truck Parking TIS scoping Letter

Ken,

The Scope will need to include a qualitative analysis of walkways, bikeways, and transit routes in the vicinity of the project. Once this is included the Scope is acceptable. Also, can you verify with Planning Department regarding any VMT analysis.

Thanks,

Harmanjit Dhaliwal, PE
Supervising Professional Engineer

City of FRESNO
Public Works Department
Traffic Operations & Planning Division
2600 Fresno Street, Room 4064
Fresno, CA 93721
Ph: (559) 621-8694
Harmanjit.Dhaliwal@fresno.gov

From: kenvang@vice-engr.com <kenvang@vice-engr.com>
Sent: Wednesday, August 18, 2021 4:36 PM
To: Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>; Thomas Veatch <Thomas.Veatch@fresno.gov>
Cc: Jill Gormley <Jill.Gormley@fresno.gov>; 'indy sangha' <sanghaindy@gmail.com>
Subject: RE: P21-01833 Barstow Truck Parking TIS scoping Letter

Yes, see attached

Best Regards,

Ken Vang, PE,TE
Principal
VANG INC CONSULTING ENGINEERS
2491 Alluvial Ave Ste#15
Clovis, CA 93611
Bus (559) 775-0023
Fax (559) 775-0016
www.vice-engr.com

From: Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>
Sent: Wednesday, August 18, 2021 4:24 PM
To: kenvang@vice-engr.com; Thomas Veatch <Thomas.Veatch@fresno.gov>
Cc: Jill Gormley <Jill.Gormley@fresno.gov>; 'indy sangha' <sanghaindy@gmail.com>
Subject: RE: P21-01833 Barstow Truck Parking TIS scoping Letter

Ken,

Is the trip distribution shown provided is based off the COG model?

Thanks,

Harmanjit Dhaliwal, PE
Supervising Professional Engineer

City of FRESNO
Public Works Department
Traffic Operations & Planning Division
2600 Fresno Street, Room 4064
Fresno, CA 93721
Ph: (559) 621-8694
Harmanjit.Dhaliwal@fresno.gov

From: kenvang@vice-engr.com <kenvang@vice-engr.com>
Sent: Monday, August 16, 2021 8:52 AM
To: Thomas Veatch <Thomas.Veatch@fresno.gov>; Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>
Cc: Jill Gormley <Jill.Gormley@fresno.gov>; 'indy sangha' <sanghaindy@gmail.com>
Subject: P21-01833 Barstow Truck Parking TIS scoping Letter

Harman/Thomas, please find attached TIS Scoping letter for P21-01833 Barstow Truck Parking. This has also been uploaded to FAASTER.

Please let me know if you have any questions,

Best Regards,

Ken Vang, PE,TE
Principal
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VICE

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www.vice-engr.com

August 16, 2021

To: Mrs. Jill Gormley, P.E.
City Traffic Engineer
City of Fresno
2600 Fresno Street
Fresno, CA 93721

Subject: Proposed Scope of Work Traffic Impact Analysis and Report for property located on the northeast corner of Contessa and Barstow Avenue (APN: 505-070-44) in the City of Fresno.

Dear Mrs. Gormley,

Vang Inc. Consulting Engineers (VICE) has been retained to perform traffic counts, analyze project impacts, and prepare Final TIS report for the Barstow Truck Parking project. The project consists of the construction and development of a truck parking facility with 5,400 sf of Auto/Truck Service Center, and 5,400 sf of truck wash with two tunnels on approximately 18.87 acres. The project proposes 374 tractor/trailer parking stalls; and 59 vehicular parking stalls.

The proposed truck parking facility is a private gated facility and not open to the general public. The customer pays for and reserves a parking stall. Truck Parking Facilities function similar to a long term parking lot or RV storage lot, with several trucks (tractors and trailers) being parked overnight or multiple days at a time. In addition, some trucks (tractors and trailers) are used for long hauls or deliveries and will be on the road for several days at a time. Therefore, not every stall is occupied on daily basis.

Trip Generation and Trip Distribution

Trip generation calculations for the proposed project is based on Institute of Transportation Engineer's (ITE) *"Trip Generation Manual"*, 9th Edition. A vehicle trip as defined by the Trip Generation Manual, is a single or one-directional vehicle movement to or from a site/area. The project generates primary trips, which are defined as vehicle trips that are generated for the primary purpose of using the site.

The Trip Generation Manual does not have trip generation estimates for truck parking facilities, therefore the proposed project's trip generation should be based Industrial Park Land use (ITE Code 130), as shown in Table 1. The project would generate 150 AM, and 156 PM peak hour trips. There are no pass-by trips or internal trip reductions.

VICE
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Clovis, CA 93611
www.vice-engr.com

Table 1 - Vehicle Trip Generation

Land Use	ITE Code	Quantity	Weekday	Peak Hour	Enter	Exit	Total
Industrial Park	130	18.31	1120	**AM**	125	25	150
				PM	33	123	156
Total Net New Trips				**AM**	125	25	150
				PM	33	123	156

Refer to Exhibit 1 for detail calculation sheet.

Intersections to be included in analyses

Based on the trip distribution Exhibit 2 and existing traffic conditions, it is recommended the following intersections be analyzed. Perform site visit, verify site conditions and constraints. VICE will acquire traffic movement counts for the AM and PM peak hour for the following intersections:

1. North Veterans Avenue/West Barstow Avenue
2. Shaw Avenue/Polk Avenue
3. Barstow Avenue/proposed driveway

Proposed trace trip analysis will be conducted for the following intersections.

1. Trace trips to Shaw Avenue/ SR99 Southbound On and off Ramp
2. Trace trips to Shaw Avenue/ SR99 Northbound On and off Ramp

Scenarios to be Analyzed

The intersection Level of Service (LOS) analysis will be performed for the above intersections, based on the 2010 Highway Capacity Manual (HCM). The scenarios to be evaluated shall be per the City of Fresno's TIS Guidelines.

A. Existing (2019)
B. Existing Plus Project
C. Near Term (approved and Pending Projects) Plus Project
D. Cumulative 2035 Plus Project

Near Term Projects to be Included in Analysis

VICE will analyze the following approved and pending projects that are within 1 mile of project as identified below.

- P 20-01815 California 99 Self Storage
- P 20-00942 Westbridge Apartments (172 unit MFR)
- P 19-04593 Johnny Quik Gas Station (Barstow/Grantland)
- P 20-00378 Johnny Quik Gas Station (Shaw/Hayes)
- P 18-02196 Brighten Academy Daycare

VICE

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Intersection Queuing Analysis/Traffic Signal Warrant Analysis
VICE will perform intersection, site access queuing analysis and provide recommended left turn storage lengths at the intersections, indicated above and proposed project driveways/accesses. The will be performed for the above intersections, based on the 2010 Highway Capacity Manual (HCM). VICE will analyze traffic signal warrants (8 hr, 4 hr, peak hour, pedestrian, crash experience) for the above intersections, pursuant to CAMUTCD and SWITRS.

Traffic Impact Report
VICE will prepare a qualitative analysis of Vehicle Miles Traveled using CalEEMOD. VICE will prepare a Traffic Impact Report summarizing the analysis and provide recommendations to mitigate project impacts as warranted. VICE will review bicycle, pedestrian, vehicular, access and internal circulation of the proposed project site. VICE will submit the final report to City of Fresno, County, and Caltrans for review and comment. VICE will address City of Fresno, County, and Caltrans comments as warranted.

Please don't hesitate to contact me should you have any questions,

Sincerely,

Ken Vang, PE 63824, TE 2674
President/Principal

cc: David Padilla, Caltrans District 6 - Office of Planning and Local Assistance

Exhibit 1
Trip Generation and Pass-by Calculations

Vehicle Trip Generation

Land Use	Code		Unit	Average Weekday				AM Peak Hour				PM Peak Hour			
				Rate	In	Out	Total	Rate	In	Out	Total	Rate	In	Out	Total
Industrial Park	130				50%	50%			83%	17%			21%	79%	
Trip Generation per acre			18.37	61.17	562	562	**1124**	8.20	125	26	**151**	8.53	33	124	**157**
Total Unadjusted Volume					562	562	**1124**		125	26	**151**		33	124	**157**
Internal Trip Capture [(1)]					0	0	**0**		0	0	**0**		0	0	**0**
Diverted Trips (2)					0	0	**0**		0	0	**0**		0	0	**0**
Total Trip Adjustments/Reductions					0	0	**0**		0	0	**0**		0	0	**0**
Total Net New Trips					562	562	**1124**		125	26	**151**		33	124	**157**

Remarks:

(1) Internal Trip Capture

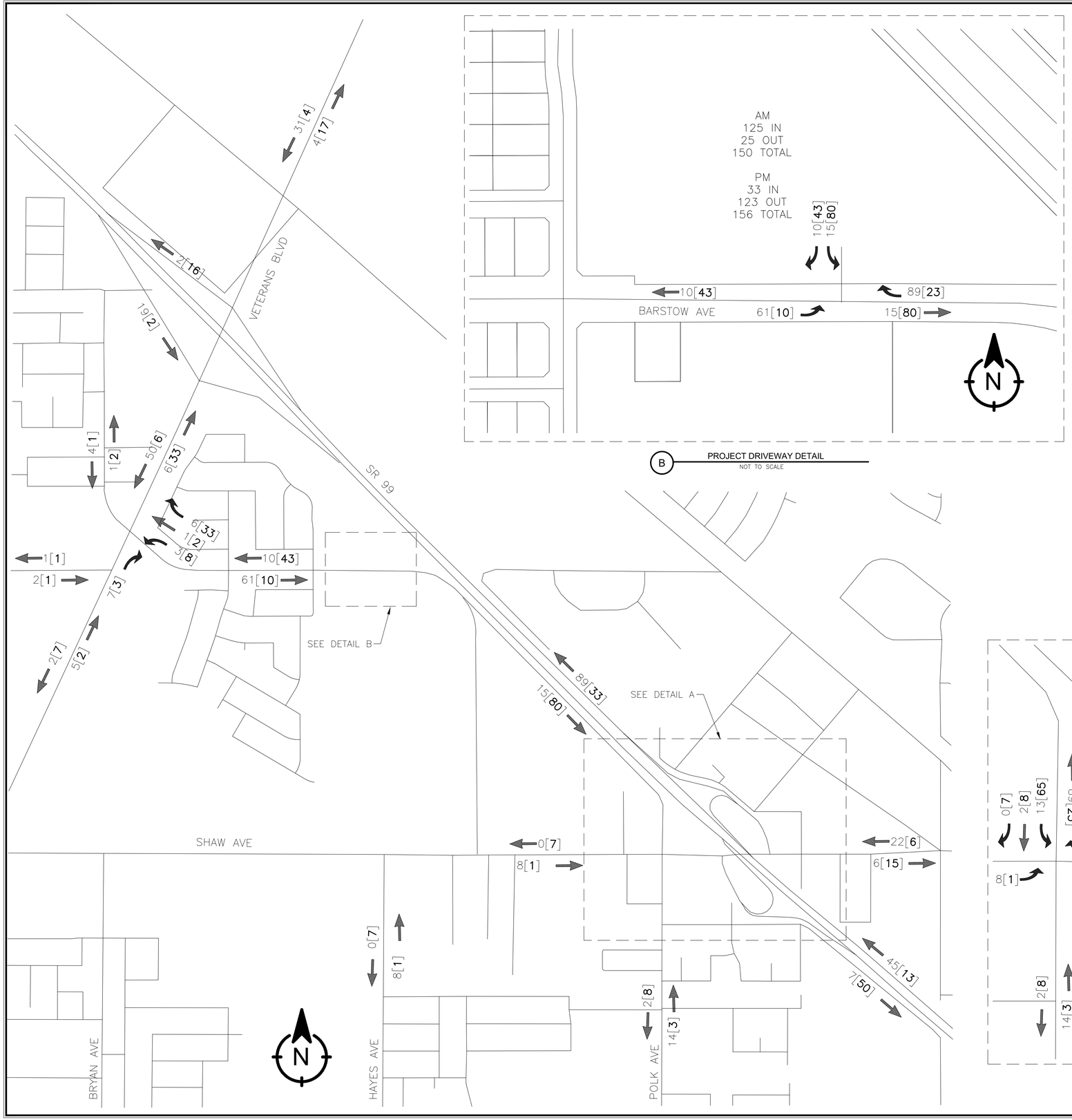
(2) Diverted Trips are existing trips already on the roadway and are diverted to the project site.

AM and PM Peak Hour Rates are peak hours of adjacent street traffic for AM (7:00-9:00) and PM (4:00-6:00)

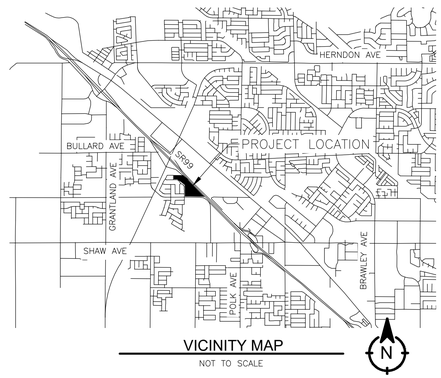
KSF: 1000 square feet of gross floor area

Source: Institute of Transportation Engineers *Trip Generation, Tenth Edition* (2017)

Exhibit 2
Trip Distribution



B PROJECT DRIVEWAY DETAIL
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

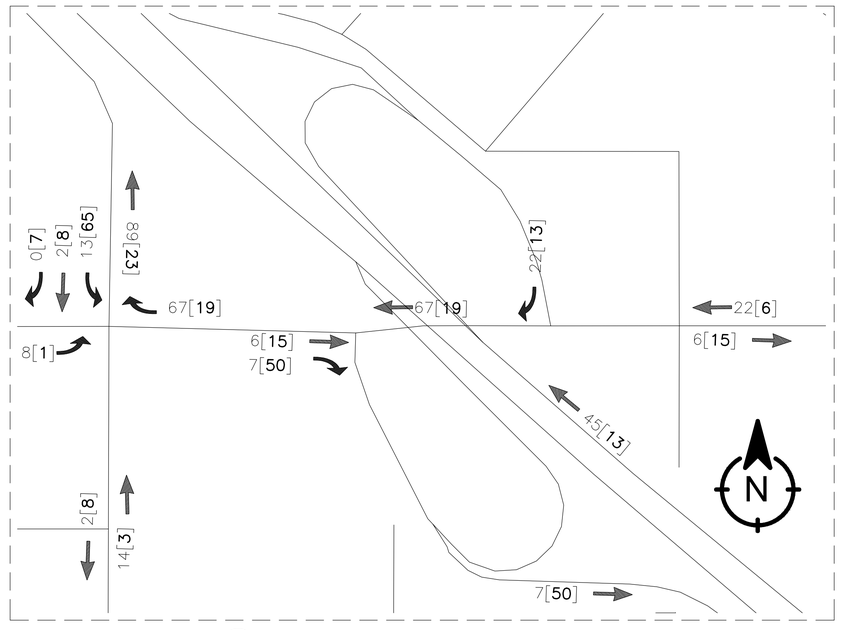
Know what's below. Call before you dig.

LEGEND

XX	AM TRIPS
[XX]	PM TRIPS
<XX>	PASSBY AM
<<XX>>	PASSBY PM

PROJECT INFO:

PROJECT LOCATION:	NORTHEAST CORNER OF BARSTOW AVE AND CONTESSA AVE IN FRESNO, CA
A.P.N.	505-070-44
PROJECT OWNER:	INDY SANGHA SANGHA CARRIERS 5812 BEDFORD AVE FRESNO, CA 93722



A SHAW AVE/SR 99 INTERCHANGE DETAIL
NOT TO SCALE

NO.	DATE	BY
REVISIONS		

2491 ALLUVIAL AVE
CLOVIS, CA 93619
(559) 775-0023
FAX: (559) 775-0016
WWW.VICE-ENGR.COM

VICE
VANG INC. CONSULTING ENGINEERS

BARSTOW TRUCK PARKING

TRIP GENERATION/
TRIP DISTRIBUTION

CITY OF FRESNO

CALIFORNIA

DATE: 8/16/2021

PROJ. ENGR: LSV

PROJ. MNGR: KYV

PREPARED FOR:
INDY SANGHA
SANGHA CARRIERS
5812 BEDFORD AVE
FRESNO, CA 93722

REGISTERED PROFESSIONAL ENGINEER
KYENG YING VANG
NO. C-63824
CIVIL
STATE OF CALIFORNIA

SHEET NO.
1 / 1

PROJECT NUMBER
20-003

8/16/2021 8:56 AM

V:\PROJECTS\2020\2020-003 BARSTOW TRUCK PARKING\03-PROJECT REPORTS\TIS\20-003 TRIP GENERATION.DWG

Appendix D: Synchro Reports

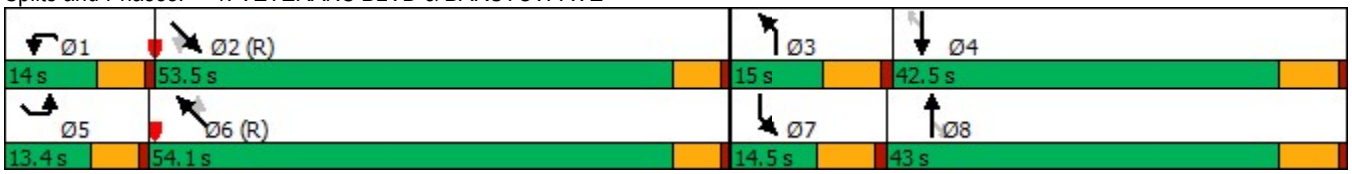
Appendix D-1: Existing Scenario(s)

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	1	0	32	0	0	0	0	128	4	18	135	0
Future Volume (vph)	1	0	32	0	0	0	0	128	4	18	135	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	10	11	12	10	11	12	10	11	12	12
Storage Length (ft)	250		250	250		250	180		180	270		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.96						0.98	0.99		
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1728	5136	1492	1818	5136	1756	1818	1881	1492	1728	1881	1881
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1698	5136	1433	1818	5136	1756	1818	1881	1461	1716	1881	1881
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			746						134			
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		689			712			593			807	
Travel Time (s)		8.5			8.8			10.1			13.8	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			2			2			2			2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1	0	36	0	0	0	0	144	4	20	152	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	0	36	0	0	0	0	144	4	20	152	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot		Perm	Prot		Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4			2			6
Minimum Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	52.4	52.4	13.4	52.4	52.4
Total Split (s)	15.0	43.0	43.0	14.5	42.5	42.5	13.4	53.5	53.5	14.0	54.1	54.1
Total Split (%)	12.0%	34.4%	34.4%	11.6%	34.0%	34.0%	10.7%	42.8%	42.8%	11.2%	43.3%	43.3%
Maximum Green (s)	8.5	36.5	36.5	8.0	36.0	36.0	8.0	48.1	48.1	8.6	48.7	48.7
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Flash Dont Walk (s)		29.0	29.0		29.0	29.0		40.0	40.0		40.0	40.0
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10
Act Effct Green (s)	8.5		36.5					48.1	48.1	8.6	48.7	
Actuated g/C Ratio	0.07		0.29					0.38	0.38	0.07	0.39	
v/c Ratio	0.01		0.04					0.20	0.01	0.17	0.21	
Control Delay	55.0		0.1					26.6	0.0	58.4	26.3	
Queue Delay	0.0		0.0					0.0	0.0	0.0	0.0	
Total Delay	55.0		0.1					26.6	0.0	58.4	26.3	
LOS	D		A					C	A	E	C	
Approach Delay		1.5						25.9			30.1	
Approach LOS		A						C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 125			
Offset: 0 (0%), Referenced to phase 2:SET and 6:NWT, Start of Green			
Natural Cycle: 125			
Control Type: Pretimed			
Maximum v/c Ratio: 0.21			
Intersection Signal Delay: 25.4		Intersection LOS: C	
Intersection Capacity Utilization 91.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: VETERANS BLVD & BARSTOW AVE



Lane Group	NBL	NBR	SET	SER	NWL	NWT
Lane Group Flow (vph)	1	36	144	4	20	152
v/c Ratio	0.01	0.04	0.20	0.01	0.17	0.21
Control Delay	55.0	0.1	26.6	0.0	58.4	26.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	0.1	26.6	0.0	58.4	26.3
Queue Length 50th (ft)	1	0	77	0	16	81
Queue Length 95th (ft)	7	0	125	0	42	129
Internal Link Dist (ft)			513			727
Turn Bay Length (ft)	250	250		180	270	
Base Capacity (vph)	117	946	723	644	118	732
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.04	0.20	0.01	0.17	0.21

Intersection Summary

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	1	0	32	0	0	0	0	128	4	18	135	0
Future Volume (veh/h)	1	0	32	0	0	0	0	128	4	18	135	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.98	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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	1	0	36	0	0	0	0	144	4	20	152	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	122	1503	448	115	1482	460	115	725	602	124	734	622
Arrive On Green	0.07	0.00	0.29	0.00	0.00	0.00	0.00	0.38	0.38	0.07	0.39	0.00
Sat Flow, veh/h	1795	5147	1535	1795	5147	1598	1795	1885	1564	1795	1885	1598
Grp Volume(v), veh/h	1	0	36	0	0	0	0	144	4	20	152	0
Grp Sat Flow(s),veh/h/ln	1795	1716	1535	1795	1716	1598	1795	1885	1564	1795	1885	1598
Q Serve(g_s), s	0.1	0.0	2.1	0.0	0.0	0.0	0.0	6.4	0.2	1.3	6.7	0.0
Cycle Q Clear(g_c), s	0.1	0.0	2.1	0.0	0.0	0.0	0.0	6.4	0.2	1.3	6.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	122	1503	448	115	1482	460	115	725	602	124	734	622
V/C Ratio(X)	0.01	0.00	0.08	0.00	0.00	0.00	0.00	0.20	0.01	0.16	0.21	0.00
Avail Cap(c_a), veh/h	122	1503	448	115	1482	460	115	725	602	124	734	622
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	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.3	0.0	32.1	0.0	0.0	0.0	0.0	25.6	23.7	54.8	25.3	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.4	0.0	0.0	0.0	0.0	0.6	0.0	2.8	0.6	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	0.8	0.0	0.0	0.0	0.0	2.9	0.1	0.7	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.4	0.0	32.4	0.0	0.0	0.0	0.0	26.2	23.7	57.6	26.0	0.0
LnGrp LOS	D	A	C	A	A	A	A	C	C	E	C	A
Approach Vol, veh/h		37			0			148			172	
Approach Delay, s/veh		33.0			0.0			26.2			29.6	
Approach LOS		C						C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	53.5	15.0	42.5	13.4	54.1	14.5	43.0
Change Period (Y+Rc), s	5.4	5.4	6.5	6.5	5.4	5.4	6.5	6.5
Max Green Setting (Gmax), s	8.6	48.1	8.5	36.0	8.0	48.7	8.0	36.5
Max Q Clear Time (g_c+I1), s	3.3	8.4	2.1	0.0	0.0	8.7	0.0	4.1
Green Ext Time (p_c), s	0.0	0.8	0.0	0.0	0.0	0.8	0.0	0.1

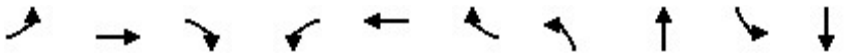
Intersection Summary			
HCM 6th Ctrl Delay		28.5	
HCM 6th LOS		C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	622	41	180	416	63	25	36	270	172	86	37
Future Volume (vph)	38	622	41	180	416	63	25	36	270	172	86	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	12	12
Storage Length (ft)	160		100	160		0	100		0	100		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99		0.96	0.99	0.98		0.99	0.99	
Frt			0.850			0.850		0.868			0.955	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3505	1568	1752	1845	1568	1694	1572	0	1694	1742	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1735	3505	1503	1738	1845	1507	1671	1572	0	1685	1742	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			141		255			26	
Link Speed (mph)		45			35			40			40	
Link Distance (ft)		792			570			414			378	
Travel Time (s)		12.0			11.1			7.1			6.4	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	44	715	47	207	478	72	29	41	310	198	99	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	715	47	207	478	72	29	351	0	198	142	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4						
Detector Phase	3	8	8	7	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (%)	15.2%	29.3%	29.3%	14.4%	31.8%	31.8%	14.3%	38.7%		14.3%	36.2%	
Maximum Green (s)	8.0	20.0	20.0	8.0	23.0	23.0	8.5	29.0		8.5	26.0	
Yellow Time (s)	4.3	4.7	4.7	3.6	3.9	3.9	3.0	3.9		3.0	4.7	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.7	5.7	4.6	4.9	4.9	4.0	4.9		4.0	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Time Before Reduce (s)	0.0	8.0	8.0	0.0	8.0	8.0	0.0	8.0		0.0	8.0	
Time To Reduce (s)	0.0	21.0	21.0	0.0	21.0	21.0	0.0	21.0		0.0	15.0	
Recall Mode	Max	Max	Max	Max	Max	Max	Max	C-Max		Max	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		5.0			5.0	
Flash Dont Walk (s)		13.0	13.0		16.0	16.0		24.0			21.0	
Pedestrian Calls (#/hr)		10	10		10	10		10			10	
Act Effct Green (s)	8.0	22.9	22.9	8.0	23.0	23.0	8.5	29.0		8.5	28.2	
Actuated g/C Ratio	0.09	0.26	0.26	0.09	0.26	0.26	0.10	0.33		0.10	0.32	
v/c Ratio	0.28	0.78	0.09	1.29	0.99	0.14	0.18	0.51		1.21	0.25	
Control Delay	41.9	37.1	0.4	205.9	72.2	0.7	39.2	9.7		174.0	19.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	41.9	37.1	0.4	205.9	72.2	0.7	39.2	9.7		174.0	19.1	
LOS	D	D	A	F	E	A	D	A		F	B	
Approach Delay		35.2			102.0			11.9			109.3	
Approach LOS		D			F			B			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 87.6			
Actuated Cycle Length: 87.6			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.29			
Intersection Signal Delay: 64.5		Intersection LOS: E	
Intersection Capacity Utilization 78.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: POLK AVE & SHAW AVE

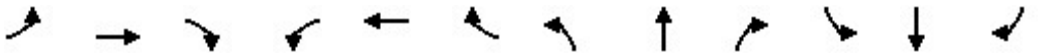


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	715	47	207	478	72	29	351	198	142
v/c Ratio	0.28	0.78	0.09	1.29	0.99	0.14	0.18	0.51	1.21	0.25
Control Delay	41.9	37.1	0.4	205.9	72.2	0.7	39.2	9.7	174.0	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	37.1	0.4	205.9	72.2	0.7	39.2	9.7	174.0	19.1
Queue Length 50th (ft)	23	192	0	~148	262	0	15	37	~135	46
Queue Length 95th (ft)	54	247	0	#270	#435	0	40	102	#254	87
Internal Link Dist (ft)		712			490			334		298
Turn Bay Length (ft)	160		100	160			100		100	
Base Capacity (vph)	160	916	497	160	484	499	164	690	164	578
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	0.28	0.78	0.09	1.29	0.99	0.14	0.18	0.51	1.21	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



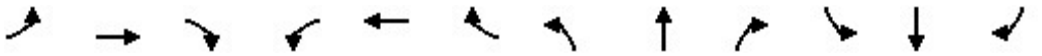
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	622	41	180	416	63	25	36	270	172	86	37
Future Volume (veh/h)	38	622	41	180	416	63	25	36	270	172	86	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	44	715	47	207	478	72	29	41	310	198	99	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	949	416	161	485	403	171	144	1092	171	949	412
Arrive On Green	0.09	0.27	0.27	0.09	0.26	0.26	0.10	0.78	0.78	0.10	0.78	0.78
Sat Flow, veh/h	1767	3526	1543	1767	1856	1542	1767	186	1409	1767	1224	532
Grp Volume(v), veh/h	44	715	47	207	478	72	29	0	351	198	0	142
Grp Sat Flow(s),veh/h/ln	1767	1763	1543	1767	1856	1542	1767	0	1595	1767	0	1756
Q Serve(g_s), s	2.0	16.4	2.0	8.0	22.6	3.2	1.3	0.0	5.6	8.5	0.0	1.7
Cycle Q Clear(g_c), s	2.0	16.4	2.0	8.0	22.6	3.2	1.3	0.0	5.6	8.5	0.0	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.88	1.00		0.30
Lane Grp Cap(c), veh/h	161	949	416	161	485	403	171	0	1236	171	0	1361
V/C Ratio(X)	0.27	0.75	0.11	1.29	0.99	0.18	0.17	0.00	0.28	1.16	0.00	0.10
Avail Cap(c_a), veh/h	161	949	416	161	485	403	171	0	1236	171	0	1361
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.3	29.5	24.2	40.0	32.3	25.2	36.5	0.0	2.9	39.8	0.0	2.4
Incr Delay (d2), s/veh	4.2	5.5	0.6	168.4	37.5	1.0	2.1	0.0	0.6	118.5	0.0	0.2
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	7.1	0.8	10.9	14.7	1.2	0.7	0.0	1.2	9.2	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	35.0	24.8	208.4	69.8	26.1	38.7	0.0	3.4	158.2	0.0	2.6
LnGrp LOS	D	C	C	F	E	C	D	A	A	F	A	A
Approach Vol, veh/h		806			757			380			340	
Approach Delay, s/veh		34.7			103.6			6.1			93.2	
Approach LOS		C			F			A			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	75.1	13.3	28.7	12.5	75.1	12.6	29.4
Change Period (Y+Rc), s	4.0	5.7	5.3	* 5.7	4.0	* 5.7	4.6	5.7
Max Green Setting (Gmax), s	8.5	26.0	8.0	* 23	8.5	* 29	8.0	20.0
Max Q Clear Time (g_c+I1), s	3.3	3.7	4.0	24.6	10.5	7.6	10.0	18.4
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.0	1.4	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	61.5
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	277	0	0	126	0	0	0	0	0	0	0
Future Volume (vph)	0	277	0	0	126	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	1863	0	1863	1863	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	1863	0	1863	1863	0	0	1863	0	0	1863	0
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		396			496			184			147	
Travel Time (s)		6.8			8.5			5.0			4.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	0	351	0	0	159	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	351	0	0	159	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	277	0	0	126	0	0	0	0	0	0	0
Future Vol, veh/h	0	277	0	0	126	0	0	0	0	0	0	0
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	351	0	0	159	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	169	0	0	361	0	0	530	530	371	530	530	179
Stage 1	-	-	-	-	-	-	361	361	-	169	169	-
Stage 2	-	-	-	-	-	-	169	169	-	361	361	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1409	-	-	1198	-	-	460	455	675	460	455	864
Stage 1	-	-	-	-	-	-	657	626	-	833	759	-
Stage 2	-	-	-	-	-	-	833	759	-	657	626	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1396	-	-	1187	-	-	451	446	662	451	446	848
Mov Cap-2 Maneuver	-	-	-	-	-	-	451	446	-	451	446	-
Stage 1	-	-	-	-	-	-	650	620	-	825	751	-
Stage 2	-	-	-	-	-	-	825	751	-	651	620	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1396	-	-	1187	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

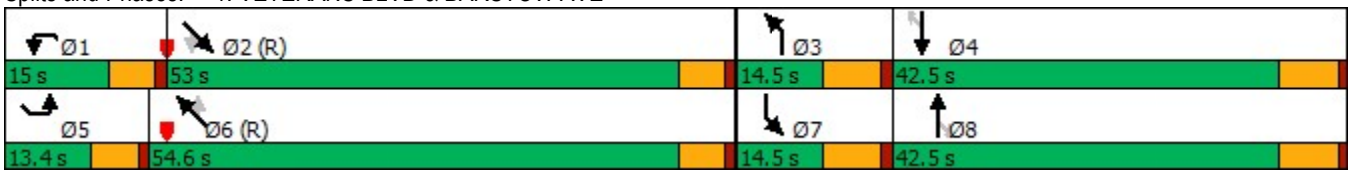
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	1	0	32	0	0	0	1	114	2	52	160	0
Future Volume (vph)	1	0	32	0	0	0	1	114	2	52	160	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	10	11	12	10	11	12	10	11	12	12
Storage Length (ft)	250		250	250		250	180		180	270		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.96				0.99		0.98	0.99		
Frt			0.850						0.850			
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1745	5187	1507	1837	5187	1773	1745	1900	1507	1745	1900	1900
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1715	5187	1452	1837	5187	1773	1734	1900	1477	1733	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			785						134			
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		689			712			593			807	
Travel Time (s)		8.5			8.8			10.1			13.8	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	0	34	0	0	0	1	120	2	55	168	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	0	34	0	0	0	1	120	2	55	168	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot		Perm	Prot		Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4			2			6
Minimum Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	52.4	52.4	13.4	52.4	52.4
Total Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	53.0	53.0	15.0	54.6	54.6
Total Split (%)	11.6%	34.0%	34.0%	11.6%	34.0%	34.0%	10.7%	42.4%	42.4%	12.0%	43.7%	43.7%
Maximum Green (s)	8.0	36.0	36.0	8.0	36.0	36.0	8.0	47.6	47.6	9.6	49.2	49.2
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		29.0	29.0		29.0	29.0		40.0	40.0		40.0	40.0

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10
Act Effct Green (s)	8.0		36.0				8.0	47.6	47.6	9.6	49.2	
Actuated g/C Ratio	0.06		0.29				0.06	0.38	0.38	0.08	0.39	
v/c Ratio	0.01		0.03				0.01	0.17	0.00	0.41	0.22	
Control Delay	55.0		0.1				55.0	26.4	0.0	64.8	26.2	
Queue Delay	0.0		0.0				0.0	0.0	0.0	0.0	0.0	
Total Delay	55.0		0.1				55.0	26.4	0.0	64.8	26.2	
LOS	D		A				D	C	A	E	C	
Approach Delay		1.6						26.2			35.7	
Approach LOS		A						C			D	

Intersection Summary

Area Type: Other
Cycle Length: 125
Actuated Cycle Length: 125
Offset: 0 (0%), Referenced to phase 2:SET and 6:NWT, Start of Green
Natural Cycle: 125
Control Type: Pretimed
Maximum v/c Ratio: 0.41
Intersection Signal Delay: 29.5 Intersection LOS: C
Intersection Capacity Utilization 91.2% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: VETERANS BLVD & BARSTOW AVE



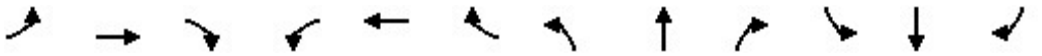
Lane Group	NBL	NBR	SEL	SET	SER	NWL	NWT
Lane Group Flow (vph)	1	34	1	120	2	55	168
v/c Ratio	0.01	0.03	0.01	0.17	0.00	0.41	0.22
Control Delay	55.0	0.1	55.0	26.4	0.0	64.8	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	0.1	55.0	26.4	0.0	64.8	26.2
Queue Length 50th (ft)	1	0	1	64	0	43	89
Queue Length 95th (ft)	7	0	7	108	0	88	142
Internal Link Dist (ft)				513			727
Turn Bay Length (ft)	250	250	180		180	270	
Base Capacity (vph)	111	977	111	723	645	134	747
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.03	0.01	0.17	0.00	0.41	0.22

Intersection Summary

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	1	0	32	0	0	0	1	114	2	52	160	0
Future Volume (veh/h)	1	0	32	0	0	0	1	114	2	52	160	0
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		1.00	1.00		0.99	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	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1	0	34	0	0	0	1	120	2	55	168	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	116	1494	456	116	1494	464	116	724	608	139	748	634
Arrive On Green	0.06	0.00	0.29	0.00	0.00	0.00	0.06	0.38	0.38	0.08	0.39	0.00
Sat Flow, veh/h	1810	5187	1582	1810	5187	1610	1810	1900	1597	1810	1900	1610
Grp Volume(v), veh/h	1	0	34	0	0	0	1	120	2	55	168	0
Grp Sat Flow(s),veh/h/ln	1810	1729	1582	1810	1729	1610	1810	1900	1597	1810	1900	1610
Q Serve(g_s), s	0.1	0.0	2.0	0.0	0.0	0.0	0.1	5.2	0.1	3.6	7.4	0.0
Cycle Q Clear(g_c), s	0.1	0.0	2.0	0.0	0.0	0.0	0.1	5.2	0.1	3.6	7.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	1494	456	116	1494	464	116	724	608	139	748	634
V/C Ratio(X)	0.01	0.00	0.07	0.00	0.00	0.00	0.01	0.17	0.00	0.40	0.22	0.00
Avail Cap(c_a), veh/h	116	1494	456	116	1494	464	116	724	608	139	748	634
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	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.8	0.0	32.4	0.0	0.0	0.0	54.8	25.6	24.0	54.9	25.2	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.0	0.0	0.0	0.1	0.5	0.0	8.2	0.7	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	0.8	0.0	0.0	0.0	0.0	2.4	0.0	1.9	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	0.0	32.7	0.0	0.0	0.0	54.9	26.1	24.0	63.2	25.9	0.0
LnGrp LOS	D	A	C	A	A	A	D	C	C	E	C	A
Approach Vol, veh/h		35			0			123			223	
Approach Delay, s/veh		33.3			0.0			26.3			35.1	
Approach LOS		C						C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	53.0	14.5	42.5	13.4	54.6	14.5	42.5
Change Period (Y+Rc), s	5.4	5.4	6.5	6.5	5.4	5.4	6.5	6.5
Max Green Setting (Gmax), s	9.6	47.6	8.0	36.0	8.0	49.2	8.0	36.0
Max Q Clear Time (g_c+I1), s	5.6	7.2	2.1	0.0	2.1	9.4	0.0	4.0
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.0	0.9	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

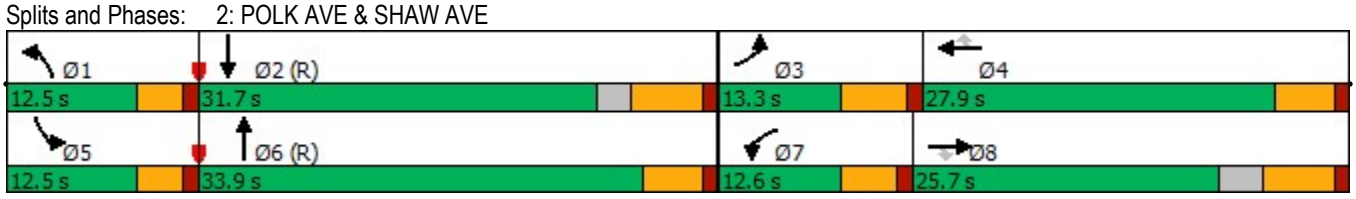


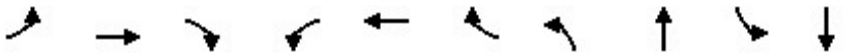
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	420	22	291	497	214	20	50	295	133	73	23
Future Volume (vph)	23	420	22	291	497	214	20	50	295	133	73	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	12	12
Storage Length (ft)	160		100	160		0	100		0	100		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.93	0.98		0.94	0.97	0.97		0.99	0.99	
Frt			0.850			0.850		0.872			0.964	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1711	1581	0	1711	1772	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1737	3539	1478	1727	1863	1487	1659	1581	0	1692	1772	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			240		303			19	
Link Speed (mph)		45			35			40			40	
Link Distance (ft)		792			570			414			378	
Travel Time (s)		12.0			11.1			7.1			6.4	
Confl. Peds. (#/hr)	21		21	21		21	21		21	21		21
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	26	472	25	327	558	240	22	56	331	149	82	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	472	25	327	558	240	22	387	0	149	108	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4						
Detector Phase	3	8	8	7	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (%)	15.2%	29.3%	29.3%	14.4%	31.8%	31.8%	14.3%	38.7%		14.3%	36.2%	
Maximum Green (s)	8.0	20.0	20.0	8.0	23.0	23.0	8.5	29.0		8.5	26.0	
Yellow Time (s)	4.3	4.7	4.7	3.6	3.9	3.9	3.0	3.9		3.0	4.7	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.7	5.7	4.6	4.9	4.9	4.0	4.9		4.0	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Time Before Reduce (s)	0.0	8.0	8.0	0.0	8.0	8.0	0.0	8.0		0.0	8.0	
Time To Reduce (s)	0.0	21.0	21.0	0.0	21.0	21.0	0.0	21.0		0.0	15.0	
Recall Mode	Max	Max	Max	Max	Max	Max	Max	C-Max		Max	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		5.0			5.0	
Flash Dont Walk (s)		13.0	13.0		16.0	16.0		24.0			21.0	
Pedestrian Calls (#/hr)		10	10		10	10		10			10	
Act Effct Green (s)	8.0	22.9	22.9	8.0	23.0	23.0	8.5	29.0		8.5	28.2	
Actuated g/C Ratio	0.09	0.26	0.26	0.09	0.26	0.26	0.10	0.33		0.10	0.32	
v/c Ratio	0.16	0.51	0.05	2.03	1.14	0.42	0.13	0.53		0.90	0.19	
Control Delay	39.3	29.9	0.2	509.7	117.7	6.2	38.3	8.7		89.0	18.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	39.3	29.9	0.2	509.7	117.7	6.2	38.3	8.7		89.0	18.6	
LOS	D	C	A	F	F	A	D	A		F	B	
Approach Delay		28.9			207.8			10.3			59.4	
Approach LOS		C			F			B			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 87.6			
Actuated Cycle Length: 87.6			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.03			
Intersection Signal Delay: 116.0		Intersection LOS: F	
Intersection Capacity Utilization 80.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: POLK AVE & SHAW AVE



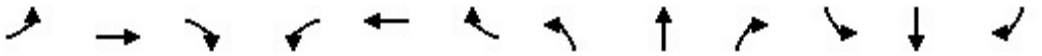


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	472	25	327	558	240	22	387	149	108
v/c Ratio	0.16	0.51	0.05	2.03	1.14	0.42	0.13	0.53	0.90	0.19
Control Delay	39.3	29.9	0.2	509.7	117.7	6.2	38.3	8.7	89.0	18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	29.9	0.2	509.7	117.7	6.2	38.3	8.7	89.0	18.6
Queue Length 50th (ft)	14	116	0	~286	~364	0	11	32	83	35
Queue Length 95th (ft)	38	162	0	#442	#550	53	33	105	#191	72
Internal Link Dist (ft)		712			490			334		298
Turn Bay Length (ft)	160		100	160			100		100	
Base Capacity (vph)	161	925	490	161	489	567	166	726	166	583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.51	0.05	2.03	1.14	0.42	0.13	0.53	0.90	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



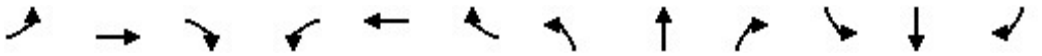
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	420	22	291	497	214	20	50	295	133	73	23
Future Volume (veh/h)	23	420	22	291	497	214	20	50	295	133	73	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.94	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	472	25	327	558	240	22	56	331	149	82	26
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	957	401	162	489	389	172	179	1055	172	1045	331
Arrive On Green	0.09	0.27	0.27	0.09	0.26	0.26	0.10	0.78	0.78	0.10	0.78	0.78
Sat Flow, veh/h	1781	3554	1491	1781	1870	1489	1781	230	1362	1781	1348	428
Grp Volume(v), veh/h	26	472	25	327	558	240	22	0	387	149	0	108
Grp Sat Flow(s),veh/h/ln	1781	1777	1491	1781	1870	1489	1781	0	1592	1781	0	1776
Q Serve(g_s), s	1.2	9.8	1.1	8.0	23.0	12.5	1.0	0.0	6.4	7.3	0.0	1.3
Cycle Q Clear(g_c), s	1.2	9.8	1.1	8.0	23.0	12.5	1.0	0.0	6.4	7.3	0.0	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.86	1.00		0.24
Lane Grp Cap(c), veh/h	162	957	401	162	489	389	172	0	1234	172	0	1376
V/C Ratio(X)	0.16	0.49	0.06	2.02	1.14	0.62	0.13	0.00	0.31	0.87	0.00	0.08
Avail Cap(c_a), veh/h	162	957	401	162	489	389	172	0	1234	172	0	1376
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.9	27.1	23.9	40.0	32.5	28.6	36.4	0.0	2.9	39.2	0.0	2.4
Incr Delay (d2), s/veh	2.1	1.8	0.3	479.7	85.7	7.1	1.5	0.0	0.7	40.5	0.0	0.1
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	0.6	4.1	0.4	25.0	21.5	4.9	0.5	0.0	1.3	5.0	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.0	28.9	24.2	519.7	118.2	35.8	37.9	0.0	3.6	79.6	0.0	2.5
LnGrp LOS	D	C	C	F	F	D	D	A	A	E	A	A
Approach Vol, veh/h		523			1125			409			257	
Approach Delay, s/veh		29.2			217.3			5.5			47.2	
Approach LOS		C			F			A			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	75.1	13.3	28.7	12.5	75.1	12.6	29.4
Change Period (Y+Rc), s	4.0	5.7	5.3	* 5.7	4.0	* 5.7	4.6	5.7
Max Green Setting (Gmax), s	8.5	26.0	8.0	* 23	8.5	* 29	8.0	20.0
Max Q Clear Time (g_c+I1), s	3.0	3.3	3.2	25.0	9.3	8.4	10.0	11.8
Green Ext Time (p_c), s	0.0	0.3	0.0	0.0	0.0	1.6	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	118.5
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	207	2	1	258	0	2	0	0	0	0	0
Future Volume (vph)	0	207	2	1	258	0	2	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999										
Flt Protected				0.950				0.950				
Satd. Flow (prot)	1881	1879	0	1787	1881	0	0	1787	0	0	1881	0
Flt Permitted				0.950				0.950				
Satd. Flow (perm)	1881	1879	0	1787	1881	0	0	1787	0	0	1881	0
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		396			496			184			147	
Travel Time (s)		6.8			8.5			5.0			4.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	0	230	2	1	287	0	2	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	232	0	1	287	0	0	2	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	207	2	1	258	0	2	0	0	0	0	0
Future Vol, veh/h	0	207	2	1	258	0	2	0	0	0	0	0
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	0	230	2	1	287	0	2	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	297	0	0	242	0	0	540	540	251	540	541	307
Stage 1	-	-	-	-	-	-	241	241	-	299	299	-
Stage 2	-	-	-	-	-	-	299	299	-	241	242	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1270	-	-	1330	-	-	454	450	790	454	449	735
Stage 1	-	-	-	-	-	-	765	708	-	712	668	-
Stage 2	-	-	-	-	-	-	712	668	-	765	707	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1258	-	-	1317	-	-	445	441	775	445	440	721
Mov Cap-2 Maneuver	-	-	-	-	-	-	445	441	-	445	440	-
Stage 1	-	-	-	-	-	-	757	701	-	705	661	-
Stage 2	-	-	-	-	-	-	705	661	-	758	700	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	13.1	0
HCM LOS			B	A

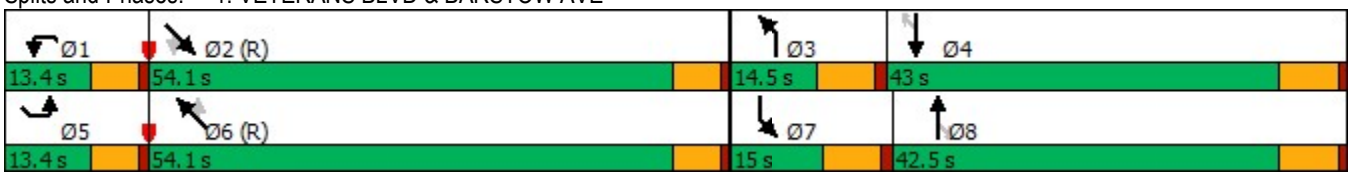
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	445	1258	-	-	1317	-	-	-
HCM Lane V/C Ratio	0.005	-	-	-	0.001	-	-	-
HCM Control Delay (s)	13.1	0	-	-	7.7	-	-	0
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	1	0	39	19	0	0	0	132	4	21	136	6
Future Volume (vph)	1	0	39	19	0	0	0	132	4	21	136	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	10	11	12	10	11	12	10	11	12	12
Storage Length (ft)	250		250	250		250	180		180	270		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.96	0.98					0.98	0.99		0.98
Frt			0.850						0.850			0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1728	5136	1492	1728	5136	1756	1818	1881	1492	1728	1881	1599
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1698	5136	1433	1698	5136	1756	1818	1881	1461	1716	1881	1566
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			698						134			134
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		689			712			593			807	
Travel Time (s)		8.5			8.8			10.1			13.8	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			2			2			2			2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1	0	44	21	0	0	0	148	4	24	153	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	0	44	21	0	0	0	148	4	24	153	7
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot		Perm	Prot		Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4			2			6
Minimum Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	52.4	52.4	13.4	52.4	52.4
Total Split (s)	14.5	42.5	42.5	15.0	43.0	43.0	13.4	54.1	54.1	13.4	54.1	54.1
Total Split (%)	11.6%	34.0%	34.0%	12.0%	34.4%	34.4%	10.7%	43.3%	43.3%	10.7%	43.3%	43.3%
Maximum Green (s)	8.0	36.0	36.0	8.5	36.5	36.5	8.0	48.7	48.7	8.0	48.7	48.7
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Flash Dont Walk (s)		29.0	29.0		29.0	29.0		40.0	40.0		40.0	40.0
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10
Act Effct Green (s)	8.0		36.0	8.5				48.7	48.7	8.0	48.7	48.7
Actuated g/C Ratio	0.06		0.29	0.07				0.39	0.39	0.06	0.39	0.39
v/c Ratio	0.01		0.05	0.18				0.20	0.01	0.22	0.21	0.01
Control Delay	55.0		0.1	58.8				26.2	0.0	60.6	26.3	0.0
Queue Delay	0.0		0.0	0.0				0.0	0.0	0.0	0.0	0.0
Total Delay	55.0		0.1	58.8				26.2	0.0	60.6	26.3	0.0
LOS	D		A	E				C	A	E	C	A
Approach Delay		1.3			58.8			25.5			29.8	
Approach LOS		A			E			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 125			
Offset: 0 (0%), Referenced to phase 2:SET and 6:NWT, Start of Green			
Natural Cycle: 125			
Control Type: Pretimed			
Maximum v/c Ratio: 0.22			
Intersection Signal Delay: 26.5		Intersection LOS: C	
Intersection Capacity Utilization 91.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: VETERANS BLVD & BARSTOW AVE



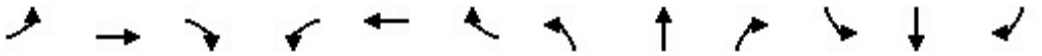
Lane Group	NBL	NBR	SBL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	1	44	21	148	4	24	153	7
v/c Ratio	0.01	0.05	0.18	0.20	0.01	0.22	0.21	0.01
Control Delay	55.0	0.1	58.8	26.2	0.0	60.6	26.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	0.1	58.8	26.2	0.0	60.6	26.3	0.0
Queue Length 50th (ft)	1	0	16	78	0	19	81	0
Queue Length 95th (ft)	7	0	43	126	0	48	130	0
Internal Link Dist (ft)				513			727	
Turn Bay Length (ft)	250	250	250		180	270		
Base Capacity (vph)	110	909	117	732	650	110	732	691
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.05	0.18	0.20	0.01	0.22	0.21	0.01

Intersection Summary

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	1	0	39	19	0	0	0	132	4	21	136	6
Future Volume (veh/h)	1	0	39	19	0	0	0	132	4	21	136	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	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	0	44	21	0	0	0	148	4	24	153	7
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	115	1482	442	122	1503	467	115	734	610	115	734	610
Arrive On Green	0.06	0.00	0.29	0.07	0.00	0.00	0.00	0.39	0.39	0.06	0.39	0.39
Sat Flow, veh/h	1795	5147	1534	1795	5147	1598	1795	1885	1565	1795	1885	1565
Grp Volume(v), veh/h	1	0	44	21	0	0	0	148	4	24	153	7
Grp Sat Flow(s),veh/h/ln	1795	1716	1534	1795	1716	1598	1795	1885	1565	1795	1885	1565
Q Serve(g_s), s	0.1	0.0	2.6	1.4	0.0	0.0	0.0	6.5	0.2	1.6	6.7	0.3
Cycle Q Clear(g_c), s	0.1	0.0	2.6	1.4	0.0	0.0	0.0	6.5	0.2	1.6	6.7	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	1482	442	122	1503	467	115	734	610	115	734	610
V/C Ratio(X)	0.01	0.00	0.10	0.17	0.00	0.00	0.00	0.20	0.01	0.21	0.21	0.01
Avail Cap(c_a), veh/h	115	1482	442	122	1503	467	115	734	610	115	734	610
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	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	0.0	32.6	54.9	0.0	0.0	0.0	25.3	23.3	55.5	25.3	23.4
Incr Delay (d2), s/veh	0.1	0.0	0.4	3.0	0.0	0.0	0.0	0.6	0.0	4.1	0.6	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	1.0	0.7	0.0	0.0	0.0	3.0	0.1	0.8	3.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	0.0	33.1	58.0	0.0	0.0	0.0	25.9	23.4	59.6	26.0	23.4
LnGrp LOS	D	A	C	E	A	A	A	C	C	E	C	C
Approach Vol, veh/h		45			21			152			184	
Approach Delay, s/veh		33.6			58.0			25.8			30.3	
Approach LOS		C			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	54.1	14.5	43.0	13.4	54.1	15.0	42.5
Change Period (Y+Rc), s	5.4	5.4	6.5	6.5	5.4	5.4	6.5	6.5
Max Green Setting (Gmax), s	8.0	48.7	8.0	36.5	8.0	48.7	8.5	36.0
Max Q Clear Time (g_c+I1), s	3.6	8.5	2.1	0.0	0.0	8.7	3.4	4.6
Green Ext Time (p_c), s	0.0	0.8	0.0	0.0	0.0	0.8	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	30.4
HCM 6th LOS	C

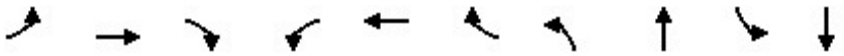


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	622	41	180	416	130	25	50	270	185	88	37
Future Volume (vph)	46	622	41	180	416	130	25	50	270	185	88	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	12	12
Storage Length (ft)	160		100	160		0	100		0	100		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99		0.96	0.99	0.98		0.99	0.99	
Frt			0.850			0.850		0.873			0.955	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3505	1568	1752	1845	1568	1694	1582	0	1694	1742	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1735	3505	1503	1738	1845	1507	1671	1582	0	1685	1742	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			149		252			26	
Link Speed (mph)		45			35			40			40	
Link Distance (ft)		792			570			414			378	
Travel Time (s)		12.0			11.1			7.1			6.4	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	53	715	47	207	478	149	29	57	310	213	101	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	715	47	207	478	149	29	367	0	213	144	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4						
Detector Phase	3	8	8	7	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (%)	15.2%	29.3%	29.3%	14.4%	31.8%	31.8%	14.3%	38.7%		14.3%	36.2%	
Maximum Green (s)	8.0	20.0	20.0	8.0	23.0	23.0	8.5	29.0		8.5	26.0	
Yellow Time (s)	4.3	4.7	4.7	3.6	3.9	3.9	3.0	3.9		3.0	4.7	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.7	5.7	4.6	4.9	4.9	4.0	4.9		4.0	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Time Before Reduce (s)	0.0	8.0	8.0	0.0	8.0	8.0	0.0	8.0		0.0	8.0	
Time To Reduce (s)	0.0	21.0	21.0	0.0	21.0	21.0	0.0	21.0		0.0	15.0	
Recall Mode	Max	Max	Max	Max	Max	Max	Max	C-Max		Max	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		5.0			5.0	
Flash Dont Walk (s)		13.0	13.0		16.0	16.0		24.0			21.0	
Pedestrian Calls (#/hr)		10	10		10	10		10			10	
Act Effct Green (s)	8.0	22.9	22.9	8.0	23.0	23.0	8.5	29.0		8.5	28.2	
Actuated g/C Ratio	0.09	0.26	0.26	0.09	0.26	0.26	0.10	0.33		0.10	0.32	
v/c Ratio	0.33	0.78	0.09	1.29	0.99	0.30	0.18	0.53		1.30	0.25	
Control Delay	43.4	37.1	0.4	205.9	72.2	6.3	39.2	10.7		206.8	19.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	43.4	37.1	0.4	205.9	72.2	6.3	39.2	10.7		206.8	19.2	
LOS	D	D	A	F	E	A	D	B		F	B	
Approach Delay		35.4			93.6			12.8			131.1	
Approach LOS		D			F			B			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 87.6			
Actuated Cycle Length: 87.6			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.30			
Intersection Signal Delay: 66.1		Intersection LOS: E	
Intersection Capacity Utilization 78.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: POLK AVE & SHAW AVE

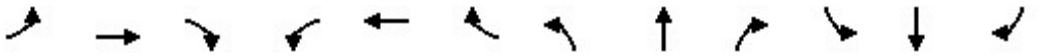


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	53	715	47	207	478	149	29	367	213	144
v/c Ratio	0.33	0.78	0.09	1.29	0.99	0.30	0.18	0.53	1.30	0.25
Control Delay	43.4	37.1	0.4	205.9	72.2	6.3	39.2	10.7	206.8	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.4	37.1	0.4	205.9	72.2	6.3	39.2	10.7	206.8	19.2
Queue Length 50th (ft)	28	192	0	~148	262	0	15	45	~152	47
Queue Length 95th (ft)	62	247	0	#270	#435	40	40	114	#275	89
Internal Link Dist (ft)		712			490			334		298
Turn Bay Length (ft)	160		100	160			100		100	
Base Capacity (vph)	160	916	497	160	484	505	164	692	164	578
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	0.33	0.78	0.09	1.29	0.99	0.30	0.18	0.53	1.30	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



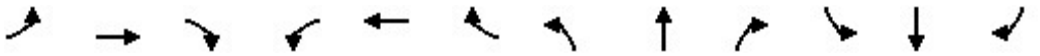
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	622	41	180	416	130	25	50	270	185	88	37
Future Volume (veh/h)	46	622	41	180	416	130	25	50	270	185	88	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	715	47	207	478	149	29	57	310	213	101	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	949	416	161	485	403	171	193	1051	171	955	407
Arrive On Green	0.09	0.27	0.27	0.09	0.26	0.26	0.10	0.78	0.78	0.10	0.78	0.78
Sat Flow, veh/h	1767	3526	1543	1767	1856	1542	1767	249	1356	1767	1232	525
Grp Volume(v), veh/h	53	715	47	207	478	149	29	0	367	213	0	144
Grp Sat Flow(s),veh/h/ln	1767	1763	1543	1767	1856	1542	1767	0	1605	1767	0	1757
Q Serve(g_s), s	2.5	16.4	2.0	8.0	22.6	7.0	1.3	0.0	5.9	8.5	0.0	1.8
Cycle Q Clear(g_c), s	2.5	16.4	2.0	8.0	22.6	7.0	1.3	0.0	5.9	8.5	0.0	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.84	1.00		0.30
Lane Grp Cap(c), veh/h	161	949	416	161	485	403	171	0	1244	171	0	1362
V/C Ratio(X)	0.33	0.75	0.11	1.29	0.99	0.37	0.17	0.00	0.29	1.25	0.00	0.11
Avail Cap(c_a), veh/h	161	949	416	161	485	403	171	0	1244	171	0	1362
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.5	29.5	24.2	40.0	32.3	26.6	36.5	0.0	2.9	39.8	0.0	2.4
Incr Delay (d2), s/veh	5.4	5.5	0.6	168.4	37.5	2.6	2.1	0.0	0.6	150.8	0.0	0.2
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	1.3	7.1	0.8	10.9	14.7	2.7	0.7	0.0	1.2	10.7	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.9	35.0	24.8	208.4	69.8	29.2	38.7	0.0	3.5	190.5	0.0	2.6
LnGrp LOS	D	C	C	F	E	C	D	A	A	F	A	A
Approach Vol, veh/h		815			834			396			357	
Approach Delay, s/veh		34.9			96.9			6.1			114.7	
Approach LOS		C			F			A			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	75.1	13.3	28.7	12.5	75.1	12.6	29.4
Change Period (Y+Rc), s	4.0	5.7	5.3	* 5.7	4.0	* 5.7	4.6	5.7
Max Green Setting (Gmax), s	8.5	26.0	8.0	* 23	8.5	* 29	8.0	20.0
Max Q Clear Time (g_c+I1), s	3.3	3.8	4.5	24.6	10.5	7.9	10.0	18.4
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.0	1.4	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	63.6
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	277	0	0	126	89	0	0	0	15	0	10
Future Volume (vph)	10	277	0	0	126	89	0	0	0	15	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.938						0.945	
Flt Protected	0.950										0.971	
Satd. Flow (prot)	1770	1863	0	1863	1747	0	0	1863	0	0	1709	0
Flt Permitted	0.950										0.971	
Satd. Flow (perm)	1770	1863	0	1863	1747	0	0	1863	0	0	1709	0
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		396			496			184			147	
Travel Time (s)		6.8			8.5			5.0			4.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	13	351	0	0	159	113	0	0	0	19	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	351	0	0	272	0	0	0	0	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	277	0	0	126	89	0	0	0	15	0	10
Future Vol, veh/h	10	277	0	0	126	89	0	0	0	15	0	10
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	351	0	0	159	113	0	0	0	19	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	282	0	0	361	0	0	619	669	371	613	613	236
Stage 1	-	-	-	-	-	-	387	387	-	226	226	-
Stage 2	-	-	-	-	-	-	232	282	-	387	387	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1280	-	-	1198	-	-	401	379	675	405	408	803
Stage 1	-	-	-	-	-	-	637	610	-	777	717	-
Stage 2	-	-	-	-	-	-	771	678	-	637	610	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1268	-	-	1187	-	-	384	368	662	394	396	788
Mov Cap-2 Maneuver	-	-	-	-	-	-	384	368	-	394	396	-
Stage 1	-	-	-	-	-	-	624	598	-	761	710	-
Stage 2	-	-	-	-	-	-	751	671	-	624	598	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	0	12.8
HCM LOS			A	B

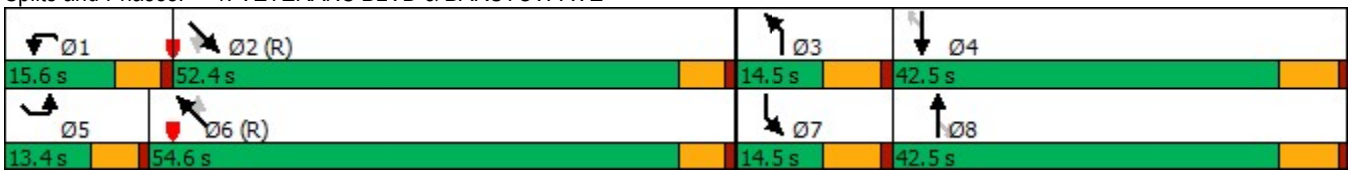
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1268	-	-	1187	-	-	493
HCM Lane V/C Ratio	-	0.01	-	-	-	-	-	0.064
HCM Control Delay (s)	0	7.9	-	-	0	-	-	12.8
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	1	0	35	2	0	0	1	115	2	60	162	33
Future Volume (vph)	1	0	35	2	0	0	1	115	2	60	162	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	10	11	12	10	11	12	10	11	12	12
Storage Length (ft)	250		250	250		250	180		180	270		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.96	0.98			0.99		0.98	0.99		0.98
Frt			0.850						0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	5187	1507	1745	5187	1773	1745	1900	1507	1745	1900	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1715	5187	1452	1715	5187	1773	1734	1900	1477	1733	1900	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			775						134			134
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		689			712			593			807	
Travel Time (s)		8.5			8.8			10.1			13.8	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	0	37	2	0	0	1	121	2	63	171	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	0	37	2	0	0	1	121	2	63	171	35
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot		Perm	Prot		Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4			2			6
Minimum Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	52.4	52.4	13.4	52.4	52.4
Total Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	52.4	52.4	15.6	54.6	54.6
Total Split (%)	11.6%	34.0%	34.0%	11.6%	34.0%	34.0%	10.7%	41.9%	41.9%	12.5%	43.7%	43.7%
Maximum Green (s)	8.0	36.0	36.0	8.0	36.0	36.0	8.0	47.0	47.0	10.2	49.2	49.2
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		29.0	29.0		29.0	29.0		40.0	40.0		40.0	40.0

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10
Act Effct Green (s)	8.0		36.0	8.0			8.0	47.0	47.0	10.2	49.2	49.2
Actuated g/C Ratio	0.06		0.29	0.06			0.06	0.38	0.38	0.08	0.39	0.39
v/c Ratio	0.01		0.04	0.02			0.01	0.17	0.00	0.44	0.23	0.05
Control Delay	55.0		0.1	55.5			55.0	26.8	0.0	65.2	26.3	0.1
Queue Delay	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0		0.1	55.5			55.0	26.8	0.0	65.2	26.3	0.1
LOS	D		A	E			D	C	A	E	C	A
Approach Delay		1.5			55.5			26.6			32.0	
Approach LOS		A			E			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 125			
Offset: 0 (0%), Referenced to phase 2:SET and 6:NWT, Start of Green			
Natural Cycle: 125			
Control Type: Pretimed			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 27.9		Intersection LOS: C	
Intersection Capacity Utilization 91.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: VETERANS BLVD & BARSTOW AVE



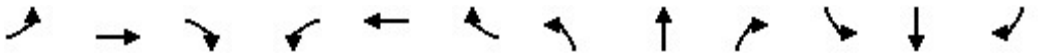
Lane Group	NBL	NBR	SBL	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	1	37	2	1	121	2	63	171	35
v/c Ratio	0.01	0.04	0.02	0.01	0.17	0.00	0.44	0.23	0.05
Control Delay	55.0	0.1	55.5	55.0	26.8	0.0	65.2	26.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	0.1	55.5	55.0	26.8	0.0	65.2	26.3	0.1
Queue Length 50th (ft)	1	0	2	1	65	0	49	91	0
Queue Length 95th (ft)	7	0	10	7	109	0	97	144	0
Internal Link Dist (ft)					513			727	
Turn Bay Length (ft)	250	250	250	180		180	270		
Base Capacity (vph)	111	969	111	111	714	638	142	747	704
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.04	0.02	0.01	0.17	0.00	0.44	0.23	0.05

Intersection Summary

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	1	0	35	2	0	0	1	115	2	60	162	33
Future Volume (veh/h)	1	0	35	2	0	0	1	115	2	60	162	33
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		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1	0	37	2	0	0	1	121	2	63	171	35
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	116	1494	456	116	1494	464	116	714	601	148	748	629
Arrive On Green	0.06	0.00	0.29	0.06	0.00	0.00	0.06	0.38	0.38	0.08	0.39	0.39
Sat Flow, veh/h	1810	5187	1582	1810	5187	1610	1810	1900	1597	1810	1900	1598
Grp Volume(v), veh/h	1	0	37	2	0	0	1	121	2	63	171	35
Grp Sat Flow(s),veh/h/ln	1810	1729	1582	1810	1729	1610	1810	1900	1597	1810	1900	1598
Q Serve(g_s), s	0.1	0.0	2.1	0.1	0.0	0.0	0.1	5.3	0.1	4.1	7.5	1.7
Cycle Q Clear(g_c), s	0.1	0.0	2.1	0.1	0.0	0.0	0.1	5.3	0.1	4.1	7.5	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	1494	456	116	1494	464	116	714	601	148	748	629
V/C Ratio(X)	0.01	0.00	0.08	0.02	0.00	0.00	0.01	0.17	0.00	0.43	0.23	0.06
Avail Cap(c_a), veh/h	116	1494	456	116	1494	464	116	714	601	148	748	629
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	0.0	32.4	54.8	0.0	0.0	54.8	26.0	24.4	54.6	25.3	23.5
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.3	0.0	0.0	0.1	0.5	0.0	8.8	0.7	0.2
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	0.0	0.0	0.8	0.1	0.0	0.0	0.0	2.5	0.0	2.2	3.5	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	0.0	32.8	55.1	0.0	0.0	54.9	26.5	24.4	63.4	26.0	23.7
LnGrp LOS	D	A	C	E	A	A	D	C	C	E	C	C
Approach Vol, veh/h		38			2			124			269	
Approach Delay, s/veh		33.4			55.1			26.7			34.4	
Approach LOS		C			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	52.4	14.5	42.5	13.4	54.6	14.5	42.5
Change Period (Y+Rc), s	5.4	5.4	6.5	6.5	5.4	5.4	6.5	6.5
Max Green Setting (Gmax), s	10.2	47.0	8.0	36.0	8.0	49.2	8.0	36.0
Max Q Clear Time (g_c+I1), s	6.1	7.3	2.1	0.0	2.1	9.5	2.1	4.1
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.0	1.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	32.2
HCM 6th LOS	C

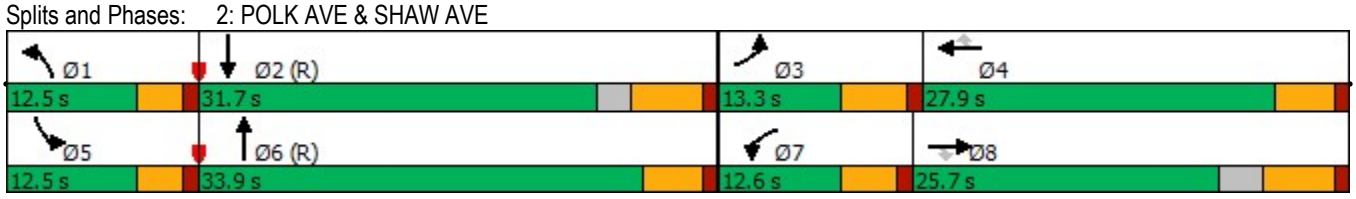


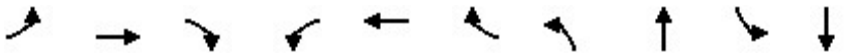
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	420	22	291	497	233	20	53	295	198	81	30
Future Volume (vph)	24	420	22	291	497	233	20	53	295	198	81	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	12	12
Storage Length (ft)	160		100	160		0	100		0	100		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.93	0.98		0.94	0.97	0.97		0.99	0.98	
Frt			0.850			0.850		0.873			0.959	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1711	1583	0	1711	1759	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1737	3539	1478	1727	1863	1487	1660	1583	0	1692	1759	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			262		282			23	
Link Speed (mph)		45			35			40			40	
Link Distance (ft)		792			570			414			378	
Travel Time (s)		12.0			11.1			7.1			6.4	
Confl. Peds. (#/hr)	21		21	21		21	21		21	21		21
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	27	472	25	327	558	262	22	60	331	222	91	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	472	25	327	558	262	22	391	0	222	125	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4						
Detector Phase	3	8	8	7	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (%)	15.2%	29.3%	29.3%	14.4%	31.8%	31.8%	14.3%	38.7%		14.3%	36.2%	
Maximum Green (s)	8.0	20.0	20.0	8.0	23.0	23.0	8.5	29.0		8.5	26.0	
Yellow Time (s)	4.3	4.7	4.7	3.6	3.9	3.9	3.0	3.9		3.0	4.7	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.7	5.7	4.6	4.9	4.9	4.0	4.9		4.0	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Time Before Reduce (s)	0.0	8.0	8.0	0.0	8.0	8.0	0.0	8.0		0.0	8.0	
Time To Reduce (s)	0.0	21.0	21.0	0.0	21.0	21.0	0.0	21.0		0.0	15.0	
Recall Mode	Max	Max	Max	Max	Max	Max	Max	C-Max		Max	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		5.0			5.0	
Flash Dont Walk (s)		13.0	13.0		16.0	16.0		24.0			21.0	
Pedestrian Calls (#/hr)		10	10		10	10		10			10	
Act Effct Green (s)	8.0	22.9	22.9	8.0	23.0	23.0	8.5	29.0		8.5	28.2	
Actuated g/C Ratio	0.09	0.26	0.26	0.09	0.26	0.26	0.10	0.33		0.10	0.32	
v/c Ratio	0.17	0.51	0.05	2.03	1.14	0.45	0.13	0.55		1.34	0.22	
Control Delay	39.5	29.9	0.2	509.7	117.7	6.2	38.3	10.1		221.0	18.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	39.5	29.9	0.2	509.7	117.7	6.2	38.3	10.1		221.0	18.7	
LOS	D	C	A	F	F	A	D	B		F	B	
Approach Delay		29.0			204.0			11.6			148.1	
Approach LOS		C			F			B			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 87.6			
Actuated Cycle Length: 87.6			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.03			
Intersection Signal Delay: 125.6		Intersection LOS: F	
Intersection Capacity Utilization 83.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: POLK AVE & SHAW AVE



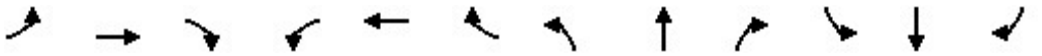


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	27	472	25	327	558	262	22	391	222	125
v/c Ratio	0.17	0.51	0.05	2.03	1.14	0.45	0.13	0.55	1.34	0.22
Control Delay	39.5	29.9	0.2	509.7	117.7	6.2	38.3	10.1	221.0	18.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	29.9	0.2	509.7	117.7	6.2	38.3	10.1	221.0	18.7
Queue Length 50th (ft)	14	116	0	~286	~364	0	11	43	~162	40
Queue Length 95th (ft)	39	162	0	#442	#550	55	33	121	#295	81
Internal Link Dist (ft)		712			490			334		298
Turn Bay Length (ft)	160		100	160			100		100	
Base Capacity (vph)	161	925	490	161	489	583	166	712	166	581
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	0.17	0.51	0.05	2.03	1.14	0.45	0.13	0.55	1.34	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



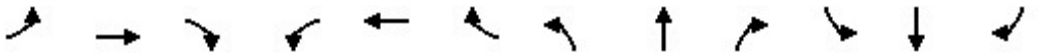
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	420	22	291	497	233	20	53	295	198	81	30
Future Volume (veh/h)	24	420	22	291	497	233	20	53	295	198	81	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.94	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	472	25	327	558	262	22	60	331	222	91	34
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	957	401	162	489	389	172	190	1046	172	995	372
Arrive On Green	0.09	0.27	0.27	0.09	0.26	0.26	0.10	0.78	0.78	0.10	0.78	0.78
Sat Flow, veh/h	1781	3554	1491	1781	1870	1489	1781	245	1350	1781	1284	480
Grp Volume(v), veh/h	27	472	25	327	558	262	22	0	391	222	0	125
Grp Sat Flow(s),veh/h/ln	1781	1777	1491	1781	1870	1489	1781	0	1594	1781	0	1764
Q Serve(g_s), s	1.2	9.8	1.1	8.0	23.0	13.9	1.0	0.0	6.4	8.5	0.0	1.5
Cycle Q Clear(g_c), s	1.2	9.8	1.1	8.0	23.0	13.9	1.0	0.0	6.4	8.5	0.0	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.85	1.00		0.27
Lane Grp Cap(c), veh/h	162	957	401	162	489	389	172	0	1236	172	0	1367
V/C Ratio(X)	0.17	0.49	0.06	2.02	1.14	0.67	0.13	0.00	0.32	1.29	0.00	0.09
Avail Cap(c_a), veh/h	162	957	401	162	489	389	172	0	1236	172	0	1367
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.9	27.1	23.9	40.0	32.5	29.1	36.4	0.0	3.0	39.8	0.0	2.4
Incr Delay (d2), s/veh	2.2	1.8	0.3	479.7	85.7	9.0	1.5	0.0	0.7	167.0	0.0	0.1
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	0.6	4.1	0.4	25.0	21.5	5.6	0.5	0.0	1.3	11.5	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	28.9	24.2	519.7	118.2	38.1	37.9	0.0	3.6	206.7	0.0	2.5
LnGrp LOS	D	C	C	F	F	D	D	A	A	F	A	A
Approach Vol, veh/h		524			1147			413			347	
Approach Delay, s/veh		29.2			214.4			5.4			133.2	
Approach LOS		C			F			A			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	75.1	13.3	28.7	12.5	75.1	12.6	29.4
Change Period (Y+Rc), s	4.0	5.7	5.3	* 5.7	4.0	* 5.7	4.6	5.7
Max Green Setting (Gmax), s	8.5	26.0	8.0	* 23	8.5	* 29	8.0	20.0
Max Q Clear Time (g_c+I1), s	3.0	3.5	3.2	25.0	10.5	8.4	10.0	11.8
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.0	1.6	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	127.4
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	207	2	1	258	23	2	0	0	80	0	43
Future Volume (vph)	61	207	2	1	258	23	2	0	0	80	0	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.988						0.953	
Flt Protected	0.950			0.950				0.950			0.969	
Satd. Flow (prot)	1787	1879	0	1787	1859	0	0	1787	0	0	1737	0
Flt Permitted	0.950			0.950				0.950			0.969	
Satd. Flow (perm)	1787	1879	0	1787	1859	0	0	1787	0	0	1737	0
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		396			496			184			147	
Travel Time (s)		6.8			8.5			5.0			4.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	68	230	2	1	287	26	2	0	0	89	0	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	232	0	1	313	0	0	2	0	0	137	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	207	2	1	258	23	2	0	0	80	0	43
Future Vol, veh/h	61	207	2	1	258	23	2	0	0	80	0	43
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	68	230	2	1	287	26	2	0	0	89	0	48

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	323	0	0	242	0	0	713	702	251	689	690	320
Stage 1	-	-	-	-	-	-	377	377	-	312	312	-
Stage 2	-	-	-	-	-	-	336	325	-	377	378	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1242	-	-	1330	-	-	348	364	790	361	369	723
Stage 1	-	-	-	-	-	-	647	618	-	701	659	-
Stage 2	-	-	-	-	-	-	680	651	-	647	617	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1230	-	-	1317	-	-	305	337	775	339	341	709
Mov Cap-2 Maneuver	-	-	-	-	-	-	305	337	-	339	341	-
Stage 1	-	-	-	-	-	-	606	578	-	656	652	-
Stage 2	-	-	-	-	-	-	628	644	-	605	578	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0	16.9	17.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	305	1230	-	-	1317	-	-	415
HCM Lane V/C Ratio	0.007	0.055	-	-	0.001	-	-	0.329
HCM Control Delay (s)	16.9	8.1	-	-	7.7	-	-	17.9
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	1.4

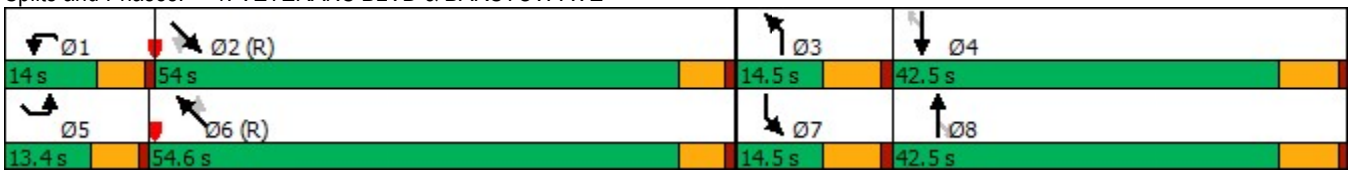
Appendix D-2: Near Term Scenario(s)

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	1	80	32	2	47	0	0	128	4	18	135	2
Future Volume (vph)	1	80	32	2	47	0	0	128	4	18	135	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	10	11	12	10	11	12	10	11	12	12
Storage Length (ft)	250		250	250		250	180		180	270		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.96	0.98					0.98	0.99		0.98
Frt			0.850						0.850			0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1728	5136	1492	1728	5136	1756	1818	1881	1492	1728	1881	1599
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1700	5136	1433	1701	5136	1756	1818	1881	1461	1716	1881	1566
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			125						134			134
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		689			712			593			807	
Travel Time (s)		8.5			8.8			10.1			13.8	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			2			2			2			2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1	90	36	2	53	0	0	144	4	20	152	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	90	36	2	53	0	0	144	4	20	152	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4			2			6
Minimum Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	52.4	52.4	13.4	52.4	52.4
Total Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	54.0	54.0	14.0	54.6	54.6
Total Split (%)	11.6%	34.0%	34.0%	11.6%	34.0%	34.0%	10.7%	43.2%	43.2%	11.2%	43.7%	43.7%
Maximum Green (s)	8.0	36.0	36.0	8.0	36.0	36.0	8.0	48.6	48.6	8.6	49.2	49.2
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Flash Dont Walk (s)		29.0	29.0		29.0	29.0		40.0	40.0		40.0	40.0
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10
Act Effct Green (s)	8.0	36.0	36.0	8.0	36.0			48.6	48.6	8.6	49.2	49.2
Actuated g/C Ratio	0.06	0.29	0.29	0.06	0.29			0.39	0.39	0.07	0.39	0.39
v/c Ratio	0.01	0.06	0.07	0.02	0.04			0.20	0.01	0.17	0.21	0.00
Control Delay	55.0	32.5	0.3	55.5	32.2			26.2	0.0	58.4	26.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	32.5	0.3	55.5	32.2			26.2	0.0	58.4	26.0	0.0
LOS	D	C	A	E	C			C	A	E	C	A
Approach Delay		23.5			33.0			25.5			29.4	
Approach LOS		C			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 125			
Offset: 0 (0%), Referenced to phase 2:SET and 6:NWT, Start of Green			
Natural Cycle: 125			
Control Type: Pretimed			
Maximum v/c Ratio: 0.21			
Intersection Signal Delay: 27.2		Intersection LOS: C	
Intersection Capacity Utilization 91.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: VETERANS BLVD & BARSTOW AVE



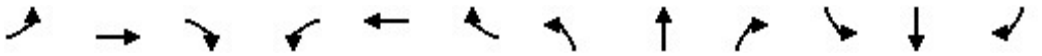
Lane Group	NBL	NBT	NBR	SBL	SBT	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	1	90	36	2	53	144	4	20	152	2
v/c Ratio	0.01	0.06	0.07	0.02	0.04	0.20	0.01	0.17	0.21	0.00
Control Delay	55.0	32.5	0.3	55.5	32.2	26.2	0.0	58.4	26.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	32.5	0.3	55.5	32.2	26.2	0.0	58.4	26.0	0.0
Queue Length 50th (ft)	1	19	0	2	11	76	0	16	80	0
Queue Length 95th (ft)	7	33	0	9	22	124	0	42	128	0
Internal Link Dist (ft)		609			632	513			727	
Turn Bay Length (ft)	250		250	250			180	270		
Base Capacity (vph)	110	1479	501	110	1479	731	649	118	740	697
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	0.01	0.06	0.07	0.02	0.04	0.20	0.01	0.17	0.21	0.00

Intersection Summary

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	1	80	32	2	47	0	0	128	4	18	135	2
Future Volume (veh/h)	1	80	32	2	47	0	0	128	4	18	135	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	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	90	36	2	53	0	0	144	4	20	152	2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	115	1482	442	115	1482	460	115	733	608	124	742	616
Arrive On Green	0.06	0.29	0.29	0.06	0.29	0.00	0.00	0.39	0.39	0.07	0.39	0.39
Sat Flow, veh/h	1795	5147	1534	1795	5147	1598	1795	1885	1565	1795	1885	1565
Grp Volume(v), veh/h	1	90	36	2	53	0	0	144	4	20	152	2
Grp Sat Flow(s),veh/h/ln	1795	1716	1534	1795	1716	1598	1795	1885	1565	1795	1885	1565
Q Serve(g_s), s	0.1	1.6	2.1	0.1	0.9	0.0	0.0	6.3	0.2	1.3	6.6	0.1
Cycle Q Clear(g_c), s	0.1	1.6	2.1	0.1	0.9	0.0	0.0	6.3	0.2	1.3	6.6	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	1482	442	115	1482	460	115	733	608	124	742	616
V/C Ratio(X)	0.01	0.06	0.08	0.02	0.04	0.00	0.00	0.20	0.01	0.16	0.20	0.00
Avail Cap(c_a), veh/h	115	1482	442	115	1482	460	115	733	608	124	742	616
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	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	32.2	32.4	54.8	32.0	0.0	0.0	25.3	23.4	54.8	25.0	23.0
Incr Delay (d2), s/veh	0.1	0.1	0.4	0.3	0.0	0.0	0.0	0.6	0.0	2.8	0.6	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	0.6	0.8	0.1	0.4	0.0	0.0	2.9	0.1	0.7	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	32.3	32.8	55.1	32.1	0.0	0.0	25.9	23.4	57.6	25.6	23.0
LnGrp LOS	D	C	C	E	C	A	A	C	C	E	C	C
Approach Vol, veh/h		127			55			148			174	
Approach Delay, s/veh		32.6			32.9			25.8			29.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	54.0	14.5	42.5	13.4	54.6	14.5	42.5
Change Period (Y+Rc), s	5.4	5.4	6.5	6.5	5.4	5.4	6.5	6.5
Max Green Setting (Gmax), s	8.6	48.6	8.0	36.0	8.0	49.2	8.0	36.0
Max Q Clear Time (g_c+I1), s	3.3	8.3	2.1	2.9	0.0	8.6	2.1	4.1
Green Ext Time (p_c), s	0.0	0.8	0.0	0.2	0.0	0.8	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C

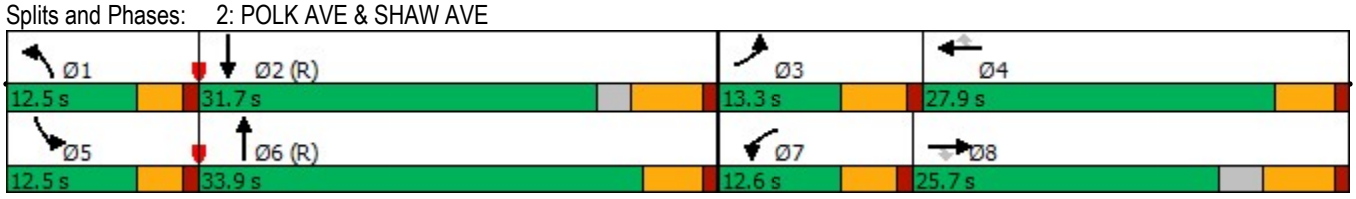


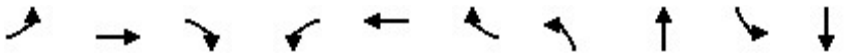
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	622	41	180	416	68	25	37	270	176	87	37
Future Volume (vph)	38	622	41	180	416	68	25	37	270	176	87	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	12	12
Storage Length (ft)	160		100	160		0	100		0	100		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99		0.96	0.99	0.98		0.99	0.99	
Frt			0.850			0.850		0.868			0.955	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3505	1568	1752	1845	1568	1694	1572	0	1694	1742	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1735	3505	1503	1738	1845	1507	1671	1572	0	1685	1742	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			141		254			26	
Link Speed (mph)		45			35			40			40	
Link Distance (ft)		792			570			414			378	
Travel Time (s)		12.0			11.1			7.1			6.4	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	44	715	47	207	478	78	29	43	310	202	100	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	715	47	207	478	78	29	353	0	202	143	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4						
Detector Phase	3	8	8	7	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (%)	15.2%	29.3%	29.3%	14.4%	31.8%	31.8%	14.3%	38.7%		14.3%	36.2%	
Maximum Green (s)	8.0	20.0	20.0	8.0	23.0	23.0	8.5	29.0		8.5	26.0	
Yellow Time (s)	4.3	4.7	4.7	3.6	3.9	3.9	3.0	3.9		3.0	4.7	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.7	5.7	4.6	4.9	4.9	4.0	4.9		4.0	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Time Before Reduce (s)	0.0	8.0	8.0	0.0	8.0	8.0	0.0	8.0		0.0	8.0	
Time To Reduce (s)	0.0	21.0	21.0	0.0	21.0	21.0	0.0	21.0		0.0	15.0	
Recall Mode	Max	Max	Max	Max	Max	Max	Max	C-Max		Max	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		5.0			5.0	
Flash Dont Walk (s)		13.0	13.0		16.0	16.0		24.0			21.0	
Pedestrian Calls (#/hr)		10	10		10	10		10			10	
Act Effct Green (s)	8.0	22.9	22.9	8.0	23.0	23.0	8.5	29.0		8.5	28.2	
Actuated g/C Ratio	0.09	0.26	0.26	0.09	0.26	0.26	0.10	0.33		0.10	0.32	
v/c Ratio	0.28	0.78	0.09	1.29	0.99	0.16	0.18	0.51		1.23	0.25	
Control Delay	41.9	37.1	0.4	205.9	72.2	1.3	39.2	9.8		182.5	19.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	41.9	37.1	0.4	205.9	72.2	1.3	39.2	9.8		182.5	19.1	
LOS	D	D	A	F	E	A	D	A		F	B	
Approach Delay		35.2			101.2			12.1			114.8	
Approach LOS		D			F			B			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 87.6			
Actuated Cycle Length: 87.6			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.29			
Intersection Signal Delay: 65.2		Intersection LOS: E	
Intersection Capacity Utilization 78.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: POLK AVE & SHAW AVE



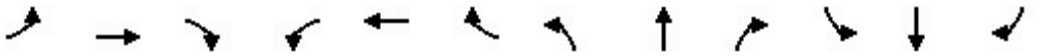


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	44	715	47	207	478	78	29	353	202	143
v/c Ratio	0.28	0.78	0.09	1.29	0.99	0.16	0.18	0.51	1.23	0.25
Control Delay	41.9	37.1	0.4	205.9	72.2	1.3	39.2	9.8	182.5	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	37.1	0.4	205.9	72.2	1.3	39.2	9.8	182.5	19.1
Queue Length 50th (ft)	23	192	0	~148	262	0	15	39	~139	47
Queue Length 95th (ft)	54	247	0	#270	#435	3	40	103	#260	88
Internal Link Dist (ft)		712			490			334		298
Turn Bay Length (ft)	160		100	160			100		100	
Base Capacity (vph)	160	916	497	160	484	499	164	690	164	578
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	0.28	0.78	0.09	1.29	0.99	0.16	0.18	0.51	1.23	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



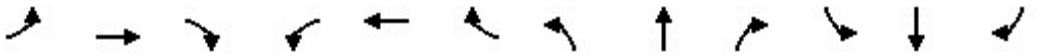
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	420	22	291	497	232	20	50	295	139	74	23
Future Volume (veh/h)	23	420	22	291	497	232	20	50	295	139	74	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	44	715	47	207	478	78	29	43	310	202	100	43
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	949	416	161	485	403	171	151	1087	171	952	409
Arrive On Green	0.09	0.27	0.27	0.09	0.26	0.26	0.10	0.78	0.78	0.10	0.78	0.78
Sat Flow, veh/h	1767	3526	1543	1767	1856	1542	1767	195	1402	1767	1228	528
Grp Volume(v), veh/h	44	715	47	207	478	78	29	0	353	202	0	143
Grp Sat Flow(s),veh/h/ln	1767	1763	1543	1767	1856	1542	1767	0	1597	1767	0	1756
Q Serve(g_s), s	2.0	16.4	2.0	8.0	22.6	3.5	1.3	0.0	5.6	8.5	0.0	1.8
Cycle Q Clear(g_c), s	2.0	16.4	2.0	8.0	22.6	3.5	1.3	0.0	5.6	8.5	0.0	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.88	1.00		0.30
Lane Grp Cap(c), veh/h	161	949	416	161	485	403	171	0	1237	171	0	1361
V/C Ratio(X)	0.27	0.75	0.11	1.29	0.99	0.19	0.17	0.00	0.29	1.18	0.00	0.11
Avail Cap(c_a), veh/h	161	949	416	161	485	403	171	0	1237	171	0	1361
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.3	29.5	24.2	40.0	32.3	25.3	36.5	0.0	2.9	39.8	0.0	2.4
Incr Delay (d2), s/veh	4.2	5.5	0.6	168.4	37.5	1.1	2.1	0.0	0.6	126.8	0.0	0.2
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	7.1	0.8	10.9	14.7	1.3	0.7	0.0	1.2	9.6	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	35.0	24.8	208.4	69.8	26.4	38.7	0.0	3.4	166.6	0.0	2.6
LnGrp LOS	D	C	C	F	E	C	D	A	A	F	A	A
Approach Vol, veh/h		806			763			382			345	
Approach Delay, s/veh		34.7			103.0			6.1			98.6	
Approach LOS		C			F			A			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	75.1	13.3	28.7	12.5	75.1	12.6	29.4
Change Period (Y+Rc), s	4.0	5.7	5.3	* 5.7	4.0	* 5.7	4.6	5.7
Max Green Setting (Gmax), s	8.5	26.0	8.0	* 23	8.5	* 29	8.0	20.0
Max Q Clear Time (g_c+I1), s	3.3	3.8	4.0	24.6	10.5	7.6	10.0	18.4
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.0	1.4	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	62.2
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	209	2	1	262	0	2	0	0	0	0	0
Future Volume (vph)	0	209	2	1	262	0	2	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999										
Flt Protected				0.950				0.950				
Satd. Flow (prot)	1881	1879	0	1787	1881	0	0	1787	0	0	1881	0
Flt Permitted				0.950				0.950				
Satd. Flow (perm)	1881	1879	0	1787	1881	0	0	1787	0	0	1881	0
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		396			496			184			147	
Travel Time (s)		6.8			8.5			5.0			4.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	0	232	2	1	291	0	2	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	234	0	1	291	0	0	2	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	209	2	1	262	0	2	0	0	0	0	0
Future Vol, veh/h	0	209	2	1	262	0	2	0	0	0	0	0
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	0	232	2	1	291	0	2	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	301	0	0	244	0	0	546	546	253	546	547	311
Stage 1	-	-	-	-	-	-	243	243	-	303	303	-
Stage 2	-	-	-	-	-	-	303	303	-	243	244	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1266	-	-	1328	-	-	450	447	788	450	446	731
Stage 1	-	-	-	-	-	-	763	707	-	708	665	-
Stage 2	-	-	-	-	-	-	708	665	-	763	706	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1254	-	-	1315	-	-	441	438	773	441	437	717
Mov Cap-2 Maneuver	-	-	-	-	-	-	441	438	-	441	437	-
Stage 1	-	-	-	-	-	-	755	700	-	701	658	-
Stage 2	-	-	-	-	-	-	701	658	-	756	699	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	13.2	0
HCM LOS			B	A

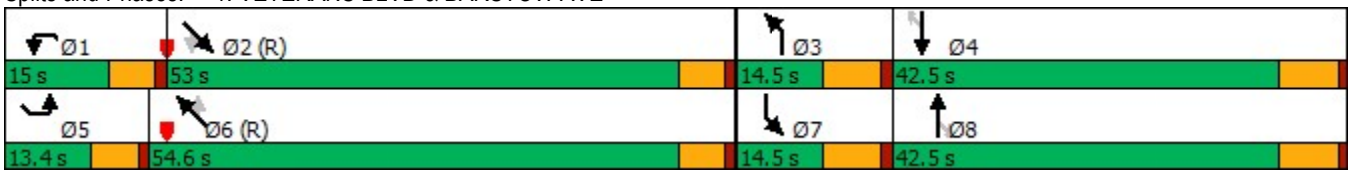
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	441	1254	-	-	1315	-	-	-
HCM Lane V/C Ratio	0.005	-	-	-	0.001	-	-	-
HCM Control Delay (s)	13.2	0	-	-	7.7	-	-	0
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	1	60	32	1	71	0	1	114	2	52	160	6
Future Volume (vph)	1	60	32	1	71	0	1	114	2	52	160	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	10	11	12	10	11	12	10	11	12	12
Storage Length (ft)	250		250	250		250	180		180	270		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.96	0.98			0.99		0.98	0.99		0.98
Frt			0.850						0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	5187	1507	1745	5187	1773	1745	1900	1507	1745	1900	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1718	5187	1452	1717	5187	1773	1734	1900	1477	1733	1900	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			125						134			134
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		689			712			593			807	
Travel Time (s)		8.5			8.8			10.1			13.8	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	63	34	1	75	0	1	120	2	55	168	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	63	34	1	75	0	1	120	2	55	168	6
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4			2			6
Minimum Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	52.4	52.4	13.4	52.4	52.4
Total Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	53.0	53.0	15.0	54.6	54.6
Total Split (%)	11.6%	34.0%	34.0%	11.6%	34.0%	34.0%	10.7%	42.4%	42.4%	12.0%	43.7%	43.7%
Maximum Green (s)	8.0	36.0	36.0	8.0	36.0	36.0	8.0	47.6	47.6	9.6	49.2	49.2
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		29.0	29.0		29.0	29.0		40.0	40.0		40.0	40.0

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10
Act Effct Green (s)	8.0	36.0	36.0	8.0	36.0		8.0	47.6	47.6	9.6	49.2	49.2
Actuated g/C Ratio	0.06	0.29	0.29	0.06	0.29		0.06	0.38	0.38	0.08	0.39	0.39
v/c Ratio	0.01	0.04	0.07	0.01	0.05		0.01	0.17	0.00	0.41	0.22	0.01
Control Delay	55.0	32.2	0.2	55.0	32.3		55.0	26.4	0.0	64.8	26.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	32.2	0.2	55.0	32.3		55.0	26.4	0.0	64.8	26.2	0.0
LOS	D	C	A	D	C		D	C	A	E	C	A
Approach Delay		21.4			32.6			26.2			34.8	
Approach LOS		C			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 125			
Offset: 0 (0%), Referenced to phase 2:SET and 6:NWT, Start of Green			
Natural Cycle: 125			
Control Type: Pretimed			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 30.0		Intersection LOS: C	
Intersection Capacity Utilization 91.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: VETERANS BLVD & BARSTOW AVE



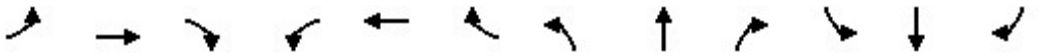
Lane Group	NBL	NBT	NBR	SBL	SBT	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	1	63	34	1	75	1	120	2	55	168	6
v/c Ratio	0.01	0.04	0.07	0.01	0.05	0.01	0.17	0.00	0.41	0.22	0.01
Control Delay	55.0	32.2	0.2	55.0	32.3	55.0	26.4	0.0	64.8	26.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	32.2	0.2	55.0	32.3	55.0	26.4	0.0	64.8	26.2	0.0
Queue Length 50th (ft)	1	13	0	1	16	1	64	0	43	89	0
Queue Length 95th (ft)	7	26	0	7	29	7	108	0	88	142	0
Internal Link Dist (ft)		609			632		513			727	
Turn Bay Length (ft)	250		250	250		180		180	270		
Base Capacity (vph)	111	1493	507	111	1493	111	723	645	134	747	704
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.04	0.07	0.01	0.05	0.01	0.17	0.00	0.41	0.22	0.01

Intersection Summary

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	1	60	32	1	71	0	1	114	2	52	160	6
Future Volume (veh/h)	1	60	32	1	71	0	1	114	2	52	160	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		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1	63	34	1	75	0	1	120	2	55	168	6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	116	1494	456	116	1494	464	116	724	608	139	748	629
Arrive On Green	0.06	0.29	0.29	0.06	0.29	0.00	0.06	0.38	0.38	0.08	0.39	0.39
Sat Flow, veh/h	1810	5187	1582	1810	5187	1610	1810	1900	1597	1810	1900	1598
Grp Volume(v), veh/h	1	63	34	1	75	0	1	120	2	55	168	6
Grp Sat Flow(s),veh/h/ln	1810	1729	1582	1810	1729	1610	1810	1900	1597	1810	1900	1598
Q Serve(g_s), s	0.1	1.1	2.0	0.1	1.3	0.0	0.1	5.2	0.1	3.6	7.4	0.3
Cycle Q Clear(g_c), s	0.1	1.1	2.0	0.1	1.3	0.0	0.1	5.2	0.1	3.6	7.4	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	1494	456	116	1494	464	116	724	608	139	748	629
V/C Ratio(X)	0.01	0.04	0.07	0.01	0.05	0.00	0.01	0.17	0.00	0.40	0.22	0.01
Avail Cap(c_a), veh/h	116	1494	456	116	1494	464	116	724	608	139	748	629
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	32.1	32.4	54.8	32.1	0.0	54.8	25.6	24.0	54.9	25.2	23.1
Incr Delay (d2), s/veh	0.1	0.1	0.3	0.1	0.1	0.0	0.1	0.5	0.0	8.2	0.7	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	0.4	0.8	0.0	0.5	0.0	0.0	2.4	0.0	1.9	3.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	32.1	32.7	54.9	32.2	0.0	54.9	26.1	24.0	63.2	25.9	23.1
LnGrp LOS	D	C	C	D	C	A	D	C	C	E	C	C
Approach Vol, veh/h		98			76			123			229	
Approach Delay, s/veh		32.6			32.5			26.3			34.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	53.0	14.5	42.5	13.4	54.6	14.5	42.5
Change Period (Y+Rc), s	5.4	5.4	6.5	6.5	5.4	5.4	6.5	6.5
Max Green Setting (Gmax), s	9.6	47.6	8.0	36.0	8.0	49.2	8.0	36.0
Max Q Clear Time (g_c+I1), s	5.6	7.2	2.1	3.3	2.1	9.4	2.1	4.0
Green Ext Time (p_c), s	0.0	0.6	0.0	0.4	0.0	0.9	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	32.1
HCM 6th LOS	C

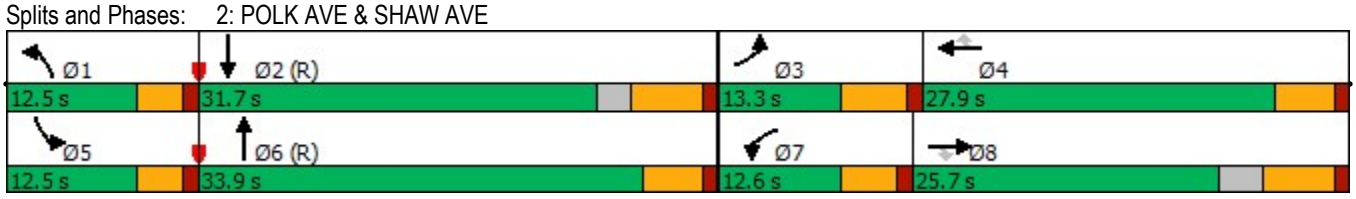


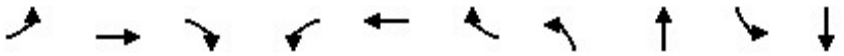
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	420	22	291	497	232	20	50	295	139	74	23
Future Volume (vph)	23	420	22	291	497	232	20	50	295	139	74	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	12	12
Storage Length (ft)	160		100	160		0	100		0	100		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.93	0.98		0.94	0.97	0.97		0.99	0.99	
Frt			0.850			0.850		0.872			0.964	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1711	1581	0	1711	1772	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1737	3539	1478	1727	1863	1487	1659	1581	0	1692	1772	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			261		300			19	
Link Speed (mph)		45			35			40			40	
Link Distance (ft)		792			570			414			378	
Travel Time (s)		12.0			11.1			7.1			6.4	
Confl. Peds. (#/hr)	21		21	21		21	21		21	21		21
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	26	472	25	327	558	261	22	56	331	156	83	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	472	25	327	558	261	22	387	0	156	109	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4						
Detector Phase	3	8	8	7	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (%)	15.2%	29.3%	29.3%	14.4%	31.8%	31.8%	14.3%	38.7%		14.3%	36.2%	
Maximum Green (s)	8.0	20.0	20.0	8.0	23.0	23.0	8.5	29.0		8.5	26.0	
Yellow Time (s)	4.3	4.7	4.7	3.6	3.9	3.9	3.0	3.9		3.0	4.7	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.7	5.7	4.6	4.9	4.9	4.0	4.9		4.0	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Time Before Reduce (s)	0.0	8.0	8.0	0.0	8.0	8.0	0.0	8.0		0.0	8.0	
Time To Reduce (s)	0.0	21.0	21.0	0.0	21.0	21.0	0.0	21.0		0.0	15.0	
Recall Mode	Max	Max	Max	Max	Max	Max	Max	C-Max		Max	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		5.0			5.0	
Flash Dont Walk (s)		13.0	13.0		16.0	16.0		24.0			21.0	
Pedestrian Calls (#/hr)		10	10		10	10		10			10	
Act Effct Green (s)	8.0	22.9	22.9	8.0	23.0	23.0	8.5	29.0		8.5	28.2	
Actuated g/C Ratio	0.09	0.26	0.26	0.09	0.26	0.26	0.10	0.33		0.10	0.32	
v/c Ratio	0.16	0.51	0.05	2.03	1.14	0.45	0.13	0.53		0.94	0.19	
Control Delay	39.3	29.9	0.2	509.7	117.7	6.2	38.3	8.9		97.9	18.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	39.3	29.9	0.2	509.7	117.7	6.2	38.3	8.9		97.9	18.6	
LOS	D	C	A	F	F	A	D	A		F	B	
Approach Delay		28.9			204.2			10.4			65.3	
Approach LOS		C			F			B			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 87.6			
Actuated Cycle Length: 87.6			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.03			
Intersection Signal Delay: 115.5		Intersection LOS: F	
Intersection Capacity Utilization 80.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: POLK AVE & SHAW AVE



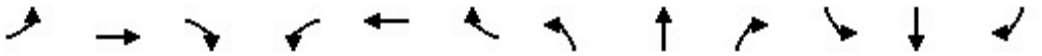


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	472	25	327	558	261	22	387	156	109
v/c Ratio	0.16	0.51	0.05	2.03	1.14	0.45	0.13	0.53	0.94	0.19
Control Delay	39.3	29.9	0.2	509.7	117.7	6.2	38.3	8.9	97.9	18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	29.9	0.2	509.7	117.7	6.2	38.3	8.9	97.9	18.6
Queue Length 50th (ft)	14	116	0	~286	~364	0	11	34	87	35
Queue Length 95th (ft)	38	162	0	#442	#550	55	33	107	#201	73
Internal Link Dist (ft)		712			490			334		298
Turn Bay Length (ft)	160		100	160			100		100	
Base Capacity (vph)	161	925	490	161	489	582	166	724	166	583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.51	0.05	2.03	1.14	0.45	0.13	0.53	0.94	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



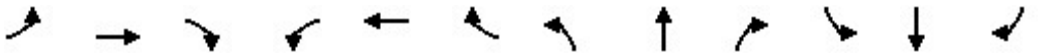
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	420	22	291	497	232	20	50	295	139	74	23
Future Volume (veh/h)	23	420	22	291	497	232	20	50	295	139	74	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.94	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	472	25	327	558	261	22	56	331	156	83	26
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	957	401	162	489	389	172	179	1055	172	1048	328
Arrive On Green	0.09	0.27	0.27	0.09	0.26	0.26	0.10	0.78	0.78	0.10	0.78	0.78
Sat Flow, veh/h	1781	3554	1491	1781	1870	1489	1781	230	1362	1781	1353	424
Grp Volume(v), veh/h	26	472	25	327	558	261	22	0	387	156	0	109
Grp Sat Flow(s),veh/h/ln	1781	1777	1491	1781	1870	1489	1781	0	1592	1781	0	1777
Q Serve(g_s), s	1.2	9.8	1.1	8.0	23.0	13.8	1.0	0.0	6.4	7.6	0.0	1.3
Cycle Q Clear(g_c), s	1.2	9.8	1.1	8.0	23.0	13.8	1.0	0.0	6.4	7.6	0.0	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.86	1.00		0.24
Lane Grp Cap(c), veh/h	162	957	401	162	489	389	172	0	1234	172	0	1377
V/C Ratio(X)	0.16	0.49	0.06	2.02	1.14	0.67	0.13	0.00	0.31	0.91	0.00	0.08
Avail Cap(c_a), veh/h	162	957	401	162	489	389	172	0	1234	172	0	1377
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.9	27.1	23.9	40.0	32.5	29.1	36.4	0.0	2.9	39.4	0.0	2.4
Incr Delay (d2), s/veh	2.1	1.8	0.3	479.7	85.7	8.9	1.5	0.0	0.7	47.6	0.0	0.1
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	0.6	4.1	0.4	25.0	21.5	5.5	0.5	0.0	1.3	5.5	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.0	28.9	24.2	519.7	118.2	38.0	37.9	0.0	3.6	87.0	0.0	2.5
LnGrp LOS	D	C	C	F	F	D	D	A	A	F	A	A
Approach Vol, veh/h		523			1146			409			265	
Approach Delay, s/veh		29.2			214.5			5.5			52.2	
Approach LOS		C			F			A			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	75.1	13.3	28.7	12.5	75.1	12.6	29.4
Change Period (Y+Rc), s	4.0	5.7	5.3	* 5.7	4.0	* 5.7	4.6	5.7
Max Green Setting (Gmax), s	8.5	26.0	8.0	* 23	8.5	* 29	8.0	20.0
Max Q Clear Time (g_c+I1), s	3.0	3.3	3.2	25.0	9.6	8.4	10.0	11.8
Green Ext Time (p_c), s	0.0	0.3	0.0	0.0	0.0	1.6	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	118.3
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	209	2	1	262	0	2	0	0	0	0	0
Future Volume (vph)	0	209	2	1	262	0	2	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999										
Flt Protected				0.950				0.950				
Satd. Flow (prot)	1881	1879	0	1787	1881	0	0	1787	0	0	1881	0
Flt Permitted				0.950				0.950				
Satd. Flow (perm)	1881	1879	0	1787	1881	0	0	1787	0	0	1881	0
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		396			496			184			147	
Travel Time (s)		6.8			8.5			5.0			4.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	0	232	2	1	291	0	2	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	234	0	1	291	0	0	2	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	209	2	1	262	0	2	0	0	0	0	0
Future Vol, veh/h	0	209	2	1	262	0	2	0	0	0	0	0
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	0	232	2	1	291	0	2	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	301	0	0	244	0	0	546	546	253	546	547	311
Stage 1	-	-	-	-	-	-	243	243	-	303	303	-
Stage 2	-	-	-	-	-	-	303	303	-	243	244	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1266	-	-	1328	-	-	450	447	788	450	446	731
Stage 1	-	-	-	-	-	-	763	707	-	708	665	-
Stage 2	-	-	-	-	-	-	708	665	-	763	706	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1254	-	-	1315	-	-	441	438	773	441	437	717
Mov Cap-2 Maneuver	-	-	-	-	-	-	441	438	-	441	437	-
Stage 1	-	-	-	-	-	-	755	700	-	701	658	-
Stage 2	-	-	-	-	-	-	701	658	-	756	699	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	13.2	0
HCM LOS			B	A

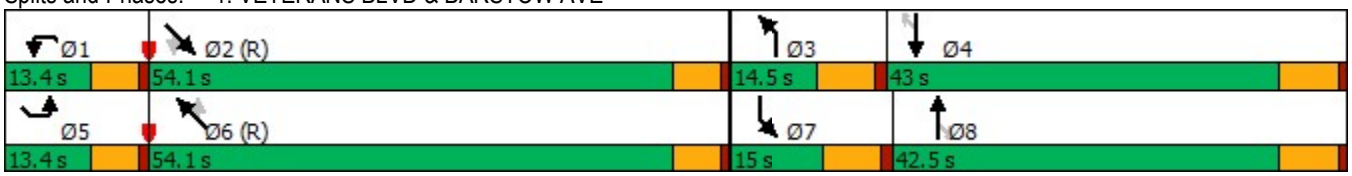
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	441	1254	-	-	1315	-	-	-
HCM Lane V/C Ratio	0.005	-	-	-	0.001	-	-	-
HCM Control Delay (s)	13.2	0	-	-	7.7	-	-	0
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	1	80	39	21	47	0	0	132	4	21	136	8
Future Volume (vph)	1	80	39	21	47	0	0	132	4	21	136	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	10	11	12	10	11	12	10	11	12	12
Storage Length (ft)	250		250	250		250	180		180	270		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.96	0.98					0.98	0.99		0.98
Frt			0.850						0.850			0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1728	5136	1492	1728	5136	1756	1818	1881	1492	1728	1881	1599
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1700	5136	1433	1701	5136	1756	1818	1881	1461	1716	1881	1566
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			125						134			134
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		689			712			593			807	
Travel Time (s)		8.5			8.8			10.1			13.8	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Confl. Bikes (#/hr)			2			2			2			2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1	90	44	24	53	0	0	148	4	24	153	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	90	44	24	53	0	0	148	4	24	153	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4			2			6
Minimum Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	52.4	52.4	13.4	52.4	52.4
Total Split (s)	14.5	42.5	42.5	15.0	43.0	43.0	13.4	54.1	54.1	13.4	54.1	54.1
Total Split (%)	11.6%	34.0%	34.0%	12.0%	34.4%	34.4%	10.7%	43.3%	43.3%	10.7%	43.3%	43.3%
Maximum Green (s)	8.0	36.0	36.0	8.5	36.5	36.5	8.0	48.7	48.7	8.0	48.7	48.7
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Flash Dont Walk (s)		29.0	29.0		29.0	29.0		40.0	40.0		40.0	40.0
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10
Act Effct Green (s)	8.0	36.0	36.0	8.5	36.5			48.7	48.7	8.0	48.7	48.7
Actuated g/C Ratio	0.06	0.29	0.29	0.07	0.29			0.39	0.39	0.06	0.39	0.39
v/c Ratio	0.01	0.06	0.09	0.21	0.04			0.20	0.01	0.22	0.21	0.01
Control Delay	55.0	32.5	0.3	59.6	31.8			26.2	0.0	60.6	26.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	32.5	0.3	59.6	31.8			26.2	0.0	60.6	26.3	0.0
LOS	D	C	A	E	C			C	A	E	C	A
Approach Delay		22.1			40.5			25.5			29.5	
Approach LOS		C			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 125			
Offset: 0 (0%), Referenced to phase 2:SET and 6:NWT, Start of Green			
Natural Cycle: 125			
Control Type: Pretimed			
Maximum v/c Ratio: 0.22			
Intersection Signal Delay: 28.1		Intersection LOS: C	
Intersection Capacity Utilization 91.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: VETERANS BLVD & BARSTOW AVE



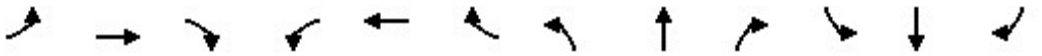
Lane Group	NBL	NBT	NBR	SBL	SBT	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	1	90	44	24	53	148	4	24	153	9
v/c Ratio	0.01	0.06	0.09	0.21	0.04	0.20	0.01	0.22	0.21	0.01
Control Delay	55.0	32.5	0.3	59.6	31.8	26.2	0.0	60.6	26.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	32.5	0.3	59.6	31.8	26.2	0.0	60.6	26.3	0.0
Queue Length 50th (ft)	1	19	0	19	11	78	0	19	81	0
Queue Length 95th (ft)	7	33	0	48	22	126	0	48	130	0
Internal Link Dist (ft)		609			632	513			727	
Turn Bay Length (ft)	250		250	250			180	270		
Base Capacity (vph)	110	1479	501	117	1499	732	650	110	732	691
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	0.01	0.06	0.09	0.21	0.04	0.20	0.01	0.22	0.21	0.01

Intersection Summary

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	1	80	39	21	47	0	0	132	4	21	136	8
Future Volume (veh/h)	1	80	39	21	47	0	0	132	4	21	136	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	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	90	44	24	53	0	0	148	4	24	153	9
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	115	1482	442	122	1503	467	115	734	610	115	734	610
Arrive On Green	0.06	0.29	0.29	0.07	0.29	0.00	0.00	0.39	0.39	0.06	0.39	0.39
Sat Flow, veh/h	1795	5147	1534	1795	5147	1598	1795	1885	1565	1795	1885	1565
Grp Volume(v), veh/h	1	90	44	24	53	0	0	148	4	24	153	9
Grp Sat Flow(s),veh/h/ln	1795	1716	1534	1795	1716	1598	1795	1885	1565	1795	1885	1565
Q Serve(g_s), s	0.1	1.6	2.6	1.6	0.9	0.0	0.0	6.5	0.2	1.6	6.7	0.4
Cycle Q Clear(g_c), s	0.1	1.6	2.6	1.6	0.9	0.0	0.0	6.5	0.2	1.6	6.7	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	1482	442	122	1503	467	115	734	610	115	734	610
V/C Ratio(X)	0.01	0.06	0.10	0.20	0.04	0.00	0.00	0.20	0.01	0.21	0.21	0.01
Avail Cap(c_a), veh/h	115	1482	442	122	1503	467	115	734	610	115	734	610
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	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	32.2	32.6	55.0	31.7	0.0	0.0	25.3	23.3	55.5	25.3	23.4
Incr Delay (d2), s/veh	0.1	0.1	0.4	3.6	0.0	0.0	0.0	0.6	0.0	4.1	0.6	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	0.6	1.0	0.8	0.4	0.0	0.0	3.0	0.1	0.8	3.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	32.3	33.1	58.6	31.7	0.0	0.0	25.9	23.4	59.6	26.0	23.5
LnGrp LOS	D	C	C	E	C	A	A	C	C	E	C	C
Approach Vol, veh/h		135			77			152			186	
Approach Delay, s/veh		32.7			40.1			25.8			30.2	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	54.1	14.5	43.0	13.4	54.1	15.0	42.5
Change Period (Y+Rc), s	5.4	5.4	6.5	6.5	5.4	5.4	6.5	6.5
Max Green Setting (Gmax), s	8.0	48.7	8.0	36.5	8.0	48.7	8.5	36.0
Max Q Clear Time (g_c+I1), s	3.6	8.5	2.1	2.9	0.0	8.7	3.6	4.6
Green Ext Time (p_c), s	0.0	0.8	0.0	0.2	0.0	0.8	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	31.0
HCM 6th LOS	C

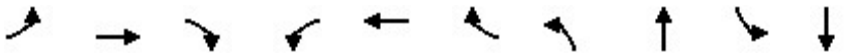


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	622	41	180	416	135	25	51	270	189	89	37
Future Volume (vph)	46	622	41	180	416	135	25	51	270	189	89	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	12	12
Storage Length (ft)	160		100	160		0	100		0	100		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99		0.96	0.99	0.98		0.99	0.99	
Frt			0.850			0.850		0.874			0.956	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3505	1568	1752	1845	1568	1694	1584	0	1694	1744	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1735	3505	1503	1738	1845	1507	1671	1584	0	1685	1744	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			155		251			26	
Link Speed (mph)		45			35			40			40	
Link Distance (ft)		792			570			414			378	
Travel Time (s)		12.0			11.1			7.1			6.4	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	53	715	47	207	478	155	29	59	310	217	102	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	715	47	207	478	155	29	369	0	217	145	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4						
Detector Phase	3	8	8	7	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (%)	15.2%	29.3%	29.3%	14.4%	31.8%	31.8%	14.3%	38.7%		14.3%	36.2%	
Maximum Green (s)	8.0	20.0	20.0	8.0	23.0	23.0	8.5	29.0		8.5	26.0	
Yellow Time (s)	4.3	4.7	4.7	3.6	3.9	3.9	3.0	3.9		3.0	4.7	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.7	5.7	4.6	4.9	4.9	4.0	4.9		4.0	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Time Before Reduce (s)	0.0	8.0	8.0	0.0	8.0	8.0	0.0	8.0		0.0	8.0	
Time To Reduce (s)	0.0	21.0	21.0	0.0	21.0	21.0	0.0	21.0		0.0	15.0	
Recall Mode	Max	Max	Max	Max	Max	Max	Max	C-Max		Max	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		5.0			5.0	
Flash Dont Walk (s)		13.0	13.0		16.0	16.0		24.0			21.0	
Pedestrian Calls (#/hr)		10	10		10	10		10			10	
Act Effct Green (s)	8.0	22.9	22.9	8.0	23.0	23.0	8.5	29.0		8.5	28.2	
Actuated g/C Ratio	0.09	0.26	0.26	0.09	0.26	0.26	0.10	0.33		0.10	0.32	
v/c Ratio	0.33	0.78	0.09	1.29	0.99	0.30	0.18	0.53		1.32	0.25	
Control Delay	43.4	37.1	0.4	205.9	72.2	6.3	39.2	10.8		215.9	19.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	43.4	37.1	0.4	205.9	72.2	6.3	39.2	10.8		215.9	19.2	
LOS	D	D	A	F	E	A	D	B		F	B	
Approach Delay		35.4			93.0			12.9			137.2	
Approach LOS		D			F			B			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 87.6			
Actuated Cycle Length: 87.6			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.32			
Intersection Signal Delay: 67.0		Intersection LOS: E	
Intersection Capacity Utilization 79.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: POLK AVE & SHAW AVE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	53	715	47	207	478	155	29	369	217	145
v/c Ratio	0.33	0.78	0.09	1.29	0.99	0.30	0.18	0.53	1.32	0.25
Control Delay	43.4	37.1	0.4	205.9	72.2	6.3	39.2	10.8	215.9	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.4	37.1	0.4	205.9	72.2	6.3	39.2	10.8	215.9	19.2
Queue Length 50th (ft)	28	192	0	~148	262	0	15	47	~157	47
Queue Length 95th (ft)	62	247	0	#270	#435	41	40	117	#281	89
Internal Link Dist (ft)		712			490			334		298
Turn Bay Length (ft)	160		100	160			100		100	
Base Capacity (vph)	160	916	497	160	484	509	164	692	164	579
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	0.33	0.78	0.09	1.29	0.99	0.30	0.18	0.53	1.32	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

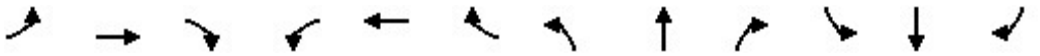
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	622	41	180	416	135	25	51	270	189	89	37
Future Volume (veh/h)	46	622	41	180	416	135	25	51	270	189	89	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	715	47	207	478	155	29	59	310	217	102	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	949	416	161	485	403	171	199	1046	171	958	404
Arrive On Green	0.09	0.27	0.27	0.09	0.26	0.26	0.10	0.78	0.78	0.10	0.78	0.78
Sat Flow, veh/h	1767	3526	1543	1767	1856	1542	1767	257	1350	1767	1236	521
Grp Volume(v), veh/h	53	715	47	207	478	155	29	0	369	217	0	145
Grp Sat Flow(s),veh/h/ln	1767	1763	1543	1767	1856	1542	1767	0	1606	1767	0	1758
Q Serve(g_s), s	2.5	16.4	2.0	8.0	22.6	7.3	1.3	0.0	5.9	8.5	0.0	1.8
Cycle Q Clear(g_c), s	2.5	16.4	2.0	8.0	22.6	7.3	1.3	0.0	5.9	8.5	0.0	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.84	1.00		0.30
Lane Grp Cap(c), veh/h	161	949	416	161	485	403	171	0	1245	171	0	1362
V/C Ratio(X)	0.33	0.75	0.11	1.29	0.99	0.38	0.17	0.00	0.30	1.27	0.00	0.11
Avail Cap(c_a), veh/h	161	949	416	161	485	403	171	0	1245	171	0	1362
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.5	29.5	24.2	40.0	32.3	26.7	36.5	0.0	2.9	39.8	0.0	2.4
Incr Delay (d2), s/veh	5.4	5.5	0.6	168.4	37.5	2.8	2.1	0.0	0.6	159.8	0.0	0.2
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	1.3	7.1	0.8	10.9	14.7	2.8	0.7	0.0	1.2	11.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.9	35.0	24.8	208.4	69.8	29.4	38.7	0.0	3.5	199.6	0.0	2.6
LnGrp LOS	D	C	C	F	E	C	D	A	A	F	A	A
Approach Vol, veh/h		815			840			398			362	
Approach Delay, s/veh		34.9			96.5			6.1			120.7	
Approach LOS		C			F			A			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	75.1	13.3	28.7	12.5	75.1	12.6	29.4
Change Period (Y+Rc), s	4.0	5.7	5.3	* 5.7	4.0	* 5.7	4.6	5.7
Max Green Setting (Gmax), s	8.5	26.0	8.0	* 23	8.5	* 29	8.0	20.0
Max Q Clear Time (g_c+I1), s	3.3	3.8	4.5	24.6	10.5	7.9	10.0	18.4
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.0	1.4	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	64.4
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	280	0	0	132	89	0	0	0	15	0	10
Future Volume (vph)	10	280	0	0	132	89	0	0	0	15	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.939						0.945	
Flt Protected	0.950										0.971	
Satd. Flow (prot)	1770	1863	0	1863	1749	0	0	1863	0	0	1709	0
Flt Permitted	0.950										0.971	
Satd. Flow (perm)	1770	1863	0	1863	1749	0	0	1863	0	0	1709	0
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		396			496			184			147	
Travel Time (s)		6.8			8.5			5.0			4.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	13	354	0	0	167	113	0	0	0	19	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	354	0	0	280	0	0	0	0	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	280	0	0	132	89	0	0	0	15	0	10
Future Vol, veh/h	10	280	0	0	132	89	0	0	0	15	0	10
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	354	0	0	167	113	0	0	0	19	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	290	0	0	364	0	0	630	680	374	624	624	244
Stage 1	-	-	-	-	-	-	390	390	-	234	234	-
Stage 2	-	-	-	-	-	-	240	290	-	390	390	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1272	-	-	1195	-	-	394	373	672	398	402	795
Stage 1	-	-	-	-	-	-	634	608	-	769	711	-
Stage 2	-	-	-	-	-	-	763	672	-	634	608	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1260	-	-	1184	-	-	377	362	659	387	390	780
Mov Cap-2 Maneuver	-	-	-	-	-	-	377	362	-	387	390	-
Stage 1	-	-	-	-	-	-	621	596	-	754	704	-
Stage 2	-	-	-	-	-	-	743	665	-	621	596	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	0	12.9
HCM LOS			A	B

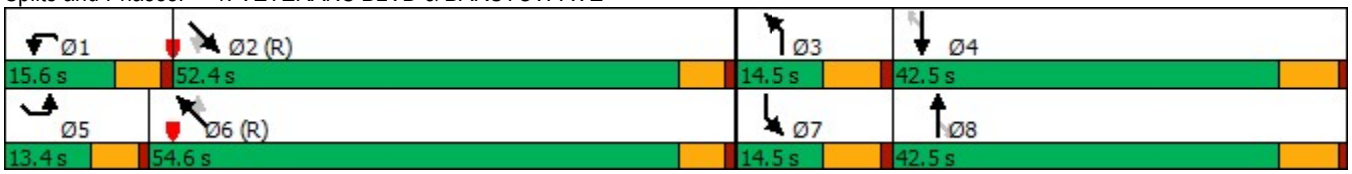
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1260	-	-	1184	-	-	485
HCM Lane V/C Ratio	-	0.01	-	-	-	-	-	0.065
HCM Control Delay (s)	0	7.9	-	-	0	-	-	12.9
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	1	60	35	3	71	0	1	115	2	60	162	39
Future Volume (vph)	1	60	35	3	71	0	1	115	2	60	162	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	10	11	12	10	11	12	10	11	12	12
Storage Length (ft)	250		250	250		250	180		180	270		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.96	0.98			0.99		0.98	0.99		0.98
Frt			0.850						0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	5187	1507	1745	5187	1773	1745	1900	1507	1745	1900	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1718	5187	1452	1717	5187	1773	1734	1900	1477	1733	1900	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			125						134			134
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		689			712			593			807	
Travel Time (s)		8.5			8.8			10.1			13.8	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	63	37	3	75	0	1	121	2	63	171	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	63	37	3	75	0	1	121	2	63	171	41
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4			2			6
Minimum Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	52.4	52.4	13.4	52.4	52.4
Total Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	52.4	52.4	15.6	54.6	54.6
Total Split (%)	11.6%	34.0%	34.0%	11.6%	34.0%	34.0%	10.7%	41.9%	41.9%	12.5%	43.7%	43.7%
Maximum Green (s)	8.0	36.0	36.0	8.0	36.0	36.0	8.0	47.0	47.0	10.2	49.2	49.2
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		29.0	29.0		29.0	29.0		40.0	40.0		40.0	40.0

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10
Act Effct Green (s)	8.0	36.0	36.0	8.0	36.0		8.0	47.0	47.0	10.2	49.2	49.2
Actuated g/C Ratio	0.06	0.29	0.29	0.06	0.29		0.06	0.38	0.38	0.08	0.39	0.39
v/c Ratio	0.01	0.04	0.07	0.03	0.05		0.01	0.17	0.00	0.44	0.23	0.06
Control Delay	55.0	32.2	0.3	55.7	32.3		55.0	26.8	0.0	65.2	26.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	32.2	0.3	55.7	32.3		55.0	26.8	0.0	65.2	26.3	0.2
LOS	D	C	A	E	C		D	C	A	E	C	A
Approach Delay		20.8			33.2			26.6			31.3	
Approach LOS		C			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 125			
Offset: 0 (0%), Referenced to phase 2:SET and 6:NWT, Start of Green			
Natural Cycle: 125			
Control Type: Pretimed			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 28.7		Intersection LOS: C	
Intersection Capacity Utilization 91.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: VETERANS BLVD & BARSTOW AVE



Lane Group	NBL	NBT	NBR	SBL	SBT	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	1	63	37	3	75	1	121	2	63	171	41
v/c Ratio	0.01	0.04	0.07	0.03	0.05	0.01	0.17	0.00	0.44	0.23	0.06
Control Delay	55.0	32.2	0.3	55.7	32.3	55.0	26.8	0.0	65.2	26.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	32.2	0.3	55.7	32.3	55.0	26.8	0.0	65.2	26.3	0.2
Queue Length 50th (ft)	1	13	0	2	16	1	65	0	49	91	0
Queue Length 95th (ft)	7	26	0	12	29	7	109	0	97	144	0
Internal Link Dist (ft)		609			632		513			727	
Turn Bay Length (ft)	250		250	250		180		180	270		
Base Capacity (vph)	111	1493	507	111	1493	111	714	638	142	747	704
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.04	0.07	0.03	0.05	0.01	0.17	0.00	0.44	0.23	0.06

Intersection Summary

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	1	60	35	3	71	0	1	115	2	60	162	39
Future Volume (veh/h)	1	60	35	3	71	0	1	115	2	60	162	39
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		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	1	63	37	3	75	0	1	121	2	63	171	41
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	116	1494	456	116	1494	464	116	714	601	148	748	629
Arrive On Green	0.06	0.29	0.29	0.06	0.29	0.00	0.06	0.38	0.38	0.08	0.39	0.39
Sat Flow, veh/h	1810	5187	1582	1810	5187	1610	1810	1900	1597	1810	1900	1598
Grp Volume(v), veh/h	1	63	37	3	75	0	1	121	2	63	171	41
Grp Sat Flow(s),veh/h/ln	1810	1729	1582	1810	1729	1610	1810	1900	1597	1810	1900	1598
Q Serve(g_s), s	0.1	1.1	2.1	0.2	1.3	0.0	0.1	5.3	0.1	4.1	7.5	2.0
Cycle Q Clear(g_c), s	0.1	1.1	2.1	0.2	1.3	0.0	0.1	5.3	0.1	4.1	7.5	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	1494	456	116	1494	464	116	714	601	148	748	629
V/C Ratio(X)	0.01	0.04	0.08	0.03	0.05	0.00	0.01	0.17	0.00	0.43	0.23	0.07
Avail Cap(c_a), veh/h	116	1494	456	116	1494	464	116	714	601	148	748	629
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	32.1	32.4	54.8	32.1	0.0	54.8	26.0	24.4	54.6	25.3	23.6
Incr Delay (d2), s/veh	0.1	0.1	0.3	0.4	0.1	0.0	0.1	0.5	0.0	8.8	0.7	0.2
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	0.0	0.4	0.8	0.1	0.5	0.0	0.0	2.5	0.0	2.2	3.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	32.1	32.8	55.3	32.2	0.0	54.9	26.5	24.4	63.4	26.0	23.8
LnGrp LOS	D	C	C	E	C	A	D	C	C	E	C	C
Approach Vol, veh/h		101			78			124			275	
Approach Delay, s/veh		32.6			33.1			26.7			34.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	52.4	14.5	42.5	13.4	54.6	14.5	42.5
Change Period (Y+Rc), s	5.4	5.4	6.5	6.5	5.4	5.4	6.5	6.5
Max Green Setting (Gmax), s	10.2	47.0	8.0	36.0	8.0	49.2	8.0	36.0
Max Q Clear Time (g_c+I1), s	6.1	7.3	2.1	3.3	2.1	9.5	2.2	4.1
Green Ext Time (p_c), s	0.0	0.6	0.0	0.4	0.0	1.1	0.0	0.4

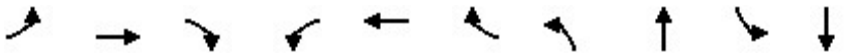
Intersection Summary	
HCM 6th Ctrl Delay	32.2
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	420	22	291	497	251	20	53	295	204	82	30
Future Volume (vph)	24	420	22	291	497	251	20	53	295	204	82	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	12	12
Storage Length (ft)	160		100	160		0	100		0	100		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.93	0.98		0.94	0.97	0.97		0.99	0.98	
Frt			0.850			0.850		0.873			0.960	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1711	1583	0	1711	1761	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1737	3539	1478	1727	1863	1487	1660	1583	0	1692	1761	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			282		281			22	
Link Speed (mph)		45			35			40			40	
Link Distance (ft)		792			570			414			378	
Travel Time (s)		12.0			11.1			7.1			6.4	
Confl. Peds. (#/hr)	21		21	21		21	21		21	21		21
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	27	472	25	327	558	282	22	60	331	229	92	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	472	25	327	558	282	22	391	0	229	126	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4						
Detector Phase	3	8	8	7	4	4	1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (s)	13.3	25.7	25.7	12.6	27.9	27.9	12.5	33.9		12.5	31.7	
Total Split (%)	15.2%	29.3%	29.3%	14.4%	31.8%	31.8%	14.3%	38.7%		14.3%	36.2%	
Maximum Green (s)	8.0	20.0	20.0	8.0	23.0	23.0	8.5	29.0		8.5	26.0	
Yellow Time (s)	4.3	4.7	4.7	3.6	3.9	3.9	3.0	3.9		3.0	4.7	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.7	5.7	4.6	4.9	4.9	4.0	4.9		4.0	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Time Before Reduce (s)	0.0	8.0	8.0	0.0	8.0	8.0	0.0	8.0		0.0	8.0	
Time To Reduce (s)	0.0	21.0	21.0	0.0	21.0	21.0	0.0	21.0		0.0	15.0	
Recall Mode	Max	Max	Max	Max	Max	Max	Max	C-Max		Max	C-Max	
Walk Time (s)		7.0	7.0		7.0	7.0		5.0			5.0	
Flash Dont Walk (s)		13.0	13.0		16.0	16.0		24.0			21.0	
Pedestrian Calls (#/hr)		10	10		10	10		10			10	
Act Effct Green (s)	8.0	22.9	22.9	8.0	23.0	23.0	8.5	29.0		8.5	28.2	
Actuated g/C Ratio	0.09	0.26	0.26	0.09	0.26	0.26	0.10	0.33		0.10	0.32	
v/c Ratio	0.17	0.51	0.05	2.03	1.14	0.47	0.13	0.55		1.38	0.22	
Control Delay	39.5	29.9	0.2	509.7	117.7	6.3	38.3	10.2		237.2	19.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	39.5	29.9	0.2	509.7	117.7	6.3	38.3	10.2		237.2	19.0	
LOS	D	C	A	F	F	A	D	B		F	B	
Approach Delay		29.0			200.6			11.7			159.8	
Approach LOS		C			F			B			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 87.6			
Actuated Cycle Length: 87.6			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.03			
Intersection Signal Delay: 126.4		Intersection LOS: F	
Intersection Capacity Utilization 84.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: POLK AVE & SHAW AVE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	27	472	25	327	558	282	22	391	229	126
v/c Ratio	0.17	0.51	0.05	2.03	1.14	0.47	0.13	0.55	1.38	0.22
Control Delay	39.5	29.9	0.2	509.7	117.7	6.3	38.3	10.2	237.2	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	29.9	0.2	509.7	117.7	6.3	38.3	10.2	237.2	19.0
Queue Length 50th (ft)	14	116	0	~286	~364	0	11	43	~170	41
Queue Length 95th (ft)	39	162	0	#442	#550	57	33	122	#306	82
Internal Link Dist (ft)		712			490			334		298
Turn Bay Length (ft)	160		100	160			100		100	
Base Capacity (vph)	161	925	490	161	489	598	166	712	166	581
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	0.17	0.51	0.05	2.03	1.14	0.47	0.13	0.55	1.38	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

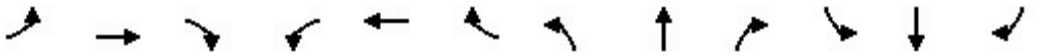
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	622	41	180	416	68	25	37	270	176	87	37
Future Volume (veh/h)	38	622	41	180	416	68	25	37	270	176	87	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.94	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	472	25	327	558	282	22	60	331	229	92	34
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	957	401	162	489	389	172	190	1046	172	999	369
Arrive On Green	0.09	0.27	0.27	0.09	0.26	0.26	0.10	0.78	0.78	0.10	0.78	0.78
Sat Flow, veh/h	1781	3554	1491	1781	1870	1489	1781	245	1350	1781	1289	476
Grp Volume(v), veh/h	27	472	25	327	558	282	22	0	391	229	0	126
Grp Sat Flow(s),veh/h/ln	1781	1777	1491	1781	1870	1489	1781	0	1594	1781	0	1765
Q Serve(g_s), s	1.2	9.8	1.1	8.0	23.0	15.2	1.0	0.0	6.4	8.5	0.0	1.5
Cycle Q Clear(g_c), s	1.2	9.8	1.1	8.0	23.0	15.2	1.0	0.0	6.4	8.5	0.0	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.85	1.00		0.27
Lane Grp Cap(c), veh/h	162	957	401	162	489	389	172	0	1236	172	0	1368
V/C Ratio(X)	0.17	0.49	0.06	2.02	1.14	0.72	0.13	0.00	0.32	1.33	0.00	0.09
Avail Cap(c_a), veh/h	162	957	401	162	489	389	172	0	1236	172	0	1368
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.9	27.1	23.9	40.0	32.5	29.6	36.4	0.0	3.0	39.8	0.0	2.4
Incr Delay (d2), s/veh	2.2	1.8	0.3	479.7	85.7	11.2	1.5	0.0	0.7	183.1	0.0	0.1
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	0.6	4.1	0.4	25.0	21.5	6.2	0.5	0.0	1.3	12.3	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	28.9	24.2	519.7	118.2	40.8	37.9	0.0	3.6	222.9	0.0	2.5
LnGrp LOS	D	C	C	F	F	D	D	A	A	F	A	A
Approach Vol, veh/h		524			1167			413			355	
Approach Delay, s/veh		29.2			212.0			5.4			144.7	
Approach LOS		C			F			A			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	75.1	13.3	28.7	12.5	75.1	12.6	29.4
Change Period (Y+Rc), s	4.0	5.7	5.3	* 5.7	4.0	* 5.7	4.6	5.7
Max Green Setting (Gmax), s	8.5	26.0	8.0	* 23	8.5	* 29	8.0	20.0
Max Q Clear Time (g_c+I1), s	3.0	3.5	3.2	25.0	10.5	8.4	10.0	11.8
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.0	1.6	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	128.6
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	0	0	0	132	0	0	0	0	0	0	0
Future Volume (vph)	280	0	0	0	132	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected	0.950											
Satd. Flow (prot)	1770	1863	0	1863	1863	0	0	1863	0	0	1863	0
Flt Permitted	0.950											
Satd. Flow (perm)	1770	1863	0	1863	1863	0	0	1863	0	0	1863	0
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		396			496			184			147	
Travel Time (s)		6.8			8.5			5.0			4.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	354	0	0	0	167	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	354	0	0	0	167	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	280	0	0	0	132	0	0	0	0	0	0	0
Future Vol, veh/h	280	0	0	0	132	0	0	0	0	0	0	0
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	354	0	0	0	167	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	177	0	0	10	0	0	895	895	20	895	895	187
Stage 1	-	-	-	-	-	-	718	718	-	177	177	-
Stage 2	-	-	-	-	-	-	177	177	-	718	718	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1399	-	-	1610	-	-	261	280	1058	261	280	855
Stage 1	-	-	-	-	-	-	420	433	-	825	753	-
Stage 2	-	-	-	-	-	-	825	753	-	420	433	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1386	-	-	1595	-	-	206	204	1038	206	204	839
Mov Cap-2 Maneuver	-	-	-	-	-	-	206	204	-	206	204	-
Stage 1	-	-	-	-	-	-	310	320	-	608	745	-
Stage 2	-	-	-	-	-	-	817	745	-	310	320	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.5	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1386	-	-	1595	-	-	-
HCM Lane V/C Ratio	-	0.256	-	-	-	-	-	-
HCM Control Delay (s)	0	8.5	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	1	-	-	0	-	-	-

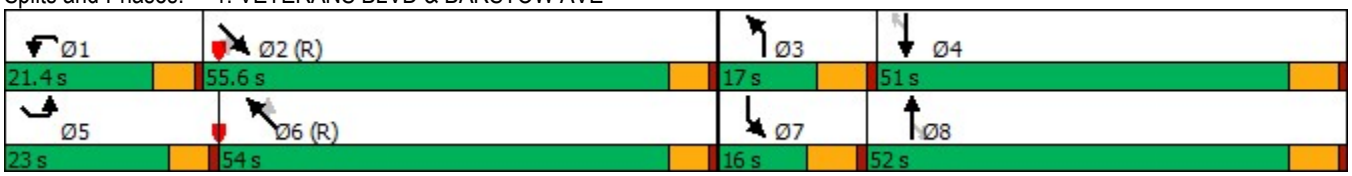
Appendix D-3: Cumulative Scenario(s)

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	227	2631	143	190	1165	302	584	31	194	181	47	546
Future Volume (vph)	227	2631	143	190	1165	302	584	31	194	181	47	546
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	10	11	12	10	11	12	10	11	12	12
Storage Length (ft)	250		250	250		250	180		180	270		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.96	1.00		0.96	0.99		0.98	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	5085	1478	1711	5085	1478	1711	1863	1478	1711	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1705	5085	1419	1710	5085	1419	1696	1863	1447	1696	1863	1550
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			108			279			173			148
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		689			712			593			807	
Travel Time (s)		8.5			8.8			10.1			13.8	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	247	2860	155	207	1266	328	635	34	211	197	51	593
Shared Lane Traffic (%)												
Lane Group Flow (vph)	247	2860	155	207	1266	328	635	34	211	197	51	593
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4			2			6
Minimum Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	52.4	52.4	13.4	52.4	52.4
Total Split (s)	17.0	52.0	52.0	16.0	51.0	51.0	23.0	55.6	55.6	21.4	54.0	54.0
Total Split (%)	11.7%	35.9%	35.9%	11.0%	35.2%	35.2%	15.9%	38.3%	38.3%	14.8%	37.2%	37.2%
Maximum Green (s)	10.5	45.5	45.5	9.5	44.5	44.5	17.6	50.2	50.2	16.0	48.6	48.6
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		29.0	29.0		29.0	29.0		40.0	40.0		40.0	40.0
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Act Effct Green (s)	10.5	45.5	45.5	9.5	44.5	44.5	17.6	50.2	50.2	16.0	48.6	48.6
Actuated g/C Ratio	0.07	0.31	0.31	0.07	0.31	0.31	0.12	0.35	0.35	0.11	0.34	0.34
v/c Ratio	2.01	1.79	0.30	1.85	0.81	0.52	3.07	0.05	0.34	1.05	0.08	0.96
Control Delay	512.8	389.7	14.2	448.7	51.4	10.5	963.1	32.0	9.3	139.2	33.6	63.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	512.8	389.7	14.2	448.7	51.4	10.5	963.1	32.0	9.3	139.2	33.6	63.2
LOS	F	F	B	F	D	B	F	C	A	F	C	E
Approach Delay		381.2			89.6			698.4			79.2	
Approach LOS		F			F			F			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 0 (0%), Referenced to phase 2:SET and 6:NWT, Start of Green			
Natural Cycle: 145			
Control Type: Pretimed			
Maximum v/c Ratio: 3.07			
Intersection Signal Delay: 307.5		Intersection LOS: F	
Intersection Capacity Utilization 136.8%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: VETERANS BLVD & BARSTOW AVE



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	247	2860	155	207	1266	328	635	34	211	197	51	593
v/c Ratio	2.01	1.79	0.30	1.85	0.81	0.52	3.07	0.05	0.34	1.05	0.08	0.96
Control Delay	512.8	389.7	14.2	448.7	51.4	10.5	963.1	32.0	9.3	139.2	33.6	63.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	512.8	389.7	14.2	448.7	51.4	10.5	963.1	32.0	9.3	139.2	33.6	63.2
Queue Length 50th (ft)	~363	~1479	32	~296	405	33	~1041	21	24	~201	33	443
Queue Length 95th (ft)	#541	#1557	90	#464	465	124	#1282	48	87	#366	66	#697
Internal Link Dist (ft)		609			632			513			727	
Turn Bay Length (ft)	250		250	250		250	180		180	270		
Base Capacity (vph)	123	1595	519	112	1560	628	207	644	614	188	624	617
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.01	1.79	0.30	1.85	0.81	0.52	3.07	0.05	0.34	1.05	0.08	0.96

Intersection Summary

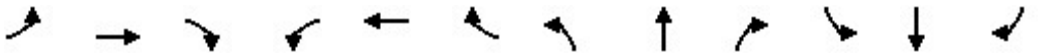
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	227	2631	143	190	1165	302	584	31	194	181	47	546
Future Volume (veh/h)	227	2631	143	190	1165	302	584	31	194	181	47	546
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		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	247	2860	155	207	1266	328	635	34	211	197	51	593
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	129	1602	489	117	1567	479	216	648	544	197	627	527
Arrive On Green	0.07	0.31	0.31	0.07	0.31	0.31	0.12	0.35	0.35	0.11	0.34	0.34
Sat Flow, veh/h	1781	5106	1560	1781	5106	1559	1781	1870	1571	1781	1870	1571
Grp Volume(v), veh/h	247	2860	155	207	1266	328	635	34	211	197	51	593
Grp Sat Flow(s),veh/h/ln	1781	1702	1560	1781	1702	1559	1781	1870	1571	1781	1870	1571
Q Serve(g_s), s	10.5	45.5	11.0	9.5	33.1	26.8	17.6	1.8	14.7	16.0	2.7	48.6
Cycle Q Clear(g_c), s	10.5	45.5	11.0	9.5	33.1	26.8	17.6	1.8	14.7	16.0	2.7	48.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	129	1602	489	117	1567	479	216	648	544	197	627	527
V/C Ratio(X)	1.91	1.78	0.32	1.77	0.81	0.69	2.94	0.05	0.39	1.00	0.08	1.13
Avail Cap(c_a), veh/h	129	1602	489	117	1567	479	216	648	544	197	627	527
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	49.7	37.9	67.8	46.3	44.1	63.7	31.6	35.8	64.5	32.9	48.2
Incr Delay (d2), s/veh	439.1	355.8	1.7	380.5	4.6	7.8	884.1	0.2	2.1	64.8	0.3	78.8
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	20.4	71.2	4.3	16.5	14.1	11.0	61.0	0.8	5.8	10.7	1.3	29.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	506.3	405.5	39.6	448.3	50.9	51.9	947.8	31.7	37.9	129.3	33.2	127.0
LnGrp LOS	F	F	D	F	D	D	F	C	D	F	C	F
Approach Vol, veh/h		3262			1801			880			841	
Approach Delay, s/veh		395.8			96.7			694.2			121.9	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.4	55.6	17.0	51.0	23.0	54.0	16.0	52.0
Change Period (Y+Rc), s	5.4	5.4	6.5	6.5	5.4	5.4	6.5	6.5
Max Green Setting (Gmax), s	16.0	50.2	10.5	44.5	17.6	48.6	9.5	45.5
Max Q Clear Time (g_c+I1), s	18.0	16.7	12.5	35.1	19.6	50.6	11.5	47.5
Green Ext Time (p_c), s	0.0	0.9	0.0	5.7	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	321.1
HCM 6th LOS	F

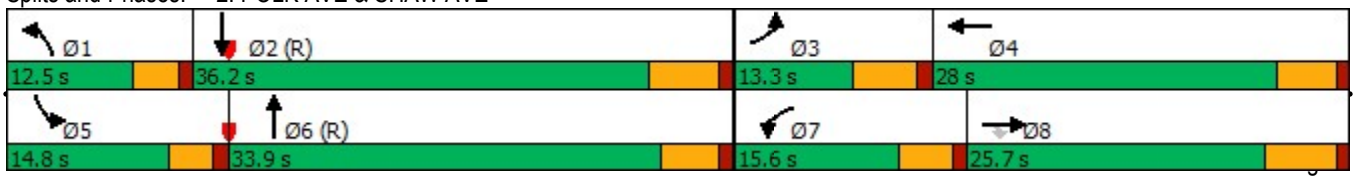


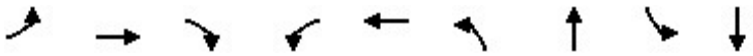
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	622	41	180	416	63	25	36	270	172	86	37
Future Volume (vph)	38	622	41	180	416	63	25	36	270	172	86	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	12	12
Storage Length (ft)	160		100	160		0	100		0	100		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99	0.99		0.99	0.98		0.99	0.99	
Frt			0.850		0.980			0.868			0.955	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3451	0	1711	1587	0	1711	1767	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1753	3539	1517	1754	3451	0	1696	1587	0	1701	1767	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145		18			280			26	
Link Speed (mph)		45			35			40			40	
Link Distance (ft)		792			570			414			378	
Travel Time (s)		12.0			11.1			7.1			6.4	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	41	676	45	196	452	68	27	39	293	187	93	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	676	45	196	520	0	27	332	0	187	133	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8									
Detector Phase	3	8	8	7	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.3	25.7	25.7	12.6	27.9		12.5	33.9		12.5	31.7	
Total Split (s)	13.3	25.7	25.7	15.6	28.0		12.5	33.9		14.8	36.2	
Total Split (%)	14.8%	28.6%	28.6%	17.3%	31.1%		13.9%	37.7%		16.4%	40.2%	
Maximum Green (s)	8.0	20.0	20.0	11.0	23.1		8.5	29.0		10.8	30.5	
Yellow Time (s)	4.3	4.7	4.7	3.6	3.9		3.0	3.9		3.0	4.7	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.7	5.7	4.6	4.9		4.0	4.9		4.0	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Time Before Reduce (s)	0.0	8.0	8.0	0.0	8.0		0.0	8.0		0.0	8.0	
Time To Reduce (s)	0.0	21.0	21.0	0.0	21.0		0.0	21.0		0.0	15.0	
Recall Mode	Max	Max	Max	Max	Max		Max	C-Max		Max	C-Max	
Walk Time (s)		7.0	7.0		7.0			5.0			5.0	
Flash Dont Walk (s)		13.0	13.0		16.0			24.0			21.0	
Pedestrian Calls (#/hr)		10	10		10			10			10	
Act Effct Green (s)	8.0	20.0	20.0	11.0	23.1		8.5	29.0		10.8	30.5	
Actuated g/C Ratio	0.09	0.22	0.22	0.12	0.26		0.09	0.32		0.12	0.34	
v/c Ratio	0.26	0.86	0.10	0.91	0.58		0.17	0.47		0.91	0.22	
Control Delay	42.8	46.3	0.4	82.5	31.2		40.2	7.4		85.0	18.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.8	46.3	0.4	82.5	31.2		40.2	7.4		85.0	18.1	
LOS	D	D	A	F	C		D	A		F	B	
Approach Delay		43.4			45.2			9.9			57.2	
Approach LOS		D			D			A			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 40.5		Intersection LOS: D	
Intersection Capacity Utilization 76.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: POLK AVE & SHAW AVE

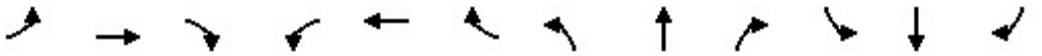




Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	41	676	45	196	520	27	332	187	133
v/c Ratio	0.26	0.86	0.10	0.91	0.58	0.17	0.47	0.91	0.22
Control Delay	42.8	46.3	0.4	82.5	31.2	40.2	7.4	85.0	18.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.8	46.3	0.4	82.5	31.2	40.2	7.4	85.0	18.1
Queue Length 50th (ft)	22	195	0	112	131	14	21	107	42
Queue Length 95th (ft)	54	#288	0	#239	183	40	87	#231	85
Internal Link Dist (ft)		712			490		334		298
Turn Bay Length (ft)	160		100	160		100		100	
Base Capacity (vph)	157	786	449	216	899	161	701	205	616
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.86	0.10	0.91	0.58	0.17	0.47	0.91	0.22

Intersection Summary

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



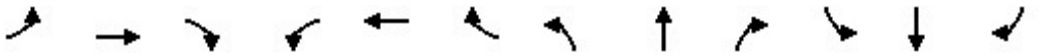
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	622	41	180	416	63	25	36	270	172	86	37
Future Volume (veh/h)	38	622	41	180	416	63	25	36	270	172	86	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	41	676	45	196	452	68	27	39	293	187	93	40
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	821	358	218	793	119	168	172	1291	214	1158	498
Arrive On Green	0.09	0.23	0.23	0.12	0.26	0.26	0.09	0.91	0.91	0.12	0.93	0.93
Sat Flow, veh/h	1781	3554	1551	1781	3091	462	1781	189	1420	1781	1239	533
Grp Volume(v), veh/h	41	676	45	196	259	261	27	0	332	187	0	133
Grp Sat Flow(s),veh/h/ln	1781	1777	1551	1781	1777	1776	1781	0	1609	1781	0	1772
Q Serve(g_s), s	1.9	16.3	2.1	9.8	11.4	11.5	1.3	0.0	2.1	9.3	0.0	0.5
Cycle Q Clear(g_c), s	1.9	16.3	2.1	9.8	11.4	11.5	1.3	0.0	2.1	9.3	0.0	0.5
Prop In Lane	1.00		1.00	1.00		0.26	1.00		0.88	1.00		0.30
Lane Grp Cap(c), veh/h	158	821	358	218	456	456	168	0	1463	214	0	1656
V/C Ratio(X)	0.26	0.82	0.13	0.90	0.57	0.57	0.16	0.00	0.23	0.87	0.00	0.08
Avail Cap(c_a), veh/h	158	821	358	218	456	456	168	0	1463	214	0	1656
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.2	32.9	27.4	39.0	29.1	29.2	37.5	0.0	0.5	38.9	0.0	0.2
Incr Delay (d2), s/veh	3.9	9.1	0.7	39.6	5.0	5.2	2.0	0.0	0.4	35.9	0.0	0.1
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	1.0	7.6	0.8	6.5	5.3	5.4	0.6	0.0	0.1	6.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.2	42.0	28.1	78.6	34.1	34.3	39.5	0.0	0.8	74.9	0.0	0.3
LnGrp LOS	D	D	C	E	C	C	D	A	A	E	A	A
Approach Vol, veh/h		762			716			359			320	
Approach Delay, s/veh		41.2			46.4			3.7			43.9	
Approach LOS		D			D			A			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	91.4	13.3	28.8	14.8	89.1	15.6	26.5
Change Period (Y+Rc), s	4.0	5.7	5.3	* 5.7	4.0	* 5.7	4.6	5.7
Max Green Setting (Gmax), s	8.5	30.5	8.0	* 23	10.8	* 29	11.0	20.0
Max Q Clear Time (g_c+I1), s	3.3	2.5	3.9	13.5	11.3	4.1	11.8	18.3
Green Ext Time (p_c), s	0.0	0.4	0.0	1.4	0.0	1.3	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	37.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	277	0	0	421	0	0	0	0	0	0	0
Future Volume (vph)	0	277	0	0	421	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	1863	1863	0	1863	1863	0	0	1863	0	0	1863	0
Flt Permitted												
Satd. Flow (perm)	1863	1863	0	1863	1863	0	0	1863	0	0	1863	0
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		396			496			184			147	
Travel Time (s)		6.8			8.5			5.0			4.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	0	301	0	0	458	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	301	0	0	458	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	277	0	0	421	0	0	0	0	0	0	0
Future Vol, veh/h	0	277	0	0	421	0	0	0	0	0	0	0
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	301	0	0	458	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	468	0	0	311	0	0	779	779	321	779	779	478
Stage 1	-	-	-	-	-	-	311	311	-	468	468	-
Stage 2	-	-	-	-	-	-	468	468	-	311	311	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1094	-	-	1249	-	-	313	327	720	313	327	587
Stage 1	-	-	-	-	-	-	699	658	-	575	561	-
Stage 2	-	-	-	-	-	-	575	561	-	699	658	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1084	-	-	1237	-	-	307	320	706	307	320	576
Mov Cap-2 Maneuver	-	-	-	-	-	-	307	320	-	307	320	-
Stage 1	-	-	-	-	-	-	692	651	-	569	555	-
Stage 2	-	-	-	-	-	-	570	555	-	692	651	-

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

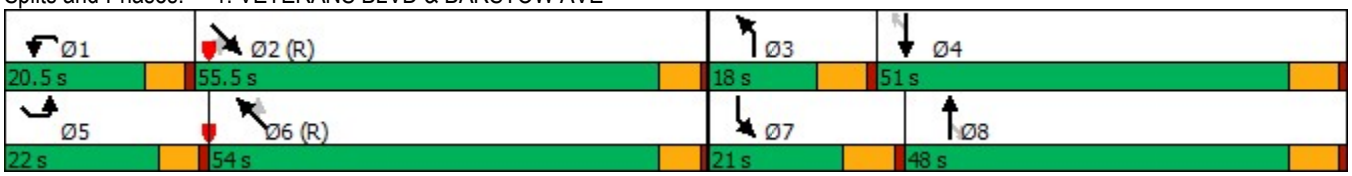
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1084	-	-	1237	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	234	1975	158	339	2103	504	441	35	218	168	40	339
Future Volume (vph)	234	1975	158	339	2103	504	441	35	218	168	40	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	10	11	12	10	11	12	10	11	12	12
Storage Length (ft)	250		250	250		250	180		180	270		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.96	1.00		0.96	0.99		0.98	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	5085	1478	1711	5085	1478	1711	1863	1478	1711	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1709	5085	1419	1709	5085	1419	1696	1863	1447	1696	1863	1550
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			108			258			208			185
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		689			712			593			807	
Travel Time (s)		8.5			8.8			10.1			13.8	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	254	2147	172	368	2286	548	479	38	237	183	43	368
Shared Lane Traffic (%)												
Lane Group Flow (vph)	254	2147	172	368	2286	548	479	38	237	183	43	368
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4			2			6
Minimum Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	52.4	52.4	13.4	52.4	52.4
Total Split (s)	18.0	48.0	48.0	21.0	51.0	51.0	22.0	55.5	55.5	20.5	54.0	54.0
Total Split (%)	12.4%	33.1%	33.1%	14.5%	35.2%	35.2%	15.2%	38.3%	38.3%	14.1%	37.2%	37.2%
Maximum Green (s)	11.5	41.5	41.5	14.5	44.5	44.5	16.6	50.1	50.1	15.1	48.6	48.6
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		29.0	29.0		29.0	29.0		40.0	40.0		40.0	40.0
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Act Effct Green (s)	11.5	41.5	41.5	14.5	44.5	44.5	16.6	50.1	50.1	15.1	48.6	48.6
Actuated g/C Ratio	0.08	0.29	0.29	0.10	0.31	0.31	0.11	0.35	0.35	0.10	0.34	0.34
v/c Ratio	1.88	1.48	0.36	2.15	1.47	0.89	2.46	0.06	0.37	1.03	0.07	0.57
Control Delay	457.1	254.6	18.0	566.4	249.4	43.1	695.7	32.2	8.1	136.9	33.4	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	457.1	254.6	18.0	566.4	249.4	43.1	695.7	32.2	8.1	136.9	33.4	22.8
LOS	F	F	B	F	F	D	F	C	A	F	C	C
Approach Delay		258.8			250.5			446.1			58.7	
Approach LOS		F			F			F			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 0 (0%), Referenced to phase 2:SET and 6:NWT, Start of Green			
Natural Cycle: 145			
Control Type: Pretimed			
Maximum v/c Ratio: 2.46			
Intersection Signal Delay: 258.2		Intersection LOS: F	
Intersection Capacity Utilization 116.2%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: VETERANS BLVD & BARSTOW AVE



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	254	2147	172	368	2286	548	479	38	237	183	43	368
v/c Ratio	1.88	1.48	0.36	2.15	1.47	0.89	2.46	0.06	0.37	1.03	0.07	0.57
Control Delay	457.1	254.6	18.0	566.4	249.4	43.1	695.7	32.2	8.1	136.9	33.4	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	457.1	254.6	18.0	566.4	249.4	43.1	695.7	32.2	8.1	136.9	33.4	22.8
Queue Length 50th (ft)	~365	~1018	45	~553	~1080	293	~747	24	18	~184	28	141
Queue Length 95th (ft)	#547	#1109	112	#759	#1169	#524	#968	52	84	#345	57	249
Internal Link Dist (ft)		609			632			513			727	
Turn Bay Length (ft)	250		250	250		250	180		180	270		
Base Capacity (vph)	135	1455	483	171	1560	614	195	643	636	178	624	642
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.88	1.48	0.36	2.15	1.47	0.89	2.46	0.06	0.37	1.03	0.07	0.57

Intersection Summary

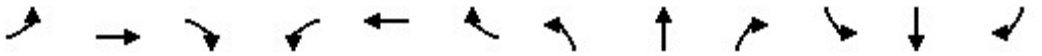
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	234	1975	158	339	2103	504	441	35	218	168	40	339
Future Volume (veh/h)	234	1975	158	339	2103	504	441	35	218	168	40	339
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		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	254	2147	172	368	2286	548	479	38	237	183	43	368
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	1461	446	178	1567	479	204	646	543	186	627	527
Arrive On Green	0.08	0.29	0.29	0.10	0.31	0.31	0.11	0.35	0.35	0.10	0.34	0.34
Sat Flow, veh/h	1781	5106	1557	1781	5106	1559	1781	1870	1571	1781	1870	1571
Grp Volume(v), veh/h	254	2147	172	368	2286	548	479	38	237	183	43	368
Grp Sat Flow(s),veh/h/ln	1781	1702	1557	1781	1702	1559	1781	1870	1571	1781	1870	1571
Q Serve(g_s), s	11.5	41.5	12.9	14.5	44.5	44.5	16.6	2.0	16.9	14.9	2.3	29.5
Cycle Q Clear(g_c), s	11.5	41.5	12.9	14.5	44.5	44.5	16.6	2.0	16.9	14.9	2.3	29.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	1461	446	178	1567	479	204	646	543	186	627	527
V/C Ratio(X)	1.80	1.47	0.39	2.07	1.46	1.15	2.35	0.06	0.44	0.99	0.07	0.70
Avail Cap(c_a), veh/h	141	1461	446	178	1567	479	204	646	543	186	627	527
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.7	51.8	41.5	65.3	50.2	50.2	64.2	31.7	36.6	64.8	32.8	41.8
Incr Delay (d2), s/veh	385.8	214.9	2.5	498.5	210.1	87.5	622.0	0.2	2.5	62.7	0.2	7.5
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	20.2	46.0	5.1	31.0	48.5	28.1	42.7	0.9	6.6	9.9	1.1	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	452.5	266.7	44.0	563.8	260.3	137.7	686.2	31.9	39.1	127.5	33.0	49.4
LnGrp LOS	F	F	D	F	F	F	F	C	D	F	C	D
Approach Vol, veh/h		2573			3202			754			594	
Approach Delay, s/veh		270.1			274.2			449.8			72.3	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	55.5	18.0	51.0	22.0	54.0	21.0	48.0
Change Period (Y+Rc), s	5.4	5.4	6.5	6.5	5.4	5.4	6.5	6.5
Max Green Setting (Gmax), s	15.1	50.1	11.5	44.5	16.6	48.6	14.5	41.5
Max Q Clear Time (g_c+I1), s	16.9	18.9	13.5	46.5	18.6	31.5	16.5	43.5
Green Ext Time (p_c), s	0.0	1.0	0.0	0.0	0.0	1.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	274.5
HCM 6th LOS	F

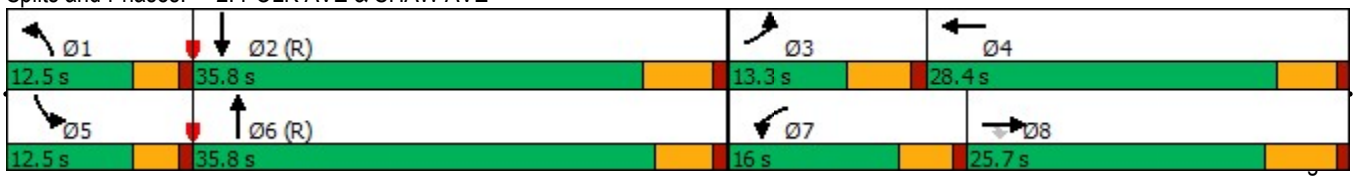


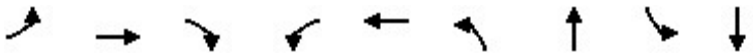
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	420	22	291	497	214	20	50	295	133	73	23
Future Volume (vph)	23	420	22	291	497	214	20	50	295	133	73	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	12	12
Storage Length (ft)	160		100	160		0	100		0	100		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99	0.99		0.99	0.98		0.99	0.99	
Frt			0.850		0.955			0.872			0.964	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3340	0	1711	1595	0	1711	1786	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1758	3539	1517	1749	3340	0	1695	1595	0	1701	1786	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145		72			306			19	
Link Speed (mph)		45			35			40			40	
Link Distance (ft)		792			570			414			378	
Travel Time (s)		12.0			11.1			7.1			6.4	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	25	457	24	316	540	233	22	54	321	145	79	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	457	24	316	773	0	22	375	0	145	104	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8									
Detector Phase	3	8	8	7	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.3	25.7	25.7	12.6	27.9		12.5	33.9		12.5	31.7	
Total Split (s)	13.3	25.7	25.7	16.0	28.4		12.5	35.8		12.5	35.8	
Total Split (%)	14.8%	28.6%	28.6%	17.8%	31.6%		13.9%	39.8%		13.9%	39.8%	
Maximum Green (s)	8.0	20.0	20.0	11.4	23.5		8.5	30.9		8.5	30.1	
Yellow Time (s)	4.3	4.7	4.7	3.6	3.9		3.0	3.9		3.0	4.7	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.7	5.7	4.6	4.9		4.0	4.9		4.0	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Time Before Reduce (s)	0.0	8.0	8.0	0.0	8.0		0.0	8.0		0.0	8.0	
Time To Reduce (s)	0.0	21.0	21.0	0.0	21.0		0.0	21.0		0.0	15.0	
Recall Mode	Max	Max	Max	Max	Max		Max	C-Max		Max	C-Max	
Walk Time (s)		7.0	7.0		7.0			5.0			5.0	
Flash Dont Walk (s)		13.0	13.0		16.0			24.0			21.0	
Pedestrian Calls (#/hr)		10	10		10			10			10	
Act Effct Green (s)	8.0	20.0	20.0	11.4	23.5		8.5	30.9		8.5	30.1	
Actuated g/C Ratio	0.09	0.22	0.22	0.13	0.26		0.09	0.34		0.09	0.33	
v/c Ratio	0.16	0.58	0.05	1.41	0.84		0.14	0.50		0.90	0.17	
Control Delay	40.5	34.7	0.2	241.7	37.9		39.6	7.6		91.6	18.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	40.5	34.7	0.2	241.7	37.9		39.6	7.6		91.6	18.1	
LOS	D	C	A	F	D		D	A		F	B	
Approach Delay		33.4			97.1			9.3			60.9	
Approach LOS		C			F			A			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.41			
Intersection Signal Delay: 63.1		Intersection LOS: E	
Intersection Capacity Utilization 80.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: POLK AVE & SHAW AVE



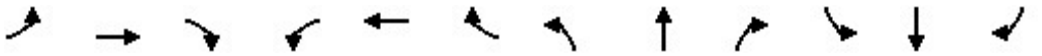


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	457	24	316	773	22	375	145	104
v/c Ratio	0.16	0.58	0.05	1.41	0.84	0.14	0.50	0.90	0.17
Control Delay	40.5	34.7	0.2	241.7	37.9	39.6	7.6	91.6	18.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.5	34.7	0.2	241.7	37.9	39.6	7.6	91.6	18.1
Queue Length 50th (ft)	13	122	0	~244	199	12	27	83	33
Queue Length 95th (ft)	38	173	0	#405	#293	35	97	#194	70
Internal Link Dist (ft)		712			490		334		298
Turn Bay Length (ft)	160		100	160		100		100	
Base Capacity (vph)	157	786	449	224	925	161	748	161	609
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.58	0.05	1.41	0.84	0.14	0.50	0.90	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



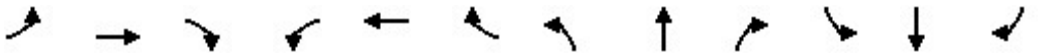
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	420	22	291	497	214	20	50	295	133	73	23
Future Volume (veh/h)	23	420	22	291	497	214	20	50	295	133	73	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	457	24	316	540	233	22	54	321	145	79	25
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	821	358	226	628	270	168	216	1287	168	1265	400
Arrive On Green	0.09	0.23	0.23	0.13	0.26	0.26	0.09	0.93	0.93	0.09	0.93	0.93
Sat Flow, veh/h	1781	3554	1551	1781	2404	1034	1781	233	1383	1781	1361	431
Grp Volume(v), veh/h	25	457	24	316	399	374	22	0	375	145	0	104
Grp Sat Flow(s),veh/h/ln	1781	1777	1551	1781	1777	1661	1781	0	1616	1781	0	1791
Q Serve(g_s), s	1.2	10.2	1.1	11.4	19.2	19.4	1.0	0.0	1.9	7.2	0.0	0.4
Cycle Q Clear(g_c), s	1.2	10.2	1.1	11.4	19.2	19.4	1.0	0.0	1.9	7.2	0.0	0.4
Prop In Lane	1.00		1.00	1.00		0.62	1.00		0.86	1.00		0.24
Lane Grp Cap(c), veh/h	158	821	358	226	464	434	168	0	1503	168	0	1666
V/C Ratio(X)	0.16	0.56	0.07	1.40	0.86	0.86	0.13	0.00	0.25	0.86	0.00	0.06
Avail Cap(c_a), veh/h	158	821	358	226	464	434	168	0	1503	168	0	1666
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.9	30.5	27.0	39.3	31.7	31.7	37.4	0.0	0.3	40.2	0.0	0.2
Incr Delay (d2), s/veh	2.1	2.7	0.4	204.8	18.4	19.8	1.6	0.0	0.4	40.4	0.0	0.1
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	0.6	4.4	0.4	17.7	10.3	9.8	0.5	0.0	0.2	4.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.0	33.2	27.4	244.1	50.0	51.6	39.0	0.0	0.7	80.6	0.0	0.3
LnGrp LOS	D	C	C	F	D	D	D	A	A	F	A	A
Approach Vol, veh/h		506			1089			397			249	
Approach Delay, s/veh		33.3			106.9			2.8			47.1	
Approach LOS		C			F			A			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	91.0	13.3	29.2	12.5	91.0	16.0	26.5
Change Period (Y+Rc), s	4.0	5.7	5.3	* 5.7	4.0	* 5.7	4.6	5.7
Max Green Setting (Gmax), s	8.5	30.1	8.0	* 24	8.5	* 31	11.4	20.0
Max Q Clear Time (g_c+I1), s	3.0	2.4	3.2	21.4	9.2	3.9	13.4	12.2
Green Ext Time (p_c), s	0.0	0.3	0.0	0.8	0.0	1.6	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	65.2
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	207	2	1	258	0	2	0	0	0	0	0
Future Volume (vph)	0	207	2	1	258	0	2	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999										
Flt Protected				0.950				0.950				
Satd. Flow (prot)	1863	1861	0	1770	1863	0	0	1770	0	0	1863	0
Flt Permitted				0.950				0.950				
Satd. Flow (perm)	1863	1861	0	1770	1863	0	0	1770	0	0	1863	0
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		396			496			184			147	
Travel Time (s)		6.8			8.5			5.0			4.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	0	225	2	1	280	0	2	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	227	0	1	280	0	0	2	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	207	2	1	258	0	2	0	0	0	0	0
Future Vol, veh/h	0	207	2	1	258	0	2	0	0	0	0	0
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	225	2	1	280	0	2	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	290	0	0	237	0	0	528	528	246	528	529	300
Stage 1	-	-	-	-	-	-	236	236	-	292	292	-
Stage 2	-	-	-	-	-	-	292	292	-	236	237	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1272	-	-	1330	-	-	461	456	793	461	455	740
Stage 1	-	-	-	-	-	-	767	710	-	716	671	-
Stage 2	-	-	-	-	-	-	716	671	-	767	709	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1260	-	-	1317	-	-	452	446	778	452	445	726
Mov Cap-2 Maneuver	-	-	-	-	-	-	452	446	-	452	445	-
Stage 1	-	-	-	-	-	-	759	703	-	709	664	-
Stage 2	-	-	-	-	-	-	709	664	-	760	702	-

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

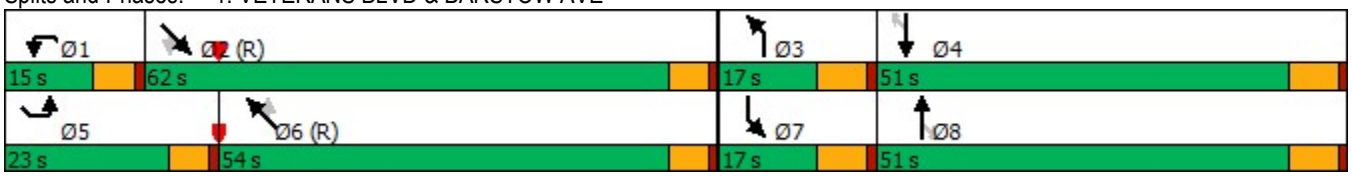
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	452	1260	-	-	1317	-	-	-
HCM Lane V/C Ratio	0.005	-	-	-	0.001	-	-	-
HCM Control Delay (s)	13	0	-	-	7.7	-	-	0
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	227	2631	150	209	1165	302	584	35	194	184	48	552
Future Volume (vph)	227	2631	150	209	1165	302	584	35	194	184	48	552
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	10	11	12	10	11	12	10	11	12	12
Storage Length (ft)	250		250	250		250	180		180	270		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.96	1.00		0.96	0.99		0.98	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	5085	1478	1711	5085	1478	1711	1863	1478	1711	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1705	5085	1419	1710	5085	1419	1696	1863	1447	1696	1863	1550
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			148			279			182			171
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		689			712			593			807	
Travel Time (s)		8.5			8.8			10.1			13.8	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	247	2860	163	227	1266	328	635	38	211	200	52	600
Shared Lane Traffic (%)												
Lane Group Flow (vph)	247	2860	163	227	1266	328	635	38	211	200	52	600
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4			2			6
Minimum Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	52.4	52.4	13.4	52.4	52.4
Total Split (s)	17.0	51.0	51.0	17.0	51.0	51.0	23.0	62.0	62.0	15.0	54.0	54.0
Total Split (%)	11.7%	35.2%	35.2%	11.7%	35.2%	35.2%	15.9%	42.8%	42.8%	10.3%	37.2%	37.2%
Maximum Green (s)	10.5	44.5	44.5	10.5	44.5	44.5	17.6	56.6	56.6	9.6	48.6	48.6
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		29.0	29.0		29.0	29.0		40.0	40.0		40.0	40.0
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Act Effct Green (s)	10.5	44.5	44.5	10.5	44.5	44.5	17.6	56.6	56.6	9.6	48.6	48.6
Actuated g/C Ratio	0.07	0.31	0.31	0.07	0.31	0.31	0.12	0.39	0.39	0.07	0.34	0.34
v/c Ratio	2.01	1.83	0.30	1.85	0.81	0.52	3.07	0.05	0.31	1.77	0.08	0.95
Control Delay	512.8	407.3	8.7	444.7	51.4	10.5	963.1	27.9	7.2	416.2	33.6	58.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	512.8	407.3	8.7	444.7	51.4	10.5	963.1	27.9	7.2	416.2	33.6	58.5
LOS	F	F	A	F	D	B	F	C	A	F	C	E
Approach Delay		395.4			93.1			694.8			141.0	
Approach LOS		F			F			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 0 (0%), Referenced to phase 2:SET and 6:NWT, Start of Green			
Natural Cycle: 145			
Control Type: Pretimed			
Maximum v/c Ratio: 3.07			
Intersection Signal Delay: 321.8		Intersection LOS: F	
Intersection Capacity Utilization 136.8%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: VETERANS BLVD & BARSTOW AVE



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	247	2860	163	227	1266	328	635	38	211	200	52	600
v/c Ratio	2.01	1.83	0.30	1.85	0.81	0.52	3.07	0.05	0.31	1.77	0.08	0.95
Control Delay	512.8	407.3	8.7	444.7	51.4	10.5	963.1	27.9	7.2	416.2	33.6	58.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	512.8	407.3	8.7	444.7	51.4	10.5	963.1	27.9	7.2	416.2	33.6	58.5
Queue Length 50th (ft)	~363	~1492	10	~323	405	33	~1041	22	17	~281	34	428
Queue Length 95th (ft)	#541	#1569	66	#496	465	124	#1282	48	73	#445	66	#680
Internal Link Dist (ft)		609			632			513			727	
Turn Bay Length (ft)	250		250	250		250	180		180	270		
Base Capacity (vph)	123	1560	538	123	1560	628	207	727	675	113	624	633
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.01	1.83	0.30	1.85	0.81	0.52	3.07	0.05	0.31	1.77	0.08	0.95

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	227	2631	150	209	1165	302	584	35	194	184	48	552
Future Volume (veh/h)	227	2631	150	209	1165	302	584	35	194	184	48	552
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		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	247	2860	163	227	1266	328	635	38	211	200	52	600
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	129	1567	479	129	1567	479	216	730	614	118	627	527
Arrive On Green	0.07	0.31	0.31	0.07	0.31	0.31	0.12	0.39	0.39	0.07	0.34	0.34
Sat Flow, veh/h	1781	5106	1559	1781	5106	1559	1781	1870	1573	1781	1870	1571
Grp Volume(v), veh/h	247	2860	163	227	1266	328	635	38	211	200	52	600
Grp Sat Flow(s),veh/h/ln	1781	1702	1559	1781	1702	1559	1781	1870	1573	1781	1870	1571
Q Serve(g_s), s	10.5	44.5	11.7	10.5	33.1	26.8	17.6	1.8	13.7	9.6	2.8	48.6
Cycle Q Clear(g_c), s	10.5	44.5	11.7	10.5	33.1	26.8	17.6	1.8	13.7	9.6	2.8	48.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	129	1567	479	129	1567	479	216	730	614	118	627	527
V/C Ratio(X)	1.91	1.83	0.34	1.76	0.81	0.69	2.94	0.05	0.34	1.70	0.08	1.14
Avail Cap(c_a), veh/h	129	1567	479	129	1567	479	216	730	614	118	627	527
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.3	50.2	38.9	67.3	46.3	44.1	63.7	27.5	31.1	67.7	33.0	48.2
Incr Delay (d2), s/veh	439.1	373.8	1.9	371.7	4.6	7.8	884.1	0.1	1.5	346.7	0.3	83.7
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	20.4	72.2	4.6	17.9	14.1	11.0	61.0	0.8	5.3	15.7	1.3	30.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	506.3	424.1	40.8	438.9	50.9	51.9	947.8	27.6	32.6	414.4	33.2	131.9
LnGrp LOS	F	F	D	F	D	D	F	C	C	F	C	F
Approach Vol, veh/h		3270			1821			884			852	
Approach Delay, s/veh		411.2			99.4			689.8			192.2	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	62.0	17.0	51.0	23.0	54.0	17.0	51.0
Change Period (Y+Rc), s	5.4	5.4	6.5	6.5	5.4	5.4	6.5	6.5
Max Green Setting (Gmax), s	9.6	56.6	10.5	44.5	17.6	48.6	10.5	44.5
Max Q Clear Time (g_c+I1), s	11.6	15.7	12.5	35.1	19.6	50.6	12.5	46.5
Green Ext Time (p_c), s	0.0	0.9	0.0	5.7	0.0	0.0	0.0	0.0

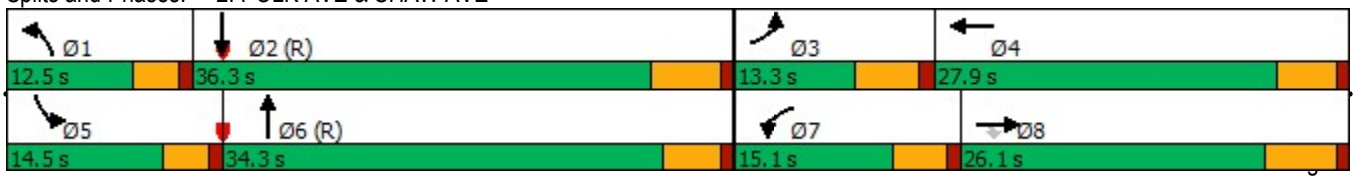
Intersection Summary	
HCM 6th Ctrl Delay	336.8
HCM 6th LOS	F

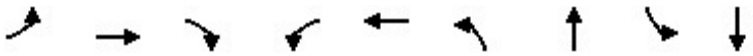
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	622	41	180	416	130	25	50	270	185	88	37
Future Volume (vph)	46	622	41	180	416	130	25	50	270	185	88	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	12	12
Storage Length (ft)	160		100	160		0	100		0	100		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99	0.99		0.99	0.98		0.99	0.99	
Frt			0.850		0.964			0.873			0.956	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3380	0	1711	1597	0	1711	1769	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1754	3539	1517	1754	3380	0	1696	1597	0	1701	1769	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145		44			271			25	
Link Speed (mph)		45			35			40			40	
Link Distance (ft)		792			570			414			378	
Travel Time (s)		12.0			11.1			7.1			6.4	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	50	676	45	196	452	141	27	54	293	201	96	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	676	45	196	593	0	27	347	0	201	136	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8									
Detector Phase	3	8	8	7	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.3	25.7	25.7	12.6	27.9		12.5	33.9		12.5	31.7	
Total Split (s)	13.3	26.1	26.1	15.1	27.9		12.5	34.3		14.5	36.3	
Total Split (%)	14.8%	29.0%	29.0%	16.8%	31.0%		13.9%	38.1%		16.1%	40.3%	
Maximum Green (s)	8.0	20.4	20.4	10.5	23.0		8.5	29.4		10.5	30.6	
Yellow Time (s)	4.3	4.7	4.7	3.6	3.9		3.0	3.9		3.0	4.7	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.7	5.7	4.6	4.9		4.0	4.9		4.0	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Time Before Reduce (s)	0.0	8.0	8.0	0.0	8.0		0.0	8.0		0.0	8.0	
Time To Reduce (s)	0.0	21.0	21.0	0.0	21.0		0.0	21.0		0.0	15.0	
Recall Mode	Max	Max	Max	Max	Max		Max	C-Max		Max	C-Max	
Walk Time (s)		7.0	7.0		7.0			5.0			5.0	
Flash Dont Walk (s)		13.0	13.0		16.0			24.0			21.0	
Pedestrian Calls (#/hr)		10	10		10			10			10	
Act Effct Green (s)	8.0	20.4	20.4	10.5	23.0		8.5	29.4		10.5	30.6	
Actuated g/C Ratio	0.09	0.23	0.23	0.12	0.26		0.09	0.33		0.12	0.34	
v/c Ratio	0.32	0.84	0.10	0.95	0.66		0.17	0.49		1.01	0.22	
Control Delay	44.3	44.5	0.4	93.3	31.8		40.2	8.6		108.7	18.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	44.3	44.5	0.4	93.3	31.8		40.2	8.6		108.7	18.3	
LOS	D	D	A	F	C		D	A		F	B	
Approach Delay		41.9			47.1			10.9			72.2	
Approach LOS		D			D			B			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 43.1		Intersection LOS: D	
Intersection Capacity Utilization 77.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: POLK AVE & SHAW AVE



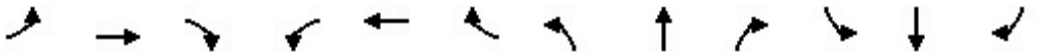


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	50	676	45	196	593	27	347	201	136
v/c Ratio	0.32	0.84	0.10	0.95	0.66	0.17	0.49	1.01	0.22
Control Delay	44.3	44.5	0.4	93.3	31.8	40.2	8.6	108.7	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.3	44.5	0.4	93.3	31.8	40.2	8.6	108.7	18.3
Queue Length 50th (ft)	27	194	0	113	147	14	30	~117	44
Queue Length 95th (ft)	63	#283	0	#245	205	40	102	#256	87
Internal Link Dist (ft)		712			490		334		298
Turn Bay Length (ft)	160		100	160		100		100	
Base Capacity (vph)	157	802	455	206	896	161	704	199	617
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.84	0.10	0.95	0.66	0.17	0.49	1.01	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



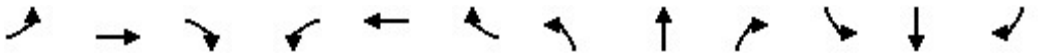
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	622	41	180	416	130	25	50	270	185	88	37
Future Volume (veh/h)	46	622	41	180	416	130	25	50	270	185	88	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	50	676	45	196	452	141	27	54	293	201	96	40
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	837	365	208	679	210	168	230	1249	208	1172	488
Arrive On Green	0.09	0.24	0.24	0.12	0.26	0.26	0.09	0.91	0.91	0.12	0.94	0.94
Sat Flow, veh/h	1781	3554	1551	1781	2658	822	1781	252	1367	1781	1253	522
Grp Volume(v), veh/h	50	676	45	196	301	292	27	0	347	201	0	136
Grp Sat Flow(s),veh/h/ln	1781	1777	1551	1781	1777	1703	1781	0	1619	1781	0	1774
Q Serve(g_s), s	2.4	16.2	2.1	9.8	13.7	13.9	1.3	0.0	2.1	10.1	0.0	0.5
Cycle Q Clear(g_c), s	2.4	16.2	2.1	9.8	13.7	13.9	1.3	0.0	2.1	10.1	0.0	0.5
Prop In Lane	1.00		1.00	1.00		0.48	1.00		0.84	1.00		0.29
Lane Grp Cap(c), veh/h	158	837	365	208	454	435	168	0	1479	208	0	1660
V/C Ratio(X)	0.32	0.81	0.12	0.94	0.66	0.67	0.16	0.00	0.23	0.97	0.00	0.08
Avail Cap(c_a), veh/h	158	837	365	208	454	435	168	0	1479	208	0	1660
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.4	32.5	27.1	39.5	30.0	30.1	37.5	0.0	0.4	39.6	0.0	0.2
Incr Delay (d2), s/veh	5.2	8.2	0.7	49.2	7.4	8.0	2.0	0.0	0.4	54.5	0.0	0.1
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	1.2	7.4	0.8	7.0	6.5	6.4	0.6	0.0	0.2	7.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	40.7	27.8	88.6	37.4	38.1	39.5	0.0	0.8	94.0	0.0	0.3
LnGrp LOS	D	D	C	F	D	D	D	A	A	F	A	A
Approach Vol, veh/h		771			789			374			337	
Approach Delay, s/veh		40.1			50.4			3.6			56.2	
Approach LOS		D			D			A			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	91.5	13.3	28.7	14.5	89.5	15.1	26.9
Change Period (Y+Rc), s	4.0	5.7	5.3	* 5.7	4.0	* 5.7	4.6	5.7
Max Green Setting (Gmax), s	8.5	30.6	8.0	* 23	10.5	* 29	10.5	20.4
Max Q Clear Time (g_c+I1), s	3.3	2.5	4.4	15.9	12.1	4.1	11.8	18.2
Green Ext Time (p_c), s	0.0	0.4	0.0	1.4	0.0	1.4	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	40.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	277	0	0	421	89	0	0	0	15	0	10
Future Volume (vph)	10	277	0	0	421	89	0	0	0	15	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.974						0.945	
Flt Protected	0.950										0.971	
Satd. Flow (prot)	1770	1863	0	1863	1814	0	0	1863	0	0	1709	0
Flt Permitted	0.950										0.971	
Satd. Flow (perm)	1770	1863	0	1863	1814	0	0	1863	0	0	1709	0
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		396			496			184			147	
Travel Time (s)		6.8			8.5			5.0			4.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	11	301	0	0	458	97	0	0	0	16	0	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	301	0	0	555	0	0	0	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	277	0	0	421	89	0	0	0	15	0	10
Future Vol, veh/h	10	277	0	0	421	89	0	0	0	15	0	10
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	301	0	0	458	97	0	0	0	16	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	565	0	0	311	0	0	855	898	321	850	850	527
Stage 1	-	-	-	-	-	-	333	333	-	517	517	-
Stage 2	-	-	-	-	-	-	522	565	-	333	333	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1007	-	-	1249	-	-	278	279	720	280	298	551
Stage 1	-	-	-	-	-	-	681	644	-	541	534	-
Stage 2	-	-	-	-	-	-	538	508	-	681	644	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	997	-	-	1237	-	-	265	270	706	272	289	541
Mov Cap-2 Maneuver	-	-	-	-	-	-	265	270	-	272	289	-
Stage 1	-	-	-	-	-	-	667	630	-	530	529	-
Stage 2	-	-	-	-	-	-	522	503	-	667	630	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	0	16.5
HCM LOS			A	C

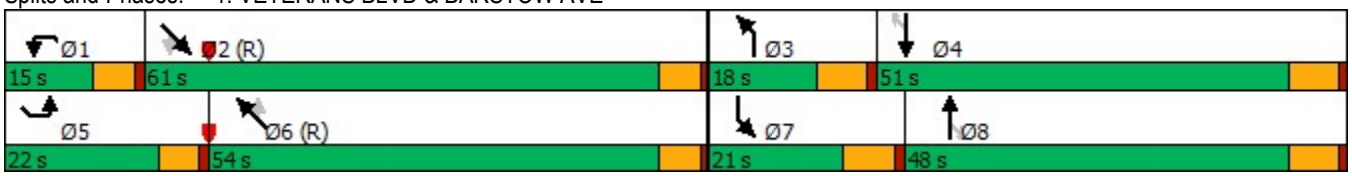
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	997	-	-	1237	-	-	340
HCM Lane V/C Ratio	-	0.011	-	-	-	-	-	0.08
HCM Control Delay (s)	0	8.7	-	-	0	-	-	16.5
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.3

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	234	1975	161	341	2103	504	441	36	218	176	42	372
Future Volume (vph)	234	1975	161	341	2103	504	441	36	218	176	42	372
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	10	11	12	10	11	12	10	11	12	12
Storage Length (ft)	250		250	250		250	180		180	270		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.96	1.00		0.96	0.99		0.98	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1711	5085	1478	1711	5085	1478	1711	1863	1478	1711	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1709	5085	1419	1709	5085	1419	1696	1863	1447	1696	1863	1550
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			148			258			204			196
Link Speed (mph)		55			55			40			40	
Link Distance (ft)		689			712			593			807	
Travel Time (s)		8.5			8.8			10.1			13.8	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	254	2147	175	371	2286	548	479	39	237	191	46	404
Shared Lane Traffic (%)												
Lane Group Flow (vph)	254	2147	175	371	2286	548	479	39	237	191	46	404
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.09	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases			8			4			2			6
Minimum Split (s)	14.5	42.5	42.5	14.5	42.5	42.5	13.4	52.4	52.4	13.4	52.4	52.4
Total Split (s)	18.0	48.0	48.0	21.0	51.0	51.0	22.0	61.0	61.0	15.0	54.0	54.0
Total Split (%)	12.4%	33.1%	33.1%	14.5%	35.2%	35.2%	15.2%	42.1%	42.1%	10.3%	37.2%	37.2%
Maximum Green (s)	11.5	41.5	41.5	14.5	44.5	44.5	16.6	55.6	55.6	9.6	48.6	48.6
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.4	5.4	5.4	5.4	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		29.0	29.0		29.0	29.0		40.0	40.0		40.0	40.0
Pedestrian Calls (#/hr)		10	10		10	10		10	10		10	10

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Act Effct Green (s)	11.5	41.5	41.5	14.5	44.5	44.5	16.6	55.6	55.6	9.6	48.6	48.6
Actuated g/C Ratio	0.08	0.29	0.29	0.10	0.31	0.31	0.11	0.38	0.38	0.07	0.34	0.34
v/c Ratio	1.88	1.48	0.34	2.17	1.47	0.89	2.46	0.05	0.35	1.69	0.07	0.62
Control Delay	457.1	254.6	10.9	573.9	249.4	43.1	695.7	28.6	7.4	383.8	33.4	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	457.1	254.6	10.9	573.9	249.4	43.1	695.7	28.6	7.4	383.8	33.4	24.7
LOS	F	F	B	F	F	D	F	C	A	F	C	C
Approach Delay		258.1			251.7			445.2			132.3	
Approach LOS		F			F			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 0 (0%), Referenced to phase 2:SET and 6:NWT, Start of Green			
Natural Cycle: 145			
Control Type: Pretimed			
Maximum v/c Ratio: 2.46			
Intersection Signal Delay: 263.7		Intersection LOS: F	
Intersection Capacity Utilization 116.2%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: VETERANS BLVD & BARSTOW AVE



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Group Flow (vph)	254	2147	175	371	2286	548	479	39	237	191	46	404
v/c Ratio	1.88	1.48	0.34	2.17	1.47	0.89	2.46	0.05	0.35	1.69	0.07	0.62
Control Delay	457.1	254.6	10.9	573.9	249.4	43.1	695.7	28.6	7.4	383.8	33.4	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	457.1	254.6	10.9	573.9	249.4	43.1	695.7	28.6	7.4	383.8	33.4	24.7
Queue Length 50th (ft)	~365	~1018	19	~559	~1080	293	~747	23	20	~263	30	165
Queue Length 95th (ft)	#547	#1109	81	#765	#1169	#524	#968	49	81	#426	61	284
Internal Link Dist (ft)		609			632			513			727	
Turn Bay Length (ft)	250		250	250		250	180		180	270		
Base Capacity (vph)	135	1455	511	171	1560	614	195	714	680	113	624	649
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.88	1.48	0.34	2.17	1.47	0.89	2.46	0.05	0.35	1.69	0.07	0.62

Intersection Summary

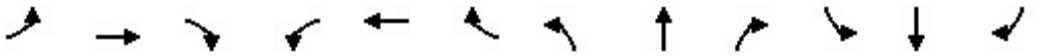
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	234	1975	161	341	2103	504	441	36	218	176	42	372
Future Volume (veh/h)	234	1975	161	341	2103	504	441	36	218	176	42	372
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		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	254	2147	175	371	2286	548	479	39	237	191	46	404
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	1461	446	178	1567	479	204	717	603	118	627	527
Arrive On Green	0.08	0.29	0.29	0.10	0.31	0.31	0.11	0.38	0.38	0.07	0.34	0.34
Sat Flow, veh/h	1781	5106	1557	1781	5106	1559	1781	1870	1573	1781	1870	1571
Grp Volume(v), veh/h	254	2147	175	371	2286	548	479	39	237	191	46	404
Grp Sat Flow(s),veh/h/ln	1781	1702	1557	1781	1702	1559	1781	1870	1573	1781	1870	1571
Q Serve(g_s), s	11.5	41.5	13.1	14.5	44.5	44.5	16.6	1.9	15.9	9.6	2.4	33.4
Cycle Q Clear(g_c), s	11.5	41.5	13.1	14.5	44.5	44.5	16.6	1.9	15.9	9.6	2.4	33.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	1461	446	178	1567	479	204	717	603	118	627	527
V/C Ratio(X)	1.80	1.47	0.39	2.08	1.46	1.15	2.35	0.05	0.39	1.62	0.07	0.77
Avail Cap(c_a), veh/h	141	1461	446	178	1567	479	204	717	603	118	627	527
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.7	51.8	41.6	65.3	50.2	50.2	64.2	28.1	32.5	67.7	32.9	43.1
Incr Delay (d2), s/veh	385.8	214.9	2.6	506.0	210.1	87.5	622.0	0.1	1.9	314.2	0.2	10.3
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	20.2	46.0	5.2	31.4	48.5	28.1	42.7	0.9	6.1	14.6	1.1	13.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	452.5	266.7	44.2	571.2	260.3	137.7	686.2	28.3	34.4	381.9	33.1	53.4
LnGrp LOS	F	F	D	F	F	F	F	C	C	F	C	D
Approach Vol, veh/h		2576			3205			755			641	
Approach Delay, s/veh		269.9			275.3			447.6			149.8	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	61.0	18.0	51.0	22.0	54.0	21.0	48.0
Change Period (Y+Rc), s	5.4	5.4	6.5	6.5	5.4	5.4	6.5	6.5
Max Green Setting (Gmax), s	9.6	55.6	11.5	44.5	16.6	48.6	14.5	41.5
Max Q Clear Time (g_c+I1), s	11.6	17.9	13.5	46.5	18.6	35.4	16.5	43.5
Green Ext Time (p_c), s	0.0	1.0	0.0	0.0	0.0	1.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	280.3
HCM 6th LOS	F

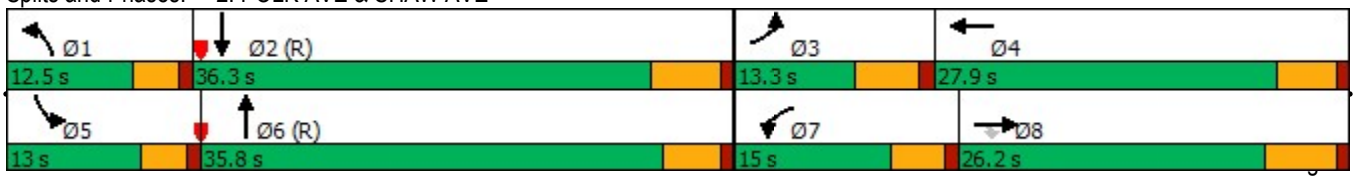


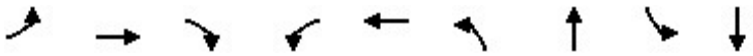
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	420	22	291	497	233	20	53	295	198	81	30
Future Volume (vph)	24	420	22	291	497	233	20	53	295	198	81	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	12	12	11	12	12
Storage Length (ft)	160		100	160		0	100		0	100		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.96	0.99	0.99		0.99	0.98		0.99	0.99	
Frt			0.850		0.952			0.873			0.959	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3327	0	1711	1597	0	1711	1776	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1758	3539	1517	1749	3327	0	1696	1597	0	1701	1776	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145		83			287			23	
Link Speed (mph)		45			35			40			40	
Link Distance (ft)		792			570			414			378	
Travel Time (s)		12.0			11.1			7.1			6.4	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	26	457	24	316	540	253	22	58	321	215	88	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	457	24	316	793	0	22	379	0	215	121	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8									
Detector Phase	3	8	8	7	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	13.3	25.7	25.7	12.6	27.9		12.5	33.9		12.5	31.7	
Total Split (s)	13.3	26.2	26.2	15.0	27.9		12.5	35.8		13.0	36.3	
Total Split (%)	14.8%	29.1%	29.1%	16.7%	31.0%		13.9%	39.8%		14.4%	40.3%	
Maximum Green (s)	8.0	20.5	20.5	10.4	23.0		8.5	30.9		9.0	30.6	
Yellow Time (s)	4.3	4.7	4.7	3.6	3.9		3.0	3.9		3.0	4.7	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.3	5.7	5.7	4.6	4.9		4.0	4.9		4.0	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Time Before Reduce (s)	0.0	8.0	8.0	0.0	8.0		0.0	8.0		0.0	8.0	
Time To Reduce (s)	0.0	21.0	21.0	0.0	21.0		0.0	21.0		0.0	15.0	
Recall Mode	Max	Max	Max	Max	Max		Max	C-Max		Max	C-Max	
Walk Time (s)		7.0	7.0		7.0			5.0			5.0	
Flash Dont Walk (s)		13.0	13.0		16.0			24.0			21.0	
Pedestrian Calls (#/hr)		10	10		10			10			10	
Act Effct Green (s)	8.0	20.5	20.5	10.4	23.0		8.5	30.9		9.0	30.6	
Actuated g/C Ratio	0.09	0.23	0.23	0.12	0.26		0.09	0.34		0.10	0.34	
v/c Ratio	0.17	0.57	0.05	1.55	0.87		0.14	0.51		1.26	0.20	
Control Delay	40.7	34.0	0.2	300.4	40.5		39.6	8.8		190.7	17.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	40.7	34.0	0.2	300.4	40.5		39.6	8.8		190.7	17.9	
LOS	D	C	A	F	D		D	A		F	B	
Approach Delay		32.8			114.5			10.5			128.5	
Approach LOS		C			F			B			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.55			
Intersection Signal Delay: 81.2		Intersection LOS: F	
Intersection Capacity Utilization 83.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: POLK AVE & SHAW AVE



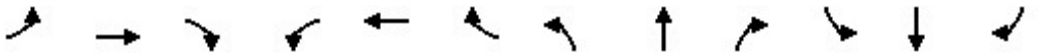


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	457	24	316	793	22	379	215	121
v/c Ratio	0.17	0.57	0.05	1.55	0.87	0.14	0.51	1.26	0.20
Control Delay	40.7	34.0	0.2	300.4	40.5	39.6	8.8	190.7	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	34.0	0.2	300.4	40.5	39.6	8.8	190.7	17.9
Queue Length 50th (ft)	14	122	0	~255	205	12	36	~155	38
Queue Length 95th (ft)	39	171	0	#417	#308	35	112	#293	78
Internal Link Dist (ft)		712			490		334		298
Turn Bay Length (ft)	160		100	160		100		100	
Base Capacity (vph)	157	806	457	204	912	161	736	171	619
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.57	0.05	1.55	0.87	0.14	0.51	1.26	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



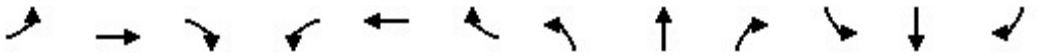
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	420	22	291	497	233	20	53	295	198	81	30
Future Volume (veh/h)	24	420	22	291	497	233	20	53	295	198	81	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	457	24	316	540	253	22	58	321	215	88	33
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	841	367	206	597	279	168	230	1275	178	1212	454
Arrive On Green	0.09	0.24	0.24	0.12	0.26	0.26	0.09	0.93	0.93	0.10	0.94	0.94
Sat Flow, veh/h	1781	3554	1552	1781	2335	1090	1781	248	1371	1781	1295	486
Grp Volume(v), veh/h	26	457	24	316	411	382	22	0	379	215	0	121
Grp Sat Flow(s),veh/h/ln	1781	1777	1552	1781	1777	1648	1781	0	1618	1781	0	1781
Q Serve(g_s), s	1.2	10.1	1.1	10.4	20.1	20.2	1.0	0.0	1.9	9.0	0.0	0.4
Cycle Q Clear(g_c), s	1.2	10.1	1.1	10.4	20.1	20.2	1.0	0.0	1.9	9.0	0.0	0.4
Prop In Lane	1.00		1.00	1.00		0.66	1.00		0.85	1.00		0.27
Lane Grp Cap(c), veh/h	158	841	367	206	454	421	168	0	1505	178	0	1666
V/C Ratio(X)	0.16	0.54	0.07	1.54	0.90	0.91	0.13	0.00	0.25	1.21	0.00	0.07
Avail Cap(c_a), veh/h	158	841	367	206	454	421	168	0	1505	178	0	1666
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.9	30.1	26.6	39.8	32.4	32.5	37.4	0.0	0.3	40.5	0.0	0.2
Incr Delay (d2), s/veh	2.2	2.5	0.3	263.7	24.0	25.9	1.6	0.0	0.4	134.1	0.0	0.1
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	0.6	4.4	0.4	19.5	11.3	10.7	0.5	0.0	0.2	10.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.1	32.6	27.0	303.5	56.5	58.4	39.0	0.0	0.7	174.6	0.0	0.3
LnGrp LOS	D	C	C	F	E	E	D	A	A	F	A	A
Approach Vol, veh/h		507			1109			401			336	
Approach Delay, s/veh		32.7			127.5			2.8			111.8	
Approach LOS		C			F			A			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	91.5	13.3	28.7	13.0	91.0	15.0	27.0
Change Period (Y+Rc), s	4.0	5.7	5.3	* 5.7	4.0	* 5.7	4.6	5.7
Max Green Setting (Gmax), s	8.5	30.6	8.0	* 23	9.0	* 31	10.4	20.5
Max Q Clear Time (g_c+I1), s	3.0	2.4	3.2	22.2	11.0	3.9	12.4	12.1
Green Ext Time (p_c), s	0.0	0.4	0.0	0.3	0.0	1.6	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	83.6
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	207	2	1	258	23	2	0	0	80	0	43
Future Volume (vph)	61	207	2	1	258	23	2	0	0	80	0	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		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	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.988						0.953	
Flt Protected	0.950			0.950				0.950			0.969	
Satd. Flow (prot)	1770	1861	0	1770	1840	0	0	1770	0	0	1720	0
Flt Permitted	0.950			0.950				0.950			0.969	
Satd. Flow (perm)	1770	1861	0	1770	1840	0	0	1770	0	0	1720	0
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		396			496			184			147	
Travel Time (s)		6.8			8.5			5.0			4.0	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
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
Adj. Flow (vph)	66	225	2	1	280	25	2	0	0	87	0	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	227	0	1	305	0	0	2	0	0	134	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	207	2	1	258	23	2	0	0	80	0	43
Future Vol, veh/h	61	207	2	1	258	23	2	0	0	80	0	43
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	225	2	1	280	25	2	0	0	87	0	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	315	0	0	237	0	0	696	685	246	673	674	313
Stage 1	-	-	-	-	-	-	368	368	-	305	305	-
Stage 2	-	-	-	-	-	-	328	317	-	368	369	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1245	-	-	1330	-	-	356	371	793	369	376	727
Stage 1	-	-	-	-	-	-	652	621	-	705	662	-
Stage 2	-	-	-	-	-	-	685	654	-	652	621	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1233	-	-	1317	-	-	313	344	778	347	348	713
Mov Cap-2 Maneuver	-	-	-	-	-	-	313	344	-	347	348	-
Stage 1	-	-	-	-	-	-	611	582	-	661	655	-
Stage 2	-	-	-	-	-	-	634	647	-	611	582	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0	16.6	17.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	313	1233	-	-	1317	-	-	423
HCM Lane V/C Ratio	0.007	0.054	-	-	0.001	-	-	0.316
HCM Control Delay (s)	16.6	8.1	-	-	7.7	-	-	17.4
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	1.3

Appendix E: Fresno COG "Model Steering Committee Recommended Procedures for Using Traffic Projections from the Fresno COG Travel Model dated December 2002"

Council of Fresno County Governments

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Model Steering Committee

Recommended Procedures for Using Traffic Projections from the Fresno COG Travel Model

Updated 12-2002

A recommended procedure for adjusting traffic volumes from the Council of Fresno County Governments (Fresno COG) travel model is presented.

1. BACKGROUND

The Fresno COG model has been validated to replicate overall existing traffic volumes in Fresno County. The model accurately represents overall traffic volumes on roads grouped by classification or across regional screenlines.

It is likely that a model will not be accurate enough in every location to reliably calculate LOS directly from model output.

Validated models will generate good estimates of changes in traffic volume in response to changes in land use or road network assumptions.

In many locations, the model also accurately estimates traffic on specific road segments. Therefore, it is recommended that adjustments be applied to model results prior to traffic operations analysis.

The primary reference for traffic model volume adjustments is National Cooperative Highway Research Program Report (NCHRP) 255: Highway Traffic Data for Urbanized Area Project Planning and Design (1982, now out of print). Some of the simplified procedures described in NCHRP 255 can be improved using current computer programs.

The Fresno COG Model Steering Committee has adopted an adjustment process that should account for any validation errors.

The following procedures are suggested methods to use when using traffic projections from the Fresno COG Traffic Model:

2. LINK VOLUMES

There are two common procedures for adjusting link volumes from a model:

1. Growth Factor (adjust traffic counts by ratio of future year model to base year model)
2. Incremental (adjust traffic counts by increment from current year model to future year model)

2.1 Growth Factor Method

The growth factor or ratio method calculates the ratio of future model forecast volumes to base year model volumes and applies the ratio to the base year traffic count. For example, a segment of Shaw Avenue may have a 1998 traffic count of 24,000 daily vehicles. The validated 1998 base year model may estimate a 1998 volume of 19,500 (19% low) and a 2020 volume of 23,800 (lower than the 1998 count). The growth factor method would calculate an overall factor of 23,800/19,500 = 1.22. Applying the factor of 1.22 to the count of 24,000 would result in an adjusted forecast of 29,280.

Example: **Growth Factor Method**	**1998 Base Year Model = 19,500 (19% low)** **2025 Model Projection = 23,800 (lower than 1998 count)** **1998 Traffic Count = 24,000** **Growth Factor = 23,800/19,500 = 1.22** **1.22 (factor) X 24,000 (traffic count) = 29,280 adjusted Forecast**

The factor method can generate very odd results when either the traffic count or base year model volume is very low. The factor method also does not guarantee continuity of flow from one link to the next. Therefore, the increment method is recommended.

2.2 Incremental Method – *Recommended*

It is recommended that link volumes from the Fresno COG model be adjusted based on the increment method, for any link where traffic counts are available. Factors may be applied in locations where forecasts are needed and traffic counts are not available.

The following procedure is recommended for adjustment of all forecast volumes on all road types, including freeways, local streets, and intersection approach and departure volumes. A spreadsheet is useful for organizing the adjustments.

1. **Compile Current Year Model Volumes.** Enter the appropriate DAILY, A.M. peak hour or P.M. peak hour traffic volumes from the current year version of the Fresno COG traffic model. *The current year traffic model is available on the Fresno COG website at www.fresnocog.org/model/model.htm*
2. **Compile Future Year Model Volumes.** Enter the appropriate DAILY, A.M. peak hour or P.M. peak hour traffic volumes from the version of the Fresno COG model that is closest to the future study year. (Generally 2025)
3. **Calculate Increment from Current Year Model to Future Year Model.** Subtract the current year model volume on each link from the future year model volume. *[Future Year model (2025)] – [current Year model (2002)] = Increment*

Example Increment Method

Calculate the Increment from the Current Year Model to the Future Year Model	**Future Year Model Volume = 43,800**
	Current Year Model Volume = 20,000
[Future Year Model] – [Current Year Model] = Increment	**Increment = 23,800**
	Count = 25,500
Add Increment to Count	**Increment = 23,800**
[Increment] + [Count] = Adjusted Volume	**Adjusted Volume = 49,300**
	FY – CY = I
Check for Negative Increments	**C + I = AV**

4. **Check Negative Increments.** In some cases, the model volumes will decrease between the current year and the future year. Decreases in traffic could be due to legitimate reasons, such as construction of a new facility that diverts traffic off of the road. There could also be legitimate but difficult-to-explain reasons, such as future traffic avoiding a road where the model is predicting significant future congestion. Or, decreases could be due to errors or discrepancies between the base year and future year land use assumptions. The analyst must determine whether to allow traffic to decrease consistent with the model assumptions, or to reset the negative increments to zero so that no future forecasts are lower than the current year traffic counts.
5. **Add Increment to Traffic Count.** Add the growth increment to the current year traffic count to calculate the final adjusted forecast volume. *[Increment] + [current Year Count] = Adjusted Volume*

2.3 Procedure for Links without Traffic Counts

For road segments that exist in the base year but do not have traffic counts, a factor method is recommended for adjusting future model volume forecasts.

1. **Adjust Links with Traffic Counts.** Calculate adjusted forecast volumes for links with traffic counts following the above procedure in Section 2.2.

2. **Select Representative Links.** Select one or more similar nearby links with adjusted forecasts. For example, adjacent freeway links should be used for adjustments on freeways. Ramps that serve the same general movements (such as "northbound off-ramp from downtown") should be used to adjust ramp volumes. Parallel arterials should be used to adjust arterial segments. Calculate the adjustment factor on those nearby links as the adjusted traffic volume divided by the unadjusted future year model volume.
3. **Apply Adjustment Factor.** Apply the average adjustment growth factor to the unadjusted future year model volume on the link without traffic counts. (Adjustment Factor = Adjusted Future Year Volume/Unadjusted Future Year volume, see Section 2.1)

For future roads that do not exist in the base year, it would generally be appropriate to use unadjusted model traffic volume forecasts.

3. INTERSECTION TURN VOLUMES

It is possible to create a travel model that estimates accurate link volumes on a majority of important road segments. However, it is very difficult to accurately estimate individual turn movements. This is primarily due to the aggregation of land uses into transportation analysis zones (TAZs), which means that the model cannot represent all of the individual paths that drivers use to reach individual parcels and driveways. Therefore an adjustment process is recommended.

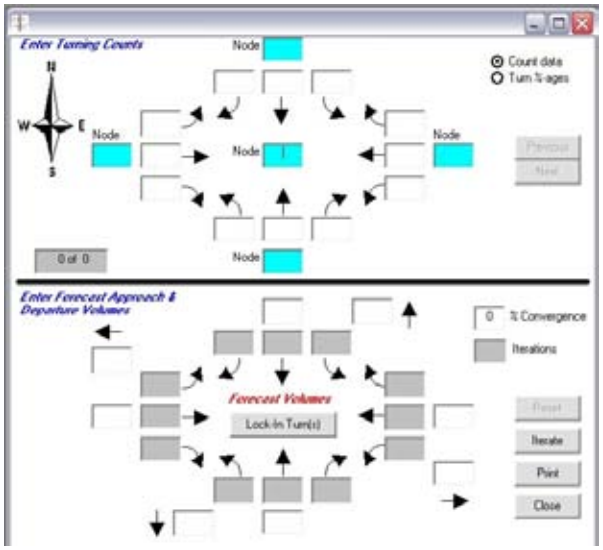
3.1 Procedure for Turn Movements

Forecasting Future Turns	**Observed turns** **Link forecasts** **Software Version of NCHRP 255**

The procedure for intersection turn volumes is a two-step process. First, the link volumes entering and exiting the intersection are adjusted as described above. Second, existing turn movement counts are factored to match the adjusted entering and exiting volumes.

1. **Adjust Link Volumes.** Adjust the peak hour link volumes in and out of each leg of the intersection (generally eight segments for a standard four-way intersection) using the incremental adjustment process described in Section 2.2.
2. **Factor Turn Volumes.** Factor the base year turn movement count at the intersection until the total volumes in and out of each leg closely match the adjusted link volumes. A common factoring algorithm is named after its creator, Furness. Computer applications of the Furness procedure are available ("TurnsW32" on the Dowling Associates website, www.dowlinginc.com, or simplified versions can be programmed in spreadsheets.

Turnsw32
Free from http://dowlinginc.com



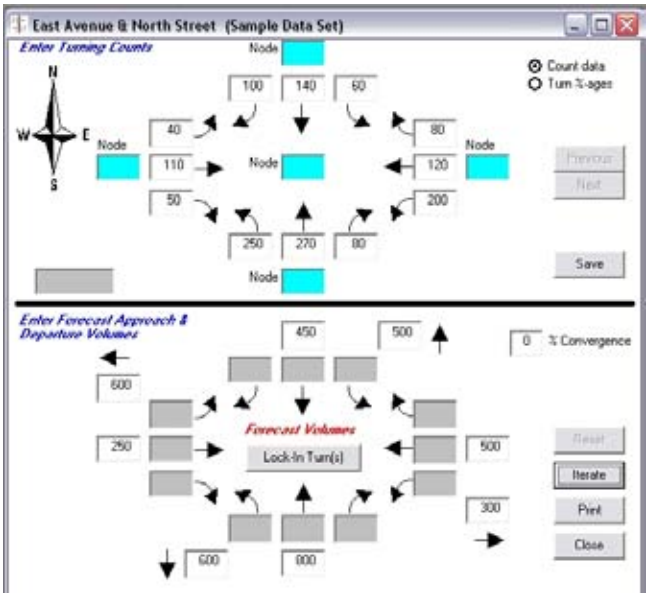
TurnsW32 computes forecast turning volumes from existing turning movement volumes and forecasted future approach and departure volumes, using the techniques described in NCHRP 255

Observed Turns data Entry

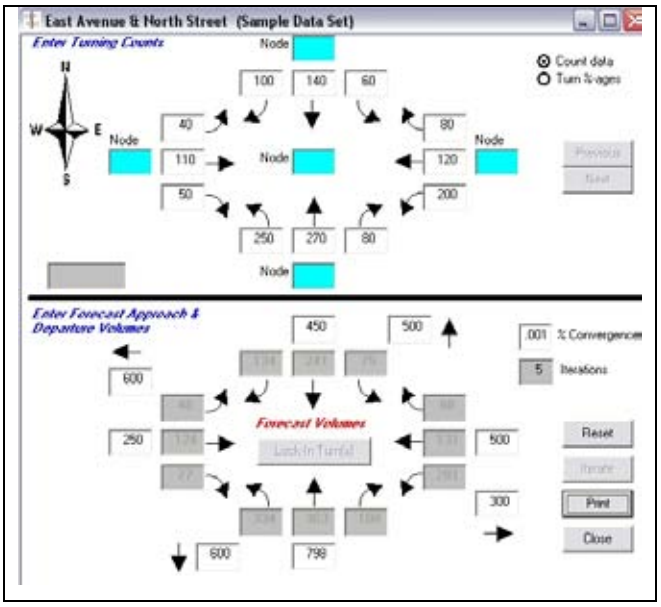
Step 1

Enter observed turning volumes.

Alternatively enter estimated percentages of future year's assigned inflows. Percentages must equal 100 on each approach.



Enter Forecast Approach and Departure Volumes



Step 2

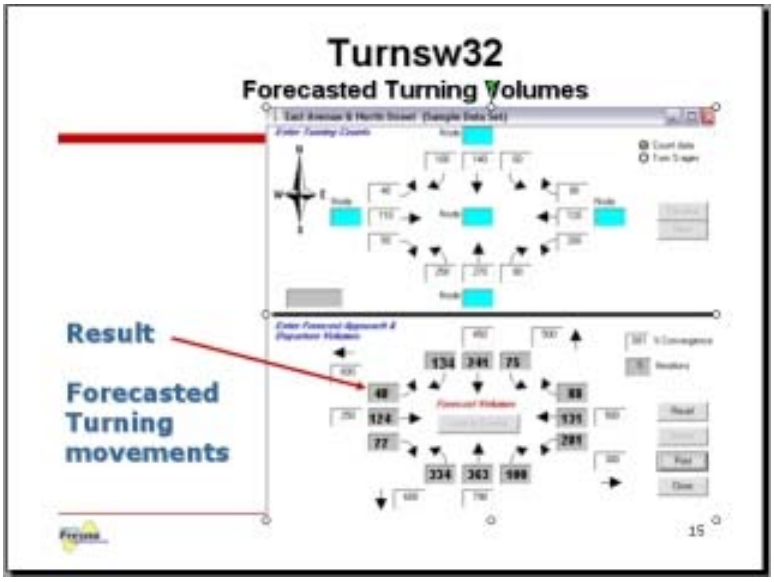
Enter forecasted approach and departure volumes.

Inflows must equal outflows.

User may "lock in" pre-determined turn volume for one or more movement.

Forecasted Turning Volumes

Result is the forecasted turning volumes



3. **Check Increments**. Some of the factored turn movements may end up lower than the base year traffic counts, due to large increases on certain exiting movements that divert traffic away from other movements. The analyst must decide if the forecast turn movements can decrease from the base year traffic counts, or if the forecast turn movements should be reset to be no lower than the base year traffic counts.

3.2 Procedure for Movements without Traffic Counts

If a new road segment is added in the future, there will be no traffic counts available for adjustment. The following procedure is recommended

1. **Model Traffic Assignment.** Assign future daily or peak hour traffic using the TP+ model and save turn movements at the selected intersections.
2. **Intersection with Existing Road.** If the new road will intersect an existing road, estimate current year traffic counts and adjusted forecast link volumes on as many movements as possible on the existing road at the new intersection based on traffic counts at adjacent locations.
3. **Substitute Model Volumes for Count.** Substitute model-estimated turn movement volumes as current year traffic counts for all turn movements to and from the new road.
4. **Factor Turn Movements.** Continue with the procedure described in Section 3.1.

3.3 Shortcut Procedure

The factoring procedure described in Section 3.1 will give the most representative results for intersection turn movement forecasts based on growth on individual legs. However, there may be times when the analyst may not have ready access to the adjustment software and needs a quick assessment of intersection conditions. The following procedure is recommended for "shortcut" analysis only:

1. **Calculate Factors.** Calculate the growth factors on each leg of the intersection as the adjusted future year model volume (or unadjusted future year model volumes if adjustments are not available) divided by the base year model volume (or base year traffic count if the base year model is not available). The factor can be calculated based on total two-way or directional one-way daily or peak hour model volumes.
2. **Apply Factors.** Apply the growth factor on each leg to the turn movement counts entering from that leg;

   OR

   Calculate the growth factor for each turn movement as the average of the two growth factors on the entering and exiting leg.
3. **Check Results.**

Appendix F: CALEEMOD Reports

20-003 PHASE 4

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Automobile Care Center	5.40	1000sqft	0.12	5,400.00	0
Automobile Care Center	5.40	1000sqft	0.12	5,400.00	0
Parking Lot	8.91	1000sqft	0.20	8,910.00	0
Other Non-Asphalt Surfaces	2.02	1000sqft	0.05	2,020.00	0
Other Asphalt Surfaces	31.92	1000sqft	0.73	31,920.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - CAR WASH - 5400SF
OFFICE/TRUCK REPAIR - 5400SF

Construction Phase - NONE

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading -

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	NumDays	4.00	22.00
tblConstructionPhase	NumDays	200.00	137.00
tblConstructionPhase	NumDays	10.00	21.00
tblConstructionPhase	NumDays	10.00	24.00
tblConstructionPhase	PhaseEndDate	3/29/2024	3/8/2024

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	8.9400e-003	0.0714	0.0956	1.5000e-004	1.0900e-003	3.6500e-003	4.7500e-003	2.9000e-004	3.3700e-003	3.6600e-003	0.0000	13.2375	13.2375	3.9400e-003	0.0000	13.3359
2024	0.2046	0.9822	1.0084	2.0500e-003	0.0862	0.0382	0.1244	0.0399	0.0366	0.0765	0.0000	172.7508	172.7508	0.0288	0.0000	173.4702
Maximum	**0.2046**	**0.9822**	**1.0084**	**2.0500e-003**	**0.0862**	**0.0382**	**0.1244**	**0.0399**	**0.0366**	**0.0765**	**0.0000**	**172.7508**	**172.7508**	**0.0288**	**0.0000**	**173.4702**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	8.9400e-003	0.0714	0.0956	1.5000e-004	1.0900e-003	3.6500e-003	4.7500e-003	2.9000e-004	3.3700e-003	3.6600e-003	0.0000	13.2375	13.2375	3.9400e-003	0.0000	13.3359
2024	0.2046	0.9822	1.0084	2.0500e-003	0.0444	0.0382	0.0826	0.0185	0.0366	0.0551	0.0000	172.7506	172.7506	0.0288	0.0000	173.4701
Maximum	**0.2046**	**0.9822**	**1.0084**	**2.0500e-003**	**0.0444**	**0.0382**	**0.0826**	**0.0185**	**0.0366**	**0.0551**	**0.0000**	**172.7506**	**172.7506**	**0.0288**	**0.0000**	**173.4701**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**47.91**	**0.00**	**32.38**	**53.32**	**0.00**	**26.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**3-3-2024**	**6-2-2024**	0.4352	0.4352
2	**6-3-2024**	**9-2-2024**	0.4386	0.4386
3	**9-3-2024**	**9-30-2024**	0.1335	0.1335
		Highest	0.4386	0.4386

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0534	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.6000e-004	9.6000e-004	0.0000	0.0000	1.0200e-003
Energy	1.2200e-003	0.0111	9.2800e-003	7.0000e-005		8.4000e-004	8.4000e-004		8.4000e-004	8.4000e-004	0.0000	40.6463	40.6463	1.5200e-003	4.9000e-004	40.8299
Mobile	0.0502	0.6055	0.3408	1.9200e-003	0.0908	9.3000e-004	0.0918	0.0245	8.7000e-004	0.0254	0.0000	180.0788	180.0788	0.0250	0.0000	180.7030
Waste						0.0000	0.0000		0.0000	0.0000	8.3754	0.0000	8.3754	0.4950	0.0000	20.7497
Water						0.0000	0.0000		0.0000	0.0000	0.3224	2.2335	2.5559	0.0332	8.0000e-004	3.6253
Total	**0.1048**	**0.6166**	**0.3505**	**1.9900e-003**	**0.0908**	**1.7700e-003**	**0.0926**	**0.0245**	**1.7100e-003**	**0.0262**	**8.6978**	**222.9595**	**231.6573**	**0.5547**	**1.2900e-003**	**245.9089**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0502	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.5000e-004	9.5000e-004	0.0000	0.0000	1.0100e-003
Energy	1.1900e-003	0.0108	9.0500e-003	6.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	39.8854	39.8854	1.5000e-003	4.8000e-004	40.0654
Mobile	0.0438	0.5393	0.2141	1.0700e-003	0.0273	4.4000e-004	0.0277	7.3400e-003	4.1000e-004	7.7600e-003	0.0000	100.4464	100.4464	0.0234	0.0000	101.0312
Waste						0.0000	0.0000		0.0000	0.0000	2.0939	0.0000	2.0939	0.1237	0.0000	5.1874
Water						0.0000	0.0000		0.0000	0.0000	0.2579	1.8750	2.1328	0.0266	6.4000e-004	2.9887
Total	**0.0953**	**0.5500**	**0.2237**	**1.1300e-003**	**0.0273**	**1.2600e-003**	**0.0285**	**7.3400e-003**	**1.2300e-003**	**8.5800e-003**	**2.3517**	**142.2077**	**144.5594**	**0.1752**	**1.1200e-003**	**149.2738**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**9.10**	**10.79**	**36.20**	**43.22**	**70.00**	**28.81**	**69.20**	**70.02**	**28.07**	**67.24**	**72.96**	**36.22**	**37.60**	**68.41**	**13.18**	**39.30**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
Vegetation Land Change	-5.3013
Total	**-5.3013**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	SITE PREPARATION	Site Preparation	3/3/2024	3/8/2024	5	5	
2	GRADING	Grading	3/8/2024	4/8/2024	5	22	
3	BUILDING CONSTRUCTION	Building Construction	4/8/2024	10/15/2024	5	137	
4	PAVING	Paving	4/8/2022	5/8/2022	5	21	
5	ARCHITECTURAL COATING	Architectural Coating	10/15/2024	11/15/2024	5	24	

Acres of Grading (Site Preparation Phase): 2.5

Acres of Grading (Grading Phase): 8.25

Acres of Paving: 0.98

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 16,200; Non-Residential Outdoor: 5,400; Striped Parking Area: 2,571 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
ARCHITECTURAL COATING	Air Compressors	1	6.00	78	0.48
PAVING	Cement and Mortar Mixers	1	6.00	9	0.56
SITE PREPARATION	Concrete/Industrial Saws	0		81	0.73
BUILDING CONSTRUCTION	Generator Sets	1	8.00	84	0.74
BUILDING CONSTRUCTION	Cranes	1	6.00	231	0.29
BUILDING CONSTRUCTION	Forklifts	1	6.00	89	0.20
SITE PREPARATION	Graders	1	8.00	187	0.41
PAVING	Pavers	1	6.00	130	0.42
PAVING	Rollers	1	7.00	80	0.38
SITE PREPARATION	Rubber Tired Dozers	1	7.00	247	0.40
GRADING	Rubber Tired Dozers	1	6.00	247	0.40
BUILDING CONSTRUCTION	Tractors/Loaders/Backhoes	1	6.00	97	0.37
SITE PREPARATION	Tractors/Loaders/Backhoes	1	8.00	97	0.37
GRADING	Tractors/Loaders/Backhoes	1	7.00	97	0.37
PAVING	Tractors/Loaders/Backhoes	1	8.00	97	0.37
SITE PREPARATION	Tractors/Loaders/Backhoes	1	8.00	97	0.37
GRADING	Graders	1	6.00	187	0.41
PAVING	Paving Equipment	1	8.00	132	0.36
SITE PREPARATION	Rubber Tired Dozers	1	7.00	247	0.40
BUILDING CONSTRUCTION	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
SITE PREPARATION	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
SITE PREPARATION	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
GRADING	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
BUILDING CONSTRUCTION	7	21.00	9.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
PAVING	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
ARCHITECTURAL COATING	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 SITE PREPARATION - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0145	0.0000	0.0145	7.3800e-003	0.0000	7.3800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6500e-003	0.0488	0.0290	7.0000e-005		2.0700e-003	2.0700e-003		1.9100e-003	1.9100e-003	0.0000	6.1037	6.1037	1.9700e-003	0.0000	6.1530
Total	**4.6500e-003**	**0.0488**	**0.0290**	**7.0000e-005**	**0.0145**	**2.0700e-003**	**0.0166**	**7.3800e-003**	**1.9100e-003**	**9.2900e-003**	**0.0000**	**6.1037**	**6.1037**	**1.9700e-003**	**0.0000**	**6.1530**

3.2 SITE PREPARATION - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.1000e-004	1.2500e-003	0.0000	9.7000e-004	0.0000	9.7000e-004	2.5000e-004	0.0000	2.5000e-004	0.0000	0.3873	0.3873	1.0000e-005	0.0000	0.3875
Total	**2.1000e-004**	**1.1000e-004**	**1.2500e-003**	**0.0000**	**9.7000e-004**	**0.0000**	**9.7000e-004**	**2.5000e-004**	**0.0000**	**2.5000e-004**	**0.0000**	**0.3873**	**0.3873**	**1.0000e-005**	**0.0000**	**0.3875**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.6500e-003	0.0000	5.6500e-003	2.8800e-003	0.0000	2.8800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6500e-003	0.0488	0.0290	7.0000e-005		2.0700e-003	2.0700e-003		1.9100e-003	1.9100e-003	0.0000	6.1037	6.1037	1.9700e-003	0.0000	6.1530
Total	**4.6500e-003**	**0.0488**	**0.0290**	**7.0000e-005**	**5.6500e-003**	**2.0700e-003**	**7.7200e-003**	**2.8800e-003**	**1.9100e-003**	**4.7900e-003**	**0.0000**	**6.1037**	**6.1037**	**1.9700e-003**	**0.0000**	**6.1530**

3.2 SITE PREPARATION - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.1000e-004	1.2500e-003	0.0000	9.7000e-004	0.0000	9.7000e-004	2.5000e-004	0.0000	2.5000e-004	0.0000	0.3873	0.3873	1.0000e-005	0.0000	0.3875
Total	**2.1000e-004**	**1.1000e-004**	**1.2500e-003**	**0.0000**	**9.7000e-004**	**0.0000**	**9.7000e-004**	**2.5000e-004**	**0.0000**	**2.5000e-004**	**0.0000**	**0.3873**	**0.3873**	**1.0000e-005**	**0.0000**	**0.3875**

3.3 GRADING - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0541	0.0000	0.0541	0.0278	0.0000	0.0278	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0100	0.1070	0.0610	1.5000e-004		4.4000e-003	4.4000e-003		4.0500e-003	4.0500e-003	0.0000	13.6180	13.6180	4.4000e-003	0.0000	13.7281
Total	**0.0100**	**0.1070**	**0.0610**	**1.5000e-004**	**0.0541**	**4.4000e-003**	**0.0585**	**0.0278**	**4.0500e-003**	**0.0318**	**0.0000**	**13.6180**	**13.6180**	**4.4000e-003**	**0.0000**	**13.7281**

3.3 GRADING - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.5000e-004	1.7000e-003	1.0000e-005	7.0000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5243	0.5243	1.0000e-005	0.0000	0.5246
Total	**2.8000e-004**	**1.5000e-004**	**1.7000e-003**	**1.0000e-005**	**7.0000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5243**	**0.5243**	**1.0000e-005**	**0.0000**	**0.5246**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0211	0.0000	0.0211	0.0108	0.0000	0.0108	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0100	0.1070	0.0610	1.5000e-004		4.4000e-003	4.4000e-003		4.0500e-003	4.0500e-003	0.0000	13.6180	13.6180	4.4000e-003	0.0000	13.7281
Total	**0.0100**	**0.1070**	**0.0610**	**1.5000e-004**	**0.0211**	**4.4000e-003**	**0.0255**	**0.0108**	**4.0500e-003**	**0.0149**	**0.0000**	**13.6180**	**13.6180**	**4.4000e-003**	**0.0000**	**13.7281**

3.3 GRADING - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.5000e-004	1.7000e-003	1.0000e-005	7.0000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5243	0.5243	1.0000e-005	0.0000	0.5246
Total	**2.8000e-004**	**1.5000e-004**	**1.7000e-003**	**1.0000e-005**	**7.0000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.5243**	**0.5243**	**1.0000e-005**	**0.0000**	**0.5246**

3.4 BUILDING CONSTRUCTION - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0973	0.7579	0.8574	1.5100e-003		0.0309	0.0309		0.0298	0.0298	0.0000	124.4037	124.4037	0.0207	0.0000	124.9217
Total	**0.0973**	**0.7579**	**0.8574**	**1.5100e-003**		**0.0309**	**0.0309**		**0.0298**	**0.0298**	**0.0000**	**124.4037**	**124.4037**	**0.0207**	**0.0000**	**124.9217**

3.4 BUILDING CONSTRUCTION - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1600e-003	0.0510	7.5600e-003	1.7000e-004	4.0900e-003	5.0000e-005	4.1300e-003	1.1800e-003	5.0000e-005	1.2300e-003	0.0000	15.7927	15.7927	1.3200e-003	0.0000	15.8256
Worker	4.6400e-003	2.5200e-003	0.0278	9.0000e-005	0.0115	7.0000e-005	0.0116	3.0600e-003	6.0000e-005	3.1200e-003	0.0000	8.5712	8.5712	1.7000e-004	0.0000	8.5754
Total	**5.8000e-003**	**0.0535**	**0.0353**	**2.6000e-004**	**0.0156**	**1.2000e-004**	**0.0157**	**4.2400e-003**	**1.1000e-004**	**4.3500e-003**	**0.0000**	**24.3639**	**24.3639**	**1.4900e-003**	**0.0000**	**24.4010**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0973	0.7579	0.8574	1.5100e-003		0.0309	0.0309		0.0298	0.0298	0.0000	124.4036	124.4036	0.0207	0.0000	124.9215
Total	**0.0973**	**0.7579**	**0.8574**	**1.5100e-003**		**0.0309**	**0.0309**		**0.0298**	**0.0298**	**0.0000**	**124.4036**	**124.4036**	**0.0207**	**0.0000**	**124.9215**

3.4 BUILDING CONSTRUCTION - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1600e-003	0.0510	7.5600e-003	1.7000e-004	4.0900e-003	5.0000e-005	4.1300e-003	1.1800e-003	5.0000e-005	1.2300e-003	0.0000	15.7927	15.7927	1.3200e-003	0.0000	15.8256
Worker	4.6400e-003	2.5200e-003	0.0278	9.0000e-005	0.0115	7.0000e-005	0.0116	3.0600e-003	6.0000e-005	3.1200e-003	0.0000	8.5712	8.5712	1.7000e-004	0.0000	8.5754
Total	**5.8000e-003**	**0.0535**	**0.0353**	**2.6000e-004**	**0.0156**	**1.2000e-004**	**0.0157**	**4.2400e-003**	**1.1000e-004**	**4.3500e-003**	**0.0000**	**24.3639**	**24.3639**	**1.4900e-003**	**0.0000**	**24.4010**

3.5 PAVING - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.2200e-003	0.0711	0.0925	1.4000e-004		3.6500e-003	3.6500e-003		3.3700e-003	3.3700e-003	0.0000	12.3581	12.3581	3.9200e-003	0.0000	12.4560
Paving	1.2200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.4400e-003**	**0.0711**	**0.0925**	**1.4000e-004**		**3.6500e-003**	**3.6500e-003**		**3.3700e-003**	**3.3700e-003**	**0.0000**	**12.3581**	**12.3581**	**3.9200e-003**	**0.0000**	**12.4560**

3.5 PAVING - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	3.0000e-004	3.1400e-003	1.0000e-005	1.0900e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8794	0.8794	2.0000e-005	0.0000	0.8799
Total	**5.1000e-004**	**3.0000e-004**	**3.1400e-003**	**1.0000e-005**	**1.0900e-003**	**1.0000e-005**	**1.1000e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.8794**	**0.8794**	**2.0000e-005**	**0.0000**	**0.8799**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.2200e-003	0.0711	0.0925	1.4000e-004		3.6500e-003	3.6500e-003		3.3700e-003	3.3700e-003	0.0000	12.3581	12.3581	3.9200e-003	0.0000	12.4560
Paving	1.2200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.4400e-003**	**0.0711**	**0.0925**	**1.4000e-004**		**3.6500e-003**	**3.6500e-003**		**3.3700e-003**	**3.3700e-003**	**0.0000**	**12.3581**	**12.3581**	**3.9200e-003**	**0.0000**	**12.4560**

3.5 PAVING - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	3.0000e-004	3.1400e-003	1.0000e-005	1.0900e-003	1.0000e-005	1.1000e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.8794	0.8794	2.0000e-005	0.0000	0.8799
Total	**5.1000e-004**	**3.0000e-004**	**3.1400e-003**	**1.0000e-005**	**1.0900e-003**	**1.0000e-005**	**1.1000e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.8794**	**0.8794**	**2.0000e-005**	**0.0000**	**0.8799**

3.6 ARCHITECTURAL COATING - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0840					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1700e-003	0.0146	0.0217	4.0000e-005		7.3000e-004	7.3000e-004		7.3000e-004	7.3000e-004	0.0000	3.0639	3.0639	1.7000e-004	0.0000	3.0682
Total	**0.0862**	**0.0146**	**0.0217**	**4.0000e-005**		**7.3000e-004**	**7.3000e-004**		**7.3000e-004**	**7.3000e-004**	**0.0000**	**3.0639**	**3.0639**	**1.7000e-004**	**0.0000**	**3.0682**

3.6 ARCHITECTURAL COATING - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	8.0000e-005	9.3000e-004	0.0000	3.8000e-004	0.0000	3.9000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2860	0.2860	1.0000e-005	0.0000	0.2862
Total	**1.5000e-004**	**8.0000e-005**	**9.3000e-004**	**0.0000**	**3.8000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2860**	**0.2860**	**1.0000e-005**	**0.0000**	**0.2862**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0840					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1700e-003	0.0146	0.0217	4.0000e-005		7.3000e-004	7.3000e-004		7.3000e-004	7.3000e-004	0.0000	3.0639	3.0639	1.7000e-004	0.0000	3.0682
Total	**0.0862**	**0.0146**	**0.0217**	**4.0000e-005**		**7.3000e-004**	**7.3000e-004**		**7.3000e-004**	**7.3000e-004**	**0.0000**	**3.0639**	**3.0639**	**1.7000e-004**	**0.0000**	**3.0682**

3.6 ARCHITECTURAL COATING - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	8.0000e-005	9.3000e-004	0.0000	3.8000e-004	0.0000	3.9000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2860	0.2860	1.0000e-005	0.0000	0.2862
Total	**1.5000e-004**	**8.0000e-005**	**9.3000e-004**	**0.0000**	**3.8000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.2860**	**0.2860**	**1.0000e-005**	**0.0000**	**0.2862**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Implement NEV Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0438	0.5393	0.2141	1.0700e-003	0.0273	4.4000e-004	0.0277	7.3400e-003	4.1000e-004	7.7600e-003	0.0000	100.4464	100.4464	0.0234	0.0000	101.0312
Unmitigated	0.0502	0.6055	0.3408	1.9200e-003	0.0908	9.3000e-004	0.0918	0.0245	8.7000e-004	0.0254	0.0000	180.0788	180.0788	0.0250	0.0000	180.7030

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	128.09	128.09	64.15	118,501	35,550
Automobile Care Center	128.09	128.09	64.15	118,501	35,550
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	256.18	256.18	128.30	237,001	71,100

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.501421	0.030018	0.171383	0.107490	0.013683	0.004097	0.033773	0.127911	0.002341	0.001406	0.004884	0.001058	0.000535
Other Asphalt Surfaces	0.501421	0.030018	0.171383	0.107490	0.013683	0.004097	0.033773	0.127911	0.002341	0.001406	0.004884	0.001058	0.000535
Other Non-Asphalt Surfaces	0.501421	0.030018	0.171383	0.107490	0.013683	0.004097	0.033773	0.127911	0.002341	0.001406	0.004884	0.001058	0.000535
Parking Lot	0.501421	0.030018	0.171383	0.107490	0.013683	0.004097	0.033773	0.127911	0.002341	0.001406	0.004884	0.001058	0.000535

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	28.1518	28.1518	1.2700e-003	2.6000e-004	28.2621
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	28.6183	28.6183	1.2900e-003	2.7000e-004	28.7304
NaturalGas Mitigated	1.1900e-003	0.0108	9.0500e-003	6.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	11.7335	11.7335	2.2000e-004	2.2000e-004	11.8033
NaturalGas Unmitigated	1.2200e-003	0.0111	9.2800e-003	7.0000e-005		8.4000e-004	8.4000e-004		8.4000e-004	8.4000e-004	0.0000	12.0280	12.0280	2.3000e-004	2.2000e-004	12.0995

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	112698	1.2200e-003	0.0111	9.2800e-003	7.0000e-005		8.4000e-004	8.4000e-004		8.4000e-004	8.4000e-004	0.0000	12.0280	12.0280	2.3000e-004	2.2000e-004	12.0995
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.2200e-003**	**0.0111**	**9.2800e-003**	**7.0000e-005**		**8.4000e-004**	**8.4000e-004**		**8.4000e-004**	**8.4000e-004**	**0.0000**	**12.0280**	**12.0280**	**2.3000e-004**	**2.2000e-004**	**12.0995**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	109939	1.1900e-003	0.0108	9.0500e-003	6.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	11.7335	11.7335	2.2000e-004	2.2000e-004	11.8033
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.1900e-003**	**0.0108**	**9.0500e-003**	**6.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**11.7335**	**11.7335**	**2.2000e-004**	**2.2000e-004**	**11.8033**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	47628	27.7111	1.2500e-003	2.6000e-004	27.8196
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	3118.5	0.9072	4.0000e-005	1.0000e-005	0.9108
Total		**28.6183**	**1.2900e-003**	**2.7000e-004**	**28.7304**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	46873.1	27.2718	1.2300e-003	2.6000e-004	27.3787
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	3024.94	0.8800	4.0000e-005	1.0000e-005	0.8834
Total		**28.1518**	**1.2700e-003**	**2.7000e-004**	**28.2621**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0502	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.5000e-004	9.5000e-004	0.0000	0.0000	1.0100e-003
Unmitigated	0.0534	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.6000e-004	9.6000e-004	0.0000	0.0000	1.0200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	8.4000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0450					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.6000e-004	9.6000e-004	0.0000	0.0000	1.0200e-003
Total	**0.0534**	**0.0000**	**4.9000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.6000e-004**	**9.6000e-004**	**0.0000**	**0.0000**	**1.0200e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	8.4000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0418					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.5000e-004	9.5000e-004	0.0000	0.0000	1.0100e-003
Total	**0.0502**	**0.0000**	**4.9000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.5000e-004**	**9.5000e-004**	**0.0000**	**0.0000**	**1.0100e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Turf Reduction

Use Water Efficient Irrigation System

Use Water Efficient Landscaping

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.1328	0.0266	6.4000e-004	2.9887
Unmitigated	2.5559	0.0332	8.0000e-004	3.6253

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	1.01608 / 0.622756	2.5559	0.0332	8.0000e-004	3.6253
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.5559**	**0.0332**	**8.0000e-004**	**3.6253**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	0.812861 / 0.584768	2.1328	0.0266	6.4000e-004	2.9887
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.1328**	**0.0266**	**6.4000e-004**	**2.9887**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.0939	0.1237	0.0000	5.1874
Unmitigated	8.3754	0.4950	0.0000	20.7497

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	41.26	8.3754	0.4950	0.0000	20.7497
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**8.3754**	**0.4950**	**0.0000**	**20.7497**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	10.315	2.0939	0.1237	0.0000	5.1874
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**2.0939**	**0.1237**	**0.0000**	**5.1874**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-5.3013	0.0000	0.0000	-5.3013

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	1.23 / 0	-5.3013	0.0000	0.0000	-5.3013
Total		**-5.3013**	**0.0000**	**0.0000**	**-5.3013**

APPENDIX H

VEHICLE MILES TRAVELED MEMORANDUM

CARLSBAD
CLOVIS
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: May 4, 2022

TO: Indy Sangha
Sangha Carriers

FROM: Ambarish Mukherjee, Principal

SUBJECT: Barstow Truck Parking Facility Vehicle Miles Traveled Analysis Memorandum

LSA is under contract to prepare a Vehicle Miles Traveled (VMT) Analysis Memorandum (Memo) for the proposed Barstow Truck Parking Project (project) to be located on the northeast corner of W Barstow Avenue and N Contessa Avenue in the City of Fresno (City). The project proposes construction of 374 truck parking stalls, 5,400 SF of auto/truck service center, and 5,400 SF of truck wash facility in approximately 18.87 acres. The project is consistent with the General Plan and will not require a General Plan Amendment (GPA).

BACKGROUND

On December 28, 2018, the California Office of Administrative Law cleared the revised California Environmental Quality Act (CEQA) guidelines for use. Among the changes to the guidelines was removal of vehicle delay and level of service from consideration under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project's effect on VMT. The VMT analysis for this project has been prepared based on the City's *CEQA Guidelines for Vehicle Miles Traveled Thresholds* (VMT Guidelines), dated June 2020.

METHODOLOGY

The City's VMT Guidelines state that for projects which do not include residential, office, or retail uses, VMT per employee may be used as the metric for analysis purposes. Additionally, the guidelines define Fresno County (County) as the "region" for determining VMT thresholds for VMT per employee metric. As per the guidelines, projects which do not include residential, office, or retail uses and do not require a GPA will generate a significant VMT impact if the project VMT per employee exceeds the County's VMT per employee. Therefore, the project VMT per employee has been compared with the Fresno County VMT per employee to determine if the project will create a significant VMT impact.

Project VMT per employee was estimated using the Fresno Council of Governments' (COG's) Activity-Based Model (ABM), while the regional VMT per employee was obtained from the City's VMT Guidelines. The model's socioeconomic database under baseline (2019) conditions was updated with the project land use. As such, project VMT per employee was calculated from the model runs as described below:

Project Traffic Analysis Zone Update

The first step in the preparation of this analysis was to update the traffic analysis zones (TAZs) in the model that include the project area. Given the unique nature of the project, no trip generation rates were available for the project land use type. At the advice of the City, ITE Trip Generation land use category "Industrial Park (LU Code 130)" was used for project trip generation. Hence, the same land use category was used to convert project land use into model employment categories. Even though the project operational statement included potential number of employees, for the VMT analysis to be consistent with the traffic analysis, the land use conversion factors were used. Also, the land use conversion methodology resulted in a much higher number of employees than the number of employees suggested in the operational statement and in that regard the VMT analysis can be considered as a conservative approach.

Fresno COG ABM includes ability to add or split zones. In order to isolate the project VMT, a new zone was created in the model. The project employment was included in the newly created zone for modeling purposes. Model run was conducted for the existing/base scenario with updated model inputs. The outputs from this updated model run were used to calculate the project VMT per employee.

VMT ANALYSIS

Table A shows the VMT analysis results. As shown in Table A, the regional VMT per employee obtained from the City's VMT Guidelines is 25.6, while the project VMT per employee is 13.8. The project VMT per employee is 54 percent lower than the regional VMT per employee. Therefore, as per the City's VMT Guidelines, the project will not have a significant VMT impact.

Table A: Baseline (2019) VMT Per Employee Comparison

Region (Fresno County)[1]	Project	Percentage Difference
25.6	13.8	-54.1%

Source: Fresno Council of Governments' Activity-Based Model
VMT = Vehicle Miles Traveled
[1]The Fresno County VMT per employee was obtained from the City of Fresno *CEQA Guidelines for Vehicle Miles Traveled Thresholds,* dated June 2020.

ATTACHMENTS

Appendix A – VMT Analysis Worksheet

APPENDIX A

VMT ANALYSIS WORKSHEET

LSA

Appendix A - VMT Analysis Worksheet

Total project employment (a)	393
Percent External Workers from outside (b) [1]	7.03%
Project external employment (c=b*a)	28
Total Internal-Internal (II) Work VMT (d) [2]	4,666
Internal project employment (e=a-c)	365
II VMT per employee (f=d/e)	12.77
XI VMT per employee (g) [3]	28.1
Total XI VMT (h=g*c)	776
Total project VMT (i=d+h)	5,443
VMT per employee (j=i/a)	13.8

[1] *Obtained from "Fresno_worker_ixxifractions.dat" from model inputs. Used same percentages/values as the parent TAZ (1317)*

[2] *Includes primary work tour VMT and all work sub-tours VMT from the Fresno Council of Governments (COG) Activity-Based Model (ABM) run.*

[3] *XI VMT per employee was estimated as weighted average for all TAZs in the CSTDM Zone 2570*