NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION (RECIRCULATED)
NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that on Tuesday, November 14, 2023 at 5:30 p.m., a public hearing will be conducted by the Hanford Planning Commission in the Council Chamber of the City of Hanford Civic Auditorium, 400 N. Douty Street, Hanford, California, pertaining to the following:

PROJECT DESCRIPTION AND LOCATION:

- **Tentative Tract 930:** A request to subdivide a 14.86-acre property into 55 single-family residential lots with a Planned Unit Development overlay in the R-L-8 Low-Density Residential zone district.

- **Planned Unit Development No. 2020-01:** A request to allow deviations from the standards of the R-L-8 Low-Density Residential zone district for a single-family residential subdivision. Deviations include reduced lot sizes from 8,000 square feet to 7,443 square feet for Lots 13-23 and 40 and reduced lot depths from 95 feet to 93 feet.

- **Variance No. 2021-01:** A request to deviate from the standards of the Hanford Municipal Code, in order to permit a 14-foot sound wall, in order to reduce noise impacts for a planned residential development.

  Location: The project is located north of Grangeville Boulevard, west of the railroad tracks, east of Kings Road (APN 008-410-043).

Based on an Initial Study, the Community Development Department has determined that the project described above would not have significant adverse impacts on the environment with the incorporation of mitigation measures. A Mitigated Negative Declaration has been prepared for the project. You may review the Mitigated Negative Declaration, Initial Study, proposed mitigation measures, reference material, and any comments received on the Mitigated Negative Declaration at the City of Hanford, 317 N. Douty Street, Hanford, CA 93230.

COMMENT PERIOD: October 20 to November 9, 2023 [20-day comment period]

PUBLIC COMMENT INVITED: All interested parties are invited to submit written comment on the Recirculated Mitigated Negative Declaration by November 9th and/or to appear at the hearing described above to present testimony, in regard to the above-listed request. All comments should be submitted to the City of Hanford, Attention: Gabrielle Myers, at the above listed address.

If you challenge any action or decision regarding the project described in this notice in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City prior to, or at, the public hearing.

For further information, contact the Hanford Community Development Department at (559) 585-2580 or 317 N. Douty Street, Hanford, California, 93230.

HANFORD COMMUNITY DEVELOPMENT DEPARTMENT

MITIGATED NEGATIVE DECLARATION NO. 2020-54 Recirculation #2

Project Title: Tentative Tract 930, Planned Unit Development No. 2020-01, Variance No. 2021-01

File Number: TT 930 (504-0539), PUD 2020-01 (509-0102), VAR 2021-01 (511-0203)

State Clearinghouse Number:

Lead Agency: City of Hanford

Responsible Agency: n/a

Applicant:
Strada Construction c/o Daniel Bailey
480 E Bogert Trail
Palm Springs, CA 92264

Owner:
Titan Holdings c/o Walter J. Plumb III
201 S. Main St. Suite 2000
Salt Lake City, UT 84111

Project Description: Tentative Tract 930: A request to subdivide a 14.86-acre property into 55 single-family residential lots with a Planned Unit Development overlay in the R-L-8 Low-Density Residential zone district. **Planned Unit Development No. 2020-01:** A request to allow deviations from the standards of the R-L-8 Low-Density Residential zone district for a single-family residential subdivision. Deviations include reduced lot sizes from 8,000 square feet to 7,443 square feet for Lots 13-23 and 40 and reduced lot depths from 95 feet to 93 feet. **Variance No. 2021-01:** A request to deviate from the standards of the Hanford Municipal Code, in order to permit a 14-foot sound wall, in order to reduce noise impacts for a planned residential development.

The project is located north of Grangeville Boulevard, west of the railroad tracks, east of Kings Road (APN 008-410-043).

Attachments:

Initial Study	(X)
Environmental Checklist	(X)
Maps	(X)
Mitigation Measures	(X)
Letters	(X)

Environmental Assessment: The Initial Study for the project is available for public review at the City of Hanford, Community Development Department, 317 N. Douty St., Hanford CA.

Declaration of No Significant Effect: The City of Hanford has completed the preparation of an initial study for the project described above. The initial study did not identify any potentially significant environmental effects that would result from the proposed project. This finding is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15064 (Determining Significant Effect), 15065 (Mandatory Findings of Significance), and 15070 (Decision to prepare a Negative Declaration), and the following reasons as documented in the Initial Evaluation (Initial Study) for the project, which is attached.

(a) The project does not 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.

(b) The project does not have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.

(c) The project does not have environmental effects which are individually limited but cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual 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.

(d) The environmental effects of the project will not cause substantial adverse effects on human beings, either directly or indirectly.

This Mitigated Negative Declaration has been prepared by the City of Hanford Community Development Department in accordance with the California Environmental Quality Act of 1970, as amended.

Contact Person: Gabrielle Myers, Senior Planner **Phone:** (559) 585-2578

Signature: Gabrielle Myers **Date:** October 19, 2023

Review Period: October 20 to November 9, 2023 [20-day comment period]

INITIAL STUDY AND RECIRCULATED MITIGATED NEGATIVE DECLARATION NO. 2020-54 RECIRCULATION #2

Prepared For

Tentative Tract 930

Planned Unit Development No. 2020-01

Variance No. 2021-01

Strada Construction

Prepared By

The City of Hanford

October 19, 2023

INITIAL STUDY

INTRODUCTION AND REGULATORY GUIDANCE

This document is an Initial Study and Mitigated Negative Declaration (MND) prepared pursuant to the California Environmental Quality Act (CEQA) for the Project. This MND has been prepared in accordance with CEQA, Public Resources Code Section 21000 et seq., and the CEQA Guidelines.

The City of Hanford prepared a General Plan Update and certified a Program Level Environmental Impact Report (EIR) on April 18, 2017. The CEQA Guidelines Section 15168 states that subsequent activities must be examined in the light of the program EIR to determine if the later activity would have effects that were not examined in the program EIR. Consistent with 15165, if a project is not otherwise statutorily or categorically exempt from CEQA, an Initial Study is conducted by a lead agency to determine if a project may have a significant effect on the environment. In accordance with the CEQA Guidelines, Section 15064, an environmental impact report (EIR) must be prepared if the Initial Study indicates that the proposed project under review may have a potentially significant impact on the environment. A negative declaration may be prepared instead, if the lead agency prepares a written statement describing the reasons why a proposed project would not have a significant effect on the environment, and, therefore why it does not require the preparation of an EIR. According to the CEQA Guidelines Section 15070, a negative declaration shall be prepared when either:

1) The initial study shows there is no substantial evidence, in light of the whole record before the agency, that the proposed project may have a significant effect on the environment, or

2) The Initial Study identified potentially significant effects, but:

    a) Revisions in the project plans or proposals made by or agreed to by the applicant before the proposed negative declaration is released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and

    b) There is no substantial evidence, in light of the whole record before the agency, that the proposed project as revised may have a significant effect on the environment.

If the Initial Study reveals that there may be a significant effect upon the environment, but those effects can be avoided or reduced to a less than significant level with revisions to the project plan and/or mitigation measures, and the applicant agrees to the revision and/or mitigation measures, the lead agency may prepare a mitigated negative declaration.

PROJECT DESCRIPTION: Tentative Tract 930: A request to subdivide a 14.86-acre property into 55 single-family residential lots with a Planned Unit Development overlay in the R-L-8 Low-Density Residential zone district. **Planned Unit Development No. 2020-01:** A request to allow deviations from the standards of the R-L-8 Low-Density Residential zone district for a single-family residential subdivision. Deviations include reduced lot sizes from 8,000 square feet to 7,443 square feet for Lots 13-23 and 40 and reduced lot depths from 95 feet to 93 feet. **Variance No. 2021-01:** A request to deviate from the standards of the Hanford Municipal Code, in order to permit a 14-foot sound wall, in order to reduce noise impacts for a planned residential development.

Location: The project is located north of Grangeville Boulevard, west of the railroad tracks, east of Kings Road (APN 008-410-043).

ENVIRONMENTAL IMPACTS

No significant adverse environmental impacts have been identified for this project. The City of Hanford Land Use Element, Zoning Ordinance, and Climate Action Plan contain policies and regulations and measures that are designed to mitigate impacts to a level of non-significance. Environmental measures are methods, measures, standard regulations or practices that avoid, reduce, or minimize a project's adverse effects on various environmental resources. Based on the underlying authority, they may be applied before, during, or after construction of the project. Environmental measures are also commonly listed as conditions of approval. The City Municipal Code and other agencies currently contain measures that assist to mitigate environmental impacts. Mitigation measures have been included in the environmental assessment that will mitigate any potential impacts to a level of less than significant.

In addition, a Statement of Overriding Considerations was adopted for Agriculture and Forestry Resources (program and cumulative), Air Quality (cumulative), Biological Resources (program and cumulative). Cultural Resources (program and cumulative), Greenhouse Gases (cumulative), and Population and Housing (program and cumulative) for the EIR

prepared for the 2035 General Plan Update. The project is being developed consistent with the land use designation that was evaluated in the 2017 General Plan EIR. The General Plan Update and EIR are herein incorporated by reference, including Resolution 17-20-R. Other documents used in the preparation of this environmental assessment are listed as sources and also incorporated by reference.

PROJECT COMPATIBILITY WITH EXISTING ZONES AND PLANS

The proposed Tentative Tract, Planned Unit Development, and Variance are consistent with the policy of the General Plan and Zoning Ordinance. The proposed subdivision and deviations from the standards of the Hanford Municipal Code are supported through General Plan Policy, special circumstances, and past precedent.

SUMMARY OF INITIAL STUDY/MITIGATED NEGATIVE DECLARATION IMPACT CONCLUSIONS

An Initial Study/Mitigated Negative Declaration (IS/MND) was prepared for the projects Tentative Tract 930, and Planned Unit Development No. 2020-01, and Variance 2021-01 in accordance with the California Environmental Quality Act (CEQA), the State CEQA Guidelines, and the City of Hanford Municipal Code. The IS/MND for the proposed Project is tiered from the 2035 General Plan Update Environmental Impact Report (EIR) (SCH No. 2015041024), certified by the City Council on April 15, 2017, for which a Statement of Overriding Considerations was adopted for Agriculture and Forestry Resources (program and cumulative), Air Quality (cumulative), Biological Resources (program and cumulative). Cultural Resources (program and cumulative), Greenhouse Gases (cumulative), and Population and Housing (program and cumulative) for the EIR prepared for the 2035 General Plan Update.

The Proposed IS/MND analyzed the Project's potential impacts with regard to the following environmental topical areas: (1) aesthetics, (2) agriculture and forest resources, (3) air quality, (4) biological resources, (5) cultural resources, (6) energy, (7) geology and soils, (8) greenhouse gas emissions, (9) hazards and hazardous materials, (10) hydrology and water quality, (11) land use and planning, (12) mineral resources, (13) noise, (14) population and housing, (15) public services, (16) recreation, (17) transportation/traffic, (18) tribal resources, and (19) utilities and services systems.

The proposed Project, as analyzed in the IS/MND, incorporates all relevant General Plan policies, standards and Mitigation Measures (MMs), as adopted by the 2035 General Plan EIR for purposes of determining environmental impacts of Project implementation. Based on the Project-specific analysis presented in the IS/MND it was determined that the Project in each topical area would have either no impact, a less than significant impact, impacts that could be mitigated to a less than significant level or that project impacts were adequately analyzed in the 2035 General Plan Update EIR. The IS/MND concluded that the proposed Project would have no impact or a less than significant Project-specific impact in the following topical areas: Agriculture and Forestry Resources, Energy, Greenhouse Gas Emissions, Mineral Resources, Population and Housing, and Wildfire.

Further, it was concluded that the proposed Project would have less than significant cumulative impacts with mitigation measures. The initial study utilized the full build out of the General Plan Planning Area as the area for consideration of cumulative impacts. Significant and unavoidable impacts to Agriculture and Forestry Resources (program and cumulative), Air Quality (cumulative), Biological Resources (program and cumulative). Cultural Resources (program and cumulative), Greenhouse Gases (cumulative), and Population and Housing (program and cumulative) were identified with the full build out of the General Plan Planning Area. These impacts were analyzed in the 2035 General Plan EIR and determined to be a significant and unavoidable impact associated with implementation of the 2035 General Plan, of which the Project is a part and consistent with. A Statement of Overriding Considerations for these significant unavoidable impacts was adopted by the City Council as part of the approval of the 2035 General Plan Update. The proposed Project is consistent with and implements the General Plan and would not result in any new impacts that cannot be mitigated to less than significant levels, nor would it increase the severity of any previously identified impacts. Therefore, the Statement of Overriding Considerations is re-affirmed for the proposed Project and a Mitigated Negative Declaration is the recommended appropriate environmental document for the proposed Project, in accordance with CEQA.

CONSULTATION

Pre-consultation was sent to the interested agencies on December 9, 2020.
Upon recirculation, due to changes in the project, pre-consultation was sent again on September 19, 2023.

Preliminary responses were received from the following:

1. Consultation from Michael Wilson with AT&T (Received December 9, 2020)

2. Consultation from San Joaquin Valley Air Pollution Control District (Received December 14, 2020).

3. Consultation from the Department of Transportation District 6 Office (Received December 17, 2020).

4. Consultation from Michael Hawkins with Kings County Public Works (Received December 18, 2020)

Additional early consultation responses were received indicating no comments – included in attachments.

SOURCES – hereunto annexed and incorporated by reference

2010 Urban Water Management Plan. (2011, June 11). *City of Hanford -*

California Building Standards Code 2016 (Title 24, California Code Regulations). *Codes.*

City of Hanford 2035 General Plan Update (2017).

*City of Hanford General Plan Update, 2035 – Environmental Impact Report. (*2017). Hanford, California.

City of Hanford Storm Drainage Water Master Plan (1995, August)

City of Hanford Public Works Construction Standards

City of Hanford Water Master Plan

City of Hanford Waste Water Master Plan

County Important Farmland Data Information. Department of Ag *(2012)*

Final Staff Report – Climate Change Action Plan: Addressing GHG Emission Impacts under CEQA. (2009, December 17) *San Joaquin Valley Air Pollution Control District Climate Change Action Report.*

San Joaquin Valley Air Pollution Control District Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), Revised March 19, 2015.

San Joaquin Valley Air Pollution Control District Small Project Analysis Level (SPAL)

Hanford Municipal Code (Hanford, California). (2017). *Hanford Municipal Code.*

United States Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map for Hanford (Community Panel Number 06031C 0185C, June 16, 2009)

Final Regional Climate Action Plan (May 28, 2014)

Focused Traffic Impact Analysis Report prepared by JLB Traffic Engineering, Inc. (October 20, 2020),

Updated Focused Traffic Impact Analysis Report prepared by JLB Traffic Engineering, Inc. (June 2021).

<u>Pre-Consultation Letters Received:</u>

1. Consultation from Michael Wilson with AT&T (Received December 9, 2020)
2. Consultation from San Joaquin Valley Air Pollution Control District (Received December 14, 2020).
3. Consultation from the Department of Transportation District 6 Office (Received December 17, 2020).
4. Consultation from Michael Hawkins with Kings County Public Works (Received December 18, 2020)

APPENDIX G: Initial Study and Findings

ENVIRONMENTAL ASSESSMENT NO. 2020-54

1. Project Title: Tentative Tract 930, Planned Unit Development No. 2020-01, Variance No 2021-01

2. Lead Agency Name and Address: City of Hanford
317 N. Douty Street
Hanford, CA 93230

3. Responsible Agency Name and Address: n/a

4. Contact Person/Phone Number: Gabrielle Myers
Senior Planner
Community Development Department
(559) 585-2578

5. Project Location: The project is located north of Grangeville Boulevard, west of the railroad tracks, east of Kings Road (APN 008-410-043).

6. Project Sponsor's Name/Address: Strada Construction c/o Daniel Bailey
480 E. Bogert Trail
Palm Springs, CA 92264

7. General Plan Designation: Low-Density Residential

8. Zoning: R-L-8 Low-Density Residential

9. Description of the Project: Tentative Tract 930: A request to subdivide a 14.86-acre property into 55 single-family residential lots with a Planned Unit Development overlay in the R-L-8 Low-Density Residential zone district. Planned Unit Development No. 2020-01: A request to allow deviations from the standards of the R-L-8 Low-Density Residential zone district for a single-family residential subdivision. Deviations include reduced lot sizes from 8,000 square feet to 7,443 square feet for Lots 13-23 and 40 and reduced lot depths from 95 feet to 93 feet. Variance No. 2021-01: A request to deviate from the standards of the Hanford Municipal Code, in order to permit a 14-foot sound wall, in order to reduce noise impacts for a planned residential development.

10. Surrounding land uses and setting:

	Zoning	General Plan Designation	Land Use
North	PF Public Facility	Public Facility	Drainage Basin
East	CO Conservation C-S Service Commercial	Open Space Service Commercial	Railroad tracks, Slough, Mini-storage facility
South	R-L-5 Low-Density Residential	Low-Density Residential	Single-Family Residence
West	R-L-12 Low-Density Residential	Low-Density Residential	Single-Family Residential

11. Other public agencies whose approval is required:

    San Joaquin Valley Air Pollution Control District

12. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

    The Santa Rosa Rancheria Tachi Yokut Tribe has requested consultation pursuant to Public Resources Code Section 21080.3.1 for projects requiring an initial study within the City of Hanford.

    Consultation notices were mailed for the project on December 9, 2020 for the original project proposal and again on September 19, 2023, as a result of changes to the project.

    Consultation was not received from the Santra Rosa Rancheria Tachi Yokut Tribe.

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 Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gases	☐ Hazards & Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation/Traffic	☐ 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. **A NEGATIVE DECLARATION WILL BE PREPARED**.

☒ 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 the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** 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 **ENVIRONMENTAL IMPACT REPORT** 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.

FOR: CITY OF HANFORD

Gabrielle Myers

Gabrielle Myers
Senior Planner
City of Hanford

October 19, 2023

DATE

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:
   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

Issues:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☑	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☑	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☑	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☑	☐	☐

ENVIRONMENTAL SETTING:

SCENIC VISTAS AND CORRIDORS

Views consist primarily of broad panoramas of agricultural land. Most of the land surrounding the northern and western part of the city is characterized by flat, dry valley grasslands scattered throughout as well as grazing and other agricultural uses. The grasslands, grazing land, and large farms create open vistas at the northern and eastern edges of the City.

SCENIC HIGHWAYS

According to the California Scenic Highway Mapping System, there are no adopted Scenic Highways within the planning area. (Caltrans 2015).

VISUAL CHARACTER

Hanford is located in the northern portion of Kings County and has a total area of 16.6 square miles, all of which is flat land not covered by water. The only natural watercourse is Mussel Slough, remnants of which still exist on the City's western edge. The Kings River is about 6.5 miles north of Hanford. The People's Ditch, an irrigation canal dug in the 1870s, traverses Hanford from north to south.

The Planning Area consists of urban agricultural, and grassland habitat areas located in transitional zone in the Central Valley between the flat valley floor and the Sierra Nevada foothills to the east. Hanford is surrounded by productive agricultural land, much of which is encumbered by Williamson Act contracts that prohibit development.

LIGHT AND GLARE

The majority of the City includes existing sources of daytime glare and nighttime lighting and illumination.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

Significance Criteria

The Project may result in significant impacts to aesthetics if it substantially affects the view of a scenic corridor, vista or view open to the public, cause's substantial degradation of views from adjacent residences, or results in new night lighting that shines into adjacent residences.

Checklist Discussion:

a) Less than Significant Impact – The project site is an infill lot, substantially surrounded by urban development. North of the project site has been developed as city basin. East of the site is a mini-storage facility and rail road tracks. South of the site is a single-family residence. West of the site is an existing single-family residential development. Development of the site as a single-family residential development will not impact views from the site.

b) Less than Significant Impact – There are no designated State Scenic Highways, as identified by the California Scenic Highway Mapping System within the City's General Plan Study area. There are also no rock outcroppings within the Study Area. The City does have an ordinance protecting trees in Chapter 12.12 Street Trees and Shrubs of the Municipal Code. Development of the projects would be consistent with the tree ordinance. The projects would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway and impacts would be less than significant.

c) **Less than Significant Impact with Mitigation Incorporation:** Several sections of the Hanford Municipal Code regulate physical development by controlling not only the appearance of new development, but also by controlling the placement of new development with consideration for surrounding uses. The project development will be required to comply with the General Plan, R-L-8 Low-Density Residential standards (except where modified through the Planned Unit Development), and the Tree Ordinance. The applicant has submitted elevations for the single-family development. Development will be required to comply with the submitted elevations. (**Elevations attached).**

d) **Less than Significant Impact with Mitigation Incorporation**– The development is subject to the applicable provisions of the Hanford Municipal Code, such as Section 17.50.140 – Outdoor Lighting Standards. Additionally, the California Building Code contains standards for outdoor lighting that are intended to reduce light pollution and glare by regulation light power and brightness, shielding, and sensor controls.

Mitigation Measures:

MM Aesthetics 1: That the applicant develops the project consistent with the General Plan, Hanford Municipal Code with a Planned Unit Development Overlay, Tree Ordinance, and elevations submitted.

MM Aesthetics 2: That the development complies with the Hanford Municipal Code Section 17.50.140 Outdoor Lighting Standards and the California Building Code for outdoor lighting standards.

Conclusion: Impacts to aesthetics are anticipated to be less than significant with the incorporation of mitigation measures.

Sources: 2035 General Plan, 2035 General Plan EIR, Hanford Municipal Code, California Building Code

II. AGRICULTURE 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. Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☑	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☑	☐
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))?	☐	☐	☐	☑
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑
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?	☐	☐	☐	☑

Agriculture and Forestry Resources:

The General Plan EIR analyzed the impacts of the City's urban growth on agricultural land and includes mitigation measures to reduce those impacts, however, impacts to agricultural lands remain significant and unavoidable. A Statement of Overriding Considerations was adopted for the impacts to agricultural lands.

Environmental Setting

The City's climate, water availability and proximity to transcontinental transportation routes have made it a premier location for agricultural land development for over a century. Most of the land surrounding the urbanized area of Hanford was converted to agricultural uses over a century ago, leaving very little undisturbed natural landscape.

A majority of Prime Farmland is shown toward the northern and western portions of the study Area. Farmland of Statewide Importance is located on portions of land toward the southern edge of the Study Area. The acreage total for Prime Farmland, Farmland of Statewide Importance, and Unique Farmland within the Study and Planned Areas is categorized as follows:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

Table 4.2-1
Farmland Mapping and Monitoring Program

Area	Prime Farmland (Acres)	Farmland of Statewide Importance (Acres)	Unique Farmland (Acres)	Total (Acres)
Planned Area	877	1,724	105	2,705
Study Area (Excluding Planned Area)	10,280	7,495	380	18,157
Total (Study Area)	**11,157**	**9,219**	**485**	**20,862**

There are 3,056 acres of land currently subject to a Williamson Act contract within the Planned Area and 16,299 acres of land currently subject to a Williamson Act contract within the Study Area. There are 335 acres currently under non-renewal and are scheduled to be removed from the provisions of the Williamson Act in the Planned Area.

There are no forest lands found within the Study Area, as defined by Public Resources Code Section 12220 (g), which defines such areas as "land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allow for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits." There is also no "timberland" found in the Study Area, as defined by the Public Resources Code Section 4526, which defines such areas as "land…which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees."

Build-out of the General Plan would result in significant and unavoidable impacts to farmland conversion and conflicts with land under Williamson Act land use contracts. Thus, the overall impact of full-build out of the General Plan would be cumulatively significant and unavoidable.

Significance Criteria
The Project may result in significant impacts to agricultural resources since the project results in the removal of lands designated as prime farmland by the Department of Conservation.

Checklist Discussion:

a) Less than Significant Impact: The project is located within an area listed Urban and Built-Up land by the California Department of Conservation. Urban and Built-Up land is occupied by structures with a building density of at least one unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. Common examples include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures. Therefore, the project will not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use.

b) Less than significant impact – The property is currently in the General Plan as Low-Density Residential and is zoned R-L-8 Low-Density Residential, in accordance with the General Plan. The property is not within a Williamson Act Contract.

c) No impact – the projects would not conflict with existing zoning for, or cause rezoning of, Forest Land, Timberland, or Timberland Zoned Timberland Production, as these designations do not exist within the City. There would be no impact.

d) No Impact – There is no forest land within the City. The projects would not result in the loss of forest land or conversion of forest land to non-forest use, as these designations do not exist within the City. There would be

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
no impact. e) No Impact – None. Sources: 2035 General Plan, General Plan Update EIR, Hanford Subdivision Ordinance, California Department of Conservation Farmland Mapping and Monitoring Program – Kings County Map (2020);				
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?	☐	☑	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☑	☐	☐
c) 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)?	☐	☑	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☑	☐

Air Quality:
Climatological/Topological Factors

The San Joaquin Valley's topography and meteorology provide ideal conditions for trapping air pollution for long periods of time and producing harmful levels of air pollutants, including ozone and particulate matter. Low precipitation levels, cloudless days, high temperatures, and light winds during the summer in the San Joaquin Valley are conducive to high ozone levels resulting from the photochemical reaction of oxides of nitrogen (NOX) and volatile organic compounds (VOC). Inversion layers in the atmosphere during the winter can trap emissions of directly emitted particulate matter less than 2.5 microns (MN2.5) and PM2.4 precursors (such as NOX and sulfur dioxide [SO2] within the San Joaquin Valley for several days, accumulating to unhealthy levels.

The region also houses the State's major arteries for good and people movement, Interstate 5 to the west and State Route 99 through the Central Valley, thereby attracting a large volume of vehicular traffic. Another compounding factor is the region's historically high rate of population growth compared to other regions of California. Increased population typically results in an even greater increase in vehicle activity and more consumer product use, leading to increased emissions of air pollution, including NOX. In fact, mobile sources account for about 80% of the Valley's total NOX emissions inventory. Since NOX is a significant precursor for both ozone and PM2.5, reducing NOX from mobile sources is critical for progressing the Valley towards attainment of ozone and PM2.4 standards.

The geography of mountainous areas to the east, west, and south, in combination with long summers and relatively

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

short winters, contributes to local climate episodes that prevent the dispersion of pollutants. Transport, as affected by wind flows and inversions, also plays a role in the creation of air pollution.

The climate of the SJV is modified by topography. This creates climatic conditions that are particularly conducive to air pollution formation. The SJV is surrounded by mountains on three sides and open to the Sacramento Valley and the San Francisco Bay Area to the north.

Hanford is located in the southern end of the San Joaquin Valley Air Basin.

San Joaquin Valley Air Basin

The SJVAB is in the southern half of California's Central Valley and is approximately 250-miles long and averages 35-miles wide. The San Joaquin Valley is bordered by the Sierra Nevada Mountains to the east, the Coast Ranges to the west, and the Tehachapi mountains to the south. There is a slight downward elevation gradient from Bakersfield in the southeast end to sea level at the northwest end where the valley opens to the San Francisco Bay at the Carquinez Straits. At its northern end is the Sacramento Valley, which comprises the northern half of California's Central Valley. The bowl shaped topography inhibits movement of pollutants out of the Valley.

The SJV is in a Mediterranean Climate Zone. Mediterranean Climates Zones occur on the west coast and are influenced by a subtropical high-pressure cell most of the year. Mediterranean Climates are characterized by sparse rainfall, which occurs mainly in winter. Summers are hot and dry. Summertime maximum temperatures often exceed 100 degrees Fahrenheit in the Valley.

The subtropical high-pressure cell is strongest during spring, simmer, and fall and produces subsiding air, which can result in temperature inversions in the Valley. A temperature inversion can act like a lid, inhibiting vertical mixing of the air mass at the surface. Any emissions of pollutants can be trapped below the inversion. Most of the surrounding mountains are above the normal height of summer inversion (1,500 to 3,000 square feet).

Winter-time high pressure events can often last many weeks with surface temperatures often lowering into the 30s degrees F. During these events, fog can be present and inversions are extremely strong. These wintertime inversions can inhibit vertical mixing of pollutants to a few 100 feet.

Wind

Wind speed and direction play an important role in dispersion and transport of air pollutants. Wind at the surface and aloft can disperse pollution by mixing and transporting the pollution to other locations. The region's topographic features restrict air movement and channel the air mass toward the southeastern end of the Valley. The Coastal Range is a barrier to air movement to the west and the high Sierra Nevada range is a significant barrier to the east. A secondary, but significant, summer wind pattern is from the southeasterly direction and can be associated with nighttime drainage winds, prefrontal conditions, and summer monsoons.

San Joaquin Valley Air Basin Monitoring

The SJVAB consists of eight counties, from San Joaquin County to the north to Kern County in the South. The closest monitoring station to the Study Area is located at Hanford's South Irwin Street Monitoring Station. The station monitors particulates, ozone, carbon monoxide, and nitrogen dioxide.

The SJVAB is nonattainment for ozone (1 hour and 8 hour) and particulate matter. In accordance with the Federal Clean Air Act (FCAA), EPA uses the design value at the time of standard promulgation to assign nonattainment areas to one of several classes that reflect the severity of the nonattainment problem.

The SJVAB was reclassified from a "serious" nonattainment area for the 8-hour ozone standard to "extreme" effective June 4, 2010.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

Maximum Pollutant Levels at Hanford's South Irwin Street Monitoring Station

Pollutant	Time Avg.	2012 Max.	2013 Max.	2014 Max.	National Standards	State Standards
Ozone (O3)	1 hour	0.109 ppm	0.104 ppm	0.108 ppm	NA	0.009 ppm
Ozone (03)	8 hour	0.094 ppm	0.098 ppm	0.0904 ppm	0.075 ppm	0.070 ppm
Carbon Monoxide (C0)	8 hour	0.033 ppm	*	*	9.0 ppm	9.0 ppm
Nitrogen Dioxide (NO2)	1 hour	0.056 ppm	0.058 ppm	0.050 ppm	100 ppm	0.18 ppm
Nitrogen Dioxide (NO2)	Annual Average	0.009 ppm	0.010 ppm	0.010 ppm	0.053 ppm	0.030 ppm
Particulates (PM 10)	24 hour	128.0 µg/m3	177.0 µg/m3	131.3 µg/m3	150 µg/m3	50 µg/m3
Particulates (PM 10)	Federal Annual Arithmetic Mean	40.3 µg/m3	50.3 µg/m3	47.8 µg/m3	NA µg/m3	20 µg/m3
Particulates (PM 2.5)	24 hour	64 µg/m3	128.7 µg/m3	96.7 µg/m3	35 µg/m3	NA
Particulates (PM 10)	Federal Annual Arithmetic Mean	14.8 µg/m3	18.1 µg/m3	17.4 µg/m3	12 µg/m3	12 µg/m3

Notes:
NA = Not Applicable (there is no standard for this pollutant)
*** = There was insufficient data available to determine the value**
ppm = parts per million
µg/m3 = microgram per cubic meter

Attainment Status

Air quality impacts from proposed projects within Hanford are controlled through policies and provisions of the San Joaquin Valley Air Pollution Control District (SJVAPCD). In order to demonstrate that a project would not cause further air quality degradation in either of the SJVAPCD's plan to improve air quality within the air basin or federal requirements to meet certain air quality compliance goals, each project should also demonstrate consistency with the SJVAPCD's adopted Air Quality Attainment Plans (AQAP) for ozone and PM10. The SJVAPCD is required to submit a "Rate of Progress" document to ARB that demonstrates past and planned project toward reaching attainment for all criteria pollutants. The CCAA requires air pollution control districts with severe or extreme air quality problems to provide a 5% reduction in non-attainment emissions per year. The Air Quality Attainment Plans prepared for the SJV by the SJVAPCD complies with this requirement.

Air pollution sources associated with stationary sources are regulated through the permitting authority of the SJVAPCD under the New and Modified Stationary Review Rule (SJVAPCD Rule 2201). Owners of any new or modified equipment that emits, recues, or controls air contaminants, except those specifically exempted by the SJVAPCD, are require to apply for an Authority to Construct and Permit to Operate (SJVAPCD Rule 2010). Additionally, best available control technology is required on specific types of stationary equipment and are required to offset both stationary source emission increases along with increases in cargo carrier emissions if the specified threshold levels are exceeded (SJVAPCD Rule 2201, 4.7.1). Through this mechanism, all stationary sources within

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

the Study Area would be subject to the standards of the SJVAPCD to ensure that new developments do not result in net increases in stationary sources of criteria air pollutants.

Existing Air Quality

Air pollutant emissions generated from projects constructed under the implementation of the General Plan would be required to adhere to SJVAPCD rules and regulations and therefore, would not exceed SJVAPCD thresholds.

Odor

The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJVAB. The types of facilities that are known to produce odors are shown below along with a reasonable distance from the source within which, the degree of odors could possibly be significant. Information presented in the table will be used as a screening level of analysis for potential odor sources for new development as a result of implementation of the General Plan.

Type of Facility	Distance
Wastewater Treatment Facility	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 mile
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operation (e.g., auto body shops)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile

Asbestos

New development's construction phase may cause asbestos to become airborne due to construction activities. In order to control naturally-occurring asbestos dust, new development can use some of the following control actions to reduce the release of airborne asbestos fibers:

- Water wetting or road surfaces;
- Rinse vehicles and equipment;
- Wet loads of excavated materials; and
- Cover loads of excavated materials

Project Impacts

The project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.

The SJVAB often exceeds the State and national ozone stands and if the new development as a result of the General Plan Update emits a substantial quantity of ozone precursors, it may contribute to an exceedance of the ozone standard. The SJVAB is also in nonattainment for State PM10 air quality standards and in nonattainment for State and federal PM2.5 air quality standards. Therefore, substantial project emissions may contribute to an exceedance for these pollutants.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

District Rule 2201, the New and Modified Stationary Source Review (NSR), is a major component of the SJVAPCD's attainment strategy as it relates to growth. It applies to new and modified stationary sources of air pollution. The SJVAPCD's attainment plans demonstrate that project-specific emissions below the SJVAPCD's offset thresholds would have a less-than-significant impact on air quality. Thus the SJVAPCD concludes that use of the NSR Offset thresholds as the consistency in significance determinations within the environmental review process and is applicable to both stationary and non-stationary emission sources.

Project Type	Pollutant/Precursor Emission (tons/year)					
	CO	NOX	ROG	SOX	PM10	PM2.5
Construction Emissions	100	10	10	27	15	15
Operational Emissions (Permitted Equipment and Activities)	100	10	10	27	15	15
Operational Emissions (Non-Permitted Equipment and Activities)	100	10	10	27	15	15

Short-term (construction) emissions

Construction-related impacts are expected to be temporary in nature and can generally be reduced to a less-than-significant level through the use of mitigation measures and through compliance with applicable existing City, county, State and SJVAPCD regulations for reducing construction-related emissions. The SJVAPCD's Regulation VIII is applied to all construction sites and would constitute sufficient measures to reduce air quality impacts to a level considered less than significant.

Long-term (operational) emissions

Operational emissions are emitted from two main sources:

1) small, distributed sources known as area sources and
2) motor vehicles known as mobile sources.

All new development and infrastructure projects would be subject to SJVAPCD guidelines and regulations, including Rule 9510 (indirect source review) and Regulation VIII (Fugitive Dust Prohibitions). Existing businesses and new projects that are large employers (over 100 employees) would be subject to Rule 9410 (Employer Based Trip Reduction). Individual projects would require a project-level analysis to determine necessary mitigation strategies. As appropriate, the City of Hanford would require the implementation of the above-notated mitigation strategy intended to avoid or reduce the significant impacts identified.

Short-term (construction) emissions

Fugitive dust control rules:

- Rule 8011 – Fugitive dust administrative requirements for control of fine particulate matter
- Rule 8021 – Fugitive dust requirements for the control of fine particulate matter from construction, demolition, excavation, extraction, and earthmoving activities.
- Rule 8071 – Fugitive dust requirements for the control of fine particulate matter from vehicle and/or requirement parking, shipping, receiving, transfer, fueling, and service areas one acre or larger

Further, the new development should include the following local municipal code requirements:

- Water sprays or chemical suppressants must be applied to all unpaved roads to control fugitive emissions
- All access roads and parking areas must be covered with asphalt-concrete paving

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

Compliance with Regulation VIII under the SJVAPCD for all construction sites would constitute sufficient measures to reduce PM10 impacts to a level considered less than significant

Compliance with Regulation VIII under the SJVAPCD for all construction sites would constitute sufficient measures to reduce PM10 impacts to a level considered less than significant.

The following measures from the Guide for Assessing and Mitigation Air Quality Impacts are required to be implemented at construction sites for all new development built during the planning cycle of the General Plan Update:

- 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.
- With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demotion.
- When materials are transported offsite, all materials 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 storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
- Within urban areas, track out shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.

Long-Term (operational) emissions
Long-term emissions from new development are generated by mobile source (vehicle) emissions and area sources such as water heaters and lawn maintenance equipment.

Future development projects in the City of Hanford would be subject to the SJVAPCD's Indirect Source Review (ISR) program. The purpose of the SJVAPCD's ISR Program is to reduce emissions of NOX and PM10 from new development projects. Further, all new developments and infrastructure projects would be subject to SJVAPCD guidelines and regulations, including the ISR rule and Regulation VIII. Existing businesses and new projects that are large employers (over 100 employees) would be subject to Rule 9410 (Employer based trip reduction).

The project would not expose sensitive receptors to substantial pollutant concentrations.

Sensitive receptors are those individuals who are sensitive to air pollution, which may include children, the elderly, and persons with pre-existing respiratory or cardiovascular illness. The Air District considers a sensitive receptor to be a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. The six criteria pollutants include ozone, CO, NO2, SO2, particulate matter, and Pb. Of the six pollutants, particle pollution and ground-level ozone are the most widespread health threats.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

The SJVAPCD has determined that any project would perform an ambient air quality analysis when construction activities or operational activities exceed the 100 pound per day screening level of any criteria pollutant after implementation of all enforceable mitigation measures.

Exempt small development projects include:

- Residential projects with 50 dwelling units or less
- Commercial projects with 2,000 square feet or less
- Light industrial projects with 25,000 square feet or less
- Heavy Industrial projects with 100,000 square feet or less
- Medical Office projects with 20,000 square feet or less
- General Office projects with 39,000 square feet or less
- Educational projects with 9,000 square feet or less
- Government projects with 10,000 square feet or less
- Recreational projects with 20,000 square feet or less
- Transportation or Transit projects with construction exhaust emissions of 2 tons of NOX or PM10 or less

Pre-Consultation – San Joaquin Valley Air Pollution Control District

The following comments were received from the SJVAPCD, pertaining to the original project to develop 76 residential lots. The request to develop 55 single-family residential lots will have a less impactful effect on Air Quality. Updated consultation has not been received.

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the project referenced above from the City of Hanford (City). The project consists of changing the zoning on a portion of the property, subdividing a 14.86- acre property into 76 single-family residential lots *[referring to the original project described]* with a Planned Unit Development to allow deviations from the standards (Project). The Project is located east of Kings Road, North of Grangeville Blvd, in Hanford, CA.

Project Scope

The Project consists of a change to the zoning on a portion of property from R-L-8 Low-Density Residential to R-L-5 Low-Density Residential *[referring to the original project described]* and to subdivide a 14.86-acre property into 76 single-family residential lots *[referring to the original project described, now 55 SFD]* with a Planned Unit Development overlay in an area proposed to be rezoned. The Planned Unit Development will allow deviations from the standards of the R-L-5 Low-Density Residential zone district for a single-family residential subdivision. Deviations include private streets and reduced lot sizes.

Based on information provided to the District, Project specific annual emissions from construction and operation emissions of criteria pollutants are not expected to exceed any of the following District significance thresholds: 100 tons per year of carbon monoxide (CO), 10 tons per year of oxides of nitrogen (NOx),10 tons per year of reactive organic gases (ROG), 27 tons per year of oxides of sulfur (Sox), 15 tons per year of particulate matter of 10 microns or less in size (PM10), or 15 tons per year of particulate matter of 2.5 microns or less in size (PM2.5).

Other potential significant air quality impacts related to Toxic Air Contaminants (see information below under Health Risk Assessment), Ambient Air Quality Standards, Hazards and Odors, may require assessments and mitigation. More information can be found in the District's Guidance for Assessing and Mitigating Air Quality Impacts at Https://www.valleyair.org/transportation/GAMAQI_12-26-19.pdf.

The District offers the following comments:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

The District recommends that a more detailed preliminary review of the Project be conducted for the Project's construction and operational emissions. The additional environmental review of the Project's potential impact on air quality should consider the following items:

1. **Project Related Criteria Pollutant Emissions**

1a) **Construction Emissions:**

Although the construction-related emissions are expected to have a less than significant impact, the District suggests that the City advise project proponents with construction-related exhaust emissions and activities resulting in less than significant impact on air quality to utilize the cleanest reasonably available off-road construction fleets and practices (i.e. eliminating unnecessary idling) to further reduce impacts from construction-related exhaust emissions and activities.

1b) Health Risk Screening/Assessment

Located directly west of the Project, there are sensitive receptors (i.e. Simas Elementary School and residential units). The Health Risk Assessment should evaluate the reis associated with sensitive receptors in the area and mitigate any potentially significant risk to help limit emission exposure to sensitive receptors.

A Health Risk Screening/Assessment identifies potential Toxic Air Contaminants (TAC's) impact on surrounding sensitive receptors such as hospitals, daycare centers, schools, work-sites, and residences. TAC's are air pollutants identified by the Office of Environmental Health Hazard Assessment/California Air Resources Board (OEHHA/CARB) that pose a present or potential hazard to human health. A common source of TACs can be attributed to diesel exhaust emitted from both mobile and stationary sources. List of TAC's identified by OEHHA/CARB can be found at:
https://ww2.arb.ca.gov/resources/documents/carb-identified-toxic-air-contaminants

The District recommends the development project(s) be evaluated for potential health impacts to surrounding receptors (on-site and off-site) resulting from operational and multi-year construction TAC emissions.

i) The District recommends conducting a screening analysis that includes all sources of emissions. A screening analysis is used to identify projects which may have a significant health impact. A prioritization, using the latest approved California Air Pollution Control Officer's Association (CAPCOA) methodology, is the recommended screening method. A prioritization score of 10 or greater is considered to be significant and a refined Health Risk Assessment (HRA) should be performed.

For your convenience, the District's prioritization calculator can be found at:
http:www.valleyair.org/busind/pto/emission_factors/Criteria/Toxics/Utilities/PRIORITIZATION%20RMR%202016.XLS.

ii) The District recommends a refined HRA for development projects that result in a prioritization score of 10 or greater. Prior to performing an HRA, it is recommended that development project applicants contact the District to review the proposed modeling protocol. A development project would be considered to have a significant health risk if the HRA demonstrates that the project related health impacts would exceed the Districts significance threshold of 20 in a million for carcinogenic risk and 1.0 for the Acute and Chronic Hazard Indices, and would trigger all feasible mitigation measures. The District recommends that development projects which result in a significant health risk not be approved.

For HRA submittals, please provide the following information electronically to the District for review:
- HRA AERMOD model files
- HARP2 files
- Summary of emissions source locations, emissions rates, and emission factor calculations and

methodology.

More information on toxic emission factors, prioritizations and HRAs can be obtained by:

- E-Mailing inquiries to: hramodeler@valleyair.org; or
- Contacting the District by phone for assistance at (559) 230-6000; or
- Visiting the Districts website (Modeling Guidance) at: http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

1c) Ambient Air Quality Analysis

An ambient air quality analysis (AAQA) uses air dispersion modeling to determine if emissions increases from a project will cause or contribute to a violation of the ambient air quality standards. For development projects the District recommends that an AAQA be performed for the project if emissions exceed 100 pounds per day of any pollutant.

If an AAQA is performed, the analysis should include emissions from both project specific permitted and non-permitted equipment and activities. The District recommends consultation with District staff to determine the appropriate model and input data to use in the analysis.

Specific information for assessing significance, including screening tools and modeling guidance is available online at the District's website www.valleyair.org/ceqa.

2. Solar Deployment in the Community

It is the policy of the State of California that renewable energy resources and zerocarbon resources supply 100% of retail sales of electricity to California end-use customers by December 31, 2045. While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, the production of solar energy is contributing to improving air quality and public health. The District suggests that the City of Hanford consider the feasibility of incorporating solar power systems, as an emission reduction strategy for this Project.

3. Clean Lawn and Garden Equipment in the Community

Since the Project consists of residential development, gas-powered residential lawn and garden equipment have the potential to result in an increase of NOx and PM2.5 emissions. Utilizing electric lawn care equipment can provide residents with immediate economic, environmental, and health benefits. The District recommends the Project proponent consider the District's Clean Green Yard Machines (CGYM) program which provides incentive funding for replacement of existing gas powered lawn and garden equipment. More information on the District CGYM program and funding can be found at: http://www.valleyair.org/grants/cgym.htm and http://valleyair.org/grants/cgym-commercial.htm.

4. District Rules and Regulation

The District issues permits for many types of air pollution sources and regulates some activities not requiring permits. A project subject to District rules and regulation would reduce its impacts on air quality through compliance with regulatory requirements. In general, a regulation is a collection of rules, each of which deals with a specific topic.

Here are a couple of example, Regulation II (Permits) deals with permitting emission sources and includes rules such as District permit requirements (Rule 2010), and New and Modified Stationary Source Review (Rule 2201).

4a) District Rule 9510 (Indirect Source Review)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

The purpose of District Rule 9510 (Indirect Source Review) is to reduce the growth in both NOx and PM10 emissions associated with development and transportation projects from mobile and area sources associated with construction and operation of development projects. The rule encourages clean air design elements to be incorporated into the development project. In case the proposed project clean air design elements are insufficient to meet the targeted emission reductions, the rule requires developers to pay a fee used to fund projects to achieve off-site emissions reductions.

The proposed Project is subject to District Rule 9510 because it will receive a project-level discretionary approval from a public agency and will equal or exceed 50 residential units. When subject to the rule, an Air Impact Assessment (AIA) application is required no later than applying for project-level approval from a public agency. In this case, if not already done, please inform the project proponent to immediately submit an AIA application to the District to comply with District Rule 9510.

An AIA application is required and the District recommends that demonstration of compliance with District Rule 9510, before issuance of the first building permit, be made a condition of Project approval.

Information about how to comply with District Rule 9510 can be found online at: http://www.valleyair.org/ISR/ISRHome.htm.

The AIA application form can be found online at: http://www.valleyair.org/ISR/ISRFormsAndApplications.htm

4b) District Regulation VIII (Fugitive PM10 Prohibitions)

The Project will be subject to Regulation VIII. The project proponent is required to submit a Construction Notification Form or submit and receive approval of a Dust Control Plan prior to construction. Information on how to comply with

Regulation VIII can be found online at: http://www.valleyair.org/busind/comply/PM10/compliance_PM10.htm.

4c) Other District Rules and Regulations

The Project may also be subject to the following District rules: Regulation VIII, (Fugitive PM10 Prohibitions), and Rule 4601 (Architectural Coatings). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous
Air Pollutants).

The list of rules below is neither exhaustive nor exclusive. Current District rules can be found online at: www.valleyair.org/rules/1ruleslist.htm. To identify other District rules or regulations that apply to this Project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (559) 230-5888.

5. Potential Air Quality Improvement Measures

The District encourages the following air quality improvement measures to further reduce Project related emissions from construction and operation. A complete list of potential air quality improvement measures can be found online at: http://www.valleyair.org/ceqaconnected/aqimeasures.aspx.

a. Improve Walkability Design – This measure is to improve design elements to enhance walkability and connectivity. Improved street network characteristics within a neighborhood include street accessibility, usually measured in terms of average block size, proportion of four-way intersections, or number of intersections per square mile. Design is also measured in terms of sidewalk coverage, building setbacks, street widths,

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

pedestrian crossings, presence of street trees, and a host of other physical variables that differentiate pedestrian oriented environments from auto-oriented environments.

b. Improve Destination Accessibility – This measure is to locate the project in an area with high accessibility to destinations. Destination accessibility is measured in terms of the number of jobs or other attractions reachable within a given travel time, which tends to be highest at central locations and lowest at peripheral ones. The location of the project also increases the potential for pedestrians to walk and bike to these destinations and therefore reduces the (vehicle miles traveled) VMT.

c. Increase Transit Accessibility – This measure is to locate the project with high-density near transit which will facilitate the use of transit by people traveling to or from the Project site. The use of transit results in a mode shift and therefore reduced VMT. A project with a residential/commercial center designed around a rail or bus station, is called a transit-oriented development (TOD). The project description should include, at a minimum, the following design features:

- A transit station/stop with high-quality, high-frequency bus service located within a 5-10 minute walk (or roughly ¼ mile from stop to edge of development), and/or
- A rail station located within a 20 minute walk (or roughly ½ mile from station to edge of development)
- Fast, frequent, and reliable transit service connecting to a high percentage of regional destinations
- Neighborhood designed for walking and cycling

6. District Comment Letter

The District recommends that a copy of the District's comments be provided to the Project proponent.

Required Mitigation Measures:

Mitigation Measure: Utilize the cleanest reasonably available off-road construction fleets and practices to further reduce impacts from construction-related exhaust emissions and activities.

That an Air Quality Analysis be submitted to the Air District, in compliance with District Rule 9510.

In accordance with the District's Guidance for Assessing and Mitigating Air Quality Impacts, the District recommends a health risk analysis be prepared for two types of land use projects, which have the potential to cause long-term public health risk impacts.

- Type A Projects: Land use projects that will place new toxic sources in the vicinity of existing receptors, and
- Type B Projects: Land use projects that will place new receptors in the vicinity of existing toxics sources.

<u>Examples of Type A Projects (new project impacts existing receptors):</u>
This category includes sources of air toxic emissions such as:
- Gasoline dispensing facilities,
- Asphalt batch plants,
- Warehouse distribution centers,
- New freeways or high traffic roads, and
- Other stationary sources that emit toxic substances.

<u>Examples of Type B projects (New project impacted by existing toxic sources):</u>
This category includes residential, commercial, and institutional developments proposed to be located in the vicinity of existing toxic emission sources such as:
- Stationary sources
- Freeway of high traffic roads

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

- Rail yards, and
- Warehouse distribution centers.

The proposed project does not fall within either of these project types, therefore, the Lead Agency has determined a screening analysis is not required.

An Ambient Air Quality Analysis (AAQA) was conducted via CalEEmod. The CalEEMod analysis demonstrated that the emissions from the project would not exceed the District's thresholds for criteria pollutants. **See attached.**

The Building Energy Efficiency Standards (Energy Code) have solar photovoltaic (PV) system and solar ready requirements.

The solar PV system requirements apply to newly constructed low-rise residential buildings.

The solar-ready requirements are mandatory measures and applicable to buildings which do not have a solar PV system installed. When a building is built to be solar ready, applicable Energy Code requirements prepare the building for future installation of a solar energy system.

The residential project is subject to District Rule 9510 as it exceeds 50 residential units. An Air Impact assessment is required to be submitted. The applicant will subject the AIA to the District.

The project applicant will submit a Construction Notification Form or submit and receive approval of a Dust Control Plan, as required.

Recirculation: Although the comments provided from the District refer to the preliminary project, analyzed prior to recirculation, the changes to the project are less impactful, as they propose less residential units (reduced from 76 to 55). Therefore, the analysis provided within the AAQA and comments provided by the District reflect a more impactful project than the project proposed herein.

Checklist Discussion

a) **Less than Significant Impact with Mitigation Incorporation** - The project will not disrupt implementation of the San Joaquin Valley Unified Air Pollution Control District's Air Quality Plan. Compliance with the Air District's Air Quality Plan is a requirement of development. Additionally, the applicant will be required to obtain any necessary permits through the SJVAPCD. With these mitigation measures, the project will have a less than significant impact. Coccidiodes immiti, the fungus that causes valley fever, a serious and potentially long-term respiratory illness, is endemic in the soils of Kings County. Construction activities that disturb soils containing the spores of the fungus can put workers and the nearby public at risk. Effective dust control must be maintained on the job site at all times in order to reduce the risk of valley fever to workers and nearby residents. More information regarding the prevention of work related valley fever is available at www.cdph.ca.gov/programs/hesis/Documents/CocciFact.pdf and http://www.cdph.ca.gov/programs/ohb/Documents/OccCocci.pdf. Contact the San Joaquin Valley Air Pollution Control District for more information on dust control techniques.

b) **Less than Significant with Mitigation Incorporation** – in a consultation received from the San Joaquin Valley Air Pollution Control District, it was determined that the project would not exceed the District's significance thresholds for NOX, ROG, or PM10. The District concluded that the project specific criteria pollutant emissions would have no significant adverse impact on air quality. The project will be subject to District Rule 9510, which is intended to mitigate the project's impact on air quality though design elements or payment of applicable off-site mitigation fees. An Air Impact Assessment application is required to be submitted to the SJVAPCD prior to issuance of a building permit. The project is required to submit a Construction Notification Form or submit and receive approval of a Dust Control Plan prior to any earthmoving activities.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

c) **Less than Significant with Mitigation Incorporation** – in a consultation received from the San Joaquin Valley Air Pollution Control District, it was determined that the project would not exceed the District's significance thresholds for NOX, ROG, or PM10. The District concluded that the project specific criteria pollutant emissions would have no significant adverse impact on air quality. The District concluded that the project specific criteria pollutant emissions would have no significant adverse impact on air quality. The project will be subject to District Rule 9510, which is intended to mitigate the project's impact on air quality though design elements or payment of applicable off-site mitigation fees. An Air Impact Assessment application is required to be submitted to the SJVAPCD prior to issuance of a building permit. The project is required to submit a Construction Notification Form or submit and receive approval of a Dust Control Plan prior to any earthmoving activities.

d) Less than Significant Impact - There are no known pollutant concentrations that would be generated by the future residential development project that would expose sensitive receptors to substantial pollutant concentrations. The nearest potential sensitive receptors are directly to the south, east and west, where residential development is located or proposed; however, since there are not known pollutant concentrations to be emitted from the project, the project impact is considered less than significant

e) Less than Significant Impact – the proposed project is for a residential development. The normal use of a residential subdivision does not create objectionable odors. No objectionable odors are anticipated to occur as a result of development of the residential subdivision. Therefore, the impact is considered less than significant.

Mitigation Measures:

MM Air Quality 1: That the applicant complies with the SJVAPCDC Air Quality Plan and obtains any necessary permits through the SJVAPCD.

MM Air Quality 2: That effective dust control must be maintained on the job site at all times in order to reduce the risk of valley fever to workers and nearby residents. More information regarding the prevention of work related valley fever is available at www.cdph.ca.gov/programs/hesis/Documents/CocciFact.pdf and http://www.cdph.ca.gov/programs/ohb/Documents/OccCocci.pdf. Contact the San Joaquin Valley Air Pollution Control District for more information on dust control techniques.

MM Air Quality 3: The project is subject to District Rule 9510, which is intended to mitigate a project's impact on air quality through project design elements or by payment of applicable off-site mitigation fees. The applicant is required to submit an Air Impact Assessment (AIA) application to the District prior to issuance of a building permit.

MM Air Quality 4: Utilize the cleanest reasonably available off-road construction fleets and practices to further reduce impacts from construction-related exhaust emissions and activities.

Conclusion: Less than Significant with Mitigation Incorporation -The project will not create or result in any significant air quality impacts, with the incorporation of the rules and regulations of the SJVUAPCD for dust control measures.

Source(s): Hanford General Plan (2017), General Plan Environmental Impact Report (2017), San Joaquin Valley Air Pollution Control District, California Air Resources Board 2008, Ambient Air Quality Standards (4/1/2008) http://www.arb.ca.ags; Consultation received from the San Joaquin Valley Air Pollution Control District

IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on	☐	☑	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?				
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☑	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
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?	☐	☐	☑	☐

Environmental Setting

Natural Communities

The natural communities tracked by the California Natural Diversity Database in the Study Area and surrounding vicinity include Valley Sacaton Grassland and Valley Sink Scrub.

Valley Sacaton Grassland is mid-height to three feet tussock-forming grassland dominated by alkali sacaton. The community is fine textured and poorly drained on usually alkaline soils with generally a seasonally high water table or are overflowed during winter flooding. This community was formerly extensive in the Tulare Lake Basin.

There are two patches of riparian woodlands identified by the State Dept. of Conservation mapping program that are within the study area (City of Hanford). Riparian woodlands are one of the richest wildlife habitats in the State; however,

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

much has been severely degraded. Less than 1% of the Central Valley's riparian vegetation is in a natural, high-quality condition. Riparian woodlands in the study area are located on the west side of 12th Avenue between Houston and Iona Avenues, and along the west side of 13th Avenue, north of Iona Avenue. They are 30 and 14 acres in size, respectively. Valley oak woodland provides habitat components such as food, cover, nesting sites, and dispersal habitat for a wide variety of wildlife. The large oak trees present in this vegetation community provide nesting opportunities for many birds of prey. Typical wildlife species in this vegetation community include California ground squirrel, western fence lizard, western scrub jay, California quail, northern flicker, northern mockingbird, mourning dove, American kestrel, and red-tailed hawk.

Vegetation within the City of Hanford consists primarily of agricultural crops with little remaining non-agricultural vegetation. Agricultural crops consist of orchard, vineyard, annual dryland and irrigated grain crops, irrigated row and field crops, and some rice production. A good portion of the study area consists of urban development, but an almost equal portion of the study area is agricultural development.

Waters/Wetlands

Queries of the National Wetland Inventory and National Hydrology Dataset reveal the presence of numerous wetlands and waters within the Study Area. The largest of the water bodies are holding ponds off of Iona Avenue and South 11th Avenue. The system is artificially flooded and manmade. Other wetland and water features are reported including emergent wetlands, freshwater wetlands, freshwater ponds, canals and ditches, and blue-line stream courses.

The only natural watercourse is Mussel Slough, remnants of which still exist on the City's western edge. The People's Ditch, an irrigation canal dug in the 1870s, traverses Hanford from north to south and portions of it still exist north of Grangeville Boulevard and west of the Santa Fe Railroad. The Sand and Lone Oak sloughs once traversed the city north and south, and remnants still remain in the southern half of the City south of SR 198. The Kings River is about 4 miles north of Hanford.

Wildlife Corridors

Wildlife corridors are areas of habitat that connect two or more habitat patches that would otherwise be fragmented or isolated from one another.

Isolated "islands" of wildlife habitat have been created by the fragmentation of open space areas due to urbanization and other anthropogenic disturbance. Certain wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas in the absence of habitat linkages due to the loss of gene flow required to maintain genetic diversity.

Within the urbanized areas of the Study Area, wildlife corridors are largely limited to linear water features, such as canals, water and flood control conveyance structures, and remnant natural ways. Surrounding the Study Area, agricultural fields and sparsely located and fragmented patches of lands containing non-agricultural vegetation located amongst the agricultural fields extend for many miles in all directions. Wildlife movement is largely uninhibited in this open space area of the Study Area outside of, and surrounding, the urbanized areas.

In accordance with the General Plan EIR Mitigation Measure MM4.4-1 and General Plan Policy O34, potential impacts to biological resources and sensitive habitat shall be carefully evaluated when considering development projects. Since the San Joaquin Kit Fox has been documented in the area in the General Plan background report, a biological assessment that includes recommendations to reduce impacts to special-status species and habitats, including avoidance, minimization, and/or mitigation measures is required for the project.

The most recent sighting (2006) was recorded north of Grangeville Boulevard, between 11th and 12 Avenues.

A Biological Reconnaissance Survey was conducted for the project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

The following is an excerpt from the Biological Reconnaissance Survey prepared by QK, dated May 17, 2020.

"The survey focused on identifying the presence of special-status plant and wildlife species, wetlands and waters, and other sensitive biological resources.

Project Description and Background

The Project includes the construction of a housing development on an approximately 14-acre parcel (APN 008-4100-43000) on the west side of Hanford, north of West Grangeville Avenue. A biological survey was previously conducted on the Project site in 2007. That survey focused on determining the presence of the San Joaquin kit fox (Vulpes macrotis mutica) based upon a site visit by CDFW and a possible sighting of a San Joaquin kit fox that was reported by a neighboring resident. The site examination conducted in 2007 revealed that there was a pair of red foxes (Vuples Vulpes) that were denning near the site and that occasionally used the site as foraging habitat. The purpose of this survey conducted in 2020 was to provide an updated and more comprehensive biological evaluation of the Project site.

Methods

QK conducted a preliminary review of pertinent literature, such as previous environmental reports for other projects near the site, and a query of pertinent databases including the California Native Plant Society Inventory of Rare Plants (CNPS 2020), California Natural Diversity Database (CNDDB 2020), U.S. Fish and Wildlife Service species list (USFWS 2020), National Wetland Inventory, and National Hydrography Dataset (NWI/NHD 2020). This information was used to identify potential biological resources that could occur on the site including, but not limited to San Joaquin kit fox, Swainson's hawk (Buteo swainsoni), and Tipton kangaroo rat (Dipodomys nitratoides nitratoides).

A reconnaissance level survey was conducted on May 8, 2020 by QK Environmental Scientists Julie Hausknecht and Sarah Yates. During the survey, pedestrian transects were walked to achieve 100% visual coverage of the Project site and a 500-foot survey buffer where access was available. All plant and wildlife species observed during the survey were recorded and special-status species and habitats were identified and documented using ArcGIS Collector installed on iPads. Representative photographs were taken. The Project site and surrounding 500 feet were examined for the presence of nesting birds and raptors and suitable nesting substrates.

Results

The Project site consists of nonnative annual grassland habitat dominated by ripgut brome (Bromus diandrus), wild oats (Avena fatua), and common fiddleneck (Amsinckia intermedia). Other common plant species observed included cheeseweed (Malva parviflora), London rocket (Sisymbrium irio), foxtail barley (Hordeum murinum), common mustard (Brassica rapa), black mustard (Brassica nigra), red stemmed filaree (Erodium cicutarium), prickly lettuce (Lactuca serriola), jimsonweed (Datura wrightii), Canada horseweed (Erigeron canadensis), Russian thistle (Salsola tragus), common groundsel (Senecio vulgaris), rattail sixweeks grass (Festuca myuros), puncturevine (Tribulus terrestris), and ornamentals and escaped agricultural varieties of grape (Vitus sp.), wheat (Triticum sp.) black walnut (Juglans californica), palm (Washingtonia sp.), and star jasmine (Jasminum multiflorum). Railroad tracks are east, northeast of the site, within the 500-foot buffer. Also, to the east is the Santa Fe Mini Storage, and the land use to the north, west, and south are residential.

No wetland features occur on the Project site, but a drainage basin was present to the east of the site within the 500-foot buffer. That area was fenced, access was restricted, and Project activities would not affect that resource.
There were no special-status species plant or wildlife species present on and within 500 feet of the Project site during the reconnaissance survey. The relatively high degree of past disturbances and the isolated nature of this parcel limits the potential for special-status species to occur.

Two red foxes were observed north of the site within the 500-foot buffer. They were moving east across the railroad tracks from cover beneath oleander shrubs (Nerium oleander). The surveyors searched for dens, not only on the project

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

site but also in the vicinity of where the foxes were seen. No den was found. A pile of old discarded lumber was present on the northwest corner of the site, which has potential to provide shelter for the foxes. The lumber pile was recorded as a potential den for the red foxes (Figure 4 in Attachment A).

The site is covered by nonnative annual grassland habitat which provides suitable foraging habitat for the red fox as well as the San Joaquin kit fox. California ground squirrels (Otospermophilus beecheyi) and a complex of burrows was present in the 500-foot buffer to the south of the site and along the southern border of the site at the end of Claridge Lane (see Figure 4 in Attachment A). Pocket gopher (Thomomys bottae) mounds and burrows were scattered throughout the site and along the site perimeter. The grassland habitat has loose-textured soils but has denser vegetation than is typically preferred by the San Joaquin kit fox. No diagnostic signs of the San Joaquin kit fox were found, and they were determined to be absent from the site because of the presence of red foxes, the high level of disturbance on the site, the lack of dens, and the extensive surrounding residential and commercial developments.

One Eurasian collared dove (Streptopelia decaocto) was incubating in a nest located in a eucalyptus tree (Eucalyptus sp.). This nest was in the 500-foot buffer, northwest of the site (see Figure 4 in Attachment A). The Eurasian collared dove is not protected by the Migratory Bird Treaty Act. No other nesting birds or raptors were found.

Common bird and wildlife species present onsite during the survey include mourning dove (Zenaida macroura), American crow (Corvus brachyrhynchos), snowy egret (Egretta thula), black phoebe (Sayornis nigricans), northern mockingbird (Mimus polyglottos), western kingbird (Tyrannus verticalis), house finch (Haemorhous mexicanus), European starling (Sturnus vulgaris), California scrub jay (Aphelocoma californica), rock pigeon (Columba livia), Canada goose (Branta canadensis), horned lark (Eremophila alpestris), black-chinned hummingbird (Archilochus alexandri), red-winged blackbird (Agelaius phoeniceus), house sparrow (Passer domesticus), western fence lizard (Sceloporus occidentalis), and domestic dog scat (Canis familiaris).

Summary, Conclusions, and Recommendations

A reconnaissance-level survey was conducted for a proposed housing development on a 14-acre parcel (APN 008-4100-43000) in Hanford on May 8, 2020. The purpose of the survey was to update previous findings from a survey done by QK in 2007 and to identify the presence or the potential for the presence of special-status species including, but not limited to, San Joaquin kit fox, Swainson's hawk, and Tipton kangaroo rat. No special-status species or diagnostic signs of special-status species were found. The degraded condition of the site and the isolated nature of the site limits the potential for special-status species to be present.

Two red foxes were seen in the northeast corner of the site within the 500-foot buffer. No dens were located but a pile of old lumber provides a potential denning site. Ground squirrel burrows located along the south border of the Project site have potential to become widened for use by foxes and suitable prey is present. However, it was determined that the San Joaquin kit fox does not occur on the site because of a lack of dens, the highly disturbed condition of the site, extensive surrounding residential and commercial development, and the presence of red foxes, which are a competitor of the San Joaquin kit fox. Red foxes are not a sensitive species and would tend to preclude the presence of San Joaquin kit foxes.

No existing stick nests or nesting raptors were observed on or within 500 feet of the Project site. Suitable nesting substrates are present for Swainson's hawks or other raptors including tall trees and utility poles that could support the construction of new nests, but no nests were found. The nesting Eurasian collared dove that was observed nesting in the buffer area is an introduced species and is not protected by the Migratory Bird Treaty Act. For protected bird species, existing regulations prohibit taking or possessing birds, parts of birds, nests, or eggs. A preconstruction survey should be conducted within 14 days of construction (if construction will occur between February 15 and August 15, the breeding season of migratory birds and raptors) to identify and avoid any nesting birds or raptors. If any active nests are found during the preconstruction survey, we recommend that the nests be designated as an Environmentally Sensitive Area (ESA) and protected by a construction-free buffer determined by a qualified biologist until the nests are no longer active. The typical avoidance buffers are 250 feet for passerine nests and 500 feet for raptor nests, but the buffers may be reduced if it can be documented that the birds are not negatively affected by construction activities.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

The entire report is attached.

Standards of Significance

The project would have a significant effect on biological resources if it would:

a) Interfere substantially with the movement of any resident or migratory fish or wildlife species.

b) Substantially diminish habitat for fish, wildlife or plants.

c) Substantially affect a rare, threatened, or endangered species of animal or plant or the habitat of a rare, threatened or endangered species.

Checklist Discussion

a) **Less than significant impact with mitigation measure** –a biological survey was conducted and concluded that the degraded condition of the site and the isolated nature of the site limits the potential for special-status species to be present. As a mitigation measure:

1. A preconstruction survey should be conducted within 14 days of construction (if construction will occur between February 15 and August 15, the breeding season of migratory birds and raptors) to identify and avoid any nesting birds or raptors.

    a. If any active nests are found during the preconstruction survey, the nests shall be designated as an Environmentally Sensitive Area (ESA) and protected by a construction-free buffer determined by a qualified biologist until the nests are no longer active. The typical avoidance buffers are 250 feet for passerine nests and 500 feet for raptor nests, but the buffers may be reduced if it can be documented that the birds are not negatively affected by construction activities.

b) No Impact – the site does not contain any riparian habitat or other sensitive natural community.

c) No Impact – the site is not identified as a federally protected wetland.

d) **Less than significant impact with mitigation measure** -see a.

e) No Impacts - The project would not conflict with any local policies or ordinances protecting biological resources such as a tree preservation ordinance or policy; there is not an adopted ordinance protecting biological resources.

f) Less than Significant Impact – the project pertains to land that has no value as natural habitat; therefore, the plan does not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Mitigation Measures:

1. That a preconstruction survey should be conducted within 14 days of construction (if construction will occur between February 15 and August 15, the breeding season of migratory birds and raptors) to identify and avoid any nesting birds or raptors.

    a. If any active nests are found during the preconstruction survey, the nests shall be designated as an Environmentally Sensitive Area (ESA) and protected by a construction-free buffer determined by a qualified biologist until the nests are no longer active. The typical avoidance buffers are 250 feet for passerine nests and 500 feet for raptor nests, but the buffers may be reduced if it can be documented that the birds are not negatively affected by construction activities.

Conclusion: The site is within an urban area of the City and contains no natural, undisturbed areas for habitat. The project would have a less than significant cumulative impact for biological resources with the implementation of

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
mitigation measures. **Source(s):** Hanford General Plan (2017), General Plan Environmental Impact Report (2017); QK Biological Reconnaissance Survey (May 17, 2020).				
V. CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Public Resources Code15064.5?	☐	☐	☑	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Public Resources Code 15064.5?	☐	☑	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☑	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☑	☐	☐

Ethnographic Setting

Hanford is situated between the former “delta” formed by the Kaweah River to the south and the Kings River to the north. Yokuts lived in villages consisting of wood frame huts covered with large tule mats. The Hanford-Lemoore region on the south side of the Kings River was home to the Nutunutu Yokuts. Across the Kings River and north of the Nutunutu, were the Wimilche people. Only one village for the Wimilche and two for the Nutunutu have been described. The Wimilche village of Ugona was located north of the Kings River, 7 miles below Laton. The Nutunutu village of Cheou was across the reiver and directly west of Ugona. Kadistin, the other Nutunutu village of Cheou was across the river and directly west of Ugona. Kadistin, the other Nutunutu village, was at old Kingston on the south bank of the Kings River downstream from Laton. The better known Tachi Yokuts occupied the north and west shores of Tulare Lake.

The Yokuts subsistence economy emphasized fishing; hunting waterfowl; and collecting shellfish, roots, and seeds. Tules were abundant in the sloughs and their prodigious use in constructing shelters, boats, and as a food source reflected their significance in Yokuts life.

The dead were buried in a cemetery separate from the village with head facing west or northwest. Cremation was most common for the occasional individual who died away from home or in the event that the deceased was a shaman or medicine man. Among the Tachi, anyone of higher social status was cremated.

The 1833 epidemic, brought south from Oregon by a party of trappers, decimated an estimated 75% of California’s native people. Entire communities were wiped out, leaving few native people to consult during the early 1900s when anthropologists were recording the recollections of elderly survivors of what has been billed as a last attempt to reconstruct the lifeways of the native people before White contact.

In 1851, the tribes gave up their lands for reservations. However, such a treaty was never ratified by Congress. The remnant of native people in the southern San Joaquin Valley was placed at the Tejon

Reservation at the foot of the Tehachapis and at the Fresno reservation at Madera. However, Tejon was later abandoned in favor of a reservation on the Tule River. Many of the Tule river residents were Tachi for whom a

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

settlement was established near Lemoore.

By 1970, some 325 people identifying themselves as Yokuts lived on the 54,000-acre Tule River Reservation. Many of the residents were employed in the lumber industry or as laborers on farms. About one-third of the population of the Tule River Reservation lived on the much smaller Santa Rosa Reservation. Santa Rosa families would follow seasonal agricultural work.

Pioneer Settlement Period

Early development and success of the community was dictated by the railroad. Southern Pacific established a depot early in 1877 in what would become Hanford. In 1877, when the Southern Pacific Railway laid lines from Goshen to Coalinga, their path crossed through a Chinese sheepherder's camp. This camp reportedly was the beginning of the City of Hanford. Hanford was named for James Madison Hanford, an auditor of the railroad, who also took a lively interest in the sale of town lots which began on January 17, 1877. Within a short time, the settlement grew to a town, and, with the powerful backing of the railway interests, Hanford ultimately became the center of trade for the region.

In McKenney's Pacific Coast Directory, San Francisco, 1886-1887, Hanford was described as having a post, express and telegraph office, located along the Southern Pacific Railroad Company's Goshen Division, 254 miles from San Francisco, and 22 miles from Visalia. At the time, the community numbered 1,000 inhabitants and was located in the heart of the "famous Mussel Slough country," a region of rich top soils and important agricultural zone. Hanford was the principal depot for the local wheat industry and had several flouring mills along with schools, churches, and hotels.

Through the early pioneer years, a series of devastating fires dampened the growth of Hanford. On July 12, 1887, a fire destroyed most of the downtown business district. On June 19, 1891, another fire destroyed portions of the downtown business district. The fires of early 1890s spurred new development using fireproof materials.

National Register of Historic Places

Hanford has three buildings listed on the NRHP. They are the Hanford Carnegie Library, the Kings County Courthouse, and the Taoist Temple. All three buildings are also listed on the California Register of Historic Places.

Hanford Carnegie Library

The Hanford Carnegie Library, now the Hanford Carnegie Museum, was built in 1905 as one of the many Carnegie libraries that were funded by steel magnate, Andrew Carnegie. The library was replaced by a new structure at a different location in 1968. The old library was subsequently renovated and reopened as the Hanford Carnegie Museum in 1974. The building is of Romanesque Revival architecture, with displays of furniture and photos describing the history of the Hanford area.

Kings County Courthouse

The 1896 Kings County Courthouse was erected after Kings County was formed. The building served as the county's courthouse until 1976 when it was replaced by the new Kings County Government Center on West Lacey Boulevard. The building was listed on the National Register of Historic Places in 1978.

Taoist Temple

The Taoist Temple at 12 China Alley dates from 1893. It was listed on the NRHP in 1972. It is historically significant as a surviving authentic structure from Hanford's Chinatown. China Alley served the second largest population of Chinese in the U.S., behind San Francisco.

While many urban Chinatowns continue to thrive, most rural Chinatowns have declined; Hanford's China Alley is unique for its retention of many original features. China Alley's survival is largely because many of its buildings are owned by a single third-generation family corporation that has, through the years, exhibited concern for the site's future.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

National Register of Historic Places – Eligible Resources

There are a number of resources within Hanford that contribute to its unique culture, yet are not officially listed as historic resources, including the following:

- Clark Center for Japanese and Art and Culture, 15770 10th Avenue
- Temple Theater, 514 Visalia Street
- Fox Theater
- Kings Art Center, 605 N. Douty Street
- Hanford Civic Auditorium, 400 N. Douty Street
- Hanford Veteran's Memorial Building

Paleontological Resources

A paleontological resources report was not prepared for the General Plan, as there are recent paleontological resources reports for areas within the vicinity. The geology of the area includes the Modesto Formation, Tulare Lakebeds, and Quanternary alluvium. Between overlies sediments of the late-Pleistocene to early-Holocene Modesto Formation. From Hanford south to approximately Delano, Tulare Lakebed deposits are exposed at or near the surface.

Consultation Meeting

On January 10, 2017, the City of Hanford met with the Tachi Yokut Tribe, on a different project in order to establish conditions, which would apply to all projects in the City of Hanford, which required an initial study.

In order to address the concerns of the Tachi Yokut Tribe, the City is requiring the following as mitigation measures:

- That a Burial Treatment Plan be entered to by the applicant/property owner prior to any earth disturbing activities. **(This condition applies as a mitigation measure to all projects that require an initial study).**

In accordance with Assembly Bill 52, formal notification of determination to undertake a project and notice of consultation opportunity, pursuant to Public Resources Code Section 21080.3.1 was sent to the Tachi Yokut Tribe. A response has not been received, as of the date of preparation of this environmental assessment.

Thresholds of significance

The project would have a significant impact on cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical resource, as defined in Section 15064.5
- Cause a substantial adverse change in the significance of an archeological resource, pursuant to Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geological feature; or
- Disturb any human remains, including those interred outside of formal cemeteries

- That a Burial Treatment Plan be entered to by the applicant/property owner prior to any earth disturbing activities.

Significance Criteria
The project may have a significant impact on cultural resources if it causes substantial adverse changes in the significance of a historical or archaeological resource as set forth by the California Register of Historic Places and Section 106 of the National Historic Preservation Act; directly or indirectly destroys a unique paleontological resource or

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

site.

Checklist Discussion

a) Less than Significant Impact - The project would not cause a substantial adverse change in the significance of a historical resource as defined in 15604.5 of the CEQA Guidelines, as the site is not registered as a historical resource.

b) **Less than Significant Impact with Mitigation Measures** – The proposed project proposes the development of formerly vacant land. As a condition of approval, the Lead agency required:

MM Cultural Resources 1: That if cultural resources are discovered during construction or related activities, all work shall be halted and a qualified archeologist and the City of Hanford shall be notified. The find shall be properly investigated and appropriate measures are to be taken before construction may continue.

Also, in agreement following the previous meeting between the City of Hanford and the Tachi Yokut Tribe on January 10, 2017, the lead agency is requiring:

- **MM Cultural Resources 2:** That a Burial Treatment Plan be entered in to by the applicant/property owner prior to any earth disturbing activities.

c) Less than Significant Impact - The project will not directly or indirectly destroy any unique paleontological resource or site, as the site has not been identified as containing unique paleontological resource nor unique geological feature.

d) See B.

Mitigation Measures

MM Cultural Resources 1: That tribal monitors are required during all ground disturbance activities, including but not limited to: water ponds, grading, excavation, trenching, and utilities.

- **MM Cultural Resources 2:** That a Burial Treatment Plan be entered in to by the applicant/property owner prior to any earth disturbing activities.

Conclusion:

The incorporation of mitigation measures requested from the Tachi Yokut Tribe will reduce the impacts of development on Cultural Resources.

Source(s): Hanford General Plan (2017), California Health and Safety Code, Public Resources Code, consultation letter sent in accordance with Public Resources Code, Section 21080.3.1(b); meeting with the Tachi Yokut Tribe on January 10, 2017.

ENERGY				
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**	

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Less than Significant Impact: CEQA Guidelines require consideration of the potentially significant energy implications of a project. CEQA requires mitigation measures to reduce "wasteful, inefficient and unnecessary" energy usage (Public Resources Code Section 21100, subdivision [b][3]). The means to conserve energy include decreasing overall energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. In particular, the proposed Project would be considered "wasteful, inefficient, and unnecessary" if it were to violate State and federal energy standards and/or result in significant adverse impacts related to Project energy requirements, energy inefficiencies, energy intensiveness of materials, cause significant impacts on local and regional energy supplies or generate requirements for additional capacity, fail to comply with existing energy standards, otherwise result in significant adverse impacts on energy resources, or conflict or create an inconsistency with applicable plan, policy, or regulation. The project is required to comply with the 2019 California Green Building Standards Code, Title 24 Energy Efficiency Requirements, including the installing of solar panels, which provides energy from a renewable power source to offset energy generated by fossil fuel-ran power plants. **a) Less than Significant Impact -** The project is required to be developed, consistent with the State and City of Hanford's regulations. The project will be in compliance with all applicable federal, State, and local regulations regulating energy usage. The Project will comply with Title 24 Energy Efficiency Standards and CalGreen Code requirements for solar-ready roofs, electric vehicle charging, and water conservation. Stringent solid waste recycling requirements applicable to Project construction and operation would reduce energy consumed in solid waste disposal. Conclusion: In summary, the Project will implement all mandatory federal, State, local conservation measures, project design features, and voluntary energy conservation measures to reduce energy demands further. Therefore, the Project will not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Project-related impacts are less than significant. **Mitigation Measure(s)** No mitigation is required. **Level of Significance** Impacts would be ***less than significant***.				
VI. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to 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.	☐	☐	☐	☑
ii) Strong seismic ground shaking?	☐	☑	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☑	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
iv) Landslides?	☐	☑	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☑	☐	☐
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?	☐	☑	☐	☐
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?	☐	☐	☑	☐
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?	☐	☐	☐	☑

Environmental Setting

Geology
The topography of the City is relatively flat with a gradual slope generally from east to west. The City is located at 249 feet above mean sea level (msl).

The soil is defined as alluvial fan surfaces that are mantled with very deep, well-drained, saline-alkali soils. An alluvial fan is a fan-shaped alluvial deposit formed by a stream where its velocity is abruptly decreased.

Soil
The City of Hanford consists of the following soil types: 1) Cajon sandy loam, 2) Excelsior sandy loam, 3) Garces loam, 4) Kimberlina fine sandy loam, saline alkali 5) Kimberlina fine sand loam, sandy substratum, 6) Kimberlina salie alkali-Garces complex 7) Nord fine sandy loam, 8) Nord fine sandy loam, saline alkali, 9) Nord complex, 10) Wasco sandy loam (0-5% slopes), and 11) Whitewolf coarse sandy loam. Each of these soil types is not subject to annual flooding or poinding, and for the most part has a very low to medium surface runoff class, and is well drained. A runoff class indicates the potential for a soil to become saturated when excess storm water begins to flow at the ground surface.

Seismicity
The greatest potential for seismic activity in the City is posed by the San Andreas Fault, which is located approximately 46.5 miles southwest of the western boundary of the Study Area. The White Wolf Fault, located near Arvin and Bakersfield to the southwest in Kern County, which has the potential to cause seismic hazards for the County to a much lesser degree than the San Andreas Fault.

Fault Rapture
Kings County doesn't have any major fault system within its boundaries.

Strong Seismic Ground Shaking
Kings County has not experienced any damaging earthquake equal or greater than Richter Magnitude 6.0 over the last 200 years. The Uniform Building Code has four seismic zones in the US ranging from I to IV, the higher the number, the higher the earthquake danger. All of California lies within Seismic Zone III or IV, Kings County is within Zone III, which equates to the potential to experience 0.3 meters/second squared ground acceleration, which would result in very

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

strong to sever perceived shaking and moderate to heavy potential.

Liquefaction
Liquefaction occurs when saturated, loose materials are weakened and transformed from a solid to a near-liquid state as a result of increased pore water pressure. For liquefaction to occur, surface and near-surface soil must be saturated and be relatively loose. Liquefaction more often occurs in areas underlain by young alluvium where the groundwater table is higher than 50 ft. below ground surface. In the City, the range is generally between 120 ft to 160 feet below ground surface, therefore, the potential for liquefaction is not very probable.

Soil Erosion
Soil erosion, which can be caused by wind and water runoff, is a type of soil degradation. The potential for erosion to occur is affected by the soil's properties. The soil in the City and surrounding study area is generally sandy loams, fine sandy loams, and loams. The area's erodibility factor ranges from 0.19 to 0.38 depending on the soil type and percentage of organic matter. Based on this range, the soils in the study area have medium susceptibility to sheet and rill erosion by rainfall.

Lateral Spreading (Landslides)

Lateral spreading is large horizontal ground displacements due to earthquake-induced liquefaction. Lateral spreading also refers to landslides that commonly form on gentle slopes that have rapid, fluid-like movement. Lateral preading generally occurs on 0.3 to 5% slopes underlain by loose sand and shallow groundwater.

Subsidence
Land subsidence is the gradual settling or sudden sinking of the ground surface due to movement of the ground materials. It is generally caused my three distinct water-related causes: 1) compression of layers of clay and slit within an aquifer, 2) oxidation and drainage of organic soils, 3) dissolution and collapse of susceptible rocks. Subsidence is occurring within the San Joaquin Valley. The primary causes for subsidence in the SJV are groundwater-level decline (due to overdraft) and subsequent aquifer compaction and hydrocompaction of moisture-deficient deposits above the water table.

Collapsible Soil
Collapsible soils consist of loose, dry, low-density materials that collapse and compact under the addition of water or excessive loading. These soils are found in areas of young alluvial fans, debris flow sediments, and loess deposits. Since the City and surrounding area includes soils that are derived from alluvial fans, there is the potential for collapsible soils.

Expansive Soil
Expansive soils are fine-grained soils that can undergo a significant increase in volume with an increase in water content, as well as a significant decrease in volume with a decrease in water content. The City and surrounding area's soils contain percentages of clay that generally range between 7-27%. When a soil has 35% or more clay content, it is considered a clayey soil. Since the soil types in the Study Area generally do not contain 35% clay content, the potential for expansive soils within the City and surrounding is low.

Septic Systems
The City does not have septic requirements for septic systems within the City.

Significance Criteria

The project may result in significant earth impacts if it causes substantial erosion or siltation, exposes people to geologic hazards or risk from faults, landslides or unstable soil conditions. Grading that disturbs large amounts of land or sensitive grading areas (such as slopes in excess of 20%) may cause substantial erosion or siltation.

Checklist Discussion

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

a) **Less than Significant Impact with Mitigation Incorporation** -

i. No Impact - No portion of the project area is located within an earthquake fault zone as defined by the Alquist-Priolo Earthquake Fault Zoning Act and therefore, development would not expose people or structures to potential substantial adverse effects, including risk of loss, injury, or death involving rupture of a known earthquake fault.

ii. **Less than Significant Impact with Mitigation Measures** – Compliance with applicable City General Plan policies, as well as the California Building Code would reduce the potential to expose people or structures to potential substantial adverse effects, including risk of loss, injury, or death involving strong seismic ground shaking to a less-than-significant level.

iii. **Less than Significant Impact with Mitigation Measures** – The potential for liquefaction in the project area is low. There is a minute possibility that a rain event coupled with a concurrent seismic event may create a condition where liquefaction could occur. Compliance with applicable City General Plan policies, as well as the California Building Code would reduce the potential to expose people or structures to potential substantial adverse effects, including risk of loss, injury, or death involving strong seismic ground shaking to a less-than-significant level.

iv. **Less than Significant with Mitigation Measures** – the entire City is located within an area of low landslide incidence, but, there is still a possibility that landslides could occur within the City, as a result of erosion, slope weakening through saturation, or stresses by earthquakes that make slopes fail. Geotechnical and soil studies that identify potential hazards, including landslides, would be required prior to grading activities as part of the plan check and development review process for the physical development of the area. Such technical studies would provide structural design, as needed, pursuant to the California Building Code requirements to reduce hazards to people and structures as a result of landslides.

b) **Less than Significant Impact with Mitigation Measures** – development would result in construction-related ground disturbance, as a result of grading and excavation where topsoil is exposed, moved, and/or stockpiled. Such construction-related ground disturbance could loosen soil and remove vegetation, which could lead to exposed or stockpiled soils made susceptible to peak storm water runoff flows and wind forces. Such disturbances could result in substantial soil erosion or topsoil, which is a potentially significant impact. Adherence to the Hanford Municipal Code Chapter 15.52 Flood Damage Prevention Regulation, and the California Building Code, along with the plan check and development review process, would assist the development of property erosion controls during operation of future development to a less than significant impact.

c) Less than Significant Impact with Mitigation Measures: See a.

d) Less than Significant Impact – Expansive soils are fine-grained soils that can undergo a significant increase in volume with an increase in water content, as well as a significant decrease in volume with a decrease in water content. The City and surrounding area's soils contain percentages of clay that generally range between 7-27%. When a soil has 35% or more clay content, it is considered a clayey soil. Since the soil types in the Study Area generally do not contain 35% clay content, the potential for expansive soils within the City and surrounding is low.

e) No impact- The City does not have septic requirements for septic systems within the City. Septic is not proposed.

Mitigation Measures:

MM Geology 1: That the development of the project complies with the applicable General Plan policies, as well as the California Building Code.

MM Geology 2: That a geotechnical and soil studies be prepared as a required by the Building Official (if applicable).

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
MM Geology 3: that the physical development of the project complies with the Hanford Municipal Code Section 15.52 Flood Damage Prevention Regulation and the California Building Code, along with the plan check and development review process. **Conclusion** The project will not result in significant impacts to geophysical conditions with mitigation measures in place, therefore the impact is considered less than significant, cumulatively. **Source(s):** General Plan and General Plan EIR (2017); California Building Code				
VII. GREENHOUSE GAS EMISSIONS – Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐
Environmental Setting **Kings County and the City of Hanford** Climate change regulations require the City to take action to reduce emissions under its jurisdiction and influence. The countywide Regional Climate Action Plan (CAP) is a separate action through KCAG that was adopted by the City on May 27, 2014. The Kings County Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and the San Joaquin Valley Blueprint are also incorporate policy into the General Plan. this strategy of integrating regional planning documents help Hanford identify land use, transportation, and related policy measures and investments that could reduce GHGs from passenger cars and light-duty trucks, as part of the development of a SCS in compliance with Senate Bill 375. Commercial and residential space heating and cooling comprise a large share of direct energy use in Kings County. Other major energy users include agricultural production and industrial facilities. In Kings County, automobiles and commercial vehicles are the largest energy consumers in the transportation sector. **Global Climate Change** Climate change is a change in the average weather of the Earth that may be measured by alterations in wind patterns, storms, precipitation, and temperature. These changes are assessed using historic records of temperature changes occurring in the past, such as during previous ice ages. The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHG needed to stabilize global temperatures and climate change impacts. The IPCC predicted that global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1 degrees Celsius to 6.4 degrees C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios. **Increased Temperatures and Extreme Heat events** Climate change is expected to lead to an increase in ambient average air temperatures with greater increases expected in summer than in winter months. Larger temperature increases are anticipated in inland communities, as compared to the CA coast. The potential health impacts from sustained and significantly higher than average temperatures include heat stroke, heat exhaustion, and the exacerbation of existing medical conditions such as cardiovascular and respiratory diseases,				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

diabetes, nervous system disorders, emphysema, and epilepsy. Increased temperatures also pose a risk to human health when coupled with high concentrations of ground-level ozone and other air pollutants, which may lead to increased rates of asthma and other pulmonary diseases.

Other impacts related to increased temperatures and heat waves include:

- Increased urban "heat island" effect – urban heat islands are especially dangerous because they are both hotter during the day and do not cool down at night, increasing the risk of heat-related illness
- Reduced freezing events –reduced freezes could lead to increase incidence of disease as vectors and pathogens do not die off. In addition, fewer events of freezing would impact CA's food production and indirectly the food supply in Kings County.
- Increased energy demand for air conditioning and refrigeration

Greenhouse Gases

Gases that trap heat in the Earth's atmosphere are called greenhouse gases. Some of the solar radiation that enters Earth's atmosphere is absorbed by the Earth's surface, and some is reflected back toward space. of the radiation reflected back toward space, GHG's will absorb a part. As a result, radiation that otherwise would have escaped back into space is retained, resulting in a warming of the atmosphere. Some levels of GHGs are essential for maintaining temperatures supportive of life on Earth. Without naturally-occurring GHGs, the Earth's surface would be about 61 degrees cooler. This phenomenon is known as the greenhouse effect. Many scientists believe that emissions from human activities – such as electricity generation, vehicle emissions, and farming and forestry practices have elevated GHGs in the atmosphere beyond naturally-occurring concentrations, contributing to global climate change. The six primary GHGs are:

- Carbon dioxide (C02), emitted when solid waste, fossil fuels (oil, natural gas, and coal) and wood and wood products are burned
- Methane (CH4), produced through the anaerobic decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.
- Nitrous oxide (N20), typically generated as a result of soil cultivation practices, particularly the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning
- Hydroflourocarbons (HFCs), primarily used as refrigerants
- Perfluorocarbons (PFCs), originally introduced as alternatives to ozone depleting substances and typically emitted as by-products of industrial and manufacturing processes
- Sulfur hexafluoride (SF6), primarily used in electrical transmission and distribution systems

There are currently no State regulations in CA that establish ambient air quality standards for GHGs. However, the State of CA has passed legislation directing the CA Air Resources Board to develop actions to reduce GHG emissions.

A CalEEMod analysis of the project emissions is attached to this report – emissions do not exceed the level of significance for any criteria pollutant.

Significance Criteria

The project would have a significant impact on GHG emissions if it would:

- Generate GHG 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 reducing the emissions of GHGs

Checklist Discussion

a. Less than Significant Impact - In the General Plan EIR, impacts to Greenhouse Gas emissions were evaluated. The growth based on land use and population intensities proposed under the General Plan is anticipated to generate 1,134,876.19 metric tons of CO2e per year using an operational year of 2005, which includes area, energy, mobile, waste, and water sources. BAU is referred in ARB's ABB 32 Scoping Plan (CARB 2012) as emissions occurring in 2020 if the average baseline emissions during the 2002-2004 period grew to 2020 levels, without control. As a result, an estimate of the General Plan Update's operational emissions in 2005 were

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
compared to operational emissions in 2020 in order to determine if the General Plan Update would meet the 29% emission reduction. The SJVAPCD has reviewed relevant scientific information related to GHG emissions and has determined they are not able to determine a specific quantitative level of GHG emissions increase, above which a project would have a significant impact on the environment, and below which would have an insignificant impact. As a result, the SJVAPCD has determined that the General Plan Update's ability to achieve at least a 29% GHG emission reduction compared to BAU would be determined to have a less-than-significant individual and cumulative impact for GHG. The project complies with the General Plan policy, which includes emission reductions that mitigate GHG emission generation to a less than significant level. b. Less than Significant Impact – The project is consistent with the policies of the General Plan, which consists of numerous land uses and goals and policies to provide for a more walkable community in the Hanford area. The goals and policies of the General Plan are intended to assist in reducing operational emissions. In addition, the General Plan policy meet 10 of the 12 Smart Growth Principles cited in the San Joaquin Valley Blueprint. **Conclusion** The project is consistent with the General Plan, which provides policy to mitigate impacts of GHG to a less than significant level. Source(s): General Plan Update (2017), General Plan Update EIR (2017), San Joaquin Valley Air Pollution Control District, Final Regional Climate Action Plan				
VIII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☑	☐	☐
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?	☐	☑	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☑	☐
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?	☐	☐	☐	☑
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	☐	☐	☐	☑

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
working in the project area?				
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☑
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☑	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☑	☐

Environmental Setting

Hazardous material are substances that, because of physical or chemical properties, quantity, concentration, or other characteristics may either cause an increase in mortality or an increase in serious, irreversible, or incapacitating illness or pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, disposed of, or otherwise managed. Hazardous materials have been and are commonly used in commercial, agricultural, and industrial applications and, to a limited extent, in residential areas.

Hazardous wastes are hazardous materials that no longer have practical use, such as substances that have been discarded, discharged, spilled, contaminated, or are being stored prior to proper disposal. Large quantities of hazardous materials are transported along State Route 198, 43, and freight rail lines that pass-through Hanford, making it susceptible to hazardous spills, releases, or accidents.

Pursuant to AB 2948, Kings County adopted the *County Hazardous Waste Management Plan.* Under state law, all industries and agricultural operations that store or handle specific quantities of hazardous materials must provide the County with a hazardous materials business plan detailing the location and quantities of their hazardous materials.

Brownfields

A brownfield site is land previously used for industrial purposes or some commercial uses that may be contaminated by low concentrations of hazardous waste or pollution, and has the potential to be reused once it is cleaned up. the City has one brownfield site, located south of Third Street, north of Davis Street, west of the BNSF railroad tracks, and east of 11th Avenue.

Airport Hazards

Hanford Municipal Airport – a general aviation facility serving Kings County and the surrounding communities of Hanford, Armona, and Lemoore in south-central CA.

Emergency Response

Kings County's Office of Emergency Management (OEM) is the County's emergency management agency, responsible for coordinating multi-agency responses to complex, large-scale emergencies and disasters within Kings County. OEM develops and maintain the Emergency Operations Plan (EOP), which serves as a guideline for who will do what, as well as when, with what resources, and by what authority- before, during, and immediately after an emergency.

Significance Criteria

The project may result in significant hazards if it does any one of the following:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

1. Create a public health hazard
2. Involve the use or production, disposal or upset of materials which pose a hazard to people in the area or interferes with an emergency response plan
3. Violates applicable laws intended to protect human health and safety or would expose workers to conditions that do not meet health standards.

Checklist Discussion

a) **Less than Significant with Mitigation Incorporation–** that the routine use of a residence does not involve the routine transport, use, or disposal of hazardous materials. If hazardous materials at or above threshold reporting quantities (55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of a gas) will be kept on site during the construction phase, a Hazardous Materials Business Plan must be filed online at http://cers.calepa.ca.gov within 30 days of beginning operations. Hazardous materials are broadly defined, and include fuel, lubricants, antifreeze, motor vehicle batteries, welding gases, paints, solvents, glues, agricultural chemicals, etc. Please contact our office if you require assistance with the online registration process. Any quantities of hazardous wastes generated by the construction operation must be managed in accordance with Federal, State, and local laws and regulations. Hazardous wastes cannot be disposed of into the municipal waste stream or onsite sewage disposal system. The owner/operator must contact the Kings County Environmental Health Department at with any questions regarding proper management and reporting of hazardous wastes, such as waste oil/filters, associated with this operation. Any quantities of hazardous wastes generated by the construction operation must be managed in accordance with Federal, State, and local laws and regulations. Hazardous wastes cannot be disposed of into the municipal waste stream or onsite sewage disposal system

b) See a.

c) Less than Significant Impact – Simas Elementary School is within a ¼ mile of the project site. However, the routine use of a residence will not introduce hazardous materials to the sensitive receptor. The General Plan restricts land uses around schools, such as industrials uses, that could result in emitted hazardous emissions or handled hazardous or acutely hazardous materials, substances, or wastes within ¼ mile of an existing or proposed school that would result in significant adverse impacts to school sites. The routine use of a residence does not involve the hazardous materials.

d) No Impact – the project is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5

e) No Impact -The project site is not located within two miles of a public airport/airstrip therefore there is no impact.

f) No Impact -The project site is not located within two miles of a private airport/airstrip therefore there is no impact.

g) Less than Significant Impact - development has the potential to strain the emergency response and recovery capabilities of federal, state, and local government. Compliance with the General Plan policies to ensure adequate emergency response and maintain current plans reduces the impact of development. This plan is consistent with the policy of the General Plan, therefore, impacts are considered less than significant.

h) Less than Significant Impact– The City of Hanford is located within a zone considered by CAL FIRE to have low to no potential for wildland fires, therefore, the impact is considered less than significant.

Mitigation Measure

- **MM Hazard 1:** If hazardous materials at or above threshold reporting quantities (55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of a gas) will be kept on site during the construction phase, a Hazardous Materials Business Plan must be filed online at http://cers.calepa.ca.gov within 30 days of beginning operations. Hazardous materials are broadly defined, and include fuel, lubricants, antifreeze, motor vehicle batteries, welding gases, paints, solvents, glues, agricultural chemicals, etc. Any quantities of hazardous

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
wastes generated by the construction operation must be managed in accordance with Federal, State, and local laws and regulations. Hazardous wastes cannot be disposed of into the municipal waste stream or onsite sewage disposal system. The owner/operator must contact the Kings County Environmental Health Department at with any questions regarding proper management and reporting of hazardous wastes, such as waste oil/filters, associated with this operation. - **MM Hazard 2:** Any quantities of hazardous wastes generated by the construction operation must be managed in accordance with Federal, State, and local laws and regulations. Hazardous wastes cannot be disposed of into the municipal waste stream or onsite sewage disposal system. The owner/operator must contact our office at with any questions regarding proper management and reporting of hazardous wastes, such as waste oil/filters, associated with this operation. **Conclusion** The impact from hazards and hazardous materials are expected to be less than significant with mitigation measures to be applied for any hazardous construction materials. Source: 2017 General Plan and General Plan EIR, State of California Hazardous Waste and Substance List				
IX. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☑	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☑	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☑	☐	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☑	☐	☐
e) 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?	☐	☑	☐	☐
f) Otherwise substantially degrade water	☐	☑	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
quality?				
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☑
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☑
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☑
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☑

Environmental Setting

Climate

The City is located in the southwest portion of the Central Valley of CA and the City's climate is semi-arid. Semi-arid climates in CA tend to have precipitation patters closer to Mediterranean climates with wet winters. The Central Valley has greater temperature extremes than coastal areas because it is less affected by the moderating influence of the Pacific Ocean. Most of the rainfall in Hanford occurs in the winter months as the Gulf Stream shifts southward from northern latitudes in the wintertime. However, because of the inland location and "rainshadow effect" caused by the coastal mountain ranges, Hanford typically gets less rainfall during the winter than coastal areas to the west. The rainshadow effect refers to a reduction of precipitation commonly found on the leeward side of a mountain. Average precipitation is about 8 inches.

Surface Water Resources

Tulare Lake Basin

The City and surrounding area is located in the Central Valley's Tulare Lake Basin. This Basin covers 10.5 million acres and encompasses the drainage area of the Central Valley south of the San Joaquin River. Surface water from this basin only drains into the San Joaquin River in years of extreme rainfall. The Tulare Lake Basin is within the jurisdiction of the Central Valley Regional Water Quality Control Board.

South Valley Floor Watershed

The Study Area is located in the South Valley Floor Watershed, which is the largest watershed in the Tulare Lake Basin at about 8,235 square miles (5.3 million acres). A large portion of the surface water supply in the watershed comes from imported water, including water supplied through the San Luis Canal/CA Aqueduct System, Friant-Kern Canal, and Delta-Mendota Canal. Agriculture is the primary land use type in the watershed, encompassing approximately 67% of the total land area. Open space is secondary at 25% of the total land area and urban land uses represents about 6%.

Local

Most of the water surface features in the City and surrounding nearby areas are manmade conveyance structures for stormwater control. The only natural watercourse is Mussel Slough, remnants of which still exist on the City's western

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

edge. The People's Ditch, an irrigation canal dug in the 1870s, traverses Hanford from north to south and portions of it still exist north of Grangeville Boulevard and east of the Santa Fe Railroad. The Sand and Lone Oak sloughs once traversed the city north and south, and remnants still remain in the southern half of the City south of State Route 198. The Kings River is about 4 miles north of Hanford.

Surface Water Quality

There are no surface water bodies within the vicinity of the City that are listed as impaired per the US Environmental Protection Agency 2010 CA List of Water Quality Limited Segments.

Groundwater Resources

Regional

The City and surrounding area is located in the Tulare Lake Hydrologic Region, San Joaquin Valley Groundwater Basin, Tulare Lake Subbasin.

Local

The City exclusively uses groundwater for its potable water supply. The City's municipal water system extracts its water supply from underground aquifers via 14 active groundwater wells with depths that range from 1300 to 1700 feet below ground surface (bgs). In cooperation with the Peoples Ditch Company and the Kings County Water District, excess Kings River water and stormwater flows are conveyed to 125 acres of drainage and slough basins located throughout the City to help replenish groundwater. The basins account for approximately 568 acre-feet of available water retention and the City is planning to add approximately 317 acre feet of additional basins located along major drainage channels within the City for groundwater recharge as well as flood protection.

Groundwater Quality

Groundwater quality in the Tulare Lake Subbasin ranges from calcium bicarbonate in type in the northern portion to a sodium bicarbonate type in the lakebed. Total dissolved solids in the Subbasin typically range from 200 to 600 milligrams per liter and can be as high as 40,000 mg/L in shallow groundwater with drainage problems. the City reports electrical conductivity in 14 wells ranging from 560 micromhos per centimeter to 1,100 microhos per centimeter. There are also areas of shallow, saline groundwater in the southern portion of the Subbasin, localized areas of high arsenic and the City reports odors caused by the presence of hydrogen sulfide.

The EPA and State Water Resource Control Board have set the arsenic standard for drinking water at 0.01 parts per million and, in order to meet these standards, the City now drills wells up to 1,500 feet deep.

Floodplains

Only 48.6 acres are located within the 100-year floodplain. This accounts for 0.003% of the total area in the Planned Area of the City.

The site is not within a floodplain.

Significance Criteria

The project may result in significant impacts if it would violate any water quality standards or waste discharge requirements, substantially deplete groundwater supplies or interfere with groundwater recharge; substantially alter the existing drainage pattern of the site or substantially increase the rate of surface runoff; exceed the existing drainage system.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

Checklist Discussion

a) **Less than Significant Impact with Mitigation Measures** –

- **Construction**: potential impacts on water quality arise from erosion and sedimentation are expected to be localized and temporary during construction of new development. All new development that disturb more than one acre are required to comply with the General Permit Order No. 2012-0006-DWQ during construction. Proponents of new development would have to develop and implement a stormwater pollution prevention plan (SWPPP) that specifies best management practices (BMPs) to prevent construction pollutants from contacting stormwater, with the intent of keeping all products of erosion from moving off-site and into receiving waters; eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the United States; and inspect all BMPs.

- **Operation**: The development will be required to implement appropriate minimum control measures (MCMs) and design standards in compliance with Phase II General Permit as outlined in the Stormwater Management Plan as well as the City's grading plan and site development requirements. The development shall incorporate best management practices and adhere to design standards to maximize the reduction of pollutant loadings in that runoff to the maximum extent practical. The City Building Division and Public Works Department will review and approve grading plans and site development requirements for the new development.

b) Less than Significant Impact –The current and future efforts of the City and Kings County Water District coupled with the requirement to comply with the Sustainable groundwater management act through the Groundwater Sustainability Plan process ensures that future development as an implementation of the General Plan would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

c) See a.

d) **Less than Significant Impact with Mitigation Measures** – with the approval of grading plans and site development requirements by the City Building Division that incorporates BMPs and design standards, the new development operations would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite. Conditions of approval regarding storm water include the following:

Storm Drainage Improvements:

1. That the developer's engineer shall provide a storm drainage master plan complete with calculations for the entire subdivision for City Engineering Department review and approval prior to recording a subdivision final map for the development. Provisions shall be made to provide service for future areas of development located adjacent to the subdivision.

2. That developer shall be required to comply with State of California Water Resources Control Board requirements specifically related to the National Pollution Elimination System Permit process.

3. At the sole cost of the developer, the developer shall establish a 15' storm drain easement as shown on the Tentative Map, that extends the full depth of, and along the property line of Lots 38 and 39. The developer shall also obtain an easement with the Burlington Northern Santa Fe (BNSF) Railroad to extend said easement through the BNSF right-of-way while meeting all of BNSF regulations for piping installation under the railroad tracks. The developer shall also obtain an Encroachment Permit with the City of Hanford to further extend the storm drain piping to the Mussel Slough storm drain basin and construct an outfall structure within the storm drain basin per City Standards.

4. In the event that an easement under the Burlington Northern Santa Fe Railroad tracks is not obtainable to run the storm drainage from the development to the existing city-maintained Mussel Slough storm basin, as an alternative, the developer shall install an onsite storm basin so that all storm drainage from the

proposed development be retained in a retention drainage basin located as shown on the tentative subdivision map. The basin shall be constructed in conformance with City Standards and as follows:

a) The Developer shall install a 6' high chain link fence that includes a top rail and vinyl privacy slats per City Standard Detail GE-23. Color of privacy slats to match surrounding conditions

b) The Developer shall install a 16' wide gate entrance to basin per City Standard Detail GE-26 with vinyl privacy slats matching privacy slats in fencing.

c) The Developer shall install a 16' wide drive approach per City Standard Detail CO-41.

d) The Developer shall include a 5' landscape easement along both Saxon St. and Claridge Lane frontages.

e) The storm basin shall have a 10:1 maximum sloped drive to the bottom of the basin for maintenance purposes.

f) The developer shall install an outfall structure within the storm drain basin to City Standard Specifications.

5. In the event that the alternative storm drain basin is constructed, per resolution 19-41-R, the developer shall be eligible for a credit towards Storm Drain Impact fees per the 2019 City of Hanford Development Impact Fee Study for storage provided for this development.

e) **Less than Significant Impact with Mitigation Measures and impact fee payment** – The development is required to undergo a site development requirements approval process with the City Building Division that would include developing necessary stormwater drainage improvements to sufficiently capture and treat polluted runoff. New development would also be required to pay a stormwater system development fee. This development fee is required for all new development in order to pay the cost of capital improvements for the City of Hanford stormwater system.

f) See a.

g) No Impact. – the project site is not located within a flood zone as shown in the Flood Insurance Rate Map for Hanford (Panel 06031C 0185C, June 16, 2009) therefore there is no impact.

h) See g.

i) See g.

j) No impact – the project site is not located by the ocean. Therefore, there is no risk that new development would be inundated by tsunami. A mudflow is a flow of soil or fine-grained sediment mixed with water down a steep unstable slope. The project area is relatively flat and does not contain slopes steep enough to cause mudflow. The project would not be downgrade from aboveground water storage tanks.

Mitigation Measures:

Conclusion:

MM Hydrology 1:

<u>Storm Drainage Improvements</u>:

Storm Drainage Improvements:

1. That the developer's engineer shall provide a storm drainage master plan complete with calculations for

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

the entire subdivision for City Engineering Department review and approval prior to recording a subdivision final map for the development. Provisions shall be made to provide service for future areas of development located adjacent to the subdivision.

2. That developer shall be required to comply with State of California Water Resources Control Board requirements specifically related to the National Pollution Elimination System Permit process.

3. At the sole cost of the developer, the developer shall establish a 15' storm drain easement as shown on the Tentative Map, that extends the full depth of, and along the property line of Lots 38 and 39. The developer shall also obtain an easement with the Burlington Northern Santa Fe (BNSF) Railroad to extend said easement through the BNSF right-of-way while meeting all of BNSF regulations for piping installation under the railroad tracks. The developer shall also obtain an Encroachment Permit with the City of Hanford to further extend the storm drain piping to the Mussel Slough storm drain basin and construct an outfall structure within the storm drain basin per City Standards.

4. In the event that an easement under the Burlington Northern Santa Fe Railroad tracks is not obtainable to run the storm drainage from the development to the existing city-maintained Mussel Slough storm basin, as an alternative, the developer shall install an onsite storm basin so that all storm drainage from the proposed development be retained in a retention drainage basin located as shown on the tentative subdivision map. The basin shall be constructed in conformance with City Standards and as follows:

   g) The Developer shall install a 6' high chain link fence that includes a top rail and vinyl privacy slats per City Standard Detail GE-23. Color of privacy slats to match surrounding conditions

   h) The Developer shall install a 16' wide gate entrance to basin per City Standard Detail GE-26 with vinyl privacy slats matching privacy slats in fencing.

   i) The Developer shall install a 16' wide drive approach per City Standard Detail CO-41.

   j) The Developer shall include a 5' landscape easement along both Saxon St. and Claridge Lane frontages.

   k) The storm basin shall have a 10:1 maximum sloped drive to the bottom of the basin for maintenance purposes.

   l) The developer shall install an outfall structure within the storm drain basin to City Standard Specifications.

5. In the event that the alternative storm drain basin is constructed, per resolution 19-41-R, the developer shall be eligible for a credit towards Storm Drain Impact fees per the 2019 City of Hanford Development Impact Fee Study for storage provided for this development.

MM Hydrology 2: New development would be required to implement appropriate minimum control measures (MCMs) and design standards in compliance with Phase II General Permit, as outlined in the Stormwater Management Plan, as well as the City's grading plan and site development requirements.

MM Hydrology 3: New development must submit grading plans. Site development must comply with the requirements of the City Building Division and incorporate best management practices/design standards.

MM Hydrology 4: New development would have to incorporate best management practices and adhere to design standards to maximize the reduction of pollutant loadings in runoff to the maximum extent practical.

Less than Significant Impact with Mitigation Measures – With the incorporation of mitigation measures, the impacts to hydrology and water quality are considered less than significant.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Source: 2017 General Plan, 2017 General Plan Update, Hanford Storm Water Master Plan, State of California Department of Water Resources				
X. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?	☐	☐	☑	☐
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☑	☐	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☑

Environmental Setting
The City is predominantly surrounded by agricultural land uses and is characterized as a low rise community dominated by low-density, single-family housing along with some limited pockets of multi-family housing, low-intensity commercial uses, and several industrial areas. The City's older urban development lies north of the Union Pacific railroad tracks and south of Grangeville Boulevard, while the newly urbanized areas are north of Grangeville Boulevard. The majority of land within the City's planned area consists of agricultural, open space, and single-family residential uses.

Setting

The project is located on a vacant in-fill parcel in the City limits. The property is located north of Grangeville Boulevard, west of the AT & Santa Fe Railroad.

The property is designated as Low-Density Residential by the General Plan and zoned R-L-8 Low-Density Residential.

Significance Criteria
The project may result in significant impacts if it physically divides an established community, conflicts with existing off-site land uses, causes substantial adverse change in the types or intensity of land use patterns or conflicts with any applicable land use plan, policy or regulation.

Checklist Discussion

a) Less than significant impact – The project will not physically divide an established community. The project proposes to develop a vacant parcel. There are single-family residential properties located to the west, north, and south of the project site. The site is an infill property.

b) **Less than significant impact with mitigation** – The project is consistent with the General Plan, specifically the Low-Density Residential designation. The project proposes a gross density of 3.69 units per gross acre, which is within the allowable density range prescribed by the General Plan for the Low-Density Residential designation, which is between two and ten units per acre.

The applicant seeks a Planned Unit Development to allow deviations from the standards of the R-L-8 Low-Density Residential zone district for the single-family residential subdivision. Deviations include reduced lot

sizes from 8,000 square feet to 7,443 square feet for Lots 13-23 and 40 and reduced lot depths from 95 feet to 93 feet.

Hanford Municipal Code

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Title 17 ZONING
Chapter 17.82 PLANNED UNIT DEVELOPMENT PERMITS

17.82.060 Findings.

A. Before a planned unit development (PUD) permit can be approved, all of the following findings shall be made by the reviewing authority identified in Chapter 17.70:

1. The location and design of the PUD is in accordance with the purpose of this title;

2. The PUD is being proposed to achieve one (1) or more of the objectives identified in Section 17.82.030;

3. The location and design of the PUD and the conditions under which it would be operated or maintained will not be detrimental to the public health, safety or welfare of the community to properties or improvements in the vicinity

4. The location and design of the PUD will not generate more traffic than the streets in the vicinity can carry without congestion, and will not overload utilities;

5. That PUD's population density, site area and dimensions, site coverage, yard spaces, height of structures, distances between structures, off-street parking and off-street loading facilities, landscaped areas and street design will produce an environment of stable and desirable character consistent with the purpose of this title;

6. The combination of different dwelling types, architectural appearance, and/or varieties of land uses in the development will complement each other and will harmonize with the existing and proposed land uses in the vicinity; and

B. A PUD may be denied if the reviewing authority finds one (1) or more of the findings in this section cannot be made. (Ord. 17-04, 2017)

The applicant seeks a variance to permit a 14-foot high acoustical soundwall, where the maximum residential fence height is 7 feet.

17.84.050 Variance findings.

A. Before a variance may be approved, all of the following findings shall be made by the reviewing authority identified in Chapter 17.70:

1. There are special circumstances applicable to the property, including size, shape, topography, location or surroundings, are such that the strict application deprives such property of privileges enjoyed by other property in the vicinity that are in the same zone district;

2. The variance is necessary for the preservation and enjoyment of a substantial property right possessed by other property in the vicinity and that are in the same zone district and denied to the property for which the variance is sought;

3. The variance will not be materially detrimental to the public health, safety or welfare, or injurious to the property or improvements in the vicinity and that are in the same zone district in which the property is located;

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

4. The variance does not constitute a special privilege inconsistent with the limitations upon other properties in the vicinity and that are in the same land use district in which such property is located;

5. The variance does not allow a use or activity which is prohibited in the zone district where the property is located; and

6. The variance is consistent with the purposes of this title.

7. The variance will be consistent with the General Plan.

B. A variance may be denied if the reviewing authority finds one (1) or more of the findings in this section cannot be made. (Ord. 17-04, 2017)

c) No Impact – The City is not included in any habitat conservation plan or natural community conservation plan, nor are there plans to be involved.

Mitigation Measures:

1. That the applicant obtains discretionary approval of the planned unit development and variance, in order to allow deviations from City Standards – including minimum lot size, lot depth, and maximum fence height.

Conclusion
The project is being developed consistent with the General Plan, specifically the Land Use Element and will not have significant impacts to Land Use and Planning, with the approval of a planned unit development and variance to allow deviations to the minimum lot size and lot depth and fence/wall height.

Sources: City of Hanford General Plan (2035), City of Hanford Municipal Code (2017)

XI. 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?	☐	☐	☐	☑
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?	☐	☐	☐	☑

Environmental Setting

Oil and Gas
The planning area is not found within a Division of Oil, Gas, and Geothermal Resources recognized oil field and does not contain any areas that have been designated for mineral recovery by the Kings County General Plan.

Sand and Gravel
The only mineral resources that could occur within the vicinity of the City are sand and gravel operations for road and building construction, but there are currently no significant deposits and no active mines.

Significance Criteria

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
The project would create significant impacts to mineral resources if there was a loss of availability of a known mineral resource. **Checklist Discussion** a) No Impact – No portion of the vicinity of the City is located within the boundaries of a DOGGR-recognized oil field. There are currently no identified MRZ designated areas, no known significant sand and gravel deposits and no active mines within the vicinity of the City. b) No Impact – no portion of the City or nearby vicinity is designated for mineral resources or zoned for mineral resources. Therefore, the project would not result in the loss of availability of a locally important mineral resources recovery site delineated on a local general plan, specific plan, or other land use plan. **Conclusion** There will be no impact to mineral resources				
XII. NOISE -- Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☑	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☑	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☑	☐	☐
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 expose people residing or working in the project area to excessive noise levels?	☐	☐	☑	☐
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑
Environmental Setting Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and has been cited as being a health problem, not just in terms of actual physiological damages such as hearing impairment, but also in terms of inhibiting general wellbeing and contributing to stress and annoyance. Vehicular traffic noise is the dominant source in most				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

areas, but aircraft and rail activities are also significant sources of environmental noise in the local areas surrounding these operations. Sources of noise within the City include mobile and stationary sources.

Highways and Roadways

Existing noise levels in the City are primarily generated by transportation noise sources. Highway and roadway traffic noise levels are generally dependent upon three primary factors, which include the traffic volume, traffic speed, and percent of heavy vehicles on the roadway.

Railroad

Local railroad lines include an east-west Union Pacific Railroad (UP) line and a north-south Burlington Northern Santa Fe (BNSF) line. The east-west UP tracks are currently used by the San Joaquin Valley Railroad (SJVR), which operates two trains of approximately 5 to 10 cars per day, five days per week, at approximately 10 to 20 miles per hour. The BNSF is located in the central portion of the City in a heavy commercial/industrial area. The BNSF line carries eight Amtrak passenger trains and 18 to 22 freight trans per day. Most north-south rail traffic moves through the county at approximately 50 mph.

As of early 2014, the CA High Speed Rail Authority has been moving forward on an alignment for the HST that would run through the far easterly portion of the planning area.

Airport

Hanford Municipal Airport is a general aviation facility serving Kings County and the surrounding Communities of Hanford, Armona, and Lemoore in south-central CA. The Hanford Municipal Airport Master Plan identified existing and future year noise contours as a result of airport operations.

Stationary Noise Sources

Stationary noise sources include commercial operations, agricultural production, school playgrounds, generators, and lawn maintenance equipment.

The following operations have been identified as major stationary noise sources in and around Hanford

- Del Monte Foods
- Penny-Newman Milling Company
- Kings Waste and Recycling Authority Solid Waste Disposal Site
- Agricultural production
- Kings Speedway

Acoustical Analysis

Due to the proximity to the railroad, an acoustical analysis was requested for the project.

NOISE EXPOSURE CRITERIA

The City of Hanford Noise Element of the General Plan (adopted April 2017) does not provide any noise level standards. Therefore, WJVA consulted with City staff who provided the noise level standards from the City's 2002 General Plan. The standards provided in the 2002 General Plan are the same as those provided in the Kings County General Plan, and will be considered the applicable standards for this project.

The 2002 General Plan sets noise compatibility standards for transportation noise sources in terms of the Day-Night Average Level (Ldn). The General Plan establishes a land use compatibility criterion as 60 dB Ldn for exterior noise exposure within outdoor activity areas of residential land uses. An exterior noise exposure of up to 65 dB Ldn is allowed in instances where it is not possible to reduce noise exposure in outdoor activity areas to 60 Ldn or less using a practical application of available noise reduction measures. Outdoor activity areas generally include backyards of single-family residences, individual patios or decks of multi-family developments and common outdoor recreation areas of multi-family developments. The intent of the exterior noise level requirement is to provide an acceptable noise environment for outdoor activities and recreation.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

Additionally, the General Plan requires that interior noise levels attributable to exterior transportation noise sources not exceed 45 dB Ldn. The intent of the interior noise level standard is to provide an acceptable noise environment for indoor communication and sleep.

PROJECT SITE NOISE EXPOSURE

The double-tracked BNSF Railway main-line is located along the eastern boundary of the project site. The nearest grade crossing is located at Grangeville Boulevard, south of the project site. Train warning horns are sounded along the project frontage by southbound trains as they are approaching the Grangeville Boulevard grade crossing. The tops of the rails are approximately 3-5 feet higher than the existing project grade along most of the eastern boundary of the project site. There is an existing mini-storage facility located between the railroad and the southern half of the proposed development.

Noise level monitoring was conducted by WJVA at four (4) locations within the project site on August 13 and August 14, 2019. Site 1 was located within the northern portion of the project site, at a distance of approximately 110 feet from the centerline of the double-tracks. Site 2 was located near the northern extent of the existing mini-storage facility at a distance of approximately 155 feet from the centerline of the double-tracks, and approximately parallel with the alignment of Queens Lane. Site 3 was located near the middle of mini-storage facility (as it runs in a north-south direction), at a distance of approximately 315 feet from the centerline of the double-tracks. Site 4 was located near the southern portion of the mini-storage facility at a distance of approximately 440 feet from the centerline of the double-tracks, and approximately parallel with the alignment of Claridge Lane.

It was intended that three sites (Sites 2-4) document typical noise levels from BNSF and Amtrak train movements near a grade crossing where the warning horn must be used, and where varying distances between the project site and the railroad line result in varying levels of train nose exposure. Additionally, the existing min-storage facility provides varying levels of acoustic shielding within the project site, and Sites 2-4 were selected to document this dynamic acoustic environment. One site (Site 1) was selected to represent a location away from a grade crossing, less impacted by train warning horn noise and without any acoustic shielding from train noise exposure. The project area and railroad noise monitoring sites are shown in Figure 2.

Noise monitoring equipment consisted of Larson-Davis Laboratories Model LDL-820 sound level analyzers equipped with B&K Type 4176 1/2” microphones. This equipment complies with the specifications of the American National Standards Institute (ANSI) for Type I (Precision) sound level meters. The meters were calibrated in the field prior to use with a B&K Type 4230 acoustic calibrator to ensure the accuracy of the measurements. The microphones were placed on tripods at 5 feet above the ground.

A total of thirteen (13) train movements were monitored over the two day-day monitoring period, including three (3) passenger train and ten (10) freight trains. Table I provides the average noise levels in terms of the Lmax (maximum) and SEL metrics for each of the four monitoring sites. The SEL is a measure of the total energy of a noise event, including consideration of event duration. The SEL is not actually heard, but is a derived value used for the calculation of energy based noise exposure metrics such as the Ldn.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

TABLE I

SUMMARY OF MEASURED TRAIN NOISE LEVELS
GRANGEVILLE BOULEVARD RESIDENTIAL DEVELOPMENT, HANFORD
AUGUST 13-14, 2019

Noise Measurement Site	Average Passenger Train Noise Levels		Average Freight Train Noise Levels	
	L_{max}	SEL	L_{max}	SEL
Site 1	77.1	85.3	98.6	102.8
Site 2	69.9	79.5	89.4	96.0
Site 3	69.4	76.7	88.0	93.2
Site 4	69.7	73.8	84.3	90.0

Source: WJV Acoustics, Inc.

According to the U.S. Department of Transportation, Federal Railroad Administration Railroad Crossing Inventory, an average of 46 train movements per day occur on the BNSF Railway in the project vicinity, including 14 Amtrak train movements. Freight train operations may occur at any time during the day or night. According to the current Amtrak schedule (5/20/19), all but one passenger train passes the project site during the daytime hours (7:00 a.m.-10:00 p.m.).

Estimates of future railroad activity were not available from the BNSF Railway. Railroad noise exposure may be quantified in terms of the Ldn using the following formula:

Ldn =SEL+ 10 log Neq – 49.4

where,

SEL is the average SEL for a train pass-by, Neq is the equivalent number of pass-bys in a typical 24-hour period determined by adding 10 times the number of nighttime movements (10 p.m.-7 a.m.) to the actual number of daytime movements (7 a.m.-10 p.m.). 49.4 is a time constant equal to 10 times the log of the number of seconds in a day.

WJVA calculated the Ldn for each of the four noise monitoring sites using the measured noise levels and train data obtained from Amtrak and the Federal Railroad Administration. WJVA then applied the calculated Ldn for each site to the locations of the closest proposed residential lots to the railroad, accounting for standard rate of noise attenuation with increased distance from the noise source. Additionally, the front of Lots 1-10 and Lots 31-39 face the railroad, and the constructed homes would provide acoustical shielding to the backyards (where the exterior noise standard is applied). Whereas, lots 60-78 would have backyards that abut the railroad line, with no acoustical shielding to the backyards provided by the home structures.

The project site noise exposure described below takes into account the acoustical shielding provided by the existing mini-storage facility, as well as the acoustical shielding that would be provided by the home structures for the lots where the front faces the railroad. Noise level exposure at lots 60-77 do not take into account any acoustical shielding as they are not shielded by the existing mini-storage facility nor would the backyards be shielded by the proposed home construction. The railroad noise exposure for the proposed project is as follows:

- Lots 1-10: 56-59 dB Ldn
- Lots 31-39: 63-66 dB Ldn
- Lots 60-78: 74-76 dB Ldn

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

Noise level exposures within backyards at all lots, with the exception of lots 1-10, will exceed the City's 60 dB Ldn exterior noise level standard. **Mitigation must therefore be considered.**

NOISE MITIGATION

Exterior Noise Mitigation:

Exterior noise levels within the backyards (outdoor activity areas) of the proposed single-family residential lots would exceed the applicable City of Hanford exterior noise level standard of 60 dB Ldn at several lots, and mitigation must be considered. Additionally, noise levels for most lots would also exceed 65 dB Ldn, considered to be conditionally acceptable by the City.

Noise mitigation could be achieved by the construction of a noise barrier consisting of a sound wall, berm or a combination of the two. A complicating factor is that the BNSF rails are elevated approximately 3-5 feet above project site elevation. As project site grading plans were not known at the time of this analysis, a rail height of 4 feet above finish lot grade was assumed for the purpose of sound wall height calculations.

The effectiveness of noise barrier is determined by the geometric relationship between the noise source, barrier and receiver. Noise barriers are most effective when they are located either close to the noise source or receiver. Due to the height of the railroad noise source on the elevated railbed, the most cost-effective location for a noise barrier for this project is as close to the receiver as practical. A sound wall insertion loss program based on the FHWA Model was utilized to calculate the minimum required height of a noise barrier along the BNSF corridor. The model calculates the insertion loss (noise reduction) of a wall (or berm/wall combination) 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. It was assumed for the sound wall calculations that the effective railroad source height is 10 feet above the tracks. The standard height of a residential receiver is 5 feet above the finished floor elevation. All sound wall heights provided below are described as relative to finished lot grade elevations.

Based upon the above-described assumptions and method of analysis, the noise level insertion loss values and resulting noise levels for sound walls of various heights were calculated. Table II shows sound wall heights required to reduce noise exposure to 60 and 65 dB Ldn. According to City policy, levels up to 65 dB Ldn may be acceptable if it is determined that it is not feasible to achieve a level of 60 dB Ldn.

TABLE II

SOUND WALL HEIGHTS AND NOISE LEVELS

Lots	Height to Achieve 60 dB CNEL, Ft.	Height to Achieve 65 dB CNEL, Ft.
1-10	---[1]	---[1]
31-39	14	8
61-78	Not feasible	14

[1]Sound wall not required to meet noise level standard

Source: WJV Acoustics, Inc.

From Table II it is apparent that reducing exterior noise exposure within the backyards of lots 61-78 to 60 dB Ldn or less is not feasible, and a sound wall constructed to a minimum height of 14 feet above final backyard lot grade elevation would be required to reduce noise levels to below 65 dB Ldn. A sound wall constructed to a minimum height of 14 feet above final backyard lot grade elevation would be required to reduce exterior noise levels to below 60 dB Ldn at lots

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

31-39. The calculations and wall heights described in Table II assume the sound wall would be located as close to the railroad as possible, along the project site's eastern boundary.

The above described noise barrier would be less effective at the second-floor level and the resulting noise exposure would be greater than 65 dB Ldn and second floor outdoor activity areas such as decks should not be included in the final project design for lots 61-78.

It should be noted, Lots 1-10 are acoustically shielded by the existing mini-storage facility. The acoustic shielding provides sufficient noise level reduction to comply with the City's exterior 60 dB Ldn exterior noise level standard. As described in Table II, a sound wall is not required for Lots 1-10. If the mini-storage facility were to demolished at a future date, noise levels within these lots would exceed 60 dB Ldn noise level standard.

Interior Noise Exposure:

The City of Hanford interior noise level standard is 45 dB Ldn. With the above-described sound wall in place, the worst-case noise exposure within the proposed residential development would be approximately 65 dB Ldn at first-floor receiver locations. This means that the proposed residential construction must be capable of providing a minimum outdoor-to-indoor noise level reduction (NLR) of approximately 20 dB (65-45=20) at first floor receiver locations.

According to the project applicant, two-story construction is not currently being proposed for the project. However, if two-story construction were to be proposed along the first row of lots adjacent to the railroad line, second-story façade exposure could be as high as 78 dB Ldn (depending on proposed construction setback distance(s) from the railroad and site-specific acoustical shielding). This means that the proposed residential construction (if two-story construction were to be proposed) must be capable of providing a minimum outdoor-to-indoor noise level reduction (NLR) of approximately 33 dB (78-45=33) at second floor receiver locations.

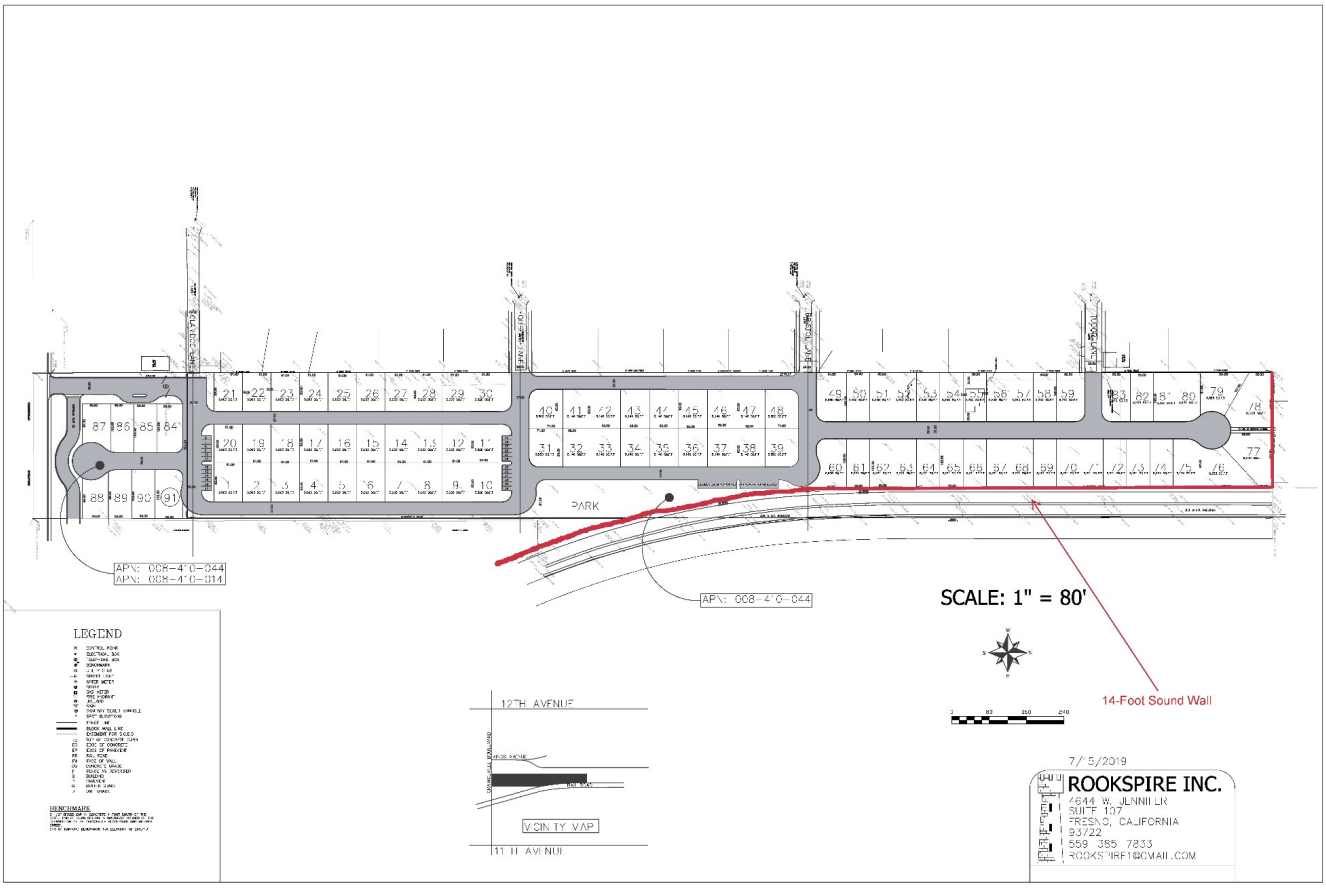
A specific analysis of interior noise levels was not performed. However, it may be assumed that residential construction methods complying with current building code requirements will reduce exterior noise levels by approximately 25 dB if windows and doors are closed. This will be sufficient for compliance with the City's 45 dB Ldn interior standard at first-floor receivers along the railroad frontage, provided the above-described sound wall is constructed. Requiring that it be possible for windows and doors to remain closed for sound insulation means that air conditioning or mechanical ventilation will be required. According to the project applicant, the proposed residential construction will consist of single-story homes. However, if two-story homes are proposed, a detailed acoustical analysis will be required once specific construction plans are known, to ensure compliance with the City's 45 dB Ldn interior noise level standard.

CONCLUSIONS AND RECOMMENDATIONS

Exterior Noise Compliance:

It is not feasible to construct a sound wall that could effectively mitigate exterior noise level exposure to 60 dB Ldn or less within all the lots for the proposed 83-lot residential development along Grangeville Boulevard. The construction of 14-foot sound wall along the project railroad frontage (as well as the rear of Lots 77 and 78) would reduce exterior noise levels to below 65 dB Ldn at Lots 60-78 and to below 60 dB Ldn for Lots 31-39. The sound wall location is provided on Figure 1.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact



The subdivision map has changed, however the 14-foot sound wall will still be required in the location shown.

Interior Noise Compliance:

The proposed residential development will comply with applicable City of Hanford interior noise level requirements at all first-floor receiver locations provided the following mitigation measures are incorporated into final project design.

1. The above-described 14-foot sound wall is incorporated into final project design.

2. Mechanical ventilation or air conditioning must be provided for all homes so that windows and doors can remain closed for sound insulation purposes.

According to the project applicant, the proposed project will consist of single-story residential construction. The above-described sound wall would not provide acoustical shielding to potential second floor receivers along the railroad line frontage.

If two-story construction is proposed, construction details should be reviewed by an acoustical consultant once project specific construction details are known.

The conclusions and recommendations of this acoustical analysis are based upon the best information known to WJV Acoustics Inc. (WJVA) at the time the analysis was prepared concerning the proposed lot layout plan, project site elevation, traffic volumes and roadway configurations. Any significant changes in these factors will require a reevaluation of the findings of this report. Additionally, any significant future changes in motor vehicle technology, noise regulations or other factors beyond WJVA's control may result in long-term noise results different from those described

by this analysis.

The full report is attached.

Significance Criteria

Impacts from the project would be considered significant if they would result in significant noise or exposure of persons to or generation of noise levels in excess of standards established in the Hanford General Plan.

Checklist Discussion

a) **Less than Significant with Mitigation Incorporation** – the project has the potential to expose persons to noise levels in excess of the noise standards established in the local general plan/noise ordinance. Mitigation is required in order to reduce interior noise level

The proposed residential development will comply with applicable City of Hanford interior and exterior noise level requirements at all first-floor receiver locations provided the following mitigation measures are incorporated into final project design.

1. That a 14-foot sound wall is incorporated into final project design.

2. Mechanical ventilation or air conditioning must be provided for all homes so that windows and doors can remain closed for sound insulation purposes.

3. All residences be limited to single-story structures.

Short-term noise-related impacts would be temporary in nature, require compliance with applicable regulations, and policies of the General Plan further ensure that construction-related impacts would be attenuated to the greatest extend feasible.

b) **Less than Significant with Mitigation Incorporation**. – Ambient vibration levels in residential areas are typically 50 VdB, which is well below human perception. The operation of heating/air conditioning systems and slamming of doors produce typical indoor vibrations that are noticeable to humans. Construction activity can result in ground vibration, depending upon the types of equipment uses. Operation of construction equipment causes ground vibrations which spread through the ground and diminish in strength with distance from the source generating the vibration. Ground vibrations as a result of construction activities very rarely reach vibration levels that would damage structures, but can cause low rumbling sounds and feelable vibrations for buildings very close to the site. Vibration levels from various types of construction equipment measured at 50 ft. are as follows:

Type of equipment	Sound Levels Measured (dBA of 50 ft)
Pumps	77
Dozers	85
Tractor	84
Front-End Loaders	80
Hydraulic Backhoe	80
Hydraulic Excavators	85
Graders	85
Air Compressors	80
Trucks	84

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

Construction activities would be temporary in nature and are expected to occur during normal daytime working hours. Construction is limited to the hours of 7 a.m. to 10 p.m. in order to mitigate impacts from ground vibration.

c) Less than Significant – full build out of the General Plan would possibly result in a maximum increase of 2 decibels when compared to existing conditions. According to the Caltrans Technical Noise Supplement, the average healthy ear can barely perceive noise level changes of 3 dBA. As a result, it is anticipated that full buildout of the General Plan, including development of this site, would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels exiting without the project.

d) **Less than Significant with Mitigation Incorporation** - A temporary increase in ambient noise would occur in association with construction activities. Construction noise is short term and will occur for limited times. As a mitigation measure, construction would be limited to the hours of 7 a.m. to 10 p.m.

e) Less than Significant Impact - The project is approximately 3.3 miles away from airport and will not be impacted by the public airport.

f) No Impact - The project is not located within the vicinity of a private airstrip, there is no impact.

Conclusion

The project would create temporary construction noise, but the impact of noise will be mitigated to a point that is considered less than significant with required conditions of the development of the property.

The project's proximity to the rail creates potential noise impacts that can be mitigated to a less than significant level with the incorporation of the following mitigation measures:

1. That a 14-foot sound wall is incorporated into final project design.
2. Mechanical ventilation or air conditioning must be provided for all homes so that windows and doors can remain closed for sound insulation purposes.
3. All residences within the subdivision be limited to single-story structures.

Mitigation Measures:

MM Noise 1: Comply with applicable regulations and policies of the General Plan to ensure that construction-related impacts would be attenuated to the greatest extend feasible.

MM Noise 2: Construction is limited to the hours of 7 a.m. to 10 p.m

MM Noise 3: That a 14-foot sound wall is incorporated into final project design.

MM Noise 4: Mechanical ventilation or air conditioning must be provided for all homes so that windows and doors can remain closed for sound insulation purposes.

MM Noise 5: All residences within the subdivision be limited to single-story structures.

Source: 2017 General Plan Update, 2017 General Plan Update EIR; Acoustical Analysis prepared by WJV Acoustics, Inc (Visalia, September 2019)

XIII. POPULATION AND HOUSING -- Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of	☐	☐	☑	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
roads or other infrastructure)?				
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

Environmental Setting

Population

The estimated population on July 1, 2019, was 57,703, according to the United States Census Bureau. It is estimated that the General Plan Update could result in a population increase of 44,786 people in 2035 for an estimated total population of 102,489.

Housing

In 2013, there were 17,867 housing units in the Study Area. It is estimated that the implementation of the General Plan could result in 15,633 additional housing units in 2035 for an estimated total number of 33,520 housing units.

Employment

In 2014, there were 20,900 jobs in the planning area. It is estimated that the implementation of the General Plan could result in 33,308 additional jobs in 2035 for an estimated total number of 54,208 jobs.

Jobs-Housing Balance

Jobs-housing balance is achieved by increasing opportunities of people to work and live in close proximity. The ratio is expressed as the number of jobs divided by the number of housing units. SCAG uses the jobs-housing balance as a general tool for analyzing where people work, where they live, and how effectively they can travel between the two. In the planning area, the existing jobs-housing balance ratio in 2013-2014 was 1.17. It is estimated that the implementation of the General Plan would increase the jobs-housing balance by 0.45 to 1.62, which would make the planning area a jobs rich area.

Significance Criteria

The project may result in significant impact if it induces substantial growth, displaces a large number of people, or contributes to a job housing imbalance.

Checklist Discussion

a) Less than significant impact – The project will induce population growth in the area by proposing 55 residential dwellings, which using the average household size, 3.17 persons per unit, yields 174 persons. This project is consistent with the density allowed in the General Plan, which planned for population growth. This project is considered an implementation of the General Plan, for which a Statement of Overriding Considerations was adopted, due to substantial population growth. The project is also considered an implementation of the Housing Element, which calls for more single-family residential opportunities.

b) No Impact - The project will not result in displacement of housing. The project site is vacant and will not remove residences.

c) No Impact - The project will not result in displacement of people – the project site is vacant.

Conclusion

Less than significant impact - The project will not result in a significant impact to population and housing.

Source: 2017 General Plan Update, 2017 General Plan Update EIR; City of Hanford Housing Element

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES --				
a) Would the project 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?	☐	☑	☐	☐
Police protection?	☐	☑	☐	☐
Schools?	☐	☑	☐	☐
Parks?	☐	☑	☐	☐
Other public facilities?	☐	☐	☑	☐

Environmental Setting

The City of Hanford currently has two fire stations located within the north central and south central portions of the Study Area. These two stations protect approximately 16.5 square miles, Station 1 is located at 350 W. Grangeville Blvd and covers the city limits north of SR 198 and station 2 is located at 10533 Houston Avenue and covers the city limits south of SR 198. In addition, two properties have been purchase for future fire stations. The City currently owns sites at Centennial Drive and Berkshire Lane and 12th Avenue and Woodland Drive, which have been planned for future fire stations. The Hanford Fire Department provides fires, rescue, hazardous materials response, and serves as a first responder for emergency medical service calls in the City. the HFD is also capable of responding to other situations such as high and low angle rescues, confined space emergencies, vehicle accidents, public assists, state-wide mutual aid responses and disaster management.

Police Protection

City residents receive police protection services from the Hanford Police Department, which currently operates out of a single station located at 425 N. Irwin Street. The City's recent growing problem that requires the need of police services includes gag and drug issues. The HPD's actual average response times are 6:30 minutes for Priority I incidents with an average of 32 Priority I incidents per day and a response time of 17:19 minutes for all other incidents with an average of 144 incidents per day. However, a response time of less than 2:30 minutes is a goal for the HPD to maintain in the future.

Schools

The Hanford Elementary School District consists of 11 elementary and junior high schools that are all located in the study area.

Pioneer Union Elementary School District consists of two elementary schools and one junior high school that are all located in the study area.

The Hanford Joint Union High School District consists of four comprehensive high schools.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

Parks

See Environmental Setting for Recreation.

Other Public Services

Library Services

The current library is a branch of the Kings County Library.

Consultation Received: Consultation was received from Renee Creech with the Hanford Joint Union High School District on May 7, 2020, stating the following, "This development is going in an area that is in our most impacted school, Sierra Pacific. This is in addition to other new developments already slated in the same area causing the District great concern in how to house students."

Staff Analysis: The City's role in development and managing school sites and programs is limited. The various school districts truly govern where a new school site would be located and when it would be necessary to construct or expand facilities in order to adequately accommodate population growth. Elected governing school boards are responsible for budgeting and decision-making and the State Department of Education establishes school site and construction standards. The General Plan provides policy which focus on collaboration with school districts in determining new school locations and utilizing school facilities for general public needs. School districts would be able to utilize the General Plan along with other plans, standards, and codes to establish new school sites and to make decisions on school amenities and cohesiveness with the surrounding area. The development will be subject to School Impact fees in order to mitigate the effect of the project on schools.

Significance Criteria

The project may result in significant public service impacts if it substantially and adversely alters the delivery or provision of fire protection, police protection, schools, facilitates maintenance and other government services.

Checklist Discussion

a) (**FIRE) Less than Significant Impact with Mitigation Measures (Payment of Impact Fees)** – the increase in population as a result of a physical project for the area will increase demands on the HFD to provide fire protection and emergency services. The development will be subject to Fire Impact fees in order to mitigate the effect of the project on Fire services.

b) **(POLICE) Less than Significant Impact with Mitigation Measures (Payment of Impact Fees)** – the increase in population as a result of a physical project for the area will increase demands on the HPD to provide law enforcement services. The development will be subject to Police Impact fees in order to mitigate the effect of the project on Police services.

c) (**SCHOOLS) Less than Significant Impact with Mitigation Measures (Payment of Impact Fees)** - The City's role in development and managing school sites and programs is limited. The various school districts truly govern where a new school site would be located and when it would be necessary to construct or expand facilities in order to adequately accommodate population growth. Elected governing school boards are responsible for budgeting and decision-making and the State Department of Education establishes school site and construction standards. The General Plan provides policy which focus on collaboration with school districts in determining new school locations and utilizing school facilities for general public needs. School districts would be able to utilize the General Plan along with other plans, standards, and codes to establish new school sites and to make decisions on school amenities and cohesiveness with the surrounding area. The development will be subject to School Impact fees in order to mitigate the effect of the project on schools.

d) **(PARKS) Less than Significant Impact with Mitigation Measures –** See Recreation. The development is subject to a park development mitigation impact fee as required by City Municipal Code Section 15.44 and any revisions thereof.

e) (OTHER) Less than significant impact – Libraries – there is not a requirement or standard for the number or size of a library based on a city's population. Policies encourage residents to utilize the library's resources.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Therefore, a significant impact is not anticipated. **Mitigation Measures:** **MM Public Services 1:** That the development of the project will be subject to Fire Impact Fees. **MM Public Services 2:** That the development of the project will be subject to Police Impact fees. **MM Public Services 3:** That the development of the project will be subject to School Impact Fees. **MM Public Services 4:** That the development of the project will be subject to Park impact fees. **Conclusion** The project can be served by existing public services. Impact fees will be required of development. Sources: 2017 General Plan and General Plan Update				
XV. RECREATION --				
a) Would the project 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?	☐	☑	☐	☐
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?	☐	☑	☐	☐
Environmental Setting **School Parks** All school sites have limited public access since their primary purpose is to support the educational mission of the school districts that control their use. There are 16 school sites within the City. The school facilities include athletic fields, conference rooms, gymnasiums, auditoriums, and swimming pools, which are open to the public after hours, during the summer, and on weekends for recreational use. **Indoor facilities** The Hanford Parks and Recreation Department also provides a wide array of programs for City residents. The Recreation Department is responsible for coordinating activities for the entire family including special classes, youth programs, and older adult activities, sports for youth and adults, as well as community events. These activities are conducted in a variety of indoor rec. facilities. **City of Hanford Parkland Standard** Combining the City's 188 acres of parkland and 100 acres of school parks, the City has a total of 288 acres of developed parkland that go toward meeting the parkland standard. This does not include regional parks outside the planning area, greenways, private parks, or indoor recreation facilities. Based on the 2013 estimated population of 55,860 for the City of Hanford, the Study Area has approximately 5.2 acres of parkland for every 1,000 residents in the City. **Significance Criteria** The project may create impacts if it creates demand for new expanded parks and recreation facilities or substantially				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

alters existing facilities.

Checklist Criteria

a) Less than Significant Impact with Mitigation Measures – The City would be able to utilize the Quimby Act and AB 1600 as a funding mechanism for parkland acquisition along with the General Plan Update and Park Master Plan for guidance and priorities. As permitted in the Quimby Act, local jurisdictions can require the dedication of land for parks and or the payment of in-lieu fees for purchase of parkland. The General Plan requires a ratio of 3.5 acres of park space per 1,000 residents. By multiplying the number of units proposed (55) by the average number of persons per household (3.11), the project could house approximately 174 residents, which yields a requirement of approximately 26,528 sq. ft. (0.609 acres) of park space. The applicant would be subject to park impact fees.

MM Recreation 1: That the development of the project will be subject to Park impact fees.

b) Less than Significant Impact with Mitigation Measures- the project does not require the development of a park, based on the park space calculations provided in the General Plan, however, the development will require the payment of park impact fees, to off-set the development's impact on neighboring and regional parks.

MM Recreation 1: That the development of the project will be subject to Park impact fees.

Mitigation Measures

MM Recreation 1: That the development of the project will be subject to Park impact fees.

Conclusion: The project would have a less than significant impact on recreation with the incorporation of mitigation measures, including the payment of park impact fees.

Source: 2017 General Plan, 2017 General Plan EIR

XVI. TRANSPORTATION/TRAFFIC -- Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☑	☐	☐
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☑	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☑	☐
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☑	☐
e) Result in inadequate emergency access?	☐	☐	☑	☐

Environmental Setting

Existing Functional Roadway Classification System

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

State Freeways and Highways
There are two State Facilities serving the Study Area, namely SR-198 and -43.

Arterial Roads
Hanford's arterial street pattern is generally one-mile spacing between the existing arterials.

Grangeville Boulevard is located south of the project site.

Collector Streets
Similar to some arterials, collector streets have evolved from heavy use as opposed to formal development standards.

Local Streets
Local street provide access to individual homes and businesses. Local streets have on lane in each direction. Local streets connect single-family homes and other uses not appropriate adjacent to major roadways, to the arterial-collector network.

Existing Intersections
All of the study intersections are operating at acceptable levels of LOS.

Existing Roadway Segments
Results of the analysis of existing roadway segments show that all of the study roadway segments are currently operating at acceptable LOS.

Bicycle Facilities
The 2011 Kings County Regional Bicycle Plan contains the specific "Bicycle Plan for the City of Hanford." The General Plan and the Bicycle Plan promote the establishment of a shared use roadway system, but encourages newly developing areas to provide for bicycle facilities along major roadways and off-road systems as part of open space and recreation amenities. The 2011 Regional Bicycle Master Plan then goes on to state Policy CI 8.4 of the 2002 General Plan: Bicycle lanes should be established where feasible along Major and Minor Collectors in newly developing areas. A bicycle route system should be identified which serves the existing developed City. This route system may not utilize Arterials or Collectors where travel ways are constrained, but rather parallel streets with less traffic. Where bicycle lanes are proposed they should be considered a shared facility with vehicular traffic on the street.

Mass Transit

Kings Area Rural Transit
Kings County Area Public Transit Agency (KCAPTA) is an intra-governmental agency with representatives from Avenal, Kings County, Hanford and Lemoore, and is responsible for the operation of the Kings Area Rural Transit (KART). KART offers scheduled daily bus service from Hanford to Armona, Lemoore, the Lemoore Naval Air Station, Visalia, Corcoran, Stratford, Kettleman City, and Avenal.

KART Dial-A-Ride Service
Dial-A-Ride is an origin-to-destination service available to eligible residents of Hanford, Lemoore, Armona and Avenal.

Park-and-Ride lots
Park-and-Ride lots provide a meeting place where drivers can safely park and join carpools or vanpools or utilize existing public transit. Park-and-Ride lots are generally located near community entrances, near major highways or local arterial where conveniently scheduled transit service is provided. Hanford has one Park-and-Ride facility located at the northeastern entrance of the City at 10th Avenue and SR 43.

KART-Vanpool Program
KART defines vanpooling as 7 to 15 persons who commute together in a van-type vehicle and who share the operating expenses. The KART Vanpool Program provides passengers with reliable transportation to and from work. The vanpool

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

program is not only to provide safe travel to work but to provide alternative transportation options, which would ultimately reduce the amount of vehicles on the road.

Rail Service

Amtrak Passenger Service
Amtrak provides passenger rail service from Hanford station to the San Francisco Bay Area and Sacramento, and service to Southern CA by a combination of rail and bus. Freight service is available from both the BNSF Railway and the San Joaquin Valley Railroad. The Amtrak San Joaquin passenger train provides regularly scheduled intercity passenger rail service to Kings County. Stops are made daily at the Hanford and Corcoran stations for each northbound and southbound trains. Stops along the San Joaquin line also include Bakersfield, Wasco, Fresno, Madera, Merced, Turlock, Modesto, Stockton, Antioch, Martinez, Richmond, Emeryville, and Oakland, with connecting bus service to LA, Sacramento, SF, and many other points in Northern and Southern CA. Passengers can transfer to Amtrak Coast Starlight, which continues north to Portland and Seattle.

High Speed Rail
In November 2008, Proposition 1A, a High Speed Rail bond, was passed by California voters. In 2009, the US Department of Transportation through the American Recovery and Reinvestment Act program, announced the allocation of $8 billion to high speed rail projects throughout the US. Of that amount, $2.24 billion was allocated to California High Speed Rail. In November 2013, the California High Speed Rail Commission identified the preferred route through the Planning Area. The selected route, which runs along the eastern edge of Hanford, roughly follows a north-south route near the hgi voltage power lines between 7th and 8th Avenues.

Freight Service
Almost 87% of the total freight tonnage is moved out of the Valley by truck, while rail account for 11%. BNSF and SJVR railroads provide freight service to the Hanford Area. The BNSF mainline is double-tracked through the entire Planning Area. Over time, it is expected that the number of trains using the system will increase as demand for rail service increases. The BNSF railroad currently operates between 50 and 60 trains per day on the system.

Pro-Rate Fair Share of Future Transportation Improvements

For those improvements not presently covered by local and regional roadway impact fee programs or grant funding, any future development resulting from the Project's approval shall contribute its equitable, fair share towards future transportation improvements. Payment of the Project's equitable, fair share in addition to the local and regional impact fee programs would satisfy the Project's traffic recommendations and will be applied to development on the Project site. The proposed Project will impact the existing transportation systems and will have an impact on the existing plans, ordinances, or policies related to the effectiveness or performance of the circulation system. However, the Project will comply with all applicable City development standards to reduce such impacts to less than significant.

VMT

The City of Hanford adopted VMT Thresholds and Implementation Guidelines which provide details on appropriate "screening thresholds" that can be used to identify when a proposed land use project is anticipated to result in a less-than-significant impact without conducting a more detailed VMT analysis. Screening thresholds include:

1. Projects within .5 mile of a Transit Priority Area of High-Quality Transit Area
2. Locally serving retail projects up to 55,000 square feet
3. Residential, office, or mixed-use projects within low-VMT generating areas
4. 100 percent affordable housing projects
5. Project consistent with the City's General Plan, which generate less than 1,000 average daily trips.
6. Projects inconsistent with the City's General Plan, which generate less than 500 average daily trips.

A land use project need only meet one of the above screening thresholds to result in a less than significant impact.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

Traffic Study

The City of Hanford Public Works Department, Engineering Division requested a focused traffic study be prepared for the project.

As requested, a Focused Traffic Impact Analysis Report was prepared by JLB Traffic Engineering, Inc. for the proposed project. The full traffic study is **attached** to this report.

Due to changes in the project, an updated Focused TIA was requested and prepared. The amended TIA is included as an attachment.

Traffic Engineering, Inc. (JLB) has prepared this Addendum Letter to the Revised Traffic Impact Analysis (TIA) Report for Liberty Pointe (Project) located north of Grangeville Boulevard and west of BN&SF railroad in the City of Hanford. The Revised Liberty Pointe TIA, dated June 30, 2021, was previously completed based on the traffic operations of the Original Project Site Plan which included 76 single-family residential dwelling units. The Updated Project Site Plan has decreased the number of single-family residential dwelling units to 55 and eliminated access to Kings Road via Bristol Lane. As a
result, the trip generation and project only trips are different than what was previously analyzed. This addendum letter has been prepared at the request of the City of Hanford to analyze the difference in traffic generation and operations between the Original Project Site Plan and the Updated Project Site Plan.

Project Description
The Original Project Site Plan proposed to develop approximately 8.72 acres with 76 single family residential units located north of Grangeville Boulevard and west of BN&SF railroad in the City of Hanford. The Updated Project Site Plan proposes to develop 55 single family residential units on approximately 8.72 acres. The Updated Project Site Plan also eliminated access to Kings Road via Bristol Lane. The Update Project Site Plan can be found in Exhibit A of the TIA.

Original Project Trip Generation
The trip generation rates for the Original Project Site Plan were obtained from the Revised Liberty Pointe TIA dated June 30, 2021. Table I presents the total trip generation for the Original Project Site Plan with trip generation rates for single-family detached housing (210). Per the Revised Liberty Pointe TIA, the Original Project Site Plan was estimated to generate approximately 717 daily, 56 AM peak hour and 75 PM peak hour driveway trips.

Table I: Original Project Trip Generation

Land Use (ITE Code)	Size	Unit	Daily		AM (7-9) Peak Hour						PM (4-6) Peak Hour					
			Rate	Total	Trip Rate	In %	Out %	In	Out	Total	Trip Rate	In %	Out %	In	Out	Total
Single-Family Detached Housing (210)	76	d.u.	9.44	717	0.74	25	75	14	42	56	0.99	63	37	47	28	75
Total Project Driveway Trips				**717**				**14**	**42**	**56**				**47**	**28**	**75**

Note: d.u. = dwelling units

Updated Project Trip Generation
The trip generation rates for the Updated Project Site Plan were obtained from the 11th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table I presents the total trip generation for the updated Project Site Plan with trip generation rates for single-family detached housing (210). Per the ITE, the Updated Project Site Plan is estimated to generate approximately 519 daily, 39 AM peak hour and 52 PM peak hour driveway trips.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

Table II: Updated Project Trip Generation

Land Use (ITE Code)	Size	Unit	Daily		AM (7-9) Peak Hour						PM (4-6) Peak Hour					
			Rate	Total	Trip Rate	In %	Out %	In	Out	Total	Trip Rate	In %	Out %	In	Out	Total
Single-Family Detached Housing (210)	55	d.u.	9.43	519	0.70	26	74	10	29	39	0.94	63	37	33	19	52
Total Project Driveway Trips				**519**				**10**	**29**	**39**				**33**	**19**	**52**

Note: d.u. = dwelling units

Difference in Trip Generation

Compared to the Revised Liberty Pointe TIA, dated June 30, 2021, the Updated Project Site Plan is estimated to yield a lower trip generation by 198 daily trips, 17 AM peak hour trips and 23 PM peak hour trips. The difference in trip generation between the Updated Project Site Plan and the Original Project Site Plan analyzed in the Revised Liberty Pointe TIA is summarized in Table III.

Table III: Difference in Trip Generation

Land Use (ITE Code)	Daily	AM (7-9) Peak Hour			PM (4-6) Peak Hour		
	Total	In	Out	Total	In	Out	Total
Original Project Site	717	14	42	56	47	28	75
Updated Project Site	519	10	29	39	33	19	52
Total Project Driveway Trips	**198**	**4**	**13**	**17**	**14**	**9**	**23**

Project Trip Distribution

The trip distribution assumptions are based on the same patterns as previously analyzed. The previously analyzed trip distribution assumptions were developed based on existing travel patterns, the existing roadway network, engineering judgment, data provided by the developer, knowledge of the study area, existing residential and commercial densities, and the City of Hanford 2035 General Plan Circulation Element in the vicinity of the Project site. The elimination of access to Kings Road via Bristol Lane does not change the trip distribution to the study intersections. The daily trips on segments of Kings Road were altered, but no segment of Kings Road is projected to receive more traffic than previously analyzed. In fact, daily and peak hour volumes to the study facilities will be decreased when compared to the previously analyzed project. The Updated Project Only Trips can be found in Exhibit B.

Conclusions

The Original Project Site Plan resulted in less than significant traffic impacts in the Revised Liberty Pointe TIA dated June 30, 2021. The Updated Project Site Plan contains fewer dwelling units and no access to Kings Road via Bristol Lane. Access to Kings Road via Bristol Lane does not change the trip distribution to the study intersections. When compared to the Original Project Site Plan, the Updated Project Site Plan is estimated to yield a lower trip generation by approximately 198 daily, 17 AM peak hour and 23 PM peak hour driveway trips. As a result, the Original Project Site Plan analyzed in the Revised Liberty Pointe TIA can be considered a worst-case scenario, and thus, there is no need to redo the LOS analysis of the TIA.

June 21, 2021 TIA

Introduction

This Report describes a Focused Traffic Impact Analysis (TIA) prepared by JLB Traffic Engineering, Inc. (JLB) for proposed Liberty Pointe (Project) located on the northeast quadrant of 12th Avenue and Grangeville Boulevard in the

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

City of Hanford. The Project proposes to develop an approximately 8.72-acre site on the northeast quadrant of 12th Avenue and Grangeville Boulevard just west of the BNSF railroad with up to 76 single-family residential units for an overall density of 8.72 units per acre. Based on information provided to JLB, the Project is consistent with the City of Hanford's General Plan. Figure 1 shows the location of the proposed Project site relative to the surrounding roadway network.

The purpose of this TIA is to evaluate the potential on-site and off-site traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures and identify any critical traffic issues that should be addressed in the on-going planning process. The Scope of Work was prepared via consultation with the City of Hanford and County of Kings staff.

Summary
The potential traffic impacts of the proposed Project were evaluated in accordance with the standards set forth by the Level of Service (LOS) policy of the City of Hanford.

Existing Baseline 2020 Traffic Conditions
• At present, the intersection operates at an acceptable LOS during both peak periods.
• Under this scenario, the study segments operate at an acceptable LOS.

Existing Baseline 2020 plus Project Traffic Conditions
• JLB analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. A review of the Project access points to be constructed indicates that they are located at points that minimize traffic operational impacts to the existing roadway network.
• At build-out, the Project is estimated to generate a maximum of 717 daily trips, 56 AM peak hour trips and 75 PM peak hour trips.
• Under this scenario, the intersection is projected to operate at an acceptable LOS during both peak periods.
• Under this scenario, the study segments are projected to operate at an acceptable LOS.
Near Term plus Project Traffic Conditions
• The total trip generation for the Near Term Projects is 3,956 daily trips, 310 AM peak hour trips and 416 PM peak hour trips.
• Under this scenario, the intersection is projected to operate at an acceptable LOS during both peak periods.
• Under this scenario, the study segments are projected to operate at an acceptable LOS.

Cumulative Year 2040 plus Project Traffic Conditions
• Under this scenario, the intersection is projected to operate at an acceptable LOS during both peak periods.
• Under this scenario, the study segments are projected to operate at an acceptable LOS.
Queuing Analysis
• It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

The June 21, 2021 TIA is attached to this report.

Staff Analysis: The City of Hanford Engineering staff conditioned the project, accordingly.

Consultation Received:

Pre- Consultation was received from Kings County Public Works Department, stating the following:

In the case that Kings Road, Tudor Lane, etc. does not annex to the City of Hanford, Kings County Public Works would recommend that Kings Road, Tudor Lane, Bristol Lane, Queens Lane and Claridge Lane be reconstructed to accommodate the increased traffic volumes. Conversely, a discussion over maintenance responsibility between Kings County and The City of Hanford, for all roads serving the new development shall be entered.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

Staff Analysis: The comment provided was received prior to the City's annexation of the county island into the City limits. The City of Hanford is responsible for maintenance within the former County island.

Pre-Consultation was received from Caltrans on September 29, 2023 indicating no comments:

Thank you for the opportunity to review Tentative Tract 930, PUD 2020-01 and VAR 2021-01, we have no comments on the application. The project does not propose any land use changes other than minor deviations from the current residential standards for the project site, the project is anticipated to have minimal impacts to the local State Highway System (SHS) facilities.

This project was previously reviewed with our minor comments recommending the implementation of vehicle miles traveled (VMT) mitigation strategies. We continue to encourage projects implement VMT mitigation strategies where feasible, which include non-motorized facilities and coordinating public transit services for projects. We also encourage the City consider creating a VMT mitigation impact fee program to minimize impacts to local roads and SHS facilities.

Analysis: Caltrans indicated no comments; the comments pertaining to VMT are general and the City of Hanford is considering VMT mitigation strategies Citywide. This particular project has a less than significant VMT impact.

Significance Criteria

The project may result in significant transportation/circulation impact if it does the following:

1. Cause an increase in traffic which is substantial in relation to the existing traffic loads and capacity of the road system that are inconsistent with adopted standards.
2. Creates traffic conditions which expose people to traffic hazards.
3. Substantially interferes or prevents emergency access to the site or surrounding properties.
4. Conflicts with adopted policies or plans for alternative transportation.

Checklist Discussion

a) **Less than Significant Impact with Mitigation Measures (payment of Traffic Impact Fees) –** Traffic improvements in the area will result in a LOS D or above in year 2035, with the proposed future develop of the project site and surrounding planned projects. The circulation pattern in the vicinity has been designed to accommodate future build out in the area in accordance with the Circulation Element. The project will have a less than significant cumulative impact on traffic and circulation conditions through appropriate project design and payment of traffic impact fees, as required. Conditions of the subdivision include:

Street Improvements:

1. That all improvements consisting of sanitary sewers, storm sewers, water mains, concrete curbs and gutters per City Standard Detail CO-11, parkstrip sidewalks per City Standard Detail CO-14, streetlights per City Standard Detail GE-56, landscaping, street sub-grading, surfacing and striping and all other improvements shall be installed in accordance with Chapter 16.24, "Improvements", of the Hanford Municipal Code and this resolution pertaining to subdivision improvements in effect at the time of filing the tentative subdivision map.
2. All power poles, utility poles, water wells and all other existing utilities in conflict with development shall be removed, relocated or abandoned.
3. Developer shall install a timber barricade at the east end of existing Bristol Lane where the roadway ends at Lots 17 and 18, and at the east end of the future extension of Claridge Lane per City Standard Detail GE-59.
4. A geotechnical report shall be submitted to the City Engineer identifying the existing structural section thickness of all residential roadways concurrent with the submittal of development improvement plans. Reconstruction of existing streets (or another form of mitigation as approved by the City Engineer) will be

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

required if the existing street structural section does not conform to City Standards and Specifications.

5. All streets within the subdivision shall be developed to residential street standard ST-32, except the following:

- The portion of Claridge Lane extended to within the development shall be constructed as a modified ST-32 as approved on the Tentative Map.
- Traffic index used for the design of street structural section shall be a minimum of 5.0.

i. With an 18' travel lane as measured between centerline of road and face of curb, the north half of Claridge Lane shall have a distance of 23' from centerline of road to the north right-of-way line. A Public Utilities Easement shall be established behind the future city sidewalk.

ii. With a 15' travel lane as measured between centerline of road and the face of a city standard AC dike, the south half of Claridge Lane shall have a distance of 16' from centerline of road to the south right-of-way line.

iii. Street improvements shall include, but not be limited to, the installation of concrete curb and gutter, sidewalk, landscaping, decorative masonry block wall, street lights, roadway construction, and all street signing, striping and transition paving as required.

6. That street lights shall be installed throughout the subdivision in conformance with City Standard GE-56 and Southern California Edison requirements. Street lights shall be located as designated by City Engineer.

7. That all existing access streets outside of the subdivision boundaries with the exception of Bristol Lane, shall be reconstructed to a modified residential street standard ST-32 as described below:

8. The following are additional criteria for re-development of the offsite street improvements.

i. The existing offsite streets shall be reconstructed to conform with City Standard Details ST-32, ST-12 and ST-13 with a minimum traffic index of 5.0 and a road section of a minimum 2.5" asphalt over a minimum of 5" of aggregate road base. If the developer demonstrates to the City that section cores and soil testing indicate that existing road sections and subgrade meet the requirements of these City Standard Details, reconstruction of the existing road sections will not be required.

ii. Street improvements shall include, but not be limited to, the installation of concrete curb and gutter per City Standard Detail CO-11, attached sidewalk per City Standard Detail CO-15, accessible ramps at the corners of Kings Road with Claridge Lane, Queens Lane and Tudor Lane per City Standard Detail CO-20, street paving, including pavement reconstruction of existing roadway if applicable, street signing, striping and transition paving as required, repair or replacement of in-kind landscaping and irrigation as needed for existing residential properties and accepted as complete by existing properties owners.

iii. With an 18' travel lane as measured between centerline of road and face of curb, the north half of Claridge Lane shall have a distance of 23' from centerline of road to the north right-of-way line.

iv. With a 15' travel lane as measured between centerline of road and face of curb, the south half of Claridge Lane shall have a distance of 16' from centerline of road to the south right-of-way line.

9. The reconstruction of existing roadways is subject to partial reimbursement to the developer. The developer shall be entitled to a credit towards their development impact fee for permanent street improvements constructed by the developer based on a percentage of use. It has been determined that the new development will have 85.5% usage of the existing streets (Claridge Lane, Queens Land and

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

Tudor Lane) for ingress/egress to the new development. Therefore, the City would reimburse the remaining 14.5% of the construction costs associated with reconstructing the roadway as needed including the addition of curb & gutter, sidewalks, accessible ramps and asphalt pave out to the lip of gutter per the approved Tentative Subdivision Map. Appropriate graphic exhibits referenced to the subdivision offsite improvement plans shall also be provided as needed to facilitate the reimbursement review process.

a)

b) The City of Hanford VMT Guidelines provides various screening thresholds, which can be used to identify when a proposed land use project is anticipated to result in a less-than-significant impact, without requiring a more detailed VMT analysis. Screening thresholds include:
   1. Residential and office projects within a Transit Priority Area
   2. Locally serving retail projects up to 55,000 square feet
   3. Residential, office, or mixed-use projects within low-VMT generating areas
   4. 100 percent affordable housing projects
   5. Projects that are consistent with the City's General Plan and generating fewer than 1,000 daily trips.
   6. Projects that are inconsistent with the City's General Plan and generating fewer than 500 daily trips.

The project qualifies for screening method 5: The project proposes 55 single-family dwelling units. Per trip generation rates taken from the Institute of Traffic Engineer's *Trip Generation, 11th Edition* (9.30 average daily trips per dwelling unit), the project is expected to generate 511.5 daily trips. As the project is consistent with the City's General Plan, this trip generation is under the 1,000 daily trip threshold.

Trip Generation screening threshold is met and the project is anticipated to have a less-than-significant impact on VMT.

c) Less than Significant - The proposed project will not create a change in air traffic patterns or increase traffic levels or change in location that result in substantial safety risks. The project is located approximately 2.1 miles northwest from the nearest municipal airport.

d) Less than Significant Impact**-** the development has been reviewed by the various departments to ensure hazardous features are not incorporated into the project.

e) Less than Significant Impact – the development has been reviewed by the various departments and fire truck access to and through the development has been verified. The applicant has provided the accurate turning radius to accommodate emergency access.

Mitigation Measures

MM Traffic 1 – That the development is subject to traffic impact fees.

MM Traffic 2 - Conditions of the development include:

1. That all improvements consisting of sanitary sewers, storm sewers, water mains, concrete curbs and gutters per City Standard Detail CO-11, parkstrip sidewalks per City Standard Detail CO-14, streetlights per City Standard Detail GE-56, landscaping, street sub-grading, surfacing and striping and all other improvements shall be installed in accordance with Chapter 16.24, "Improvements", of the Hanford Municipal Code and this resolution pertaining to subdivision improvements in effect at the time of filing the tentative subdivision map.

    a. All power poles, utility poles, water wells and all other existing utilities in conflict with development shall be removed, relocated or abandoned.
    b. Developer shall install a timber barricade at the east end of existing Bristol Lane where the roadway ends at Lots 17 and 18, and at the east end of the future extension of Claridge Lane per City Standard Detail GE-59.
    c. A geotechnical report shall be submitted to the City Engineer identifying the existing structural section

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

thickness of all residential roadways concurrent with the submittal of development improvement plans. Reconstruction of existing streets (or another form of mitigation as approved by the City Engineer) will be required if the existing street structural section does not conform to City Standards and Specifications.

2. That all streets within the subdivision shall be developed to residential street standard ST-32, except the following:

b) The portion of Claridge Lane extended to within the development shall be constructed as a modified ST-32 as approved on the Tentative Map.

i. Traffic index used for the design of street structural section shall be a minimum of 5.0.

ii. With an 18' travel lane as measured between centerline of road and face of curb, the north half of Claridge Lane shall have a distance of 23' from centerline of road to the north right-of-way line. A Public Utilities Easement shall be established behind the future city sidewalk.

iii. With a 15' travel lane as measured between centerline of road and the face of a city standard AC dike, the south half of Claridge Lane shall have a distance of 16' from centerline of road to the south right-of-way line.

iv. Street improvements shall include, but not be limited to, the installation of concrete curb and gutter, sidewalk, landscaping, decorative masonry block wall, street lights, roadway construction, and all street signing, striping and transition paving as required.

3. That street lights shall be installed throughout the subdivision in conformance with City Standard GE-56 and Southern California Edison requirements. Street lights shall be located as designated by City Engineer.

4. That all existing access streets outside of the subdivision boundaries with the exception of Bristol Lane, shall be reconstructed to a modified residential street standard ST-32 as described below:

a. The following are additional criteria for re-development of the offsite street improvements.

v. The existing offsite streets shall be reconstructed to conform with City Standard Details ST-32, ST-12 and ST-13 with a minimum traffic index of 5.0 and a road section of a minimum 2.5" asphalt over a minimum of 5" of aggregate road base. If the developer demonstrates to the City that section cores and soil testing indicate that existing road sections and subgrade meet the requirements of these City Standard Details, reconstruction of the existing road sections will not be required.

vi. Street improvements shall include, but not be limited to, the installation of concrete curb and gutter per City Standard Detail CO-11, attached sidewalk per City Standard Detail CO-15, accessible ramps at the corners of Kings Road with Claridge Lane, Queens Lane and Tudor Lane per City Standard Detail CO-20, street paving, including pavement reconstruction of existing roadway if applicable, street signing, striping and transition paving as required, repair or replacement of in-kind landscaping and irrigation as needed for existing residential properties and accepted as complete by existing properties owners.

vii. With an 18' travel lane as measured between centerline of road and face of curb, the north half of Claridge Lane shall have a distance of 23' from centerline of road to the north right-of-way line.

viii. With a 15' travel lane as measured between centerline of road and face of curb, the south half of Claridge Lane shall have a distance of 16' from centerline of road to the south right-of-way line.

5. The reconstruction of existing roadways is subject to partial reimbursement to the developer. The developer shall be

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

entitled to a credit towards their development impact fee for permanent street improvements constructed by the developer based on a percentage of use. It has been determined that the new development will have 85.5% usage of the existing streets (Claridge Lane, Queens Land and Tudor Lane) for ingress/egress to the new development. Therefore, the City would reimburse the remaining 14.5% of the construction costs associated with reconstructing the roadway as needed including the addition of curb & gutter, sidewalks, accessible ramps and asphalt pave out to the lip of gutter per the approved Tentative Subdivision Map. Appropriate graphic exhibits referenced to the subdivision offsite improvement plans shall also be provided as needed to facilitate the reimbursement review process.

Conclusion
The site has been evaluated for traffic-related impacts, with the incorporation of City standards for development and payment of traffic impact fees, the project will have a less than significant impact on traffic.

Source: City of Hanford General Plan and EIR 2017, City of Hanford Municipal Code, Revised Focused Traffic Impact Analysis Report – JLB Traffic Engineering, Inc. (June 2021), revised report (July 2023); City of Hanford VMT Thresholds and Implementation Guidelines (2022)

XVIII. TRIBAL CULTURAL RESOURCES				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 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	☐	☑	☐	☐
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 § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☐	☑	☐

Ethnographic Setting

Hanford is situated between the former “delta” formed by the Kaweah River to the south and the Kings River to the north. Yokuts lived in villages consisting of wood frame huts covered with large tule mats. The Hanford-Lemoore region on the south side of the Kings River was home to the Nutunutu Yokuts. Across the Kings River and north of the Nutunutu, were the Wimilche people. Only one village for the Wimilche and two for the Nutunutu have been described. The Wimilche village of Ugona was located north of the Kings River, 7 miles below Laton. The Nutunutu village of Cheou was across the reiver and directly west of Ugona. Kadistin, the other Nutunutu village of Cheou was across the

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

river and directly west of Ugona. Kadistin, the other Nutunutu village, was at old Kingston on the south bank of the Kings River downstream from Laton. The better known Tachi Yokuts occupied the north and west shores of Tulare Lake.

The Yokuts subsistence economy emphasized fishing; hunting waterfowl; and collecting shellfish, roots, and seeds. Tules were abundant in the sloughs and their prodigious use in constructing shelters, boats, and as a food source reflected their significance in Yokuts life.

The dead were buried in a cemetery separate from the village with head facing west or northwest. Cremation was most common for the occasional individual who died away from home or in the event that the deceased was a shaman or medicine man. Among the Tachi, anyone of higher social status was cremated.

The 1833 epidemic, brought south from Oregon by a party of trappers, decimated an estimated 75% of California's native people. Entire communities were wiped out, leaving few native people to consult during the early 1900s when anthropologists were recording the recollections of elderly survivors of what has been billed as a last attempt to reconstruct the lifeways of the native people before White contact.

In 1851, the tribes gave up their lands for reservations. However, such a treaty was never ratified by Congress. The remnant of native people in the southern San Joaquin Valley was placed at the Tejon

Reservation at the foot of the Tehachapis and at the Fresno reservation at Madera. However, Tejon was later abandoned in favor of a reservation on the Tule River. Many of the Tule river residents were Tachi for whom a settlement was established near Lemoore.

By 1970, some 325 people identifying themselves as Yokuts lived on the 54,000-acre Tule River Reservation. Many of the residents were employed in the lumber industry or as laborers on farms. About one-third of the population of the Tule River Reservation lived on the much smaller Santa Rosa Reservation. Santa Rosa families would follow seasonal agricultural work.

Consultation Meeting

On January 10, 2017, the City of Hanford met with the Tachi Yokut Tribe, on a different project in order to establish conditions, which would apply to all projects in the City of Hanford, which required an initial study.

In order to address the concerns of the Tachi Yokut Tribe, the City is requiring the following as mitigation measures:

- That a Burial Treatment Plan be entered to by the applicant/property owner prior to any earth disturbing activities. **(This condition applies as a mitigation measure to all projects that require an initial study).**

In accordance with Assembly Bill 52, formal notification of determination to undertake a project and notice of consultation opportunity, pursuant to Public Resources Code Section 21080.3.1 was sent to the Tachi Yokut Tribe. A response has not been received, as of the date of preparation of this environmental assessment.

State:

California Environmental Quality Act

Public Resources Code - PRC § 21083.2

a) As part of the determination made pursuant to Section 21080.1, the lead agency shall determine whether the project may have a significant effect on archaeological resources. If the lead agency determines that the project may have a significant effect on unique archaeological resources, the environmental impact report shall address the issue of those resources. An environmental impact report, if otherwise necessary, shall not address the issue of nonunique

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

archaeological resources. A negative declaration shall be issued with respect to a project if, but for the issue of nonunique archaeological resources, the negative declaration would be otherwise issued.

(b) If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Examples of that treatment, in no order of preference, may include, but are not limited to, any of the following:

(1) Planning construction to avoid archaeological sites.

(2) Deeding archaeological sites into permanent conservation easements.

(3) Capping or covering archaeological sites with a layer of soil before building on the sites.

(4) Planning parks, greenspace, or other open space to incorporate archaeological sites.

(c) To the extent that unique archaeological resources are not preserved in place or not left in an undisturbed state, mitigation measures shall be required as provided in this subdivision. The project applicant shall provide a guarantee to the lead agency to pay one-half the estimated cost of mitigating the significant effects of the project on unique archaeological resources. In determining payment, the lead agency shall give due consideration to the in-kind value of project design or expenditures that are intended to permit any or all archaeological resources or California Native American culturally significant sites to be preserved in place or left in an undisturbed state. When a final decision is made to carry out or approve the project, the lead agency shall, if necessary, reduce the specified mitigation measures to those which can be funded with the money guaranteed by the project applicant plus the money voluntarily guaranteed by any other person or persons for those mitigation purposes. In order to allow time for interested persons to provide the funding guarantee referred to in this subdivision, a final decision to carry out or approve a project shall not occur sooner than 60 days after completion of the recommended special environmental impact report required by this section.

(d) Excavation as mitigation shall be restricted to those parts of the unique archaeological resource that would be damaged or destroyed by the project. Excavation as mitigation shall not be required for a unique archaeological resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the resource, if this determination is documented in the environmental impact report.

(e) In no event shall the amount paid by a project applicant for mitigation measures required pursuant to subdivision (c) exceed the following amounts:

(1) An amount equal to one-half of 1 percent of the projected cost of the project for mitigation measures undertaken within the site boundaries of a commercial or industrial project.

(2) An amount equal to three-fourths of 1 percent of the projected cost of the project for mitigation measures undertaken within the site boundaries of a housing project consisting of a single unit.

(3) If a housing project consists of more than a single unit, an amount equal to three-fourths of 1 percent of the projected cost of the project for mitigation measures undertaken within the site boundaries of the project for the first unit plus the sum of the following:

(A) Two hundred dollars ($200) per unit for any of the next 99 units.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

(B) One hundred fifty dollars ($150) per unit for any of the next 400 units.

(C) One hundred dollars ($100) per unit in excess of 500 units.

(f) Unless special or unusual circumstances warrant an exception, the field excavation phase of an approved mitigation plan shall be completed within 90 days after final approval necessary to implement the physical development of the project or, if a phased project, in connection with the phased portion to which the specific mitigation measures are applicable. However, the project applicant may extend that period if he or she so elects. Nothing in this section shall nullify protections for Indian cemeteries under any other provision of law.

(g) As used in this section, "unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

(h) As used in this section, "nonunique archaeological resource" means an archaeological artifact, object, or site which does not meet the criteria in subdivision (g). A nonunique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects.

(i) As part of the objectives, criteria, and procedures required by Section 21082 or as part of conditions imposed for mitigation, a lead agency may make provisions for archaeological sites accidentally discovered during construction. These provisions may include an immediate evaluation of the find. If the find is determined to be a unique archaeological resource, contingency funding and a time allotment sufficient to allow recovering an archaeological sample or to employ one of the avoidance measures may be required under the provisions set forth in this section. Construction work may continue on other parts of the building site while archaeological mitigation takes place.

(j) This section does not apply to any project described in subdivision (a) or (b) of Section 21065 if the lead agency elects to comply with all other applicable provisions of this division. This section does not apply to any project described in subdivision (c) of Section 21065 if the applicant and the lead agency jointly elect to comply with all other applicable provisions of this division.

(k) Any additional costs to any local agency as a result of complying with this section with respect to a project of other than a public agency shall be borne by the project applicant.

(*l*) Nothing in this section is intended to affect or modify the requirements of Section 21084 or 21084.1.

Native American Heritage Act

§ 5097.9 – Interference with Native American religion or damage to cemeteries or places of worship, etc., prohibited; construction and exemptions from law.

No public agency, and no private party using or occupying public property, or operating on public property, under a public license, permit, grant, lease, or contract made on or after July 1, 1977, shall in any manner whatsoever interfere with the free expression or exercise of Native American religion as provided in the United States Constitution and the

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

California Constitution; nor shall any such agency or party cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property, except on a clear and convincing showing that the public interest and necessity so require. The provisions of this chapter shall be enforced by the commission, pursuant to Sections 5097.94 and 5097.97.

The provisions of this chapter shall not be construed to limit the requirements of the Environmental Quality Act of 1970, Division 13 (commencing with Section 21000).

The public property of all cities, counties, and city and county located within the limits of the city, county, and city and county, except for all parklands in excess of 100 acres, shall be exempt from the provisions of this chapter.' Nothing in this section shall, however, nullify protections for Indian cemeteries under other statutes.

Public Notice to California Native American Indian Tribes
GC Section 65092 includes California Native American tribes that are on the contact list maintained by the NAHC in the definition of "person" to whom notice of public hearings shall be sent by local governments.

Disposition of Human Remains (Health and Safety Code Section 7050.5)

When an initial study identifies the existence, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native American groups or individuals as identified by the NAHC as provided in PRC Section 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains, and any items associated with Native American burials. Furthermore, HSC Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the NAHC.

California Native American Graves Protection and Repatriation Act of 2001
In 2001, the State Legislature passed AB-978, the California Native American Graves Protection and Repatriation Act of 2001 (Steinberg, 2001), requiring all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items to provide a process for the identification and repatriation of these items to the appropriate tribes. The bill also created a Repatriation Oversight Commission with oversight authority. The intent of the legislation was to cover gaps in the federal Native American Graves Protection and Repatriation Act (Udall, 1990) specific to the State of California.

After the Repatriation Oversight Commission remained unfunded for over a decade, the Native American Heritage Commission (Commission) was granted oversight authority. In 2018, the State Legislature added additional Commission responsibilities under AB-2836 (Gloria, 2018), including providing technical assistance to the University of California (UC) in adopting policies and procedures adopted to expedite repatriation of remaining items in its possession.

On September 25, 2020, Governor Newsom signed AB-275 (Ramos, 2020) into law, which amended CalNAGPRA and became effective on January 1, 2021. In AB-275, the State Legislature added additional Commission responsibilities, including maintaining a list of California Indian tribes and their state aboriginal territories, adopting mediation procedures, and publishing notices of completion of preliminary inventories and summaries on the Commission website.

a) **Less than Significant Impact with Mitigation Incorporated.** A record search of the NAHC Sacred Lands File was completed for the Project area and the results were negative for the presence of Native American tribal cultural resources. Mitigation Measures CUL-1, CUL-2 and CUL-3, described above in Cultural Resources are recommended in the event tribal cultural materials or human remains are unearthed during excavation or construction.xcxc
b) **Less than Significant with Mitigation Incorporation:** Consultation was mailed in accordance with Assembly Bill 52, formal notification of determination to undertake a project and notice of consultation opportunity,

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
pursuant to Public Resources Code Section 21080.3.1 was sent to the Tachi Yokut Tribe. A response has not been received, as of the date of preparation of this environmental assessment. With mitigation in place, as required by MM Cultural Resources 1, 2, and 3, the project will have a less than significant impact to Tribal Resources.				
XVI. UTILITIES AND SERVICE SYSTEMS -- Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☑	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☑	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☑	☐	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☑	☐	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments?	☐	☐	☐	☑
f) Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs?	☐	☐	☑	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☑	☐	☐

Environmental Setting

Wastewater

The City's wastewater system provides for treatment, disposal, and reuse of effluent, which meets all of the state's discharge requirements for the entire City of Hanford (City). The wastewater system consists of a treatment plant and 21 sanitary sewer lift stations located throughout the City. The treatment facility has a capacity of 8.0 million gallons per day and is located south of Houston Avenue and east of 11th Avenue.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

While the City is constantly working to improve and provide adequate services to the population demand, the Irwin Street trunk main has become a priority issue for the City's wastewater system. The Irwin Street trunk main is located south of the Downtown East Precise Plan area and may eventually be undergoing capacity issues. Sections of the trunk line are in poor condition, with adverse grades, inadequate pipe sizing, and near full capacity.

The City's wastewater system has also pursued water conservation strategies to ensure long-term reuse of treated disinfected wastewater for agricultural purposes and to recharge groundwater supplies for agriculture. By doing so, the City accomplishes two important water conservation efforts: 1) the additional supply for the City extends the surface water irrigation season and 2) reduces the need for agricultural pumping of groundwater in an area known to be low in groundwater.

Water Supply

The City's water system is a groundwater system. The City is located within the Tulare Lake Hydrologic Region. Within that region, the City is located within the Tulare Lake Groundwater Subbasin, which transmits, filters, and stores water from the main San Joaquin Valley Groundwater Basin.

The City's groundwater system consists of 13 supply wells, one standby well, three elevated storage tanks (all three of which have abandoned), one existing 0.5 million gallon ground-level storage tank at the Industrial Park, 3.5 million gallon ground-level storage tanks, and a piping network for distributing the water throughout the City (2-million-gallon storage tank at Grangeville and Centennial Drive facility and 1-million-gallon storage tank at the Fargo Avenue facility). No surface water is used by the water system as groundwater is contained in both an unconfined and confined aquifer lying beneath the City. Currently, the City maintains 206 miles of main lines and 15,870 service connections, which includes 8-inch to 30-inch pipes with 12-inch mains laid out on an approximately 1-mile grid. Water is pumped from 13 deep wells. The well depth is determined by the water quality, but typically, is drilled to a minimum depth of 1,500 feet and below the Corcoran clay layer.

The City's groundwater supply is recharged by rain and snowfall in the Sierra Nevada range and, to a lesser degree, from rainfall on the Valley floor. In addition, the City, along with the Peoples Ditch Company and the Kings County Water District, deliver excess water flows from the Kings River and storm water runoff into the drainage and slough basins located throughout the City. This, as well as percolation from storm water basins, local waterways, and agricultural irrigation, help to replenish the City's groundwater in surplus years.

Storm Water Drainage

The City is predominantly located within a 500-year Flood Zone as defined by FEMA Flood Insurance Maps. Areas subject to the 500-year flood zone have a moderate to low risk of flooding.

There are two major irrigation ditches that flow through the City. Lakeside Ditch, which is operated and maintained by the Lakeside Water District, and the Peoples Ditch, which is operated and maintained by the Peoples Ditch Company.

The Existing drainage infrastructure within the boundaries covered by the City's Storm Water Management Program includes natural drainage channels, retention basins, natural vegetation, piping, and pump stations. There are numerous areas where storm drainage is controlled via drainage inlets and underground structures. The storm drainage system consists of 30 pump stations, 57 miles of pipeline ranging in size from 6-inch through 60-inch, and 220 acres of drainage basins and drainage ditches. The storm drainage system removes rainfall from surface streets and disposes the accumulated stormwater in drainage basins.

The City, in cooperation with the People's Ditch Company and the Kings County Water District, delivers excess water flows from the Kings River, along with storm water runoff, into the 125 acres of drainage and slough basins located throughout the City to help replenish the groundwater. Some of this acreage is located within the City's park facilities.

Solid Waste Disposal

The City's solid waste and recycling services are provided by the Kings Waste Recycling Authority (KWRA). The current KWRA facility is located at 7803 Hanford-Armona Road, southeast of the City near SR 43 and 198 and operates as a solid waste disposal and recycling facility. The responsibilities of the KWRA include the siting, permitting, financing, construction, and operation of landfills, as well as a Material Recovery Plan and Transfer Station. The KWRA also ensures all activities and waste diversion goals required by the State at the closure, post-closure monitoring, and

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

liabilities of all identified former landfills in Kings County. The KWRA is the leading contributor to helping the City meet the State's recycling goals.

Refuse from both municipal and commercial haulers is sorted at the KWRA facility to recover a variety of recyclable materials. Once waste is separated from recyclable materials, it is then hauled by transfer trucks from the Material Recovery Facility to the State-permitted 320-acre Chemical Waste Management Landfill site in Kettleman Hills.

The landfills at the Kettleman Hills Facility are designed for municipal solid waste, which encompasses household and commercial trash. The facility is permitted to receive a maximum of 2,000 tons of municipal solid waste per day.

The City has instituted a greenwaste collection mixed recycle collection program for single-family residential customers.

Dry Utilities

Gas and Electric Service

The City's main electricity providers are Pacific Gas and Electric Company and Southern California Edison Company. Within the Study Area, PG&E provides power to sites south of Iona Avenue and north of Flint Avenue via 12 kv and 70kv lines. SCE supplies power to sites north of Iona Avenue and south of Flint Avenue via 12 kv and 66kv lines.

Communication Systems

AT&T and Comcast are currently available in Hanford. AT&T provides telephone services that include ISDN and all other necessary high-technological services. Many cellular and long-distance services are also available. Comcast, Dish Network, and Direct TV provide television services as well as internet access.

Thresholds of Significance

The project may result in significant impacts on utilities and service systems if it substantially and adversely alters the delivery of utilities or substantially increases the demand for utilities.

Checklist Discussion

a) Less than significant - the City's Wastewater Treatment Facility is currently up-to-date with all wastewater treatment requirements set forth by the Central Valley Regional Water Quality Control Board. The City's WWTF would continue to comply with the requirements set forth by the Central Valley Regional Water Quality Control Board, as required by law.

b) Less than Significant – Under the General Plan Update it was determined that planned improvements and expansion development through various goals and policies will assist in providing wastewater services to the study area, as development continues. The current capacity of the WWTF is designed to accommodate 8 mgd, which is expected to provide adequate services to population growth for the foreseeable future, planned in the General Plan.

c) **Less than Significant with Mitigation Measures** – The project has been reviewed by the Public Works department to ensure stormwater drainage is adequately addressed through conditions of approval. Conditions of approval for storm drainage is as follows:

Storm Drainage Improvements:

1. That the developer's engineer shall provide a storm drainage master plan complete with calculations for the entire subdivision for City Engineering Department review and approval prior to recording a subdivision final map for the development. Provisions shall be made to provide service for future areas of development located adjacent to the subdivision.

2. That developer shall be required to comply with State of California Water Resources Control Board requirements specifically related to the National Pollution Elimination System Permit process.

3. At the sole cost of the developer, the developer shall establish a 15' storm drain easement as shown on the Tentative Map, that extends the full depth of, and along the property line of Lots 38 and 39. The developer shall also obtain an easement with the Burlington Northern Santa Fe (BNSF) Railroad to extend

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

said easement through the BNSF right-of-way while meeting all of BNSF regulations for piping installation under the railroad tracks. The developer shall also obtain an Encroachment Permit with the City of Hanford to further extend the storm drain piping to the Mussel Slough storm drain basin and construct an outfall structure within the storm drain basin per City Standards.

4. In the event that an easement under the Burlington Northern Santa Fe Railroad tracks is not obtainable to run the storm drainage from the development to the existing city-maintained Mussel Slough storm basin, as an alternative, the developer shall install an onsite storm basin so that all storm drainage from the proposed development be retained in a retention drainage basin located as shown on the tentative subdivision map. The basin shall be constructed in conformance with City Standards and as follows:

   m) The Developer shall install a 6' high chain link fence that includes a top rail and vinyl privacy slats per City Standard Detail GE-23. Color of privacy slats to match surrounding conditions

   n) The Developer shall install a 16' wide gate entrance to basin per City Standard Detail GE-26 with vinyl privacy slats matching privacy slats in fencing.

   o) The Developer shall install a 16' wide drive approach per City Standard Detail CO-41.

   p) The Developer shall include a 5' landscape easement along both Saxon St. and Claridge Lane frontages.

   q) The storm basin shall have a 10:1 maximum sloped drive to the bottom of the basin for maintenance purposes.

   r) The developer shall install an outfall structure within the storm drain basin to City Standard Specifications.

5. In the event that the alternative storm drain basin is constructed, per resolution 19-41-R, the developer shall be eligible for a credit towards Storm Drain Impact fees per the 2019 City of Hanford Development Impact Fee Study for storage provided for this development.

d) **Less than Significant with Mitigation Measures** - Future population growth in the area would create an increase in water usage. Water supply demand was addressed under the Urban Water Management Plan, which concluded that the Tulare Lake Groundwater subbasin would continue to reliably supply water to meet the City's projected water demands through the year 2035. This would be made possible through the implementation of water conservation goals and policies established in the General Plan Update.

e) No Impact. The project will not require a determination by a wastewater agency.

f) Less than Significant – the City of Hanford will provide for solid waste collection and disposal for the proposed project site, when developed. The City has achieved a 50% diversion rate from the landfill and has incorporated a green waste program and recycling at the Materials Recycling Facility.

g) **Less than Significant impact with Mitigation Measures** – that the project is required to comply with all statutes and regulations related to solid waste.

Mitigation Measure:

Mitigation Measure Utilities 1: Conditions of approval for storm drainage is as follows:

Storm Drainage Improvements:

1. That the developer's engineer shall provide a storm drainage master plan complete with calculations for the entire subdivision for City Engineering Department review and approval prior to recording a subdivision final map for the development. Provisions shall be made to provide service for future areas of development located adjacent to the subdivision.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

2. That developer shall be required to comply with State of California Water Resources Control Board requirements specifically related to the National Pollution Elimination System Permit process.

3. At the sole cost of the developer, the developer shall establish a 15' storm drain easement as shown on the Tentative Map, that extends the full depth of, and along the property line of Lots 38 and 39. The developer shall also obtain an easement with the Burlington Northern Santa Fe (BNSF) Railroad to extend said easement through the BNSF right-of-way while meeting all of BNSF regulations for piping installation under the railroad tracks. The developer shall also obtain an Encroachment Permit with the City of Hanford to further extend the storm drain piping to the Mussel Slough storm drain basin and construct an outfall structure within the storm drain basin per City Standards.

4. In the event that an easement under the Burlington Northern Santa Fe Railroad tracks is not obtainable to run the storm drainage from the development to the existing city-maintained Mussel Slough storm basin, as an alternative, the developer shall install an onsite storm basin so that all storm drainage from the proposed development be retained in a retention drainage basin located as shown on the tentative subdivision map. The basin shall be constructed in conformance with City Standards and as follows:

   s) The Developer shall install a 6' high chain link fence that includes a top rail and vinyl privacy slats per City Standard Detail GE-23. Color of privacy slats to match surrounding conditions

   t) The Developer shall install a 16' wide gate entrance to basin per City Standard Detail GE-26 with vinyl privacy slats matching privacy slats in fencing.

   u) The Developer shall install a 16' wide drive approach per City Standard Detail CO-41.

   v) The Developer shall include a 5' landscape easement along both Saxon St. and Claridge Lane frontages.

   w) The storm basin shall have a 10:1 maximum sloped drive to the bottom of the basin for maintenance purposes.

   x) The developer shall install an outfall structure within the storm drain basin to City Standard Specifications.

5. In the event that the alternative storm drain basin is constructed, per resolution 19-41-R, the developer shall be eligible for a credit towards Storm Drain Impact fees per the 2019 City of Hanford Development Impact Fee Study for storage provided for this development.

Mitigation Measure Utilities 2: That the future development would be required to implement water conservation measures.

Mitigation Measure Utilities 3: That the future project be required to comply with all statutes and regulations related to solid waste.

Conclusion Less than Significant Impact with Mitigation Incorporation - Impacts to utilities and services are considered less than significant with compliance with all statutes and regulations related to water usage and solid waste.

Source: 2017 General Plan and General Plan EIR, State of California Department of Water Resources, Cal Recycle 2015

WILDFIRE				
If located in or near state responsibility areas or lands classified as very high fire hazard				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
The Project site is located in an area that is not designated as being a very high fire hazard severity zone. The Project site is also not located in an area that has been designated as an SRA by the California Board of Forestry and Fire Protection's State Responsibility Area Viewer. a-d) No Impact. **Source:** California Department of Forestry and Fire Protection 2023				
XVII. 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?	☐	☐	☑	☐
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,	☐	☑	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
the effects of other current projects, and the effects of probable future projects)?				
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☑	☐	☐

a) Less than Significant - Based on the analysis provided in the initial study, the project does not 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 or threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare or endangered plants or animals.

b) Less than Significant with Mitigation Incorporation- Based on the analysis provided, the project would not result in any significant cumulative impacts relative to other current projects, or the effects of probable future projects.

c) Less than Significant with Mitigation Incorporation - Based on the analysis provided, the project will not have environmental effects that will cause substantial adverse effects on human beings.

Gabrielle Myers

Gabrielle de Silva Myers
Senior Planner

October 19, 2023

Date

This section addresses the project's potential to contribute to cumulative impacts in the region, CEQA Guidelines Section 15355 defines cumulative impacts as two or more individual effects that, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects.

Cumulative Setting

The cumulative setting for the proposed project area includes the development of this in-fill project and the existing environment – the subject property is surrounded by existing residential development to the north, west and south, an existing mini-storage facility and railroad to the east. The project is considered in-fill. In accordance with the Hanford General Plan, an infill development site is defined as any parcel or group of parcels that are vacant or underdeveloped and surrounded by development on at least 75% of its perimeter. Infill sites may include previously developed sites that may/will be redeveloped.

Impact Analysis

Aesthetics

Less than Significant with Mitigation Incorporation - All impacts to aesthetics are anticipated to be less than significant with mitigation measures for light sources from new projects including this project, and past projects. Several sections of the Hanford Municipal Code regulate physical development by controlling not only the appearance of new development, but also by controlling the placement of new development with consideration for surrounding uses. This project and former projects in the area will be held/have been held to the appropriate development standards of the Hanford Municipal Code to mitigate impacts to aesthetics – therefore, the impact to aesthetics would be less than significant with mitigation incorporation.

Agriculture and Forest Resources

Less than Significant - The General Plan EIR analyzed the impacts of the City's urban growth on agricultural land and included mitigation measures to reduce those impacts, however, impacts to agricultural lands remain significant and unavoidable. A Statement of Overriding Considerations was adopted for the impacts to agricultural lands.

The project area is within the City's center and the land has no value as agricultural land.

Air Quality

Less than Significant with Mitigation Incorporation – This project and the development of the previously approved projects in the area will not create or result in any significant air quality impacts, all projects are required to be developed consistent with the Air Quality Element.

Biological Resources

Less than Significant with Mitigation Incorporation – the project area was evaluated for its potential for habitat and mitigation measures were appropriately applied. The surrounding area contains no natural and undisturbed areas that may be considered habitat.

Cultural Resources

Less than Significant with Mitigation Incorporation – the Tachi Yokut Tribe was consulted for this project and surrounding projects, in accordance with AB 52. As a general condition of approval, mitigation measures, that the applicant enter into a burial treatment plan with the Tribe and that if sensitive resources are discovered, construction halt and the proper officials be contacted, will mitigate cultural resources impacts to a less than significant level.

Geology and Soils

Less than Impact with Mitigation Measures - This project and the development of the previously approved projects in the area on geology and soils would be mitigated by compliance with the California building

code, a geotechnical and soil studies (if required), and compliance with the Municipal Code Section 15.52.

Greenhouse Gas Emissions
Less than Significant with Mitigation Measures – the cumulative projects would contribute to GHG emissions, which is inherently a cumulative issue. The emissions during construction would be short-term as a result of fossil fuel burning construction equipment. Since the impacts are short-term and the contribution to GHG emissions would be minor compared to the State's GHG emission target of 427 MMTCO2 eq by 2020, the construction-related GHG emissions of the project would be considered less than significant. The operational emission from the projects would be indirect emissions from electricity usage. Compliance with current building code standards will assist in the reduction of energy use. The emissions are considered less than significant with mitigation incorporation.

Hazards and Hazardous Materials
Less than Significant – The projects are not expected to have a significant impact as a result of hazards or hazardous materials.

Hydrology/Water Quality
Less than Significant with Mitigation Incorporation – the projects will be developed in accordance with City requirements specific to hydrology and water quality. Mitigations have been required on a project by project basis.

Land Use Planning and Population
Less than Significant -The projects are being developed consistent with the General Plan policy. This project and existing projects in the area have been developed consistent with the General Plan.

Mineral Resources
No Impact - there are no known mineral resources in the City.

Noise
Less than Significant with Mitigation Incorporation- this project and future existing projects within the area are required to meet the decibel requirement prescribed by the General Plan for Noise. Construction-related noise would be mitigated through the limitation of hours construction is permitted (between 7 a.m. and 10 p.m.). Full build out of the General Plan would possibly result in a maximum increase of 2 decibels when compared to existing conditions. According to the Caltrans Technical Noise Supplement, the average healthy ear can barely perceive noise level changes of 3 dBA. As a result, it is anticipated that full buildout of the General Plan, including development of this site, would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels exiting without the project.

Due to the proximity to the rail road, this project, and residential projects in the rail's vicinity have mitigation measures, such as sound walls to mitigate noise impacts.

Population and Housing
Less than Significant - The projects will induce population growth in the area by proposing residential development. The projects are consistent with the density allowed in the General Plan, which planned for population growth. This projects are considered an implementation of the General Plan, for which a Statement of Overriding Considerations was adopted, due to substantial population growth.

Public Services
Less than Significant with Payment of Impact Fees to Mitigate Effect -The residential projects in the vicinity are subject to impact fees to mitigate the effect on public services.

Recreation
Less than Significant with Payment of Impact Fees to Mitigate Effect - development of residences will impact recreation facilities, however, the impact will be mitigated through the payment of park impact fees and the development of park space.

Transportation/Traffic
Less than Significant with Payment of Impact Fees and Future Road Improvements to Mitigate Effect – The circulation pattern in the vicinity has been designed to accommodate future build out in the area in accordance with the Circulation Element. The projects will have a less than significant cumulative impact on traffic and circulation conditions through appropriate project design and payment of traffic impact fees, as required.

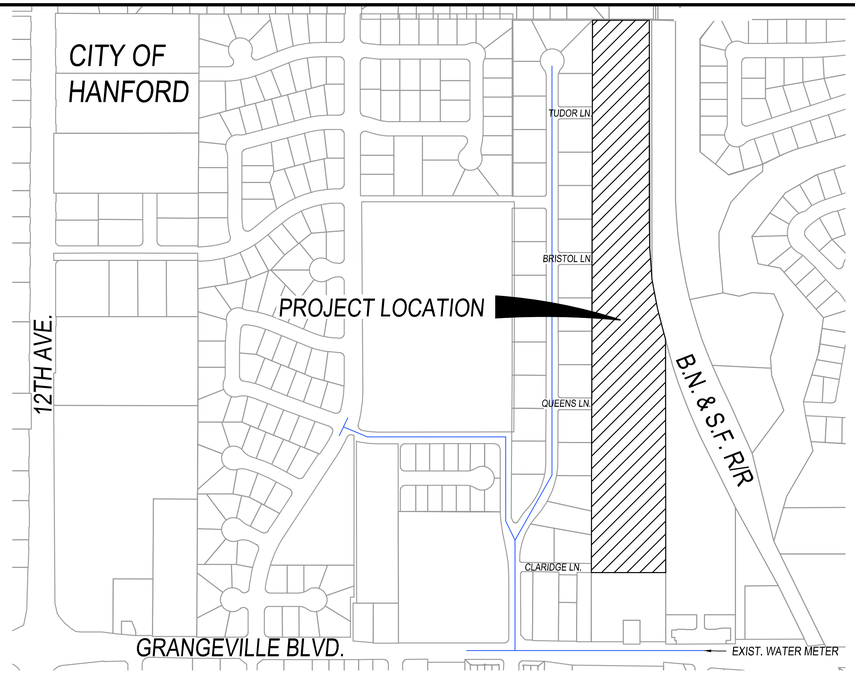
Utilities and Service Systems
Less than Significant with Mitigation Incorporation – Impacts to utilities and services are considered less than significant with compliance with existing State and local water conservation measures. This project and future projects in the area have been accounted for and can be served by the City's utilities and service systems.

LIBERTY POINTE

TENTATIVE SUBDIVISION MAP

APRIL 11, 2023

BEING OF A PORTION OF THE EAST 19.02 ACRES OF THE SW 1/4 OF SEC. 23, T. 18 S., R. 21 E., M.D.B. & M., IN THE CITY OF HANFORD, COUNTY OF KINGS, STATE OF CALIFORNIA.



VICINITY MAP
SCALE: 1" = 300'

SITE DATA:

APN:	008-041-043
ACREAGE:	±14.88 AC. (DESIGNATED REMAINDER PER PM 17-36)
PROPOSED LOTS:	55
EXISTING ZONING:	R-L-8
PROPOSED ZONING:	R-L-8
EXISTING USE:	VACANT
PROPOSED USE:	SINGLE FAMILY RESIDENTIAL
PROPOSED MAINTENANCE:	CITY OF HANFORD

SETBACK REQUIREMENTS (PER THE CITY OF HANFORD MUNICIPAL CODE):

FRONT: THE FRONT BUILDING SETBACK SHALL BE FIFTEEN (15) FEET FROM THE LOT LINE FOR LIVABLE BUILDING SPACE AND TWENTY (20) FEET FOR GARGES, CARPORTS, AND OTHER NON-LIVABLE BUILDING SPACE.

REAR: THE REAR BUILDING SETBACK SHALL BE FIFTEEN (15) FEET FROM THE REAR LOT LINE, EXCEPT WHERE THERE IS A LANDSCAPE EASEMENT WITH A WALL OR FENCE ON THE REAR OF THE LOT THEN THE REAR BUILDING SETBACK SHALL BE TWENTY (20) FEET. THE REAR BUILDING SETBACK AREA SHALL BE INCREASED BY TEN (10) FEET FOR BUILDINGS OVER ONE STORY HIGH.

SIDE: THE SIDE BUILDING SETBACK AREA SHALL BE FIVE (5) FEET FROM AN INTERIOR SIDE LOT LINE AND TEN (10) FEET FROM A STREET SIDE PROPERTY LINE. WHERE THERE IS A LANDSCAPE EASEMENT WITH A WALL OR FENCE ON THE STREET SIDE OF THE LOT THE SIDE YARD SETBACK AREA SHALL BE MEASURED FROM THE EASEMENT ARE INSTEAD OF THE SIDE LOT LINE.

UTILITIES:

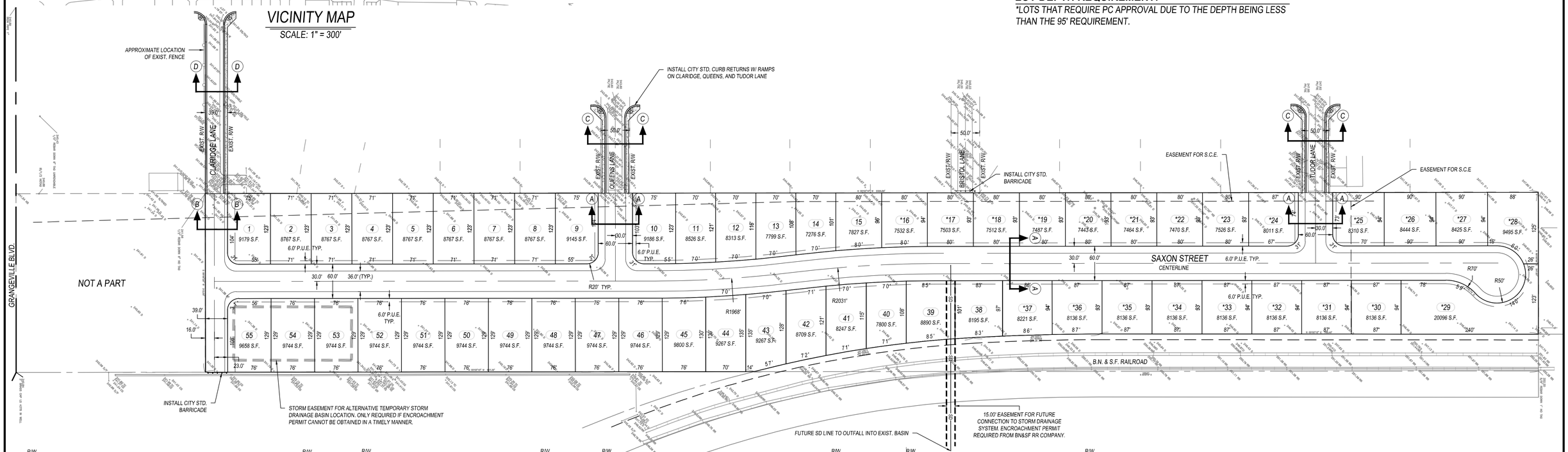
SEWER SERVICE:	CITY OF HANFORD
WATER SERVICE:	CITY OF HANFORD
STORM DRAIN SERVICE:	CITY OF HANFORD
ELECTRICITY:	SOUTHERN CALIFORNIA EDISON COMPANY
NATURAL GAS:	THE GAS COMPANY
TELEPHONE:	AT&T
CABLE:	COMCAST
REFUSE:	CITY OF HANFORD

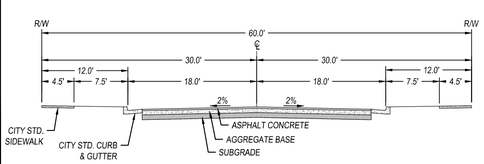
LOT DATA:

MINIMUM LOT AREA:	7,443 SF
MAXIMUM LOT AREA:	20,096 SF
AVERAGE LOT AREA:	9,011 SF
GROSS AREA:	±14.9 AC.
NET AREA:	±11.1 AC.
LOTS PER NET AREA:	5 LOTS PER ACRE
LOTS UNDER MIN. DEPTH REQUIREMENT:	16-37 (22 TOTAL)
TOTAL NUMBER OF LOTS:	55

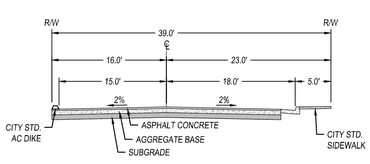
LOT DEPTH REQUIREMENT:

*LOTS THAT REQUIRE PC APPROVAL DUE TO THE DEPTH BEING LESS THAN THE 95' REQUIREMENT.

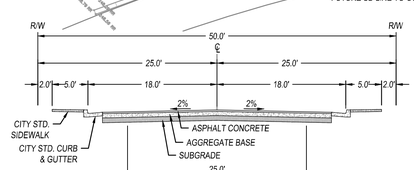




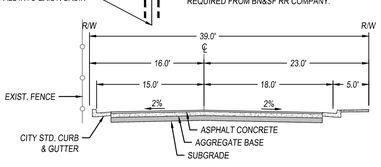
SAXON ST./QUEENS LN./TUDOR LN.
(A-A)



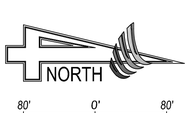
CLARIDGE LANE
(B-B)



QUEENS LN./TUDOR LN.
(C-C)



CLARIDGE LANE
(D-D)



PREPARED BY:

4CREEKS

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VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215







Tentative Tract 930, Planned Unit Development 2020-01, Rezone 2020-01, and Variance No. 2021-01
Mitigation Measures
Mitigated Negative Declaration 2020-54

Mitigation Number	Potential Impact	Mitigation Measure	Responsible Party
AESTHETICS			
MM Aesthetics 1	The project could substantially degrade the existing visual character or quality of the site and its surroundings?	That the applicant develop the project consistent with the General Plan, Planned Unit Development Overlay, Hanford Municipal Code, and Tree Ordinance.	Developer
MM Aesthetics 2	The project may create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	That the development comply with the Hanford Municipal Code Section 17.50.140 Outdoor Lighting Standards and the California Building Code for outdoor lighting standards.	Developer
AIR QUALITY			
MM Air Quality 1	The project may conflict with or obstruct implementation of the applicable air quality plan?	That the applicant complies with the SJVAPCDC Air Quality Plan and obtains any necessary permits through the SJVAPCD.	Developer to file application with San Joaquin Valley Air Pollution Control District
MM Air Quality 2	The project could potentially violate any air quality standard or contribute substantially to an existing or projected air quality	That effective dust control must be maintained on the job site at all times in order to reduce the risk of valley fever to workers and nearby residents. More information regarding the prevention of work related valley fever is available at www.cdph.ca.gov/programs/hesis/Documents/CocciFact.pdf and http://www.cdph.ca.gov/programs/ohb/Documents/OccCocci.pdf.	Developer

	violation?	Contact the San Joaquin Valley Air Pollution Control District for more information on dust control techniques.	
MM Air Quality 3 and 4	The project could potentially 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)?	The project is subject to District Rule 9510, which is intended to mitigate a project's impact on air quality through project design elements or by payment of applicable off-site mitigation fees. The applicant is required to submit an Air Impact Assessment (AIA) application to the District prior to issuance of a building permit. Utilize the cleanest reasonably available off-road construction fleets and practices to further reduce impacts from constructed related exhaust emission and activities.	Developer
BIOLOGICAL RESOURCES			
MM Biological Resources 1	The project could 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? Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with	That a preconstruction survey should be conducted within 14 days of construction (if construction will occur between February 15 and August 15, the breeding season of migratory birds and raptors) to identify and avoid any nesting birds or raptors. - If any active nests are found during the preconstruction survey, the nests shall be designated as an Environmentally Sensitive Area (ESA) and protected by a construction-free buffer determined by a qualified biologist until the nests are no longer active. The typical avoidance buffers are 250 feet for passerine nests and 500 feet for raptor nests, but the buffers may be reduced if it can be documented that the birds are not negatively affected by construction activities.	**Developer**

	established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		
CULTURAL RESOURCES			
MM Cultural Resources 1	The project could potentially cause a substantial adverse change in the significance of an archeological resource pursuant to Public Resources Code 15064.5? The project could potentially disturb human remains, including those interred outside of formal cemeteries?	That tribal monitors are required during all ground disturbance activities, including but not limited to: water ponds, grading, excavation, trenching, and utilities.	Developer to coordinate with the Tachi Yokut Tribe; Developer or representative to notify archeologist or coroner of discovery (if uncovered)
MM Cultural Resources 2	The project could potentially cause a substantial adverse change in the significance of an archeological resource pursuant to Public Resources Code 15064.5? The project could potentially disturb human remains, including those interred outside of formal cemeteries?	That a Burial Treatment Plan be entered to by the applicant/property owner prior to any earth disturbing activities.	Developer to coordinate with the Tachi Yokut Tribe; Developer or representative to notify archeologist or coroner of discovery (if uncovered)

GEOLOGY AND SOILS			
MM Geology 1	That the project may expose people or structures to potential substantial adverse effects including the risk of loss, injury, or death involving: - strong seismic ground shaking; - seismic-related ground failure, including liquefaction, - landslides. The project may 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?	That the development of the project complies with the applicable General Plan policies, as well as the California Building Code.	City of Hanford must ensure conditions are set forth to mitigate impacts; Developer to comply with standards
MM Geology 2	That the project may expose people or structures to potential substantial adverse effects including the risk of loss, injury, or death involving: - strong seismic ground shaking; - seismic-related ground failure, including liquefaction, - landslides. The project may be located on a geologic unit or soil that is	That a geotechnical and soil studies be prepared as a required by the Building Official (if applicable).	Building Official to require; developer to conduct study

	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?		
MM Geology 3:	That the project could result in substantial soil erosion or the loss of topsoil?	That the physical development of the project comply with the Hanford Municipal Code Section 15.52 Flood Damage Prevention Regulation and the California Building Code, along with the plan check and development review process.	City to require; developer to comply
HAZARDS AND HAZARDOUS MATERIALS			
MM Hazards 1	That the project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	If hazardous materials at or above threshold reporting quantities (55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of a gas) will be kept on site during the construction phase, a Hazardous Materials Business Plan must be filed online at http://cers.calepa.ca.gov within 30 days of beginning operations. Hazardous materials are broadly defined, and include fuel, lubricants, antifreeze, motor vehicle batteries, welding gases, paints, solvents, glues, agricultural chemicals, etc. Please contact our office if you require assistance with the online registration process. Any quantities of hazardous wastes generated by the construction operation must be managed in accordance with Federal, State, and local laws and regulations. Hazardous wastes cannot be disposed of into the municipal waste stream or onsite sewage disposal system. The owner/operator must contact the Kings County Environmental Health Department at with any questions regarding proper management and reporting of hazardous wastes, such as waste oil/filters, associated with this operation.	Developer
MM Hazards 2	That the project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Any quantities of hazardous wastes generated by the construction operation must be managed in accordance with Federal, State, and local laws and regulations. Hazardous wastes cannot be disposed of into the municipal waste stream or onsite sewage disposal system. The owner/operator must contact our office at with any questions regarding proper management and reporting of hazardous wastes, such as waste oil/filters, associated with this operation.	Developer

	That the project could 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?		
HYDROLOGY AND WATER QUALITY			
MM Hydrology 1 & 2	The project could potentially violate water quality standards or waste discharge requirements. That the project could potentially substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	**MM Hydrology 1:** **<u>Storm Drainage Improvements</u>:** 1. That the developer's engineer shall provide a storm drainage master plan complete with calculations for the entire subdivision for City Engineering Department review and approval prior to recording a subdivision final map for the development. Provisions shall be made to provide service for future areas of development located adjacent to the subdivision. 2. That developer shall be required to comply with State of California Water Resources Control Board requirements specifically related to the National Pollution Elimination System Permit process. 3. At the sole cost of the developer, the developer shall establish a 15' storm drain easement as shown on the Tentative Map, that extends the full depth of, and along the property line of Lots 38 and 39. The developer shall also obtain an easement with the Burlington Northern Santa Fe (BNSF) Railroad to extend said easement through the BNSF right-of-way while meeting all of BNSF regulations for piping installation under the railroad tracks. The developer shall also obtain an Encroachment Permit with the City of Hanford to further extend the storm drain piping to the Mussel Slough	City to require; Developer to provide

		storm drain basin and construct an outfall structure within the storm drain basin per City Standards. 4. In the event that an easement under the Burlington Northern Santa Fe Railroad tracks is not obtainable to run the storm drainage from the development to the existing city-maintained Mussel Slough storm basin, as an alternative, the developer shall install an onsite storm basin so that all storm drainage from the proposed development be retained in a retention drainage basin located as shown on the tentative subdivision map. The basin shall be constructed in conformance with City Standards and as follows: a) The Developer shall install a 6' high chain link fence that includes a top rail and vinyl privacy slats per City Standard Detail GE-23. Color of privacy slats to match surrounding conditions b) The Developer shall install a 16' wide gate entrance to basin per City Standard Detail GE-26 with vinyl privacy slats matching privacy slats in fencing. c) The Developer shall install a 16' wide drive approach per City Standard Detail CO-41. d) The Developer shall include a 5' landscape easement along both Saxon St. and Claridge Lane frontages. e) The storm basin shall have a 10:1 maximum sloped drive to the bottom of the basin for maintenance purposes. f) The developer shall install an outfall structure within the storm drain basin to City Standard Specifications. 5. In the event that the alternative storm drain basin is constructed, per resolution 19-41-R, the developer shall be eligible for a credit towards Storm Drain Impact fees per the 2019 City of Hanford Development Impact Fee Study for storage provided for this development. **MM Hydrology 2:** New development would be required to implement	

		appropriate minimum control measures (MCMs) and design standards in compliance with Phase II General Permit, as outlined in the Stormwater Management Plan, as well as the City's grading plan and site development requirements.	
MM Hydrology 3	The project could potentially substantially alter the existing drainage pattern of the site or area, including through the alteration of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? 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?	New development must submit grading plans. Site development must comply with the requirements of the City Building Division and incorporate best management practices/design standards.	City to require; Developer to provide
MM Hydrology 4	Otherwise substantially degrade water quality?	New development would have to incorporate best management practices and adhere to design standards to maximize the reduction of pollutant loadings in runoff to the maximum extent practical.	City to require; Developer to provide
LAND USE AND PLANNING			
MM Land Use and	Conflict with any applicable land use	**1.** That the applicant obtains discretionary approval of the planned unit development and variance, in order to allow	Discretionary body to approved

Planning 1	plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	deviations from City Standards – including minimum lot size, lot depth, and maximum fence height.	based on required findings
NOISE			
MM Noise 1, 3, and 4	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	**MM Noise 1:** Comply with applicable regulations and policies of the General Plan to ensure that construction-related impacts would be attenuated to the greatest extend feasible. **MM Noise 3:** That a 14-foot sound wall is incorporated into final project design. **MM Noise 4:** Mechanical ventilation or air conditioning must be provided for all homes so that windows and doors can remain closed for sound insulation purposes.	Developer to provide
MM Noise 2:	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? The project could cause a substantial temporary or periodic increase in ambient noise levels existing without the project?	Construction is limited to the hours of 7 a.m. to 10 p.m.	Developer; Police to enforce
PUBLIC SERVICES			

MM Public Services 1	The project may 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. (Fire)	That the development of the project will be subject to Fire Impact Fees.	Developer to pay
MM Public Services 2	The project may 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. (Police)	That the development of the project will be subject to Police Impact Fees.	Developer to pay
MM Public Services 3	The project may 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. (Schools)	That the development of the project will be subject to School Impact Fees.	Developer to pay
MM Public Services 4	The project may result in substantial adverse physical impacts associated with the	That the development of the project will be subject to Park Impact Fees.	Developer to pay

	provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities. (Parks)		
RECREATION			
MM Recreation 1	The project would 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 project includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	1. That the development of the project will be subject to Park impact fees, or provision of park space. 2. That the park be developed according to the conditions set forth by the Public Works Department.	Developer to pay; City to require
TRANSPORTATION/TRAFFIC			
MM Transportation/Traffic 1	The project may conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation	1. That the development is subject to traffic impact fees. 2. Conditions of the development include: **<u>Street Improvements</u>:** 1. That all improvements consisting of sanitary sewers, storm sewers, water mains, concrete curbs and gutters per City Standard Detail CO-11, parkstrip sidewalks per City Standard Detail CO-14, streetlights per City Standard Detail GE-56, landscaping, street sub-	City to require; developer to provide and pay

	including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	grading, surfacing and striping and all other improvements shall be installed in accordance with Chapter 16.24, “Improvements”, of the Hanford Municipal Code and this resolution pertaining to subdivision improvements in effect at the time of filing the tentative subdivision map. 2. All power poles, utility poles, water wells and all other existing utilities in conflict with development shall be removed, relocated or abandoned. 3. Developer shall install a timber barricade at the east end of existing Bristol Lane where the roadway ends at Lots 17 and 18, and at the east end of the future extension of Claridge Lane per City Standard Detail GE-59. 4. A geotechnical report shall be submitted to the City Engineer identifying the existing structural section thickness of all residential roadways concurrent with the submittal of development improvement plans. Reconstruction of existing streets (or another form of mitigation as approved by the City Engineer) will be required if the existing street structural section does not conform to City Standards and Specifications. 5. All streets within the subdivision shall be developed to residential street standard ST-32, except the following: - The portion of Claridge Lane extended to within the development shall be constructed as a modified ST-32 as approved on the Tentative Map. - Traffic index used for the design of street structural section shall be a minimum of 5.0. i. With an 18’ travel lane as measured between centerline of road and face of curb, the north half of Claridge Lane shall have a distance of 23’ from centerline of road to the north right-of-way line. A Public Utilities Easement shall be established behind the future city sidewalk. ii. With a 15’ travel lane as measured between centerline of road and the face of a city standard AC dike, the south half of Claridge Lane shall have a distance of 16’ from centerline of road to the south right-of-way line.	

		iii. Street improvements shall include, but not be limited to, the installation of concrete curb and gutter, sidewalk, landscaping, decorative masonry block wall, street lights, roadway construction, and all street signing, striping and transition paving as required. 6. That street lights shall be installed throughout the subdivision in conformance with City Standard GE-56 and Southern California Edison requirements. Street lights shall be located as designated by City Engineer. 7. That all existing access streets outside of the subdivision boundaries with the exception of Bristol Lane, shall be reconstructed to a modified residential street standard ST-32 as described below: 8. The following are additional criteria for re-development of the offsite street improvements. i. The existing offsite streets shall be reconstructed to conform with City Standard Details ST-32, ST-12 and ST-13 with a minimum traffic index of 5.0 and a road section of a minimum 2.5" asphalt over a minimum of 5" of aggregate road base. If the developer demonstrates to the City that section cores and soil testing indicate that existing road sections and subgrade meet the requirements of these City Standard Details, reconstruction of the existing road sections will not be required. ii. Street improvements shall include, but not be limited to, the installation of concrete curb and gutter per City Standard Detail CO-11, attached sidewalk per City Standard Detail CO-15, accessible ramps at the corners of Kings Road with Claridge Lane, Queens Lane and Tudor Lane per City Standard Detail CO-20, street paving, including pavement reconstruction of existing roadway if applicable, street signing, striping and transition paving as required, repair or replacement of in-kind landscaping and irrigation as needed for existing	

		residential properties and accepted as complete by existing properties owners. iii. With an 18' travel lane as measured between centerline of road and face of curb, the north half of Claridge Lane shall have a distance of 23' from centerline of road to the north right-of-way line. iv. With a 15' travel lane as measured between centerline of road and face of curb, the south half of Claridge Lane shall have a distance of 16' from centerline of road to the south right-of-way line. 9. The reconstruction of existing roadways is subject to partial reimbursement to the developer. The developer shall be entitled to a credit towards their development impact fee for permanent street improvements constructed by the developer based on a percentage of use. It has been determined that the new development will have 85.5% usage of the existing streets (Claridge Lane, Queens Land and Tudor Lane) for ingress/egress to the new development. Therefore, the City would reimburse the remaining 14.5% of the construction costs associated with reconstructing the roadway as needed including the addition of curb & gutter, sidewalks, accessible ramps and asphalt pave out to the lip of gutter per the approved Tentative Subdivision Map. Appropriate graphic exhibits referenced to the subdivision offsite improvement plans shall also be provided as needed to facilitate the reimbursement review process.	
MM Transportation/Traffic 2	The project may conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated	That the development is subject to traffic impact fees.	Developer to pay

	roads of highways?		
MM Transportation/Traffic 3	The project may conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	That the development is subject to traffic impact fees.	Developer to pay
UTILITIES AND SERVICE SYSTEMS			
MM Utilities 1	Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	See **MM Hydrology 1.**	City to require and ensure compliance; developer to provide
MM Utilities 2	Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	That the future development would be required to implement water conservation measures.	City to require and ensure compliance; developer and future occupants to adhere
MM Utilities 3	Would the project comply with federal, state, and local statures related to solid waste?	That the future project be required to comply with all statutes and regulations related to solid waste.	City to require; developer to provide

CalEEMOD

Liberty Pointe 930 Summary Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Liberty Pointe 930
Construction Start Date	1/1/2024
Operational Year	2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.40
Precipitation (days)	23.0
Location	36.34994556776053, -119.66491878859821
County	Kings
City	Hanford
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2615
EDFZ	9
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.14

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Single Family Housing	55.0	Dwelling Unit	14.0	107,250	644,207	—	170	55-unit single-family residential subdivision

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.55	33.7	11.4	14.3	0.02	0.50	0.16	0.66	0.46	0.04	0.50	—	2,641	2,641	0.11	0.04	0.84	2,655
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.42	3.72	36.0	33.7	0.06	1.60	19.8	21.4	1.47	10.1	11.6	—	6,753	6,753	0.28	0.06	0.02	6,778
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.32	2.23	10.1	11.1	0.02	0.44	1.40	1.83	0.40	0.60	1.00	—	2,139	2,139	0.09	0.03	0.23	2,149
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.24	0.41	1.83	2.03	< 0.005	0.08	0.25	0.33	0.07	0.11	0.18	—	354	354	0.01	< 0.005	0.04	356

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.56	6.44	3.22	30.1	0.08	1.88	2.37	4.25	1.81	0.60	2.41	328	5,307	5,635	4.58	0.20	13.1	5,821
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.98	5.86	3.47	25.6	0.08	1.88	2.37	4.24	1.81	0.60	2.41	328	5,035	5,363	4.61	0.21	1.09	5,542
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.93	4.91	2.79	16.8	0.04	0.48	2.31	2.79	0.46	0.59	1.05	96.3	4,596	4,692	3.50	0.20	5.99	4,845
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.53	0.90	0.51	3.07	0.01	0.09	0.42	0.51	0.08	0.11	0.19	15.9	761	777	0.58	0.03	0.99	802

6. Climate Risk Detailed Report

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	0	0	N/A
Drought	3	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	5	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	3	1	1	3
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	5	1	1	4

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

7. Health and Equity Details

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	51.0
Healthy Places Index Score for Project Location (b)	57.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

Biological Survey

601 Pollasky Avenue, Suite 301 | Clovis, CA 93612

May 17, 2020

Daniel Bailey
President/CEO
Holly Hills Group
480 E. Bogert Trail
Palm Springs, CA 92264

Subject: Biological Reconnaissance Survey on a 14-acre Parcel (APN 008-4100-43000) in Hanford, California

Dear Mr. Bailey:

Quad Knopf, Inc. (QK) is pleased to present this letter report on the results of a biological reconnaissance-level survey on a 14-acre parcel in Hanford, California. The survey focused on identifying the presence of special-status plant and wildlife species, wetlands and waters, and other sensitive biological resources.

Project Description and Background

The Project includes the construction of a housing development on an approximately 14-acre parcel (APN 008-4100-43000) on the west side of Hanford, north of West Grangeville Avenue. A biological survey was previously conducted on the Project site in 2007. That survey focused on determining the presence of the San Joaquin kit fox (*Vulpes macrotis mutica*) based upon a site visit by CDFW and a possible sighting of a San Joaquin kit fox that was reported by a neighboring resident. The site examination conducted in 2007 revealed that there was a pair of red foxes (*Vuples Vulpes*) that were denning near the site and that occasionally used the site as foraging habitat. The purpose of this survey conducted in 2020 was to provide an updated and more comprehensive biological evaluation of the Project site.

Methods

QK conducted a preliminary review of pertinent literature, such as previous environmental reports for other projects near the site, and a query of pertinent databases including the California Native Plant Society Inventory of Rare Plants (CNPS 2020), California Natural Diversity Database (CNDDB 2020), U.S. Fish and Wildlife Service species list (USFWS 2020), National Wetland Inventory, and National Hydrography Dataset (NWI/NHD 2020). This information was used to identify potential biological resources that could occur on the site including, but not limited to San Joaquin kit fox, Swainson's hawk (*Buteo swainsoni*), and Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*).

A reconnaissance level survey was conducted on May 8, 2020 by QK Environmental Scientists Julie Hausknecht and Sarah Yates. During the survey, pedestrian transects were walked to achieve 100% visual coverage of the Project site and a 500-foot survey buffer where access was available. All plant and wildlife species observed during the survey were recorded and special-status species and habitats were identified and documented using ArcGIS Collector installed on iPads. Representative photographs were taken. The Project site and surrounding 500 feet were examined for the presence of nesting birds and raptors and suitable nesting substrates.

Results

The Project site consists of nonnative annual grassland habitat dominated by ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua*), and common fiddleneck (*Amsinckia intermedia*). Other common plant species observed included cheeseweed (*Malva parviflora*), London rocket (*Sisymbrium irio*), foxtail barley (*Hordeum murinum*), common mustard (*Brassica rapa*), black mustard (*Brassica nigra*), red stemmed filaree (*Erodium cicutarium*), prickly lettuce (*Lactuca serriola*), jimsonweed (*Datura wrightii*), Canada horseweed (*Erigeron canadensis*), Russian thistle (*Salsola tragus*), common groundsel (*Senecio vulgaris*), rattail sixweeks grass (*Festuca myuros*), puncturevine (*Tribulus terrestris*), and ornamentals and escaped agricultural varieties of grape (*Vitus* sp.), wheat (*Triticum* sp.) black walnut (*Juglans californica*), palm (*Washingtonia* sp.), and star jasmine (*Jasminum multiflorum*). Railroad tracks are east, northeast of the site, within the 500-foot buffer. Also, to the east is the Santa Fe Mini Storage, and the land use to the north, west, and south are residential.

No wetland features occur on the Project site, but a drainage basin was present to the east of the site within the 500-foot buffer. That area was fenced, access was restricted, and Project activities would not affect that resource.

There were no special-status species plant or wildlife species present on and within 500 feet of the Project site during the reconnaissance survey. The relatively high degree of past disturbances and the isolated nature of this parcel limits the potential for special-status species to occur.

Two red foxes were observed north of the site within the 500-foot buffer. They were moving east across the railroad tracks from cover beneath oleander shrubs (*Nerium oleander*). The surveyors searched for dens, not only on the project site but also in the vicinity of where the foxes were seen. No den was found. A pile of old discarded lumber was present on the northwest corner of the site, which has potential to provide shelter for the foxes. The lumber pile was recorded as a potential den for the red foxes (Figure 4 in Attachment A).

The site is covered by nonnative annual grassland habitat which provides suitable foraging habitat for the red fox as well as the San Joaquin kit fox. California ground squirrels (*Otospermophilus beecheyi*) and a complex of burrows was present in the 500-foot buffer to the south of the site and along the southern border of the site at the end of Claridge Lane (see Figure 4 in Attachment A). Pocket gopher (*Thomomys bottae*) mounds and burrows were scattered throughout the site and along the site perimeter. The grassland habitat has loose-textured soils but has denser vegetation than is typically preferred by the San Joaquin kit fox. No diagnostic signs of the San Joaquin kit fox were found, and they were determined to be absent from the site because of the presence of red foxes, the high level of disturbance on the site, the lack of dens, and the extensive surrounding residential and commercial developments.

One Eurasian collared dove (*Streptopelia decaocto*) was incubating in a nest located in a eucalyptus tree (*Eucalyptus* sp.). This nest was in the 500-foot buffer, northwest of the site (see Figure 4 in Attachment A). The Eurasian collared dove is not protected by the Migratory Bird Treaty Act. No other nesting birds or raptors were found.

Common bird and wildlife species present onsite during the survey include mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), snowy egret (*Egretta thula*), black phoebe (*Sayornis nigricans*), northern mockingbird (*Mimus polyglottos*), western kingbird (*Tyrannus verticalis*), house finch (*Haemorhous mexicanus*), European starling (*Sturnus vulgaris*), California

scrub jay (*Aphelocoma californica*), rock pigeon (*Columba livia*), Canada goose (*Branta canadensis*), horned lark (*Eremophila alpestris*), black-chinned hummingbird (*Archilochus alexandri*), red-winged blackbird (*Agelaius phoeniceus*), house sparrow (*Passer domesticus*), western fence lizard (*Sceloporus occidentalis*), and domestic dog scat (*Canis familiaris*).

Summary, Conclusions, and Recommendations

A reconnaissance-level survey was conducted for a proposed housing development on a 14-acre parcel (APN 008-4100-43000) in Hanford on May 8, 2020. The purpose of the survey was to update previous findings from a survey done by QK in 2007 and to identify the presence or the potential for the presence of special-status species including, but not limited to, San Joaquin kit fox, Swainson's hawk, and Tipton kangaroo rat. No special-status species or diagnostic signs of special-status species were found. The degraded condition of the site and the isolated nature of the site limits the potential for special-status species to be present.

Two red foxes were seen in the northeast corner of the site within the 500-foot buffer. No dens were located but a pile of old lumber provides a potential denning site. Ground squirrel burrows located along the south border of the Project site have potential to become widened for use by foxes and suitable prey is present. However, it was determined that the San Joaquin kit fox does not occur on the site because of a lack of dens, the highly disturbed condition of the site, extensive surrounding residential and commercial development, and the presence of red foxes, which are a competitor of the San Joaquin kit fox. Red foxes are not a sensitive species and would tend to preclude the presence of San Joaquin kit foxes.

No existing stick nests or nesting raptors were observed on or within 500 feet of the Project site. Suitable nesting substrates are present for Swainson's hawks or other raptors including tall trees and utility poles that could support the construction of new nests, but no nests were found. The nesting Eurasian collared dove that was observed nesting in the buffer area is an introduced species and is not protected by the Migratory Bird Treaty Act. For protected bird species, existing regulations prohibit taking or possessing birds, parts of birds, nests, or eggs. A preconstruction survey should be conducted within 14 days of construction (if construction will occur between February 15 and August 15, the breeding season of migratory birds and raptors) to identify and avoid any nesting birds or raptors. If any active nests are found during the preconstruction survey, we recommend that the nests be designated as an Environmentally Sensitive Area (ESA) and protected by a construction-free buffer determined by a qualified biologist until the nests are no longer active. The typical avoidance buffers are 250 feet for passerine nests and 500 feet for raptor nests, but the buffers may be reduced if it can be documented that the birds are not negatively affected by construction activities.

Please contact us at (559) 449-2400 if you have any questions regarding the contents of this letter report or need additional information. It has been a pleasure to assist you with this Project.

Sincerely,

Sarah Yates,
Assistant Environmental Scientist

Curtis Uptain,
Principal Environmental Scientist

Attachments:

A: Figures
B: Representative Photographs

References

California Department of Fish and Wildlife (CDFW). 2020. California Natural Diversity Database—Rarefind Version 5. Biogeographic Data Branch of California Department of Fish and Wildlife [accessed May 7, 2020].

California Native Plant Society (CNPS). 2020. Inventory of Rare and Endangered Plants of California: online edition, v8-03 0.39. http://www.rareplants.cnps.org [accessed May 7, 2020].

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U.S. Fish and Wildlife Service (USFWS). 2020. Online Information for Planning and Consultation (IPaC) http://www.fws.gov/sacramento/es/spp_list.htm. [accessed May 7, 2020].

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U.S. Geological Survey. National Hydrographic Dataset (NHD). 2020. United States Geological Survey Hydrography On-line Database. http://nhd.usgs.gov/. [accessed May 7, 2020].

ATTACHMENT A

FIGURES

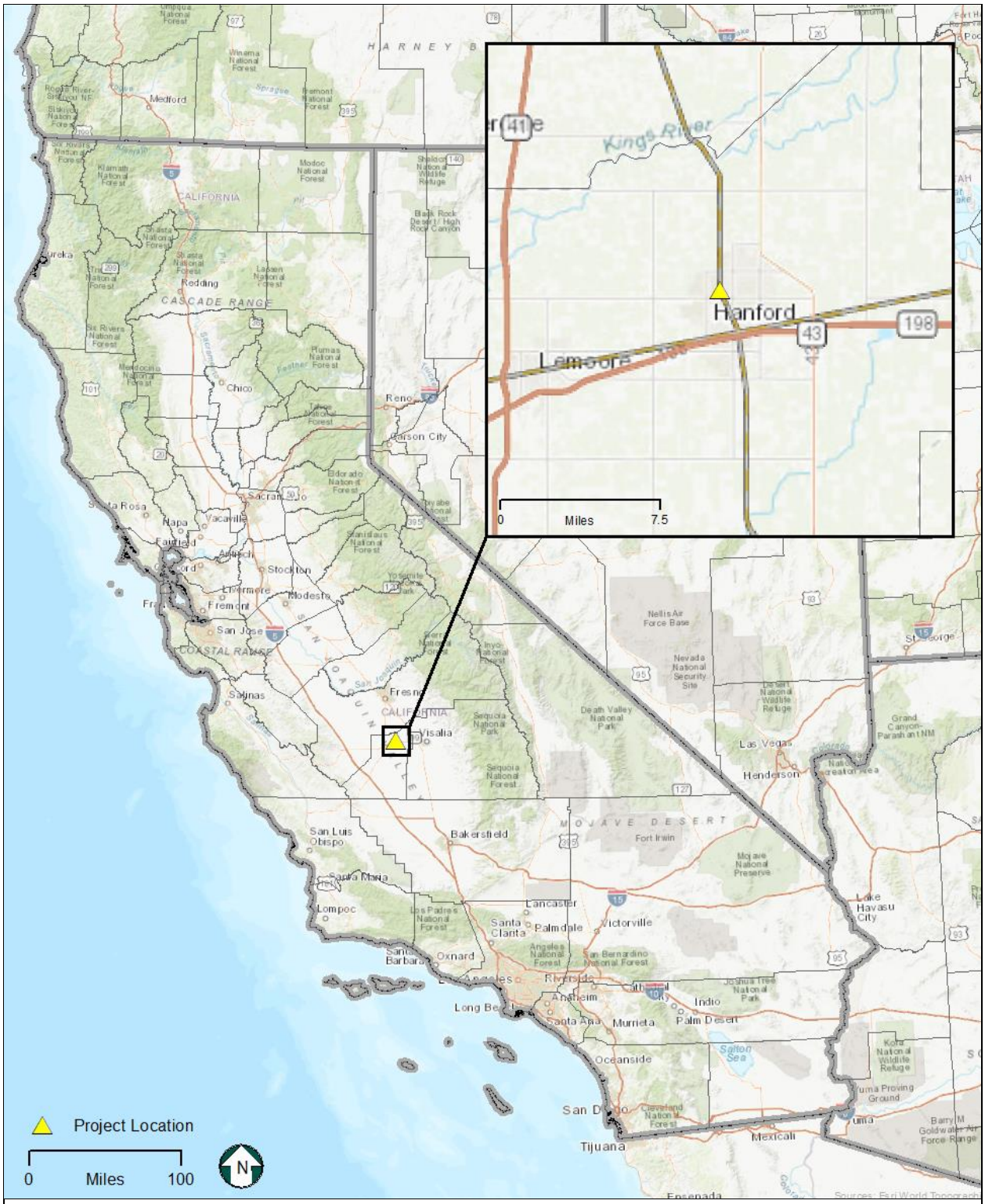


Figure 1
Regional Map, Hanford Housing Project,
Kings County, California



Figure 2
Vicinity Map, Hanford Housing Project,
Kings County, California

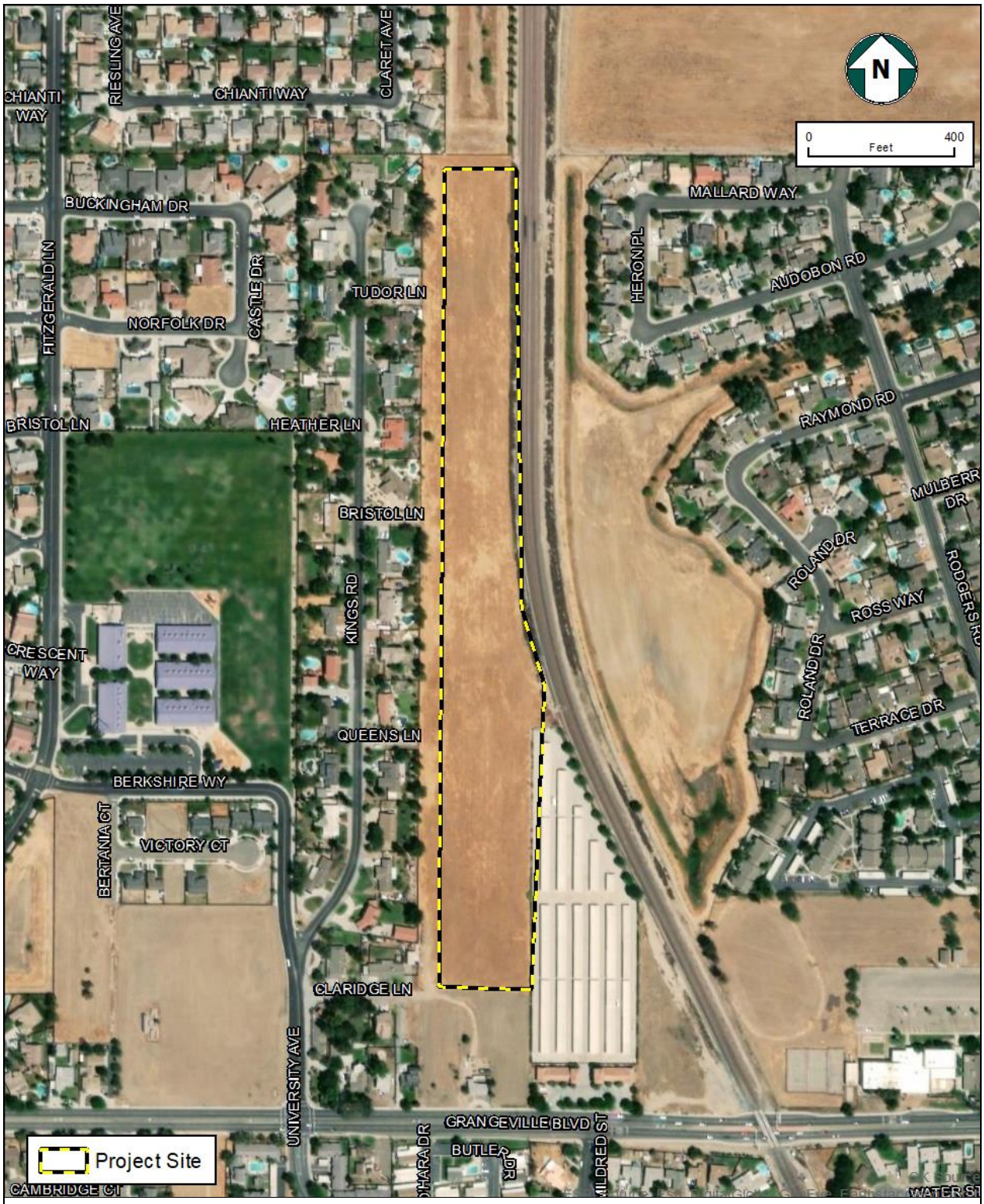


Figure 3
Project Site Map, Hanford Housing Project,
Kings County, California

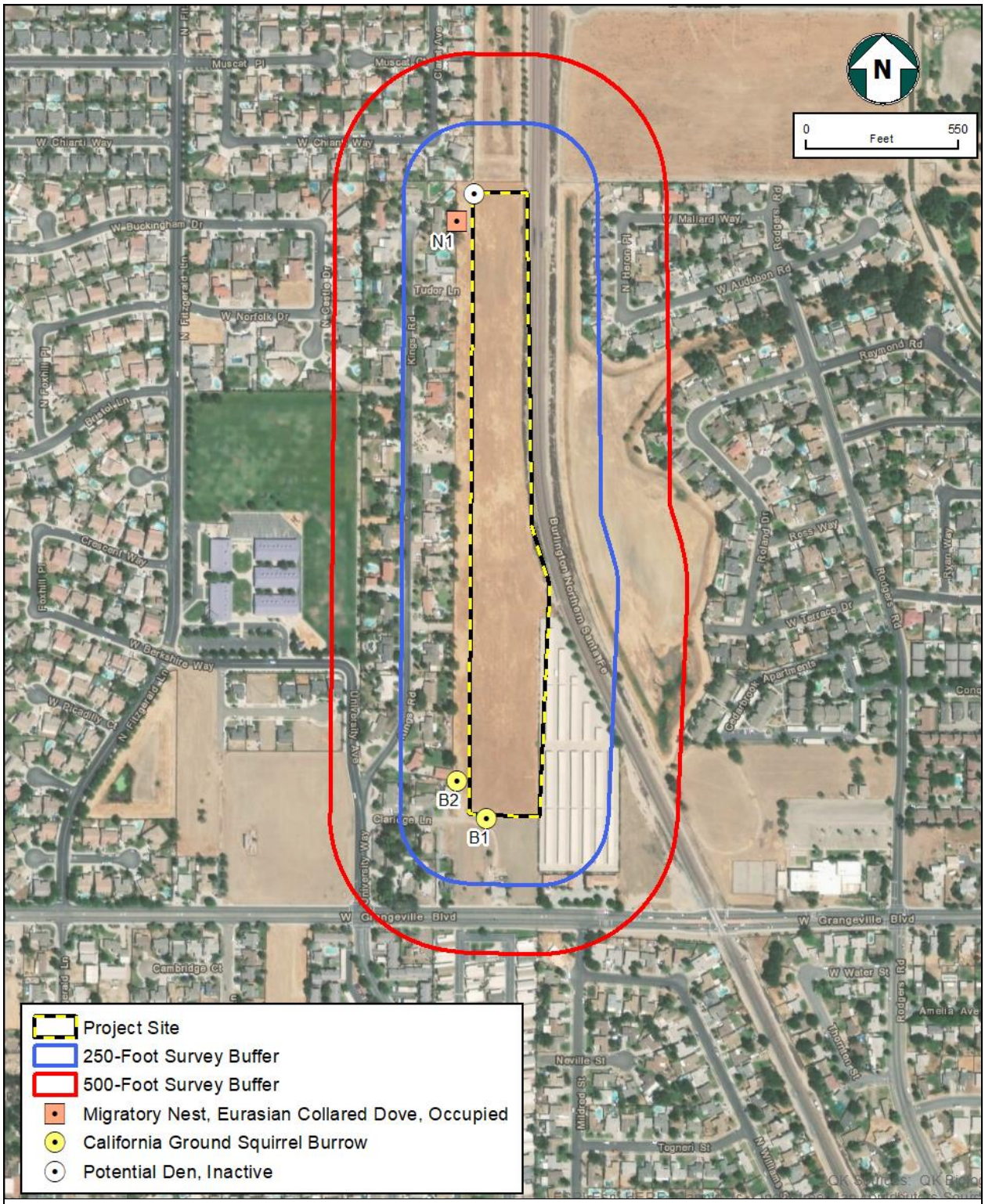


Figure 4
Biological Resources, Hanford Housing Project,
Kings County, California

ATTACHMENT A

REPRESENTATIVE PHOTOGRAPHS



Photograph 1. Aerial view of the Project site and surrounding area.
36.34278, -119.66333 facing northwest
Taken by Sarah Yates on May 8, 2020



Photograph 2. View of the drainage basin, Santa Fe Mini Storage, and railroad to the east within the 500-foot buffer of the Project site. 36.34305, -119.66306, facing north.
Taken by Sarah Yates on May 8, 2020



Photograph 3. Area of black mustard and field mustard growth where house finches were foraging.
36.34305, -119.66306, facing north.
Taken by Julie Hausknecht on May 8, 2020



Photograph 4. View of a ground squirrel burrow complex in the south-central portion of the site.
36.34363, -119.66466, facing northwest.
Taken by Sarah Yates on May 8, 2020.



Photograph 5. Overview of the site conditions in the north east corner where two red foxes were observed. 36.34954, -119.66420, facing northwest.
Taken by Sarah Yates on May 8, 2020.



Photograph 6. Railroad tracks with a view of the Project site (left) and the fenced in drainage basin (right) and vegetation. 36.34572, -119.66361, facing northwest.
Taken by Sarah Yates on May 8, 2020.



Photograph 7. Pile of old lumber in the northwest corner of the site.
36.34983, -119.66483, facing northwest.
Taken by Julie Hausknecht on May 8, 2020.



Photograph 8. Location of a Eurasian collared dove nest in a eucalyptus, northwest of the site in the 500-foot buffer. 36.34983, -119.66483, facing northwest.
Taken by Julie Hausknecht on May 8, 2020.

Acoustical Analysis

ACOUSTICAL ANALYSIS

WEST GRANGEVILLE BOULEVARD RESIDENTIAL DEVELOPMENT
HANFORD, CALIFORNIA

WJVA Project No. 19-036

PREPARED FOR

HOLLY HILLS GROUP
480 E. BOGERT TRAIL
PALM SPRINGS, CALIFORNIA 92264

PREPARED BY

WJV ACOUSTICS, INC.
VISALIA, CALIFORNIA

wjv acoustics

SEPTEMBER 4, 2019

INTRODUCTION

The project is a proposed 83-lot single-family residential development to be located in Hanford, California. The project site is located north of Grangeville Boulevard, between 11th Avenue and 12th Avenue. The City of Hanford has requested an acoustical analysis to quantify project site noise exposure and determine noise mitigation requirements. This analysis, prepared by WJV Acoustics, Inc. (WJVA), is based upon a project site plan provided by the potential project developer, railroad operations data provided by the Federal Rail Administration (FRA) and the findings of on-site noise level measurements. Revisions to the lot layout site plan will affect the findings and recommendations of this report. The site plan is provided as Figure 1.

Appendix A provides a description of the acoustical terminology used in this report. Unless otherwise stated, all sound levels reported are in A-weighted 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-weighting, as it provides a high degree of correlation with human annoyance and health effects. Appendix B provides typical A-weighted sound levels for common noise sources.

NOISE EXPOSURE CRITERIA

The City of Hanford Noise Element of the General Plan (adopted April 2017) does not provide any noise level standards. Therefore, WJVA consulted with City staff who provided the noise level standards from the City's 2002 General Plan. The standards provided in the 2002 General Plan are the same as those provided in the Kings County General Plan, and will be considered the applicable standards for this project.

The 2002 General Plan sets noise compatibility standards for transportation noise sources in terms of the Day-Night Average Level (L_{dn}). The General Plan establishes a land use compatibility criterion as 60 dB L_{dn} for exterior noise exposure within outdoor activity areas of residential land uses. An exterior noise exposure of up to 65 dB L_{dn} is allowed in instances where it is not possible to reduce noise exposure in outdoor activity areas to 60 L_{dn} or less using a practical application of available noise reduction measures. Outdoor activity areas generally include backyards of single-family residences, individual patios or decks of multi-family developments and common outdoor recreation areas of multi-family developments. The intent of the exterior noise level requirement is to provide an acceptable noise environment for outdoor activities and recreation.

Additionally, the General Plan requires that interior noise levels attributable to exterior transportation noise sources not exceed 45 dB L_{dn}. The intent of the interior noise level standard is to provide an acceptable noise environment for indoor communication and sleep.

PROJECT SITE NOISE EXPOSURE

The double-tracked BNSF Railway main-line is located along the eastern boundary of the project site. The nearest grade crossing is located at Grangeville Boulevard, south of the project site. Train warning horns are sounded along the project frontage by southbound trains as they are approaching the Grangeville Boulevard grade crossing. The tops of the rails are approximately 3-5 feet higher than the existing project grade along most of the eastern boundary of the project site. There is an existing mini-storage facility located between the railroad and the southern half of the proposed development.

Noise level monitoring was conducted by WJVA at four (4) locations within the project site on August 13 and August 14, 2019. Site 1 was located within the norther portion of the project site, at a distance of approximately 110 feet from the centerline of the double-tracks. Site 2 was located near the northern extent of the existing mini-storage facility at a distance of approximately 155 feet from the centerline of the double-tracks, and approximately parallel with the alignment of Queens Lane. Site 3 was located near the middle of mini-storage facility (as it runs in a north-south direction), at a distance of approximately 315 feet from the centerline of the double-tracks. Site 4 was located near the southern portion of the mini-storage facility at a distance of approximately 440 feet from the centerline of the double-tracks, and approximately parallel with the alignment of Claridge Lane.

It was intended that three sites (Sites 2-4) document typical noise levels from BNSF and Amtrak train movements near a grade crossing where the warning horn must be used, and where varying distances between the project site and the railroad line result in varying levels of train nose exposure. Additionally, the existing min-storage facility provides varying levels of acoustic shielding within the project site, and Sites 2-4 were selected to document this dynamic acoustic environment. One site (Site 1) was selected to represent a location away from a grade crossing, less impacted by train warning horn noise and without any acoustic shielding from train noise exposure. The project area and railroad noise monitoring sites are shown in Figure 2.

Noise monitoring equipment consisted of Larson-Davis Laboratories Model LDL-820 sound level analyzers equipped with B&K Type 4176 1/2" microphones. This equipment complies with the specifications of the American National Standards Institute (ANSI) for Type I (Precision) sound level meters. The meters were calibrated in the field prior to use with a B&K Type 4230 acoustic calibrator to ensure the accuracy of the measurements. The microphones were placed on tripods at 5 feet above the ground.

A total of thirteen (13) train movements were monitored over the two day-day monitoring period, including three (3) passenger train and ten (10) freight trains. Table I provides the average noise levels in terms of the L_{max} (maximum) and SEL metrics for each of the four monitoring sites. The SEL is a measure of the total energy of a noise event, including consideration of event duration. The SEL is not actually heard, but is a derived value used for the calculation of energy-based noise exposure metrics such as the L_{dn}.

TABLE I

SUMMARY OF MEASURED TRAIN NOISE LEVELS
GRANGEVILLE BOULEVARD RESIDENTIAL DEVELOPMENT, HANFORD
AUGUST 13-14, 2019

Noise Measurement Site	Average Passenger Train Noise Levels		Average Freight Train Noise Levels	
	L_{max}	SEL	L_{max}	SEL
Site 1	77.1	85.3	98.6	102.8
Site 2	69.9	79.5	89.4	96.0
Site 3	69.4	76.7	88.0	93.2
Site 4	69.7	73.8	84.3	90.0

Source: WJV Acoustics, Inc.

According to the U.S. Department of Transportation, Federal Railroad Administration Railroad Crossing Inventory, an average of 46 train movements per day occur on the BNSF Railway in the project vicinity, including 14 Amtrak train movements. Freight train operations may occur at any time during the day or night. According to the current Amtrak schedule (5/20/19), all but one passenger train passes the project site during the daytime hours (7:00 a.m.-10:00 p.m.). Estimates of future railroad activity were not available from the BNSF Railway.

Railroad noise exposure may be quantified in terms of the L_{dn} using the following formula:

L_{dn} *=SEL+ 10 log Neq – 49.4*

where,

SEL is the average SEL for a train pass-by, Neq is the equivalent number of pass-bys in a typical 24-hour period determined by adding 10 times the number of nighttime movements (10 p.m.-7 a.m.) to the actual number of daytime movements (7 a.m.-10 p.m.). 49.4 is a time constant equal to 10 times the log of the number of seconds in a day.

WJVA calculated the L_{dn} for each of the four noise monitoring sites using the measured noise levels and train data obtained from Amtrak and the Federal Railroad Administration. WJVA then applied the calculated L_{dn} for each site to the locations of the closest proposed residential lots to the railroad, accounting for standard rate of noise attenuation with increased distance from the noise source. Additionally, the front of Lots 1-10 and Lots 31-39 face the railroad, and the constructed homes would provide acoustical shielding to the backyards (where the exterior noise standard is applied). Whereas, lots 60-78 would have backyards that abut the railroad line, with no acoustical shielding to the backyards provided by the home structures.

The project site noise exposure described below takes into account the acoustical shielding provided by the existing mini-storage facility, as well as the acoustical shielding that would be provided by the home structures for the lots where the front faces the railroad. Noise level exposure at lots 60-77 do not take into account any acoustical shielding as they are not shielded

by the existing min-storage facility nor would the backyards be shielded by the proposed home construction. The railroad noise exposure for the proposed project is as follows:

- Lots 1-10: 56-59 dB L_{dn}
- Lots 31-39: 63-66 dB L_{dn}
- Lots 60-78: 74-76 dB L_{dn}

Noise level exposures within backyards at all lots, with the exception of lots 1-10, will exceed the City's 60 dB L_{dn} exterior noise level standard. Mitigation must therefore be considered.

NOISE MITIGATION

Exterior Noise Mitigation:

Exterior noise levels within the backyards (outdoor activity areas) of the proposed single-family residential lots would exceed the applicable City of Hanford exterior noise level standard of 60 dB L_{dn} at several lots, and mitigation must be considered. Additionally, noise levels for most lots would also exceed 65 dB L_{dn}, considered to be conditionally acceptable by the City. Noise mitigation could be achieved by the construction of a noise barrier consisting of a sound wall, berm or a combination of the two. A complicating factor is that the BNSF rails are elevated approximately 3-5 feet above project site elevation. As project site grading plans were not known at the time of this analysis, a rail height of 4 feet above finish lot grade was assumed for the purpose of sound wall height calculations.

The effectiveness of noise barrier is determined by the geometric relationship between the noise source, barrier and receiver. Noise barriers are most effective when they are located either close to the noise source or receiver. Due to the height of the railroad noise source on the elevated railbed, the most cost-effective location for a noise barrier for this project is as close to the receiver as practical.

A sound wall insertion loss program based on the FHWA Model was utilized to calculate the minimum required height of a noise barrier along the BNSF corridor. The model calculates the insertion loss (noise reduction) of a wall (or berm/wall combination) 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. It was assumed for the sound wall calculations that the effective railroad source height is 10 feet above the tracks. The standard height of a residential receiver is 5 feet above the finished floor elevation. All sound wall heights provided below are described as relative to finished lot grade elevations.

Based upon the above-described assumptions and method of analysis, the noise level insertion loss values and resulting noise levels for sound walls of various heights were calculated. Table II shows sound wall heights required to reduce noise exposure to 60 and 65 dB L_{dn}. According to City policy, levels up to 65 dB L_{dn} may be acceptable if it is determined that it is not feasible to achieve a level of 60 dB L_{dn}.

TABLE II

SOUND WALL HEIGHTS AND NOISE LEVELS

Lots	Height to Achieve 60 dB CNEL, Ft.	Height to Achieve 65 dB CNEL, Ft.
1-10	---[1]	---[1]
31-39	14	8
61-78	Not feasible	14

[1]Sound wall not required to meet noise level standard
Source: WJV Acoustics, Inc.

From Table II it is apparent that reducing exterior noise exposure within the backyards of lots 61-78 to 60 dB L_{dn} or less is not feasible, and a sound wall constructed to a minimum height of 14 feet above final backyard lot grade elevation would be required to reduce noise levels to below 65 dB L_{dn}. A sound wall constructed to a minimum height of 14 feet above final backyard lot grade elevation would be required to reduce exterior noise levels to below 60 dB L_{dn} at lots 31-39. The calculations and wall heights described in Table II assume the sound wall would be located as close to the railroad as possible, along the project site's eastern boundary.

The above described noise barrier would be less effective at the second-floor level and the resulting noise exposure would be greater than 65 dB L_{dn} and second floor outdoor activity areas such as decks should not be included in the final project design for lots 61-78.

It should be noted, Lots 1-10 are acoustically shielded by the existing mini-storage facility. The acoustic shielding provides sufficient noise level reduction to comply with the City's exterior 60 dB L_{dn} exterior noise level standard. As described in Table II, a sound wall is not required for Lots 1-10. If the mini-storage facility were to demolished at a future date, noise levels within these lots would exceed 60 dB L_{dn} noise level standard.

Interior Noise Exposure:

The City of Hanford interior noise level standard is 45 dB L_{dn}. With the above-described sound wall in place, the worst-case noise exposure within the proposed residential development would be approximately 65 dB L_{dn} at first-floor receiver locations. This means that the proposed residential construction must be capable of providing a minimum outdoor-to-indoor noise level reduction (NLR) of approximately 20 dB (65-45=20) at first floor receiver locations.

According to the project applicant, two-story construction is not currently being proposed for the project. However, if two-story construction were to be proposed along the first row of lots adjacent to the railroad line, second-story façade exposure could be as high as 78 dB L_{dn} (depending on proposed construction setback distance(s) from the railroad and site-specific acoustical shielding). This means that the proposed residential construction (if two-story construction were to be proposed) must be capable of providing a minimum outdoor-to-indoor noise level reduction (NLR) of approximately 33 dB (78-45=33) at second floor receiver locations.

A specific analysis of interior noise levels was not performed. However, it may be assumed that residential construction methods complying with current building code requirements will reduce exterior noise levels by approximately 25 dB if windows and doors are closed. This will be sufficient for compliance with the City's 45 dB L_{dn} interior standard at first-floor receivers along the railroad frontage, provided the above-described sound wall is constructed. Requiring that it be possible for windows and doors to remain closed for sound insulation means that air conditioning or mechanical ventilation will be required. According to the project applicant, the proposed residential construction will consist of single-story homes. However, if two-story homes are proposed, a detailed acoustical analysis will be required once specific construction plans are known, to ensure compliance with the City's 45 dB L_{dn} interior noise level standard.

GRANGEVILLE BOULEVARD GRADE CROSSING REMOVAL

According to the project applicant, the City of Hanford may consider a grade separation of the BNSF railroad line as it crosses Grangeville Boulevard. The removal of the grade crossing would eliminate the need for trains to utilize their warning horns within approximately ¼ mile of the grade crossing.

With the current project site plan (lot layout), the removal of the grade crossing would not greatly reduce the required mitigation measures, as the area most impacted are Lots 60-78, where backyards are not acoustically shielded by the home construction. Noise levels at Lots 60-78 are not highly impacted by train warning horn noise as they are located up to ½ mile from the existing grade crossing. The removal of the grade crossing would reduce noise levels at lots 1-10, and to a lesser extent, Lots 31-39. The removal of the grade crossing would reduce the required sound wall heights along Lots 31-39, but would not reduce the required sound wall heights along Lots 60-78.

CONCLUSIONS AND RECOMMENDATIONS

Exterior Noise Compliance:

It is not feasible to construct a sound wall that could effectively mitigate exterior noise level exposure to 60 dB L_{dn} or less within all the lots for the proposed 83-lot residential development along Grangeville Boulevard. The construction of 14-foot sound wall along the project railroad frontage (as well as the rear of Lots 77 and 78) would reduce exterior noise levels to below 65 dB L_{dn} at Lots 60-78 and to below 60 dB L_{dn} for Lots 31-39. The sound wall location is provided on Figure 1.

Interior Noise Compliance:

The proposed 83-lot residential development will comply with applicable City of Hanford interior noise level requirements at all first-floor receiver locations provided the following mitigation measures are incorporated into final project design.

1. The above-described 14-foot sound wall is incorporated into final project design.

2. Mechanical ventilation or air conditioning must be provided for all homes so that windows and doors can remain closed for sound insulation purposes.

According to the project applicant, the proposed project will consist of single-story residential construction. The above-described sound wall would not provide acoustical shielding to potential second floor receivers (if proposed) along the railroad line frontage. **If two-story construction is proposed, construction details should be reviewed by an acoustical consultant once project-specific construction details are known.**

The conclusions and recommendations of this acoustical analysis are based upon the best information known to WJV Acoustics Inc. (WJVA) at the time the analysis was prepared concerning the proposed lot layout plan, project site elevation, traffic volumes and roadway configurations. Any significant changes in these factors will require a reevaluation of the findings of this report. Additionally, any significant future changes in motor vehicle technology, noise regulations or other factors beyond WJVA's control may result in long-term noise results different from those described by this analysis.

Respectfully submitted,



Walter J. Van Groningen
President

WJV:wjv

FIGURE 1: SITE PLAN

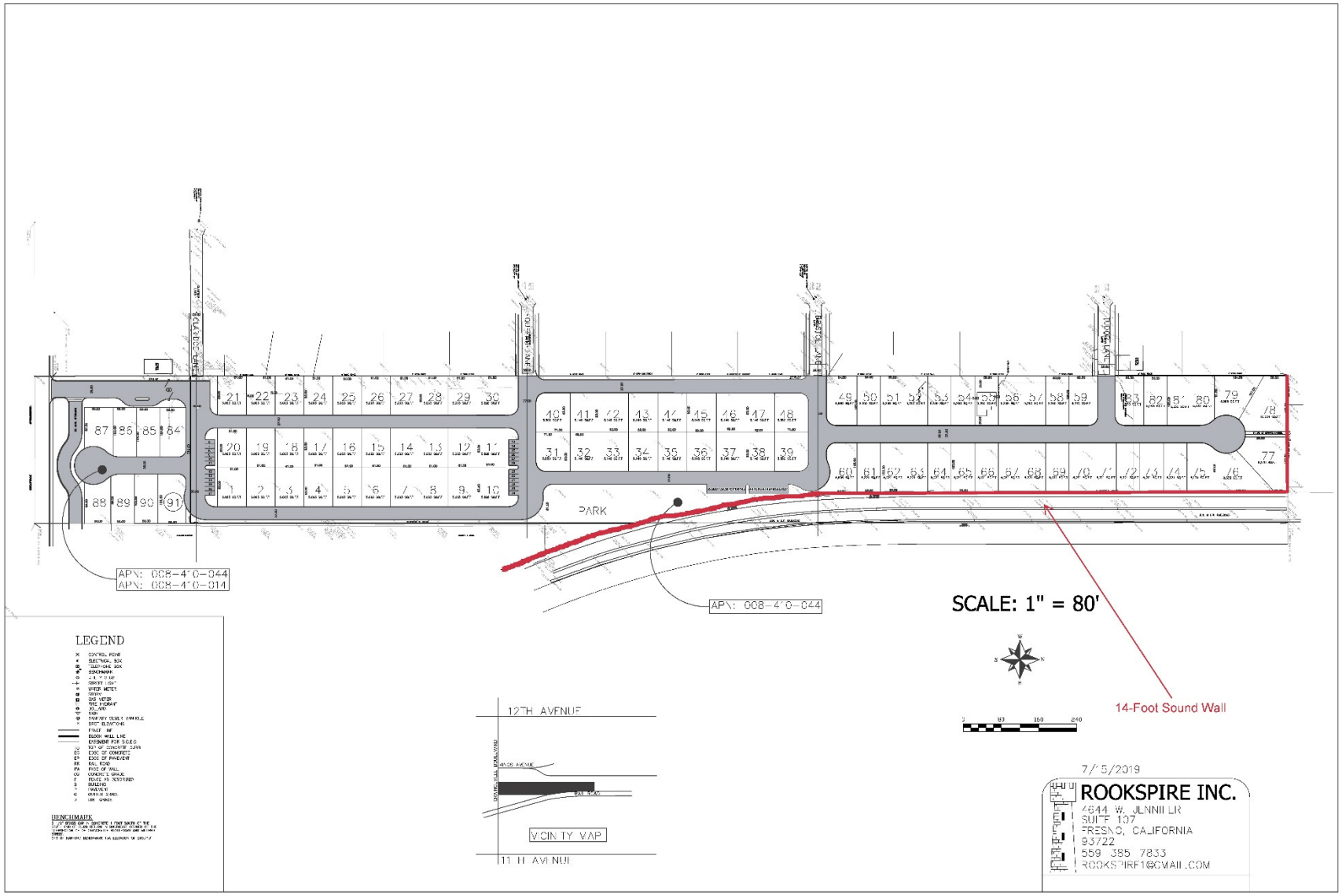
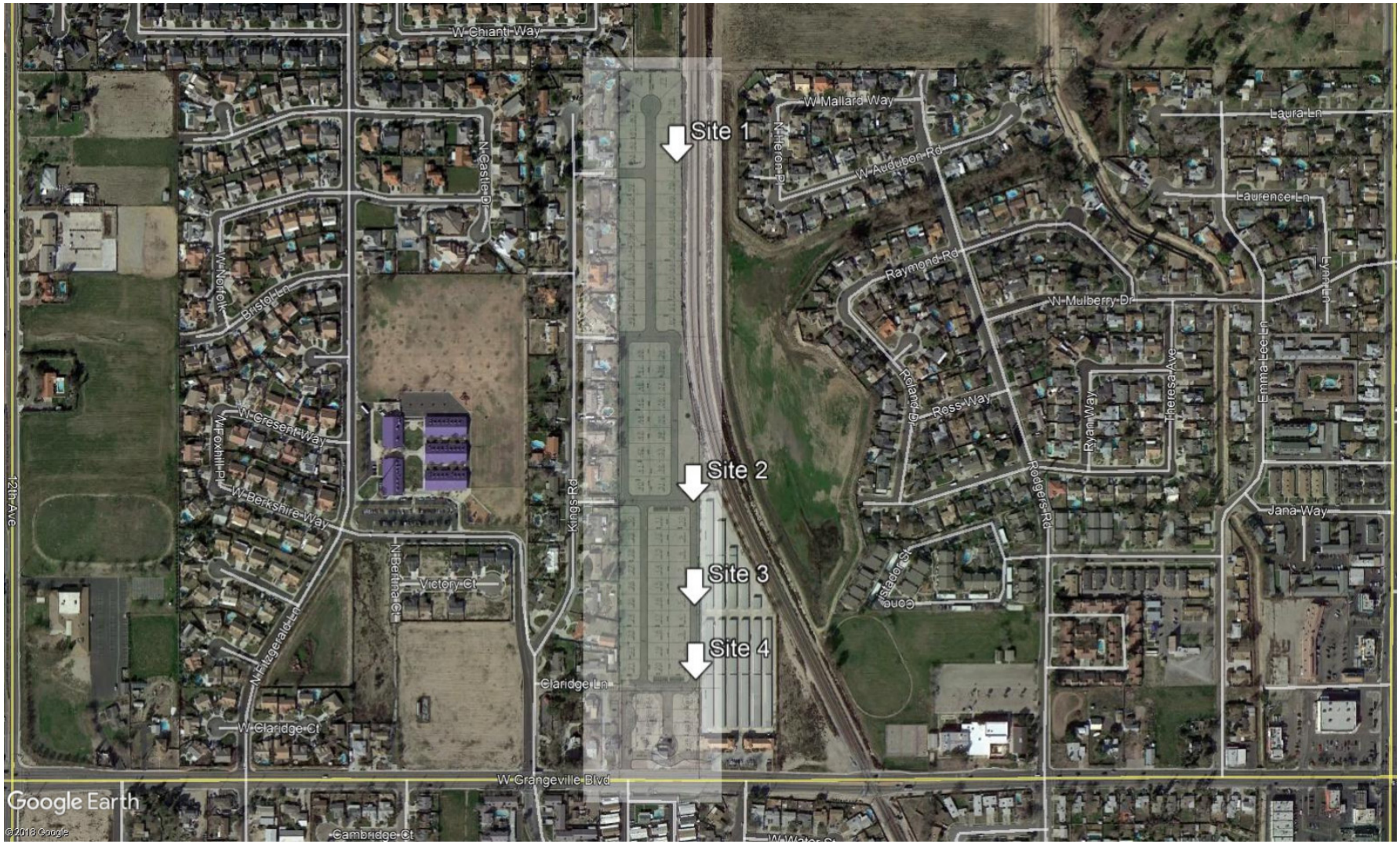


FIGURE 2: PROJECT SITE VICINITY AND NOISE MEASUREMENT LOCATIONS



APPENDIX A

ACOUSTICAL TERMINOLOGY

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 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.

DECIBEL, dB: A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

DNL/L_{dn}: Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.

L_{eq}: Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.

NOTE: The CNEL and L_{dn} represent daily levels of noise exposure averaged on an annual basis, while L_{eq} represents the average noise exposure for a shorter time period, typically one hour.

L_{max}: The maximum noise level recorded during a noise event.

L_n: The sound level exceeded "n" percent of the time during a sample interval (L_{90}, L_{50}, L_{10}, etc.). For example, L_{10} equals the level exceeded 10 percent of the time.

A-2

ACOUSTICAL TERMINOLOGY

NOISE EXPOSURE CONTOURS: Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and L_{dn} contours are frequently utilized to describe community exposure to noise.

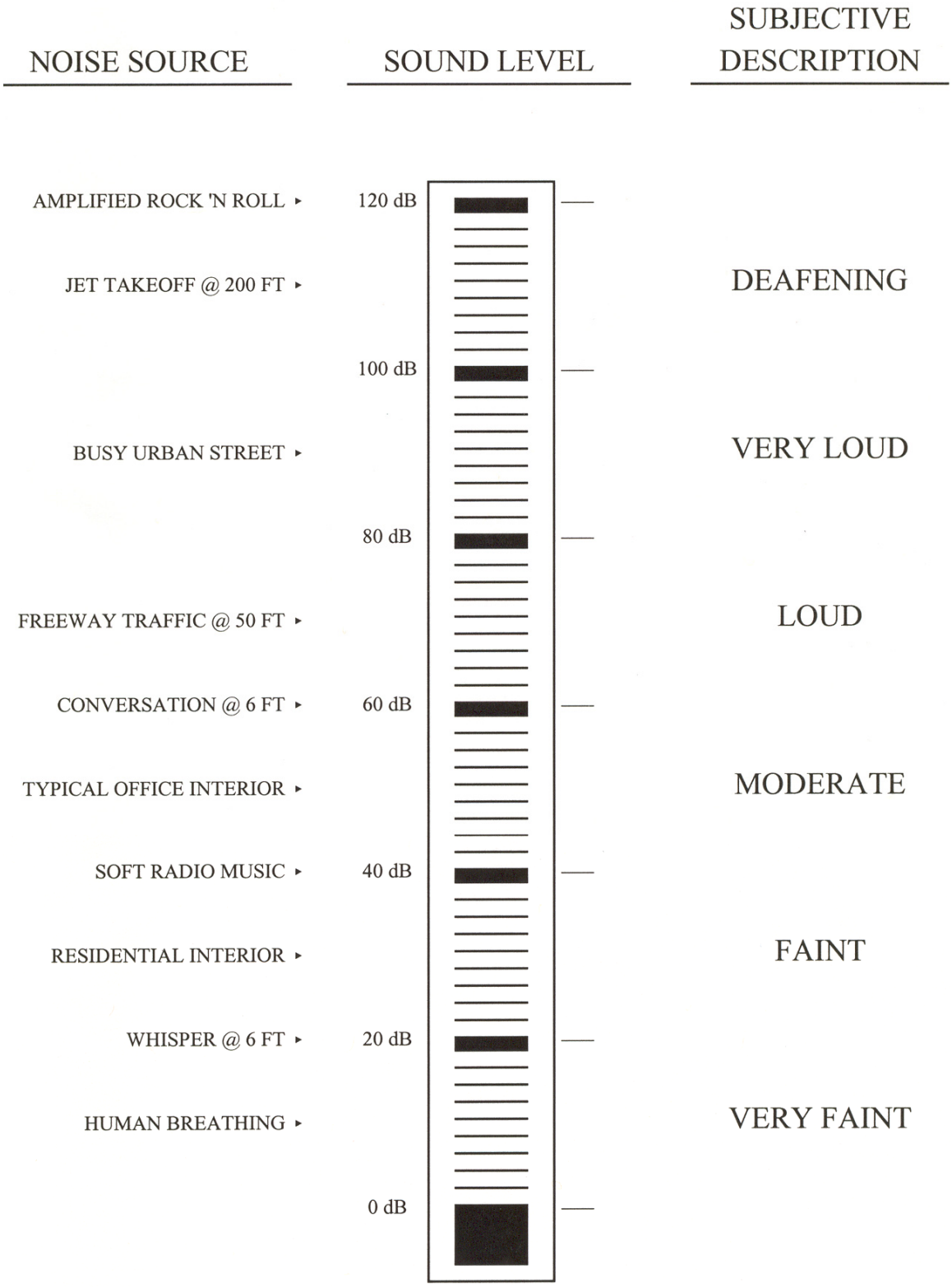
NOISE LEVEL REDUCTION (NLR): The noise reduction between indoor and outdoor environments or between two rooms that is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of "noise level reduction" combines the effect of the transmission loss performance of the structure plus the effect of acoustic absorption present in the receiving room.

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 a 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 micropascals and a reference duration of one second.

SOUND LEVEL: The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting 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.

SOUND TRANSMISSION CLASS (STC): The single-number rating of sound transmission loss for a construction element (window, door, etc.) over a frequency range where speech intelligibility largely occurs.

APPENDIX B
EXAMPLES OF SOUND LEVELS



Traffic Impact Analysis

(Original, 1st Revision, 2nd Revision)

Focused Traffic Impact Analysis Report

Liberty Pointe

Located on the Northeast Quadrant of
12th Avenue and Grangeville Boulevard

In the City of Hanford, California

Prepared for
HollyHills Development
480 East Bogart Trail
Palm Springs, CA 92264

October 20, 2020

Project No. 047-001

Traffic Engineering, Transportation Planning, & Parking Solutions
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Traffic Engineering, Transportation Planning, & Parking Solutions

Focused Traffic Impact Analysis Report

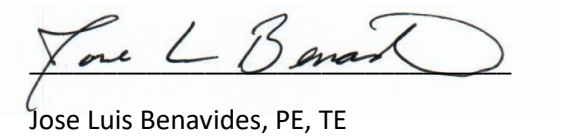
For Liberty Pointe located on the Northeast Quadrant of 12th Avenue and Grangeville Boulevard

In the City of Hanford, CA

October 20, 2020

This Focused Traffic Impact Analysis Report has been prepared under the direction of a licensed Traffic Engineer. The licensed Traffic Engineer attests to the technical information contained therein and has judged the qualifications of any technical specialists providing engineering data from which recommendations, conclusions, and decisions are based.

Prepared by:



Jose Luis Benavides, PE, TE
President



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Introduction and Summary

Introduction

This Report describes a Focused Traffic Impact Analysis (TIA) prepared by JLB Traffic Engineering, Inc. (JLB) for proposed Liberty Pointe (Project) located on the northeast quadrant of 12th Avenue and Grangeville Boulevard in the City of Hanford. The Project proposes to develop an approximately 8.72-acre site on the northeast quadrant of 12th Avenue and Grangeville Boulevard just west of the BNSF railroad with up to 76 single-family residential units for an overall density of 8.72 units per acre. Based on information provided to JLB, the Project is consistent with the City of Hanford's General Plan. Figure 1 shows the location of the proposed Project site relative to the surrounding roadway network.

The purpose of this TIA is to evaluate the potential on-site and off-site traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures and identify any critical traffic issues that should be addressed in the on-going planning process. The Scope of Work was prepared via consultation with the City of Hanford and County of Kings staff.

Summary

The potential traffic impacts of the proposed Project were evaluated in accordance with the standards set forth by the Level of Service (LOS) policy of the City of Hanford.

Existing Baseline 2020 Traffic Conditions

- At present, the intersection operates at an acceptable LOS during both peak periods.
- Under this scenario, the study segments operate at an acceptable LOS.

Existing Baseline 2020 plus Project Traffic Conditions

- JLB analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. A review of the Project access points to be constructed indicates that they are located at points that minimize traffic operational impacts to the existing roadway network.
- At build-out, the Project is estimated to generate a maximum of 717 daily trips, 56 AM peak hour trips and 75 PM peak hour trips.
- Under this scenario, the intersection is projected to operate at an acceptable LOS during both peak periods.
- Under this scenario, the study segments are projected to operate at an acceptable LOS.

Near Term plus Project Traffic Conditions

- The total trip generation for the Near Term Projects is 3,956 daily trips, 310 AM peak hour trips and 416 PM peak hour trips.
- Under this scenario, the intersection is projected to operate at an acceptable LOS during both peak periods.
- Under this scenario, the study segments are projected to operate at an acceptable LOS.

Cumulative Year 2040 plus Project Traffic Conditions

- Under this scenario, the intersection is projected to operate at an acceptable LOS during both peak periods.
- Under this scenario, the study segments are projected to operate at an acceptable LOS.

Queuing Analysis

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

Scope of Work

The TIA focused on evaluating traffic conditions at study intersections and segments that may potentially be impacted by the proposed Project. On September 4, 2020, a Draft Scope of Work for the preparation of a TIA for this Project was provided to City of Hanford and County of Kings staff for their review and comment. Any comments to the proposed Scope of Work were to be provided by September 28, 2020.

On September 8, 2020, County of Kings staff responded that they would not be involved in this Project. On September 16, 2020, the City of Hanford approved the Draft Scope of Work as presented. The Draft Scope of Work and the comments received from the lead agency and responsible agencies are included in Appendix A.

Study Facilities

In the past seven months since March, regulations on public activities have been in place to help reduce the spread of COVID19. It is due to these regulations that current traffic volumes are lower than traffic volumes that have been observed before March 2020. For this reason, JLB obtained historic and current turning movement counts for the study intersection. The historic turning movement count was conducted in December 2018 and the new turning movement and segment counts were conducted in September 2020. Both of the intersection turning movement counts include pedestrian and bicycles volumes. When the historical and new count were compared, the historical count had a greater total. In order to circumvent these lower current traffic volumes, a growth rate was determined from the Kings County Association of Governments (Kings CAG) regional model. Based on the Kings CAG regional model the annual growth rate in traffic in the vicinity of the proposed Project was found to be 1.15 percent. However, in order to provide a conservative analysis of the traffic impacts JLB utilized a higher annual growth rate of 2 percent to forecast traffic growth. The historic turning movement count was expanded by that growth rate of 2 percent for two years and compared to the current turning movement count again. Any movement from the expanded historic count with a volume lower than that of the current count was then adjusted to be equal by adding volumes taken from its respective thru movement. The volumes resulting from this process were used as the Existing Baseline 2020 turning movement volumes.

For the study segments along Kings Road, a comparison between the Existing Baseline 2020 turning movement volumes and the September 2020 turning movement count was conducted. This comparison revealed that the total from the Existing Baseline 2020 volumes were greater than the total of the current turning movement count collected in September 2020 by a factor of 1.48. Therefore, the current segment count was multiplied by this factor of 1.48 in order to account for the observed reduction in traffic as a result of Covid19 restrictions. These are referred to as the Existing Baseline 2020 segment volumes. The current segment count was conducted on the segment directly north of the Kings Road outlet to University Avenue. Study segments further north of that segment to Tudor Lane are reduced according to the number of houses on Kings Road that utilize each segment. Current and historical traffic counts for the existing study intersection and segment are contained in Appendix B. The existing intersection turning movement volumes, intersection geometrics and traffic controls are illustrated in Figure 2.

Study Intersections

1. University Avenue / Grangeville Boulevard

Study Segments

1. Kings Road between Tudor Lane and University Avenue

Study Scenarios

Existing Baseline 2020 Traffic Conditions

This scenario evaluates the Existing Baseline 2020 Traffic Conditions based on existing traffic volumes and roadway conditions from traffic counts and field surveys conducted in September 2020. The Existing Baseline 2020 traffic volumes were based on historic traffic counts conducted in December 2018 expanded by a growth rate of 2 percent for two years then adjusted to contain no lower volume than the current count for the study intersection. The study segment count was conducted in September 2020 and increased by a factor of 1.48 derived from the comparison of Existing Baseline 2020 turning movement volumes and the turning movement count collected in September 2020.

Existing Baseline 2020 plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Existing Baseline 2020 plus Project Traffic Conditions. The Existing Baseline 2020 plus Project traffic volumes were obtained by adding the Project Only Trips to the Existing Baseline 2020 Traffic Conditions. The Project Only Trips to the study facilities were developed based on existing travel patterns, the existing roadway network, engineering judgment, data provided by the developer, knowledge of the study area, existing residential and commercial densities, and the City of Hanford 2035 General Plan Circulation Element in the vicinity of the Project site.

Near Term plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Near Term plus Project Traffic Conditions. The Near Term plus Project traffic volumes were obtained by adding the Near Term related trips to the Existing Baseline 2020 plus Project Traffic Conditions scenario. The Near Term trips do not add any traffic to our study segment, therefore segment counts were not affected by near term trips.

Cumulative Year 2040 plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Cumulative Year 2040 plus Project Traffic Conditions. The Cumulative Year 2040 plus Project traffic volumes were obtained by expanding existing volumes by a growth rate as determined from the Kings County Association of Governments (Kings CAG) regional model. Based on the Kings CAG regional model the annual growth rate in the vicinity of the proposed Project was found to be 1.15 percent between Base Year 2020 and Cumulative Year 2042 models. However, in order to provide a conservative analysis of the traffic impacts JLB utilized a higher annual growth rate of 2 percent to forecast traffic growth. The study segment is not affected by annual growth since the area using the segment would be built out upon completion of the proposed Project. The Kings CAG Models used for the project growth rate are contained in Appendix C.

Level of Service Analysis Methodology

Level of Service (LOS) is a qualitative index of the performance of an element of the transportation system. LOS is a rating scale running from "A" to "F", with "A" indicating no congestion of any kind and "F" indicating unacceptable congestion and delays. LOS in this study describes the operating conditions for signalized and unsignalized intersections.

The *Highway Capacity Manual* (HCM) 6th Edition is the standard reference published by the Transportation Research Board and contains the specific criteria and methods to be used in assessing LOS. Synchro software was used to define LOS in this study. Details regarding these calculations are included in Appendix D.

Criteria of Significance

The City of Hanford 2035 General Plan has established level of service (LOS) D as the acceptable level of traffic congestion for all streets and intersections within the Planned Growth Boundary. Besides those in the area bounded by State Route 198, 10th Avenue, 11th Avenue and Florinda Avenue that have an acceptable LOS of E. In this TIA, all study facilities fall within the Planned Growth Boundary SOI, but outside of the higher impacted area. Therefore, the City of Hanford LOS threshold for the Planned Growth Boundary of D is utilized.

Operational Analysis Assumptions and Defaults

The following operational analysis values, assumptions and defaults were used in this study to ensure a consistent analysis of LOS among the various scenarios.

- Yellow time consistent with the California Manual of Uniform Traffic Control Devices (CA MUTCD) based on approach speeds
- Yellow time of 3.2 seconds for left-turn phases
- All-red clearance intervals of 1.0 second for all phases
- Walk intervals of 7.0 seconds
- Flashing Don't Walk based on 3.5 feet/second walking speed with yellow plus all-red clearance subtracted and 2.0 seconds added
- The observed or a minimum of a 3 percent heavy vehicle factor was utilized
- An average of 3 pedestrian calls per hour at signalized intersections
- The number of observed pedestrians at existing intersections was utilized under all study scenarios
- At existing intersections, the observed approach Peak Hour Factor (PHF) is utilized in the Existing Baseline 2020, Existing Baseline 2020 plus Project, Near Term plus Project scenarios and Cumulative Year 2040 plus Project scenarios

Existing Traffic Conditions

Roadway Network

The Project site and surrounding study area are illustrated in Figure 1. Important roadways serving the Project are discussed below.

University Avenue is an existing north-south two-lane undivided collector in the vicinity of the proposed Project site. In this area, University Avenue is a two-lane undivided collector north of Greenfield Avenue extending to Berkshire Way. The City of Hanford 2035 General Plan Circulation Element designates University Avenue as a two-lane undivided collector through the City of Hanford SOI.

Kings Road is an existing north-south two-lane undivided local street in the vicinity of the proposed Project site. In this area, Kings Road is a two-lane undivided local street between of University Avenue and Tudor Lane. The City of Hanford 2035 General Plan Circulation Element designates Kings Road as a two-lane undivided local street through the City of Hanford SOI.

Grangeville Boulevard is an existing east-west four-lane arterial in the vicinity of the proposed Project site. In this area, Grangeville Boulevard is four-lane arterial divided by a two-way left-turn lane. The City of Hanford 2035 General Plan Circulation Element designates Grangeville Boulevard a two-lane undivided arterial between 13th Avenue and Centennial Avenue, as a three-lane arterial divided by a two-way left-turn between Centennial Avenue and 12th Avenue, as a four-lane arterial divided by a two-way left-turn lane between 12th Avenue and 9¼ Avenue, and as a two-lane undivided arterial between 9¼ Avenue and 7th Avenue.

Results of Existing Baseline 2020 Level of Service Analysis

Figure 2 illustrates the Existing Baseline 2020 Traffic Conditions turning movement and segment volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing Baseline 2020 Traffic Conditions scenario are provided in Appendix E. Table I presents a summary of the Existing Baseline 2020 peak hour LOS at the study intersection, while Table II presents a summary of the Existing Baseline 2020 LOS for the study segments.

At present, the intersection operates at an acceptable LOS during both peak periods.

At present, the study segments operate at an acceptable LOS.

Table I: Existing Baseline 2020 Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM (7-9) Peak Hour*		*PM (4-6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	University Avenue / Grangeville Boulevard	Signalized	18.1	B	16.3	B

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

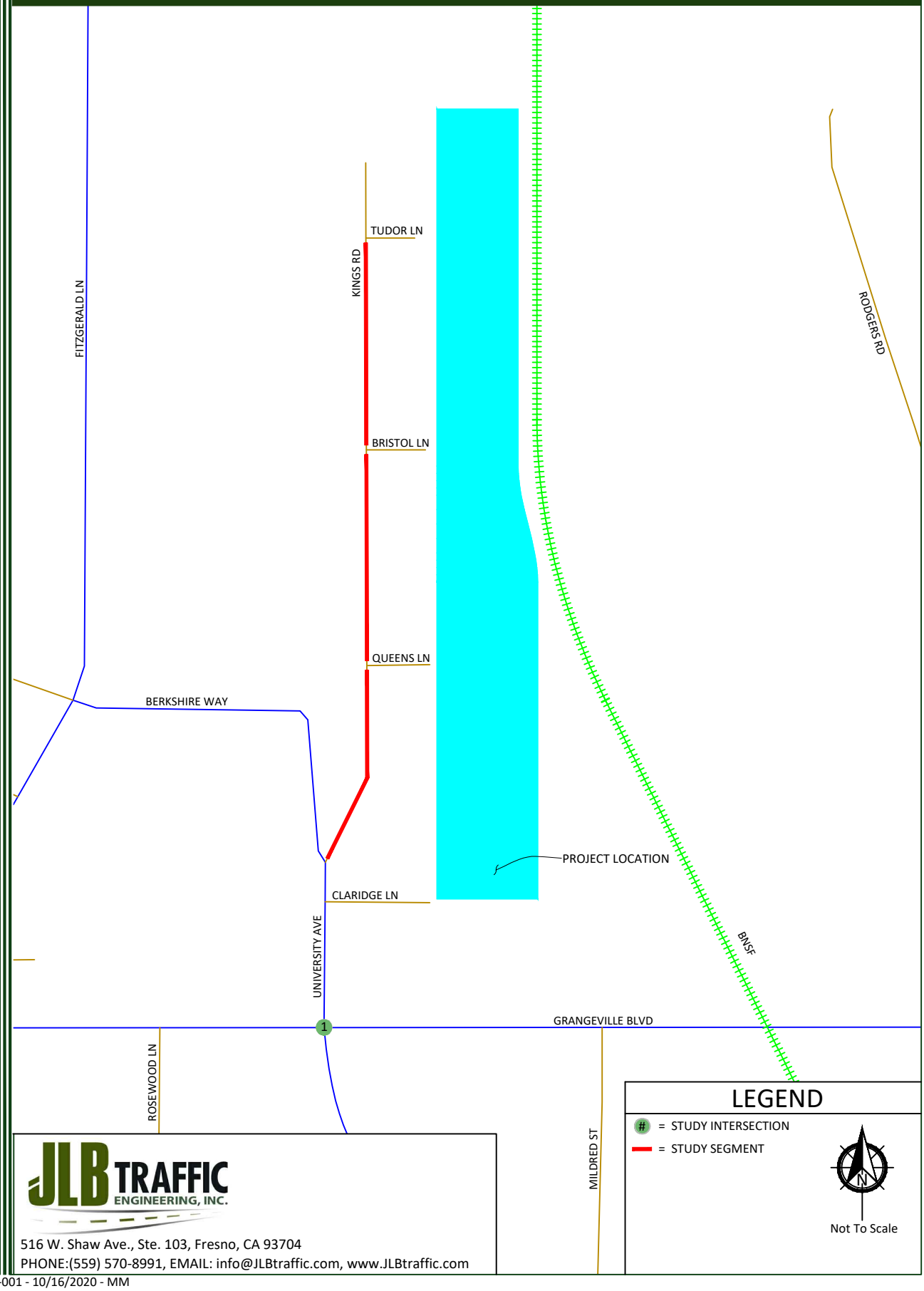
Table II: Existing Baseline 2020 Segment LOS Results

ID	*Segment*	*Limits*	*Lanes*	*24-hour Volume*	*LOS*
1	Kings Road	Tudor Lane and Bristol Lane	2	156	B
2	Kings Road	Bristol Lane and Queens Lane	2	244	B
3	Kings Road	Queens Lane and University Avenue	2	322	B

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Liberty Pointe - City of Hanford
Vicinity Map

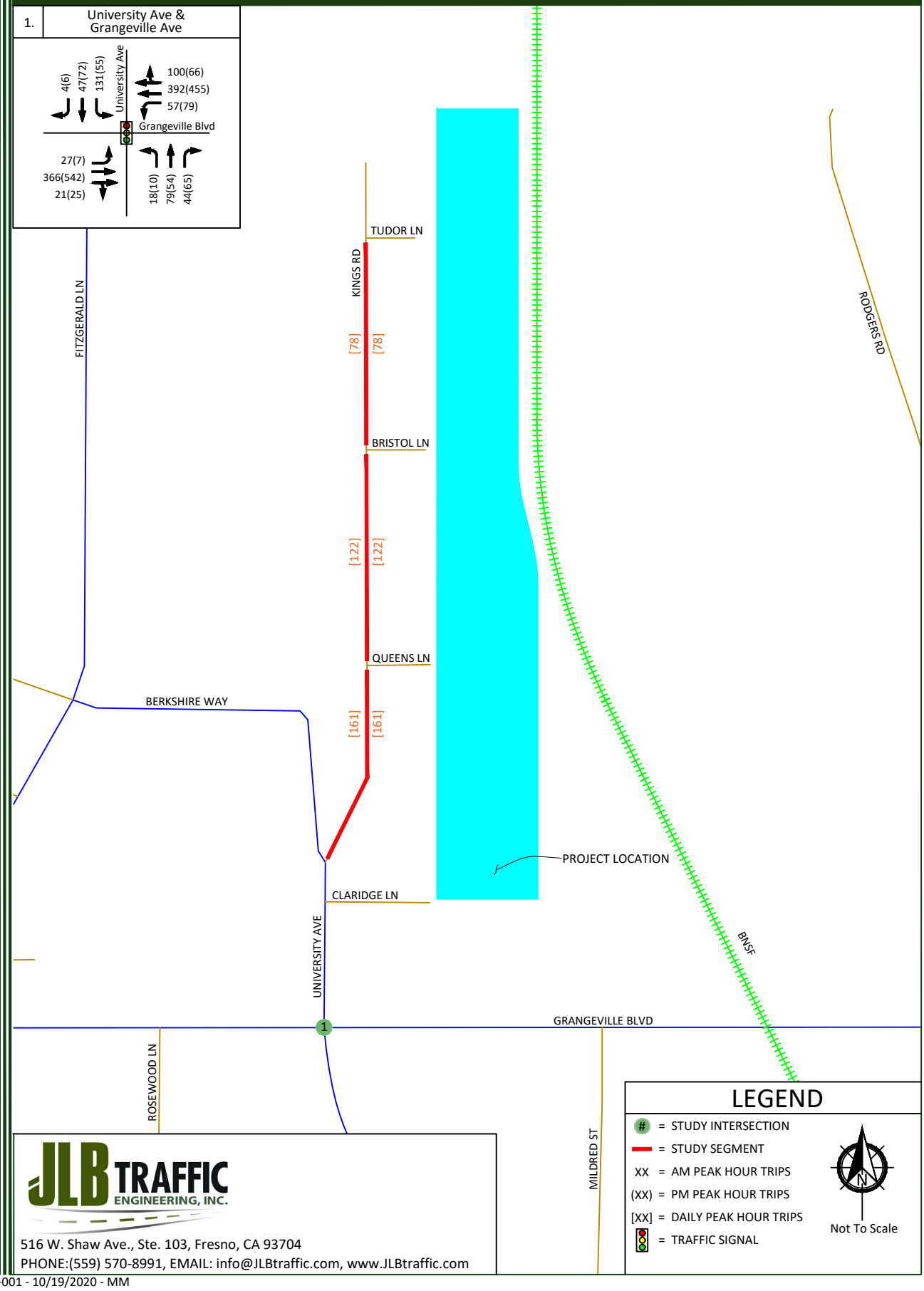
Figure 1



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Liberty Pointe - City of Hanford
Existing Baseline 2020 - Traffic Volumes, Geometrics and Controls

Figure 2



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Existing Baseline 2020 plus Project Traffic Conditions

Project Description

The Project proposes to develop an 8.72-acre site on the northeast quadrant of University Avenue and Grangeville Boulevard with up to 76 single-family residential units for an overall density of 8.72 units per acre. Based on information provided to JLB, the Project is consistent with the City's General Plan. Figure 3 illustrates the latest Project Site Plan.

Project Access

Based on the latest Project Site Plan, access to and from the Project site will be travel through four (4) access points that will tie into existing local streets: Tudor Lane, Bristol Lane, Queens Lane and Claridge Lane. Claridge Lane connects directly through to University Avenue while Tudor Lane, Bristol Lane and Queens Lane connect to Kings Road, which feeds into University Avenue. JLB analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. A review of the Project access points to be constructed indicates that they are located at points that minimize traffic operational impacts to the existing roadway network.

Trip Generation

Trip generation rates for the proposed Project were obtained from the 10th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table III presents the trip generation for the proposed Project with trip generation rates for 76 Single-Family Detached Housing units. At buildout, the proposed Project is estimated to generate a maximum of 717 daily trips, 56 AM peak hour trips and 75 PM peak hour trips.

Table III: Trip Generation - Proposed Project

Land Use (ITE Code)	*Size*	*Unit*	*Daily*		*AM (7-9) Peak Hour*						*PM (4-6) Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*
						%						*%*				
Single-Family Detached Housing (210)	76	d.u.	9.44	717	0.74	25	75	14	42	56	0.99	63	37	47	28	75
Total Project Trips				**717**				**14**	**42**	**56**				**47**	**28**	**75**

Note: d.u. = Dwelling Units

Trip Distribution

The trip distribution assumptions were developed based existing travel patterns, the existing roadway network, engineering judgment, data provided by the developer, knowledge of the study area, existing residential and commercial densities, and the City of Hanford 2035 General Plan Circulation Element in the vicinity of the Project site. Figure 4 presents the Project Only Trips to the study intersection and segments.

Transit

Kings Area Rural Transit (KART) is the transit operator in the City of Hanford. At present, there are two (2) KART routes, Route 1 and Route 7, that operate and have stops in the vicinity of the Project. KART Route 7, which runs along Grangeville Boulevard, operates at 30-minute intervals on weekdays from 6:45 AM - 6:15 PM and 60-minute intervals on weekends from 10:00 AM to 4:00 PM. The closest stop to the Project on Route 7 is located on the north side of Grangeville Boulevard directly east of University Avenue. This route provides a direct connection to the YMCA, Kings County Government Center, Hanford Mall and the KART Transit Center. KART Route 1, which runs along 11th Avenue, operates at 30-minute intervals on weekdays from 7:00 AM - 6:30 PM and 60-minute intervals on weekends from 9:30 AM to 4:30 PM. The closest stop to the Project on Route 1 is located on the east side of 11th Avenue approximately 830 feet north of Grangeville Boulevard. This route provides a direct connection to the Hidden Valley Park, Kings County Community Action, Hanford High School, Central Valley General Hospital, Civic Park, Kings County Library and the KART Transit Center. Retention of the existing and expansion of future transit routes is dependent on transit ridership demand and available funding.

Roadway Network

The Existing Baseline 2020 plus Project Traffic Conditions scenario assumes the same roadway geometrics and traffic controls as those assumed under the Existing Baseline 2020 Traffic Conditions scenario. Figure 5 illustrates the assumed intersection geometrics and traffic controls for these intersections under this scenario.

Results of Existing Baseline 2020 plus Project Level of Service Analysis

The Existing Baseline 2020 plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place. Figure 5 illustrates the Existing Baseline 2020 plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing Baseline 2020 plus Project Traffic Conditions scenario are provided in Appendix F. Table IV presents a summary of the Existing Baseline 2020 plus Project peak hour LOS at the study intersection, while Table V presents a summary of the Existing Baseline 2020 plus Project LOS for the study segments.

Under this scenario, the intersection is projected to operate at an acceptable LOS during both peak periods.

Under this scenario, the study segments are projected to operate at an acceptable LOS.

Table IV: Existing Baseline 2020 plus Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM (7-9) Peak Hour*		*PM (4-6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	University Avenue / Grangeville Boulevard	Signalized	18.9	B	16.6	B

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

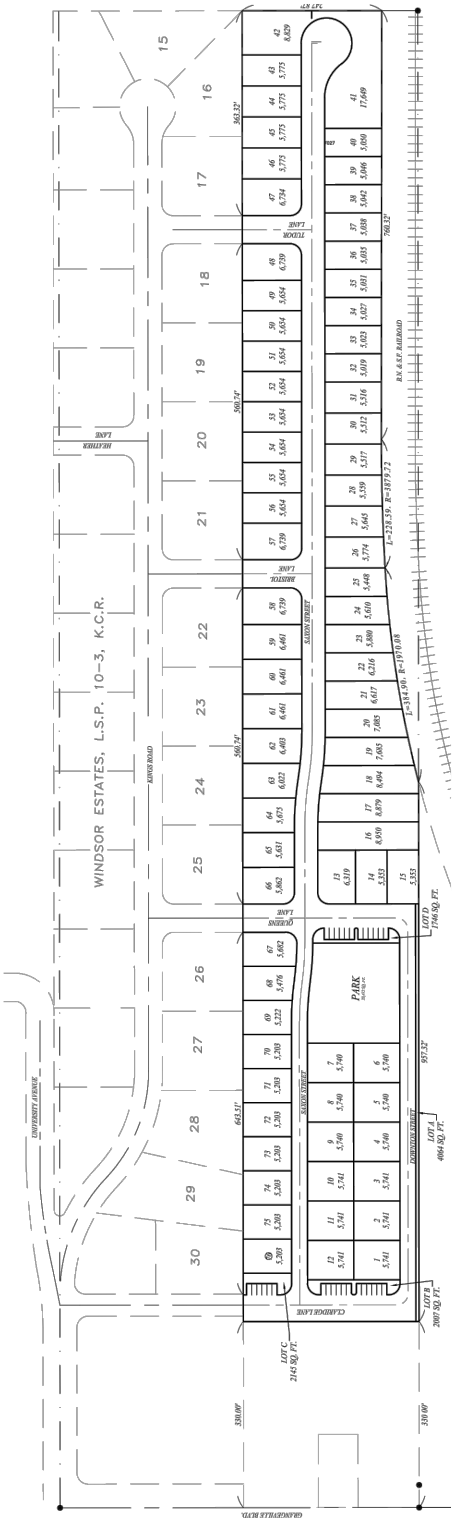
Table V: Existing Baseline 2020 plus Project Segment LOS Results

ID	*Segment*	*Limits*	*Lanes*	*24-hour Volume*	*LOS*
1	Kings Road	Tudor Lane and Bristol Lane	2	256	B
2	Kings Road	Bristol Lane and Queens Lane	2	460	B
3	Kings Road	Queens Lane and University Avenue	2	614	B

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Liberty Pointe - City of Hanford
Project Site Plan

Figure 3



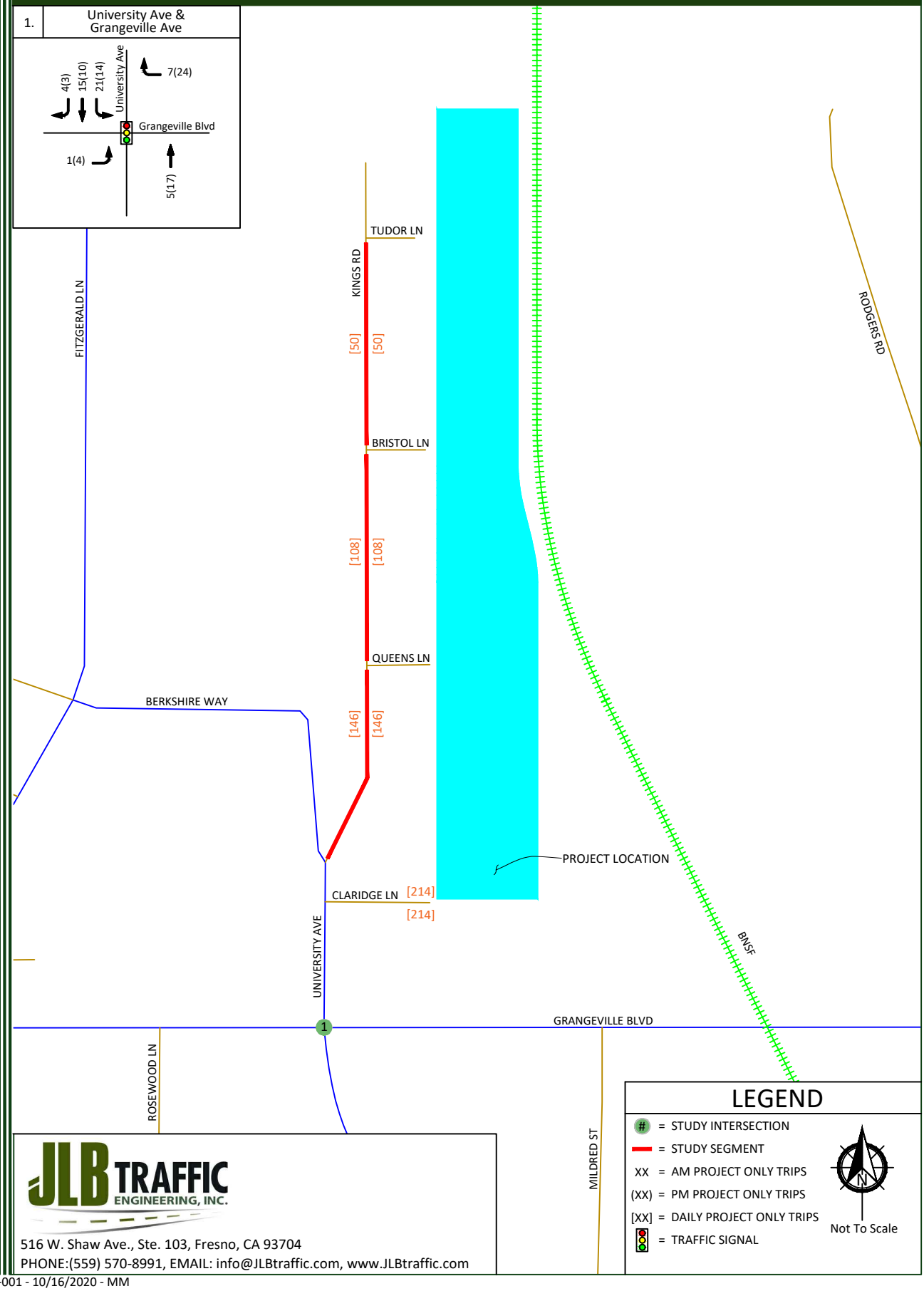
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PHONE:(559) 570-8991, EMAIL: info@JLBtraffic.com, www.JLBtraffic.com

Not To Scale

Liberty Pointe - City of Hanford
Project Only Trips

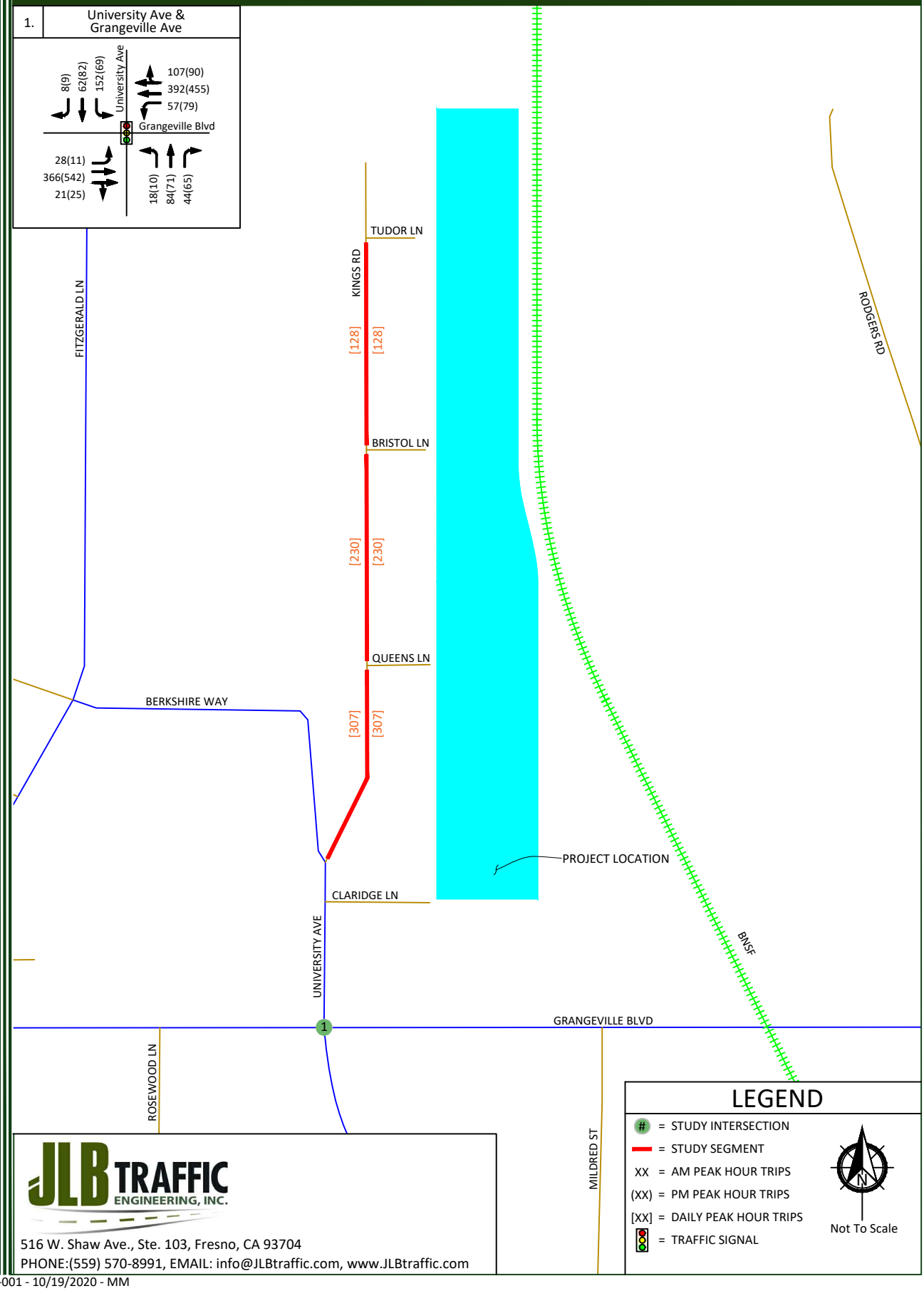
Figure 4



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Liberty Pointe - City of Hanford
Existing Baseline 2020 plus Project - Traffic Volumes, Geometrics and Controls

Figure 5



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Near Term plus Project Traffic Conditions

Description of Near Term Projects

Near Term Projects consist of developments that are either under construction, built but not fully occupied, are not built but have final site development review (SDR) approval, or for which the lead agency or responsible agencies have knowledge of. The City of Hanford staff were consulted throughout the preparation of this TIA regarding Near Term Projects that could potentially impact the study intersections. Therefore, the Near Term Projects listed in Table VI were approved, near approval, or in the pipeline within the proximity of the proposed Project.

The trip generation listed in Table VI is that which is anticipated to be added to the streets and highways by Near Term Projects between the time of the preparation of this Report and five (5) years after buildout of the proposed Project. As shown in Table VI, the total trip generation for the Near Term Projects is 3,956 daily trips, 310 AM peak hour trips and 416 PM peak hour trips. Figure 6 illustrates the location of the Near Term Projects and their combined trip assignment to the study intersections under the Near Term plus Project Traffic Conditions scenario.

Table VI: Near Term Projects' Trip Generation

ID	*Approved or Pipeline Project Name*	*Daily Trips*	*AM Peak Hour*	*PM Peak Hour*
A	Bonterra/Bella VIsta[1]	1,378	108	145
B	TT 922[1]	1,322	104	139
C	TT 927[1]	1,256	98	132
Total Approved and Pipeline Project Trips		**3,956**	**310**	**416**

Note: 1 = Trip Generation Prepared by JLB Traffic Engineering, Inc.

Roadway Network

The Near Term plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls as those assumed under the Existing Baseline 2020 plus Project Traffic Conditions scenario. Figure 7 illustrates the assumed intersection geometrics and traffic controls for these intersections under this scenario.

Results of Near Term plus Project Level of Service Analysis

The Near Term plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place. Figure 7 illustrates the Near Term plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Near Term plus Project Traffic Conditions scenario are provided in Appendix G. Table VII presents a summary of the Near Term plus Project peak hour LOS at the study intersection, while Table VIII presents a summary of the Near Term plus Project LOS for the study segment.

Under this scenario, the intersection is projected to operate at an acceptable LOS during both peak periods.

Under this scenario, the study segment is projected to operate at an acceptable LOS.

Table VII: Near Term plus Project Intersection LOS Results

ID	Intersection	Intersection Control	AM (7-9) Peak Hour		PM (4-6) Peak Hour	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	University Avenue / Grangeville Boulevard	Signalized	19.0	B	16.7	B

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

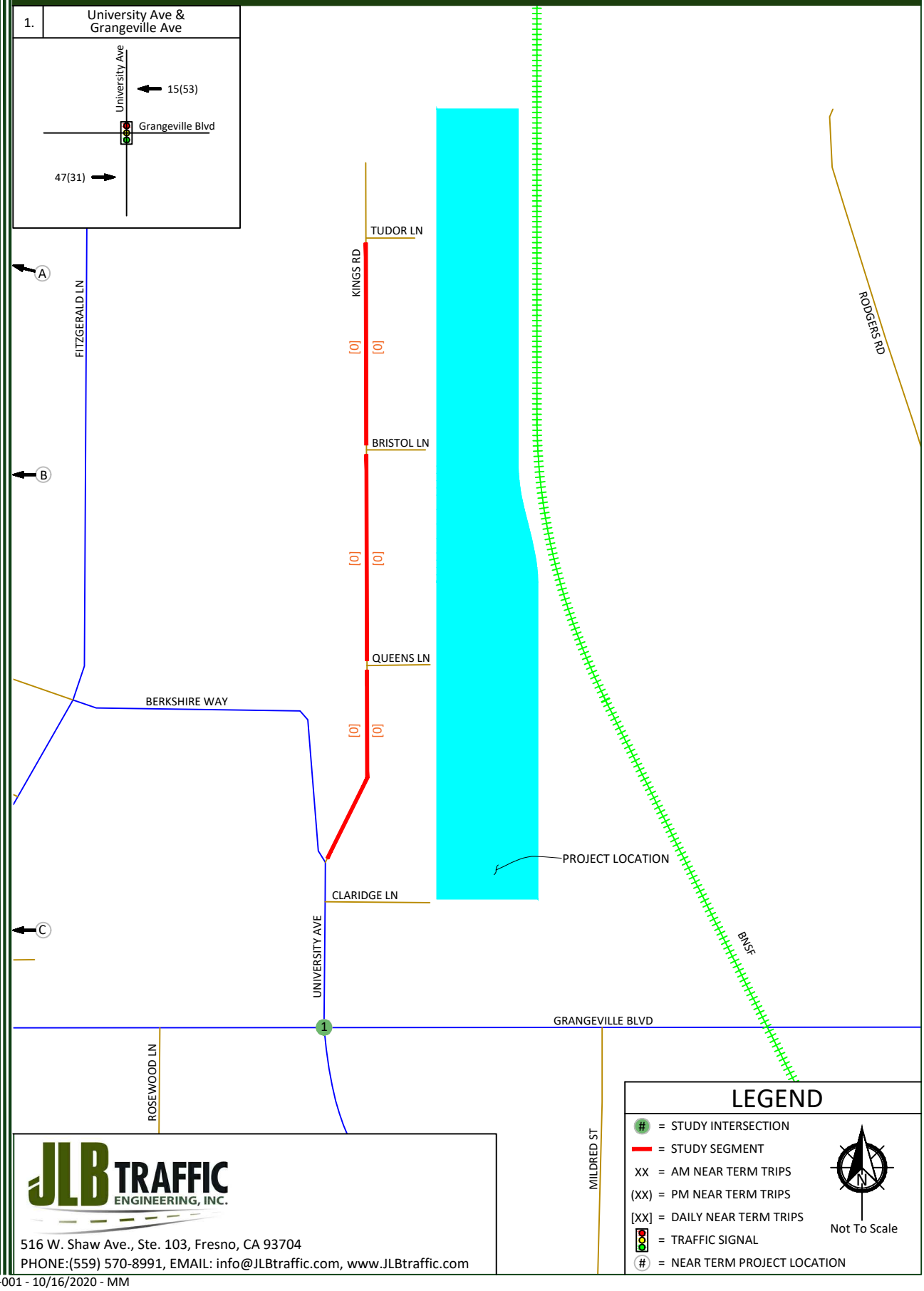
Table VIII: Near Term Segment LOS Results

ID	Segment	Limits	Lanes	24-hour Volume	LOS
1	Kings Road	Tudor Lane and Bristol Lane	2	256	B
2	Kings Road	Bristol Lane and Queens Lane	2	460	B
3	Kings Road	Queens Lane and University Avenue	2	614	B

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Liberty Pointe - City of Hanford
Near Term Projects' Trip Assignment

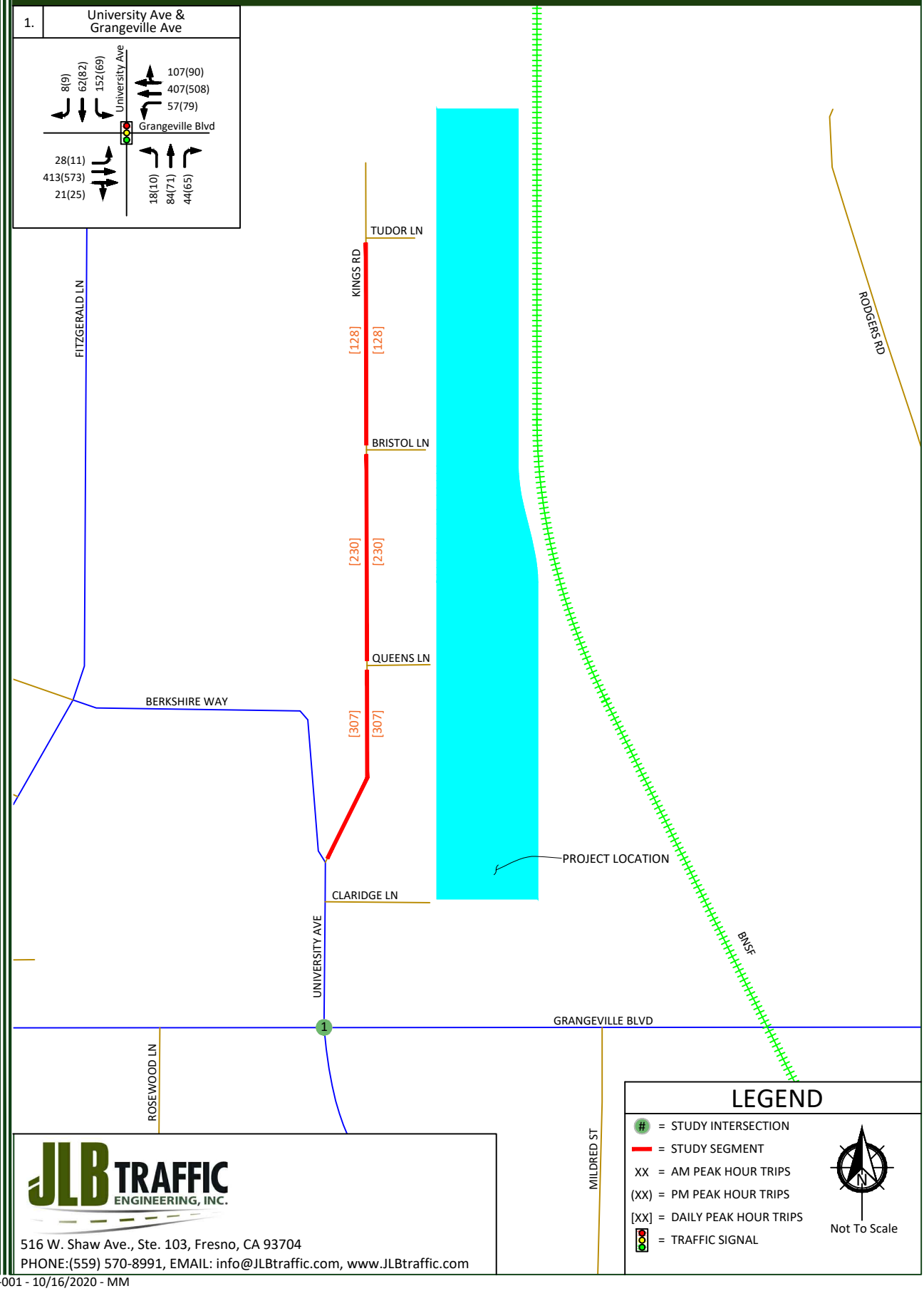
Figure 6



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PHONE:(559) 570-8991, EMAIL: info@JLBtraffic.com, www.JLBtraffic.com

Liberty Pointe - City of Hanford
Near Term plus Project - Traffic Volumes, Geometrics and Controls

Figure 7



JLB TRAFFIC ENGINEERING, INC.
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Cumulative Year 2040 plus Project Traffic Conditions

Roadway Network

The Cumulative Year 2040 plus Project Traffic Conditions scenario assumes the same roadway geometrics and traffic controls as those assumed under the Near Term plus Project Traffic Conditions scenario. Figure 8 illustrates the assumed intersection geometrics and traffic controls for these intersections under this scenario.

Results of Cumulative Year 2040 plus Project Level of Service Analysis

The Cumulative Year 2040 plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place. Figure 8 illustrates the Cumulative Year 2040 plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Cumulative Year 2040 plus Project Traffic Conditions scenario are provided in Appendix H. Table IX presents a summary of the Cumulative Year 2040 plus Project peak hour LOS at the study intersection, while Table X presents a summary of the Cumulative Year 2040 plus Project LOS for the study segments.

Under this scenario, the intersection is projected to operate at an acceptable LOS during both peak periods.

Under this scenario, the study segments are projected to operate at an acceptable LOS.

Table IX: Cumulative Year 2040 plus Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM (7-9) Peak Hour*		*PM (4-6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	University Avenue / Grangeville Boulevard	Signalized	27.9	B	18.5	B

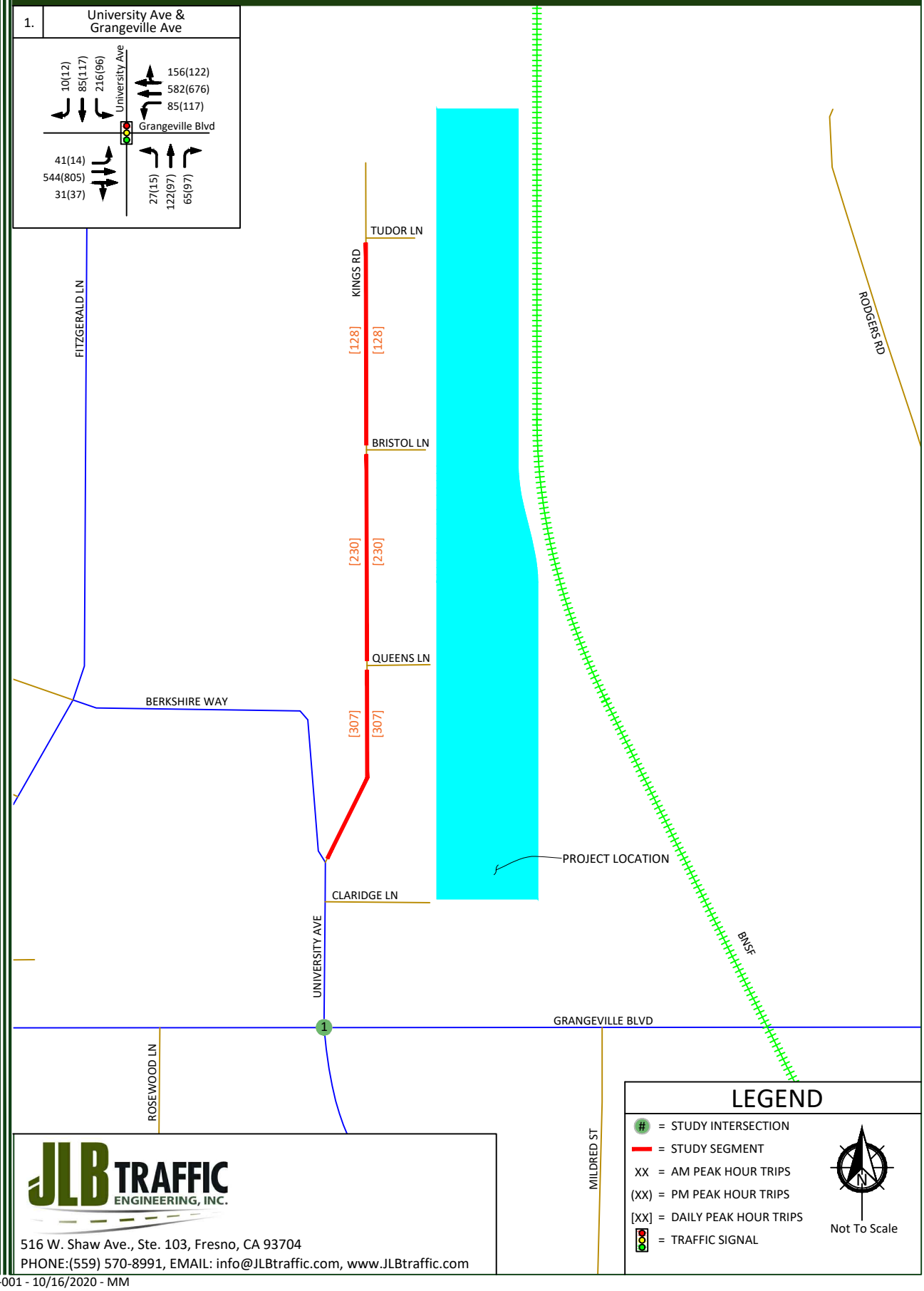
Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Table X: Cumulative Year 2040 Segment LOS Results

ID	*Segment*	*Limits*	*Lanes*	*24-hour Volume*	*LOS*
1	Kings Road	Tudor Lane and Bristol Lane	2	256	B
2	Kings Road	Bristol Lane and Queens Lane	2	460	B
3	Kings Road	Queens Lane and University Avenue	2	614	B

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Liberty Pointe - City of Hanford
Figure 8
Cumulative Year 2040 plus Project - Traffic Volumes, Geometrics and Controls



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Queuing Analysis

Table XI provides a queue length summary for left-turn and right-turn lanes at the study intersections under all study scenarios. The queuing analyses for the study intersections are contained in the LOS worksheets for the respective scenarios. Appendix D contains the methodologies used to evaluate these intersections. Queuing analyses were completed using Sim Traffic output information. Synchro provides both 50th and 95th percentile maximum queue lengths (in feet). According to the Synchro manual, "the 50th percentile maximum queue is the maximum back of queue on a typical cycle and the 95th percentile queue is the maximum back of queue with 95th percentile volumes." The queues shown on Table XI are the 95th percentile queue lengths for the respective lane movements.

The Highway Design Manual (HDM) provides guidance for determining deceleration lengths for the left-turn and right-turn lanes based on design speeds. Per the HDM criteria, "tapers for right-turn lanes are usually un-necessary since the main line traffic need not be shifted laterally to provide space for the right-turn lane. If, in some rare instances, a lateral shift was needed, the approach taper would use the same formula as for a left-turn lane." Therefore, a bay taper length pursuant to the Caltrans HDM would need to be added, as necessary, to the recommended storage lengths presented in Table XI.

The storage capacity for the Cumulative Year 2040 scenario shall be based on the SimTraffic output files and engineering judgement. The values in bold presented in Table XI are the projected queue lengths that will likely need to be accommodated by the Cumulative Year 2040 scenario. It is recommended that the storage length for the southbound left turn lane be increased from 100 feet to 175 feet. Based on review of the existing roadway geometrics, the extension of the southbound left turn pocket can be achieved by striping only.

Table XI: Queuing Analysis

ID	*Intersection*	*Existing Queue Storage Length (ft.)*		*Existing Baseline 2020*		*Existing Baseline 2020 plus Project*		*Near Term plus Project*		*Cumulative Year 2040 plus Project*	
				AM	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*
		EB L	100	50	15	45	19	51	21	70	25
		EB T	>500	112	144	122	159	119	143	171	232
		EB TR	>500	94	151	110	146	102	151	154	237
		WB L	190	73	77	65	65	59	85	101	115
		WB T	>500	122	129	113	124	139	130	167	173
		WB TR	>500	122	125	105	131	142	134	174	201
		NB L	100	38	36	33	25	42	24	56	43
		NB T	>500	89	62	79	97	75	66	128	84
		NB R	75	47	55	49	73	46	65	**83**	66
		SB L	100	103	59	138	73	117	81	**165**	101
		SB T	>500	71	77	81	94	71	107	139	120
		SB R	80	22	19	25	24	19	21	17	26

Conclusions and Recommendations

Conclusions and recommendations regarding the proposed Project are presented below.

Existing Baseline 2020 Traffic Conditions

- At present, the study intersection operates at an acceptable LOS during both peak periods.
- Under this scenario, the study segments operate at an acceptable LOS.

Existing Baseline 2020 plus Project Traffic Conditions

- JLB analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. A review of the Project access points to be constructed indicates that they are located at points that minimize traffic operational impacts to the existing roadway network.
- At build-out, the Project is estimated to generate a maximum of 717 daily trips, 56 AM peak hour trips and 75 PM peak hour trips.
- Under this scenario, the study intersection is projected to operate at an acceptable LOS during both peak periods.
- Under this scenario, the study segments are projected to operate at an acceptable LOS.

Near Term plus Project Traffic Conditions

- The total trip generation for the Near Term Projects is 3,956 daily trips, 310 AM peak hour trips and 416 PM peak hour trips.
- Under this scenario, the intersection is projected to operate at an acceptable LOS during both peak periods.
- Under this scenario, the study segments are projected to operate at an acceptable LOS.

Cumulative Year 2040 plus Project Traffic Conditions

- Under this scenario, the intersection is projected to operate at an acceptable LOS during both peak periods.
- Under this scenario, the study segments are projected to operate at an acceptable LOS.

Queuing Analysis

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

Study Participants

JLB Traffic Engineering, Inc. Personnel:

Jose Luis Benavides, PE, TE	Project Manager
Susana Maciel, EIT	Project Engineer
Matthew Arndt, EIT	Engineer I/II
Jesus Garcia	Engineer I/II
Dennis Wynn	Sr. Engineering Technician
Justin Barnett	Engineering Aide
Adrian Benavides	Engineering Aide
Michael McConnel	Engineering Aide
Christian Sanchez	Engineering Aide

Persons Consulted:

T.J. Connolly	HollyHills Development
Gabrielle de Silva Myers	City of Hanford
James Doyle	City of Hanford
Luis Verdugo	City of Hanford
Dominic Tyburski, P.E.	County of Kings

References

1. City of Hanford, *2035 General Plan*.
2. *Guide for the Preparation of Traffic Impact Studies*, Caltrans, dated December 2002.
3. *Trip Generation,* 10th Edition, Washington D.C., Institute of Transportation Engineers, 2017.
4. *2014 California Manual on Uniform Traffic Control Devices*, Caltrans, November 7, 2014.

Appendix A: Scope of Work

September 4, 2020

Gabrielle de Silva Myers
Senior Planner
City of Hanford
317 N. Douty Street
Hanford, CA 93230

Via Email Only: gmyers@cityofhanfordca.com

Subject: ***Proposed Scope of Work for the Preparation of a Focused Traffic Impact Analysis for the Liberty Pointe TIA in the City of Hanford (JLB Project 047-001)***

Dear Mrs. Myers,

JLB Traffic Engineering, Inc. (JLB) hereby submits this Draft Scope of Work for the preparation of a Focused Traffic Impact Analysis (TIA) for the Liberty Pointe (Project) located north of Grangeville Boulevard and west of the BN&SF railroad in the City of Hanford. The Project proposes to develop approximately 8.72-acres with 76 single family residential units at an overall density of 8.72 units/acre. Based on information provided to JLB, the Project is consistent with the City's General Plan. An aerial of the Project vicinity and Project Site Plan are shown in Exhibits A and Exhibit B, respectively.

The purpose of the TIA is to evaluate the potential on-site and off-site traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures and identify any critical traffic issues that should be addressed in the on-going planning process. To evaluate the on-site and off-site traffic impacts of the proposed Project, JLB proposes the following Scope of Work which has been based on comments received from the City dated February 3, 2020.

Scope of Work

- JLB will request the Kings Council Association of Governments (Kings CAG) traffic forecast. The Kings CAG traffic forecasting model will be used to forecast traffic volumes for the Base Year 2020 and the Cumulative Year 2040 scenarios.
- JLB proposes to utilize a combination of historical counts as the collection of new traffic counts may not be reflective of the typical travel demands. These counts will include pedestrians and vehicles.
- JLB will perform a site visit to observe existing traffic conditions, especially during the AM and PM peak hours. Existing roadway conditions including intersection geometrics and traffic controls will be verified.
- JLB will evaluate on-site circulation and provide recommendations as necessary to improve circulation to and within the Project site.
- JLB will prepare CA MUTCD Warrant 3 “Peak Hour” for unsignalized study intersections under the Existing plus Project, Near Term plus Project and Cumulative Year 2040 plus Project scenarios.
- JLB will thoroughly analyze existing and planned transit routes in the vicinity of the Project.

- JLB will forecast trip distribution based on turn count information and knowledge of the existing and planned circulation network in the vicinity of the Project.
- JLB will evaluate existing and forecasted levels of service (LOS) at the study intersection(s). JLB will use HCM 6th or HCM 2000 methodologies (as appropriate) within Synchro to perform this analysis for the AM and PM peak hours. JLB will identify the causes of poor LOS.

Study Scenarios

1. Existing Traffic Conditions with needed improvements (if any);
2. Existing plus Project Buildout Traffic Conditions with proposed improvement measures (if any);
3. Near Term plus Project Buildout Traffic Conditions with proposed improvement measures (if any); and
4. Cumulative Year 2040 plus Project Traffic Conditions with proposed improvement measures (if any).

Weekday peak hours to be analyzed (Tuesday through Thursday only)

1. 7 - 9 AM peak hour
2. 4 - 6 PM peak hour

Study Intersections

1. University Avenue / Grangeville Boulevard

Queuing analysis is included in the proposed Scope of Work for the study intersection(s) listed above under all study scenarios. This analysis will be utilized to recommend minimum storage lengths for left-turn and right-turn lanes at all study intersections.

Study Segments

1. Kings Road between Tudor Lane and University Avenue

Project Only Trip Assignment to State Facilities

1. None

Project Trip Generation

The trip generation rates for the proposed Project were obtained from the 10th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table I presents the trip generation for the proposed Project with trip generation rates for Single-Family Detached Housing. At buildout, the proposed Project is estimated to generate a maximum of 717 daily trips, 56 AM peak hour trips and 75 PM peak hour trips.

Table I: Project Trip Generation

Land Use (ITE Code)	*Size*	*Unit*	*Daily*		*AM (7-9) Peak Hour*						*PM (4-6) Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*
						%						*%*				
Single-Family Detached Housing (210)	76	d.u.	9.44	717	0.74	25	75	14	42	56	0.99	63	37	47	28	75
Total Project Trips				**717**				**14**	**42**	**56**				**47**	**28**	**75**

Note: d.u. = Dwelling Units

Access to the Project

Access to and from the Project site will predominantly be from four (4) access points. These four access points will tie into existing local streets: Tudor Lane, Bristol Lane, Queens Lane and Claridge Lane. Tudor, Bristol and Queens Lanes connect to Kings Road which connects to University Avenue while Claridge Lane connects directly to University Avenue. University Avenue then leads to Grangeville Boulevard. Additional Project details can be found on Exhibit B.

Near Term Projects to be Included

JLB will be consulting with City of Hanford Planning Department and Engineering staff to determine which Projects should be included in the Near Term plus Project analysis. JLB will include Near Term Projects in the vicinity of the proposed Project under the Near Term plus Project analysis for which the City, County or Caltrans has knowledge of and for which it is anticipated that said project(s) is/are projected to be whole or partially built by the Near Term Project year 2025. City of Hanford, County of Kings and Caltrans, as appropriate, would provide JLB with Near Term Project details such as a project description, location, proposed land uses with breakdowns and type of residential units and amount of square footages for non-residential uses.

The Scope of Work is based on our understanding of this Project, City of Hanford comments dated February 3, 2020 and our experience with similar TIAs. In the absence of comments by August 25, 2020 it will be assumed that the Scope of Work is acceptable to the agency(ies) that have not submitted any comments. If you have any questions or require additional information, please contact via email at marndt@JLBtraffic.com.

Sincerely,

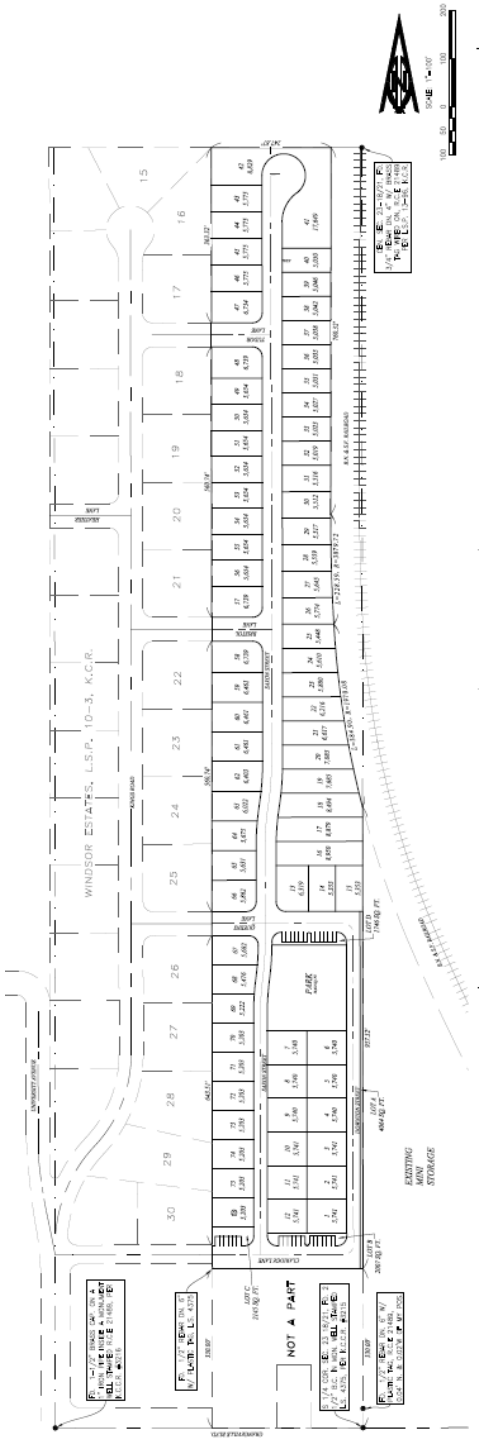
Matthew Arndt, EIT
Engineer I/II

cc: John Doyle, City of Hanford
Luis Verdugo, City of Hanford
Dominic Tyburski, County of Kings
Jose Benavides, JLB Traffic Engineering, Inc.

Exhibit A – Aerial



Exhibit B – Project Site Plan



Jose Benavides

From: Tyburski, Dominic <Dominic.Tyburski@co.kings.ca.us>
Sent: Tuesday, September 8, 2020 9:52 AM
To: Matt Arndt; gmyers@cityofhanfordca.com
Cc: Jose Benavides; jdoyel@cityofhanfordca.com; lverdugo@cityofhanfordca.com
Subject: RE: Liberty Point Focused TIA: Draft Scope of Work

Hi Matt,

Kings County Public Works will not be involved in this project, thank you.

Dominic Tyburski, P.E.
Chief Engineer | Division of Engineering

County of Kings | Public Works Department
1400 W. Lacey Blvd. | Hanford, CA 93230

Direct 559-852-2698 | Fax 559-582-2506
Dominic.Tyburski@co.kings.ca.us | www.countyofkings.com

From: Matt Arndt <marndt@jlbtraffic.com>
Sent: Friday, September 4, 2020 4:29 PM
To: gmyers@cityofhanfordca.com
Cc: Jose Benavides <jbenavides@jlbtraffic.com>; Tyburski, Dominic <Dominic.Tyburski@co.kings.ca.us>; jdoyel@cityofhanfordca.com; lverdugo@cityofhanfordca.com
Subject: Liberty Point Focused TIA: Draft Scope of Work

Hello,

Attached you will find a Draft Scope of Work for the preparation of a Focused Traffic Impact Analysis for a Project in the City of Hanford.

We kindly ask that you take a moment to review and comment on the proposed Scope of Work. In the absence of comments by September 28, 2020, it will be assumed that the proposed Scope of Work is acceptable to the agency(ies) that have not submitted any comments.

If you have any questions or require additional information, please contact me via e-mail at marndt@jlbtraffic.com. We appreciate your time and attention to this matter.

Sincerely,

Matthew Arndt

Jose Benavides

From: Gabrielle Myers <GdeSilva@cityofhanfordca.com>
Sent: Wednesday, September 16, 2020 11:45 AM
To: Matt Arndt
Cc: Jose Benavides; dominic.tyburski@co.kings.ca.us; John Doyel; Luis Verdugo
Subject: RE: Liberty Point Focused TIA: Draft Scope of Work

Our Public Works Director, John Doyel, has approved your scope of work for the proposed project.
Please let me know if you have any questions. Thank you.

Gabrielle de Silva Myers
Senior Planner
City of Hanford
317 N. Douty Street
Hanford, CA 93230
Direct: (559)585-2578
E-mail: gmyers@cityofhanfordca.com
TDD/TYY, Dial 711

From: Matt Arndt <marndt@jlbtraffic.com>
Sent: Friday, September 4, 2020 4:29 PM
To: Gabrielle Myers <GdeSilva@cityofhanfordca.com>
Cc: Jose Benavides <jbenavides@jlbtraffic.com>; dominic.tyburski@co.kings.ca.us; John Doyel <JDoyel@cityofhanfordca.com>; Luis Verdugo <lverdugo@cityofhanfordca.com>
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We kindly ask that you take a moment to review and comment on the proposed Scope of Work. In the absence of comments by September 28, 2020, it will be assumed that the proposed Scope of Work is acceptable to the agency(ies) that have not submitted any comments.

If you have any questions or require additional information, please contact me via e-mail at marndt@jlbtraffic.com. We appreciate your time and attention to this matter.

Sincerely,

Matthew Arndt

JLB TRAFFIC ENGINEERING

Traffic Engineering, Transportation Planning and Parking Solutions
Certified Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE)

Appendix B: 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:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

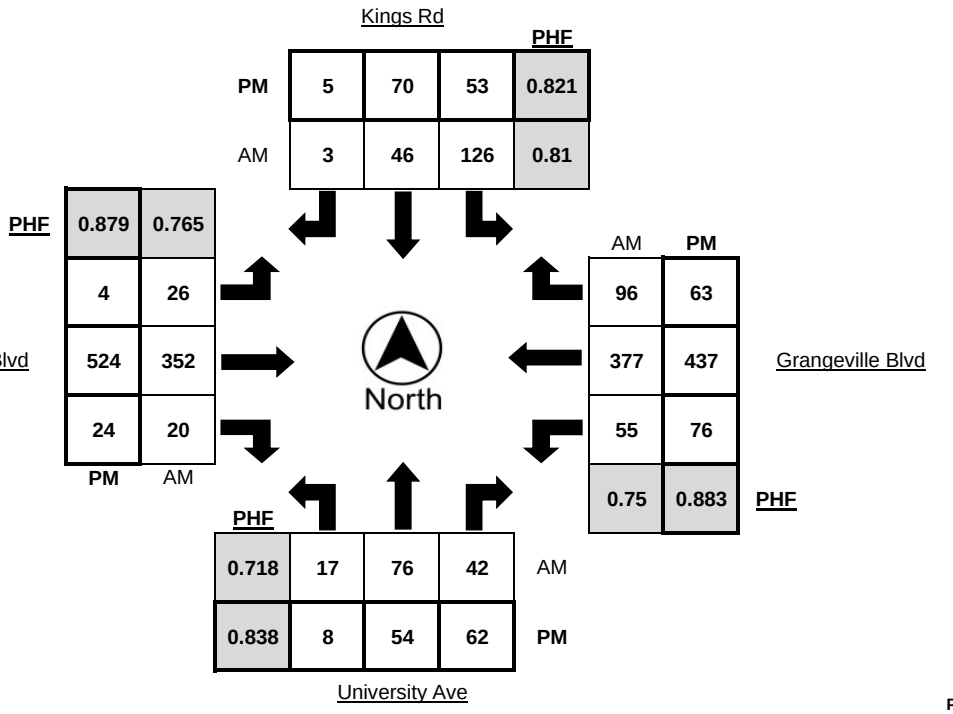
LOCATION Grangeville Blvd @ University Ave
LATITUDE 36.3426
COUNTY Kings
LONGITUDE -119.6661
COLLECTION DATE Tuesday, December 18, 2018
WEATHER AM Fog / PM Clear

	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	7	3	1	10	12	0	1	1	34	2	0	4	50	6	4
7:15 AM - 7:30 AM	3	11	9	0	25	6	0	1	4	59	4	0	10	63	11	4
7:30 AM - 7:45 AM	7	26	14	0	38	13	2	1	11	100	5	0	12	88	27	0
7:45 AM - 8:00 AM	3	32	10	1	42	11	1	0	10	113	7	1	18	110	48	0
8:00 AM - 8:15 AM	4	7	9	0	21	16	0	0	1	80	4	1	15	116	10	4
8:15 AM - 8:30 AM	1	2	6	1	13	14	2	0	1	78	5	0	3	57	11	2
8:30 AM - 8:45 AM	2	3	3	0	7	17	1	0	0	67	3	1	11	55	7	1
8:45 AM - 9:00 AM	3	5	3	0	9	11	0	0	0	64	2	2	10	73	6	4
TOTAL	**23**	**93**	**57**	**3**	**165**	**100**	**6**	**3**	**28**	**595**	**32**	**5**	**83**	**612**	**126**	**19**

	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	3	12	8	0	12	13	2	0	1	105	1	0	11	110	5	2
4:15 PM - 4:30 PM	3	6	6	0	18	10	1	0	0	125	7	1	8	104	12	1
4:30 PM - 4:45 PM	2	13	22	0	13	17	1	0	1	119	4	2	14	103	9	0
4:45 PM - 5:00 PM	2	11	12	0	14	12	2	0	3	105	8	0	18	93	15	1
5:00 PM - 5:15 PM	1	16	19	0	12	17	1	0	0	148	7	0	27	114	22	0
5:15 PM - 5:30 PM	3	14	9	0	14	24	1	0	0	152	5	0	17	127	17	2
5:30 PM - 5:45 PM	1	17	10	0	7	8	2	0	2	107	5	0	12	110	12	0
5:45 PM - 6:00 PM	1	11	8	0	14	7	1	0	0	111	3	0	4	84	17	0
TOTAL	**16**	**100**	**94**	**0**	**104**	**108**	**11**	**0**	**7**	**972**	**40**	**3**	**111**	**845**	**109**	**6**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	17	76	42	1	126	46	3	2	26	352	20	2	55	377	96	8
4:30 PM - 5:30 PM	8	54	62	0	53	70	5	0	4	524	24	2	76	437	63	3

	PHF	Trucks
AM	0.763	1.1%
PM	0.898	0.4%



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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
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Fresno, CA 93704

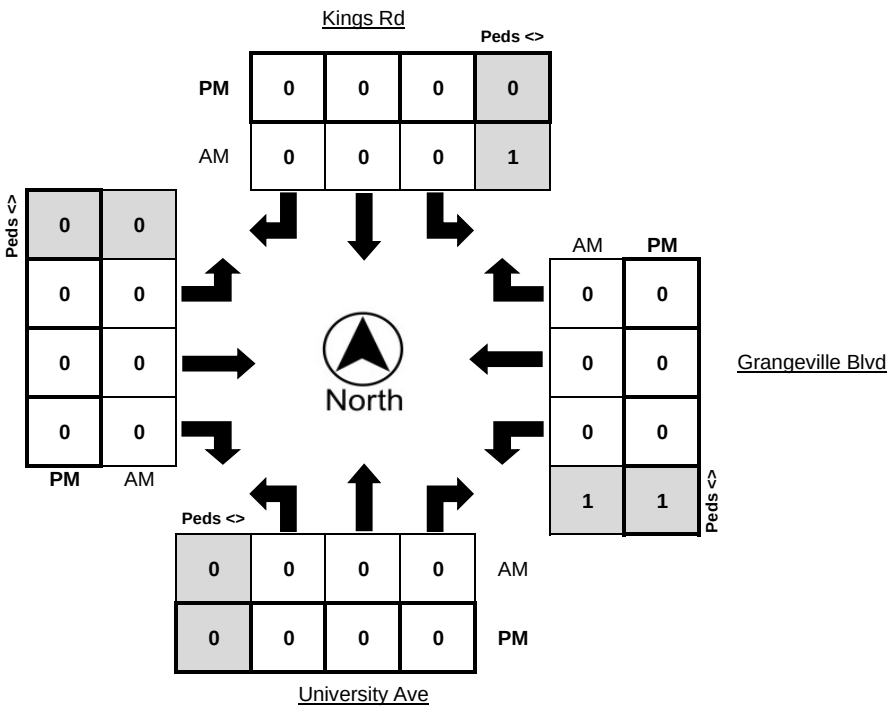
LOCATION Grangeville Blvd @ University Ave
LATITUDE 36.3426
COUNTY Kings
LONGITUDE -119.6661
COLLECTION DATE Tuesday, December 18, 2018
WEATHER AM Fog / PM Clear

	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	0	0	1	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	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	1	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	1	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	1	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**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**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	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	1	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	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	1	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	1	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**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**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**
7:15 AM - 8:15 AM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0

	Bikes	Peds
AM Peak Total	0	2
PM Peak Total	**0**	**1**



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Prepared For:
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Fresno, CA 93704

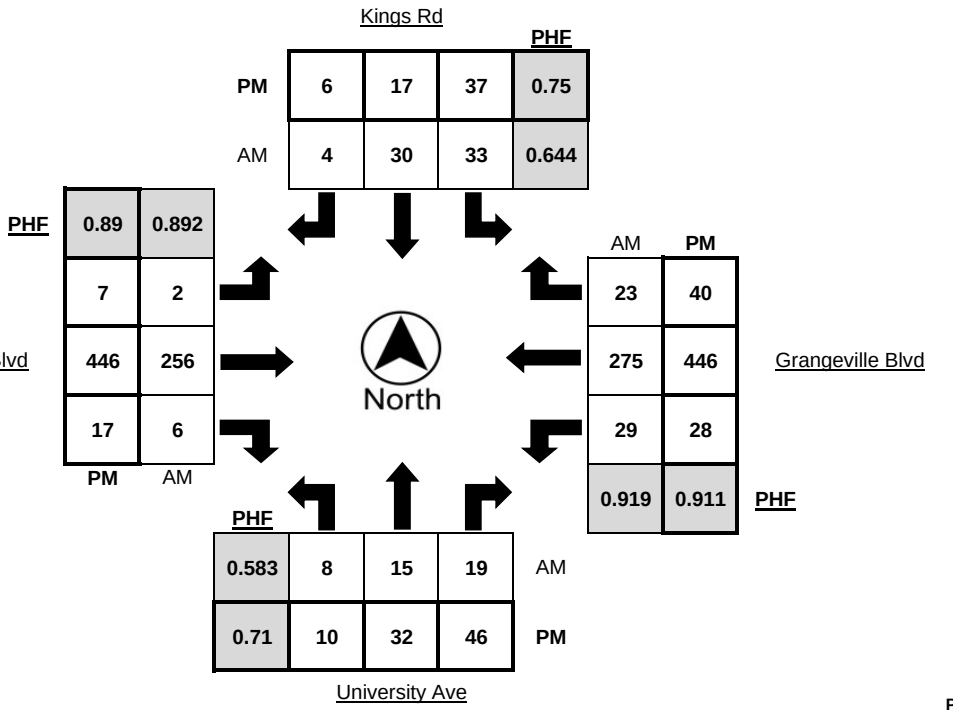
LOCATION Grangeville Blvd @ Kings Rd / University Ave
LATITUDE 36.3427
COUNTY Kings
LONGITUDE -119.6661
COLLECTION DATE Wednesday, September 2, 2020
WEATHER Clear

	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	2	7	0	8	3	0	0	0	31	1	0	1	53	5	1
7:15 AM - 7:30 AM	2	0	3	0	6	4	2	1	1	58	1	0	13	66	4	1
7:30 AM - 7:45 AM	5	4	9	0	8	8	1	0	1	55	1	0	7	75	7	0
7:45 AM - 8:00 AM	1	6	4	0	11	15	0	0	0	71	2	1	5	74	6	3
8:00 AM - 8:15 AM	0	5	3	0	8	3	1	0	0	72	2	0	4	60	6	1
8:15 AM - 8:30 AM	3	4	3	0	6	12	1	0	0	59	1	0	4	50	3	1
8:30 AM - 8:45 AM	1	5	6	0	8	4	0	1	3	57	0	2	7	51	2	4
8:45 AM - 9:00 AM	4	3	3	1	10	5	1	1	0	90	5	2	8	81	4	2
TOTAL	**16**	**29**	**38**	**1**	**65**	**54**	**6**	**3**	**5**	**493**	**13**	**5**	**49**	**510**	**37**	**13**

	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	3	6	12	0	5	3	1	0	2	112	6	0	2	101	7	0
4:15 PM - 4:30 PM	0	14	6	0	9	4	1	0	0	113	7	0	6	98	11	1
4:30 PM - 4:45 PM	2	6	10	0	9	2	1	0	1	105	5	0	8	102	10	0
4:45 PM - 5:00 PM	2	1	12	0	12	6	2	0	1	101	4	0	16	96	5	1
5:00 PM - 5:15 PM	7	6	18	0	5	2	3	0	2	108	6	0	3	111	13	0
5:15 PM - 5:30 PM	0	14	7	0	11	4	1	0	3	127	2	0	7	123	11	1
5:30 PM - 5:45 PM	1	11	9	0	9	5	0	0	1	110	5	0	2	116	11	2
5:45 PM - 6:00 PM	1	3	7	0	8	9	0	0	0	94	4	0	15	104	6	2
TOTAL	**16**	**61**	**81**	**0**	**68**	**35**	**9**	**0**	**10**	**870**	**39**	**0**	**59**	**851**	**74**	**7**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	8	15	19	0	33	30	4	1	2	256	6	1	29	275	23	5
4:45 PM - 5:45 PM	10	32	46	0	37	17	6	0	7	446	17	0	28	446	40	4

	PHF	Trucks
AM	0.897	1.0%
PM	0.913	0.4%



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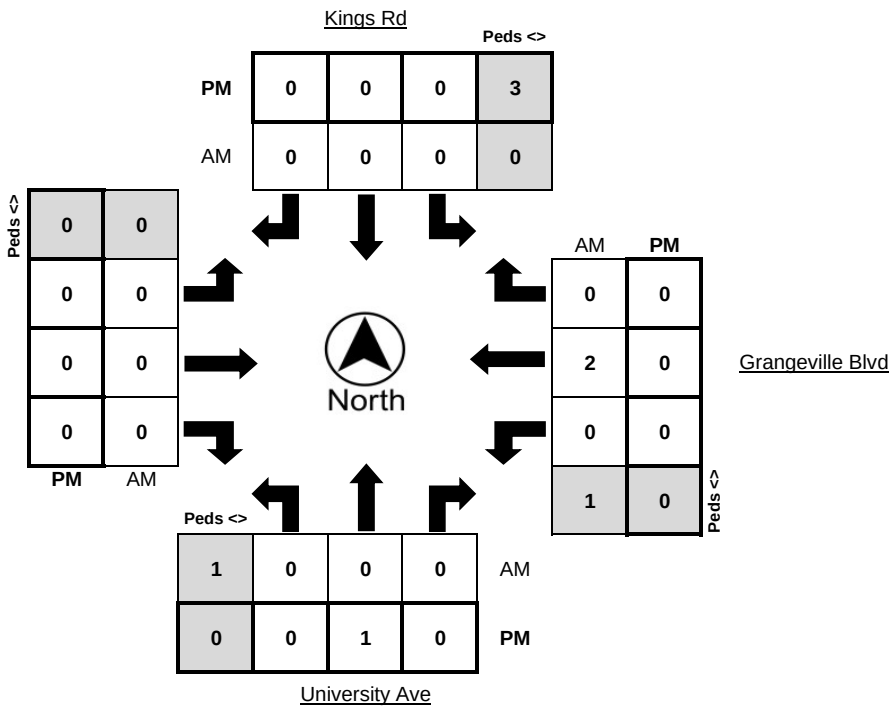
LOCATION Grangeville Blvd @ Kings Rd / University Ave
LATITUDE 36.3427
COUNTY Kings
LONGITUDE -119.6661
COLLECTION DATE Wednesday, September 2, 2020
WEATHER Clear

	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	1	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	2	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	1	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**3**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**2**	**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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	1	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	1	0	1	0	0	0	0	0	0
TOTAL	**0**	**1**	**0**	**3**	**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
PEAK HOUR	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0
4:45 PM - 5:45 PM	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	**Peds**
AM Peak Total	2	2
PM Peak Total	**1**	**3**



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24 Hour Volume Report

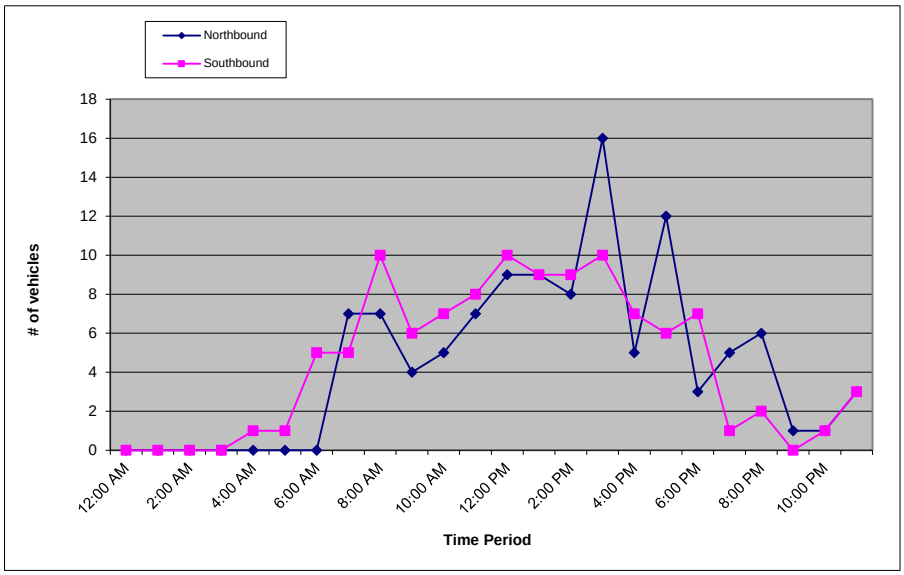
Prepared For: **JLB Traffic Engineering, Inc.**
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

LOCATION Kings Rd north of University Ave
LATITUDE 36.344043°
COUNTY Kings
LONGITUDE -119.665983°
DATE Wednesday, September 30, 2020
WEATHER Clear
NUMBER OF LANES 2

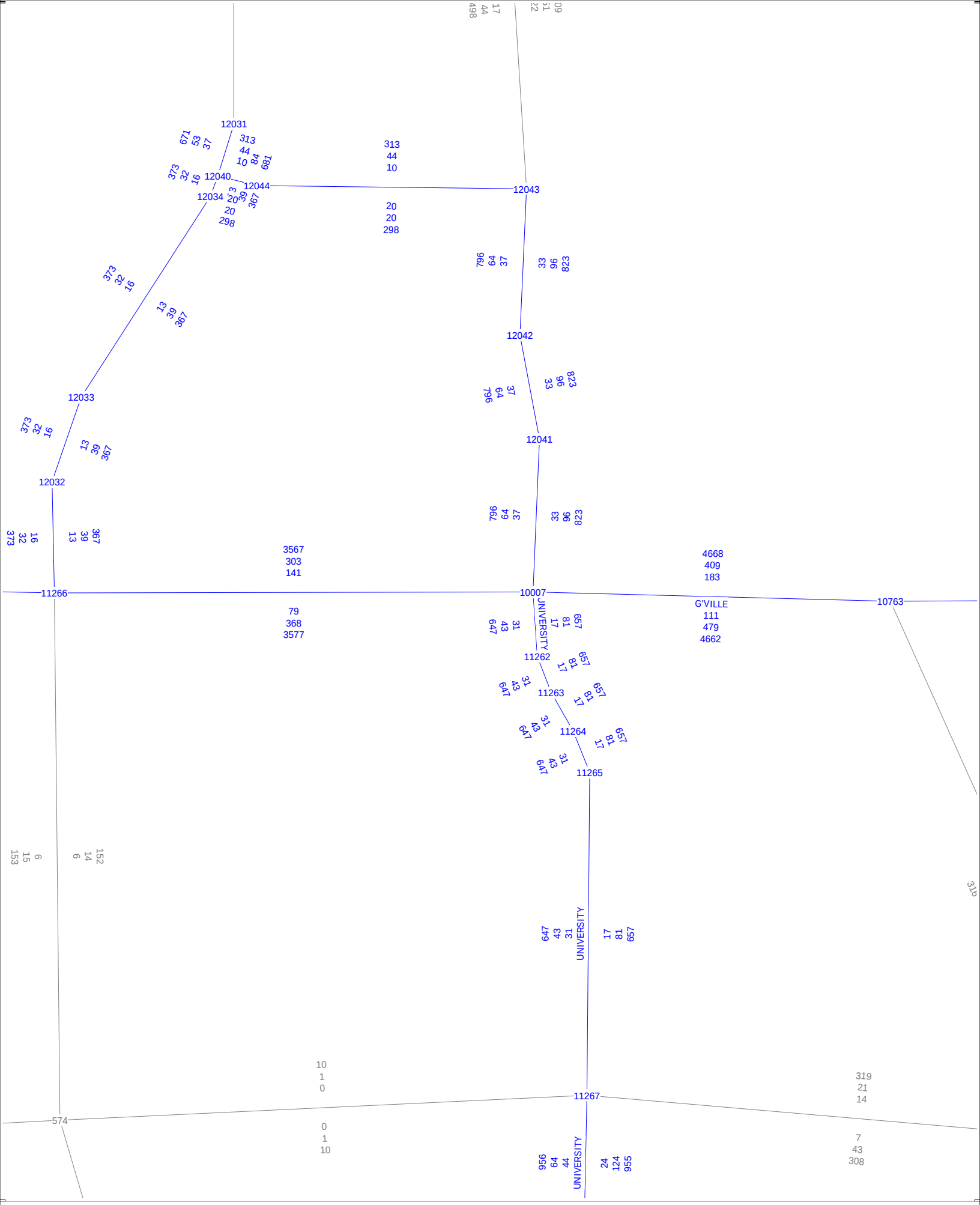
	Northbound					Southbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
1:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
2:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
3:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
4:00 AM	0	0	0	0	**0**	1	0	0	0	**1**	**1**
5:00 AM	0	0	0	0	**0**	1	0	0	0	**1**	**1**
6:00 AM	0	0	0	0	**0**	1	0	2	2	**5**	**5**
7:00 AM	1	0	4	2	**7**	1	1	1	2	**5**	**12**
8:00 AM	3	2	2	0	**7**	2	3	3	2	**10**	**17**
9:00 AM	0	2	1	1	**4**	2	2	0	2	**6**	**10**
10:00 AM	1	3	0	1	**5**	3	3	1	0	**7**	**12**
11:00 AM	2	4	0	1	**7**	3	2	3	0	**8**	**15**
12:00 PM	4	0	4	1	**9**	1	1	3	5	**10**	**19**
1:00 PM	4	0	3	2	**9**	3	4	0	2	**9**	**18**
2:00 PM	3	3	1	1	**8**	3	0	3	3	**9**	**17**
3:00 PM	3	6	4	3	**16**	6	1	2	1	**10**	**26**
4:00 PM	1	1	2	1	**5**	1	4	1	1	**7**	**12**
5:00 PM	3	4	2	3	**12**	0	4	2	0	**6**	**18**
6:00 PM	1	0	2	0	**3**	1	3	0	3	**7**	**10**
7:00 PM	3	0	1	1	**5**	0	1	0	0	**1**	**6**
8:00 PM	3	1	2	0	**6**	1	1	0	0	**2**	**8**
9:00 PM	0	1	0	0	**1**	0	0	0	0	**0**	**1**
10:00 PM	0	0	0	1	**1**	0	0	0	1	**1**	**2**
11:00 PM	1	0	2	0	**3**	1	0	0	2	**3**	**6**
Total	**50.0%**				**108**	**50.0%**				**108**	
	216										

AM% 33.8% **AM Peak** 19 **7:45 am to 8:45 am** **AM P.H.F.** 0.95

PM% 66.2% **PM Peak** 26 **3:00 pm to 4:00 pm** **PM P.H.F.** 0.72

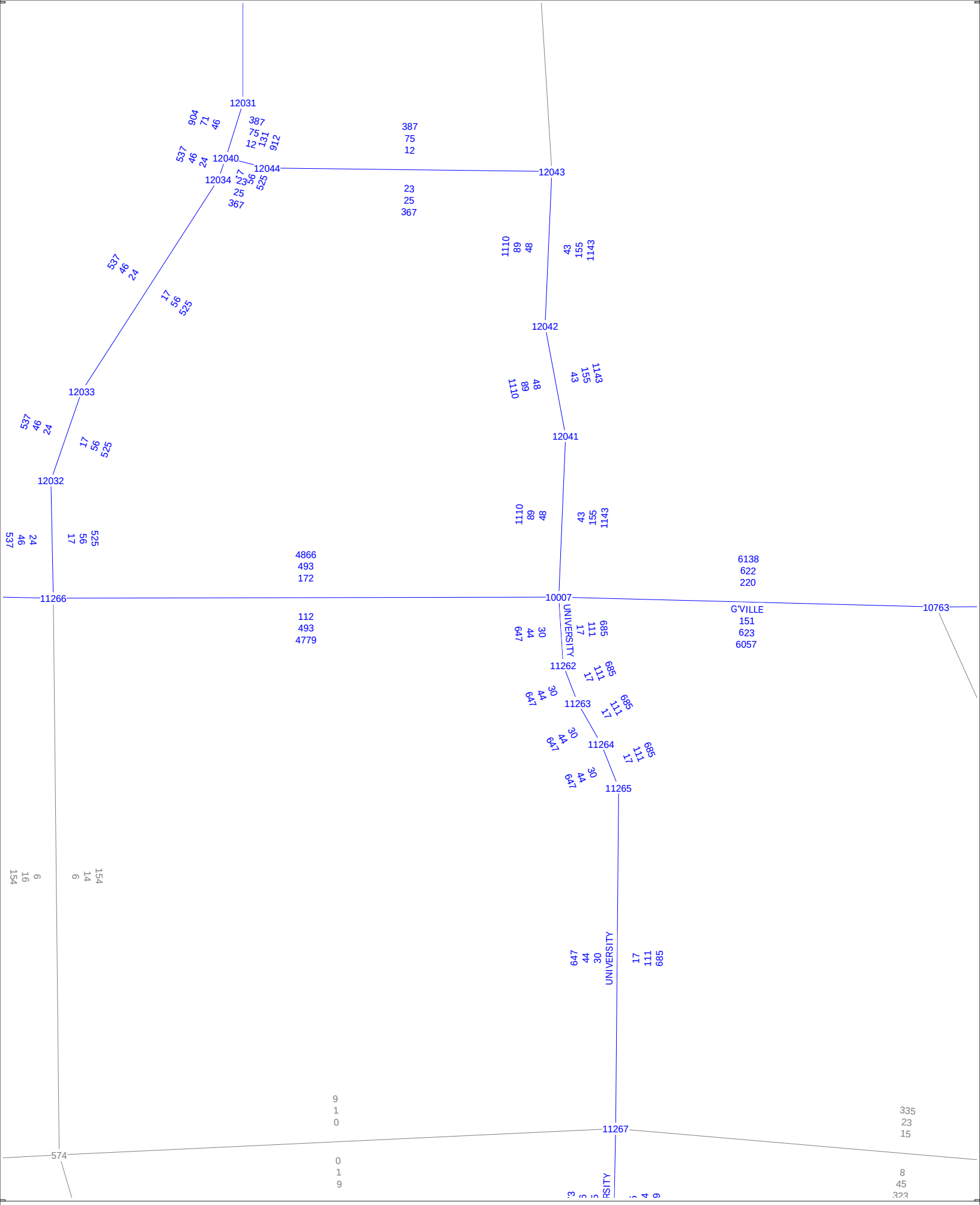


Appendix C: Traffic Modeling



Base Year 2020
AM, PM, Daily

cube
(Licensed to JLB Traffic Engineering Inc)



Cumulative Year 2042
AM, PM, Daily

cube
(Licensed to JLB Traffic Engineering Inc)

Appendix D: Methodology

Levels of Service Methodology

The description and procedures for calculating capacity and level of service (LOS) are found in the Transportation Research Board, Highway Capacity Manual (HCM). The HCM 2010 represents the research on capacity and quality of service for transportation facilities.

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

Six levels of service are defined for each type of facility that has analysis procedures available. Letters designate each level of service (LOS), from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each LOS represents a range of operating conditions and the driver's perception of these conditions. Safety is not included in the measures that establish a LOS.

Urban Streets (Automobile Mode)

The term "urban streets" refers to urban arterials and collectors, including those in downtown areas. Arterial streets are roads that primarily serve longer through trips. However, providing access to abutting commercial and residential land uses is also an important function of arterials. Collector streets provide both land access and traffic circulation within residential, commercial and industrial areas. Their access function is more important than that of arterials, and unlike arterials their operation is not always dominated by traffic signals. Downtown streets are signalized facilities that often resemble arterials. They not only move through traffic but also provide access to local businesses for passenger cars, transit buses, and trucks. Pedestrian conflicts and lane obstructions created by stopping or standing taxicabs, buses, trucks and parking vehicles that cause turbulence in the traffic flow are typical of downtown streets.

Flow Characteristics

The speed of vehicles on urban streets is influenced by three main factors, street environment, interaction among vehicles and traffic control.

The street environment includes the geometric characteristics of the facility, the character of roadside activity, and adjacent land uses. Thus, the environment reflects the number and width of lanes, type of median, driveway/access point density, spacing between signalized intersections, existence of parking, level of pedestrian and bicyclist activity and speed limit.

The interaction among vehicles is determined by traffic density, the proportion of trucks and buses, and turning movements. This interaction affects the operation of vehicles at intersections and, to a lesser extent, between signals.

Traffic controls (including signals and signs) forces a portion of all vehicles to slow or stop. The delays and speed changes caused by traffic control devices reduce vehicle speeds; however, such controls are needed to establish right-of-way.

Levels of Service (automobile Mode)

The average travel speed for through vehicles along an urban street is the determinant of the operating level of service (LOS). The travel speed along a segment, section or entire length of an urban street is dependent on the running speed between signalized intersections and the amount of control delay incurred at signalized intersections.

LOS A describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal. Travel speeds exceed 85 of the base free flow speed (FFS).

LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67 and 85 percent of the base FFS.

LOS C describes stable operations. The ability to maneuver and change lanes in midblock location may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50 and 67 percent of the base FFS.

LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volumes, inappropriate signal timing, at the boundary intersections. The travel speed is between 40 and 50 percent of the base FFS.

LOS E is characterized unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30 and 40 percent of the base FFS.

LOS F is characterized by street flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30 percent or less of the base FFS.

Table A-1: Urban Street Levels of Service (Automobile Mode)

Travel Speed as a Percentage of Base Free-Flow Speed (%)	LOS by Critical Volume-to-Capacity Ratio[a]	
	≤1.0	>1.0
>85	A	F
>67 to 85	B	F
>50 to 67	C	F
>40 to 50	D	F
>30 to 40	E	F
≤30	F	F

a = The Critical volume-to-capacity ratio is based on consideration of the through movement-to-capacity ratio at each boundary intersection in the subject direction of travel. The critical volume-to-capacity ratio is the largest ratio of those considered.
Source: Highway Capacity Manual 2010, Exhibit 16-4. Urban Street LOS Criteria (Automobile Mode)

Intersection Levels of Service

One of the more important elements limiting, and often interrupting the flow of traffic on a highway is the intersection. Flow on an interrupted facility is usually dominated by points of fixed operation such as traffic signals, stop and yield signs.

Signalized Intersections – Performance Measures

For signalized intersections the performance measures include automobile volume-to-capacity ratio, automobile delay, queue storage length, ratio of pedestrian delay, pedestrian circulation area, pedestrian perception score, bicycle delay, and bicycle perception score. LOS is also considered a performance measure. For the automobile mode average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection. A LOS designation is given to the weighted average control delay to better describe the level of operation. A description of LOS for signalized intersections is found in Table A-2.

Table A-2: Signalized Intersection Level of Service Description (Automobile Mode)

Level of Service	Description	Average Control Delay (seconds per vehicle)
A	Operations with a control delay of 10 seconds/vehicle or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when volume-to-capacity ratio is and either progression is exceptionally favorable or the cycle length is very short. If it's due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Operations with control delay between 10.1 to 20.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	>10.0 to 20.0
C	Operations with average control delays between 20.1 to 35.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 to 35
D	Operations with control delay between 35.1 to 55.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop, and i ndividual cycle failures are noticeable.	>35 to 55
E	Operations with control delay between 55.1 to 80.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	>55 to 80
F	Operations with unacceptable control delay exceeding 80.0 seconds/vehicle and a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80

Source: Highway Capacity Manual 2010

Unsignalized Intersections

The HCM 2010 procedures use control delay as a measure of effectiveness to determine level of service. Delay is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, i. e., in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Control delay is the increased time of travel for a vehicle approaching and passing through an unsignalized intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection.

All-Way Stop Controlled Intersections

All-way stop controlled intersections is a form of traffic controls in which all approaches to an intersection are required to stop. Similar to signalized intersections, at all-way stop controlled intersections the average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection as a whole. In other words the delay measured for all-way stop controlled intersections is a measure of the average delay for all vehicles passing through the intersection during the peak hour. A LOS designation is given to the weighted average control delay to better describe the level of operation.

Two-Way Stop Controlled Intersections

Two-way stop controlled (TWSC) intersections in which stop signs are used to assign the right-of-way, are the most prevalent type of intersection in the United States. At TWSC intersections the stop-controlled approaches are referred as the minor street approaches and can be either public streets or private driveways. The approaches that are not controlled by stop signs are referred to as the major street approaches.

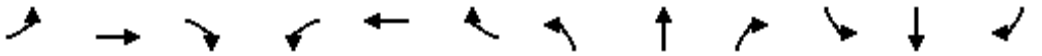
The capacity of movements subject to delay are determined using the "critical gap" method of capacity analysis. Expected average control delay based on movement volume and movement capacity is calculated. A LOS for TWSC intersection is determined by the computed or measured control delay for each minor movement. LOS is not defined for the intersection as a whole for three main reasons: (a) major-street through vehicles are assumed to experience zero delay; (b) the disproportionate number of major-street through vehicles at the typical TWSC intersection skews the weighted average of all movements, resulting in a very low overall average delay from all vehicles; and (c) the resulting low delay can mask important LOS deficiencies for minor movements. Table A-3 provides a description of LOS at unsignalized intersections.

Table A-3: Unsignalized Intersection Level of Service Description (Automobile Mode)

Control Delay (seconds per vehicle)	LOS by Volume-to-Capacity Ratio	
	v/c ≤ 1.0	**v/c > 1.0**
≤10	A	F
>10 to 15	B	F
>15 to 25	C	F
>25 to 35	D	F
>35 to 50	E	F
>50	F	F

Source: HCM 2010 Exhibit 19-1.

Appendix E: Existing Baseline 2020 Traffic Conditions



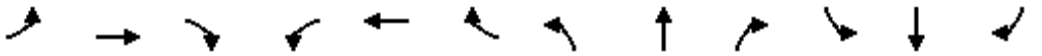
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	366	21	57	392	100	18	79	44	131	47	4
Future Volume (veh/h)	27	366	21	57	392	100	18	79	44	131	47	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	36	482	28	75	516	132	24	104	58	172	62	5
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	183	937	54	183	770	196	183	206	174	245	271	229
Arrive On Green	0.10	0.28	0.28	0.10	0.28	0.28	0.10	0.11	0.11	0.14	0.15	0.15
Sat Flow, veh/h	1767	3386	196	1767	2782	708	1767	1856	1568	1767	1856	1572
Grp Volume(v), veh/h	36	250	260	75	326	322	24	104	58	172	62	5
Grp Sat Flow(s),veh/h/ln	1767	1763	1820	1767	1763	1728	1767	1856	1568	1767	1856	1572
Q Serve(g_s), s	0.9	5.8	5.8	1.9	7.9	8.0	0.6	2.6	1.7	4.5	1.4	0.1
Cycle Q Clear(g_c), s	0.9	5.8	5.8	1.9	7.9	8.0	0.6	2.6	1.7	4.5	1.4	0.1
Prop In Lane	1.00		0.11	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	183	488	504	183	488	478	183	206	174	245	271	229
V/C Ratio(X)	0.20	0.51	0.52	0.41	0.67	0.67	0.13	0.51	0.33	0.70	0.23	0.02
Avail Cap(c_a), veh/h	223	894	923	238	908	890	201	1037	876	442	1305	1106
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	19.8	14.7	14.7	20.3	15.5	15.5	19.7	20.2	19.8	19.9	18.2	17.7
Incr Delay (d2), s/veh	0.5	0.8	0.8	1.5	1.6	1.7	0.3	1.9	1.1	3.6	0.4	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	0.3	2.0	2.0	0.8	2.8	2.7	0.2	1.1	0.6	1.9	0.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	15.6	15.6	21.8	17.1	17.2	20.0	22.2	21.0	23.5	18.7	17.7
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	B	B
Approach Vol, veh/h		546			723			186			239	
Approach Delay, s/veh		15.9			17.6			21.5			22.1	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	10.0	9.2	18.3	9.2	11.7	9.2	18.3
Change Period (Y+Rc), s	* 4.2	4.6	* 4.2	4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 12	27.0	* 6.5	24.5	* 5.5	* 34	* 6.1	24.9
Max Q Clear Time (g_c+I1), s	6.5	4.6	3.9	7.8	2.6	3.4	2.9	10.0
Green Ext Time (p_c), s	0.2	0.7	0.0	2.6	0.0	0.3	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	542	25	79	455	66	10	54	65	55	72	6
Future Volume (veh/h)	7	542	25	79	455	66	10	54	65	55	72	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	8	602	28	88	506	73	11	60	72	61	80	7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	191	937	44	191	891	128	191	201	170	191	201	170
Arrive On Green	0.11	0.27	0.27	0.11	0.29	0.29	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1767	3430	159	1767	3091	444	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	8	309	321	88	288	291	11	60	72	61	80	7
Grp Sat Flow(s),veh/h/ln	1767	1763	1827	1767	1763	1773	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	0.2	7.1	7.2	2.2	6.4	6.5	0.3	1.4	1.3	1.5	1.9	0.2
Cycle Q Clear(g_c), s	0.2	7.1	7.2	2.2	6.4	6.5	0.3	1.4	1.3	1.5	1.9	0.2
Prop In Lane	1.00		0.09	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	191	482	499	191	508	511	191	201	170	191	201	170
V/C Ratio(X)	0.04	0.64	0.64	0.46	0.57	0.57	0.06	0.30	0.42	0.32	0.40	0.04
Avail Cap(c_a), veh/h	191	972	1008	298	1079	1085	191	1084	918	222	1132	959
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	18.5	14.8	14.8	19.3	14.0	14.0	18.5	19.0	8.1	19.0	19.2	18.5
Incr Delay (d2), s/veh	0.1	1.4	1.4	1.7	1.0	1.0	0.1	0.8	1.7	1.0	1.3	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	0.1	2.4	2.5	0.8	2.1	2.2	0.1	0.6	0.7	0.6	0.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	16.2	16.2	21.1	15.0	15.0	18.6	19.8	9.8	20.0	20.5	18.6
LnGrp LOS	B	B	B	C	B	B	B	B	A	B	C	B
Approach Vol, veh/h		638			667			143			148	
Approach Delay, s/veh		16.3			15.8			14.7			20.2	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	9.6	9.9	17.5	9.2	9.6	9.2	18.2
Change Period (Y+Rc), s	* 4.2	4.6	4.9	* 4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 5.8	27.0	7.8	* 26	* 5	* 28	* 5	28.3
Max Q Clear Time (g_c+I1), s	3.5	3.4	4.2	9.2	2.3	3.9	2.2	8.5
Green Ext Time (p_c), s	0.0	0.5	0.1	3.2	0.0	0.4	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	16.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	66	112	122	101	152	170	52	120	67	114	111	28
Average Queue (ft)	19	68	47	31	76	64	10	50	18	65	27	5
95th Queue (ft)	50	112	94	73	122	122	38	89	47	103	71	22
Link Distance (ft)		1859	1859		1852	1852		1692			829	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)		2						4	0	1	1	
Queuing Penalty (veh)		0						2	0	1	1	

Network Summary

Network wide Queuing Penalty: 4

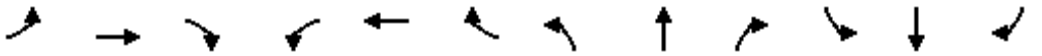
Intersection: 1: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	24	170	167	109	156	149	50	71	79	63	92	28
Average Queue (ft)	3	102	87	36	75	72	12	34	30	36	45	4
95th Queue (ft)	15	144	151	77	129	125	36	62	55	59	77	19
Link Distance (ft)		1859	1859		1852	1852		1692			829	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)		7						0	0		1	
Queuing Penalty (veh)		0						0	0		1	

Network Summary

Network wide Queuing Penalty: 1

Appendix F: Existing Baseline 2020 plus Project Traffic Conditions



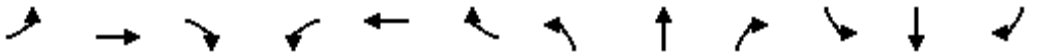
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	366	21	57	392	107	18	84	44	152	62	8
Future Volume (veh/h)	28	366	21	57	392	107	18	84	44	152	62	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	37	482	28	75	516	141	24	111	58	200	82	11
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	176	941	55	176	761	207	176	210	177	271	310	263
Arrive On Green	0.10	0.28	0.28	0.10	0.28	0.28	0.10	0.11	0.11	0.15	0.17	0.17
Sat Flow, veh/h	1767	3386	196	1767	2739	745	1767	1856	1568	1767	1856	1572
Grp Volume(v), veh/h	37	250	260	75	331	326	24	111	58	200	82	11
Grp Sat Flow(s),veh/h/ln	1767	1763	1820	1767	1763	1721	1767	1856	1568	1767	1856	1572
Q Serve(g_s), s	1.0	6.0	6.0	2.0	8.4	8.5	0.6	2.8	1.7	5.4	1.9	0.3
Cycle Q Clear(g_c), s	1.0	6.0	6.0	2.0	8.4	8.5	0.6	2.8	1.7	5.4	1.9	0.3
Prop In Lane	1.00		0.11	1.00		0.43	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	176	490	505	176	490	478	176	210	177	271	310	263
V/C Ratio(X)	0.21	0.51	0.51	0.43	0.68	0.68	0.14	0.53	0.33	0.74	0.26	0.04
Avail Cap(c_a), veh/h	179	859	887	232	912	891	193	997	843	492	1325	1123
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	20.8	15.3	15.3	21.3	16.1	16.2	20.7	21.0	20.5	20.3	18.2	17.6
Incr Delay (d2), s/veh	0.6	0.8	0.8	1.6	1.6	1.7	0.3	2.1	1.1	3.9	0.5	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	0.4	2.1	2.2	0.8	3.0	2.9	0.2	1.2	0.6	2.3	0.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.4	16.1	16.1	22.9	17.8	17.9	21.0	23.1	21.6	24.2	18.7	17.6
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	B	B
Approach Vol, veh/h		547			732			193			293	
Approach Delay, s/veh		16.5			18.4			22.4			22.4	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	10.3	9.2	18.9	9.2	13.0	9.2	18.9
Change Period (Y+Rc), s	* 4.2	4.6	* 4.2	4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 14	27.0	* 6.6	24.5	* 5.5	* 36	* 5.1	26.0
Max Q Clear Time (g_c+I1), s	7.4	4.8	4.0	8.0	2.6	3.9	3.0	10.5
Green Ext Time (p_c), s	0.3	0.7	0.0	2.5	0.0	0.4	0.0	3.4

Intersection Summary	
HCM 6th Ctrl Delay	18.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	542	25	79	455	90	10	71	65	69	82	9
Future Volume (veh/h)	11	542	25	79	455	90	10	71	65	69	82	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	12	602	28	88	506	100	11	79	72	77	91	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
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	192	931	43	192	841	165	192	201	170	192	201	170
Arrive On Green	0.11	0.27	0.27	0.11	0.29	0.29	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1767	3430	159	1767	2934	577	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	12	309	321	88	303	303	11	79	72	77	91	10
Grp Sat Flow(s),veh/h/ln	1767	1763	1827	1767	1763	1748	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	0.3	7.1	7.2	2.2	6.8	6.9	0.3	1.8	1.3	1.9	2.1	0.3
Cycle Q Clear(g_c), s	0.3	7.1	7.2	2.2	6.8	6.9	0.3	1.8	1.3	1.9	2.1	0.3
Prop In Lane	1.00		0.09	1.00		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	478	496	192	505	501	192	201	170	192	201	170
V/C Ratio(X)	0.06	0.65	0.65	0.46	0.60	0.60	0.06	0.39	0.42	0.40	0.45	0.06
Avail Cap(c_a), veh/h	192	921	955	261	990	982	192	1086	921	238	1151	975
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	18.5	14.8	14.8	19.3	14.2	14.2	18.4	19.1	8.0	19.2	19.3	18.4
Incr Delay (d2), s/veh	0.1	1.5	1.4	1.7	1.1	1.2	0.1	1.2	1.7	1.4	1.6	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	0.1	2.4	2.5	0.8	2.3	2.3	0.1	0.8	0.7	0.8	0.9	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	16.3	16.3	21.0	15.3	15.4	18.6	20.4	9.7	20.5	20.9	18.6
LnGrp LOS	B	B	B	C	B	B	B	C	A	C	C	B
Approach Vol, veh/h		642			694			162			178	
Approach Delay, s/veh		16.3			16.1			15.5			20.6	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	9.6	9.9	17.4	9.2	9.6	9.2	18.1
Change Period (Y+Rc), s	* 4.2	4.6	4.9	* 4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 6.2	27.0	6.8	* 24	* 5	* 29	* 5	25.9
Max Q Clear Time (g_c+I1), s	3.9	3.8	4.2	9.2	2.3	4.1	2.3	8.9
Green Ext Time (p_c), s	0.0	0.6	0.0	3.1	0.0	0.5	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	47	156	140	68	112	106	49	78	53	176	105	29
Average Queue (ft)	19	71	55	31	77	62	10	45	24	82	37	6
95th Queue (ft)	45	122	110	65	113	105	33	79	49	138	81	25
Link Distance (ft)		1859	1859		1852	1852		1692			829	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)		2						2		5	0	
Queuing Penalty (veh)		1						1		3	1	

Network Summary

Network wide Queuing Penalty: 6

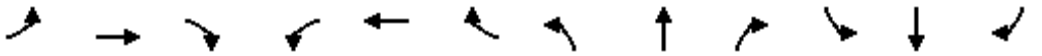
Intersection: 1: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	25	199	171	67	134	154	29	139	130	73	114	28
Average Queue (ft)	4	108	86	34	72	65	6	44	30	40	51	6
95th Queue (ft)	19	159	146	65	124	131	25	97	73	73	94	24
Link Distance (ft)		1859	1859		1852	1852		1692			829	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)		8						3	0		2	
Queuing Penalty (veh)		1						2	0		1	

Network Summary

Network wide Queuing Penalty: 5

Appendix G: Near Term plus Project Traffic Conditions



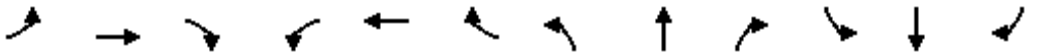
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	413	21	57	407	107	18	84	44	152	62	8
Future Volume (veh/h)	28	413	21	57	407	107	18	84	44	152	62	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	37	543	28	75	536	141	24	111	58	200	82	11
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	174	966	50	174	782	205	174	209	176	271	310	263
Arrive On Green	0.10	0.28	0.28	0.10	0.28	0.28	0.10	0.11	0.11	0.15	0.17	0.17
Sat Flow, veh/h	1767	3411	176	1767	2764	724	1767	1856	1568	1767	1856	1572
Grp Volume(v), veh/h	37	280	291	75	341	336	24	111	58	200	82	11
Grp Sat Flow(s),veh/h/ln	1767	1763	1824	1767	1763	1725	1767	1856	1568	1767	1856	1572
Q Serve(g_s), s	1.0	6.9	6.9	2.0	8.7	8.8	0.6	2.9	1.7	5.5	2.0	0.3
Cycle Q Clear(g_c), s	1.0	6.9	6.9	2.0	8.7	8.8	0.6	2.9	1.7	5.5	2.0	0.3
Prop In Lane	1.00		0.10	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	174	499	516	174	499	488	174	209	176	271	310	263
V/C Ratio(X)	0.21	0.56	0.56	0.43	0.68	0.69	0.14	0.53	0.33	0.74	0.26	0.04
Avail Cap(c_a), veh/h	178	851	880	230	903	884	192	987	834	487	1313	1112
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	21.1	15.5	15.5	21.5	16.2	16.2	20.9	21.3	20.8	20.5	18.4	17.7
Incr Delay (d2), s/veh	0.6	1.0	1.0	1.7	1.7	1.7	0.4	2.1	1.1	3.9	0.4	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	0.4	2.4	2.5	0.8	3.1	3.1	0.3	1.2	0.6	2.3	0.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.7	16.5	16.5	23.2	17.8	17.9	21.3	23.4	21.8	24.5	18.9	17.8
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	B	B
Approach Vol, veh/h		608			752			193			293	
Approach Delay, s/veh		16.8			18.4			22.6			22.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	10.3	9.2	19.3	9.2	13.1	9.2	19.3
Change Period (Y+Rc), s	* 4.2	4.6	* 4.2	4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 14	27.0	* 6.6	24.5	* 5.5	* 36	* 5.1	26.0
Max Q Clear Time (g_c+I1), s	7.5	4.9	4.0	8.9	2.6	4.0	3.0	10.8
Green Ext Time (p_c), s	0.3	0.7	0.0	2.8	0.0	0.4	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	573	25	79	508	90	10	71	65	69	82	9
Future Volume (veh/h)	11	573	25	79	508	90	10	71	65	69	82	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	12	637	28	88	564	100	11	79	72	77	91	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
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	189	967	42	189	886	157	189	198	168	189	198	168
Arrive On Green	0.11	0.28	0.28	0.11	0.30	0.30	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1767	3440	151	1767	2991	529	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	12	326	339	88	332	332	11	79	72	77	91	10
Grp Sat Flow(s),veh/h/ln	1767	1763	1828	1767	1763	1757	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	0.3	7.6	7.6	2.2	7.6	7.7	0.3	1.9	1.3	1.9	2.2	0.3
Cycle Q Clear(g_c), s	0.3	7.6	7.6	2.2	7.6	7.7	0.3	1.9	1.3	1.9	2.2	0.3
Prop In Lane	1.00		0.08	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	189	496	514	189	522	520	189	198	168	189	198	168
V/C Ratio(X)	0.06	0.66	0.66	0.47	0.64	0.64	0.06	0.40	0.43	0.41	0.46	0.06
Avail Cap(c_a), veh/h	189	909	943	257	977	974	189	1072	908	234	1135	962
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	18.8	14.8	14.8	19.6	14.3	14.3	18.8	19.5	8.3	19.5	19.6	18.8
Incr Delay (d2), s/veh	0.1	1.5	1.4	1.8	1.3	1.3	0.1	1.3	1.7	1.4	1.6	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	0.1	2.6	2.7	0.9	2.5	2.6	0.1	0.8	0.7	0.8	0.9	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.9	16.3	16.3	21.4	15.5	15.6	18.9	20.8	10.0	20.9	21.2	18.9
LnGrp LOS	B	B	B	C	B	B	B	C	B	C	C	B
Approach Vol, veh/h		677			752			162			178	
Approach Delay, s/veh		16.3			16.3			15.9			21.0	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	9.6	9.9	18.0	9.2	9.6	9.2	18.7
Change Period (Y+Rc), s	* 4.2	4.6	4.9	* 4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 6.2	27.0	6.8	* 24	* 5	* 29	* 5	25.9
Max Q Clear Time (g_c+I1), s	3.9	3.9	4.2	9.6	2.3	4.2	2.3	9.7
Green Ext Time (p_c), s	0.0	0.6	0.0	3.3	0.0	0.5	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	68	151	152	86	159	189	49	94	54	130	91	28
Average Queue (ft)	21	74	55	26	87	75	14	45	20	70	31	4
95th Queue (ft)	51	119	102	59	139	142	42	75	46	117	71	19
Link Distance (ft)		1859	1859		1852	1852		1692			829	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)		2						1		3	0	
Queuing Penalty (veh)		1						0		2	0	

Network Summary

Network wide Queuing Penalty: 3

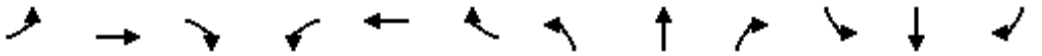
Intersection: 1: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	25	172	156	109	130	143	30	71	78	114	133	28
Average Queue (ft)	5	101	96	40	86	81	6	35	34	46	52	5
95th Queue (ft)	21	143	151	85	130	134	24	66	65	81	107	21
Link Distance (ft)		1859	1859		1852	1852		1692			829	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)		6						0	0	0	3	
Queuing Penalty (veh)		1						0	0	0	2	

Network Summary

Network wide Queuing Penalty: 4

Appendix H: Cumulative Year 2040 plus Project Traffic Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	544	31	85	582	156	27	122	65	216	85	10
Future Volume (veh/h)	41	544	31	85	582	156	27	122	65	216	85	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	54	716	41	112	766	205	36	161	86	284	112	13
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	133	1084	62	162	924	247	133	243	205	332	452	383
Arrive On Green	0.08	0.32	0.32	0.09	0.34	0.34	0.08	0.13	0.13	0.19	0.24	0.24
Sat Flow, veh/h	1767	3389	194	1767	2750	736	1767	1856	1569	1767	1856	1572
Grp Volume(v), veh/h	54	372	385	112	491	480	36	161	86	284	112	13
Grp Sat Flow(s),veh/h/ln	1767	1763	1820	1767	1763	1723	1767	1856	1569	1767	1856	1572
Q Serve(g_s), s	1.9	12.1	12.1	4.1	17.0	17.0	1.3	5.5	3.3	10.3	3.2	0.4
Cycle Q Clear(g_c), s	1.9	12.1	12.1	4.1	17.0	17.0	1.3	5.5	3.3	10.3	3.2	0.4
Prop In Lane	1.00		0.11	1.00		0.43	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	133	564	582	162	593	579	133	243	205	332	452	383
V/C Ratio(X)	0.41	0.66	0.66	0.69	0.83	0.83	0.27	0.66	0.42	0.85	0.25	0.03
Avail Cap(c_a), veh/h	133	658	680	165	690	675	162	754	638	375	989	838
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	29.3	19.5	19.5	29.2	20.3	20.3	29.0	27.5	26.5	26.1	20.2	19.2
Incr Delay (d2), s/veh	2.0	2.0	1.9	11.4	7.3	7.5	1.1	3.1	1.4	15.9	0.3	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	0.8	4.6	4.8	2.1	7.3	7.1	0.6	2.5	1.2	5.6	1.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	21.4	21.4	40.7	27.6	27.8	30.1	30.5	27.9	41.9	20.5	19.2
LnGrp LOS	C	C	C	D	C	C	C	C	C	D	C	B
Approach Vol, veh/h		811			1083			283			409	
Approach Delay, s/veh		22.1			29.0			29.7			35.3	
Approach LOS		C			C			C			D	

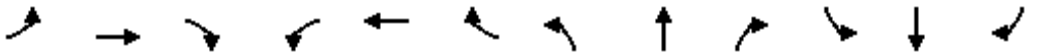
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	13.3	10.3	26.1	9.2	20.8	9.2	27.2
Change Period (Y+Rc), s	* 4.2	4.6	* 4.2	4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 14	27.0	* 6.2	24.8	* 6.1	* 35	* 5	26.0
Max Q Clear Time (g_c+I1), s	12.3	7.5	6.1	14.1	3.3	5.2	3.9	19.0
Green Ext Time (p_c), s	0.2	1.0	0.0	3.3	0.0	0.6	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	27.9
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	805	37	117	676	122	15	97	97	96	117	12
Future Volume (veh/h)	14	805	37	117	676	122	15	97	97	96	117	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	16	894	41	130	751	136	17	108	108	107	130	13
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	157	1225	56	191	1158	210	157	202	171	168	213	180
Arrive On Green	0.09	0.36	0.36	0.11	0.39	0.39	0.09	0.11	0.11	0.09	0.11	0.11
Sat Flow, veh/h	1767	3433	157	1767	2979	539	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	16	459	476	130	444	443	17	108	108	107	130	13
Grp Sat Flow(s),veh/h/ln	1767	1763	1827	1767	1763	1756	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	0.5	12.7	12.7	4.0	11.6	11.6	0.5	3.1	2.5	3.3	3.7	0.4
Cycle Q Clear(g_c), s	0.5	12.7	12.7	4.0	11.6	11.6	0.5	3.1	2.5	3.3	3.7	0.4
Prop In Lane	1.00		0.09	1.00		0.31	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	157	629	652	191	685	682	157	202	171	168	213	180
V/C Ratio(X)	0.10	0.73	0.73	0.68	0.65	0.65	0.11	0.53	0.63	0.64	0.61	0.07
Avail Cap(c_a), veh/h	157	989	1025	308	1139	1135	157	892	756	245	998	845
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	23.5	15.7	15.7	24.1	14.0	14.0	23.5	23.7	11.4	24.5	23.7	22.2
Incr Delay (d2), s/veh	0.3	1.6	1.6	4.2	1.0	1.0	0.3	2.2	3.8	4.0	2.8	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	0.2	4.5	4.6	1.7	3.9	3.9	0.2	1.4	1.4	1.5	1.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	17.3	17.3	28.3	15.1	15.1	23.8	25.9	15.2	28.5	26.5	22.4
LnGrp LOS	C	B	B	C	B	B	C	C	B	C	C	C
Approach Vol, veh/h		951			1017			233			250	
Approach Delay, s/veh		17.4			16.8			20.8			27.1	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	10.7	11.0	24.9	9.2	11.0	9.2	26.7
Change Period (Y+Rc), s	* 4.2	4.6	4.9	* 4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 7.8	27.0	9.8	* 32	* 5	* 30	* 5	36.3
Max Q Clear Time (g_c+I1), s	5.3	5.1	6.0	14.7	2.5	5.7	2.5	13.6
Green Ext Time (p_c), s	0.1	0.8	0.1	5.2	0.0	0.7	0.0	5.6

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	68	208	164	128	192	178	72	142	130	200	294	28
Average Queue (ft)	33	110	96	51	107	110	25	69	36	104	51	3
95th Queue (ft)	70	171	154	101	167	174	56	128	83	165	139	17
Link Distance (ft)		1859	1859		1852	1852		1692			829	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)		11			0			9	0	11	0	
Queuing Penalty (veh)		4			0			8	0	10	1	

Network Summary

Network wide Queuing Penalty: 23

Intersection: 1: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	25	302	331	133	180	240	49	93	91	122	160	29
Average Queue (ft)	8	143	135	64	107	113	14	48	33	60	67	7
95th Queue (ft)	25	232	237	115	173	201	43	84	66	101	120	26
Link Distance (ft)		1859	1859		1852	1852		1692			829	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)		19			0			5	0	1	5	
Queuing Penalty (veh)		3			0			6	0	2	5	

Network Summary

Network wide Queuing Penalty: 15

Revised Focused Traffic Impact Analysis Report

Liberty Pointe

Located on the Northeast Quadrant of
12th Avenue and Grangeville Boulevard

In the City of Hanford, California

Prepared for
HollyHills Development
480 East Bogart Trail
Palm Springs, CA 92264

June 21, 2021

Project No. 047-001

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Traffic Engineering, Transportation Planning, & Parking Solutions

Revised Focused Traffic Impact Analysis Report

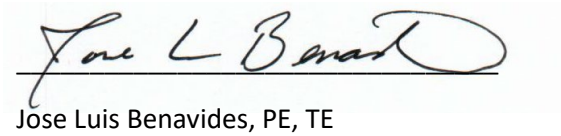
For Liberty Pointe located on the Northeast Quadrant of 12th Avenue and Grangeville Boulevard

In the City of Hanford, CA

June 21, 2021

This Revised Focused Traffic Impact Analysis Report has been prepared under the direction of a licensed Traffic Engineer. The licensed Traffic Engineer attests to the technical information contained therein and has judged the qualifications of any technical specialists providing engineering data from which recommendations, conclusions, and decisions are based.

Prepared by:





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Introduction and Summary

Introduction

This Report describes a Revised Focused Traffic Impact Analysis (TIA) prepared by JLB Traffic Engineering, Inc. (JLB) for proposed Liberty Pointe (Project) located on the northeast quadrant of 12th Avenue and Grangeville Boulevard in the City of Hanford. This Focused TIA has been revised to include the intersection of University Avenue and Kings Road due to shift in traffic patterns to and from Simas Elementary School. The Project proposes to develop an approximately 8.72-acre site on the northeast quadrant of 12th Avenue and Grangeville Boulevard just west of the BNSF railroad with up to 76 single-family residential units for an overall density of 8.72 units per acre. Based on information provided to JLB, the Project is consistent with the City of Hanford's General Plan. Figure 1 shows the location of the proposed Project site relative to the surrounding roadway network.

The purpose of this TIA is to evaluate the potential on-site and off-site traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures and identify any critical traffic issues that should be addressed in the on-going planning process. The Scope of Work was prepared via consultation with the City of Hanford and County of Kings staff.

Summary

The potential traffic impacts of the proposed Project were evaluated in accordance with the standards set forth by the Level of Service (LOS) policy of the City of Hanford.

Existing Traffic Conditions

- At present, the study intersections operate at an acceptable LOS during both peak periods.
- At present, the study segments operate at an acceptable LOS.

Existing plus Project Traffic Conditions

- JLB analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. A review of the Project access points to be constructed indicates that they are located at points that minimize traffic operational impacts to the existing roadway network.
- At build-out, the Project is estimated to generate a maximum of 717 daily trips, 56 AM peak hour trips and 75 PM peak hour trips.
- Under this scenario, the study intersections are projected to operate at an acceptable LOS during both peak periods.
- Under this scenario, the study segments are projected to operate at an acceptable LOS.

Near Term plus Project Traffic Conditions

- The total trip generation for the Near Term Projects is 3,956 daily trips, 310 AM peak hour trips and 416 PM peak hour trips.
- Under this scenario, the study intersections are projected to operate at an acceptable LOS during both peak periods.

- Under this scenario, the study segments are projected to operate at an acceptable LOS.

Cumulative Year 2040 plus Project Traffic Conditions

- Under this scenario, the study intersections are projected to operate at an acceptable LOS during both peak periods.
- Under this scenario, the study segments are projected to operate at an acceptable LOS.

Queuing Analysis

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

Scope of Work

The TIA focused on evaluating traffic conditions at study intersections and segments that may potentially be impacted by the proposed Project. On September 4, 2020, a Draft Scope of Work for the preparation of a TIA for this Project was provided to City of Hanford and County of Kings staff for their review and comment. Any comments to the proposed Scope of Work were to be provided by September 28, 2020.

On September 8, 2020, County of Kings staff responded that they would not be involved in this Project. On September 16, 2020, the City of Hanford approved the Draft Scope of Work as presented. In March 2021, the City of Hanford requested that this Focused TIA be revised to account for a shift in travel patterns to and from Simas Elementary School which took place after the completion of the original Focused TIA Report. Additionally, the City requested that the Focused TIA also include in its analysis the intersection of University Avenue and Kings Road as a result of the shift in traffic patterns to and from Simas Elementary School. The Draft Scope of Work and the comments received from the lead agency and responsible agencies are included in Appendix A.

Study Facilities

Regulations on public activities have been in place to help reduce the spread of COVID-19. It is due to these regulations that current traffic volumes are lower than traffic volumes that have been observed before March 2020. For this reason, JLB obtained current turning movement counts for both study intersections and a historic turning movement count for the intersection of University Avenue and Grangeville Boulevard. The historic turning movement count was conducted in December 2018 and the new turning movement and segment counts were conducted in May 2021. All of the intersection turning movement counts include pedestrian and bicycles volumes. In order to circumvent lower current traffic volumes, a growth rate was determined from the Kings County Association of Governments (Kings CAG) regional model. Based on the Kings CAG regional model the annual growth rate in traffic in the vicinity of the proposed Project was found to be 1.15 percent. However, in order to provide a conservative analysis of the traffic impacts JLB utilized a higher annual growth rate of 2 percent to forecast traffic growth. The historic turning movement count was expanded by the growth rate of 2 percent for three years and then compared to the current turning movement count. A difference of 11% between the total volumes, 12% between the AM peak volumes and 10% between the PM peak volumes were found between the expanded historic peak hour count and the current peak hour count. Therefore, the current AM and PM peak hour counts were increased by 12% in the AM peak and 10% in the PM peak; those results were then compared to the expanded historic count. The greater volume for each movement between the expanded historic count and expanded current count was used as the Existing volumes for the intersection of University Avenue and Grangeville Boulevard. The study intersection of University Avenue and Kings Road count was just increased by 12% in the AM peak and 10% in the PM peak.

For the study segments along Kings Road, the 11% total difference found between the total peak hour counts was used to increase the current segment count. The current segment count was conducted on the segment directly north of the Kings Road outlet to University Avenue. Kings Road between University Avenue and Tudor Lane is separated into smaller segments that have reduced volumes the further north the segment is according to the proportion of houses that utilize each segment. These resulting peak hour

and daily volumes are referred to as the Baseline Volumes. Current and historical traffic counts for the existing study intersections and segment are contained in Appendix B. The existing intersection turning movement volumes, intersection geometrics and traffic controls are illustrated in Figure 2.

Study Intersections

1. University Avenue / Kings Road
2. University Avenue / Grangeville Boulevard

Study Segments

1. Kings Road between Tudor Lane and University Avenue

Study Scenarios

Existing Traffic Conditions

This scenario evaluates the Existing Traffic Conditions based on existing traffic volumes and roadway conditions from traffic counts and field surveys conducted in May 2021. These counts were expanded upwards to create the Baseline Volumes, described in the Study Facilities section of this Report.

Existing plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Existing plus Project Traffic Conditions. The Existing plus Project traffic volumes were obtained by adding the Project Only Trips to the Existing Baseline Volumes. The Project Only Trips to the study facilities were developed based on existing travel patterns, the existing roadway network, engineering judgment, data provided by the developer, knowledge of the study area, existing residential and commercial densities, and the City of Hanford 2035 General Plan Circulation Element in the vicinity of the Project site.

Near Term plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Near Term plus Project Traffic Conditions. The Near Term plus Project traffic volumes were obtained by adding the Near Term related trips to the Existing plus Project Traffic Conditions scenario. The Near Term trips do not add any traffic to our study segment, therefore segment counts were not affected by near term trips.

Cumulative Year 2040 plus Project Traffic Conditions

This scenario evaluates total traffic volumes and roadway conditions based on the Cumulative Year 2040 plus Project Traffic Conditions. The Cumulative Year 2040 plus Project traffic volumes were obtained by expanding existing volumes by a growth rate as determined from the Kings County Association of Governments (Kings CAG) regional model. Based on the Kings CAG regional model the annual growth rate in the vicinity of the proposed Project was found to be 1.15 percent between Base Year 2020 and Cumulative Year 2042 models. However, in order to provide a conservative analysis of the traffic impacts JLB utilized a higher annual growth rate of 2 percent to forecast traffic growth. The study segment is not affected by annual growth since the area using the segment would be built out upon completion of the proposed Project. The Kings CAG Models used for the project growth rate are contained in Appendix C.

Level of Service Analysis Methodology

Level of Service (LOS) is a qualitative index of the performance of an element of the transportation system. LOS is a rating scale running from "A" to "F", with "A" indicating no congestion of any kind and "F" indicating unacceptable congestion and delays. LOS in this study describes the operating conditions for signalized and unsignalized intersections.

The *Highway Capacity Manual* (HCM) 6th Edition is the standard reference published by the Transportation Research Board and contains the specific criteria and methods to be used in assessing LOS. Synchro software was used to define LOS in this study. Details regarding these calculations are included in Appendix D.

Criteria of Significance

The City of Hanford 2035 General Plan has established level of service (LOS) D as the acceptable level of traffic congestion for all streets and intersections within the Planned Growth Boundary. Besides those in the area bounded by State Route 198, 10th Avenue, 11th Avenue and Florinda Avenue that have an acceptable LOS of E. In this TIA, all study facilities fall within the Planned Growth Boundary SOI, but outside of the higher impacted area. Therefore, the City of Hanford LOS threshold for the Planned Growth Boundary of D is utilized.

Operational Analysis Assumptions and Defaults

The following operational analysis values, assumptions and defaults were used in this study to ensure a consistent analysis of LOS among the various scenarios.

- Yellow time consistent with the California Manual of Uniform Traffic Control Devices (CA MUTCD) based on approach speeds
- Yellow time of 3.2 seconds for left-turn phases
- All-red clearance intervals of 1.0 second for all phases
- Walk intervals of 7.0 seconds
- Flashing Don't Walk based on 3.5 feet/second walking speed with yellow plus all-red clearance subtracted and 2.0 seconds added
- The observed percent heavy vehicle factor was utilized
- An average of 10 pedestrian calls per hour at signalized intersections
- The number of observed pedestrians at existing intersections was utilized under all study scenarios
- At existing intersections, the observed approach Peak Hour Factor (PHF) is utilized in the Existing, Existing plus Project, Near Term plus Project scenarios and Cumulative Year 2040 plus Project scenarios.

Existing Traffic Conditions

Roadway Network

The Project site and surrounding study area are illustrated in Figure 1. Important roadways serving the Project are discussed below.

University Avenue is an existing north-south two-lane undivided collector in the vicinity of the proposed Project site. In this area, University Avenue is a two-lane undivided collector north of Greenfield Avenue extending to Berkshire Way. The City of Hanford 2035 General Plan Circulation Element designates University Avenue as a two-lane undivided collector through the City of Hanford SOI.

Kings Road is an existing north-south two-lane undivided local street in the vicinity of the proposed Project site. In this area, Kings Road is a two-lane undivided local street between of University Avenue and Tudor Lane. The City of Hanford 2035 General Plan Circulation Element designates Kings Road as a two-lane undivided local street through the City of Hanford SOI.

Grangeville Boulevard is an existing east-west four-lane arterial in the vicinity of the proposed Project site. In this area, Grangeville Boulevard is four-lane arterial divided by a two-way left-turn lane. The City of Hanford 2035 General Plan Circulation Element designates Grangeville Boulevard a two-lane undivided arterial between 13th Avenue and Centennial Avenue, as a three-lane arterial divided by a two-way left-turn between Centennial Avenue and 12th Avenue, as a four-lane arterial divided by a two-way left-turn lane between 12th Avenue and 9¼ Avenue and as a two-lane undivided arterial between 9¼ Avenue and 7th Avenue.

Traffic Signal Warrants

Warrant 3 was prepared for the unsignalized intersections under the Existing Traffic Conditions scenario. These warrants are contained in Appendix I. At present, no unsignalized study intersection is projected to satisfy Warrant 3. Based on the traffic signal warrants, operational analysis and engineering judgment, it is not recommended that the City consider implementing traffic signal controls at the unsignalized study intersection especially since it is projected to operate at an acceptable LOS during both peak periods under the stop sign control.

Results of Existing Level of Service Analysis

Figure 2 illustrates the Existing Traffic Conditions Baseline Volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing Traffic Conditions scenario are provided in Appendix E. Table I presents a summary of the Existing peak hour LOS at the study intersections, while Table II presents a summary of the Existing LOS for the study segments.

At present, the study intersections operate at an acceptable LOS during both peak periods.

At present, the study segments operate at an acceptable LOS.

Table I: Existing Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM (7-9) Peak Hour*		*PM (4-6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	University Avenue / Kings Road	One-Way Stop	12.8	B	9.8	A
2	University Avenue / Grangeville Boulevard	Traffic Signal	20.3	C	16.4	B

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

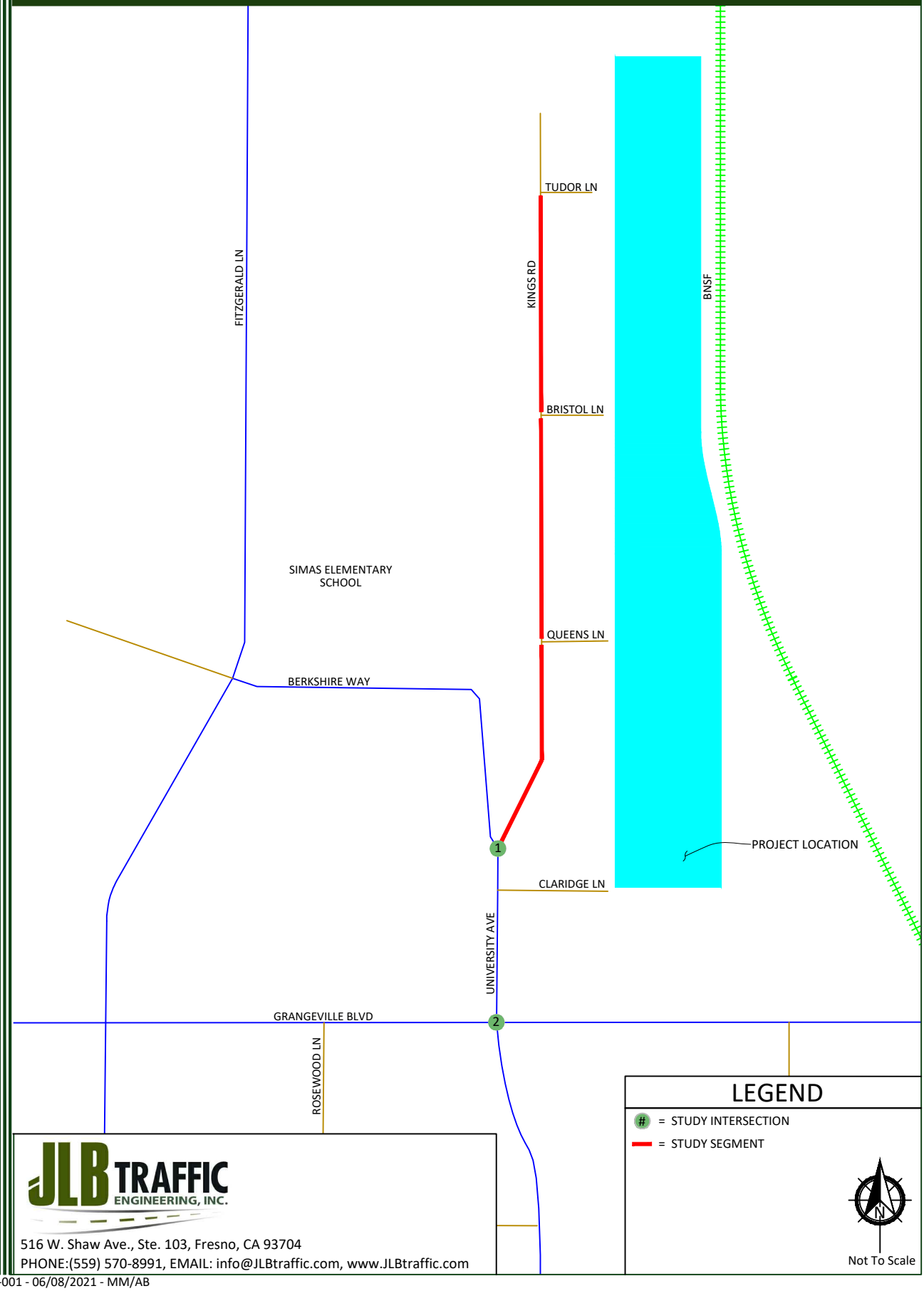
Table II: Existing Segment LOS Results

ID	*Segment*	*Limits*	*Lanes*	*24-hour Volume*	*LOS*
1	Kings Road	Tudor Lane and Bristol Lane	2	140	B
2	Kings Road	Bristol Lane and Queens Lane	2	219	B
3	Kings Road	Queens Lane and University Avenue	2	288	B

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Liberty Pointe - City of Hanford
Vicinity Map

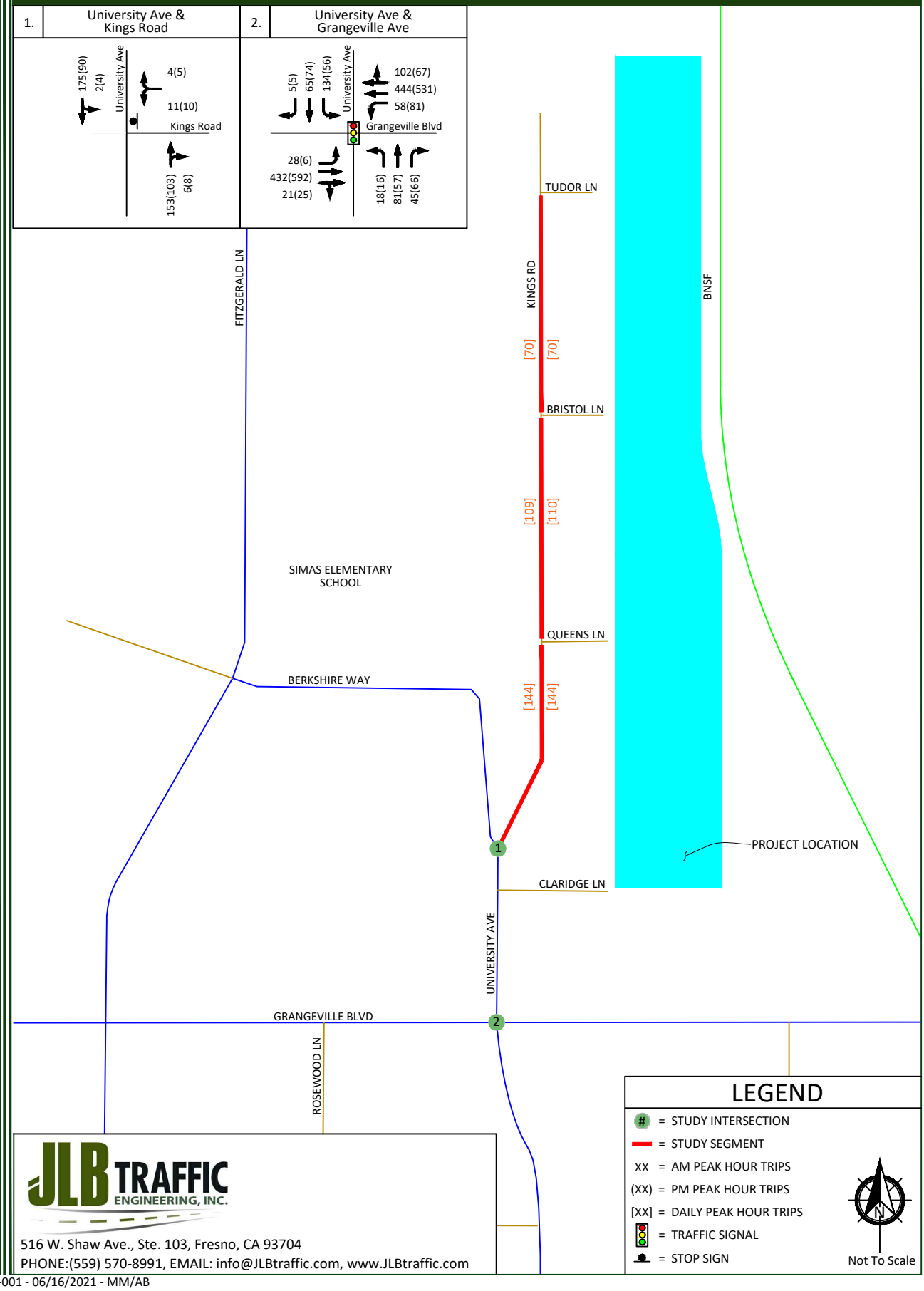
Figure 1



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Liberty Pointe - City of Hanford
Existing - Traffic Volumes, Geometrics and Controls

Figure 2



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Existing plus Project Traffic Conditions

Project Description

The Project proposes to develop an 8.72-acre site on the northeast quadrant of University Avenue and Grangeville Boulevard with up to 76 single-family residential units for an overall density of 8.72 units per acre. Based on information provided to JLB, the Project is consistent with the City's General Plan. Figure 3 illustrates the latest Project Site Plan.

Project Access

Based on the latest Project Site Plan, access to and from the Project site will be travel through four (4) access points that will tie into existing local streets: Tudor Lane, Bristol Lane, Queens Lane and Claridge Lane. Claridge Lane connects directly through to University Avenue while Tudor Lane, Bristol Lane and Queens Lane connect to Kings Road, which feeds into University Avenue. JLB analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. A review of the Project access points to be constructed indicates that they are located at points that minimize traffic operational impacts to the existing roadway network.

Trip Generation

Trip generation rates for the proposed Project were obtained from the 10th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table III presents the trip generation for the proposed Project with trip generation rates for 76 Single-Family Detached Housing units. At buildout, the proposed Project is estimated to generate a maximum of 717 daily trips, 56 AM peak hour trips and 75 PM peak hour trips.

Table III: Trip Generation - Proposed Project

Land Use (ITE Code)	*Size*	*Unit*	*Daily*		*AM (7-9) Peak Hour*						*PM (4-6) Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*
						%						*%*				
Single-Family Detached Housing (210)	76	d.u.	9.44	717	0.74	25	75	14	42	56	0.99	63	37	47	28	75
Total Project Trips				**717**				**14**	**42**	**56**				**47**	**28**	**75**

Note: d.u. = Dwelling Units

Trip Distribution

The trip distribution assumptions were developed based existing travel patterns, the existing roadway network, engineering judgment, data provided by the developer, knowledge of the study area, existing residential and commercial densities, and the City of Hanford 2035 General Plan Circulation Element in the vicinity of the Project site. Figure 4 presents the Project Only Trips to the study intersections and segments.

Transit

Kings Area Rural Transit (KART) is the transit operator in the City of Hanford. At present, there are two (2) KART routes, Route 1 and Route 7, that operate and have stops in the vicinity of the Project. KART Route 7, which runs along Grangeville Boulevard, operates at 30-minute intervals on weekdays from 6:45 AM - 6:15 PM and 60-minute intervals on weekends from 10:00 AM to 4:00 PM. The closest stop to the Project on Route 7 is located on the north side of Grangeville Boulevard directly east of University Avenue. This route provides a direct connection to the YMCA, Kings County Government Center, Hanford Mall and the KART Transit Center. KART Route 1, which runs along 11th Avenue, operates at 30-minute intervals on weekdays from 7:00 AM - 6:30 PM and 60-minute intervals on weekends from 9:30 AM to 4:30 PM. The closest stop to the Project on Route 1 is located on the east side of 11th Avenue approximately 830 feet north of Grangeville Boulevard. This route provides a direct connection to the Hidden Valley Park, Kings County Community Action, Hanford High School, Central Valley General Hospital, Civic Park, Kings County Library and the KART Transit Center. Retention of the existing and expansion of future transit routes is dependent on transit ridership demand and available funding.

Roadway Network

The Existing plus Project Traffic Conditions scenario assumes the same roadway geometrics and traffic controls as those assumed under the Existing Traffic Conditions scenario. Figure 5 illustrates the assumed intersection geometrics and traffic controls for these intersections under this scenario.

Traffic Signal Warrants

Warrant 3 was prepared for the unsignalized intersections under the Existing plus Project Traffic Conditions scenario. These warrants are contained in Appendix I. Under this scenario, no unsignalized study intersection is projected to satisfy Warrant 3. Based on the traffic signal warrants, operational analysis and engineering judgment, it is not recommended that the City consider implementing traffic signal controls at the unsignalized study intersection especially since it is projected to operate at an acceptable LOS during both peak periods under the stop sign control.

Results of Existing plus Project Level of Service Analysis

The Existing plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place. Figure 5 illustrates the Existing plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing plus Project Traffic Conditions scenario are provided in Appendix F. Table IV presents a summary of the Existing plus Project peak hour LOS at the study intersections, while Table V presents a summary of the Existing plus Project LOS for the study segments.

Under this scenario, the study intersections are projected to operate at an acceptable LOS during both peak periods.

Under this scenario, the study segments are projected to operate at an acceptable LOS.

Table IV: Existing plus Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM (7-9) Peak Hour*		*PM (4-6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	University Avenue / Kings Road	One-Way Stop	14.3	B	10.2	B
2	University Avenue / Grangeville Boulevard	Traffic Signal	21.4	C	16.7	B

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

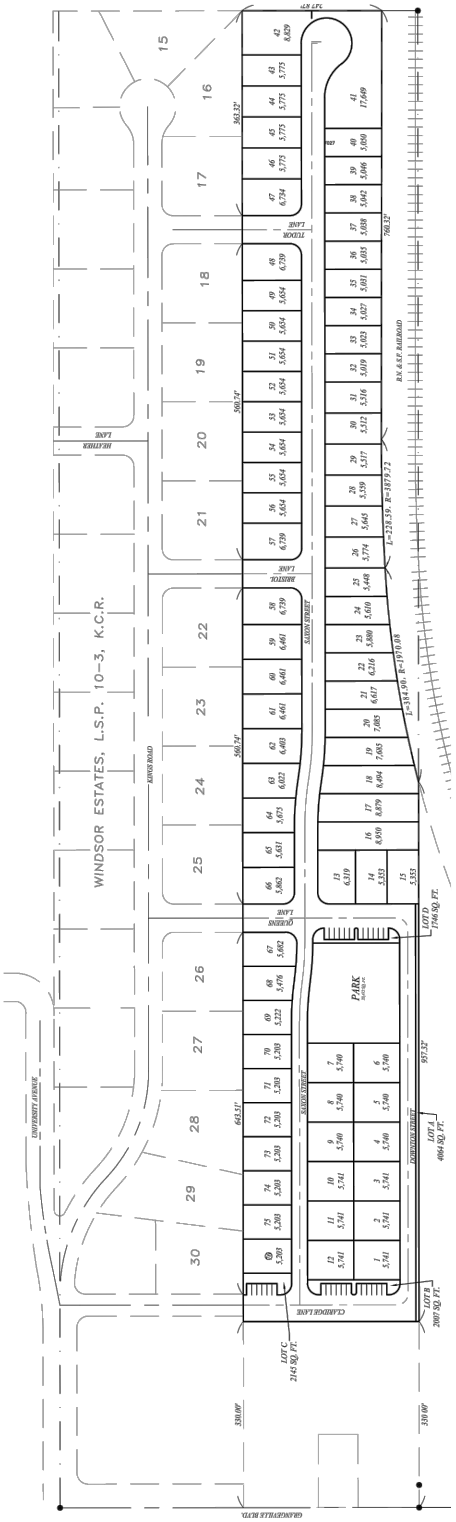
Table V: Existing plus Project Segment LOS Results

ID	*Segment*	*Limits*	*Lanes*	*24-hour Volume*	*LOS*
1	Kings Road	Tudor Lane and Bristol Lane	2	254	B
2	Kings Road	Bristol Lane and Queens Lane	2	500	B
3	Kings Road	Queens Lane and University Avenue	2	721	B

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Liberty Pointe - City of Hanford
Project Site Plan

Figure 3



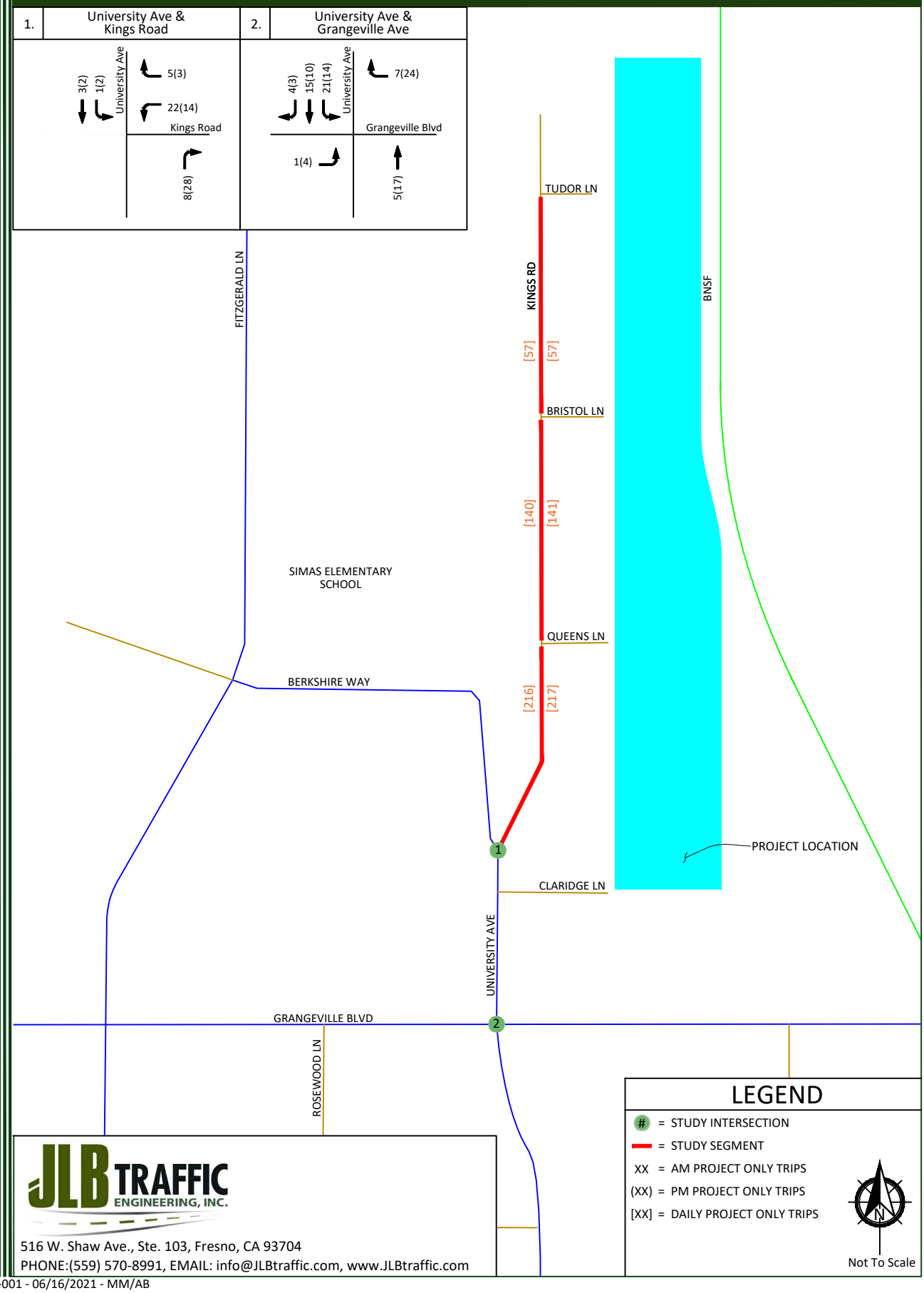
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516 W. Shaw Ave., Ste. 103, Fresno, CA 93704
PHONE:(559) 570-8991, EMAIL: info@JLBtraffic.com, www.JLBtraffic.com

Not To Scale

Liberty Pointe - City of Hanford
Project Only Trips

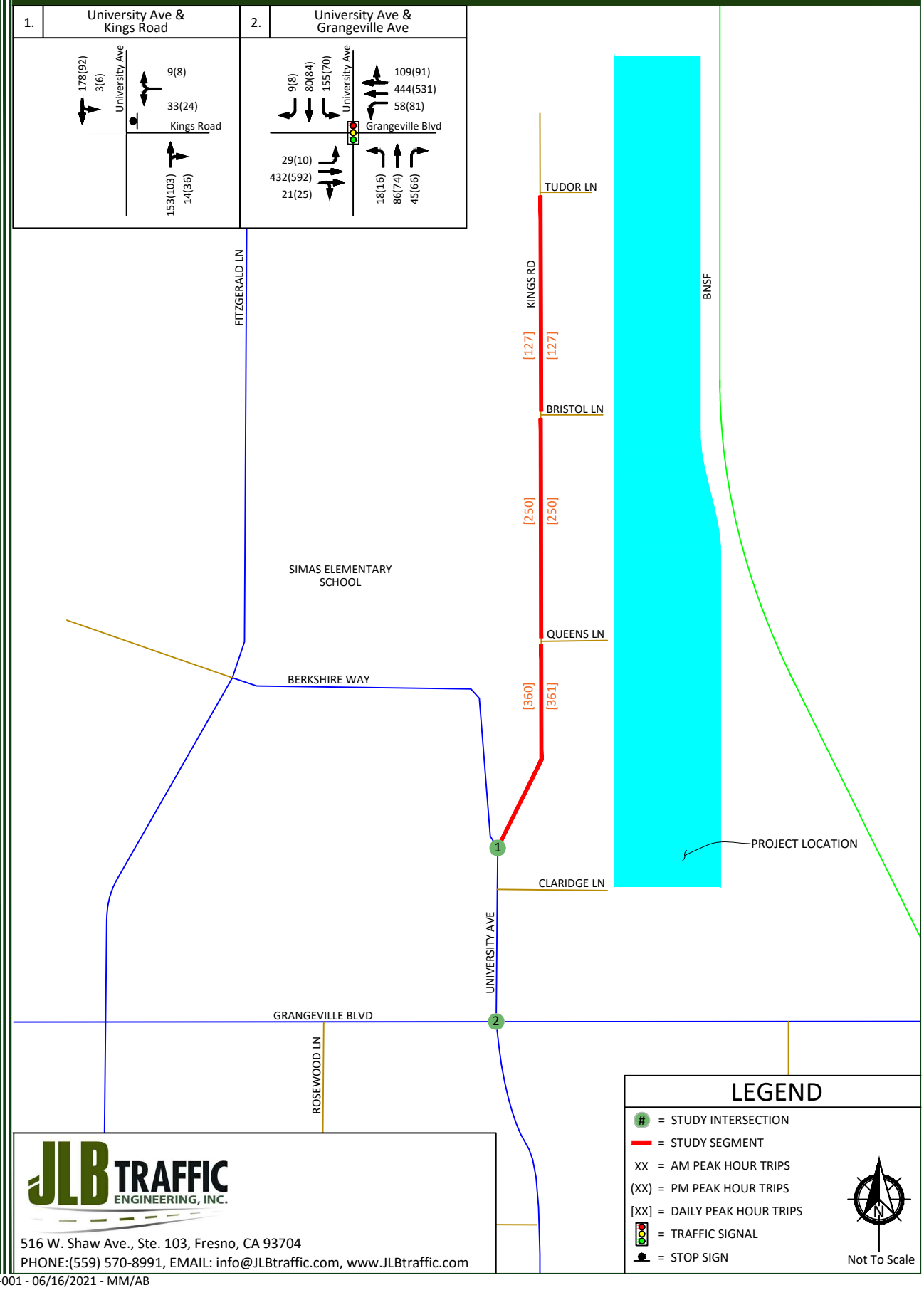
Figure 4



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Liberty Pointe - City of Hanford
Existing plus Project - Traffic Volumes, Geometrics and Controls

Figure 5



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Near Term plus Project Traffic Conditions

Description of Near Term Projects

Near Term Projects consist of developments that are either under construction, built but not fully occupied, are not built but have final site development review (SDR) approval, or for which the lead agency or responsible agencies have knowledge of. The City of Hanford staff were consulted throughout the preparation of this TIA regarding Near Term Projects that could potentially impact the study intersections. Therefore, the Near Term Projects listed in Table VI were approved, near approval, or in the pipeline within the proximity of the proposed Project.

The trip generation listed in Table VI is that which is anticipated to be added to the streets and highways by Near Term Projects between the time of the preparation of this Report and five (5) years after buildout of the proposed Project. As shown in Table VI, the total trip generation for the Near Term Projects is 3,956 daily trips, 310 AM peak hour trips and 416 PM peak hour trips. Figure 6 illustrates the location of the Near Term Projects and their combined trip assignment to the study intersections under the Near Term plus Project Traffic Conditions scenario.

Table VI: Near Term Projects' Trip Generation

ID	*Approved or Pipeline Project Name*	*Daily Trips*	*AM Peak Hour*	*PM Peak Hour*
A	Bonterra/Bella VIsta[1]	1,378	108	145
B	TT 922[1]	1,322	104	139
C	TT 927[1]	1,256	98	132
Total Approved and Pipeline Project Trips		**3,956**	**310**	**416**

Note: 1 = Trip Generation prepared by JLB Traffic Engineering, Inc. based on readily available information

Roadway Network

The Near Term plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls as those assumed under the Existing plus Project Traffic Conditions scenario. Figure 7 illustrates the assumed intersection geometrics and traffic controls for these intersections under this scenario.

Traffic Signal Warrants

Warrant 3 was prepared for the unsignalized intersections under the Near Term plus Project Traffic Conditions scenario. These warrants are contained in Appendix I. Under this scenario, no unsignalized study intersection is projected to satisfy Warrant 3. Based on the traffic signal warrants, operational analysis and engineering judgment, it is not recommended that the City consider implementing traffic signal controls at the unsignalized study intersection especially since it is projected to operate at an acceptable LOS during both peak periods under the stop sign control.

Results of Near Term plus Project Level of Service Analysis

The Near Term plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place. Figure 7 illustrates the Near Term plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Near Term plus Project Traffic Conditions scenario are provided in Appendix G. Table VII presents a summary of the Near Term plus Project peak hour LOS at the study intersections, while Table VIII presents a summary of the Near Term plus Project LOS for the study segment.

Under this scenario, the study intersections are projected to operate at an acceptable LOS during both peak periods.

Under this scenario, the study segment is projected to operate at an acceptable LOS.

Table VII: Near Term plus Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM (7-9) Peak Hour*		*PM (4-6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	University Avenue / Kings Road	One-Way Stop	14.3	B	10.2	B
2	University Avenue / Grangeville Boulevard	Traffic Signal	21.7	C	16.8	B

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

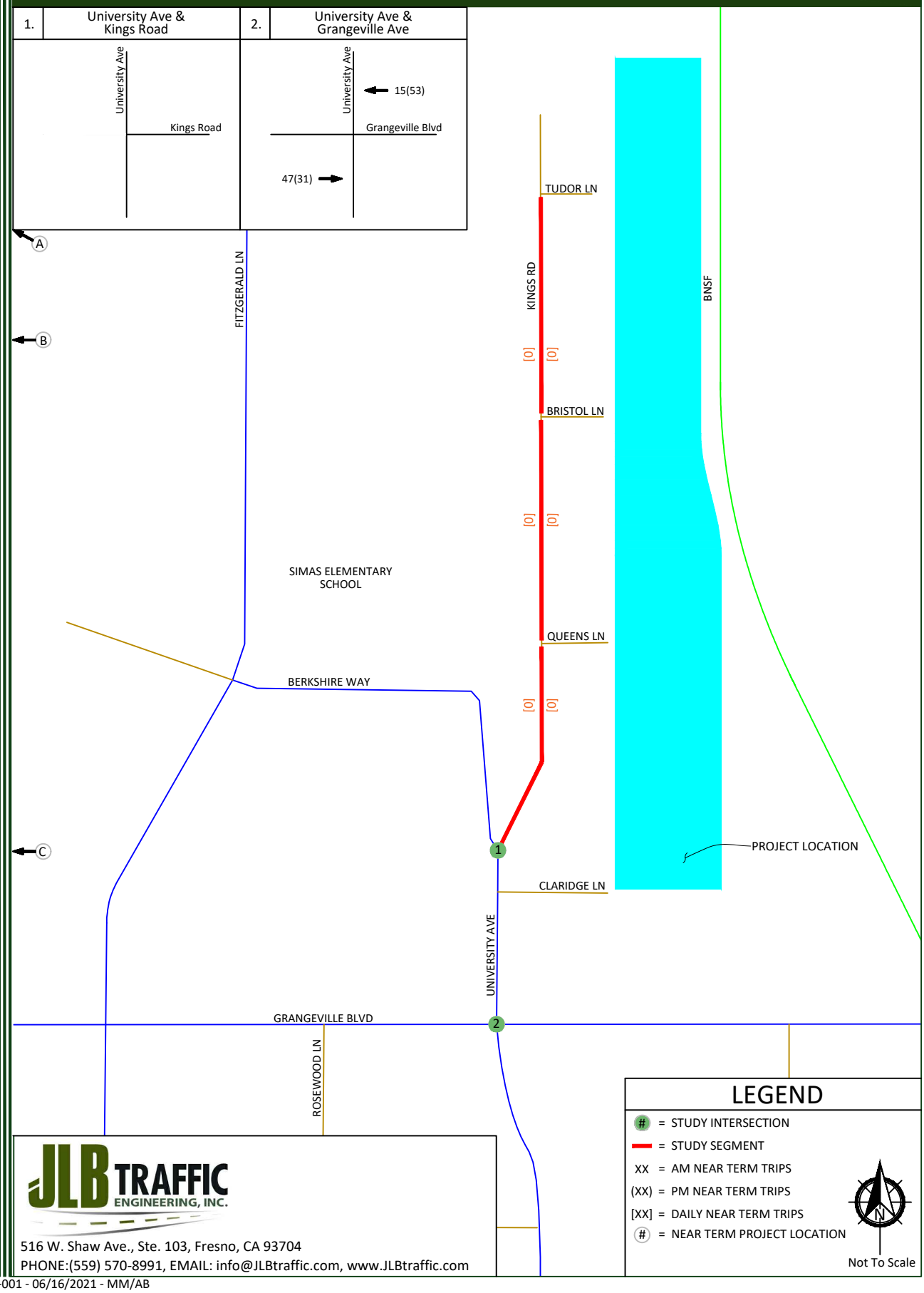
Table VIII: Near Term Segment LOS Results

ID	*Segment*	*Limits*	*Lanes*	*24-hour Volume*	*LOS*
1	Kings Road	Tudor Lane and Bristol Lane	2	254	B
2	Kings Road	Bristol Lane and Queens Lane	2	500	B
3	Kings Road	Queens Lane and University Avenue	2	721	B

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Liberty Pointe - City of Hanford
Near Term Projects' Trip Assignment

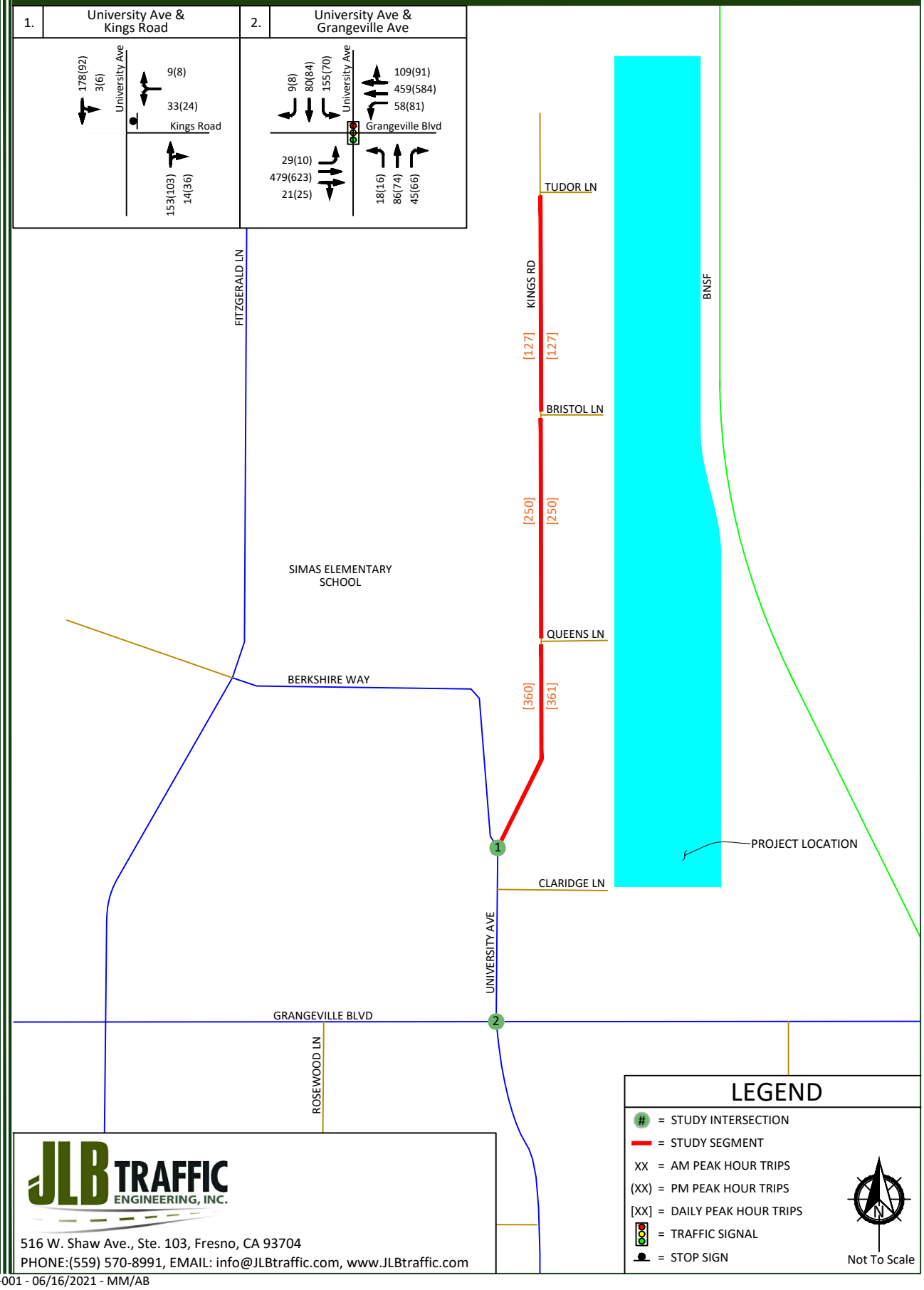
Figure 6



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Liberty Pointe - City of Hanford
Near Term plus Project - Traffic Volumes, Geometrics and Controls

Figure 7



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Cumulative Year 2040 plus Project Traffic Conditions

Roadway Network

The Cumulative Year 2040 plus Project Traffic Conditions scenario assumes the same roadway geometrics and traffic controls as those assumed under the Near Term plus Project Traffic Conditions scenario. Figure 8 illustrates the assumed intersection geometrics and traffic controls for these intersections under this scenario.

Traffic Signal Warrants

Warrant 3 was prepared for the unsignalized intersections under the Cumulative Year 2040 plus Project Traffic Conditions scenario. These warrants are contained in Appendix I. Under this scenario, no unsignalized study intersection is projected to satisfy Warrant 3. Based on the traffic signal warrants, operational analysis and engineering judgment, it is not recommended that the City consider implementing traffic signal controls at the unsignalized study intersection especially since it is projected to operate at an acceptable LOS during both peak periods under the stop sign control.

Results of Cumulative Year 2040 plus Project Level of Service Analysis

The Cumulative Year 2040 plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place. Figure 8 illustrates the Cumulative Year 2040 plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Cumulative Year 2040 plus Project Traffic Conditions scenario are provided in Appendix H. Table IX presents a summary of the Cumulative Year 2040 plus Project peak hour LOS at the study intersections, while Table X presents a summary of the Cumulative Year 2040 plus Project LOS for the study segments.

Under this scenario, the study intersections are projected to operate at an acceptable LOS during both peak periods.

Under this scenario, the study segments are projected to operate at an acceptable LOS.

Table IX: Cumulative Year 2040 plus Project Intersection LOS Results

ID	*Intersection*	*Intersection Control*	*AM (7-9) Peak Hour*		*PM (4-6) Peak Hour*	
			Average Delay (sec/veh)	*LOS*	*Average Delay (sec/veh)*	*LOS*
1	University Avenue / Kings Road	One-Way Stop	17.6	C	10.8	B
2	University Avenue / Grangeville Boulevard	Traffic Signal	37.4	D	18.7	B

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

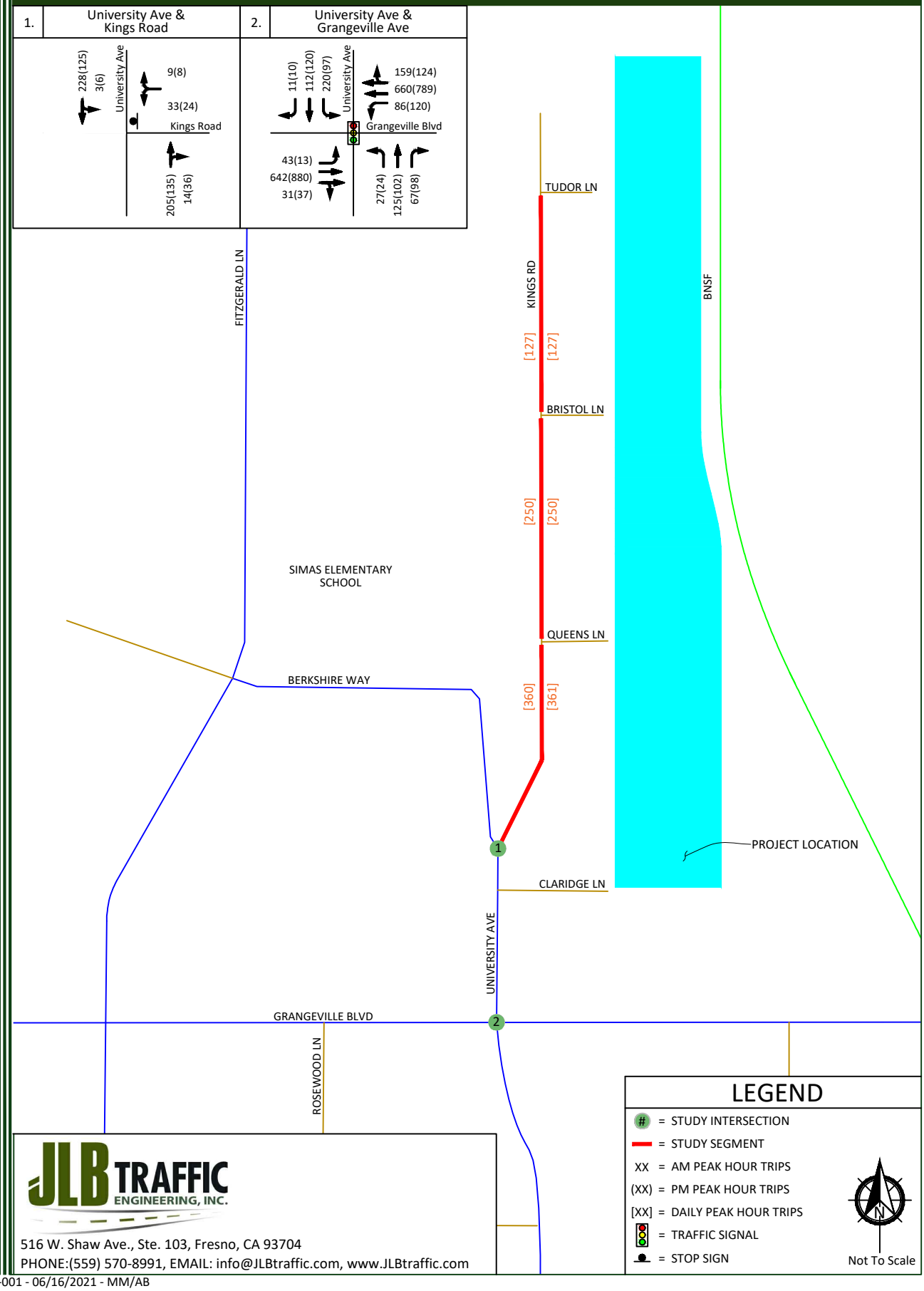
Table X: Cumulative Year 2040 Segment LOS Results

ID	*Segment*	*Limits*	*Lanes*	*24-hour Volume*	*LOS*
1	Kings Road	Tudor Lane and Bristol Lane	2	254	B
2	Kings Road	Bristol Lane and Queens Lane	2	500	B
3	Kings Road	Queens Lane and University Avenue	2	721	B

Note: LOS = Level of Service per the Florida Roadway Segment LOS Tables

Liberty Pointe - City of Hanford
Cumulative Year 2040 plus Project - Traffic Volumes, Geometrics and Controls

Figure 8



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Queuing Analysis

Table XI provides a queue length summary for left-turn and right-turn lanes at the study intersections under all study scenarios. The queuing analyses for the study intersections are contained in the LOS worksheets for the respective scenarios. Appendix D contains the methodologies used to evaluate these intersections. Queuing analyses were completed using Sim Traffic output information. Synchro provides both 50th and 95th percentile maximum queue lengths (in feet). According to the Synchro manual, "the 50th percentile maximum queue is the maximum back of queue on a typical cycle and the 95th percentile queue is the maximum back of queue with 95th percentile volumes." The queues shown on Table XI are the 95th percentile queue lengths for the respective lane movements.

The Highway Design Manual (HDM) provides guidance for determining deceleration lengths for the left-turn and right-turn lanes based on design speeds. Per the HDM criteria, "tapers for right-turn lanes are usually un-necessary since the main line traffic need not be shifted laterally to provide space for the right-turn lane. If, in some rare instances, a lateral shift was needed, the approach taper would use the same formula as for a left-turn lane." Therefore, a bay taper length pursuant to the Caltrans HDM would need to be added, as necessary, to the recommended storage lengths presented in Table XI.

The storage capacity for the Cumulative Year 2040 scenario shall be based on the SimTraffic output files and engineering judgement. The values in bold presented in Table XI are the projected queue lengths that will likely need to be accommodated by the Cumulative Year 2040 scenario. It is recommended that the storage length for the southbound left-turn lane at the intersection of University Avenue and Grangeville Boulevard be increased from 100 feet to 175 feet. It is recommended that the storage length for the eastbound left-turn lane at the intersection of University Avenue and Grangeville Boulevard be increased from 100 feet to 150 feet. Based on review of the existing roadway geometrics, the extension of the southbound left-turn pocket and eastbound left-turn pocket can be achieved by striping only.

Table XI: Queuing Analysis

ID	Intersection	Existing Queue Storage Length (ft.)		Existing		Existing plus Project		Near Term plus Project		Cumulative Year 2040 plus Project	
				AM	PM	AM	PM	AM	PM	AM	PM
1	University Avenue / Kings Road	WB LR	>500	43	29	43	42	48	44	48	45
		NB TR	>300	0	0	0	0	0	0	0	0
		SB LT	>500	10	0	0	10	0	10	0	0
2	University Avenue / Grangeville Boulevard	EB L	100	31	25	32	24	42	25	**129**	35
		EB T	>500	146	136	141	160	133	167	234	276
		EB TR	>500	139	142	153	170	113	159	230	272
		WB L	190	62	87	64	86	84	76	95	150
		WB T	>500	148	131	128	142	145	182	209	212
		WB TR	>500	156	150	153	168	152	179	224	202
		NB L	100	43	36	35	28	46	43	58	42
		NB T	>500	72	65	65	76	76	86	117	146
		NB R	75	47	52	35	53	59	71	77	**90**
		SB L	100	140	67	112	87	123	83	**182**	97
		SB T	>300	66	88	77	88	87	76	160	116
		SB R	80	15	14	35	23	25	28	25	28

Conclusions and Recommendations

Conclusions and recommendations regarding the proposed Project are presented below.

Existing Traffic Conditions

- At present, the study intersection operates at an acceptable LOS during both peak periods.
- At present, the study segments operate at an acceptable LOS.

Existing plus Project Traffic Conditions

- JLB analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. A review of the Project access points to be constructed indicates that they are located at points that minimize traffic operational impacts to the existing roadway network.
- At build-out, the Project is estimated to generate a maximum of 717 daily trips, 56 AM peak hour trips and 75 PM peak hour trips.
- Under this scenario, the study intersections are projected to operate at an acceptable LOS during both peak periods.
- Under this scenario, the study segments are projected to operate at an acceptable LOS.

Near Term plus Project Traffic Conditions

- The total trip generation for the Near Term Projects is 3,956 daily trips, 310 AM peak hour trips and 416 PM peak hour trips.
- Under this scenario, the intersections are projected to operate at an acceptable LOS during both peak periods.
- Under this scenario, the study segments are projected to operate at an acceptable LOS.

Cumulative Year 2040 plus Project Traffic Conditions

- Under this scenario, the intersections are projected to operate at an acceptable LOS during both peak periods.
- Under this scenario, the study segments are projected to operate at an acceptable LOS.

Queuing Analysis

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

Study Participants

JLB Traffic Engineering, Inc. Personnel:

Jose Luis Benavides, PE, TE	Project Manager
Susana Maciel, EIT	Project Engineer
Matthew Arndt, EIT	Engineer I/II
Jesus Garcia	Engineer I/II
Dennis Wynn	Sr. Engineering Technician
Justin Barnett	Engineering Aide
Adrian Benavides	Engineering Aide
Michael McConnel	Engineering Aide
Christian Sanchez	Engineering Aide

Persons Consulted:

Daniel Bailey	HollyHills Development
Marlene Bailey	HollyHills Development
Gabrielle de Silva Myers	City of Hanford
James Doyle	City of Hanford
Luis Verdugo	City of Hanford
Dominic Tyburski, P.E.	County of Kings

References

California Department of Transportation. 2020. "California Highway Design Manual". Sacramento: State of California.

California Department of Transportation. 2020. "California Manual On Uniform Traffic Control Devices, FHWA's MUTCD 2009 Edition, including Revisions 1 & 2 as amended for use in California ". Sacramento: 2014 ed. State of California.

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City of Hanford. 2014. "General Plan Background Report". Hanford: City of Hanford.

Institute of Transportation Engineers. 2017. "Trip Generation Manual". Washington: Institute of Transportation Engineers. Vol. 1-3.

Appendix A: Scope of Work

September 4, 2020

Gabrielle de Silva Myers
Senior Planner
City of Hanford
317 N. Douty Street
Hanford, CA 93230

Via Email Only: gmyers@cityofhanfordca.com

Subject: ***Proposed Scope of Work for the Preparation of a Focused Traffic Impact Analysis for the Liberty Pointe TIA in the City of Hanford (JLB Project 047-001)***

Dear Mrs. Myers,

JLB Traffic Engineering, Inc. (JLB) hereby submits this Draft Scope of Work for the preparation of a Focused Traffic Impact Analysis (TIA) for the Liberty Pointe (Project) located north of Grangeville Boulevard and west of the BN&SF railroad in the City of Hanford. The Project proposes to develop approximately 8.72-acres with 76 single family residential units at an overall density of 8.72 units/acre. Based on information provided to JLB, the Project is consistent with the City's General Plan. An aerial of the Project vicinity and Project Site Plan are shown in Exhibits A and Exhibit B, respectively.

The purpose of the TIA is to evaluate the potential on-site and off-site traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures and identify any critical traffic issues that should be addressed in the on-going planning process. To evaluate the on-site and off-site traffic impacts of the proposed Project, JLB proposes the following Scope of Work which has been based on comments received from the City dated February 3, 2020.

Scope of Work

- JLB will request the Kings Council Association of Governments (Kings CAG) traffic forecast. The Kings CAG traffic forecasting model will be used to forecast traffic volumes for the Base Year 2020 and the Cumulative Year 2040 scenarios.
- JLB proposes to utilize a combination of historical counts as the collection of new traffic counts may not be reflective of the typical travel demands. These counts will include pedestrians and vehicles.
- JLB will perform a site visit to observe existing traffic conditions, especially during the AM and PM peak hours. Existing roadway conditions including intersection geometrics and traffic controls will be verified.
- JLB will evaluate on-site circulation and provide recommendations as necessary to improve circulation to and within the Project site.
- JLB will prepare CA MUTCD Warrant 3 “Peak Hour” for unsignalized study intersections under the Existing plus Project, Near Term plus Project and Cumulative Year 2040 plus Project scenarios.
- JLB will thoroughly analyze existing and planned transit routes in the vicinity of the Project.

- JLB will forecast trip distribution based on turn count information and knowledge of the existing and planned circulation network in the vicinity of the Project.
- JLB will evaluate existing and forecasted levels of service (LOS) at the study intersection(s). JLB will use HCM 6th or HCM 2000 methodologies (as appropriate) within Synchro to perform this analysis for the AM and PM peak hours. JLB will identify the causes of poor LOS.

Study Scenarios

1. Existing Traffic Conditions with needed improvements (if any);
2. Existing plus Project Buildout Traffic Conditions with proposed improvement measures (if any);
3. Near Term plus Project Buildout Traffic Conditions with proposed improvement measures (if any); and
4. Cumulative Year 2040 plus Project Traffic Conditions with proposed improvement measures (if any).

Weekday peak hours to be analyzed (Tuesday through Thursday only)

1. 7 - 9 AM peak hour
2. 4 - 6 PM peak hour

Study Intersections

1. University Avenue / Grangeville Boulevard

Queuing analysis is included in the proposed Scope of Work for the study intersection(s) listed above under all study scenarios. This analysis will be utilized to recommend minimum storage lengths for left-turn and right-turn lanes at all study intersections.

Study Segments

1. Kings Road between Tudor Lane and University Avenue

Project Only Trip Assignment to State Facilities

1. None

Project Trip Generation

The trip generation rates for the proposed Project were obtained from the 10th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table I presents the trip generation for the proposed Project with trip generation rates for Single-Family Detached Housing. At buildout, the proposed Project is estimated to generate a maximum of 717 daily trips, 56 AM peak hour trips and 75 PM peak hour trips.

Table I: Project Trip Generation

Land Use (ITE Code)	*Size*	*Unit*	*Daily*		*AM (7-9) Peak Hour*						*PM (4-6) Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*	*Trip Rate*	*In*	*Out*	*In*	*Out*	*Total*
						%						*%*				
Single-Family Detached Housing (210)	76	d.u.	9.44	717	0.74	25	75	14	42	56	0.99	63	37	47	28	75
Total Project Trips				**717**				**14**	**42**	**56**				**47**	**28**	**75**

Note: d.u. = Dwelling Units

Access to the Project

Access to and from the Project site will predominantly be from four (4) access points. These four access points will tie into existing local streets: Tudor Lane, Bristol Lane, Queens Lane and Claridge Lane. Tudor, Bristol and Queens Lanes connect to Kings Road which connects to University Avenue while Claridge Lane connects directly to University Avenue. University Avenue then leads to Grangeville Boulevard. Additional Project details can be found on Exhibit B.

Near Term Projects to be Included

JLB will be consulting with City of Hanford Planning Department and Engineering staff to determine which Projects should be included in the Near Term plus Project analysis. JLB will include Near Term Projects in the vicinity of the proposed Project under the Near Term plus Project analysis for which the City, County or Caltrans has knowledge of and for which it is anticipated that said project(s) is/are projected to be whole or partially built by the Near Term Project year 2025. City of Hanford, County of Kings and Caltrans, as appropriate, would provide JLB with Near Term Project details such as a project description, location, proposed land uses with breakdowns and type of residential units and amount of square footages for non-residential uses.

The Scope of Work is based on our understanding of this Project, City of Hanford comments dated February 3, 2020 and our experience with similar TIAs. In the absence of comments by August 25, 2020 it will be assumed that the Scope of Work is acceptable to the agency(ies) that have not submitted any comments. If you have any questions or require additional information, please contact via email at marndt@JLBtraffic.com.

Sincerely,

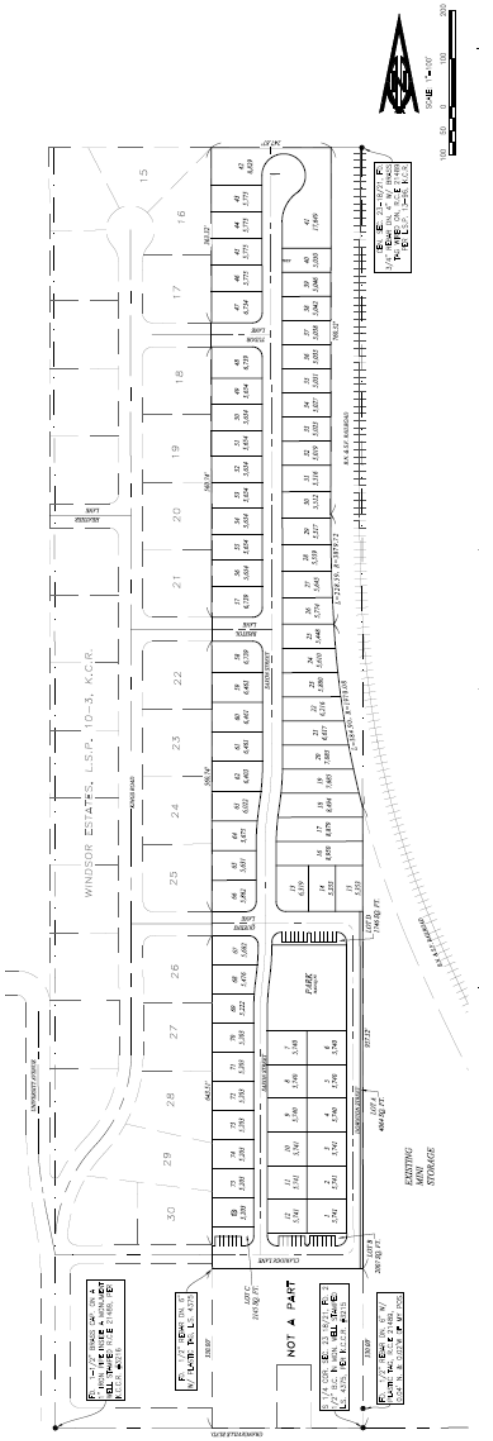
Matthew Arndt, EIT
Engineer I/II

cc: John Doyle, City of Hanford
Luis Verdugo, City of Hanford
Dominic Tyburski, County of Kings
Jose Benavides, JLB Traffic Engineering, Inc.

Exhibit A – Aerial



Exhibit B – Project Site Plan



Jose Benavides

From: Tyburski, Dominic <Dominic.Tyburski@co.kings.ca.us>
Sent: Tuesday, September 8, 2020 9:52 AM
To: Matt Arndt; gmyers@cityofhanfordca.com
Cc: Jose Benavides; jdoyel@cityofhanfordca.com; lverdugo@cityofhanfordca.com
Subject: RE: Liberty Point Focused TIA: Draft Scope of Work

Hi Matt,

Kings County Public Works will not be involved in this project, thank you.

Dominic Tyburski, P.E.
Chief Engineer | Division of Engineering

County of Kings | Public Works Department
1400 W. Lacey Blvd. | Hanford, CA 93230

Direct 559-852-2698 | Fax 559-582-2506
Dominic.Tyburski@co.kings.ca.us | www.countyofkings.com

From: Matt Arndt <marndt@jlbtraffic.com>
Sent: Friday, September 4, 2020 4:29 PM
To: gmyers@cityofhanfordca.com
Cc: Jose Benavides <jbenavides@jlbtraffic.com>; Tyburski, Dominic <Dominic.Tyburski@co.kings.ca.us>; jdoyel@cityofhanfordca.com; lverdugo@cityofhanfordca.com
Subject: Liberty Point Focused TIA: Draft Scope of Work

Hello,

Attached you will find a Draft Scope of Work for the preparation of a Focused Traffic Impact Analysis for a Project in the City of Hanford.

We kindly ask that you take a moment to review and comment on the proposed Scope of Work. In the absence of comments by September 28, 2020, it will be assumed that the proposed Scope of Work is acceptable to the agency(ies) that have not submitted any comments.

If you have any questions or require additional information, please contact me via e-mail at marndt@jlbtraffic.com. We appreciate your time and attention to this matter.

Sincerely,

Matthew Arndt

Jose Benavides

From: Gabrielle Myers <GdeSilva@cityofhanfordca.com>
Sent: Wednesday, September 16, 2020 11:45 AM
To: Matt Arndt
Cc: Jose Benavides; dominic.tyburski@co.kings.ca.us; John Doyel; Luis Verdugo
Subject: RE: Liberty Point Focused TIA: Draft Scope of Work

Our Public Works Director, John Doyel, has approved your scope of work for the proposed project.
Please let me know if you have any questions. Thank you.

Gabrielle de Silva Myers
Senior Planner
City of Hanford
317 N. Douty Street
Hanford, CA 93230
Direct: (559)585-2578
E-mail: gmyers@cityofhanfordca.com
TDD/TYY, Dial 711

From: Matt Arndt <marndt@jlbtraffic.com>
Sent: Friday, September 4, 2020 4:29 PM
To: Gabrielle Myers <GdeSilva@cityofhanfordca.com>
Cc: Jose Benavides <jbenavides@jlbtraffic.com>; dominic.tyburski@co.kings.ca.us; John Doyel <JDoyel@cityofhanfordca.com>; Luis Verdugo <lverdugo@cityofhanfordca.com>
Subject: Liberty Point Focused TIA: Draft Scope of Work

Hello,

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Sincerely,

Matthew Arndt

JLB TRAFFIC ENGINEERING

Traffic Engineering, Transportation Planning and Parking Solutions
Certified Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE)

Appendix B: 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:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

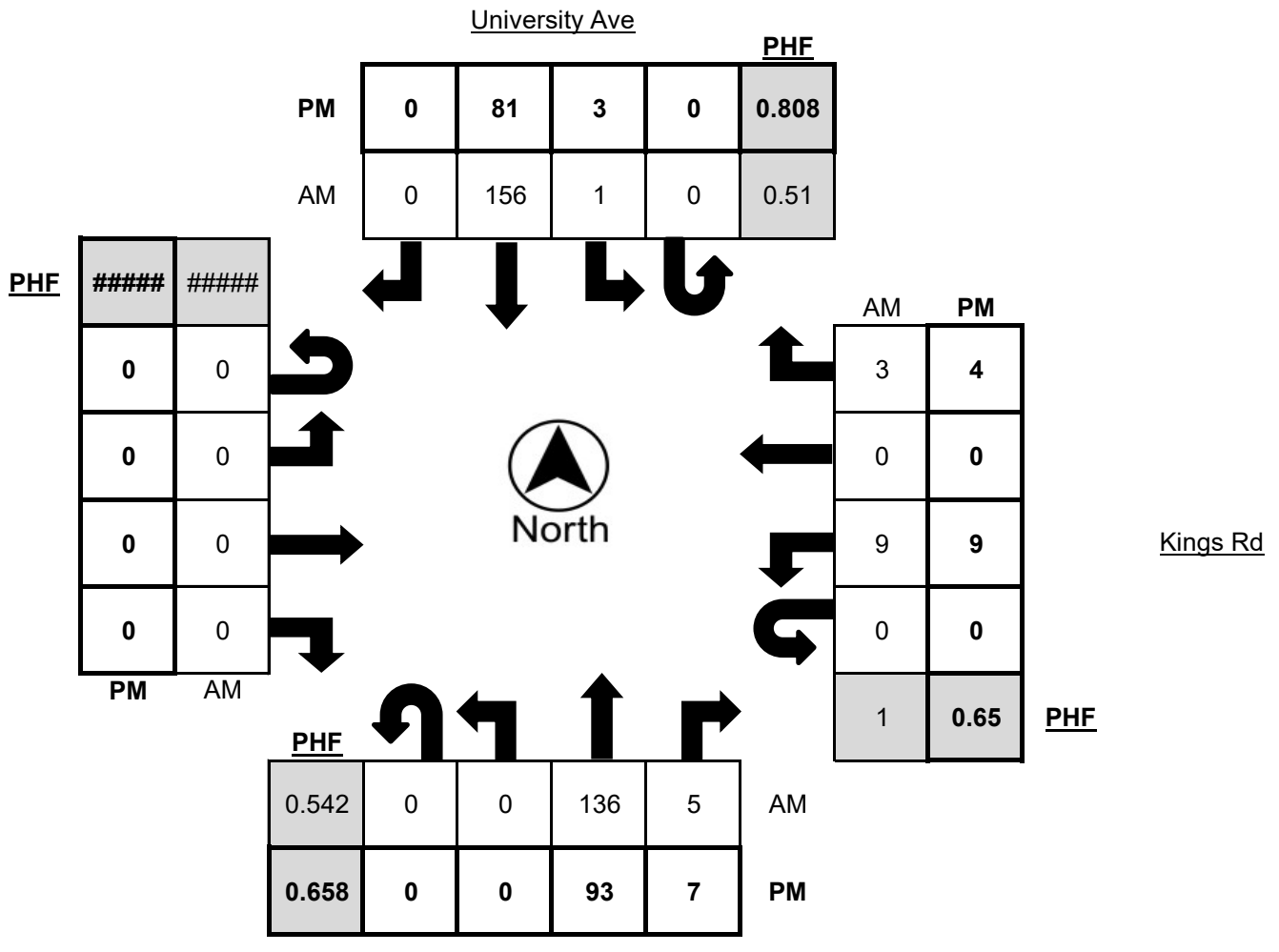
LOCATION University Ave @ Kings Rd
LATITUDE 36.3439
COUNTY Kings
LONGITUDE -119.6661
COLLECTION DATE Wednesday, May 12, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	0	0	4	1	0	0	0	8	0	0	0	0	0	0	0	0	2	0	0	0
7:15 AM - 7:30 AM	0	0	14	1	1	0	0	17	0	1	0	0	0	0	0	0	3	0	0	0
7:30 AM - 7:45 AM	0	0	35	0	0	0	0	42	0	0	0	0	0	0	0	0	2	0	1	0
7:45 AM - 8:00 AM	0	0	63	2	0	0	1	76	0	1	0	0	0	0	0	0	2	0	1	0
8:00 AM - 8:15 AM	0	0	24	2	1	0	0	21	0	0	0	0	0	0	0	0	2	0	1	0
8:15 AM - 8:30 AM	0	0	6	1	0	0	1	17	0	1	0	0	0	0	0	0	1	0	0	0
8:30 AM - 8:45 AM	0	0	8	1	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	16	0	0	0	1	10	0	0	0	0	0	0	0	0	1	0	0	0
TOTAL	**0**	**0**	**170**	**8**	**2**	**0**	**3**	**208**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**3**	**0**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	0	26	1	1	0	0	17	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM - 4:30 PM	0	0	13	3	0	0	1	18	0	0	0	0	0	0	0	0	1	0	1	0
4:30 PM - 4:45 PM	0	0	22	2	0	0	0	8	0	0	0	0	0	0	0	0	1	0	0	0
4:45 PM - 5:00 PM	0	0	21	3	1	0	2	24	0	0	0	0	0	0	0	0	2	0	1	1
5:00 PM - 5:15 PM	0	0	37	1	0	0	0	26	0	0	0	0	0	0	0	0	1	0	0	0
5:15 PM - 5:30 PM	0	0	15	3	0	0	0	20	0	0	0	0	0	0	0	0	4	0	1	0
5:30 PM - 5:45 PM	0	0	20	0	0	0	1	11	0	0	0	0	0	0	0	0	2	0	2	0
5:45 PM - 6:00 PM	0	0	17	3	0	0	2	19	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**171**	**16**	**2**	**0**	**6**	**143**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**6**	**1**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	0	0	136	5	2	0	1	156	0	2	0	0	0	0	0	0	9	0	3	0
4:45 PM - 5:45 PM	0	0	93	7	1	0	3	81	0	0	0	0	0	0	0	0	9	0	4	1

	PHF	Trucks
AM	0.534	1.3%
PM	0.758	1.0%



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Hanford, CA 93230

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Turning Movement Report

Prepared For:
JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

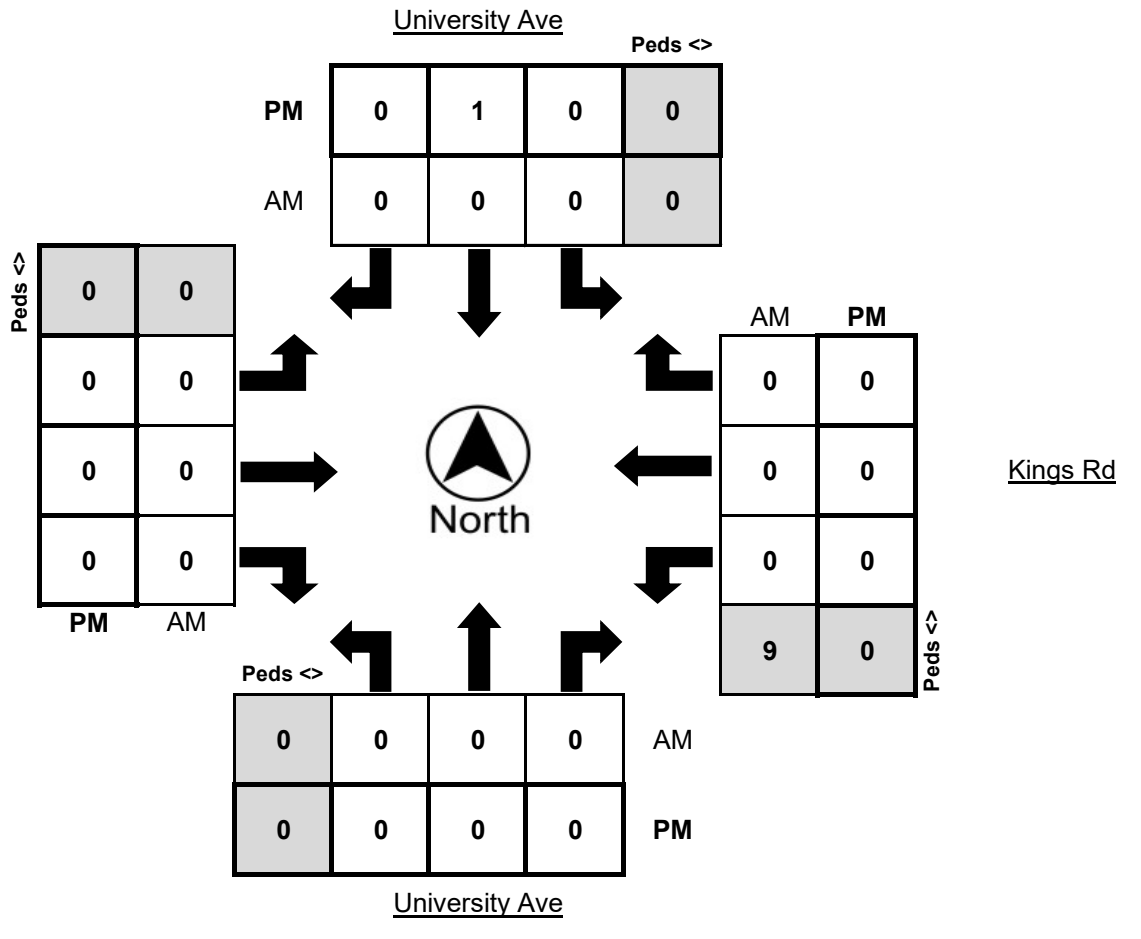
LOCATION University Ave @ Kings Rd
LATITUDE 36.3439
COUNTY Kings
LONGITUDE -119.6661
COLLECTION DATE Wednesday, May 12, 2021
WEATHER Clear

	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	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	2	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	3	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	1	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**	**1**	**0**	**0**	**0**	**0**	**0**	**9**	**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	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	1	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	1	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**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
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	0	9
PM Peak Total	1	0



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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

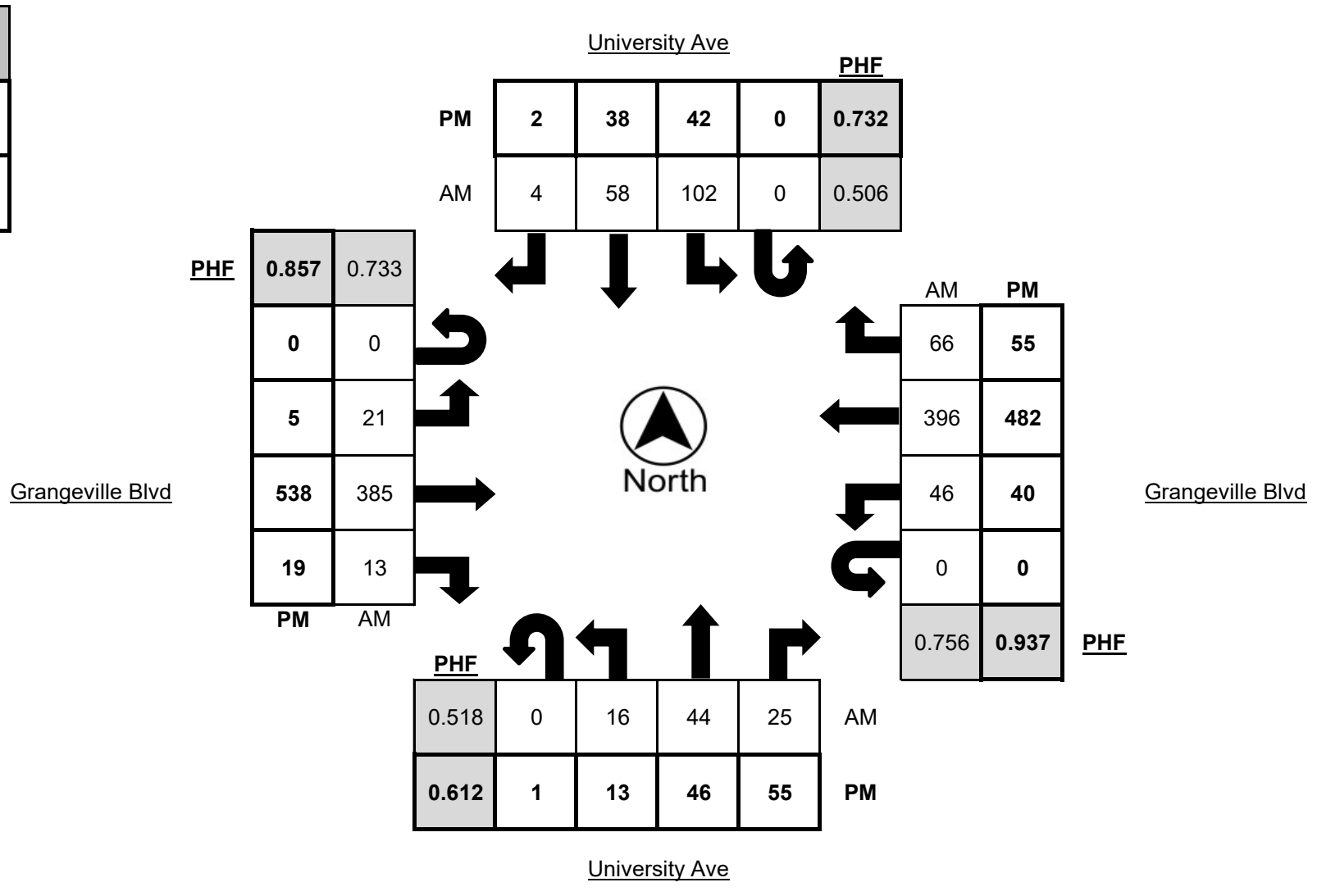
LOCATION University Ave @ Grangeville Blvd
LATITUDE 36.3427
COUNTY Kings
LONGITUDE -119.6661
COLLECTION DATE Wednesday, May 12, 2021
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	0	2	2	5	0	0	4	3	1	0	0	0	45	1	1	0	2	49	3	0
7:15 AM - 7:30 AM	0	2	3	1	1	0	15	3	2	1	0	0	53	1	2	0	11	73	12	2
7:30 AM - 7:45 AM	0	7	9	8	0	0	27	12	1	0	0	3	87	2	2	0	8	81	22	1
7:45 AM - 8:00 AM	0	4	26	11	0	0	46	34	1	0	0	14	124	5	0	0	13	131	24	3
8:00 AM - 8:15 AM	0	3	6	2	0	0	15	9	1	1	0	4	95	5	2	0	19	110	16	4
8:15 AM - 8:30 AM	0	2	3	4	0	0	14	3	1	1	0	0	79	1	4	0	6	74	4	4
8:30 AM - 8:45 AM	0	1	5	8	0	0	7	8	0	0	0	1	68	4	2	0	10	77	3	0
8:45 AM - 9:00 AM	0	1	5	4	0	0	6	7	0	0	0	1	77	3	1	0	7	65	10	3
TOTAL	**0**	**22**	**59**	**43**	**1**	**0**	**134**	**79**	**7**	**3**	**0**	**23**	**628**	**22**	**14**	**0**	**76**	**660**	**94**	**17**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	4	15	16	1	0	10	8	1	0	0	1	128	8	0	0	7	88	11	0
4:15 PM - 4:30 PM	0	2	8	9	0	0	11	8	0	0	0	2	134	7	2	0	7	113	7	0
4:30 PM - 4:45 PM	0	3	8	13	0	0	7	3	0	0	0	0	114	3	1	0	11	116	16	3
4:45 PM - 5:00 PM	1	1	8	15	0	0	12	12	1	1	0	1	160	3	2	0	9	129	15	2
5:00 PM - 5:15 PM	0	7	22	18	0	0	12	15	1	0	0	2	130	6	0	0	13	124	17	1
5:15 PM - 5:30 PM	0	2	9	8	0	0	12	12	2	0	0	2	106	2	0	0	9	129	8	3
5:30 PM - 5:45 PM	0	2	7	9	0	0	6	4	1	0	0	1	127	2	1	0	5	118	13	1
5:45 PM - 6:00 PM	0	2	6	8	0	0	15	3	0	0	0	2	112	4	0	0	8	123	13	3
TOTAL	**1**	**23**	**83**	**96**	**1**	**0**	**85**	**65**	**6**	**1**	**0**	**11**	**1011**	**35**	**6**	**0**	**69**	**940**	**100**	**13**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:30 AM - 8:30 AM	0	16	44	25	0	0	102	58	4	2	0	21	385	13	8	0	46	396	66	12
4:15 PM - 5:15 PM	1	13	46	55	0	0	42	38	2	1	0	5	538	19	5	0	40	482	55	6

	PHF	**Trucks**
AM	0.679	1.9%
PM	0.910	0.9%



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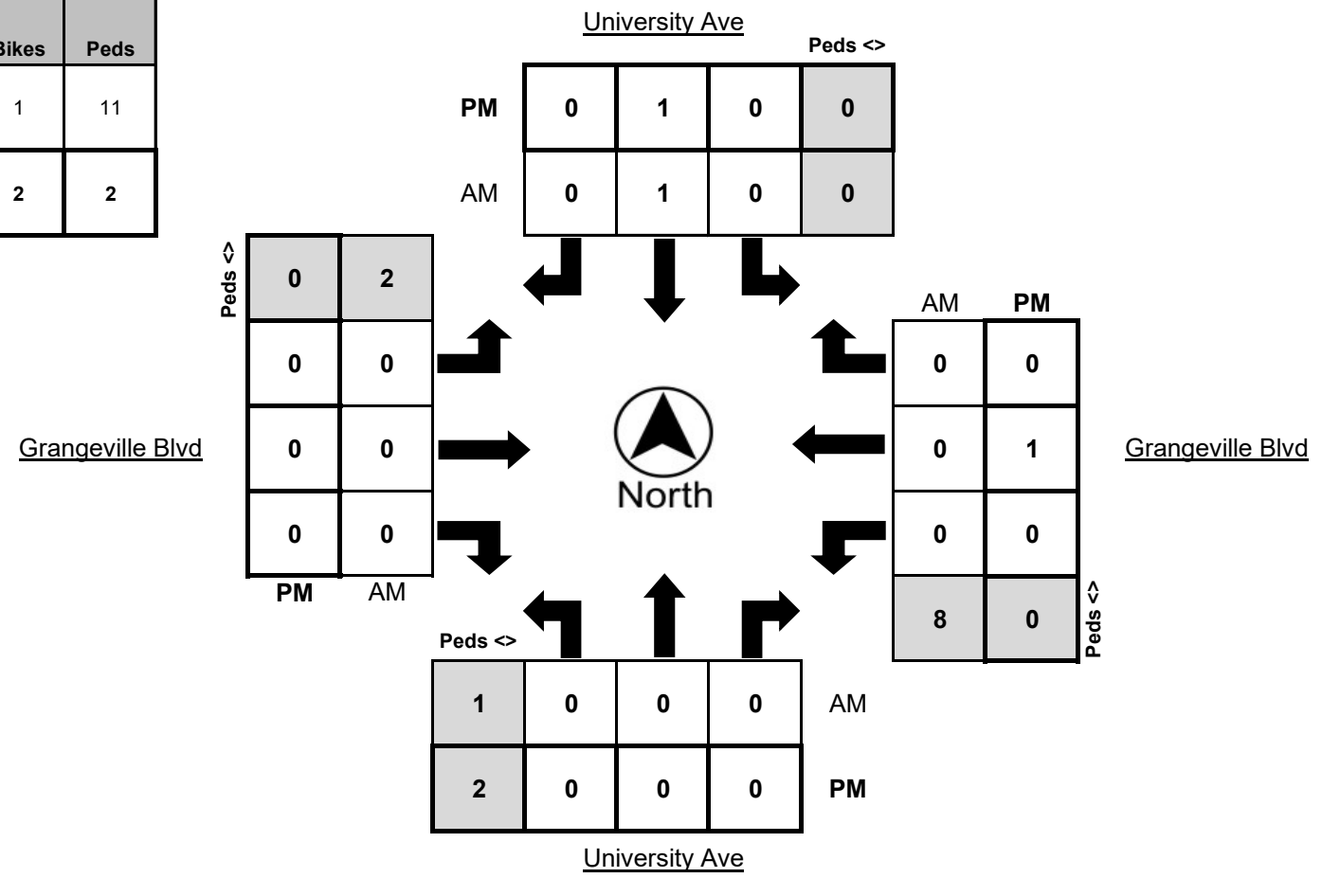
LOCATION University Ave @ Grangeville Blvd
LATITUDE 36.3427
COUNTY Kings
LONGITUDE -119.6661
COLLECTION DATE Wednesday, May 12, 2021
WEATHER Clear

	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	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	2	0	0	0	1	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	2	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	1	0	0	0	4	0	0	0	2
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	1	0	0	0	1	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**	**2**	**0**	**2**	**0**	**2**	**0**	**1**	**0**	**8**	**0**	**0**	**0**	**2**

	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	2	0	0	0	0	0	1	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2
5:30 PM - 5:45 PM	0	0	0	0	0	1	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**	**2**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**2**

	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	0	0	0	1	0	1	0	0	0	8	0	0	0	2
4:15 PM - 5:15 PM	0	0	0	0	0	1	0	2	0	0	0	0	0	1	0	0

	Bikes	Peds
AM Peak Total	1	11
PM Peak Total	2	2



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24 Hour Count Report

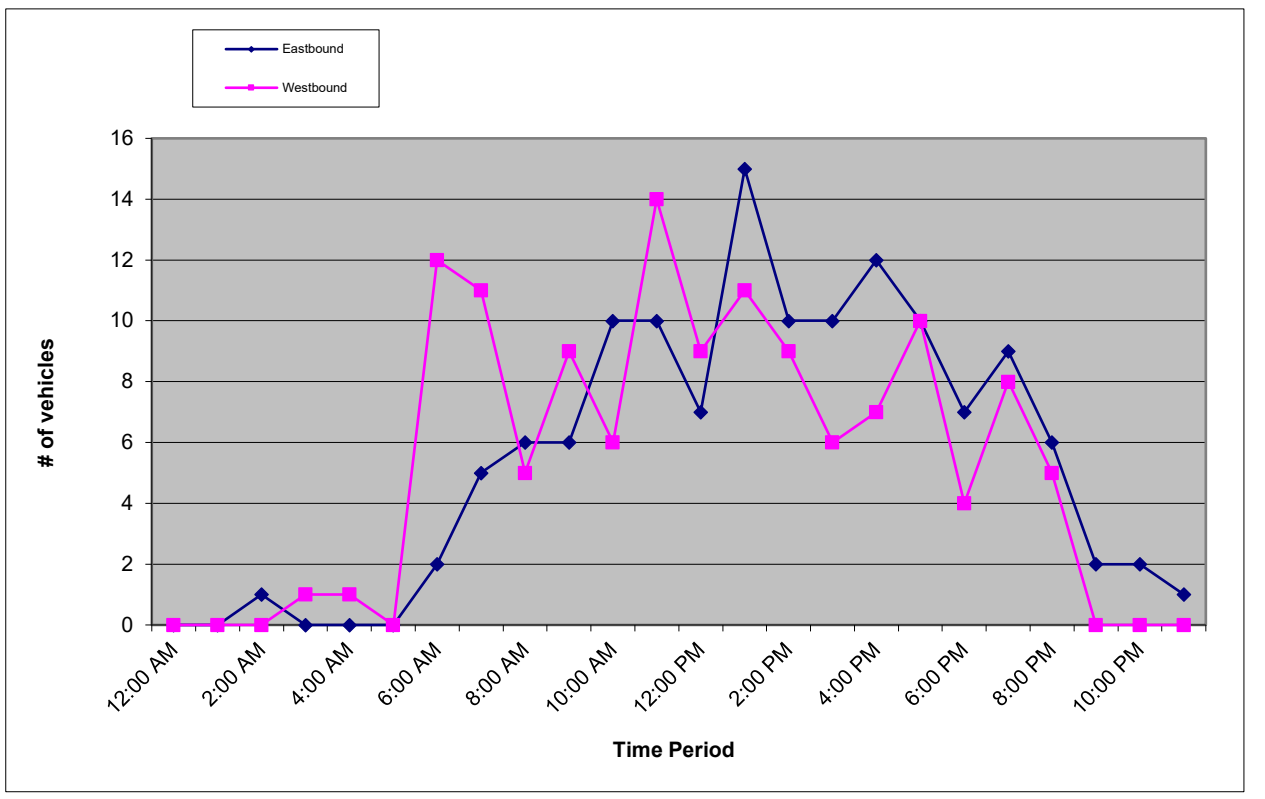
Prepared For: **JLB Traffic Engineering, Inc.**
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

STREET Kings Rd
SEGMENT North of University Ave
COLLECTION DATE Wednesday, May 12, 2021
NUMBER OF LANES 2

LATITUDE 36.3440568
LONGITUDE -119.6659857
WEATHER Clear

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
1:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
2:00 AM	0	0	0	1	**1**	0	0	0	0	**0**	**1**
3:00 AM	0	0	0	0	**0**	1	0	0	0	**1**	**1**
4:00 AM	0	0	0	0	**0**	0	0	0	1	**1**	**1**
5:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
6:00 AM	0	1	1	0	**2**	3	3	3	3	**12**	**14**
7:00 AM	1	1	0	3	**5**	2	3	3	3	**11**	**16**
8:00 AM	2	2	1	1	**6**	3	1	0	1	**5**	**11**
9:00 AM	1	1	2	2	**6**	4	2	3	0	**9**	**15**
10:00 AM	4	4	0	2	**10**	1	0	3	2	**6**	**16**
11:00 AM	2	3	3	2	**10**	4	4	2	4	**14**	**24**
12:00 PM	2	1	3	1	**7**	2	0	3	4	**9**	**16**
1:00 PM	4	3	1	7	**15**	2	2	3	4	**11**	**26**
2:00 PM	2	4	3	1	**10**	2	0	4	3	**9**	**19**
3:00 PM	3	2	4	1	**10**	4	2	0	0	**6**	**16**
4:00 PM	1	4	2	5	**12**	1	2	1	3	**7**	**19**
5:00 PM	1	3	1	5	**10**	1	5	4	0	**10**	**20**
6:00 PM	3	2	2	0	**7**	1	2	0	1	**4**	**11**
7:00 PM	2	4	3	0	**9**	1	3	1	3	**8**	**17**
8:00 PM	3	2	1	0	**6**	1	1	3	0	**5**	**11**
9:00 PM	0	2	0	0	**2**	0	0	0	0	**0**	**2**
10:00 PM	0	0	1	1	**2**	0	0	0	0	**0**	**2**
11:00 PM	1	0	0	0	**1**	0	0	0	0	**0**	**1**
Total	**50.6%**				**131**	**49.4%**				**128**	
	259										

AM% 38.2% **AM Peak** 24 **11:00 am to 12:00 pm** **AM P.H.F.** 0.86
PM% 61.8% **PM Peak** 26 **1:45 pm to 2:45 pm** **PM P.H.F.** 0.59



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Turning Movement Report

Prepared For:

JLB Traffic Engineering, Inc.
516 W. Shaw Ave, Suite 103
Fresno, CA 93704

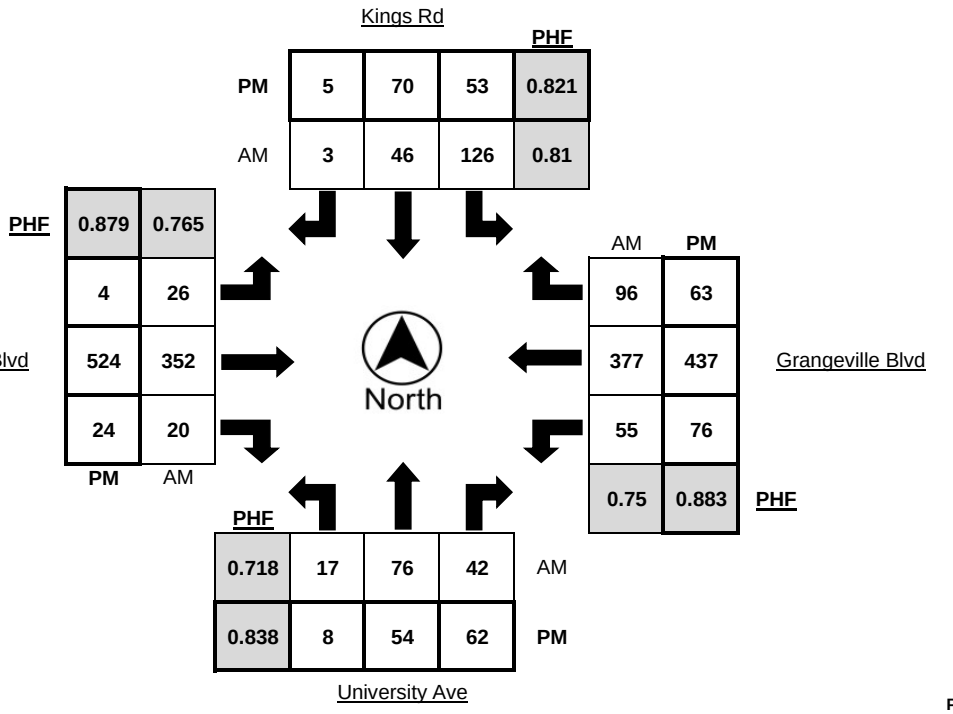
LOCATION Grangeville Blvd @ University Ave
LATITUDE 36.3426
COUNTY Kings
LONGITUDE -119.6661
COLLECTION DATE Tuesday, December 18, 2018
WEATHER AM Fog / PM Clear

	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	7	3	1	10	12	0	1	1	34	2	0	4	50	6	4
7:15 AM - 7:30 AM	3	11	9	0	25	6	0	1	4	59	4	0	10	63	11	4
7:30 AM - 7:45 AM	7	26	14	0	38	13	2	1	11	100	5	0	12	88	27	0
7:45 AM - 8:00 AM	3	32	10	1	42	11	1	0	10	113	7	1	18	110	48	0
8:00 AM - 8:15 AM	4	7	9	0	21	16	0	0	1	80	4	1	15	116	10	4
8:15 AM - 8:30 AM	1	2	6	1	13	14	2	0	1	78	5	0	3	57	11	2
8:30 AM - 8:45 AM	2	3	3	0	7	17	1	0	0	67	3	1	11	55	7	1
8:45 AM - 9:00 AM	3	5	3	0	9	11	0	0	0	64	2	2	10	73	6	4
TOTAL	**23**	**93**	**57**	**3**	**165**	**100**	**6**	**3**	**28**	**595**	**32**	**5**	**83**	**612**	**126**	**19**

	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	3	12	8	0	12	13	2	0	1	105	1	0	11	110	5	2
4:15 PM - 4:30 PM	3	6	6	0	18	10	1	0	0	125	7	1	8	104	12	1
4:30 PM - 4:45 PM	2	13	22	0	13	17	1	0	1	119	4	2	14	103	9	0
4:45 PM - 5:00 PM	2	11	12	0	14	12	2	0	3	105	8	0	18	93	15	1
5:00 PM - 5:15 PM	1	16	19	0	12	17	1	0	0	148	7	0	27	114	22	0
5:15 PM - 5:30 PM	3	14	9	0	14	24	1	0	0	152	5	0	17	127	17	2
5:30 PM - 5:45 PM	1	17	10	0	7	8	2	0	2	107	5	0	12	110	12	0
5:45 PM - 6:00 PM	1	11	8	0	14	7	1	0	0	111	3	0	4	84	17	0
TOTAL	**16**	**100**	**94**	**0**	**104**	**108**	**11**	**0**	**7**	**972**	**40**	**3**	**111**	**845**	**109**	**6**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	17	76	42	1	126	46	3	2	26	352	20	2	55	377	96	8
4:30 PM - 5:30 PM	8	54	62	0	53	70	5	0	4	524	24	2	76	437	63	3

	PHF	Trucks
AM	0.763	1.1%
PM	0.898	0.4%



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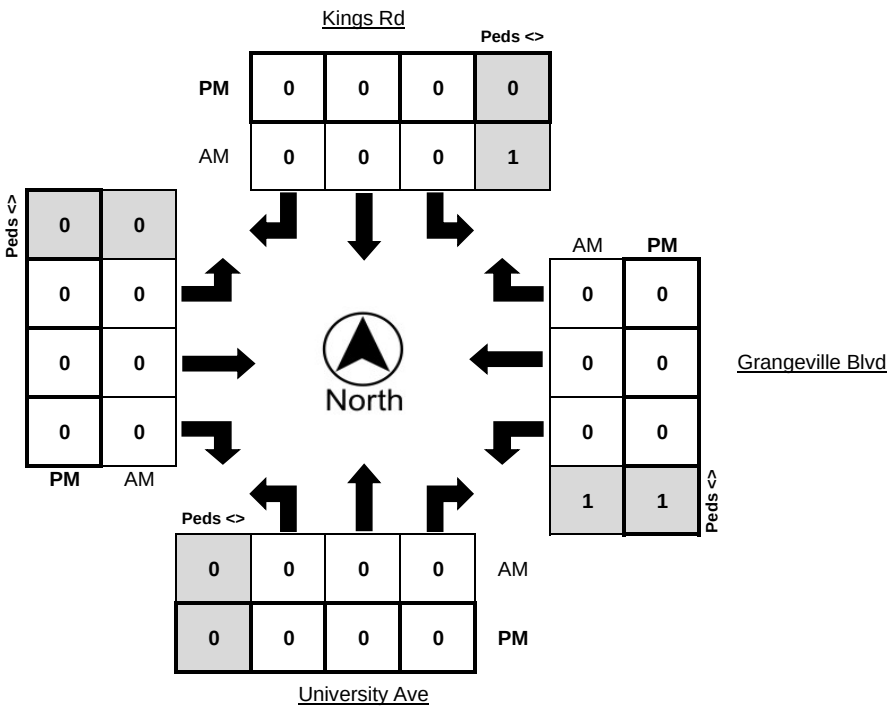
LOCATION Grangeville Blvd @ University Ave
LATITUDE 36.3426
COUNTY Kings
LONGITUDE -119.6661
COLLECTION DATE Tuesday, December 18, 2018
WEATHER AM Fog / PM Clear

	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	0	0	1	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	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	1	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	1	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	1	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**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**

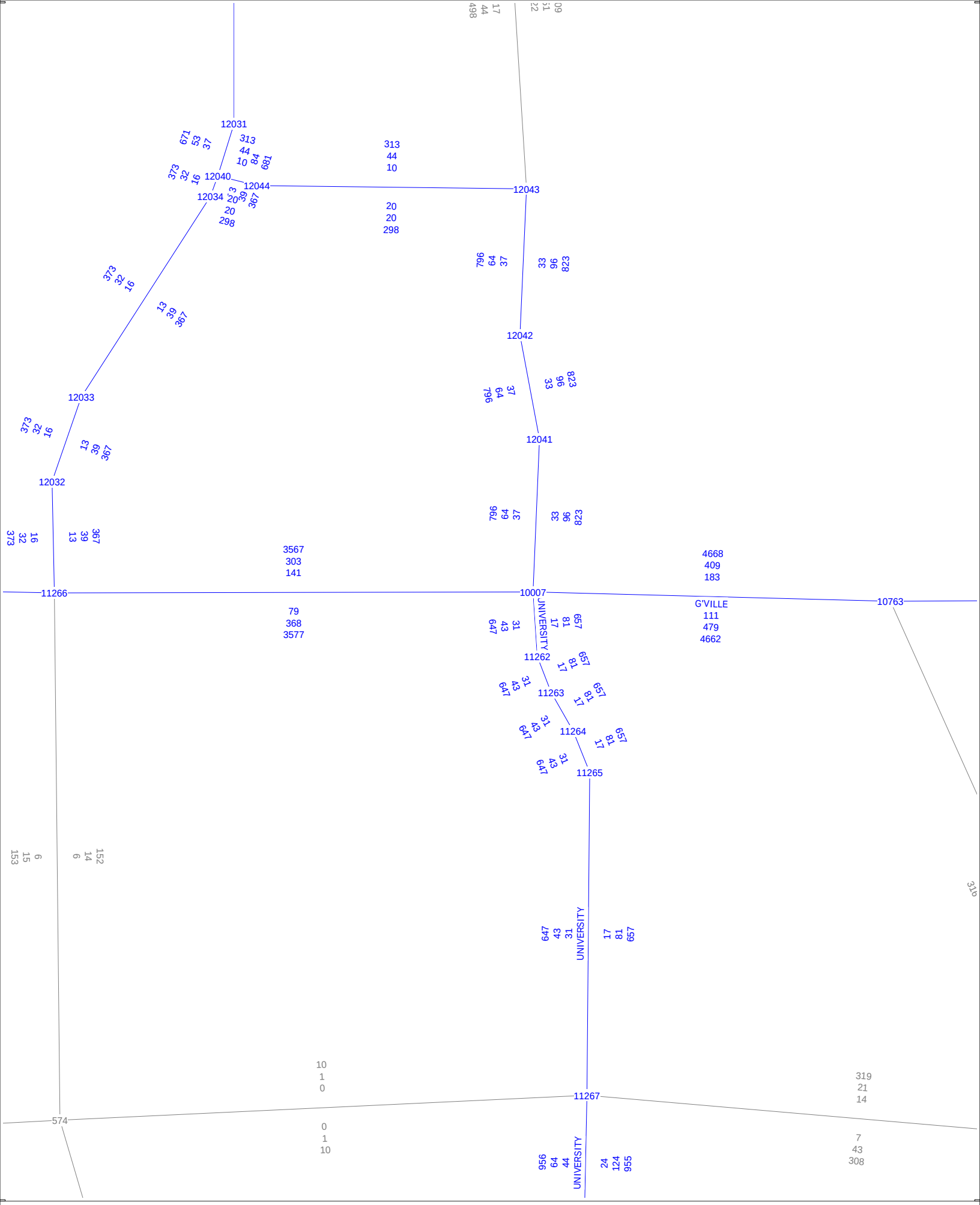
	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	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	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	1	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	1	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**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**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**
7:15 AM - 8:15 AM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0

	Bikes	Peds
AM Peak Total	0	2
PM Peak Total	**0**	**1**

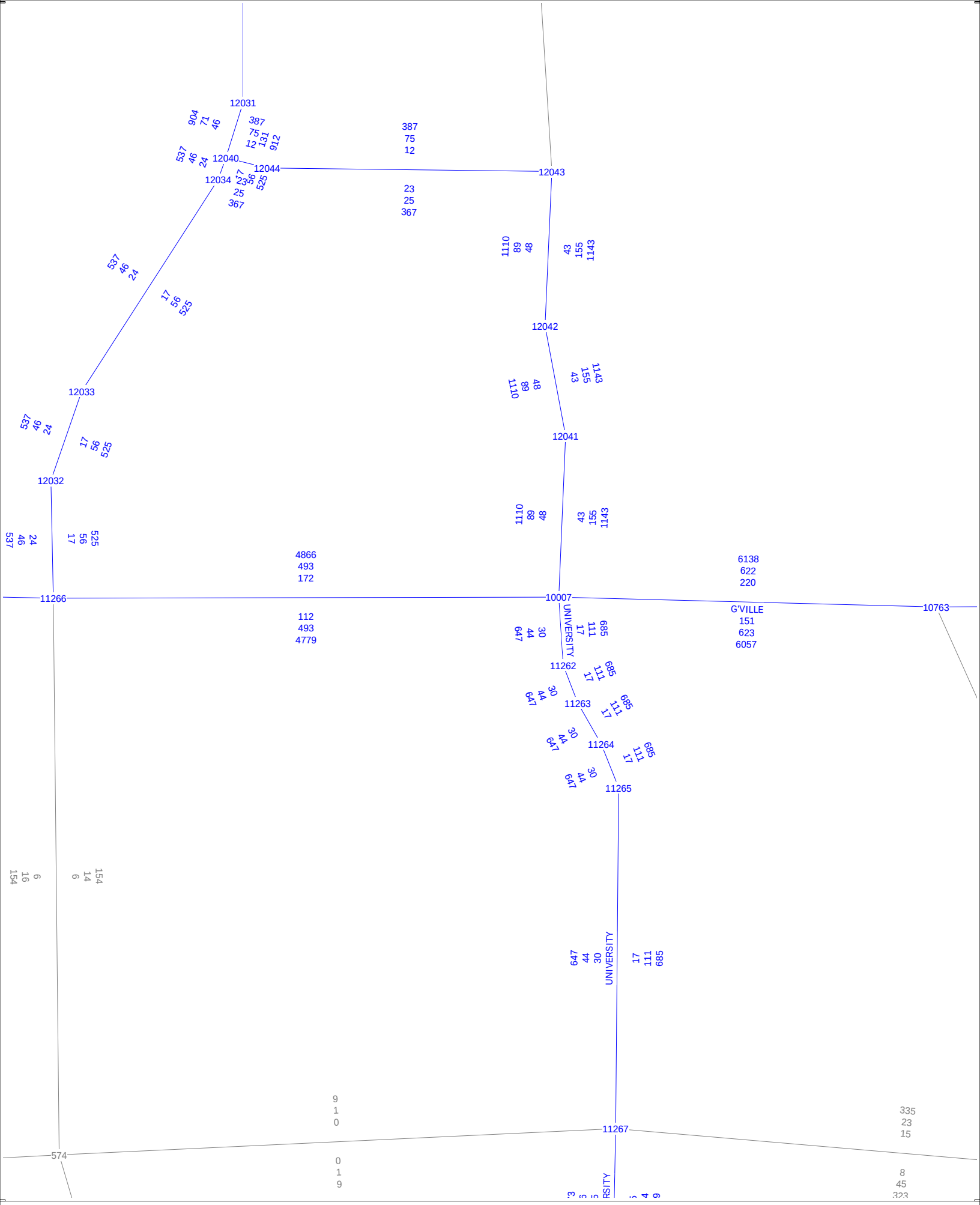


Appendix C: Traffic Modeling



Base Year 2020
AM, PM, Daily

cube
(Licensed to JLB Traffic Engineering Inc)



Cumulative Year 2042
AM, PM, Daily

cube
(Licensed to JLB Traffic Engineering Inc)

Appendix D: Methodology

Levels of Service Methodology

The description and procedures for calculating capacity and level of service (LOS) are found in the Transportation Research Board, Highway Capacity Manual (HCM). The HCM 6th Edition represents the research on capacity and quality of service for transportation facilities.

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

Six levels of service are defined for each type of facility that has analysis procedures available. Letters designate each level of service (LOS), from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each LOS represents a range of operating conditions and the driver's perception of these conditions. Safety is not included in the measures that establish an LOS.

Intersection Levels of Service

One of the more important elements limiting and often interrupting the flow of traffic on a highway is the intersection. Flow on an interrupted facility is usually dominated by points of fixed operation such as traffic signals, stop signs and yield signs.

Signalized Intersections – Performance Measures

For signalized intersections, the performance measures include automobile volume-to-capacity ratio, automobile delay, queue storage length, ratio of pedestrian delay, pedestrian circulation area, pedestrian perception score, bicycle delay and bicycle perception score. LOS is also considered a performance measure. For the automobile mode, the average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection. An LOS designation is given to the weighted average control delay to better describe the level of operation. A description of LOS for signalized intersections is found in Table A-1.

Table A-1: Signalized Intersection Levels of Service Description (Automobile Mode)

Level of Service	Description	Average Control Delay (Seconds per Vehicle)
A	Operations with a control delay of 10 seconds/vehicle or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is really low and either progression is exceptionally favorable or the cycle length is very short. If it's due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Operations with control delay between 10.1 to 20.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	>10.0 to 20.0
C	Operations with average control delays between 20.1 to 35.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio no greater than 1.0, the progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 to 35
D	Operations with control delay between 35.1 to 55.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	>35 to 55
E	Operations with control delay between 55.1 to 80.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable and the cycle length is long. Individual cycle failures are frequent.	>55 to 80
F	Operations with unacceptable control delay exceeding 80.0 seconds/vehicle and a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor and the cycle length is long. Most cycles fail to clear the queue.	>80

Source: Highway Capacity Manual 6th Edition

Unsignalized Intersections

The HCM 6th Edition procedures use control delay as a measure of effectiveness to determine level of service. Delay is a measure of driver discomfort, frustration, fuel consumption and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, i.e., in the absence of traffic control, geometric delay, any incidents and any other vehicles. Control delay is the increased time of travel for a vehicle approaching and passing through an unsignalized intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection.

All-Way Stop Controlled Intersections

All-way stop controlled intersections are a form of traffic controls in which all approaches to an intersection are required to stop. Similar to signalized intersections, at all-way stop controlled intersections the average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection as a whole. In other words, the delay measured for all-way stop controlled intersections is a measure of the average delay for all vehicles passing through the intersection during the peak hour. An LOS designation is given to the weighted average control delay to better describe the level of operation.

Two-Way Stop Controlled Intersections

Two-way stop controlled (TWSC) intersections in which stop signs are used to assign the right-of-way, are the most prevalent type of intersection in the United States. At TWSC intersections the stop-controlled approaches are referred to as the minor street approaches and can be either public streets or private driveways. The approaches that are not controlled by stop signs are referred to as the major street approaches.

The capacity of movements subject to delay are determined using the "critical gap" method of capacity analysis. Expected average control delay based on movement volume and movement capacity is calculated. An LOS for a TWSC intersection is determined by the computed or measured control delay for each minor movement. LOS is not defined for the intersection as a whole for three main reasons: (a) major-street through vehicles are assumed to experience zero delay; (b) the disproportionate number of major-street through vehicles at the typical TWSC intersection skews the weighted average of all movements, resulting in a very low overall average delay from all vehicles; and (c) the resulting low delay can mask important LOS deficiencies for minor movements. Table A-2 provides a description of LOS at unsignalized intersections.

Table A-2: Unsignalized Intersection Levels of Service Description (Automobile Mode)

Control Delay (Seconds per Vehicle)	LOS by Volume-to-Capacity Ratio	
	v/c ≤ 1.0	v/c > 1.0
≤10	A	F
>10 to 15	B	F
>15 to 25	C	F
>25 to 35	D	F
>35 to 50	E	F
>50	F	F

Source: HCM 6th Edition, Exhibit 20-2.

Roundabout Controlled Intersections

Roundabouts are intersections with a generally circular shape, characterized by yield on entry and circulation around a central island. Roundabouts have been used successfully throughout the world and are being used increasingly in the United States, especially since 1990. The procedure used to calculate LOS incorporates a combination of lane-based regression models and gap acceptance models for both single-lane and multi-lane roundabouts. As a result, the capacity models focus on one entry of a roundabout at a time. Table A-3 provides a description of LOS at roundabout intersections.

Table A-3: Roundabout Intersection Level of Service Description (Automobile Mode)

Control Delay (Seconds per Vehicle)	LOS by Volume-to-Capacity Ratio	
	v/c ≤ 1.0	v/c > 1.0
≤10	A	F
>10 to 15	B	F
>15 to 25	C	F
>25 to 35	D	F
>35 to 50	E	F
>50	F	F

Source: HCM 6th Edition, Exhibit 22-8.

Segment Levels of Service

Segments are portions of roads without any interruption of flow. These are typically studied as urban streets, basic freeways, multilane highways or two-lane highways. Each of these categories has further classification and the level of service analysis can differ between them.

Basic Freeway and Multilane Highway Segments

For segments of multilane highways and basic freeways outside the influence of merging, diverging and weaving maneuvers, LOS is defined by density. Density describes a motorist's proximity to other vehicles and is related to a motorist's freedom to maneuver within the traffic stream. Chapter 12 of the Highway Capacity Manual categorizes each LOS as follows:

LOS A describes free-flow operations. FFS prevails on the freeway or multilane highway, and vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. The effects of incidents or point breakdowns are easily absorbed.

LOS B represents reasonably free-flow operations, and FFS on the freeway or multilane highway is maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high. The effects of minor incidents are still easily absorbed.

LOS C provides for flow with speeds near the FFS of the freeway or multilane highway. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver. Minor incidents may still be absorbed, but the local deterioration in service quality will be significant. Queues may be expected to form behind any significant blockages.

LOS D is the level at which speeds begin to decline with increasing flows, with density increasing more quickly. Freedom to maneuver within the traffic stream is seriously limited, and drivers experience reduced physical and psychological comfort levels. Even minor incidents can be expected to create queuing, because the traffic stream has little space to absorb disruptions.

LOS E describes operation at or near capacity. Operations on the freeway or multilane highway at this level are highly volatile because there are virtually no usable gaps within the traffic stream, leaving little room to maneuver within the traffic stream. Any disruption to the traffic stream, such as vehicles entering from a ramp or an access point or a vehicle changing lanes, can establish a disruption wave that propagates throughout the upstream traffic stream. Toward the upper boundary of LOS E, the traffic stream has no ability to dissipate even the most minor disruption, and any incident can be expected to produce a serious breakdown and substantial queuing. The physical and psychological comfort afforded to drivers is poor.

LOS F describes unstable flow. Such conditions exist within queues forming behind bottlenecks. Breakdowns occur for a number of reasons:

- Traffic incidents can temporarily reduce the capacity of a short segment so that the number of vehicles arriving at a point is greater than the number of vehicles that can move through it.
- Points of recurring congestion, such as merge or weaving segments and lane drops, experience very high demand in which the number of vehicles arriving is greater than the number of vehicles that can be discharged.
- In analyses using forecast volumes, the projected flow rate can exceed the estimated capacity of a given location.

Basic Freeway

Basic Freeway segments generally have four to eight lanes and posted speed limits between 50 and 75 mi/hr. The performance measures include capacity, free flow speed, demand and volume-to-capacity ratio, space mean speed, average density and LOS. The LOS is dependent on the number of lanes, base free-flow speed, lane width, right side lateral clearance, total ramp density, hourly demand volume, peak hour factor and total truck percentage. Table A-4 provides a description of LOS for Basic Freeway Segments.

Multilane Highway

Multilane Highway segments generally have four to six lanes and posted speed limits between 40 and 55 mi/hr. The performance measures include capacity, free flow speed, demand and volume-to-capacity ratio, space mean speed, average density and LOS. The LOS is dependent on the number of lanes, base free-flow speed, lane width, right side lateral clearance, left side lateral clearance, access point density, terrain type, median type, hourly demand volume, peak hour factor and total truck percentage. Table A-4 provides a description of LOS for Multilane Highway Segments.

Table A-4: Basic Freeway and Multilane Highway Segment Level of Service Description

Level of Service	Density (Passenger Cars per Mile per Lane)
A	≤11
B	>11 to 18
C	>18 to 26
D	>26 to 35
E	>35 to 45
F	>45 or Demand Exceeds Capacity

Source: HCM 6th Edition, Exhibit 12-15.

Two-Lane Highway Segments

Two-Lane Highways generally have one lane per direction and only allow passing maneuvers to take place in the opposing lane of traffic. If allowed, passing maneuvers are limited by the availability of gaps in the opposing traffic stream and by the availability of sufficient sight distance for a driver to discern the approach of an opposing vehicle safely. A principal measure of LOS is percent time spent following and follower density. This is the average percent of time that vehicles must travel in platoons behind slower vehicles due to the inability to pass. Chapter 15 of the Highway Capacity Manual categorizes each LOS as follows:

At **LOS A**, motorists experience high operating speeds on Class I highways and little difficulty in passing. Platoons of three or more vehicles are rare. On Class II highways, speed is controlled primarily by roadway conditions, but a small amount of platooning would be expected. On Class III highways, motorists can maintain operating speeds at or near the facility's FFS.

At **LOS B**, passing demand and passing capacity are balanced. On both Class I and Class II highways, the degree of platooning becomes noticeable. Some speed reductions are present on Class I highways. On Class III highways, maintenance of FFS operation becomes difficult, but the speed reduction is still relatively small.

At **LOS C**, most vehicles travel in platoons. Speeds are noticeably curtailed on all three classes of highways.

At **LOS D**, platooning increases significantly. Passing demand is high on both Class I and Class II facilities, but passing capacity approaches zero. A high percentage of vehicles travels in platoons, and PTSF is noticeable. On Class III highways, the fall-off from FFS is significant.

At LOS E demand is approaching capacity. Passing on Class I and II highways is virtually impossible, and PTSF is more than 80%. Speeds are seriously curtailed. On Class III highways, speed is less than two-thirds of the FFS. The lower limit of LOSE represents capacity.

LOS F exists whenever demand flow in one or both directions exceeds the segment's capacity. Operating conditions are unstable and heavy congestion exists on all classes of two-lane highways.

Two-Lane Highway

The performance measures include average travel speed, segment travel time, percent followers, volume to capacity ratio, follower density and LOS. The LOS is dependent on Highway Class (I, II, or III), lane width, shoulder width, access point density, terrain type, free flow speed, passing lane length, demand flow rate, opposing demand flow rate peak hour factor and total truck percentage. Tables A-5 and A-6 provide a description of LOS for Two-Lane Highway Segments.

Table A-5: Two-Lane Highway Segment Level of Service Description

LOS	Class I Highways		Class II Highways	Class III Highways
	ATS (Mile per Hour)	PTSF (%)	PTSF (%)	PFFS (%)
A	>55	≤35	≤40	>91.7
B	>50 to 55	>35 to 50	>40 to 55	>83.3 to 91.7
C	>45 to 50	>50 to 65	>55 to 70	>75.0 to 83.3
D	>40 to 45	>65 to 80	>70 to 85	>66.7 to 75.0
E	≤40	>80	>85	≤66.7
F	Demand exceeds capacity			

ATS = Average Travel Speed
PTSF = Percent Time Spent Following
PFFS = Percent of Free Flow Speed
Source: HCM 6th Edition, Exhibit 15-3.

Table A-6: Two-Lane Highway Segment Level of Service Description

LOS	Follower Density (Followers per Mile per Lane)	
	High Speed Highways Posted Speed Limit ≥ 50 miles per hour	**High Speed Highways Posted Speed Limit < 50 miles per hour**
A	≤2.0	≤2.0
B	>2.0 to 4.0	>2.5 to 5.0
C	>4.0 to 8.0	>5.0 to 10.0
D	>8.0 to 12.0	>10.0 to 15.0
E	>12.0	>15.0

Source: NCHRP 'Improved Analysis of Two-Lane Highway Capacity and Operational Performance, Table 3-23.

Urban Streets (Automobile Mode)

The term “urban streets” refers to urban arterials and collectors, including those in downtown areas. Arterial streets are roads that primarily serve longer through trips. However, providing access to abutting commercial and residential land uses is also an important function of arterials. Collector streets provide both land access and traffic circulation within residential, commercial and industrial areas. Their access function is more important than that of arterials and unlike arterials their operation is not always dominated by traffic signals. Downtown streets are signalized facilities that often resemble arterials.

They not only move through traffic but also provide access to local businesses for passenger cars, transit buses and trucks. Pedestrian conflicts and lane obstructions created by stopping or standing taxicabs, buses, trucks and parking vehicles that cause turbulence in the traffic flow are typical of downtown streets.

Flow Characteristics

The speed of vehicles on urban streets is influenced by three main factors, street environment, interaction among vehicles and traffic control.

The street environment includes the geometric characteristics of the facility, the character of roadside activity and adjacent land uses. Thus, the environment reflects the number and width of lanes, type of median, driveway/access point density, spacing between signalized intersections, existence of parking, level of pedestrian and bicyclist activity and speed limit.

The interaction among vehicles is determined by traffic density, the proportion of trucks and buses and turning movements. This interaction affects the operation of vehicles at intersections and, to a lesser extent, between signals.

Traffic controls (including signals and signs) force a portion of all vehicles to slow or stop. The delays and speed changes caused by traffic control devices reduce vehicle speeds; however, such controls are needed to establish right-of-way.

Urban Street Segments LOS

The average travel speed for through vehicles along an urban street is the determinant of the operating level of service (LOS). The travel speed along a segment, section or entire length of an urban street is dependent on the running speed between signalized intersections and the amount of control delay incurred at signalized intersections. Table A-7 provides a description of LOS for Urban Street Segments.

LOS A describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal. Travel speeds exceed 80 percent of the base free flow speed (FFS).

LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67 and 80 percent of the base FFS.

LOS C describes stable operations. The ability to maneuver and change lanes in midblock location may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50 and 67 percent of the base FFS.

LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volumes or inappropriate signal timing at the boundary intersections. The travel speed is between 40 and 50 percent of the base FFS.

LOS E is characterized as an unstable operation and has significant delay. Such operations may be due to some combination of adverse progression, high volume and inappropriate signal timing at the boundary intersections. The travel speed is between 30 and 40 percent of the base FFS.

LOS F is characterized by street flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30 percent or less of the base FFS.

Table A-7: Urban Street Levels of Service (Automobile Mode)

LOS	Travel Speed Threshold by Base Free-Flow Speed (miles/hour)							Volume-to-Capacity Ratio[a]
	55	50	45	40	35	30	25	
A	>44	>40	>36	>32	>28	>24	>20	≤ 1.0
B	>37	>34	>30	>27	>23	>20	>17	
C	>28	>25	>23	>20	>18	>15	>13	
D	>22	>20	>18	>16	>14	>12	>10	
E	>17	>15	>14	>12	>11	>9	>8	
F	≤17	≤15	≤14	≤12	≤11	≤9	≤8	
F	Any							> 1.0

a = The Critical volume-to-capacity ratio is based on consideration of the through movement-to-capacity ratio at each boundary intersection in the subject direction of travel. The critical volume-to-capacity ratio is the largest ratio of those considered.
Source: Highway Capacity Manual 6th Edition, Exhibit 16-3. LOS Criteria: Motorized Vehicle Mode

Appendix E: Existing Traffic Conditions

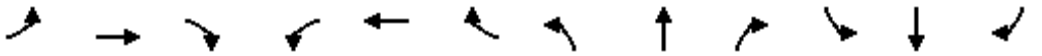
Intersection	
Int Delay, s/veh	0.6

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	153	6	2	175	11	4
Future Vol, veh/h	153	6	2	175	11	4
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	53	53	53	53	53	53
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	289	11	4	330	21	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	309	0	642	304
Stage 1	-	-	-	-	304	-
Stage 2	-	-	-	-	338	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1257	-	440	738
Stage 1	-	-	-	-	751	-
Stage 2	-	-	-	-	725	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1246	-	434	732
Mov Cap-2 Maneuver	-	-	-	-	434	-
Stage 1	-	-	-	-	744	-
Stage 2	-	-	-	-	722	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0.1	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1246	-	487
HCM Lane V/C Ratio	-	-	0.003	-	0.058
HCM Control Delay (s)	-	-	7.9	0	12.8
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	432	21	58	444	102	18	81	45	134	65	5
Future Volume (veh/h)	28	432	21	58	444	102	18	81	45	134	65	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	41	635	31	85	653	150	26	119	66	197	96	7
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	1068	52	159	889	204	159	255	212	261	362	306
Arrive On Green	0.09	0.31	0.31	0.09	0.31	0.31	0.09	0.14	0.14	0.15	0.19	0.19
Sat Flow, veh/h	1781	3448	168	1781	2870	659	1781	1870	1557	1781	1870	1580
Grp Volume(v), veh/h	41	327	339	85	404	399	26	119	66	197	96	7
Grp Sat Flow(s),veh/h/ln	1781	1777	1840	1781	1777	1752	1781	1870	1557	1781	1870	1580
Q Serve(g_s), s	1.2	8.7	8.8	2.6	11.4	11.4	0.8	3.3	2.1	6.0	2.5	0.2
Cycle Q Clear(g_c), s	1.2	8.7	8.8	2.6	11.4	11.4	0.8	3.3	2.1	6.0	2.5	0.2
Prop In Lane	1.00		0.09	1.00		0.38	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	550	570	159	550	543	159	255	212	261	362	306
V/C Ratio(X)	0.26	0.59	0.60	0.54	0.73	0.74	0.16	0.47	0.31	0.76	0.26	0.02
Avail Cap(c_a), veh/h	162	765	792	225	829	817	178	899	748	437	1185	1001
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	23.9	16.4	16.4	24.5	17.3	17.3	23.7	22.4	21.9	23.0	19.2	18.3
Incr Delay (d2), s/veh	0.9	1.0	1.0	2.8	1.9	2.0	0.5	1.3	0.8	4.4	0.4	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	0.5	3.1	3.2	1.1	4.2	4.1	0.3	1.4	0.7	2.6	1.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	17.4	17.4	27.3	19.2	19.3	24.1	23.7	22.7	27.4	19.6	18.4
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	B	B
Approach Vol, veh/h		707			888			211			300	
Approach Delay, s/veh		17.8			20.0			23.4			24.7	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	12.3	9.2	22.3	9.2	15.5	9.2	22.3
Change Period (Y+Rc), s	* 4.2	4.6	* 4.2	4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 14	27.0	* 7.1	24.2	* 5.6	* 36	* 5.1	26.2
Max Q Clear Time (g_c+I1), s	8.0	5.3	4.6	10.8	2.8	4.5	3.2	13.4
Green Ext Time (p_c), s	0.3	0.8	0.0	3.2	0.0	0.5	0.0	3.9

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

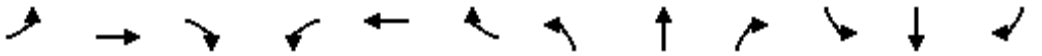
Intersection	
Int Delay, s/veh	0.8

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	103	8	4	90	10	5
Future Vol, veh/h	103	8	4	90	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	136	11	5	118	13	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	147	0	270	142
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	128	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1441	-	721	908
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	900	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1441	-	718	908
Mov Cap-2 Maneuver	-	-	-	-	718	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	896	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0.3	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1441	-	772
HCM Lane V/C Ratio	-	-	0.004	-	0.026
HCM Control Delay (s)	-	-	7.5	0	9.8
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	592	25	81	531	67	16	57	66	56	74	5
Future Volume (veh/h)	6	592	25	81	531	67	16	57	66	56	74	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	7	651	27	89	584	74	18	63	73	62	81	5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	191	993	41	191	955	121	191	201	170	191	201	170
Arrive On Green	0.11	0.28	0.28	0.11	0.30	0.30	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1795	3504	145	1795	3199	404	1795	1885	1598	1795	1885	1598
Grp Volume(v), veh/h	7	333	345	89	326	332	18	63	73	62	81	5
Grp Sat Flow(s),veh/h/ln	1795	1791	1858	1795	1791	1812	1795	1885	1598	1795	1885	1598
Q Serve(g_s), s	0.2	7.7	7.7	2.2	7.3	7.4	0.4	1.4	1.3	1.5	1.9	0.1
Cycle Q Clear(g_c), s	0.2	7.7	7.7	2.2	7.3	7.4	0.4	1.4	1.3	1.5	1.9	0.1
Prop In Lane	1.00		0.08	1.00		0.22	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	191	508	527	191	534	541	191	201	170	191	201	170
V/C Ratio(X)	0.04	0.65	0.66	0.46	0.61	0.61	0.09	0.31	0.43	0.32	0.40	0.03
Avail Cap(c_a), veh/h	191	974	1011	299	1081	1094	191	1085	920	222	1134	961
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	18.8	14.8	14.8	19.7	14.1	14.1	18.9	19.4	8.4	19.4	19.6	18.8
Incr Delay (d2), s/veh	0.1	1.4	1.4	1.8	1.1	1.1	0.2	0.9	1.7	1.0	1.3	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	0.1	2.7	2.7	0.9	2.5	2.5	0.2	0.6	0.7	0.6	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.9	16.2	16.2	21.4	15.2	15.3	19.1	20.2	10.1	20.4	20.9	18.8
LnGrp LOS	B	B	B	C	B	B	B	C	B	C	C	B
Approach Vol, veh/h		685			747			154			148	
Approach Delay, s/veh		16.2			16.0			15.3			20.6	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	9.6	9.9	18.2	9.2	9.6	9.2	18.9
Change Period (Y+Rc), s	* 4.2	4.6	4.9	* 4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 5.8	27.0	7.8	* 26	* 5	* 28	* 5	28.3
Max Q Clear Time (g_c+I1), s	3.5	3.4	4.2	9.7	2.4	3.9	2.2	9.4
Green Ext Time (p_c), s	0.0	0.5	0.1	3.5	0.0	0.4	0.0	3.6

Intersection Summary	
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: University Avenue & Kings Road

Movement	SB	SW
Directions Served	LT	LR
Maximum Queue (ft)	31	74
Average Queue (ft)	1	13
95th Queue (ft)	10	43
Link Distance (ft)	1024	723
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	44	156	159	65	187	206	53	73	52	185	74	31
Average Queue (ft)	11	92	68	31	83	79	17	43	23	72	33	2
95th Queue (ft)	31	146	139	62	148	156	43	72	47	140	66	15
Link Distance (ft)		1857	1857		1852	1852		1692			412	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)		6			0			1		4	1	
Queuing Penalty (veh)		2			0			1		3	1	

Network Summary

Network wide Queuing Penalty: 6

Intersection: 1: University Avenue & Kings Road

Movement	SW
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	8
95th Queue (ft)	29
Link Distance (ft)	723
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	43	148	151	131	148	236	45	74	54	74	115	29
Average Queue (ft)	6	94	82	38	82	73	12	32	29	30	43	2
95th Queue (ft)	25	136	142	87	131	150	36	65	52	67	88	14
Link Distance (ft)		1857	1857		1852	1852		1692			412	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)		6						1			1	
Queuing Penalty (veh)		0						1			1	

Network Summary

Network wide Queuing Penalty: 2

Appendix F: Existing plus Project Traffic Conditions

Intersection	
Int Delay, s/veh	1.6

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	153	14	3	178	33	9
Future Vol, veh/h	153	14	3	178	33	9
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	53	53	53	53	53	53
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	289	26	6	336	62	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	324	0	659	311
Stage 1	-	-	-	-	311	-
Stage 2	-	-	-	-	348	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1241	-	430	731
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	717	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1230	-	424	725
Mov Cap-2 Maneuver	-	-	-	-	424	-
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	713	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0.1	14.3
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1230	-	465
HCM Lane V/C Ratio	-	-	0.005	-	0.17
HCM Control Delay (s)	-	-	7.9	0	14.3
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	432	21	58	444	109	18	86	45	155	80	9
Future Volume (veh/h)	29	432	21	58	444	109	18	86	45	155	80	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	635	31	85	653	160	26	126	66	228	118	13
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	1063	52	152	873	214	152	258	215	290	403	341
Arrive On Green	0.09	0.31	0.31	0.09	0.31	0.31	0.09	0.14	0.14	0.16	0.22	0.22
Sat Flow, veh/h	1781	3448	168	1781	2830	693	1781	1870	1557	1781	1870	1581
Grp Volume(v), veh/h	43	327	339	85	410	403	26	126	66	228	118	13
Grp Sat Flow(s),veh/h/ln	1781	1777	1840	1781	1777	1746	1781	1870	1557	1781	1870	1581
Q Serve(g_s), s	1.3	9.1	9.2	2.7	12.1	12.2	0.8	3.6	2.2	7.2	3.1	0.4
Cycle Q Clear(g_c), s	1.3	9.1	9.2	2.7	12.1	12.2	0.8	3.6	2.2	7.2	3.1	0.4
Prop In Lane	1.00		0.09	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	548	567	152	548	538	152	258	215	290	403	341
V/C Ratio(X)	0.28	0.60	0.60	0.56	0.75	0.75	0.17	0.49	0.31	0.79	0.29	0.04
Avail Cap(c_a), veh/h	155	734	760	216	794	780	170	862	718	480	1200	1014
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	25.1	17.2	17.2	25.7	18.2	18.2	24.9	23.3	22.7	23.5	19.2	18.2
Incr Delay (d2), s/veh	1.0	1.0	1.0	3.2	2.3	2.4	0.5	1.4	0.8	4.7	0.4	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	0.6	3.3	3.4	1.2	4.6	4.5	0.3	1.6	0.8	3.2	1.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.1	18.2	18.2	28.9	20.5	20.6	25.4	24.8	23.5	28.2	19.6	18.2
LnGrp LOS	C	B	B	C	C	C	C	C	C	C	B	B
Approach Vol, veh/h		709			898			218			359	
Approach Delay, s/veh		18.7			21.4			24.5			25.0	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	12.7	9.2	23.0	9.2	17.2	9.2	23.0
Change Period (Y+Rc), s	* 4.2	4.6	* 4.2	4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 16	27.0	* 7.1	24.2	* 5.6	* 38	* 5.1	26.2
Max Q Clear Time (g_c+I1), s	9.2	5.6	4.7	11.2	2.8	5.1	3.3	14.2
Green Ext Time (p_c), s	0.3	0.8	0.0	3.1	0.0	0.7	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

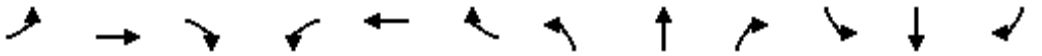
Intersection	
Int Delay, s/veh	1.4

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	103	36	6	92	24	8
Future Vol, veh/h	103	36	6	92	24	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	136	47	8	121	32	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	183	0	297	160
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	137	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1398	-	696	888
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	892	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1398	-	692	888
Mov Cap-2 Maneuver	-	-	-	-	692	-
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	887	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0.5	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1398	-	732
HCM Lane V/C Ratio	-	-	0.006	-	0.058
HCM Control Delay (s)	-	-	7.6	0	10.2
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	592	25	81	531	91	16	74	66	70	84	8
Future Volume (veh/h)	10	592	25	81	531	91	16	74	66	70	84	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	11	651	27	89	584	100	18	81	73	77	92	9
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	192	986	41	192	907	155	192	202	171	192	202	171
Arrive On Green	0.11	0.28	0.28	0.11	0.30	0.30	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1795	3504	145	1795	3060	523	1795	1885	1598	1795	1885	1598
Grp Volume(v), veh/h	11	333	345	89	341	343	18	81	73	77	92	9
Grp Sat Flow(s),veh/h/ln	1795	1791	1858	1795	1791	1791	1795	1885	1598	1795	1885	1598
Q Serve(g_s), s	0.3	7.7	7.7	2.2	7.7	7.8	0.4	1.9	1.3	1.9	2.1	0.2
Cycle Q Clear(g_c), s	0.3	7.7	7.7	2.2	7.7	7.8	0.4	1.9	1.3	1.9	2.1	0.2
Prop In Lane	1.00		0.08	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	504	523	192	531	531	192	202	171	192	202	171
V/C Ratio(X)	0.06	0.66	0.66	0.46	0.64	0.65	0.09	0.40	0.43	0.40	0.46	0.05
Avail Cap(c_a), veh/h	192	923	958	261	992	992	192	1088	922	238	1153	977
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	18.8	14.8	14.8	19.6	14.3	14.3	18.8	19.5	8.3	19.5	19.6	18.8
Incr Delay (d2), s/veh	0.1	1.5	1.4	1.7	1.3	1.3	0.2	1.3	1.7	1.4	1.6	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	0.1	2.7	2.8	0.9	2.6	2.6	0.2	0.8	0.7	0.8	0.9	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.9	16.3	16.3	21.4	15.6	15.6	19.0	20.8	10.0	20.8	21.2	18.9
LnGrp LOS	B	B	B	C	B	B	B	C	B	C	C	B
Approach Vol, veh/h		689			773			172			178	
Approach Delay, s/veh		16.3			16.3			16.0			20.9	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	9.6	9.9	18.1	9.2	9.6	9.2	18.8
Change Period (Y+Rc), s	* 4.2	4.6	4.9	* 4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 6.2	27.0	6.8	* 24	* 5	* 29	* 5	25.9
Max Q Clear Time (g_c+I1), s	3.9	3.9	4.2	9.7	2.4	4.1	2.3	9.8
Green Ext Time (p_c), s	0.0	0.6	0.0	3.3	0.0	0.5	0.0	3.6

Intersection Summary	
HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: University Avenue & Kings Road

Movement	SW
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	24
95th Queue (ft)	43
Link Distance (ft)	723
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	24	124	167	64	130	148	28	52	29	107	72	31
Average Queue (ft)	13	94	78	39	80	81	14	34	11	77	38	12
95th Queue (ft)	32	141	153	64	128	153	35	65	35	112	77	35
Link Distance (ft)		1857	1857		1852	1852		1692			412	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)		6								2	0	
Queuing Penalty (veh)		2								2	1	

Network Summary

Network wide Queuing Penalty: 4

Intersection: 1: University Avenue & Kings Road

Movement	SB	SW
Directions Served	LT	LR
Maximum Queue (ft)	30	30
Average Queue (ft)	1	19
95th Queue (ft)	10	42
Link Distance (ft)	1024	723
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	24	192	206	106	170	232	30	92	56	94	98	31
Average Queue (ft)	8	106	105	46	93	89	8	35	29	44	48	5
95th Queue (ft)	24	160	170	86	142	168	28	76	53	87	88	23
Link Distance (ft)		1857	1857		1852	1852		1692			412	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)		7						2	0	0	2	
Queuing Penalty (veh)		1						1	0	0	2	

Network Summary

Network wide Queuing Penalty: 4

Appendix G: Near Term plus Project Traffic Conditions

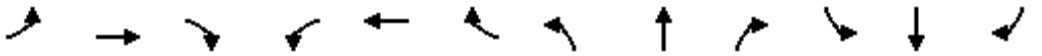
Intersection	
Int Delay, s/veh	1.6

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	153	14	3	178	33	9
Future Vol, veh/h	153	14	3	178	33	9
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	53	53	53	53	53	53
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	289	26	6	336	62	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	324	0	659	311
Stage 1	-	-	-	-	311	-
Stage 2	-	-	-	-	348	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1241	-	430	731
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	717	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1230	-	424	725
Mov Cap-2 Maneuver	-	-	-	-	424	-
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	713	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0.1	14.3
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1230	-	465
HCM Lane V/C Ratio	-	-	0.005	-	0.17
HCM Control Delay (s)	-	-	7.9	0	14.3
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	479	21	58	459	109	18	86	45	155	80	9
Future Volume (veh/h)	29	479	21	58	459	109	18	86	45	155	80	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	704	31	85	675	160	26	126	66	228	118	13
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	150	1086	48	150	893	212	150	257	214	290	403	341
Arrive On Green	0.08	0.31	0.31	0.08	0.31	0.31	0.08	0.14	0.14	0.16	0.22	0.22
Sat Flow, veh/h	1781	3467	153	1781	2851	675	1781	1870	1557	1781	1870	1581
Grp Volume(v), veh/h	43	361	374	85	421	414	26	126	66	228	118	13
Grp Sat Flow(s),veh/h/ln	1781	1777	1843	1781	1777	1749	1781	1870	1557	1781	1870	1581
Q Serve(g_s), s	1.3	10.4	10.4	2.7	12.6	12.6	0.8	3.7	2.3	7.3	3.1	0.4
Cycle Q Clear(g_c), s	1.3	10.4	10.4	2.7	12.6	12.6	0.8	3.7	2.3	7.3	3.1	0.4
Prop In Lane	1.00		0.08	1.00		0.39	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	557	577	150	557	548	150	257	214	290	403	341
V/C Ratio(X)	0.29	0.65	0.65	0.57	0.76	0.76	0.17	0.49	0.31	0.79	0.29	0.04
Avail Cap(c_a), veh/h	153	726	753	214	786	774	168	853	710	475	1188	1004
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	25.4	17.5	17.5	26.1	18.3	18.3	25.2	23.6	23.0	23.8	19.4	18.4
Incr Delay (d2), s/veh	1.0	1.3	1.2	3.3	2.6	2.7	0.5	1.4	0.8	4.7	0.4	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	0.6	3.8	3.9	1.2	4.8	4.7	0.3	1.6	0.8	3.2	1.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	18.8	18.8	29.4	20.9	21.0	25.7	25.1	23.8	28.6	19.8	18.4
LnGrp LOS	C	B	B	C	C	C	C	C	C	C	B	B
Approach Vol, veh/h		778			920			218			359	
Approach Delay, s/veh		19.2			21.7			24.8			25.3	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	12.7	9.2	23.5	9.2	17.4	9.2	23.5
Change Period (Y+Rc), s	* 4.2	4.6	* 4.2	4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 16	27.0	* 7.1	24.2	* 5.6	* 38	* 5.1	26.2
Max Q Clear Time (g_c+I1), s	9.3	5.7	4.7	12.4	2.8	5.1	3.3	14.6
Green Ext Time (p_c), s	0.3	0.8	0.0	3.3	0.0	0.7	0.0	3.9

Intersection Summary	
HCM 6th Ctrl Delay	21.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

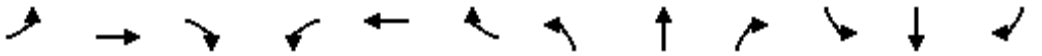
Intersection	
Int Delay, s/veh	1.4

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	103	36	6	92	24	8
Future Vol, veh/h	103	36	6	92	24	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	136	47	8	121	32	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	183	0	297	160
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	137	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1398	-	696	888
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	892	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1398	-	692	888
Mov Cap-2 Maneuver	-	-	-	-	692	-
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	887	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0.5	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1398	-	732
HCM Lane V/C Ratio	-	-	0.006	-	0.058
HCM Control Delay (s)	-	-	7.6	0	10.2
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	623	25	81	584	91	16	74	66	70	84	8
Future Volume (veh/h)	10	623	25	81	584	91	16	74	66	70	84	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	11	685	27	89	642	100	18	81	73	77	92	9
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	188	1032	41	193	968	150	188	197	167	188	197	167
Arrive On Green	0.10	0.29	0.29	0.11	0.31	0.31	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1795	3512	138	1795	3106	483	1795	1885	1598	1795	1885	1598
Grp Volume(v), veh/h	11	349	363	89	370	372	18	81	73	77	92	9
Grp Sat Flow(s),veh/h/ln	1795	1791	1860	1795	1791	1798	1795	1885	1598	1795	1885	1598
Q Serve(g_s), s	0.3	8.2	8.2	2.2	8.6	8.6	0.4	1.9	1.3	1.9	2.2	0.2
Cycle Q Clear(g_c), s	0.3	8.2	8.2	2.2	8.6	8.6	0.4	1.9	1.3	1.9	2.2	0.2
Prop In Lane	1.00		0.07	1.00		0.27	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	526	547	193	558	560	188	197	167	188	197	167
V/C Ratio(X)	0.06	0.66	0.66	0.46	0.66	0.66	0.10	0.41	0.44	0.41	0.47	0.05
Avail Cap(c_a), veh/h	188	993	1031	293	1098	1103	188	1065	903	255	1152	976
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	19.3	14.8	14.8	20.0	14.3	14.3	19.3	20.0	8.7	20.0	20.1	19.3
Incr Delay (d2), s/veh	0.1	1.4	1.4	1.7	1.4	1.4	0.2	1.4	1.8	1.4	1.7	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	0.1	2.8	2.9	0.9	2.9	2.9	0.2	0.8	0.7	0.8	1.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	16.2	16.2	21.7	15.6	15.6	19.6	21.4	10.5	21.4	21.8	19.4
LnGrp LOS	B	B	B	C	B	B	B	C	B	C	C	B
Approach Vol, veh/h		723			831			172			178	
Approach Delay, s/veh		16.3			16.3			16.6			21.5	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	9.6	10.0	18.9	9.2	9.6	9.2	19.8
Change Period (Y+Rc), s	* 4.2	4.6	4.9	* 4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 6.8	27.0	7.8	* 27	* 5	* 29	* 5	29.3
Max Q Clear Time (g_c+I1), s	3.9	3.9	4.2	10.2	2.4	4.2	2.3	10.6
Green Ext Time (p_c), s	0.0	0.6	0.1	3.7	0.0	0.5	0.0	4.2

Intersection Summary	
HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: University Avenue & Kings Road

Movement	SW
Directions Served	LR
Maximum Queue (ft)	54
Average Queue (ft)	21
95th Queue (ft)	48
Link Distance (ft)	723
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	45	168	140	127	174	174	52	113	79	148	98	31
Average Queue (ft)	16	84	62	39	91	85	16	39	30	67	40	6
95th Queue (ft)	42	133	113	84	145	152	46	76	59	123	87	25
Link Distance (ft)		1857	1857		1852	1852		1692			412	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)		3			0			1	0	4	2	
Queuing Penalty (veh)		1			0			1	0	4	3	

Network Summary

Network wide Queuing Penalty: 9

Intersection: 1: University Avenue & Kings Road

Movement	SB	SW
Directions Served	LT	LR
Maximum Queue (ft)	32	51
Average Queue (ft)	1	18
95th Queue (ft)	10	44
Link Distance (ft)	1024	723
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	46	197	154	88	212	227	51	135	130	98	96	31
Average Queue (ft)	6	113	97	40	109	103	16	41	29	44	42	7
95th Queue (ft)	25	167	159	76	182	179	43	86	71	83	76	28
Link Distance (ft)		1857	1857		1852	1852		1692			412	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)		9			1			3	0	0	0	
Queuing Penalty (veh)		1			1			2	0	0	0	

Network Summary

Network wide Queuing Penalty: 5

Appendix H: Cumulative Year 2040 plus Project Traffic Conditions

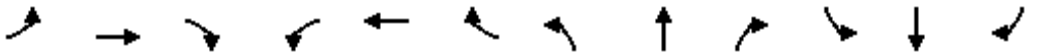
Intersection	
Int Delay, s/veh	1.5

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	205	14	3	228	33	9
Future Vol, veh/h	205	14	3	228	33	9
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	53	53	53	53	53	53
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	387	26	6	430	62	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	422	0	851	409
Stage 1	-	-	-	-	409	-
Stage 2	-	-	-	-	442	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1143	-	332	645
Stage 1	-	-	-	-	673	-
Stage 2	-	-	-	-	650	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1133	-	327	639
Mov Cap-2 Maneuver	-	-	-	-	327	-
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	645	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0.1	17.6
HCM LOS			C

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1133	-	365
HCM Lane V/C Ratio	-	-	0.005	-	0.217
HCM Control Delay (s)	-	-	8.2	0	17.6
HCM Lane LOS	-	-	A	A	C
HCM 95th %tile Q(veh)	-	-	0	-	0.8



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	642	31	86	660	159	27	125	67	220	112	11
Future Volume (veh/h)	43	642	31	86	660	159	27	125	67	220	112	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	944	46	126	971	234	40	184	99	324	165	16
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	102	1117	54	205	1107	266	100	279	232	363	555	469
Arrive On Green	0.06	0.32	0.32	0.12	0.39	0.39	0.06	0.15	0.15	0.20	0.30	0.30
Sat Flow, veh/h	1781	3449	168	1781	2841	683	1781	1870	1560	1781	1870	1582
Grp Volume(v), veh/h	63	486	504	126	606	599	40	184	99	324	165	16
Grp Sat Flow(s),veh/h/ln	1781	1777	1840	1781	1777	1747	1781	1870	1560	1781	1870	1582
Q Serve(g_s), s	3.1	22.7	22.7	6.0	28.2	28.4	1.9	8.3	3.8	15.8	6.1	0.6
Cycle Q Clear(g_c), s	3.1	22.7	22.7	6.0	28.2	28.4	1.9	8.3	3.8	15.8	6.1	0.6
Prop In Lane	1.00		0.09	1.00		0.39	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	102	575	596	205	693	681	100	279	232	363	555	469
V/C Ratio(X)	0.62	0.85	0.85	0.61	0.88	0.88	0.40	0.66	0.43	0.89	0.30	0.03
Avail Cap(c_a), veh/h	106	687	711	205	761	748	134	566	472	431	887	750
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	41.1	28.1	28.1	37.6	25.2	25.3	40.7	35.8	18.9	34.6	24.2	22.3
Incr Delay (d2), s/veh	10.0	8.3	8.0	5.4	10.5	11.0	2.6	2.7	1.2	18.3	0.3	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	1.6	10.3	10.6	2.8	12.9	12.8	0.9	3.9	1.9	8.5	2.7	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.1	36.4	36.1	43.0	35.7	36.2	43.3	38.5	20.1	52.9	24.5	22.3
LnGrp LOS	D	D	D	D	D	D	D	D	C	D	C	C
Approach Vol, veh/h		1053			1331			323			505	
Approach Delay, s/veh		37.1			36.6			33.5			42.6	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.4	17.9	15.2	33.8	9.2	31.1	9.3	39.7
Change Period (Y+Rc), s	* 4.2	4.6	4.9	* 4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 22	27.0	9.0	* 35	* 6.7	* 42	* 5.3	38.2
Max Q Clear Time (g_c+I1), s	17.8	10.3	8.0	24.7	3.9	8.1	5.1	30.4
Green Ext Time (p_c), s	0.4	1.2	0.0	4.2	0.0	1.0	0.0	4.4

Intersection Summary	
HCM 6th Ctrl Delay	37.4
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

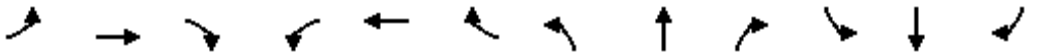
Intersection	
Int Delay, s/veh	1.2

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	135	36	6	125	24	8
Future Vol, veh/h	135	36	6	125	24	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	178	47	8	164	32	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	225	0	382	202
Stage 1	-	-	-	-	202	-
Stage 2	-	-	-	-	180	-
Critical Hdwy	-	-	4.11	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.209	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1350	-	622	841
Stage 1	-	-	-	-	834	-
Stage 2	-	-	-	-	853	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1350	-	618	841
Mov Cap-2 Maneuver	-	-	-	-	618	-
Stage 1	-	-	-	-	834	-
Stage 2	-	-	-	-	847	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0.4	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1350	-	662
HCM Lane V/C Ratio	-	-	0.006	-	0.064
HCM Control Delay (s)	-	-	7.7	0	10.8
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	880	37	120	789	124	24	102	98	97	120	10
Future Volume (veh/h)	13	880	37	120	789	124	24	102	98	97	120	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	14	967	41	132	867	136	26	112	108	107	132	11
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	154	1310	56	192	1263	198	154	200	170	167	213	181
Arrive On Green	0.09	0.37	0.37	0.11	0.41	0.41	0.09	0.11	0.11	0.09	0.11	0.11
Sat Flow, veh/h	1795	3500	148	1795	3102	487	1795	1885	1598	1795	1885	1598
Grp Volume(v), veh/h	14	495	513	132	501	502	26	112	108	107	132	11
Grp Sat Flow(s),veh/h/ln	1795	1791	1858	1795	1791	1798	1795	1885	1598	1795	1885	1598
Q Serve(g_s), s	0.4	13.9	13.9	4.1	13.4	13.4	0.8	3.3	2.6	3.3	3.9	0.4
Cycle Q Clear(g_c), s	0.4	13.9	13.9	4.1	13.4	13.4	0.8	3.3	2.6	3.3	3.9	0.4
Prop In Lane	1.00		0.08	1.00		0.27	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	670	695	192	729	732	154	200	170	167	213	181
V/C Ratio(X)	0.09	0.74	0.74	0.69	0.69	0.69	0.17	0.56	0.64	0.64	0.62	0.06
Avail Cap(c_a), veh/h	154	1032	1070	303	1179	1184	173	875	742	241	959	813
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	24.5	15.7	15.7	25.0	14.2	14.2	24.7	24.7	12.1	25.5	24.6	23.0
Incr Delay (d2), s/veh	0.3	1.6	1.6	4.3	1.2	1.2	0.5	2.4	3.9	4.1	2.9	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	0.2	4.9	5.1	1.8	4.6	4.6	0.3	1.5	1.4	1.5	1.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	17.3	17.3	29.4	15.3	15.3	25.2	27.1	16.0	29.5	27.5	23.2
LnGrp LOS	C	B	B	C	B	B	C	C	B	C	C	C
Approach Vol, veh/h		1022			1135			246			250	
Approach Delay, s/veh		17.4			17.0			22.0			28.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	10.8	11.1	26.7	9.2	11.2	9.2	28.6
Change Period (Y+Rc), s	* 4.2	4.6	4.9	* 4.9	* 4.2	* 4.6	* 4.2	4.9
Max Green Setting (Gmax), s	* 7.8	27.0	9.8	* 34	* 5.6	* 30	* 5	38.3
Max Q Clear Time (g_c+I1), s	5.3	5.3	6.1	15.9	2.8	5.9	2.4	15.4
Green Ext Time (p_c), s	0.1	0.9	0.1	5.8	0.0	0.7	0.0	6.5

Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection: 1: University Avenue & Kings Road

Movement	SW
Directions Served	LR
Maximum Queue (ft)	55
Average Queue (ft)	25
95th Queue (ft)	48
Link Distance (ft)	723
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	219	298	258	109	275	268	75	138	130	197	208	31
Average Queue (ft)	48	143	134	41	133	141	26	59	34	112	75	6
95th Queue (ft)	129	234	230	95	209	224	58	117	77	182	160	25
Link Distance (ft)		1857	1857		1852	1852		1692			412	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)	0	20			2			9	0	21	5	
Queuing Penalty (veh)	0	9			1			8	0	26	12	

Network Summary

Network wide Queuing Penalty: 56

Intersection: 1: University Avenue & Kings Road

Movement	SW
Directions Served	LR
Maximum Queue (ft)	52
Average Queue (ft)	20
95th Queue (ft)	45
Link Distance (ft)	723
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: University Avenue & Grangeville Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	R	L	T	R
Maximum Queue (ft)	46	317	337	248	285	191	49	226	130	117	142	31
Average Queue (ft)	12	177	169	77	140	141	14	60	45	63	68	7
95th Queue (ft)	35	276	272	150	212	202	42	146	90	97	116	28
Link Distance (ft)		1857	1857		1852	1852		1692			412	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			190			100		75	100		80
Storage Blk Time (%)		25			1			7	1	0	8	
Queuing Penalty (veh)		3			2			8	1	1	9	

Network Summary

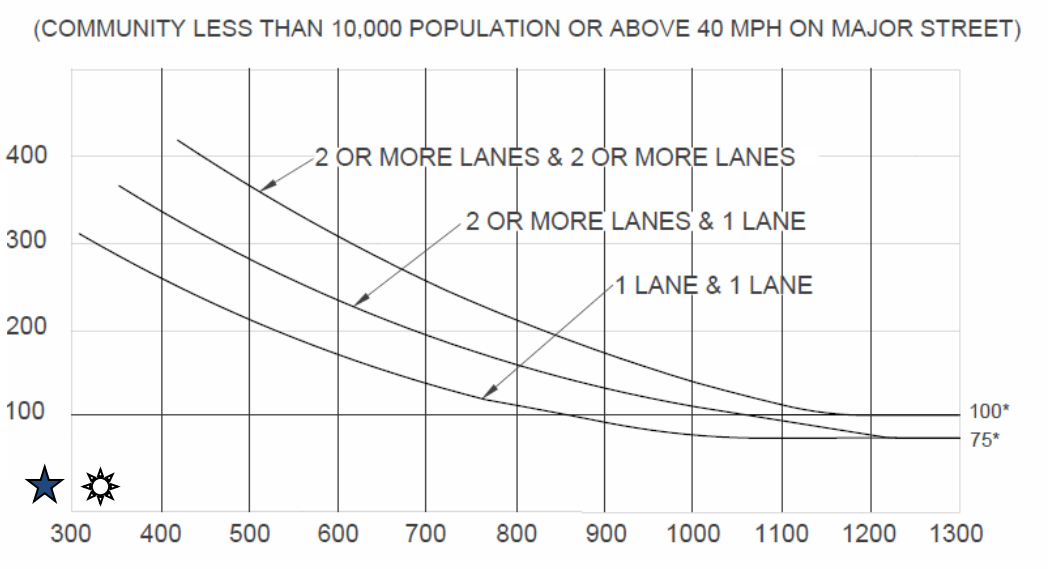
Network wide Queuing Penalty: 23

Appendix I: Traffic Signal Warrants

Warrant 3: Peak Hour (Rural)

Existing Traffic Conditions
1. University Avenue / Kings Road
AM (PM) Peak Hour

Kings Road Highest Approach Volume = 15 (15) VPH



University Avenue Total of Both Approaches =

336 (205) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

JLB TRAFFIC ENGINEERING, INC.

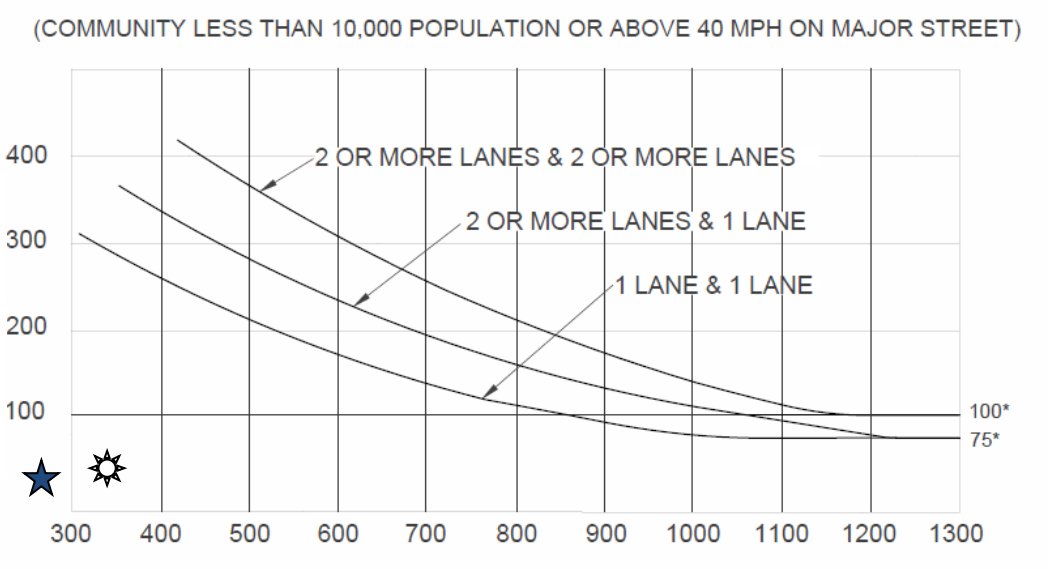
www.JLBtraffic.com
info@JLBtraffic.com

516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
(559) 570-8991

Warrant 3: Peak Hour (Rural)

Existing plus Project Traffic Conditions
1. University Avenue / Kings Road
AM (PM) Peak Hour

Kings Road Highest Approach Volume = 42 (32) VPH



University Avenue Total of Both Approaches =

348 (237) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

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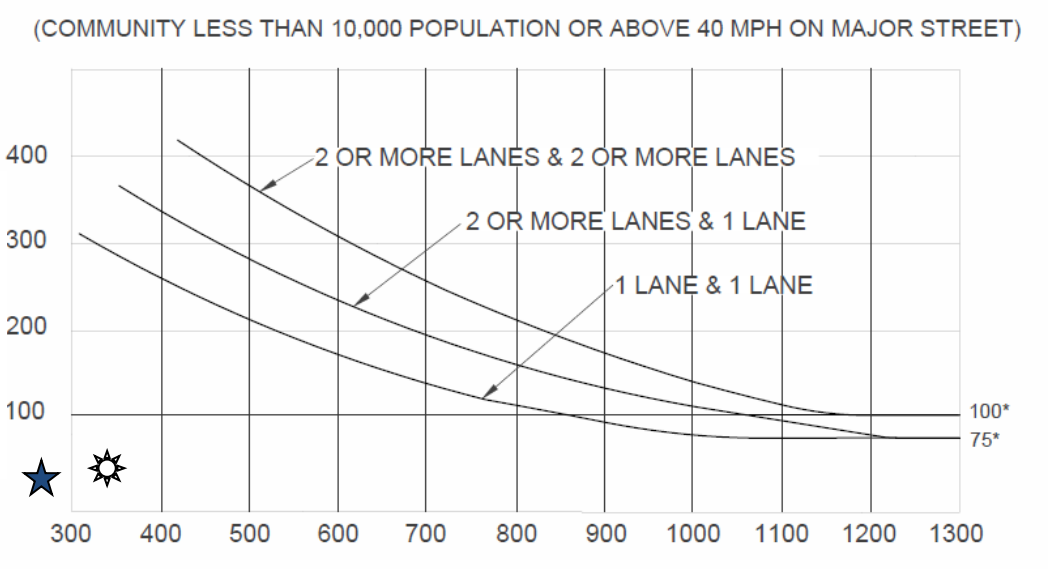
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Warrant 3: Peak Hour (Rural)

Near Term plus Project Traffic Conditions
1. University Avenue / Kings Road
AM (PM) Peak Hour

Kings Road Highest Approach Volume = 42 (32) VPH



University Avenue Total of Both Approaches =

348 (237) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Not Met

PM Peak Hour – Signal Warrant is Not Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

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516 W. Shaw Ave., Ste. 103

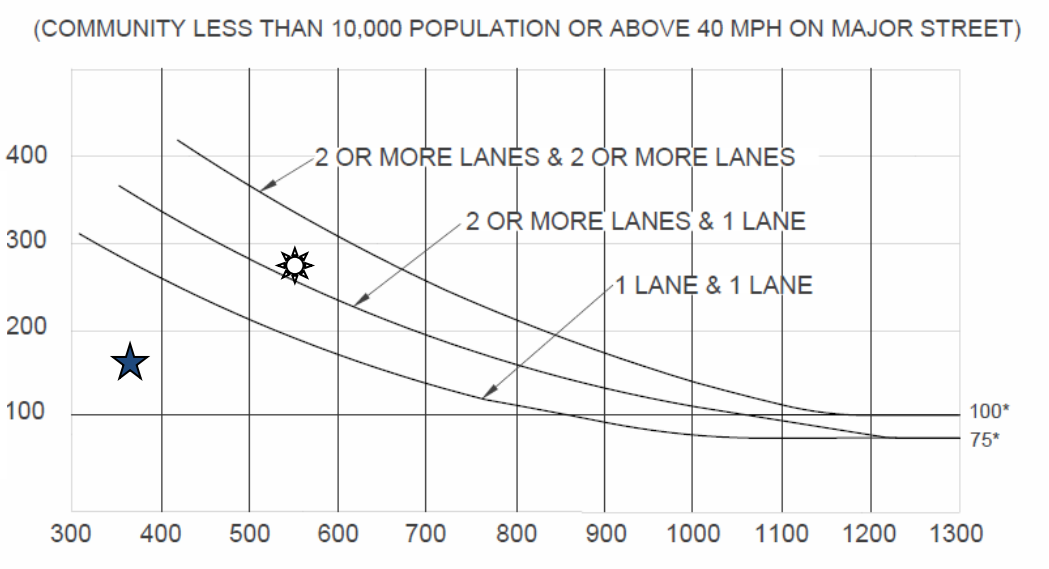
Fresno, CA 93704

(559) 570-8991

Warrant 3: Peak Hour (Rural)

Cumulative Year 2040 plus Project Traffic Conditions
1. University Avenue / Kings Road
AM (PM) Peak Hour

Kings Road Highest Approach Volume = 280 (163) VPH



University Avenue Total of Both Approaches = 550 (366) VPH

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

AM Peak Hour – Signal Warrant is Met
PM Peak Hour – Signal Warrant is Not Met

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

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August 23, 2023

Gabrielle de Silva Myers
Senior Planner
City of Hanford
317 N. Douty Street
Hanford, CA 93230

Via Email Only: gmyers@cityofhanfordca.com

Subject: ***Addendum Letter for the Revised Traffic Impact Analysis Report prepared for Liberty Pointe located North of Grangeville Boulevard and West of the BN&SF Railroad in the City of Hanford (JLB Project 047-001)***

Dear Mrs. Myers,

JLB Traffic Engineering, Inc. (JLB) has prepared this Addendum Letter to the Revised Traffic Impact Analysis (TIA) Report for Liberty Pointe (Project) located north of Grangeville Boulevard and west of BN&SF railroad in the City of Hanford. The Revised Liberty Pointe TIA, dated June 30, 2021, was previously completed based on the traffic operations of the Original Project Site Plan which included 76 single-family residential dwelling units. The Updated Project Site Plan has decreased the number of single-family residential dwelling units to 55 and eliminated access to Kings Road via Bristol Lane. As a result, the trip generation and project only trips are different than what was previously analyzed. This addendum letter has been prepared at the request of the City of Hanford to analyze the difference in traffic generation and operations between the Original Project Site Plan and the Updated Project Site Plan.

Project Description

The Original Project Site Plan proposed to develop approximately 8.72 acres with 76 single family residential units located north of Grangeville Boulevard and west of BN&SF railroad in the City of Hanford. The Updated Project Site Plan proposes to develop 55 single family residential units on approximately 8.72 acres. The Updated Project Site Plan also eliminated access to Kings Road via Bristol Lane. The Update Project Site Plan can be found in Exhibit A.

Original Project Trip Generation

The trip generation rates for the Original Project Site Plan were obtained from the Revised Liberty Pointe TIA dated June 30, 2021. Table I presents the total trip generation for the Original Project Site Plan with trip generation rates for single-family detached housing (210). Per the Revised Liberty Pointe TIA, the Original Project Site Plan was estimated to generate approximately 717 daily, 56 AM peak hour and 75 PM peak hour driveway trips.

Table I: Original Project Trip Generation

Land Use (ITE Code)	*Size*	*Unit*	*Daily*		*AM (7-9) Peak Hour*						*PM (4-6) Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In %*	*Out %*	*In*	*Out*	*Total*	*Trip Rate*	*In %*	*Out %*	*In*	*Out*	*Total*
Single-Family Detached Housing (210)	76	d.u.	9.44	717	0.74	25	75	14	42	56	0.99	63	37	47	28	75
Total Project Driveway Trips				**717**				**14**	**42**	**56**				**47**	**28**	**75**

Note: d.u. = dwelling units

Updated Project Trip Generation

The trip generation rates for the Updated Project Site Plan were obtained from the 11th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table I presents the total trip generation for the updated Project Site Plan with trip generation rates for single-family detached housing (210). Per the ITE, the Updated Project Site Plan is estimated to generate approximately 519 daily, 39 AM peak hour and 52 PM peak hour driveway trips.

Table II: Updated Project Trip Generation

Land Use (ITE Code)	*Size*	*Unit*	*Daily*		*AM (7-9) Peak Hour*						*PM (4-6) Peak Hour*					
			Rate	*Total*	*Trip Rate*	*In %*	*Out %*	*In*	*Out*	*Total*	*Trip Rate*	*In %*	*Out %*	*In*	*Out*	*Total*
Single-Family Detached Housing (210)	55	d.u.	9.43	519	0.70	26	74	10	29	39	0.94	63	37	33	19	52
Total Project Driveway Trips				**519**				**10**	**29**	**39**				**33**	**19**	**52**

Note: d.u. = dwelling units

Difference in Trip Generation

Compared to the Revised Liberty Pointe TIA, dated June 30, 2021, the Updated Project Site Plan is estimated to yield a lower trip generation by 198 daily trips, 17 AM peak hour trips and 23 PM peak hour trips. The difference in trip generation between the Updated Project Site Plan and the Original Project Site Plan analyzed in the Revised Liberty Pointe TIA is summarized in Table III.

Table III: Difference in Trip Generation

Land Use (ITE Code)	*Daily*	*AM (7-9) Peak Hour*			*PM (4-6) Peak Hour*		
	Total	*In*	*Out*	*Total*	*In*	*Out*	*Total*
Original Project Site	717	14	42	56	47	28	75
Updated Project Site	519	10	29	39	33	19	52
Total Project Driveway Trips	**198**	**4**	**13**	**17**	**14**	**9**	**23**

Project Trip Distribution

The trip distribution assumptions are based on the same patterns as previously analyzed. The previously analyzed trip distribution assumptions were developed based on existing travel patterns, the existing roadway network, engineering judgment, data provided by the developer, knowledge of the study area, existing residential and commercial densities, and the City of Hanford 2035 General Plan Circulation Element in the vicinity of the Project site. The elimination of access to Kings Road via Bristol Lane does not change the trip distribution to the study intersections. The daily trips on segments of Kings Road were altered, but no segment of Kings Road is projected to receive more traffic than previously analyzed. In fact, daily and peak hour volumes to the study facilities will be decreased when compared to the previously analyzed project. The Updated Project Only Trips can be found in Exhibit B.

Conclusions

The Original Project Site Plan resulted in less than significant traffic impacts in the Revised Liberty Pointe TIA dated June 30, 2021. The Updated Project Site Plan contains fewer dwelling units and no access to Kings Road via Bristol Lane. Access to Kings Road via Bristol Lane does not change the trip distribution to the study intersections. When compared to the Original Project Site Plan, the Updated Project Site Plan is estimated to yield a lower trip generation by approximately 198 daily, 17 AM peak hour and 23 PM peak hour driveway trips. As a result, the Original Project Site Plan analyzed in the Revised Liberty Pointe TIA can be considered a worst-case scenario, and thus, there is no need to redo the LOS analysis of the TIA.

If you have any questions or require additional information, please contact me via phone at (559) 570-8991, or via email at jbenavides@jlbtraffic.com.

Sincerely,



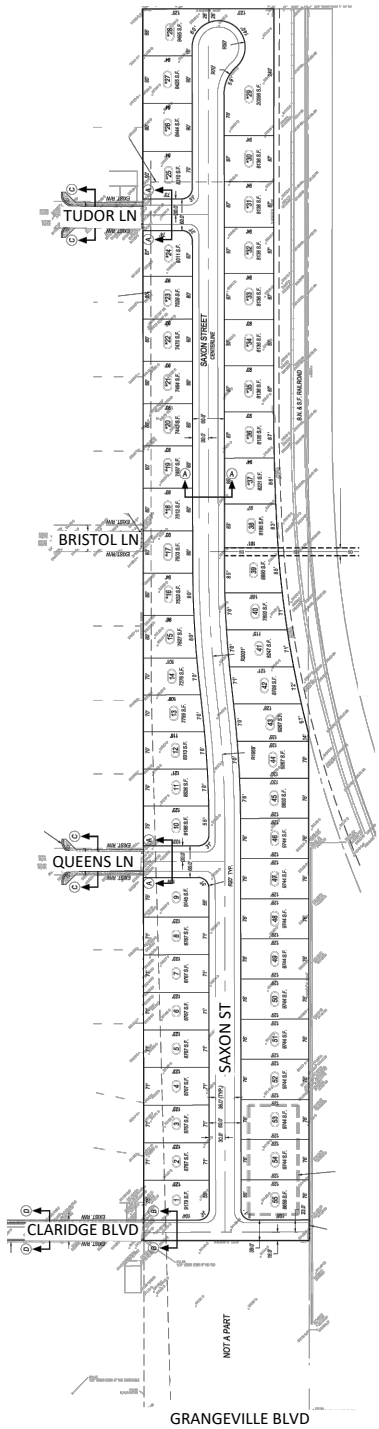
Jose Luis Benavides, P.E., T.E.
President

APPROVED
By Lisa Dock at 3:16 pm, Aug 23, 2023

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Fresno, CA 93704
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Liberty Pointe - City of Hanford
Updated Project Site Plan

Exhibit A

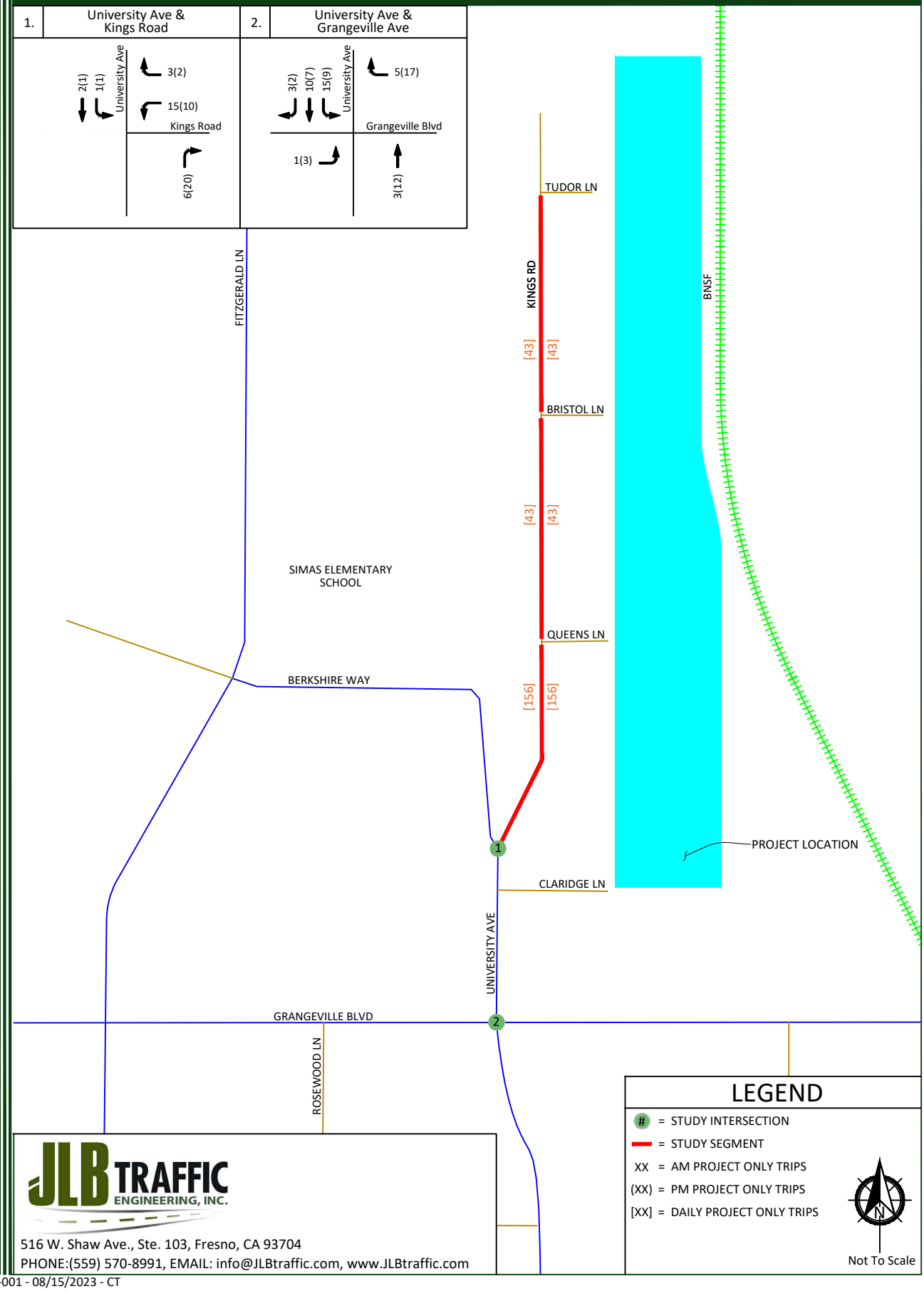


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516 W. Shaw Ave., Ste. 103, Fresno, CA 93704
PHONE:(559) 570-8991, EMAIL: info@JLBtraffic.com, www.JLBtraffic.com

Not To Scale

Liberty Pointe - City of Hanford
Updated Project Only Trips

Exhibit B



LEGEND

- # = STUDY INTERSECTION
- = STUDY SEGMENT
- XX = AM PROJECT ONLY TRIPS
- (XX) = PM PROJECT ONLY TRIPS
- [XX] = DAILY PROJECT ONLY TRIPS

N

Not To Scale

JLB TRAFFIC ENGINEERING, INC.

516 W. Shaw Ave., Ste. 103, Fresno, CA 93704

PHONE:(559) 570-8991, EMAIL: info@JLBtraffic.com, www.JLBtraffic.com

Received: February 25, 2021

Please notify developer that AT&T will use fiber cable to feed into this new development, and that feed will come from the southernmost entrance road.
Please also tell them that we will need the joint trench location (not composite) as soon as it's available. I am their contact.
We will ask for them to install conduit in the joint trench.

Thank you.

Michael Wilson
Manager / Engineer
(559) 739-6423

Consultation Notices Received from Initial Early Consultation (December 2020)

DEPARTMENT OF TRANSPORTATION
DISTRICT 6 OFFICE
1352 WEST OLIVE AVENUE
P.O. BOX 12616
FRESNO, CA 93778-2616
PHONE (559) 445-5421
FAX (559) 488-4088
TTY 711
www.dot.ca.gov

Making Conservation
a California Way of Life

December 17, 2020

06-KIN-198-17.627
Rezone #2020-01 Tentative Tract #930
Planned Unit Development

SENT VIA EMAIL

Gabrielle Myers
Community Development Department
317 N. Douty Street
Hanford, California 93230

Dear Gabrielle Myers:

Thank you for the opportunity to review the Planned Unit Development (Project). The Project proposes to rezone and subdivide a 14.86-acre property into a planned 76 single-family residential lots. The project is approximately 1.8 miles North of State Route (SR) 198 in the City of Hanford, in Kings County.

Caltrans provides the *following comments* consistent with the State's smart mobility goals that support a vibrant economy and sustainable communities:

1. Alternative transportation policies should be applied to the development. An assessment of multi-modal facilities should be conducted to develop an integrated multi-modal transportation system to serve and help alleviate traffic congestion caused by the project and related development in this area of the City. The assessment should include the following:

    a. Pedestrian walkways should link this proposal to an internal project area walkway, transit facilities, as well as other walkways in the surrounding area.

    b. The project should consider bicycles as an alternative mode of transportation and offer internal amenities to encourage bicycle use which could include parking and security.

c. If transit is not available within ¼-mile of the site, transit should be extended to provide services to what will be a high activity center.

2. Consider bicyclist and pedestrian comfort when designing facilities.

3. Promote awareness of and connections to key bicycling and walking routes.

If you have any further questions, contact Nicholas Isla at (559) 444-2583 or Nicholas.isla@dot.ca.gov.

Sincerely,



DAVID PADILLA, Branch Chief
Transportation Planning - North

COUNTY OF KINGS

DEPARTMENT OF PUBLIC WORKS

Kings County Government Center
1400 W. Lacey Boulevard
Hanford, CA 93230
Phone: (559) 582-3211
Extension: 2690
FAX: (559) 582-2506

Kevin J. McAlister, Director

December 18, 2020

Gabrielle Myers
City of Hanford
317 N. Douty St.
Hanford, CA. 93230

Hello Gabrielle,

In the case that Kings Road, Tudor Lane, etc. does not annex to the City of Hanford, Kings County Public Works would recommend that Kings Road, Tudor Lane, Bristol Lane, Queens Lane and Claridge Lane be reconstructed to accommodate the increased traffic volumes. Conversely, a discussion over maintenance responsibility between Kings County and The City of Hanford, for all roads serving the new development shall be entered.

Thank you for the opportunity to comment on this project.

Regards,

Michael Hawkins
Kings County Public Works

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

December 14, 2020

Gabrielle Myers
City of Hanford
Community Development Department
319 North Douty Street
Hanford, CA 93230

Project: Tentative Tract 930, Planned Unit Development 220-01, Rezone 2020-01

District CEQA Reference No: 20201041

Dear Ms. Myers:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the project referenced above from the City of Hanford (City). The project consists of changing the zoning on a portion of the property, subdividing a 14.86-acre property into 76 single-family residential lots with a Planned Unit Development to allow deviations from the standards. (Project). The Project is located east of Kings Road, North of Grangeville Blvd, in Hanford, CA

Project Scope

The Project consists of a change to the zoning on a portion of property from R-L-18 Low-Density Residential to R-L-5 Low-Density Residential and to subdivide a 14.86-acre property into 76 single-family residential lots with a Planned Unit Development overlay in an area proposed to be rezoned. The Planned Unit Development will allow deviations from the standards of the R-L-5 Low-Density Residential zone district for a single-family residential subdivision. Deviations include private streets, reduced lot sizes and reduced rear-yard setbacks for two-story homes.

Based on information provided to the District, Project specific annual emissions from construction and operation emissions of criteria pollutants are not expected to exceed any of the following District significance thresholds: 100 tons per year of carbon monoxide (CO), 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), 27 tons per year of oxides of sulfur (SOx), 15 tons per year of particulate matter of 10 microns or less in size (PM10), or 15 tons per year of particulate matter of 2.5 microns or less in size (PM2.5).

Other potential significant air quality impacts related to Toxic Air Contaminants (see information below under Health Risk Assessment), Ambient Air Quality Standards,

Samir Sheikh
Executive Director/Air Pollution Control Officer

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Modesto, CA 95356-8718
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Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: (661) 392-5500 FAX: (661) 392-5585

www.valleyair.org www.healthyairliving.com

Printed on recycled paper.

Hazards and Odors, may require assessments and mitigation. More information can be found in the District's Guidance for Assessing and Mitigating Air Quality Impacts at: https://www.valleyair.org/transportation/GAMAQI_12-26-19.pdf

The District offers the following comments:

The District recommends that a more detailed preliminary review of the Project be conducted for the Project's construction and operational emissions. The additional environmental review of the Project's potential impact on air quality should consider the following items:

1) Project Related Criteria Pollutant Emissions

1a) Construction Emissions:

Although the construction-related emissions are expected to have a less than significant impact, the District suggests that the City advise project proponents with construction-related exhaust emissions and activities resulting in less than significant impact on air quality to utilize the cleanest reasonably available off-road construction fleets and practices (i.e. eliminating unnecessary idling) to further reduce impacts from construction-related exhaust emissions and activities.

1b) Health Risk Screening/Assessment

Located directly west of the Project, there are sensitive receptors (i.e. Simas Elementary School and residential units). The Health Risk Assessment should evaluate the risk associated with sensitive receptors in the area and mitigate any potentially significant risk to help limit emission exposure to sensitive receptors.

A Health Risk Screening/Assessment identifies potential Toxic Air Contaminants (TAC's) impact on surrounding sensitive receptors such as hospitals, daycare centers, schools, work-sites, and residences. TAC's are air pollutants identified by the Office of Environmental Health Hazard Assessment/California Air Resources Board (OEHHA/CARB) that pose a present or potential hazard to human health. A common source of TACs can be attributed to diesel exhaust emitted from both mobile and stationary sources. List of TAC's identified by OEHHA/CARB can be found at: https://ww2.arb.ca.gov/resources/documents/carb-identified-toxic-air-contaminants

The District recommends the development project(s) be evaluated for potential health impacts to surrounding receptors (on-site and off-site) resulting from operational and multi-year construction TAC emissions.

i) The District recommends conducting a screening analysis that includes all sources of emissions. A screening analysis is used to identify projects which may have a significant health impact. A prioritization, using the latest approved California Air Pollution Control Officer's Association (CAPCOA) methodology, is the recommended screening method. A prioritization score of 10 or greater is considered to be significant and a refined Health Risk Assessment (HRA) should be performed.

   For your convenience, the District's prioritization calculator can be found at: http:www.valleyair.org/busind/pto/emission_factors/Criteria/Toxics/Utilities/PRIORITIZATION%20RMR%202016.XLS.

ii) The District recommends a refined HRA for development projects that result in a prioritization score of 10 or greater. Prior to performing an HRA, it is recommended that development project applicants contact the District to review the proposed modeling protocol. A development project would be considered to have a significant health risk if the HRA demonstrates that the project related health impacts would exceed the Districts significance threshold of 20 in a million for carcinogenic risk and 1.0 for the Acute and Chronic Hazard Indices, and would trigger all feasible mitigation measures. The District recommends that development projects which result in a significant health risk not be approved.

For HRA submittals, please provide the following information electronically to the District for review:

- HRA AERMOD model files
- HARP2 files
- Summary of emissions source locations, emissions rates, and emission factor calculations and methodology.

More information on toxic emission factors, prioritizations and HRAs can be obtained by:

- E-Mailing inquiries to: hramodeler@valleyair.org; or
- Contacting the District by phone for assistance at (559) 230-6000; or
- Visiting the Districts website (Modeling Guidance) at: http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

1c) Ambient Air Quality Analysis

An ambient air quality analysis (AAQA) uses air dispersion modeling to determine if emissions increases from a project will cause or contribute to a violation of the ambient air quality standards. For development projects the District recommends that an AAQA be performed for the project if emissions exceed 100 pounds per day of any pollutant.

If an AAQA is performed, the analysis should include emissions from both project specific permitted and non-permitted equipment and activities. The District recommends consultation with District staff to determine the appropriate model and input data to use in the analysis.

Specific information for assessing significance, including screening tools and modeling guidance is available online at the District's website www.valleyair.org/ceqa.

2) Solar Deployment in the Community

It is the policy of the State of California that renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers by December 31, 2045. While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, the production of solar energy is contributing to improving air quality and public health. The District suggests that the City of Hanford consider the feasibility of incorporating solar power systems, as an emission reduction strategy for this Project.

3) Clean Lawn and Garden Equipment in the Community

Since the Project consists of residential development, gas-powered residential lawn and garden equipment have the potential to result in an increase of NOx and PM2.5 emissions. Utilizing electric lawn care equipment can provide residents with immediate economic, environmental, and health benefits. The District recommends the Project proponent consider the District's Clean Green Yard Machines (CGYM) program which provides incentive funding for replacement of existing gas powered lawn and garden equipment. More information on the District CGYM program and funding can be found at: http://www.valleyair.org/grants/cgym.htm
and http://valleyair.org/grants/cgym-commercial.htm.

4) District Rules and Regulation

The District issues permits for many types of air pollution sources and regulates some activities not requiring permits. A project subject to District rules and regulation would

reduce its impacts on air quality through compliance with regulatory requirements. In general, a regulation is a collection of rules, each of which deals with a specific topic. Here are a couple of example, Regulation II (Permits) deals with permitting emission sources and includes rules such as District permit requirements (Rule 2010), and New and Modified Stationary Source Review (Rule 2201).

4a) District Rule 9510 (Indirect Source Review)

The purpose of District Rule 9510 (Indirect Source Review) is to reduce the growth in both NOx and PM10 emissions associated with development and transportation projects from mobile and area sources associated with construction and operation of development projects. The rule encourages clean air design elements to be incorporated into the development project. In case the proposed project clean air design elements are insufficient to meet the targeted emission reductions, the rule requires developers to pay a fee used to fund projects to achieve off-site emissions reductions.

The proposed Project is subject to District Rule 9510 because it will receive a project-level discretionary approval from a public agency and will equal or exceed 50 residential units. When subject to the rule, an Air Impact Assessment (AIA) application is required no later than applying for project-level approval from a public agency. In this case, if not already done, please inform the project proponent to immediately submit an AIA application to the District to comply with District Rule 9510.

An AIA application is required and the District recommends that demonstration of compliance with District Rule 9510, before issuance of the first building permit, be made a condition of Project approval.

Information about how to comply with District Rule 9510 can be found online at: http://www.valleyair.org/ISR/ISRHome.htm.

The AIA application form can be found online at: http://www.valleyair.org/ISR/ISRFormsAndApplications.htm

4b) District Regulation VIII (Fugitive PM10 Prohibitions)

The Project will be subject to Regulation VIII. The project proponent is required to submit a Construction Notification Form or submit and receive approval of a Dust Control Plan prior to construction. Information on how to comply with Regulation VIII can be found online at: http://www.valleyair.org/busind/comply/PM10/compliance_PM10.htm.

4c) Other District Rules and Regulations

The Project may also be subject to the following District rules: Regulation VIII, (Fugitive PM10 Prohibitions), and Rule 4601 (Architectural Coatings). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants).

The list of rules below is neither exhaustive nor exclusive. Current District rules can be found online at: www.valleyair.org/rules/1ruleslist.htm. To identify other District rules or regulations that apply to this Project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (559) 230-5888.

5) Potential Air Quality Improvement Measures

The District encourages the following air quality improvement measures to further reduce Project related emissions from construction and operation. A complete list of potential air quality improvement measures can be found online at: http://www.valleyair.org/cegaconnected/aqimeasures.aspx.

a. Improve Walkability Design – This measure is to improve design elements to enhance walkability and connectivity. Improved street network characteristics within a neighborhood include street accessibility, usually measured in terms of average block size, proportion of four-way intersections, or number of intersections per square mile. Design is also measured in terms of sidewalk coverage, building setbacks, street widths, pedestrian crossings, presence of street trees, and a host of other physical variables that differentiate pedestrian-oriented environments from auto-oriented environments.

b. Improve Destination Accessibility – This measure is to locate the project in an area with high accessibility to destinations. Destination accessibility is measured in terms of the number of jobs or other attractions reachable within a given travel time, which tends to be highest at central locations and lowest at peripheral ones. The location of the project also increases the potential for pedestrians to walk and bike to these destinations and therefore reduces the (vehicle miles traveled) VMT.

c. Increase Transit Accessibility – This measure is to locate the project with high density near transit which will facilitate the use of transit by people traveling to or from the Project site. The use of transit results in a mode shift and therefore reduced VMT. A project with a residential/commercial center designed around

a rail or bus station, is called a transit-oriented development (TOD). The project description should include, at a minimum, the following design features:

- A transit station/stop with high-quality, high-frequency bus service located within a 5-10 minute walk (or roughly ¼ mile from stop to edge of development), and/or
- A rail station located within a 20 minute walk (or roughly ½ mile from station to edge of development)
- Fast, frequent, and reliable transit service connecting to a high percentage of regional destinations
- Neighborhood designed for walking and cycling

6) <u>District Comment Letter</u>

The District recommends that a copy of the District's comments be provided to the Project proponent.

If you have any questions or require further information, please contact Carol Flores by e-mail at carol.flores@valleyair.org or by phone at (559) 230-5935.

Sincerely,



For Arnaud Marjollet
Director of Permit Services

AM: cf

Pacific Gas and Electric Company

Plan Review Team
Land Management

PGEPlanReview@pge.com

6111 Bollinger Canyon Road 3370A
San Ramon, CA 94583

February 25, 2021

Diana Black
City of Hancock
317 N Douty St
Hanford, CA 93230

Ref: Gas and Electric Transmission and Distribution

Dear Diana Black,

Thank you for submitting the Tentative Tract 930 plans for our review. PG&E will review the submitted plans in relationship to any existing Gas and Electric facilities within the project area. If the proposed project is adjacent/or within PG&E owned property and/or easements, we will be working with you to ensure compatible uses and activities near our facilities.

Attached you will find information and requirements as it relates to Gas facilities (Attachment 1) and Electric facilities (Attachment 2). Please review these in detail, as it is critical to ensure your safety and to protect PG&E's facilities and its existing rights.

Below is additional information for your review:

1. This plan review process does not replace the application process for PG&E gas or electric service your project may require. For these requests, please continue to work with PG&E Service Planning: https://www.pge.com/en_US/business/services/building-and-renovation/overview/overview.page.

2. If the project being submitted is part of a larger project, please include the entire scope of your project, and not just a portion of it. PG&E's facilities are to be incorporated within any CEQA document. PG&E needs to verify that the CEQA document will identify any required future PG&E services.

3. An engineering deposit may be required to review plans for a project depending on the size, scope, and location of the project and as it relates to any rearrangement or new installation of PG&E facilities.

Any proposed uses within the PG&E fee strip and/or easement, may include a California Public Utility Commission (CPUC) Section 851 filing. This requires the CPUC to render approval for a conveyance of rights for specific uses on PG&E's fee strip or easement. PG&E will advise if the necessity to incorporate a CPUC Section 851filing is required.

This letter does not constitute PG&E's consent to use any portion of its easement for any purpose not previously conveyed. PG&E will provide a project specific response as required.

Sincerely,

Plan Review Team
Land Management

Attachment 1 – Gas Facilities

There could be gas transmission pipelines in this area which would be considered critical facilities for PG&E and a high priority subsurface installation under California law. Care must be taken to ensure safety and accessibility. So, please ensure that if PG&E approves work near gas transmission pipelines it is done in adherence with the below stipulations. Additionally, the following link provides additional information regarding legal requirements under California excavation laws: https://www.usanorth811.org/images/pdfs/CA-LAW-2018.pdf

1. Standby Inspection: A PG&E Gas Transmission Standby Inspector must be present during any demolition or construction activity that comes within 10 feet of the gas pipeline. This includes all grading, trenching, substructure depth verifications (potholes), asphalt or concrete demolition/removal, removal of trees, signs, light poles, etc. This inspection can be coordinated through the Underground Service Alert (USA) service at 811. A minimum notice of 48 hours is required. Ensure the USA markings and notifications are maintained throughout the duration of your work.

2. Access: At any time, PG&E may need to access, excavate, and perform work on the gas pipeline. Any construction equipment, materials, or spoils may need to be removed upon notice. Any temporary construction fencing installed within PG&E's easement would also need to be capable of being removed at any time upon notice. Any plans to cut temporary slopes exceeding a 1:4 grade within 10 feet of a gas transmission pipeline need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

3. Wheel Loads: To prevent damage to the buried gas pipeline, there are weight limits that must be enforced whenever any equipment gets within 10 feet of traversing the pipe.

Ensure a list of the axle weights of all equipment being used is available for PG&E's Standby Inspector. To confirm the depth of cover, the pipeline may need to be potholed by hand in a few areas.

Due to the complex variability of tracked equipment, vibratory compaction equipment, and cranes, PG&E must evaluate those items on a case-by-case basis prior to use over the gas pipeline (provide a list of any proposed equipment of this type noting model numbers and specific attachments).

No equipment may be set up over the gas pipeline while operating. Ensure crane outriggers are at least 10 feet from the centerline of the gas pipeline. Transport trucks must not be parked over the gas pipeline while being loaded or unloaded.

4. Grading: PG&E requires a minimum of 36 inches of cover over gas pipelines (or existing grade if less) and a maximum of 7 feet of cover at all locations. The graded surface cannot exceed a cross slope of 1:4.

5. Excavating: Any digging within 2 feet of a gas pipeline must be dug by hand. Note that while the minimum clearance is only 12 inches, any excavation work within 24 inches of the edge of a pipeline must be done with hand tools. So to avoid having to dig a trench entirely with hand tools, the edge of the trench must be over 24 inches away. (Doing the math for a 24 inch

wide trench being dug along a 36 inch pipeline, the centerline of the trench would need to be at least 54 inches [24/2 + 24 + 36/2 = 54] away, or be entirely dug by hand.)

Water jetting to assist vacuum excavating must be limited to 1000 psig and directed at a 40° angle to the pipe. All pile driving must be kept a minimum of 3 feet away.

Any plans to expose and support a PG&E gas transmission pipeline across an open excavation need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

6. Boring/Trenchless Installations: PG&E Pipeline Services must review and approve all plans to bore across or parallel to (within 10 feet) a gas transmission pipeline. There are stringent criteria to pothole the gas transmission facility at regular intervals for all parallel bore installations.

For bore paths that cross gas transmission pipelines perpendicularly, the pipeline must be potholed a minimum of 2 feet in the horizontal direction of the bore path and a minimum of 12 inches in the vertical direction from the bottom of the pipe with minimum clearances measured from the edge of the pipe in both directions. Standby personnel must watch the locator trace (and every ream pass) the path of the bore as it approaches the pipeline and visually monitor the pothole (with the exposed transmission pipe) as the bore traverses the pipeline to ensure adequate clearance with the pipeline. The pothole width must account for the inaccuracy of the locating equipment.

7. Substructures: All utility crossings of a gas pipeline should be made as close to perpendicular as feasible (90° +/- 15°). All utility lines crossing the gas pipeline must have a minimum of 12 inches of separation from the gas pipeline. Parallel utilities, pole bases, water line ‘kicker blocks’, storm drain inlets, water meters, valves, back pressure devices or other utility substructures are not allowed in the PG&E gas pipeline easement.

If previously retired PG&E facilities are in conflict with proposed substructures, PG&E must verify they are safe prior to removal. This includes verification testing of the contents of the facilities, as well as environmental testing of the coating and internal surfaces. Timelines for PG&E completion of this verification will vary depending on the type and location of facilities in conflict.

8. Structures: No structures are to be built within the PG&E gas pipeline easement. This includes buildings, retaining walls, fences, decks, patios, carports, septic tanks, storage sheds, tanks, loading ramps, or any structure that could limit PG&E’s ability to access its facilities.

9. Fencing: Permanent fencing is not allowed within PG&E easements except for perpendicular crossings which must include a 16 foot wide gate for vehicular access. Gates will be secured with PG&E corporation locks.

10. Landscaping: Landscaping must be designed to allow PG&E to access the pipeline for maintenance and not interfere with pipeline coatings or other cathodic protection systems. No trees, shrubs, brush, vines, and other vegetation may be planted within the easement area. Only those plants, ground covers, grasses, flowers, and low-growing plants that grow unsupported to a maximum of four feet (4’) in height at maturity may be planted within the easement area.

11. Cathodic Protection: PG&E pipelines are protected from corrosion with an “Impressed Current” cathodic protection system. Any proposed facilities, such as metal conduit, pipes, service lines, ground rods, anodes, wires, etc. that might affect the pipeline cathodic protection system must be reviewed and approved by PG&E Corrosion Engineering.

12. Pipeline Marker Signs: PG&E needs to maintain pipeline marker signs for gas transmission pipelines in order to ensure public awareness of the presence of the pipelines. With prior written approval from PG&E Pipeline Services, an existing PG&E pipeline marker sign that is in direct conflict with proposed developments may be temporarily relocated to accommodate construction work. The pipeline marker must be moved back once construction is complete.

13. PG&E is also the provider of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E’s facilities must be reviewed and approved by PG&E to ensure that no impact occurs which may endanger the safe operation of its facilities.

Attachment 2 – Electric Facilities

It is PG&E's policy to permit certain uses on a case by case basis within its electric transmission fee strip(s) and/or easement(s) provided such uses and manner in which they are exercised, will not interfere with PG&E's rights or endanger its facilities. Some examples/restrictions are as follows:

1. Buildings and Other Structures: No buildings or other structures including the foot print and eave of any buildings, swimming pools, wells or similar structures will be permitted within fee strip(s) and/or easement(s) areas. PG&E's transmission easement shall be designated on subdivision/parcel maps as "**RESTRICTED USE AREA – NO BUILDING."**

2. Grading: Cuts, trenches or excavations may not be made within 25 feet of our towers. Developers must submit grading plans and site development plans (including geotechnical reports if applicable), signed and dated, for PG&E's review. PG&E engineers must review grade changes in the vicinity of our towers. No fills will be allowed which would impair ground-to-conductor clearances. Towers shall not be left on mounds without adequate road access to base of tower or structure.

3. Fences: Walls, fences, and other structures must be installed at locations that do not affect the safe operation of PG&'s facilities. Heavy equipment access to our facilities must be maintained at all times. Metal fences are to be grounded to PG&E specifications. No wall, fence or other like structure is to be installed within 10 feet of tower footings and unrestricted access must be maintained from a tower structure to the nearest street. Walls, fences and other structures proposed along or within the fee strip(s) and/or easement(s) will require PG&E review; submit plans to PG&E Centralized Review Team for review and comment.

4. Landscaping: Vegetation may be allowed; subject to review of plans. On overhead electric transmission fee strip(s) and/or easement(s), trees and shrubs are limited to those varieties that do not exceed 15 feet in height at maturity. PG&E must have access to its facilities at all times, including access by heavy equipment. No planting is to occur within the footprint of the tower legs. Greenbelts are encouraged.

5. Reservoirs, Sumps, Drainage Basins, and Ponds: Prohibited within PG&E's fee strip(s) and/or easement(s) for electric transmission lines.

6. Automobile Parking: Short term parking of movable passenger vehicles and light trucks (pickups, vans, etc.) is allowed. The lighting within these parking areas will need to be reviewed by PG&E; approval will be on a case by case basis. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications. Blocked-up vehicles are not allowed. Carports, canopies, or awnings are not allowed.

7. Storage of Flammable, Explosive or Corrosive Materials: There shall be no storage of fuel or combustibles and no fueling of vehicles within PG&E's easement. No trash bins or incinerators are allowed.

8. Streets and Roads: Access to facilities must be maintained at all times. Street lights may be allowed in the fee strip(s) and/or easement(s) but in all cases must be reviewed by PG&E for proper clearance. Roads and utilities should cross the transmission easement as nearly at right angles as possible. Road intersections will not be allowed within the transmission easement.

9. Pipelines: Pipelines may be allowed provided crossings are held to a minimum and to be as nearly perpendicular as possible. Pipelines within 25 feet of PG&E structures require review by PG&E. Sprinklers systems may be allowed; subject to review. Leach fields and septic tanks are not allowed. Construction plans must be submitted to PG&E for review and approval prior to the commencement of any construction.

10. Signs: Signs are not allowed except in rare cases subject to individual review by PG&E.

11. Recreation Areas: Playgrounds, parks, tennis courts, basketball courts, barbecue and light trucks (pickups, vans, etc.) may be allowed; subject to review of plans. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications.

12. Construction Activity: Since construction activity will take place near PG&E's overhead electric lines, please be advised it is the contractor's responsibility to be aware of, and observe the minimum clearances for both workers and equipment operating near high voltage electric lines set out in the High-Voltage Electrical Safety Orders of the California Division of Industrial Safety (https://www.dir.ca.gov/Title8/sb5g2.html), as well as any other safety regulations. Contractors shall comply with California Public Utilities Commission General Order 95 (http://www.cpuc.ca.gov/gos/GO95/go_95_startup_page.html) and all other safety rules. No construction may occur within 25 feet of PG&E's towers. All excavation activities may only commence after 811 protocols has been followed.

Contractor shall ensure the protection of PG&E's towers and poles from vehicular damage by (installing protective barriers) Plans for protection barriers must be approved by PG&E prior to construction.

13. PG&E is also the owner of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E's facilities must be reviewed and approved by PG&E to ensure that no impact occurs that may endanger the safe and reliable operation of its facilities.

From: WILSON, MICHAEL A [mailto:MW7046@att.com]
Sent: Wednesday, December 9, 2020 1:51 PM
To: Diana Black <DBlack@cityofhanfordca.com>
Subject: RE: Project Review - Pre-Consultation Notice (TT 930; PUD 2020-01; RZ 2020-01)

Developer to place (1) 4" conduit throughout, to AT&T plans and specifications. Developer should notify AT&T immediately prior to grading, and should present rule15 and final vesting map.
AT&T engineer will provide path redlines for conduit and handhole placement. AT&T will purchase conduit at tariff rates, and will place own cables.

This new development will be FTTP (fiber), with specific requirements for builder within each unit. They should contact AT&T engineering for details.

New fiber feed will come from aerial route s/s Grangeville, crossing Grangeville to n/s, continuing up kings, then turning east on claridge. (2) 4" PVC plus 3x5 vault for cable access.
Distribution cables will locate within conduit placed in joint utility trench; handholes placed for access; service conduit placed for future along general joint trench route.

Thank you.

Michael Wilson
Manager / Engineer
(559) 739-6423

From: Diana Black [mailto:DBlack@cityofhanfordca.com]
Sent: Wednesday, December 9, 2020 11:37 AM
To: 9-1-1 DISPATCH <kris.zuniga@co.kings.ca.us>; American Ambulance <bwiele@americanambulance.com>; SLICMAILBOX <SLICBOX@att.com>; WILSON, MICHAEL A <MW7046@att.com>; Tom Webb <TWebb@cityofhanfordca.com>; CA DEPT of WATER RESOURCES - (delia.grijalva@water.ca.gov) <delia.grijalva@water.ca.gov>; CALTRANS-Laura Gordon <laura.gordon@dot.ca.gov>; CALTRANS-Lorena mendibles <lorena.mendibles@dot.ca.gov>; CALTRANS-Scott Lau <scott.lau@dot.ca.gov>; CHAMBER OF COMMERCE <hanfordchamber@comcast.net>; COMCAST <galenraymond@comcast.net>; DRAINAGE DISTRICT <info5@waterboards.ca.gov>; HESD <adlopez@hanfordesd.org>; HESD-Superintendent <jgabler@hanfordesd.org>; HJUHSD <wfishbough@hjuhsd.org>; HJUHSD-Renee Creech <rcreech@hjuhsd.k12.ca.us>; KINGS CO ASSESSOR'S OFFICE <michelle.maldonado@co.kings.ca.us>; KINGS CO BOARD OF REALTORS <admin@kcbor.com>; KINGS CO HEALTH <jeff.taber@co.kings.ca.us>; KINGS CO HEALTH <troy.hommerding@co.kings.ca.us>; KINGS CO PLANNING <chuck.kinney@co.kings.ca.us>; KINGS CO PUBLIC WORKS <mike.hawkins@co.kings.ca.us>; Luis Verdugo <lverdugo@cityofhanfordca.com>; MAIN STREET HANFORD (michelle@mainstreethanford.com) <michelle@mainstreethanford.com>; PEOPLE'S DITCH <ahemans.peoplesditch@yahoo.com>; PG&E <r3hd@pge.com>; PG&E Steve Sisemore <stsq@pge.com>; John Doyel <JDoyel@cityofhanfordca.com>; SCE <david.loftin@sce.com>; SJVAPCD <CEQA@valleyair.org>; SO CAL GAS CO <dkemp@semprautilities.com>; Steve Pendergrass

<spendergrass@cityofhanfordca.com>; TACHI TRIBE <spowers@tachi-yokut-nsn.gov>; Mike Cosenza <MCosenza@cityofhanfordca.com>
Subject: Project Review - Pre-Consultation Notice (TT 930; PUD 2020-01; RZ 2020-01)

Please see the attached notice and forward any comments by Friday, December 18, 2020.

Thank you!

Diana Black
Development Services Technician
City of Hanford
317 N. Douty Street
Hanford, CA 93230
P: (559) 585-4768
F: (559) 583-1633
dblack@cityofhanfordca.com

City of HANFORD
CALIFORNIA 93230
CITY OFFICES 319 NORTH DOUTY STREET

MAYOR
FRANCISCO RAMIREZ
VICE-MAYOR
DIANE SHARP
COUNCIL MEMBERS
JOHN DRAXLER
KALISH MORROW
ARTHUR BRIENO
CITY MANAGER
MARIO CIFUENTEZ II
CITY ATTORNEY
ROBERT M. DOWD

February 22, 2021

PROJECT REVIEW - CONSULTATION NOTICE

DESCRIPTION AND LOCATION:

The Community Development Department of the City of Hanford is requesting your comments regarding Tentative Tract 930, Planned Unit Development No. 2020-01, Rezone No. 2020-01, and Variance No. 2021-01:

- **Rezone No. 2020-01:** A request to change the zoning on the property from R-L-8 Low-Density Residential to R-L-5 Low-Density Residential.

- **Tentative Tract 930:** A request to subdivide a 14.86-acre property into 76 single-family residential lots with a Planned Unit Development overlay in an area proposed to be rezoned to R-L-5 Low-Density Residential.

- **Planned Unit Development No. 2020-01:** A request to allow deviations from the standards of the R-L-5 Low-Density Residential zone district for a single-family residential subdivision. Deviations include private streets, deviations from City-street standards (reduced right-of-way width and elimination of sidewalks) and reduced lot sizes.

- **Variance No. 2021-01:** A request to deviate from the standards of the Hanford Municipal Code, in order to permit a 14-foot sound wall, in order to reduce noise impacts for a planned residential development.

Location: The project is located north of Grangeville Boulevard, west of the railroad tracks, east of Kings Road (APN 008-410-043).

Based on an Initial Study, the Community Development Department has determined that the project described above would not have significant adverse impacts on the environment with the incorporation of mitigation measures. A Mitigated Negative Declaration has been prepared for the project. A public hearing pertaining to the project will be held by the City of Hanford Planning Commission on March 9, 2021 at 5:30 p.m. in the Council Chambers of the Civic Auditorium, 400 N. Douty Street. You may review the Mitigated Negative Declaration, Initial Study, proposed mitigation measures, reference material, and any comments received on the Mitigated Negative Declaration at the City of Hanford, 317 N. Douty Street, Hanford, CA 93230.

Recommendations or suggestions for changes or mitigation measures requested by agencies having jurisdiction by law over natural resources affected by the project must be accompanied by a proposed reporting or monitoring program for those changes or measures in accordance with Public Resources Code Section 21081.6. It is requested that your comments, if any, be transmitted to this office by **March 9, 2021 at 5:00 p.m.** via mail to the address above or emailed to gmyers@cityofhanfordca.com. Failure to comment will indicate approval of the project and no additional information will be sent to you. If you have any questions or concerns regarding this project please call me at (559) 585-2580.

Sincerely,

COMMUNITY DEVELOPMENT DEPARTMENT

Gabrielle Myers

Gabrielle Myers, Senior Planner

I ☑ do ☐ do not have comments regarding this Project

Michael K. Hawkins — KCPW — 3/8/21

Signature — Agency — Date

KINGS CO. PUBLIC WORKS HAS CONCERNS OVER THE AMOUNT OF TRAFFIC THAT WILL BE USING KINGS ROAD AND POSSIBLE CONGESTION.

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

March 5, 2021

Gabrielle Myers
City of Hanford
Community Development Department
319 North Douty Street
Hanford, CA 93230

Project: Draft Mitigated Negative Declaration for Tentative Tract 930, Planned Unit Development 2020-01, and Rezone 2020-01

District CEQA Reference No: 20210178

Dear Ms. Myers:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Draft Mitigated Negative Declaration for the project referenced above from the City of Hanford (City). The project consists of changing the zoning on a portion of the property, subdividing a 14.86-acre property into 76 single-family residential lots with a Planned Unit Development to allow deviations from the standards. (Project). The Project is located east of Kings Road, North of Grangeville Blvd, in Hanford, CA.

Project Scope

The Project consists of a change to the zoning on a portion of property from R-L-18 Low-Density Residential to R-L-5 Low-Density Residential and to subdivide a 14.86-acre property into 76 single-family residential lots with a Planned Unit Development overlay in an area proposed to be rezoned. The Planned Unit Development will allow deviations from the standards of the R-L-5 Low-Density Residential zone district for a single-family residential subdivision. Deviations include private streets, reduced lot sizes and reduced rear-yard setbacks for two-story homes.

Based on information provided to the District, Project specific annual emissions from construction and operation emissions of criteria pollutants are not expected to exceed any of the following District significance thresholds: 100 tons per year of carbon monoxide (CO), 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), 27 tons per year of oxides of sulfur (SOx), 15 tons per year of particulate matter of 10 microns or less in size (PM10), or 15 tons per year of particulate matter of 2.5 microns or less in size (PM2.5).

Samir Sheikh
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: (661) 392-5500 FAX: (661) 392-5585

www.valleyair.org www.healthyairliving.com

Printed on recycled paper.

The District offers the following comments:

1) Project Related Criteria Pollutant Emissions

1a) Construction Emissions:

Although the construction-related emissions are expected to have a less than significant impact, the District suggests that the City advise the project proponents to utilize the cleanest reasonably available off-road construction fleets and practices (i.e. eliminating unnecessary idling) to further reduce impacts from construction-related exhaust emissions and activities.

2) District Rules and Regulations

2a) District Rule 9510 (Indirect Source Review)

The purpose of District Rule 9510 (Indirect Source Review) is to reduce the growth in both NOx and PM10 emissions associated with development and transportation projects from mobile and area sources associated with construction and operation of development projects. The rule encourages clean air design elements to be incorporated into the development project. In case the proposed project clean air design elements are insufficient to meet the targeted emission reductions, the rule requires developers to pay a fee used to fund projects to achieve off-site emissions reductions.

The proposed Project is subject to District Rule 9510 because it will receive a project-level discretionary approval from a public agency and will equal or exceed 50 residential units. When subject to the rule, an Air Impact Assessment (AIA) application is required no later than applying for project-level approval from a public agency. Please inform the project proponent to immediately submit an AIA application to the District to comply with District Rule 9510.

An AIA application is required and the District recommends that demonstration of compliance with District Rule 9510, before issuance of the first building permit, be made a condition of Project approval.

Information about how to comply with District Rule 9510 can be found online at: http://www.valleyair.org/ISR/ISRHome.htm.

The AIA application form can be found online at: http://www.valleyair.org/ISR/ISRFormsAndApplications.htm

2b) District Regulation VIII (Fugitive PM10 Prohibitions)

The Project will be subject to Regulation VIII. The project proponent is required to submit a Construction Notification Form or submit and receive approval of a Dust Control Plan prior to construction. Information on how to comply with Regulation VIII can be found online at: http://www.valleyair.org/busind/comply/PM10/compliance_PM10.htm.

2c) Other District Rules and Regulations

The Project may also be subject to the following District rules: Regulation VIII, (Fugitive PM10 Prohibitions), and Rule 4601 (Architectural Coatings). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants).

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The District encourages the following air quality improvement measures to further reduce Project related emissions from construction and operation. A complete list of potential air quality improvement measures can be found online at: http://www.valleyair.org/ceqaconnected/aqimeasures.aspx.

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c. Increase Transit Accessibility – This measure is to locate the project with high density near transit which will facilitate the use of transit by people traveling to or from the Project site. The use of transit results in a mode shift and therefore reduced VMT. A project with a residential/commercial center designed around a rail or bus station, is called a transit-oriented development (TOD). The project description should include, at a minimum, the following design features:

- A transit station/stop with high-quality, high-frequency bus service located within a 5-10 minute walk (or roughly ¼ mile from stop to edge of development), and/or
- A rail station located within a 20 minute walk (or roughly ½ mile from station to edge of development)
- Fast, frequent, and reliable transit service connecting to a high percentage of regional destinations
- Neighborhood designed for walking and cycling

4) District Comment Letter

The District recommends that a copy of the District's comments be provided to the Project proponent.

If you have any questions or require further information, please contact Will Worthley by e-mail at will.worthley@valleyair.org or by phone at (559) 230-5925.

Sincerely,

Brian Clements
Director of Permit Services



For: John Stagnaro
Program Manager

BC: ww

Consultation Notices Received from Early Consultation (September 2023)

City of **H A N F O R D**
CALIFORNIA 93230
CITY OFFICES 317 NORTH DOUTY STREET

MAYOR
TRAVIS PADEN
VICE-MAYOR
MARK KAIRIS
COUNCIL MEMBERS
LOU MARTINEZ
KALISH MORROW
DIANE SHARP
CITY MANAGER
MARIO CIFUENTEZ II
CITY ATTORNEY
ROBERT M. DOWD

September 18, 2023

RE: Pre-consultation (Project Revision)

The Community Development Department of the City of Hanford is requesting your comments regarding Tentative Tract 930, Planned Unit Development No. 2020-01 and Variance No. 2021-01.

Please note, the City of Hanford mailed pre-consultation for the project on December 9, 2020; however, due to changes in the project, the City is engaging the interested agencies for updated comments.

The information below reflects the updated project request:

- **Tentative Tract 930:** A request to subdivide a 14.86-acre property into 55 single-family residential lots with a Planned Unit Development overlay in the R-L-8 Low-Density Residential zone district.

- **Planned Unit Development No. 2020-01:** A request to allow deviations from the standards of the R-L-8 Low-Density Residential zone district for a single-family residential subdivision. Deviations include reduced lot sizes from 8,000 square feet to 7,443 square feet for Lots 13-23 and 40 and reduced lot depths from 95 feet to 93 feet.

- **Variance No. 2021-01:** A request to deviate from the standards of the Hanford Municipal Code, in order to permit a 14-foot sound wall, in order to reduce noise impacts for a planned residential development.

  Location: The project is located north of Grangeville Boulevard, west of the railroad tracks, east of Kings Road (APN 008-410-043).

The proposal is being forwarded to the responsible and interested agencies and individuals for early consultation. The City is in the process of updating the original Initial Study to identify what, if any, significant impacts need to be analyzed in conjunction with this project. Any assistance you can give in this effort would be appreciated.

It is requested that your comments, if any, be transmitted to this office by Friday, September 29, 2023 at 5:00 p.m. Comments can be mailed to 317 N. Douty Street, Hanford, CA 93230 or emailed to gmyers@cityofhanfordca.com. If you have any questions or concerns regarding this project, please call Gabrielle Myers at (559)585-2578.

Please let me know if you would like a copy of your preliminary project comments. Thank you!

Sincerely,

Gabrielle Myers

Gabrielle Myers, Senior Planner

I ☑ do ☐ do not have comments regarding this Project

Signature	Agency	Date
	FIRE	9/19/23

LIBERTY POINTE

TENTATIVE SUBDIVISION MAP

APRIL 11, 2023

BEING OF A PORTION OF THE EAST 10.00 ACRES OF THE SW 1/4 OF SEC. 29, T. 18 S., R. 21 E., M.D.B. & M., IN THE CITY OF HANFORD, COUNTY OF KINGS, STATE OF CALIFORNIA

SITE DATA:

APN	008-041-043
ACREAGE	± 14.86 AC (DESIGNATED REMAINDER PER PM 17-38)
PROPOSED LOTS	55
EXISTING ZONING	R-L-6
PROPOSED ZONING	R-L-6
EXISTING USE	VACANT
PROPOSED USE	SINGLE FAMILY RESIDENTIAL
PROPOSED MAINTENANCE	CITY OF HANFORD

SETBACK REQUIREMENTS (PER THE CITY OF HANFORD MUNICIPAL CODE):

FRONT THE FRONT BUILDING SETBACK SHALL BE FIFTEEN (15) FEET FROM THE LOT LINE FOR LIVABLE BUILDING SPACE AND TWENTY (20) FEET FOR GARGES CARPORTS AND OTHER NON-LIVABLE BUILDING SPACE

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UTILITIES:

SEWER SERVICE	CITY OF HANFORD
WATER SERVICE	CITY OF HANFORD
STORM DRAIN SERVICE	CITY OF HANFORD
ELECTRICITY	SOUTHERN CALIFORNIA EDISON COMPANY
NATURAL GAS	THE GAS COMPANY
TELEPHONE	AT&T
CABLE	COMCAST
REFUSE	CITY OF HANFORD

LOT DATA:

MINIMUM LOT AREA	7,443 SF
MAXIMUM LOT AREA	20,088 SF
AVERAGE LOT AREA	8,911 SF
GROSS AREA	± 14.9 AC
NET AREA	± 11.1 AC
LOTS PER NET AREA	5 LOTS PER ACRE
LOTS UNDER MIN. DEPTH REQUIREMENT	16-37 (22 TOTAL)
TOTAL NUMBER OF LOTS	55

LOT DEPTH REQUIREMENT:

LOTS THAT REQUIRE PC APPROVAL DUE TO THE DEPTH BEING LESS THAN THE 95' REQUIREMENT.

CITY OF HANFORD

PROJECT LOCATION

12TH AVE.

B.N. & S.F. R/R

GRANGEVILLE BLVD.

VICINITY MAP

SCALE: 1" = 500'

NOT A PART

SAXON STREET

SAXON ST./QUEENS LN./TUDOR LN. (A-A)

CLARIDGE LANE (B-B)

QUEENS LN./TUDOR LN (C-C)

CLARIDGE LANE (D-D)

NORTH

4CREEKS

H A N F O R D

FIRE DEPARTMENT

Steve Pendergrass, Fire Chief

MAYOR
TRAVIS PADEN

VICE MAYOR
MARK KAIRIS

COUNCIL MEMBERS
DIANE SHARP
LOU MARTINEZ
KALISH MARROW

CITY MANAGER
MARIO CIFUENTEZ

Date: September 19, 2023

To: Gabrielle Myers

Re: Tentative Tract 930
Fire Dept Comments

The following are the comments from the fire department regarding Tract 930. If you have questions, please contact me.

1. Bristol St is 154' 7 ¾" requiring a turn-around or the road to be punch through. We can discuss this but for now, it appears to exceed the maximum length per code.
2. Hydrants must be installed as per the code.
3. Residents are required to have fire sprinklers as per the code.
4. Addresses must be clearly marked as per the code.

Thank you.

City of HANFORD
CALIFORNIA 93230
CITY OFFICES 317 NORTH DOUTY STREET

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September 18, 2023

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Gabrielle Myers, Senior Planner

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Bill Dutton Hanford Elementary SD 9/19/23

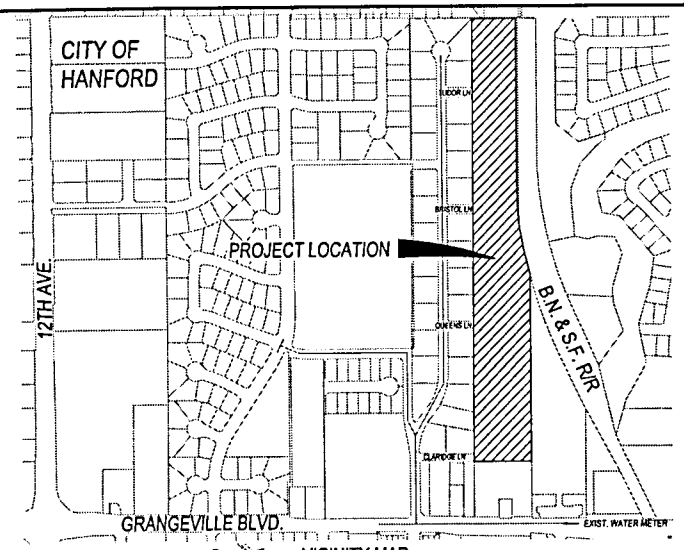
Signature Agency Date

LIBERTY POINTE

TENTATIVE SUBDIVISION MAP

APRIL 11, 2023

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VICINITY MAP
SCALE: 1" = 300'

SITE DATA:

APN:	008-041-043
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PROPOSED LOTS:	55
EXISTING ZONING:	R-L-8
PROPOSED ZONING:	R-L-8
EXISTING USE:	VACANT
PROPOSED USE:	SINGLE FAMILY RESIDENTIAL
PROPOSED MAINTENANCE:	CITY OF HANFORD

UTILITIES:

SEWER SERVICE:	CITY OF HANFORD
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STORM DRAIN SERVICE:	CITY OF HANFORD
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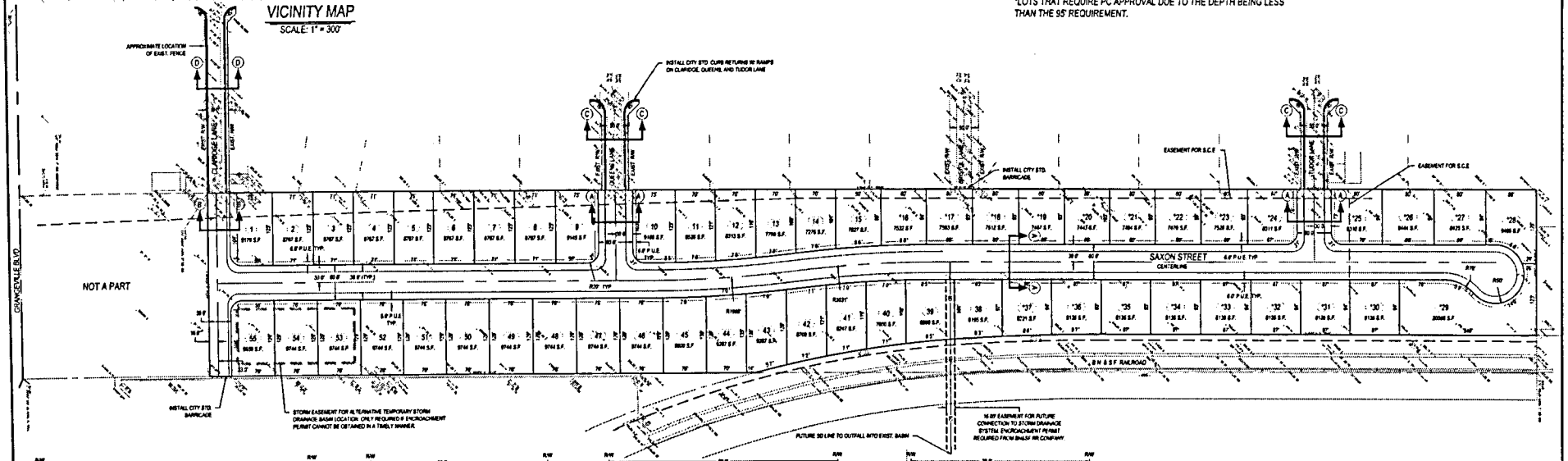
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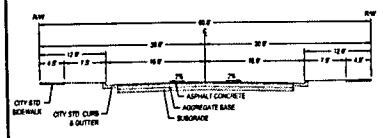
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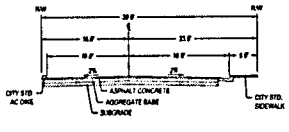
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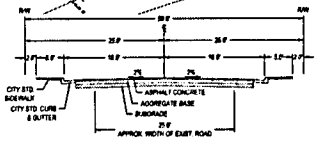
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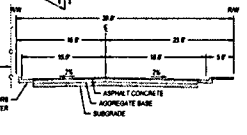
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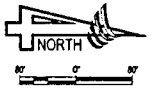












PREPARED BY:
4CREEKS
324 S. SANTA FE, STE. A
P.O. BOX 7565
VISALIA, CA 93292
TEL. 559.802.3052
FAX. 559.802.3315

Pacific Gas and Electric Company

Plan Review Team
Land Management

PGEPlanReview@pge.com

September 25, 2023

Diana Black
City of Hanford
317 N Douty St
Hanford, CA 93230

Re: Tentative Tract 90
PUD 2020-01/Var 2021-01

Dear Diana Black,

Thank you for providing PG&E the opportunity to review the proposed plans for Tentative Tract 90/PUD 2020-01/Var 2021-01 dated 9/18/2023. Our review indicates the proposed improvements do not appear to directly interfere with existing PG&E facilities or impact our easement rights.

Please note this is our preliminary review and PG&E reserves the right for additional future review as needed. This letter shall not in any way alter, modify, or terminate any provision of any existing easement rights. If there are subsequent modifications made to the design, we ask that you resubmit the plans to the email address listed below.

If the project requires PG&E gas or electrical service in the future, please continue to work with PG&E's Service Planning department: https://www.pge.com/cco/.

As a reminder, before any digging or excavation occurs, please contact Underground Service Alert (USA) by dialing 811 a minimum of 2 working days prior to commencing any work. This free and independent service will ensure that all existing underground utilities are identified and marked on-site.

If you have any questions regarding our response, please contact the PG&E Plan Review Team at pgeplanreview@pge.com.

Sincerely,

PG&E Plan Review Team
Land Management

From: Xiong, Christopher@DOT
To: Gabrielle Myers
Cc: Padilla, Dave@DOT
Subject: RE: Pre-Consultation Notice (Project Revision) - Tentative Tract 90/PUD 2020-01/Var 2021-01
Date: Friday, September 29, 2023 11:39:03 AM

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hi Gabrielle,

Thank you for the opportunity to review Tentative Tract 930, PUD 2020-01 and VAR 2021-01, we have no comments on the application. The project does not propose any land use changes other than minor deviations from the current residential standards for the project site, the project is anticipated to have minimal impacts to the local State Highway System (SHS) facilities.

This project was previously reviewed with our minor comments recommending the implementation of vehicle miles traveled (VMT) mitigation strategies. We continue to encourage projects implement VMT mitigation strategies where feasible, which include non-motorized facilities and coordinating public transit services for projects. We also encourage the City consider creating a VMT mitigation impact fee program to minimize impacts to local roads and SHS facilities.

Best regards,

Christopher Xiong
Associate Transportation Planner
Caltrans District 6
1352 W. Olive Avenue
Fresno, CA 93778
Christopher.Xiong@dot.ca.gov
(559) 908-7064

City of HANFORD
CALIFORNIA 93230
CITY OFFICES 317 NORTH DOUTY STREET

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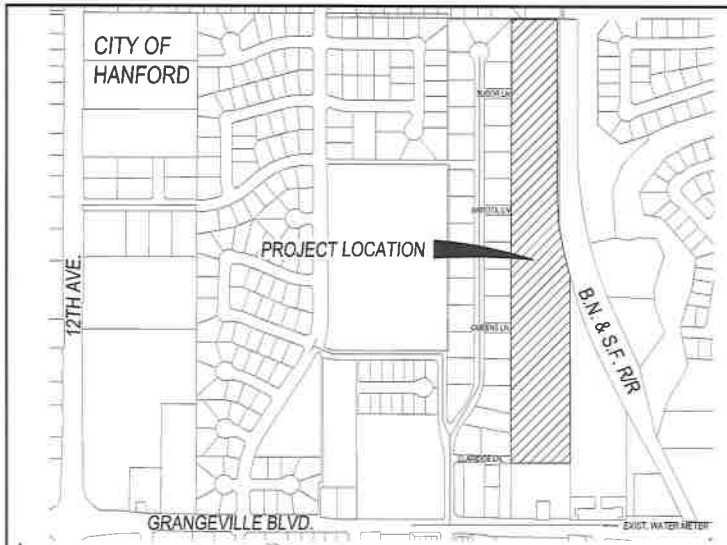
Signature	Agency	Date
Renu Crouch	HJUHSD	9/19/2023

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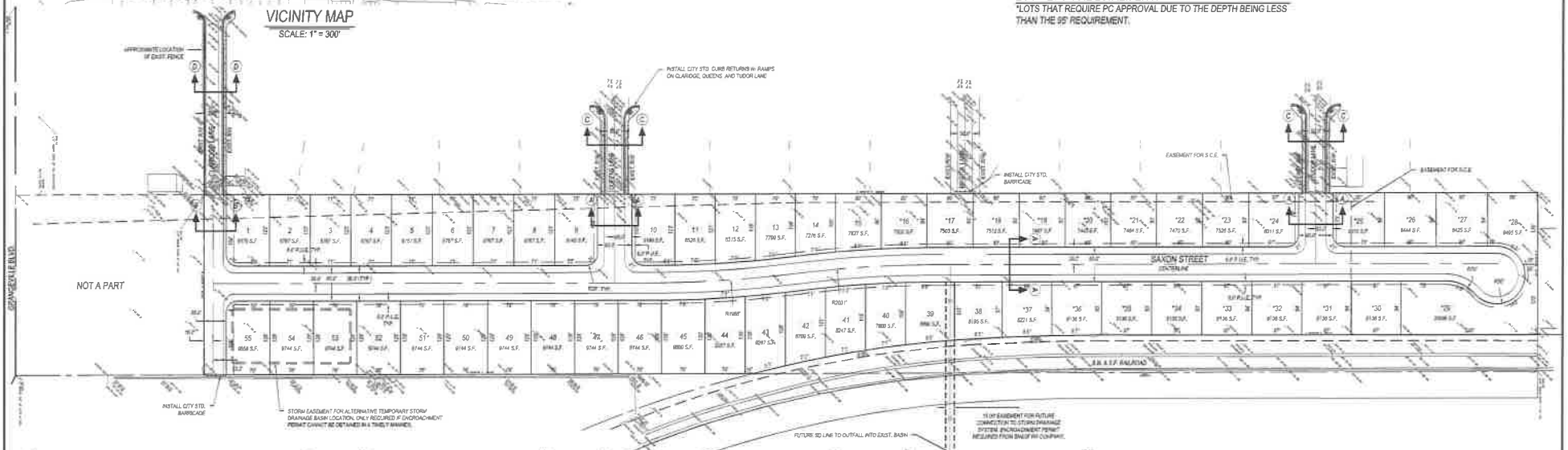
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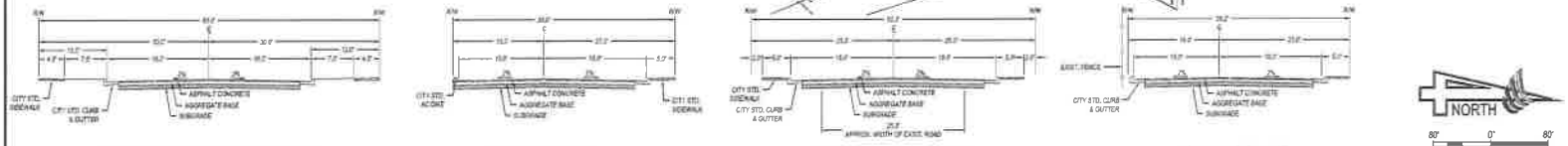
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TEL: 559.802.3052
FAX: 559.802.3215

Pacific Gas and Electric Company

Plan Review Team
Land Management

PGEPlanReview@pge.com

September 19, 2023

Diana Black
City of Hanford
317 N Douty St
Hanford, CA 93230

Ref: Gas and Electric Transmission and Distribution

Dear Diana Black,

Thank you for submitting the Tentative Tract 90 plans for our review. PG&E will review the submitted plans in relationship to any existing Gas and Electric facilities within the project area. If the proposed project is adjacent/or within PG&E owned property and/or easements, we will be working with you to ensure compatible uses and activities near our facilities.

Attached you will find information and requirements as it relates to Gas facilities (Attachment 1) and Electric facilities (Attachment 2). Please review these in detail, as it is critical to ensure your safety and to protect PG&E's facilities and its existing rights.

Below is additional information for your review:

1. This plan review process does not replace the application process for PG&E gas or electric service your project may require. For these requests, please continue to work with PG&E Service Planning: https://www.pge.com/en_US/business/services/building-and-renovation/overview/overview.page.

2. If the project being submitted is part of a larger project, please include the entire scope of your project, and not just a portion of it. PG&E's facilities are to be incorporated within any CEQA document. PG&E needs to verify that the CEQA document will identify any required future PG&E services.

3. An engineering deposit may be required to review plans for a project depending on the size, scope, and location of the project and as it relates to any rearrangement or new installation of PG&E facilities.

Any proposed uses within the PG&E fee strip and/or easement, may include a California Public Utility Commission (CPUC) Section 851 filing. This requires the CPUC to render approval for a conveyance of rights for specific uses on PG&E's fee strip or easement. PG&E will advise if the necessity to incorporate a CPUC Section 851filing is required.

This letter does not constitute PG&E's consent to use any portion of its easement for any purpose not previously conveyed. PG&E will provide a project specific response as required.

Sincerely,

Plan Review Team
Land Management

Attachment 1 – Gas Facilities

There could be gas transmission pipelines in this area which would be considered critical facilities for PG&E and a high priority subsurface installation under California law. Care must be taken to ensure safety and accessibility. So, please ensure that if PG&E approves work near gas transmission pipelines it is done in adherence with the below stipulations. Additionally, the following link provides additional information regarding legal requirements under California excavation laws: https://www.usanorth811.org/images/pdfs/CA-LAW-2018.pdf

1. Standby Inspection: A PG&E Gas Transmission Standby Inspector must be present during any demolition or construction activity that comes within 10 feet of the gas pipeline. This includes all grading, trenching, substructure depth verifications (potholes), asphalt or concrete demolition/removal, removal of trees, signs, light poles, etc. This inspection can be coordinated through the Underground Service Alert (USA) service at 811. A minimum notice of 48 hours is required. Ensure the USA markings and notifications are maintained throughout the duration of your work.

2. Access: At any time, PG&E may need to access, excavate, and perform work on the gas pipeline. Any construction equipment, materials, or spoils may need to be removed upon notice. Any temporary construction fencing installed within PG&E's easement would also need to be capable of being removed at any time upon notice. Any plans to cut temporary slopes exceeding a 1:4 grade within 10 feet of a gas transmission pipeline need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

3. Wheel Loads: To prevent damage to the buried gas pipeline, there are weight limits that must be enforced whenever any equipment gets within 10 feet of traversing the pipe.

Ensure a list of the axle weights of all equipment being used is available for PG&E's Standby Inspector. To confirm the depth of cover, the pipeline may need to be potholed by hand in a few areas.

Due to the complex variability of tracked equipment, vibratory compaction equipment, and cranes, PG&E must evaluate those items on a case-by-case basis prior to use over the gas pipeline (provide a list of any proposed equipment of this type noting model numbers and specific attachments).

No equipment may be set up over the gas pipeline while operating. Ensure crane outriggers are at least 10 feet from the centerline of the gas pipeline. Transport trucks must not be parked over the gas pipeline while being loaded or unloaded.

4. Grading: PG&E requires a minimum of 36 inches of cover over gas pipelines (or existing grade if less) and a maximum of 7 feet of cover at all locations. The graded surface cannot exceed a cross slope of 1:4.

5. Excavating: Any digging within 2 feet of a gas pipeline must be dug by hand. Note that while the minimum clearance is only 24 inches, any excavation work within 24 inches of the edge of a pipeline must be done with hand tools. So to avoid having to dig a trench entirely with hand tools, the edge of the trench must be over 24 inches away. (Doing the math for a 24 inch

wide trench being dug along a 36 inch pipeline, the centerline of the trench would need to be at least 54 inches [24/2 + 24 + 36/2 = 54] away, or be entirely dug by hand.)

Water jetting to assist vacuum excavating must be limited to 1000 psig and directed at a 40° angle to the pipe. All pile driving must be kept a minimum of 3 feet away.

Any plans to expose and support a PG&E gas transmission pipeline across an open excavation need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

6. Boring/Trenchless Installations: PG&E Pipeline Services must review and approve all plans to bore across or parallel to (within 10 feet) a gas transmission pipeline. There are stringent criteria to pothole the gas transmission facility at regular intervals for all parallel bore installations.

For bore paths that cross gas transmission pipelines perpendicularly, the pipeline must be potholed a minimum of 2 feet in the horizontal direction of the bore path and a minimum of 24 inches in the vertical direction from the bottom of the pipe with minimum clearances measured from the edge of the pipe in both directions. Standby personnel must watch the locator trace (and every ream pass) the path of the bore as it approaches the pipeline and visually monitor the pothole (with the exposed transmission pipe) as the bore traverses the pipeline to ensure adequate clearance with the pipeline. The pothole width must account for the inaccuracy of the locating equipment.

7. Substructures: All utility crossings of a gas pipeline should be made as close to perpendicular as feasible (90° +/- 15°). All utility lines crossing the gas pipeline must have a minimum of 24 inches of separation from the gas pipeline. Parallel utilities, pole bases, water line ‘kicker blocks’, storm drain inlets, water meters, valves, back pressure devices or other utility substructures are not allowed in the PG&E gas pipeline easement.

If previously retired PG&E facilities are in conflict with proposed substructures, PG&E must verify they are safe prior to removal. This includes verification testing of the contents of the facilities, as well as environmental testing of the coating and internal surfaces. Timelines for PG&E completion of this verification will vary depending on the type and location of facilities in conflict.

8. Structures: No structures are to be built within the PG&E gas pipeline easement. This includes buildings, retaining walls, fences, decks, patios, carports, septic tanks, storage sheds, tanks, loading ramps, or any structure that could limit PG&E’s ability to access its facilities.

9. Fencing: Permanent fencing is not allowed within PG&E easements except for perpendicular crossings which must include a 16 foot wide gate for vehicular access. Gates will be secured with PG&E corporation locks.

10. Landscaping: Landscaping must be designed to allow PG&E to access the pipeline for maintenance and not interfere with pipeline coatings or other cathodic protection systems. No trees, shrubs, brush, vines, and other vegetation may be planted within the easement area. Only those plants, ground covers, grasses, flowers, and low-growing plants that grow unsupported to a maximum of four feet (4’) in height at maturity may be planted within the easement area.

11. Cathodic Protection: PG&E pipelines are protected from corrosion with an “Impressed Current” cathodic protection system. Any proposed facilities, such as metal conduit, pipes, service lines, ground rods, anodes, wires, etc. that might affect the pipeline cathodic protection system must be reviewed and approved by PG&E Corrosion Engineering.

12. Pipeline Marker Signs: PG&E needs to maintain pipeline marker signs for gas transmission pipelines in order to ensure public awareness of the presence of the pipelines. With prior written approval from PG&E Pipeline Services, an existing PG&E pipeline marker sign that is in direct conflict with proposed developments may be temporarily relocated to accommodate construction work. The pipeline marker must be moved back once construction is complete.

13. PG&E is also the provider of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E’s facilities must be reviewed and approved by PG&E to ensure that no impact occurs which may endanger the safe operation of its facilities.

Attachment 2 – Electric Facilities

It is PG&E's policy to permit certain uses on a case by case basis within its electric transmission fee strip(s) and/or easement(s) provided such uses and manner in which they are exercised, will not interfere with PG&E's rights or endanger its facilities. Some examples/restrictions are as follows:

1. Buildings and Other Structures: No buildings or other structures including the foot print and eave of any buildings, swimming pools, wells or similar structures will be permitted within fee strip(s) and/or easement(s) areas. PG&E's transmission easement shall be designated on subdivision/parcel maps as "**RESTRICTED USE AREA – NO BUILDING."**

2. Grading: Cuts, trenches or excavations may not be made within 25 feet of our towers. Developers must submit grading plans and site development plans (including geotechnical reports if applicable), signed and dated, for PG&E's review. PG&E engineers must review grade changes in the vicinity of our towers. No fills will be allowed which would impair ground-to-conductor clearances. Towers shall not be left on mounds without adequate road access to base of tower or structure.

3. Fences: Walls, fences, and other structures must be installed at locations that do not affect the safe operation of PG&'s facilities. Heavy equipment access to our facilities must be maintained at all times. Metal fences are to be grounded to PG&E specifications. No wall, fence or other like structure is to be installed within 10 feet of tower footings and unrestricted access must be maintained from a tower structure to the nearest street. Walls, fences and other structures proposed along or within the fee strip(s) and/or easement(s) will require PG&E review; submit plans to PG&E Centralized Review Team for review and comment.

4. Landscaping: Vegetation may be allowed; subject to review of plans. On overhead electric transmission fee strip(s) and/or easement(s), trees and shrubs are limited to those varieties that do not exceed 10 feet in height at maturity. PG&E must have access to its facilities at all times, including access by heavy equipment. No planting is to occur within the footprint of the tower legs. Greenbelts are encouraged.

5. Reservoirs, Sumps, Drainage Basins, and Ponds: Prohibited within PG&E's fee strip(s) and/or easement(s) for electric transmission lines.

6. Automobile Parking: Short term parking of movable passenger vehicles and light trucks (pickups, vans, etc.) is allowed. The lighting within these parking areas will need to be reviewed by PG&E; approval will be on a case by case basis. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications. Blocked-up vehicles are not allowed. Carports, canopies, or awnings are not allowed.

7. Storage of Flammable, Explosive or Corrosive Materials: There shall be no storage of fuel or combustibles and no fueling of vehicles within PG&E's easement. No trash bins or incinerators are allowed.

8. Streets and Roads: Access to facilities must be maintained at all times. Street lights may be allowed in the fee strip(s) and/or easement(s) but in all cases must be reviewed by PG&E for proper clearance. Roads and utilities should cross the transmission easement as nearly at right angles as possible. Road intersections will not be allowed within the transmission easement.

9. Pipelines: Pipelines may be allowed provided crossings are held to a minimum and to be as nearly perpendicular as possible. Pipelines within 25 feet of PG&E structures require review by PG&E. Sprinklers systems may be allowed; subject to review. Leach fields and septic tanks are not allowed. Construction plans must be submitted to PG&E for review and approval prior to the commencement of any construction.

10. Signs: Signs are not allowed except in rare cases subject to individual review by PG&E.

11. Recreation Areas: Playgrounds, parks, tennis courts, basketball courts, barbecue and light trucks (pickups, vans, etc.) may be allowed; subject to review of plans. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications.

12. Construction Activity: Since construction activity will take place near PG&E's overhead electric lines, please be advised it is the contractor's responsibility to be aware of, and observe the minimum clearances for both workers and equipment operating near high voltage electric lines set out in the High-Voltage Electrical Safety Orders of the California Division of Industrial Safety (https://www.dir.ca.gov/Title8/sb5g2.html), as well as any other safety regulations. Contractors shall comply with California Public Utilities Commission General Order 95 (http://www.cpuc.ca.gov/gos/GO95/go_95_startup_page.html) and all other safety rules. No construction may occur within 25 feet of PG&E's towers. All excavation activities may only commence after 811 protocols has been followed.

Contractor shall ensure the protection of PG&E's towers and poles from vehicular damage by (installing protective barriers) Plans for protection barriers must be approved by PG&E prior to construction.

13. PG&E is also the owner of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E's facilities must be reviewed and approved by PG&E to ensure that no impact occurs that may endanger the safe and reliable operation of its facilities.