County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

Notice is hereby given that the County of Fresno has prepared Initial Study Application (IS) No. 7410 pursuant to the requirements of the California Environmental Quality Act for the following proposed project**:**

INITIAL STUDY APPLICATION NO. 7410, CLASSIFIED CONDITIONAL USE PERMIT APPLICATION NO. 3597 and **MINOR VARIANCE APPLICATION NO. 1287** filed by **KINGS RIVER PACKING**, proposing to amend Classified Conditional Use Permit (CUP) No. 3476 in order to allow expansion of an existing fruit packing and storage facility in the AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) and AL-40 (Limited Agricultural, 40-acre minimum parcel size) Zone Districts, including authorization of a 39-foot building height (35-foot maximum building height allowed) for a proposed building addition to be partially located in the AL-40 (Limited Agricultural, 40-acre minimum parcel size) and AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) Zone Districts, and a 38-foot building height (35-foot maximum building height allowed) for a proposed building addition to be located in the AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) Zone District. The project site is located on the east side of Trimmer Springs Road, approximately three quarters of a mile north of its intersection with Belmont Avenue, approximately three miles southwest of the unincorporated community of Piedra (21095 E. Trimmer Springs Road) (SUP. DIST. 5) (APNs 158-070-65, 158-070-69, 158-070-76, 158-070-77). Adopt the Mitigated Negative Declaration prepared for Initial Study Application No. 7410 and take action on Classified Conditional Use Permit Application No. 3597 and Minor Variance Application No. 1287.

(hereafter, the “Proposed Project”)

The County of Fresno has determined that it is appropriate to adopt a Mitigated Negative Declaration for the Proposed Project. The purpose of this Notice is to (1) provide notice of the availability of IS Application No. 7410 and the draft Mitigated Negative Declaration, and request written comments thereon; and (2) provide notice of the public hearing regarding the Proposed Project.

Public Comment Period

The County of Fresno will receive written comments on the Proposed Project and Mitigated Negative Declaration from June 8, 2018 through June 27, 2018.

Email written comments to dchambers@co.fresno.ca.us, or mail comments to:

Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
Attn: Derek Chambers

2220 Tulare Street, Suite A
Fresno, CA 93721

IS Application No. 7410 and the draft Mitigated Negative Declaration may be viewed at the above address Monday through Thursday, 9:00 a.m. to 5:00 p.m., and Friday, 8:30 a.m. to 12:30 p.m. (except holidays). An electronic copy of the draft Mitigated Negative Declaration for the Proposed Project may be obtained from Derek Chambers at the addresses above.

Public Hearing

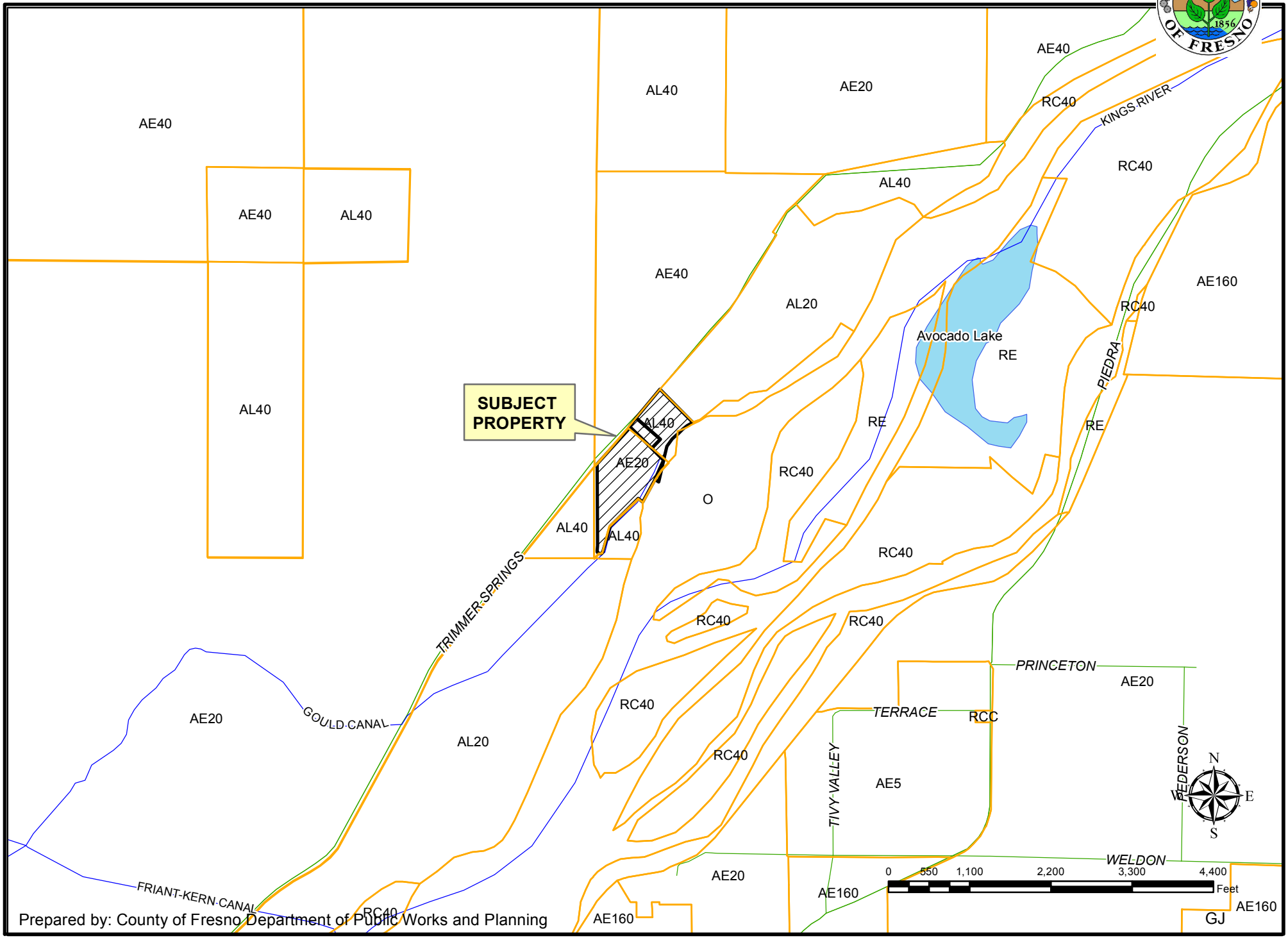
The Planning Commission will hold a public hearing to consider approving the Proposed Project and the Mitigated Negative Declaration on June 28, 2018, at 8:45 a.m., or as soon thereafter as possible, in Room 301, Hall of Records, 2281 Tulare Street, Fresno, California 93721. Interested persons are invited to appear at the hearing and comment on the Proposed Project and draft Mitigated Negative Declaration.

For questions please call Derek Chambers (559) 600-4205.

Published: June 8, 2018

CUP 3597
STR 24 - 13/23

EXISTING ZONING MAP



Prepared by: County of Fresno Department of Public Works and Planning

File original and one copy with:	Space Below For County Clerk Only.
Fresno County Clerk **2221 Kern Street** **Fresno, California 93721**	CLK-2046.00 E04-73 R00-00

Agency File No:	**LOCAL AGENCY PROPOSED MITIGATED NEGATIVE DECLARATION**	County Clerk File No:
IS 7410		**E**

Responsible Agency (Name):	Address (Street and P.O. Box):	City:	Zip Code:
Fresno County	2220 Tulare St. Sixth Floor	Fresno	93721

Agency Contact Person (Name and Title):	Area Code:	Telephone Number:	Extension:
Derek Chambers, Planner	559	600-4205	N/A

Applicant (Name):	Project Title:
Kings River Packing	Classified Conditional Use Permit Application No. 3597 and Minor Variance Application No. 1287

Project Description:

Amend Classified Conditional Use Permit (CUP) No. 3476 in order to allow expansion of an existing fruit packing and storage facility in the AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) and AL-40 (Limited Agricultural, 40-acre minimum parcel size) Zone Districts, including authorization of a 39-foot building height (35-foot maximum building height allowed) for a proposed building addition to be partially located in the AL-40 (Limited Agricultural, 40-acre minimum parcel size) and AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) Zone Districts, and a 38-foot building height (35-foot maximum building height allowed) for a proposed building addition to be located in the AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) Zone District. The project site is located on the east side of Trimmer Springs Road, approximately three quarters of a mile north of its intersection with Belmont Avenue, approximately three miles southwest of the unincorporated community of Piedra (21095 E. Trimmer Springs Road) (SUP. DIST. 5) (APNs 158-070-65, 158-070-69, 158-070-76, 158-070-77).

Justification for Negative Declaration:

Based upon the Initial Study prepared for Classified Conditional Use Permit Application No. 3597 and Minor Variance Application No. 1287, staff has concluded that the project will not have a significant effect on the environment.

No impacts were identified related to population and housing, or recreation.

Potential impacts related to agricultural and forestry resources, biological resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, public services, and utilities and service systems have been determined to be less than significant.

Potential impacts relating to aesthetics, air quality, cultural resources, and transportation and traffic have been determined to be less than significant with the identified Mitigation Measures.

The Initial Study and MND are available for review at 2220 Tulare Street, Suite A, Fresno, CA 93721.

FINDING:

The proposed project will not have a significant impact on the environment.

Newspaper and Date of Publication:	Review Date Deadline:
Fresno Business Journal – June 8, 2018	June 27, 2018

Date:	Type or Print Signature:	Submitted by (Signature):
June 8, 2018	Marianne Mollring Senior Planner	Derek Chambers Planner

State 15083, 15085

County Clerk File No.:_____

LOCAL AGENCY
MITIGATED NEGATIVE DECLARATION

INITIAL STUDY
ENVIRONMENTAL CHECKLIST FORM

1. **Project title:**
   Initial Study Application No. 7410, Classified Conditional Use Permit Application No. 3597 and Minor Variance Application No. 1287

2. **Lead agency name and address:**
   Fresno County Department of Public Works and Planning
   Development Services Division
   2220 Tulare Street, 6th Floor
   Fresno, CA 93721-2104

3. **Contact person and phone number:**
   Derek Chambers, (559) 600-4205

4. **Project location:**
   The project site is located on the east side of Trimmer Springs Road, approximately three miles north of its intersection with Belmont Avenue, approximately three miles southwest of the unincorporated community of Piedra (21095 E. Trimmer Springs Road) (SUP. DIST. 5) (APNs 158-070-65, 158-070-69, 158-070-76, 158-070-77).

5. **Project Applicant's name and address:**
   Kings River Packing
   c/o Frank Flores
   21083 E. Trimmer Springs Road
   Sanger, CA 93657

6. **General Plan designation:**
   Agriculture in the County-adopted Kings River Regional Plan

7. **Zoning:**
   AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) and AL-40 (Limited Agricultural, 40-acre minimum parcel size)

8. **Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)**
   This proposal entails the phased expansion of an existing 10.89-acre commercial fruit packing operation by an additional 5.75 acres of processing, storage, and office space in the AL-40 (Limited Agricultural, 40-acre minimum parcel size) and AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) Zone Districts. Phase I of this expansion proposal includes construction of a loading dock and a 77,500 square-foot addition to an existing metal building to be utilized for fruit cold storage and office space. Phase II of this expansion proposal includes construction of a 173,000 square-foot addition to an existing metal building to be utilized for fruit packing and office space. The proposed 77,500 square-foot addition will have an overall building height of approximately 39 feet, and the proposed 173,000 square-foot addition will have an overall building height of approximately 38 feet, whereas the AL-40 (Limited Agricultural, 40-acre minimum parcel size) and AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) Zone Districts permit a 35-foot maximum building height. As such, Minor Variance

Application No. 1287 is being concurrently processed with Classified Conditional Use Permit Application No. 3597 so as to allow the proposed 39-foot and 38-foot building heights.

The existing commercial fruit packing operation was originally authorized by Classified Conditional Use Permit (CUP) No. 2786, and was subsequently expanded by CUP No. 3307 and CUP No. 3476. Currently, the existing commercial fruit packing operation is located on an approximately 28.83-acre parcel identified as Assessor's Parcel Numbers (APNs) 158-070-65, 158-070-69, 158-070-76 and 158-070-77, which is partially located in the AL-40 (Limited Agricultural, 40-acre minimum parcel size) and AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) Zone Districts.

9. Surrounding land uses and setting: Briefly describe the project's surroundings:

The subject parcel is located in an agricultural area comprised primarily of orchards with few residential land uses dispersed throughout. Additionally, portions of the Kings River and the Fresno Irrigation District Gould Canal are easterly adjacent to the subject parcel, and the Friant-Kern Canal is located approximately one and a half-mile south of the subject parcel.

A portion of Trimmer Springs Road, which is identified as a Scenic Drive in the Fresno County General Plan, abuts a western property line of the subject parcel. Policy OS-L.3 of the General Plan typically requires intensive land use proposals such as commercial developments to be developed with a 200-foot natural open space area adjacent to the Scenic Drive. General Plan Policy OS-L.3 also allows this 200-foot natural space setback requirement to be modified for proposals which involve the expansion of an existing facility. In this case, the existing commercial fruit packing operation currently encroaches into the typically required 200-foot natural open space area. The proposed improvements would be setback farther from Trimmer Springs Road than the existing commercial fruit packing operation; however, the proposed improvements would be located within the typically required 200-foot natural open space area. As such, drought-tolerant landscaping shall be provided along the western property line of the subject parcel where said property line abuts Trimmer Springs Road. Further, said landscaping shall be maintained in healthful condition and shall consist of trees and shrubs of reasonable size and density to provide visual screening. This landscaping requirement will be included as a Mitigation Measure to reduce the proposal's aesthetic impacts on Trimmer Springs Road to a less than significant level. Additionally, the design of the required landscaping shall be reviewed for approval during Site Plan Review (SPR), which will be required as a Condition of Approval. Conditions of the SPR may include design of parking and circulation areas, access, on-site grading and drainage, fire protection, landscaping, signage and lighting.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

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

DETERMINATION OF REQUIRED ENVIRONMENTAL DOCUMENT:

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 the Mitigation Measures described on the attached sheet have been added to the project. **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 as a result of the proposed project, no new effects could occur, or new Mitigation Measures would be required that have not been addressed within the scope of a previous Environmental Impact Report.

PERFORMED BY:

Derek Chambers

Derek Chambers, Planner

Date: 6/8/2018

REVIEWED BY:

MMOLLRING

Marianne Mollring, Senior Planner

Date: 6-8-18

DC:
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INITIAL STUDY
ENVIRONMENTAL CHECKLIST FORM
(Initial Study Application No. 7410, Classified Conditional Use Permit Application No. 3597 and Minor Variance Application No. 1287)

The following checklist is used to determine if the proposed project could potentially have a significant effect on the environment. Explanations and information regarding each question follow the checklist.

1 = No Impact

2 = Less Than Significant Impact

3 = Less Than Significant Impact with Mitigation Incorporated

4 = Potentially Significant Impact

I. AESTHETICS

Would the project:

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

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

3 c) Substantially degrade the existing visual character or quality of the site and its surroundings?

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

II. AGRICULTURAL AND FORESTRY RESOURCES

Would the project:

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

2 b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?

2 c) Conflict with existing zoning for forest land, timberland or timberland zoned Timberland Production?

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

2 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?

III. AIR QUALITY

Would the project:

3 a) Conflict with or obstruct implementation of the applicable Air Quality Plan?

3 b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

3 c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under applicable Federal or State ambient air quality standards (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

3 d) Expose sensitive receptors to substantial pollutant concentrations?

3 e) Create objectionable odors affecting a substantial number of people?

IV. BIOLOGICAL RESOURCES

Would the project:

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

2 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 Wildlife or U.S. Fish and Wildlife Service?

2 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?

2 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?

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

2 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?

V. CULTURAL RESOURCES

Would the project:

3 a) Cause a substantial adverse change in the significance of a historical resource as defined in Public Resources Code Section 15064.5?

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

3 c) Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?

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

3 e) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074?

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:

1 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?

1 ii) Strong seismic ground shaking?

1 iii) Seismic-related ground failure, including liquefaction?

1 iv) Landslides?

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

1 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?

1 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?

2 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?

VII. GREENHOUSE GAS EMISSIONS

Would the project:

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

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

VIII. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

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

2 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?

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

1 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?

2 e) If 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, result in a safety hazard for people residing or working in the project area?

2 f) If within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area?

1 g) Impair implementation of or physically interfere with an adopted Emergency Response Plan or Emergency Evacuation Plan?

1 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?

IX. HYDROLOGY AND WATER QUALITY

Would the project:

2 a) Violate any water quality standards of waste discharge requirements?

2 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)?

1 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?

1 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?

2 e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

2 f) Otherwise substantially degrade water quality?

1 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?

2 h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

2 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?

1 j) Cause inundation by seiche, tsunami, or mudflow?

X. LAND USE AND PLANNING

Would the project:

1 a) Physically divide an established community?

2 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?

1 c) Conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan?

XI. MINERAL RESOURCES

Would the project:

2 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?

2 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?

XII. NOISE

Would the project:

2 a) Expose persons to or generate noise levels in excess of standards established in the local General Plan or Noise Ordinance, or applicable standards of other agencies?

2 b) Expose persons to or generate excessive ground-borne vibration or ground-borne noise levels?

2 c) Create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

2 d) Create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

2 e) Expose people residing or working in the project area to excessive noise levels, 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?

2 f) Expose people residing or working in the project area to excessive noise levels, for a project within the vicinity of a private airstrip?

XIII. POPULATION AND HOUSING

Would the project:

1 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 roads or other infrastructure)?

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

1 c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

XIV. PUBLIC SERVICES

Would the project:

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

2 i) Fire protection?

1 ii) Police protection?

1 iii) Schools?

1 iv) Parks?

1 v) Other public facilities?

XV. RECREATION

Would the project:

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

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

XVI. TRANSPORTATION / TRAFFIC

Would the project:

3 a) 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, 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?

3 b) 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 roads or highways?

1 c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, which results in substantial safety risks?

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

1 e) Result in inadequate emergency access?

2 f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

XVII. UTILITIES AND SERVICE SYSTEMS

Would the project:

2 a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

2 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?

2 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?

2 d) Have sufficient water supplies available to service the project from existing entitlements and resources, or are new or expanded entitlements needed?

2 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 project's projected demand in addition to the provider's existing commitments?

1 f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

1 g) Comply with federal, state, and local statutes and regulations related to solid waste?

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:

3 a) 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?

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

1 c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Documents Referenced:

This Initial Study is referenced by the documents listed below. These documents are available for public review at the County of Fresno, Department of Public Works and Planning, Development Services Division, 2220 Tulare Street, Suite A, Fresno, California (corner of M & Tulare Streets).

Fresno County General Plan, Policy Document and Final EIR
Fresno County Zoning Ordinance
Fresno County-adopted Kings River Regional Plan
Important Farmland Map 2014, State Department of Conservation
Cultural Resource Assessment prepared by Peak & Associates, Inc.
Transportation Impact Study prepared by Precision Civil Engineering, Inc.

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

EVALUATION OF ENVIRONMENTAL IMPACTS

APPLICANT: Kings River Packing

APPLICATION NOS.: Initial Study Application No. 7410, Classified Conditional Use Permit Application No. 3597 and Minor Variance Application No. 1287

DESCRIPTION: Amend Classified Conditional Use Permit (CUP) No. 3476 in order to allow expansion of an existing fruit packing and storage facility in the AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) and AL-40 (Limited Agricultural, 40-acre minimum parcel size) Zone Districts, including authorization of a 39-foot building height (35-foot maximum building height allowed) for a proposed building addition to be partially located in the AL-40 (Limited Agricultural, 40-acre minimum parcel size) and AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) Zone Districts, and a 38-foot building height (35-foot maximum building height allowed) for a proposed building addition to be located in the AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) Zone District.

LOCATION: The project site is located on the east side of Trimmer Springs Road, approximately three miles north of its intersection with Belmont Avenue, approximately three miles southwest of the unincorporated community of Piedra (21095 E. Trimmer Springs Road) (SUP. DIST. 5) (APNs 158-070-65, 158-070-69, 158-070-76, 158-070-77).

I. AESTHETICS

A. Would the project have a substantial adverse effect on a scenic vista; or

B. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway; or

C. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

FINDING: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED:

This proposal entails the phased expansion of an existing 10.89-acre commercial fruit packing operation by an additional 5.75 acres of processing, storage, and office space in the AL-40 (Limited Agricultural, 40-acre minimum parcel size) and AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) Zone Districts. Phase I of this expansion proposal includes construction of a loading dock and a 77,500 square-foot addition to an existing metal building to be utilized for fruit cold storage and office space. Phase II of this expansion proposal includes construction of a 173,000 square-foot addition to an existing metal building to be utilized for fruit packing and office space. The proposed 77,500 square-foot addition will have an overall building height of approximately 39 feet, and the proposed 173,000 square-foot addition will have an overall building height of approximately 38 feet, whereas the AL-40 (Limited Agricultural, 40-acre minimum parcel size) and AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) Zone Districts permit a 35-foot maximum building height. As such, Minor Variance Application No. 1287 is being concurrently processed with Classified Conditional Use Permit Application No. 3597 so as to allow the proposed 39-foot and 38-foot building heights.

The existing commercial fruit packing operation was originally authorized by Classified Conditional Use Permit (CUP) No. 2786, and was subsequently expanded by CUP No. 3307 and CUP No. 3476. Currently, the existing commercial fruit packing operation is located on an approximately 28.83-acre parcel identified as Assessor's Parcel Numbers (APNs) 158-070-65, 158-070-69, 158-070-76 and 158-070-77, which is partially located in the AL-40 (Limited Agricultural, 40-acre minimum parcel size) and AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) Zone Districts.

The subject parcel is located in an agricultural area comprised primarily of orchards with few residential land uses dispersed throughout. Additionally, portions of the Kings River and the Fresno Irrigation District Gould Canal are easterly adjacent to the subject parcel, and the Friant-Kern Canal is located approximately one and a half-mile south of the subject parcel.

A portion of Trimmer Springs Road, which is identified as a Scenic Drive in the Fresno County General Plan, abuts a western property line of the subject parcel. Policy OS-L.3 of the General Plan typically requires intensive land use proposals such as commercial developments to be developed with a 200-foot natural open space area adjacent to the Scenic Drive. General Plan Policy OS-L.3 also allows this 200-foot natural space setback requirement to be modified for proposals which involve the expansion of an existing facility. In this case, the existing commercial fruit packing operation currently encroaches into the typically required 200-foot natural open space area. The proposed improvements would be setback farther from Trimmer Springs Road than the existing commercial fruit packing operation; however, the proposed improvements would be located within the typically required 200-foot natural open space area. As such, drought-tolerant landscaping shall be provided along the western property line of the subject parcel where said property line abuts Trimmer Springs Road. Further, said landscaping shall be maintained in healthful condition and shall consist of trees and shrubs of reasonable size and density to provide visual screening. This landscaping requirement will be included as a Mitigation Measure to reduce the proposal's aesthetic impacts on Trimmer Springs Road to a less than significant level. Additionally, the design of the required landscaping shall be reviewed for approval during Site Plan

Review (SPR), which will be required as a Condition of Approval. Conditions of the SPR may include design of parking and circulation areas, access, on-site grading and drainage, fire protection, landscaping, signage and lighting.

*** *Mitigation Measure***

1. *In order to mitigate potential impacts to the scenic corridor along Trimmer Springs Road as a result of the proposed project, the Applicant shall screen the facility utilizing drought-tolerant landscaping, consisting of trees and shrubs of adequate size and density, along the western property line of the subject parcel where said property line abuts Trimmer Springs Road. Said landscaping shall be maintained in a healthy condition for the life of project operations. If the amount of landscaping provided to satisfy this requirement is equal to or greater than 500 square feet, the Applicant shall comply with California Code of Regulations Title 23, Division 2, Chapter 2.7 Model Water Efficient Landscape Ordinance (MWELO). Proposed landscaping and irrigation plans shall be submitted in conjunction with the required Site Plan Review Application and all landscaping shall be installed prior to occupancy.*

D. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

FINDING: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED:

This proposal will utilize outdoor lighting which has the potential of generating new sources of light and glare in the area. As such, all outdoor lighting fixtures shall be required to be hooded and directed so as to not shine towards adjacent properties and roads. This requirement will be included as a Mitigation Measure.

*** *Mitigation Measure***

1. *Prior to occupancy, all outdoor lighting shall be hooded, directed and permanently maintained as to not shine towards adjacent properties and roads.*

II. AGRICULTURAL AND FORESTRY RESOURCES

A. Would the project convert prime or unique farmlands or farmland of state-wide importance to non-agricultural use; or

B. Would the project conflict with existing agricultural zoning or Williamson Act Contracts; or

C. Would the project conflict with existing zoning for or cause rezoning of forest land, timberland, or timberland zoned Timberland Production; or

D. Would the project result in the loss of forest land or conversion of forest land to non-forest use; or

E. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural uses or conversion of forest land to non-forest use?

FINDING: LESS THAN SIGNIFICANT IMPACT:

The subject parcel is not located on forest land, and portions of the subject parcel are classified as Semi-Agricultural and Rural Commercial, and Prime Farmland on the Fresno County Important Farmland Map (2014).

Portions of the subject parcel are enrolled under Agricultural Land Conservation Contract (Williamson Act Contract) No. 225; however, partial Non-Renewals of Contract No. 225 have been filed for the contracted portions of the subject parcel and will be removed from the Williamson Act by the last day of December 2022.

With regard to the portions of the subject parcel classified as Prime Farmland, this proposal will preclude the agricultural cultivation of approximately 3.97 acres of Prime Farmland. However, this loss of farmland is less than significant in that the proposed improvements will serve an existing commercial enterprise which processes and stores agricultural products.

III. AIR QUALITY

A. Would the project conflict with or obstruct implementation of the applicable Air Quality Plan; or

B. Would the project isolate any air quality standard or contribute to an existing or projected air quality violation; or

C. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under a Federal or State ambient air quality standard; or

D. Would the project expose sensitive receptors to substantial pollutant concentrations; or

E. Would the project create objectionable odors affecting a substantial number of people?

FINDING: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED:

According to the San Joaquin Valley Unified Air Pollution Control District (Air District), this proposal is subject to Air District Rule 9510 (Indirect Source Review) as it meets the applicability threshold within Air District Rule 9510 (Indirect Source Review) of 25,000 square feet of light industrial space. Additionally, for proposals subject to Air District Rule 9510 (Indirect Source Review), the Air District requires submittal of an Air Impact Assessment (AIA) Application no later than applying for final discretionary approval. Further, this proposal may also be subject to the following Air District Rules: Regulation VIII (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt).

An Air Impact Assessment (AIA) Application (ISR Project No. C-20180007) was prepared for this proposal and submitted to the Air District on January 8, 2018. The AIA Application was approved by the Air District on February 15, 2018. According to the Air District, emissions of criteria pollutants specific to the proposal are expected to be mitigated below the Air District significance thresholds of 10 tons/year NOX and 15 tons/year PM10. As such, the emissions of criteria pollutants specific to the proposal would have no significant adverse impact on air quality. In order to ensure that emissions of criteria pollutants specific to the proposal are maintained below Air District significance thresholds, the commercial fruit packing operation shall adhere to the Mitigation Measures identified in the AIA Application approval.

* ***Mitigation Measure***

1. *The Applicant shall comply with all the measures identified in the Project Air Impact Assessment (AIA)/Indirect Source Review (Project Number C-2018007) dated February 15, 2018 as approved for this project by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The Applicant shall submit evidence annually to the SJVAPCD and Department of Public Works and Planning demonstrating compliance with the mitigation measures.*

Compliance with Air District Rules and Regulations will reduce air quality impacts from the subject proposal to a less than significant level.

IV. BIOLOGICAL RESOURCES

A. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any candidate, sensitive, or special-status species; or

B. Would the project 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 Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS); or

C. Would the project have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption or other means; or

D. Would the project 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; or

E. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

F. Would the project Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local regional, or state habitat conservation plan?

FINDING: LESS THAN SIGNIFICANT IMPACT:

The subject parcel is located in an agricultural area and has been previously disturbed as said property has been historically utilized for a commercial fruit packing facility and agricultural cultivation. Further, neighboring properties have been historically utilized for agricultural cultivation and, therefore, have also been previously disturbed.

This proposal was referred to the California Department of Fish and Wildlife (CDFW), which did not identify any concerns related to the project. This proposal was also referred to the U.S. Fish and Wildlife Service (USFWS), which also did not identify any concerns related to the project. Therefore, no impacts were identified in regard to: 1.) Any candidate, sensitive, or special-status species; 2.) Any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS; 3.) Federally protected wetlands as defined by Section 404 of the Clean Water Act; or 4.) 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. This proposal will not conflict with any local policies or ordinances protecting biological resources or any provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan.

V. CULTURAL RESOURCES

A. Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5; or

B. Would the project cause of substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5; or

C. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or

D. Would the project disturb any human remains, including those interred outside of formal cemeteries; or

E. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074?

FINDING: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED:

The subject parcel is located in an area designated to be highly sensitive for archeological resources; however, said property has been historically utilized for a commercial fruit packing facility and agricultural cultivation and, therefore, has been previously disturbed. Further, Peak & Associates, Inc. prepared a Cultural Resource Assessment for the project site, which identified no archaeological or cultural resources. However, in the event that cultural resources are unearthed during ground disturbing activity, all work shall be halted in the area of the find, and an Archeologist shall be

contacted to evaluate the findings and make any necessary mitigation recommendations. If human remains are unearthed during ground disturbing activities, no further disturbance is to occur until the Fresno County Sheriff-Coroner has made the necessary findings as to origin and disposition. All normal evidence procedures shall be followed by photographs, reports and video. If such remains are determined to be Native American, the Sheriff-Coroner must notify the Native American Commission within 24 hours. This requirement will be included as a Mitigation Measure to reduce the proposal's cultural resource impacts to a less than significant level.

* ***Mitigation Measure***

1. *In the event that cultural resources are unearthed during ground disturbing activities, all work shall be halted in the area of the find. An Archeologist shall be called to evaluate the findings and make any necessary mitigation recommendations. If human remains are unearthed during ground disturbing activities, no further disturbance is to occur until the Fresno County Sheriff-Coroner has made the necessary findings as to origin and disposition. All normal evidence procedures shall be followed by photographs, reports and video. If such remains are determined to be Native American, the Sheriff-Coroner must notify the Native American Commission within 24 hours.*

VI. GEOLOGY AND SOILS

A. Would the project expose people or structures to potential substantial adverse effects, including risk of loss, injury or death involving:

1. Rupture of a known earthquake; or

2. Strong seismic ground shaking; or

3. Seismic-related ground failure, including liquefaction; or

4. Landslides?

FINDING: NO IMPACT:

The area where the subject parcel is located is designated as Seismic Design Category C in the California Geological Survey. No agency expressed concerns related to ground shaking, ground failure, liquefaction or landslides. Development of the project will be subject to the Seismic Design Category C Standards.

B. Would the project result in substantial erosion or loss of topsoil?

FINDING: LESS THAN SIGNIFICANT IMPACT:

Changes in topography and erosion could result from grading activities associated with this proposal. According to the Development Engineering Section of the Fresno County Department of Public Works and Planning, the Applicant must obtain a Grading Permit

or Grading Voucher for any grading associated with this proposal. This mandatory requirement will be included as a Project Note.

C. Would the project result in on-site or off-site landslide, lateral spreading, subsidence, liquefaction or collapse; or

D. Would the project be located on expansive soils, creating substantial risks to life or property?

FINDING: NO IMPACT:

The project site is not located within an area of known risk of landslides, lateral spreading, subsidence, liquefaction, collapse, or within an area of known expansive soils.

E. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative disposal systems where sewers are not available for wastewater disposal?

FINDING: LESS THAN SIGNIFICANT IMPACT:

The existing commercial fruit packing operation is served by three engineered on-site septic systems, and no additional septic systems are being requested through the proposed expansion project.

According to the Environmental Health Division of the Fresno County Department of Public Health, California Plumbing Code Appendix H requires access to septic tanks to be maintained. Additionally, per California Plumbing Code Section 6.9, disposal fields, trenches, and leaching beds shall not be paved over or covered by concrete or a material that is capable of reducing or inhibiting evaporation of sewer effluent. These mandatory requirements will be included as Project Notes.

VII. GREENHOUSE GAS EMISSIONS

A. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

B. Would the project conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

FINDING: LESS THAN SIGNIFICANT IMPACT:

The San Joaquin Valley Unified Air Pollution Control District (Air District) has reviewed this proposal and expressed no concerns related to greenhouse gas emissions. Further, compliance with Air District Rules and Regulations discussed in Section III (Air Quality) of this analysis will reduce air quality impacts from the subject proposal to a less than significant level.

VIII. HAZARDS AND HAZARDOUS MATERIALS

A. Would the project create a significant public hazard through routine transport, use or disposal of hazardous materials; or

B. Would the project create a significant public hazard involving accidental release of hazardous materials into the environment?

FINDING: LESS THAN SIGNIFICANT IMPACT:

According to the Environmental Health Division of the Fresno County Department of Public Health, the commercial fruit packing operation shall satisfy the requirements set forth in the California Health and Safety Code (HSC), Division 20, Chapter 6.95. As such, within 30 days of the occurrence of any of the following events, the commercial fruit packing operation must update their Hazardous Materials Business Plan (HMBP) and Site Map on file with the Fresno County Department of Public Health: 1) There is a 100% or more increase in the quantities of a previously disclosed material; or 2) The facility begins handling a previously undisclosed material at or above the HMBP threshold amounts. The commercial fruit packing operation must also certify that a review of the HMBP has been conducted at least once every year and that any necessary changes were made and that the changes were submitted to the Fresno County Department of Public Health. These mandatory requirements will be included as Project Notes.

Additionally, all hazardous waste shall be handled in accordance with requirements set forth in the California Code of Regulations (CCR), Title 22, Division 4.5, which discusses proper labeling, storage and handling of hazardous wastes. This mandatory requirement will be included as a Project Note.

Further, within six months of the occurrence of any of the following events, the commercial fruit packing operation must update their Risk Management Plan (RMP) on file with the U.S. Environmental Protection Agency (EPA): 1) If a change alters the Program Level that applies to any covered process; or 2) If a change requires a revised Off-Site Consequence Analysis; or 3) If a change requires a revised Process Hazard Analysis or Hazard Review; or 4) If a new regulated substance is present above the threshold quantity in an already covered process; or 5) If a regulated substance is present above the threshold quantity in a new process; or 6) If the U.S. EPA begins regulating a new substance. This mandatory requirement will be included as a Project Note.

C. Would the project create hazardous emissions or utilize hazardous materials, substances or waste within one quarter-mile of a school?

FINDING: NO IMPACT:

There are no schools located within one quarter-mile of the subject parcel.

D. Would the project be located on a hazardous materials site?

FINDING: NO IMPACT:

No hazardous materials sites are located within the boundaries of the project site.

E. Would a project located within an airport land use plan or, absent such a plan, within two miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area; or

F. Would a project located within the vicinity of a private airstrip result in a safety hazard for people residing or working in the project area?

FINDING: LESS THAN SIGNIFICANT IMPACT:

The project site is located approximately one mile northeast of a private airstrip identified as "Harris River Ranch Airport"; however, the project site is not located within any Safety Zone of the private airstrip. Further, the private airstrip is oriented in an east to west direction.

G. Would the project impair implementation of or physically interfere with an adopted Emergency Response Plan or Emergency Evacuation Plan?

FINDING: NO IMPACT:

This proposal will not impair the implementation of, or physically interfere with an adopted Emergency Response Plan. No such impacts were identified in the project analysis.

H. Would the project 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?

FINDING: NO IMPACT:

The project site is not located within a wildland area.

IX. HYDROLOGY AND WATER QUALITY

A. Would the project violate any water quality standards or waste discharge requirements or otherwise degrade water quality?

FINDING: LESS THAN SIGNIFICANT IMPACT:

As construction associated with this proposal will disturb more than one acre, compliance with the National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002 for Discharges of Storm Water Associated with Construction Activity shall be required. Before construction begins, the Applicant shall submit to the State Water Resources Control Board a Notice of Intent to comply with said permit, a

Storm Water Pollution Prevention Plan (SWPPP), a Site Plan, and appropriate fees. The SWPPP shall contain all items listed in Section A of the General Permit, including descriptions of measures taken to prevent or eliminate unauthorized non-storm water discharges, and best management practices (BMP) implemented to prevent pollutants from discharging with storm water into waters of the United States. These mandatory requirements will be included as Project Notes.

According to the California Regional Water Quality Control Board (Water Board), the Applicant submitted a Report of Waste Discharge (RWD) to the Water Board in 1997 for the discharge of 4,500 gallons of fruit-washing wastewater per day (monthly average) to approximately 65 acres of land. If the proposed expansion project will result in a material change in the volume, character, or location of the discharge that was described in the 1997 RWD, the Applicant shall be required to submit a new RWD to the Water Board at least 140 days prior to initiating discharge from the expanded facility. This mandatory requirement will be included as a Project Note.

B. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge so that there would be a net deficit in aquifer volume or a lowering of the local groundwater table?

FINDING: LESS THAN SIGNIFICANT IMPACT:

The subject parcel is located in a designated water-short area. However, according to the Water and Natural Resources Division of the Fresno County Department of Public Works and Planning, there will not be a significant increase in water usage resulting from the proposed expansion project as water generated from the fruit washing process is recycled as a supplement for the irrigation water utilized by surrounding orchards, thereby replacing ground water that would otherwise be pumped for irrigation purposes.

C. Would the project substantially alter existing drainage patterns, including alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site; or

D. Would the project substantially alter existing drainage patterns, including alteration of the course of a stream or river, in a manner which would result in flooding on or off site?

FINDING: NO IMPACT:

Portions of the Kings River are easterly adjacent to the subject parcel; however, no streams or rivers are located within the boundaries of the subject parcel.

E. Would the project create or contribute run-off which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted run-off?

FINDING: LESS THAN SIGNIFICANT IMPACT:

Permanent improvements associated with this proposal will not cause significant changes in absorption rates, drainage patterns or the rate and amount of surface run-off, with adherence to the Grading and Drainage Sections of the Fresno County Ordinance Code. Further, any additional runoff generated by development of the proposal cannot be drained across property lines and must be retained on site per County Standards. This mandatory requirement will be included as a Project Note.

F. Would the project otherwise substantially degrade water quality?

FINDING: LESS THAN SIGNIFICANT IMPACT:

According to the Fresno Irrigation District (FID), an FID canal identified as Gould Canal No. 97 traverses an eastern edge of the subject parcel, and FID access along said portion of the canal may be obstructed by existing encroachments such as trees and fencing. As such, with regard to that portion of the canal traversing an eastern edge of the subject parcel, FID requests that any obstructions located within 20 feet of the canal be removed. Additionally, FID also requests that FID review and approval be required for any aspect of the proposed expansion project that will impact FID facilities. Further, FID also requests that the Applicant be required to submit a Grading and Drainage Plan to FID for review and approval in order to prove that the proposed expansion project will not adversely impact the structural integrity of Gould Canal No. 97, or result in drainage patterns that would adversely impact FID.

With regard to the agency comments provided by FID, County staff acknowledges that the requirement for the Applicant to provide a Grading and Drainage Plan to FID for review and approval prior to the issuance of Building Permits will help ensure that the project will not adversely impact FID facilities. This requirement will be included as a Condition of Approval, as was the case with previously-approved Classified Conditional Use Permit (CUP) No. 3476. Additionally, the inclusion of a Condition of Approval requiring the Applicant to provide a Grading and Drainage Plan to FID for review and approval negates the need for FID to review other aspects of the project. Further, regarding removal of possible obstructions to FID access along Gould Canal No. 97, County staff does not believe there is a nexus for such a requirement considering the 180-foot separation between Gould Canal No. 97 and the nearest proposed structural improvement.

G. Would the project place housing within a 100-year floodplain?

FINDING: NO IMPACT:

No housing is proposed with this project.

H. Would the project place structures within a 100-year flood hazard area that would impede or redirect flood flows?

FINDING: LESS THAN SIGNIFICANT IMPACT:

According to FEMA FIRM Panel 1645H, portions of the subject parcel are located in Flood Zone AE, which is subject to flooding from the 1% chance storm (100-year storm). Any work performed within Flood Zones shall conform to provisions established in Chapter 15.48 Flood Hazard Areas of Fresno County Ordinance. This mandatory requirement will be included as a Project Note.

I. Would the project expose persons or structures to levee or dam failure?

FINDING: LESS THAN SIGNIFICANT IMPACT:

Pineflat Reservoir is located approximately six and a half-mile northeast of the subject parcel; however, no impacts related to levee or dam failure were identified in the project analysis.

J. Would the project cause inundation by seiche, tsunami or mudflow?

FINDING: NO IMPACT:

The subject parcel is not prone to seiche, tsunami or mudflow. No such impacts were identified in the project analysis.

X. LAND USE AND PLANNING

A. Will the project physically divide an established community?

FINDING: NO IMPACT:

This proposal will not physically divide a community. The subject parcel is located approximately three miles southwest of the unincorporated community of Piedra.

B. Will the project conflict with any Land Use Plan, policy or regulation of an agency with jurisdiction over the project?

FINDING: LESS THAN SIGNIFICANT IMPACT:

The subject parcel is designated Agriculture in the County-adopted Kings River Regional Plan. Provisions for value-added agricultural uses, such as the proposed commercial fruit packing operation expansion, have been provided for in areas designated Agriculture by the Fresno County Zoning Ordinance and General Plan.

Policy LU-A.3 of the General Plan provides that value-added agricultural uses may be allowed by discretionary permit on lands designated Agriculture, subject to a number of specific criteria. Criteria LU-A.3.a states that the use shall provide a needed service to the surrounding agricultural area which cannot be provided more efficiently within urban areas or which requires location in a non-urban area because of unusual site requirements or operational characteristics. Criteria LU-A.3.b states that the use should not be sited on productive agricultural land if less productive land is available in the vicinity. Criteria LU-A.3.c states that the use shall not have a detrimental impact on

water resources or the use or management of surrounding properties within a one quarter-mile radius. Criteria LU-A.3.d states that a probable workforce should be located nearby or readily available. Criteria LU-A.3.f states that the evaluation under Criteria LU-A.3.a for proposed value-added agricultural processing facilities shall consider the service requirements of the use and the capability and capacity of cities and unincorporated communities to provide the required services. Criteria LU-A.3.h states that the evaluation of discretionary permits for existing commercial uses shall not consider Criteria LU-A.3.b.

With regard to Criteria "a" and Criteria "f", this proposal entails the expansion of an existing 10.89-acre commercial fruit packing operation by an additional 5.75 acres of processing, storage, and office space. The subject parcel is located in an agricultural area comprised primarily of orchards with few residential land uses dispersed throughout. The existing commercial fruit packing operation is served by on-site engineered septic systems and an on-site water well, and no additional septic systems or water wells are being requested through the proposed expansion project. Further, as this proposal is an expansion of an existing commercial use, Criteria "b" does not apply per Criteria "h".

With regard to Criteria "c", the subject parcel is located in a designated water-short area. However, according to the Water and Natural Resources Division of the Fresno County Department of Public Works and Planning, there will not be a significant increase in water usage resulting from the proposed expansion project as water generated from the fruit washing process is recycled as a supplement for the irrigation water utilized by surrounding orchards, thereby replacing ground water that would otherwise be pumped for irrigation purposes. Further, with adherence to the Conditions of Approval, Mitigation Measures and Project Notes identified in this Initial Study (IS), staff believes the proposal will not have a detrimental impact on the use or management of surrounding properties.

With regard to Criteria "d", this proposal is located approximately three miles southwest of the unincorporated community of Piedra, and is also located approximately ten miles east of the City of Clovis, which have the ability to provide an adequate workforce.

According to Policy LU-A.13 of the General Plan, the County shall protect agricultural operations from conflicts with non-agricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations.

According to Policy LU-A.14 of the General Plan, the County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.

With regard to Policy LU-A.13 and Policy LU-A.14, this proposal entails the expansion of an existing commercial fruit packing operation located in an agricultural area comprised primarily of orchards with few residential land uses dispersed throughout. Portions of the subject parcel are classified as Semi-Agricultural and Rural Commercial, and Prime Farmland on the Fresno County Important Farmland Map (2014). With regard to the portions of the subject parcel classified as Prime Farmland, this proposal

will preclude the agricultural cultivation of approximately 3.97 acres of Prime Farmland. However, this loss of farmland is less than significant in that the proposed improvements will serve an existing commercial enterprise which processes and stores agricultural products.

According to Policy PF-C.17 of the General Plan, the County shall undertake a water supply evaluation prior to consideration of any discretionary project related to land use. The evaluation shall include the following:

a. *Determination that the water supply is adequate to meet the highest demand that could be permitted on the lands in question;*
b. *Determination of the impact that use of the proposed water supply will have on other water users in Fresno County;*
c. *Determination that the proposed water supply is sustainable or that there is an acceptable plan to achieve sustainability.*

With regard to Policy PF-C.17, the subject parcel is located in a designated water-short area. However, according to the Water and Natural Resources Division of the Fresno County Department of Public Works and Planning, there will not be a significant increase in water usage resulting from the proposed expansion project as water generated from the fruit washing process is recycled as a supplement for the irrigation water utilized by surrounding orchards, thereby replacing ground water that would otherwise be pumped for irrigation purposes.

C. Will the project conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan?

FINDING: NO IMPACT:

This proposal will not conflict with any Habitat Conservation Plan or Natural Community Conservation Plan. No such Plans were identified in the project analysis.

XI. MINERAL RESOURCES

A. Would the project result in the loss of availability of a known mineral resource; or

B. Would the project result in the loss of availability of a locally-important mineral resource recovery site designated on a General Plan?

FINDING: LESS THAN SIGNIFICANT IMPACT:

The project site is located in Mineral Resource Zone 2 (MRZ-2) per General Plan Policy OS-C.2. Typically, the County shall not permit land uses incompatible with mineral resource recovery within areas designated as MRZ-2; however, this proposal entails expansion of an existing facility, and no mineral resource impacts were identified in the project analysis.

XII. NOISE

A. Would the project result in exposure of people to severe noise levels; or

B. Would the project result in exposure of people to or generate excessive ground-borne vibration or ground-borne noise levels; or

C. Would the project cause a substantial permanent increase in ambient noise levels in the project vicinity; or

D. Would the project result in a substantial temporary or periodic increase in ambient noise levels?

FINDING: LESS THAN SIGNIFICANT IMPACT:

The Environmental Health Division of the Fresno County Department of Public Health reviewed this proposal and did not identify any potential noise-related impacts. However, development of the proposal must comply with the Fresno County Noise Ordinance related to construction noise, limiting noise-generating construction activities to the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday and 7:00 a.m. to 5:00 p.m. Saturday and Sunday, thereby minimizing noise impacts to less than significant. This mandatory requirement will be included as a Project Note.

E. Would the project expose people to excessive noise levels associated with a location near an airport or a private airstrip; or

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?

FINDING: LESS THAN SIGNIFICANT IMPACT:

The project site is located approximately one mile northeast of a private airstrip identified as "Harris River Ranch Airport"; however, no adverse noise impacts were identified in the project analysis.

XIII. POPULATION AND HOUSING

A. Would the project induce substantial population growth either directly or indirectly; or

B. Would the project displace substantial numbers of existing housing; or

C. Would the project displace substantial numbers of people, necessitating the construction of housing elsewhere?

FINDING: NO IMPACT:

This proposal will not construct or displace housing and will not otherwise induce population growth.

XIV. PUBLIC SERVICES

A. Would the project result in substantial adverse physical impacts associated with the provision of new or physically-altered public facilities in the following areas:

1. Fire protection?

FINDING: LESS THAN SIGNIFICANT IMPACT:

This proposal was reviewed by the Fresno County Fire Protection District (Fire District) which did not identify any concerns with the project. The proposal must comply with the California Code of Regulations Title 24 – Fire Code, and three sets of County-approved construction plans for the project must be approved by the Fire District prior to issuance of Building Permits by the County. These mandatory requirements will be included as Project Notes to be addressed during Site Plan Review (SPR), which will be required as a Condition of Approval. Conditions of the SPR may include design of parking and circulation areas, access, on-site grading and drainage, fire protection, landscaping, signage and lighting.

According to the Fire District, the subject parcel must annex into Community Facilities District (CFD) No. 2010-01 of the Fresno County Fire Protection District. This requirement will be included as a Project Note.

2. Police protection; or

3. Schools; or

4. Parks; or

5. Other public facilities?

FINDING: NO IMPACT:

No impacts on the provision of other services were identified in the project analysis.

XV. RECREATION

A. Would the project increase the use of existing neighborhood and regional parks; or

B. Would the project require the construction of or expansion of recreational facilities?

FINDING: NO IMPACT:

No such impacts were identified in the project analysis.

XVI. TRANSPORTATION/TRAFFIC

A. Would the project conflict with any applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation; or

B. Would the project conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demands measures?

FINDING: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED:

This proposal was reviewed by the Design Division of the Fresno County Department of Public Works and Planning, which determined that a Traffic Impact Study (TIS) was needed to effectively evaluate potential traffic-related impacts associated with the proposed expansion project. In accordance with this determination, a TIS was prepared for the proposal by Precision Civil Engineering, Inc.

The TIS prepared for the proposed expansion project by Precision Civil Engineering, Inc. includes analysis of intersection operations at State Route 180 (Kings Canyon Road) and Rio Vista Avenue, State Route 180 (Kings Canyon Road) and Reed Avenue, State Route 180 (Kings Canyon Road) and Oliver Street, and Trimmer Springs Road and the project site access. This analysis of intersection operations was conducted under the following scenarios: 1) Existing, 2) Near-Term, 3) Near-Term plus Phase I, 4) Cumulative, and 5) Cumulative plus Full Build-Out. Additionally, the TIS prepared for the proposed expansion project also includes analysis of the roadway operations and structural conditions of Belmont Avenue west of Academy Avenue, and Trimmer Springs Road south of the project site.

According to the TIS prepared for the proposed expansion project, it was not practical to obtain traffic counts at the intersections of Belmont Avenue and Oliver Street or State Route 180 (Kings Canyon Road) and Oliver Street due to closure and reconstruction of Belmont Avenue between Academy Avenue and Trimmer Springs Road. As such, traffic counts for the intersection of State Route 180 (Kings Canyon Road) and Oliver Street were derived from Fresno Council of Governments (COG) travel demand modeling data and the other State Route 180 (Kings Canyon Road) intersection traffic counts identified in this analysis.

Based upon the TIS prepared for the proposed expansion project by Precision Civil Engineering, Inc., prior to occupancy, the applicant/owner shall enter into an agreement with Fresno County agreeing to participate, on a pro-rata basis of 38% of the total cost for the maintenance and restoration of Trimmer Springs Road (approximately 2.3 mile segment from project site) and Oliver Street (approximately one mile segment from Belmont Avenue to State Route 180) for a period not to exceed 10 years. This agreement shall establish the existing baseline condition for Trimmer Springs Road and Oliver Street, and address the monitoring and evaluation of roadway pavement conditions, and the undertaking of roadway repairs and/or maintenance overlay as necessary to ensure project related traffic can be safely accommodated. The pro-rata share for the maintenance and restoration of said roadways shall not exceed $485,000

over the term of this agreement. This requirement will be included as a Mitigation Measure to reduce adverse transportation and traffic impacts to a less than significant level.

*** *Mitigation Measure***

1. *In order to mitigate potential traffic impacts to County roadways, prior to occupancy, the applicant/owner shall enter into an agreement with Fresno County agreeing to participate, on a pro-rata basis of 38% of the total cost for the maintenance and restoration of Trimmer Springs Road (approximately 2.3 mile segment from project site) and Oliver Street (approximately one mile segment from Belmont Avenue to State Route 180) for a period not to exceed 10 years. This agreement shall establish the existing baseline condition for Trimmer Springs Road and Oliver Street, and address the monitoring and evaluation of roadway pavement conditions, and the undertaking of roadway repairs and/or maintenance overlay as necessary to ensure project related traffic can be safely accommodated. The pro-rata share for the maintenance and restoration of said roadways shall not exceed $485,000 over the term of this agreement.*

C. Would the project result in a change in air traffic patterns?

FINDING: NO IMPACT:

The project site is located approximately one mile northeast of a private airstrip identified as "Harris River Ranch Airport"; however, no adverse impacts to air traffic patterns were identified in the project analysis.

D. Would the project substantially increase traffic hazards due to design features; or

E. Would the project result in inadequate emergency access?

FINDING: NO IMPACT:

No such impacts were identified in the project analysis.

F. Would the project conflict with adopted plans, policies or programs regarding public transit, bicycle or pedestrian facilities or otherwise decrease the performance or safety of such facilities?

FINDING: LESS THAN SIGNIFICANT IMPACT:

Trimmer Springs Road is identified as a Class II Bikeway in the Transportation and Circulation Element of the General Plan; however, this proposal entails expansion of an existing facility, and no adverse alternative transportation impacts were identified in the project analysis.

XVII. UTILITIES AND SERVICE SYSTEMS

A. Would the project exceed wastewater treatment requirements; or

B. Would the project require construction of or the expansion of new water or wastewater treatment facilities?

FINDING: LESS THAN SIGNIFICANT IMPACT:

See discussion in Section VI.E Geology and Soils.

C. Would the project require or result in the construction or expansion of new storm water drainage facilities?

FINDING: LESS THAN SIGNIFICANT IMPACT:

See discussion in Section IX.E Hydrology and Water Quality.

D. Would the project have sufficient water supplies available from existing entitlements and resources, or are new or expanded entitlements needed?

FINDING: LESS THAN SIGNIFICANT IMPACT:

See discussion in Section IX.B Hydrology and Water Quality.

E. Would the project result in a determination of inadequate wastewater treatment capacity to serve project demand?

FINDING: LESS THAN SIGNIFICANT IMPACT:

See discussion in Section VI.E Geology and Soils.

F. Would the project be served by a landfill with sufficient permitted capacity; or

G. Would the project comply with federal, state and local statutes and regulations related to solid waste?

FINDING: NO IMPACT:

No such impacts were identified in the project analysis.

XVIII. 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 prehistory or history?

FINDING: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION INCORPORATED:

Pursuant to discussion in Section IV (Biological Resources), no such impacts on biological resources were identified in the project analysis. Pursuant to discussion in Section V (Cultural Resources), this proposal may have impacts on cultural resources; however, the Mitigation Measure included in Section V (Cultural Resources) will reduce such impacts to a less than significant level.

B. Does the project have impacts that are individually limited, but cumulatively considerable?

FINDING: NO IMPACT:

No cumulatively considerable impacts were identified in the project analysis.

C. Does the project have environmental impacts which will cause substantial adverse effects on human beings, either directly or indirectly?

FINDING: NO IMPACT:

No substantial adverse impacts on human beings were identified in the project analysis.

CONCLUSION/SUMMARY

Based upon the Initial Study prepared for Classified Conditional Use Permit Application No. 3597 and Minor Variance Application No. 1287, staff has concluded that the project will not have a significant effect on the environment. It has been determined that there would be no impacts to population and housing, or recreation.

Potential impacts related to agricultural and forestry resources, biological resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, public services, and utilities and service systems have been determined to be less than significant.

Potential impacts relating to aesthetics, air quality, cultural resources, and transportation and traffic have been determined to be less than significant with the identified Mitigation Measures.

A Mitigated Negative Declaration is recommended and is subject to approval by the decision-making body. The Initial Study is available for review at 2220 Tulare Street, Suite A, Street Level, located on the southeast corner of Tulare and “M” Street, Fresno, California.

DC:
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County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

DATE: November 22, 2017

TO: Department of Public Works and Planning, Attn: Bernard Jimenez, Assistant Director
Development Services, Attn: William M. Kettler, Division Manager
Development Services, Attn: Chris Motta, Principal Planner
Development Services, Current Planning, Attn: Marianne Mollring, Senior Planner
Development Services, Policy Planning, ALCC, Attn: Mohammad Khorsand
Development Services, Zoning & Permit Review, Attn: Tawanda Mtunga
Development Services, Site Plan Review, Attn: Hector Luna
Development Services, Building & Safety/Plan Check, Attn: Chuck Jonas
Development Services, Building & Safety/Plan Check, CASp, Attn: Dan Mather
Development Engineering, Attn: Nadia Leon, Grading/Mapping
Road Maintenance and Operations, Attn: Randy Ishii/Frank Daniele/Nadia Lopez
Design Division, Special Projects/Road Projects, Attn: Mohammad Alimi/Dale Siemer
Design Division, Transportation Planning, Attn: Mohammad Alimi/Dale Siemer
Water and Natural Resources Division, Attn: Glenn Allen, Division Manager
Department of Public Health, Environmental Health Division, Attn: Kevin Tsuda/Deep Sidhu/Steven Rhodes
Agricultural Commissioner, Attn: Les Wright
Sheriff's Office, Attn: Captain John Zanoni, Lt. John Reynolds, Lt. Louie Hernandez, Lt. Kathy Curtice, Lt. Ryan Hushaw
U.S. Fish and Wildlife Service, San Joaquin Valley Division, Attn: Holley Kline **(Note: Hard copy)**
CA Regional Water Quality Control Board, Attn: Scott Moore
CA Regional Water Quality Control Board, Attn: Matt Scroggins
CA Regional Water Quality Control Board, Attn: Dale Harvey
CA Department of Fish and Wildlife, Attn: Renee Robison, Environmental Scientist
State Water Resources Control Board, Division of Drinking Water, Fresno District, Attn: Carl Carlucci, Jose Robeldo
Dumna Wo Wah Tribal Government, Attn: Robert Ledger, Tribal Chairman/Eric Smith, Cultural Resources Manager/Chris Acree, Cultural Resources Analyst
Picayune Rancheria of the Chuckchansi Indians, Attn: Tara C. Estes-Harter, THPO/Cultural Resources Director
Santa Rosa Rancheria Tachi Yokut Tribe, Attn: Ruben Barrios, Tribal Chairman/ Hector Franco, Director/Shana Powers, Cultural Specialist II
Table Mountain Rancheria, Attn: Leanne Walker-Grant, Tribal Chairperson
Table Mountain Rancheria, Attn: Robert Pennell, Cultural Resources Director/Kim Taylor, Cultural Resources Department/Sara Barnett, Cultural Resources Department
San Joaquin Valley Unified Air Pollution Control District (PIC-CEQA Division), Attn: PIC Supervisor
Fresno Irrigation District, Attn: William R. Stretch and Sen Saetern
Fresno County Fire Protection District, Attn: Chris Christopherson, Battalion Chief

FROM: Derek Chambers, Planner
Development Services Division

SUBJECT: Initial Study Application No. 7410 and Classified Conditional Use Permit Application No. 3597

APPLICANT: Kings River Packing

DUE DATE: December 7, 2017

The Department of Public Works and Planning, Development Services Division is reviewing the subject applications proposing to amend Classified Conditional Use Permit (CUP) Nos. 3307 and 3476 in order to allow expansion of an existing fruit packing and storage facility in the AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) and AL-40 (Limited Agricultural, 40-acre minimum parcel size) Zone Districts.

The Department is also reviewing for environmental effects, as mandated by the California Environmental Quality Act (CEQA) and for conformity with plans and policies of the County.

Please review the proposal and respond to the questionnaire. Please answer the questions according to your specific area of expertise.

Based upon this review, a determination will be made regarding conditions to be imposed on the project, including necessary on-site and off-site improvements.

We must have your comments by **December 7, 2017.** Any comments received after this date may not be used.

NOTE - THIS WILL BE OUR ONLY REQUEST FOR WRITTEN COMMENTS. If you do not have comments, please provide a "NO COMMENT" response to our office by the above deadline (e-mail is also acceptable; see email address below).

Please address any correspondence or questions related to environmental and/or policy/design issues to me, Derek Chambers, Planner, Development Services Division, Fresno County Department of Public Works and Planning, 2220 Tulare Street, Sixth Floor, Fresno, CA 93721, or call (559) 600-4205 or email dchambers@co.fresno.ca.us

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Activity Code (Internal Review): 2381

Enclosures

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

DATE: December 6, 2017

TO: Southern San Joaquin Valley Information Center, Attn: Celeste Thomson

FROM: Derek Chambers, Planner
Development Services Division

SUBJECT: Initial Study Application No. 7410 and Classified Conditional Use Permit Application No. 3597 **- $75.00 Review Fee Enclosed**

APPLICANT: Kings River Packing

DUE DATE: December 21, 2017

The Department of Public Works and Planning, Development Services Division is reviewing the subject applications proposing to amend Classified Conditional Use Permit (CUP) Nos. 3307 and 3476 in order to allow expansion of an existing fruit packing and storage facility in the AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) and AL-40 (Limited Agricultural, 40-acre minimum parcel size) Zone Districts.

The Department is also reviewing for environmental effects, as mandated by the California Environmental Quality Act (CEQA) and for conformity with plans and policies of the County.

Please review the proposal and respond to the questionnaire. Please answer the questions according to your specific area of expertise.

Based upon this review, a determination will be made regarding conditions to be imposed on the project, including necessary on-site and off-site improvements.

We must have your comments by **December 21, 2017.** Any comments received after this date may not be used.

NOTE - THIS WILL BE OUR ONLY REQUEST FOR WRITTEN COMMENTS. If you do not have comments, please provide a "NO COMMENT" response to our office by the above deadline (e-mail is also acceptable; see email address below).

Please address any correspondence or questions related to environmental and/or policy/design issues to me, Derek Chambers, Planner, Development Services Division, Fresno County Department of Public Works and Planning, 2220 Tulare Street, Sixth Floor, Fresno, CA 93721, or call (559) 600-4205 or email dchambers@co.fresno.ca.us

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Activity Code (Internal Review): 2381

Enclosures

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

DATE: January 22, 2018

TO: Southern San Joaquin Valley Information Center, Attn: Celeste Thomson

FROM: Derek Chambers, Planner
Development Services and Capital Projects Division

SUBJECT: Initial Study Application No. 7410 and Classified Conditional Use Permit Application No. 3597 **– Cultural Resources Assessment**

APPLICANT: Kings River Packing

DUE DATE: February 6, 2018

The Department of Public Works and Planning, Development Services Division is reviewing the subject applications proposing to amend Classified Conditional Use Permit (CUP) Nos. 3307 and 3476 in order to allow expansion of an existing fruit packing and storage facility in the AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) and AL-40 (Limited Agricultural, 40-acre minimum parcel size) Zone Districts.

The Applicant has provided a Cultural Resources Assessment prepared for the project site by Peak & Associates, Inc. (copy enclosed).

Based upon this review, a determination will be made regarding conditions to be imposed on the project, including necessary on-site and off-site improvements.

We must have your comments by **February 6, 2018.** Any comments received after this date may not be used.

NOTE - THIS WILL BE OUR ONLY REQUEST FOR WRITTEN COMMENTS. If you do not have comments, please provide a "NO COMMENT" response to our office by the above deadline (e-mail is also acceptable; see email address below).

Please address any correspondence or questions related to environmental and/or policy/design issues to me, Derek Chambers, Planner, Development Services Division, Fresno County Department of Public Works and Planning, 2220 Tulare Street, Sixth Floor, Fresno, CA 93721, or call (559) 600-4205 or email dchambers@co.fresno.ca.us

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Activity Code (Internal Review): 2381

Enclosures

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

CULTURAL RESOURCE ASSESSMENT

DATE: January 22, 2018

TO: Dumna Wo Wah Tribal Government, Attn: Robert Ledger, Tribal Chairman/Eric Smith, Cultural Resources Manager/Chris Acree, Cultural Resources Analyst
Picayune Rancheria of the Chuckchansi Indians, Attn: Tara C. Estes-Harter, THPO/Cultural Resources Director
Santa Rosa Rancheria Tachi Yokut Tribe, Attn: Ruben Barrios, Tribal Chairman/ Hector Franco, Director/Shana Powers, Cultural Specialist II
Table Mountain Rancheria, Attn: Leanne Walker-Grant, Tribal Chairperson
Table Mountain Rancheria, Attn: Robert Pennell, Cultural Resources Director/Kim Taylor, Cultural Resources Department/Sara Barnett, Cultural Resources Department

FROM: Derek Chambers, Planner
Development Services and Capital Projects Division

SUBJECT: Initial Study Application No. 7410 and Classified Conditional Use Permit Application No. 3597 **– Cultural Resources Assessment**

APPLICANT: Kings River Packing

DUE DATE: February 6, 2018

The Department of Public Works and Planning, Development Services Division is reviewing the subject applications proposing to amend Classified Conditional Use Permit (CUP) Nos. 3307 and 3476 in order to allow expansion of an existing fruit packing and storage facility in the AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) and AL-40 (Limited Agricultural, 40-acre minimum parcel size) Zone Districts.

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Please address any correspondence or questions related to environmental and/or policy/design issues to me, Derek Chambers, Planner, Development Services Division, Fresno County Department of Public Works and Planning, 2220 Tulare Street, Sixth Floor, Fresno, CA 93721, or call (559) 600-4205 or email dchambers@co.fresno.ca.us

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Activity Code (Internal Review): 2381

Enclosures

Date Received: 11/17/2017

CUP 3597 (Application No.)

Fresno County Department of Public Works and Planning

MAILING ADDRESS:
Department of Public Works and Planning
Development Services Division
2220 Tulare St., 6th Floor
Fresno, Ca. 93721

LOCATION:
Southwest corner of Tulare & "M" Streets, Suite A
Street Level
Fresno Phone: (559) 600-4497
Toll Free: 1-800-742-1011 Ext. 0-4497

APPLICATION FOR:

- ☐ Pre-Application (Type) _____
- ☐ Amendment Application
- ☐ Amendment to Text
- ☒ Conditional Use Permit (amend)
- ☐ Variance (Class)/Minor Variance
- ☐ Site Plan Review/Occupancy Permit
- ☐ No Shoot/Dog Leash Law Boundary
- ☐ General Plan Amendment/Specific Plan/SP Amendment)
- ☐ Time Extension for _____
- ☐ Director Review and Approval
- ☐ for 2nd Residence
- ☐ Determination of Merger
- ☐ Agreements
- ☐ ALCC/RLCC
- ☐ Other _____

DESCRIPTION OF PROPOSED USE OR REQUEST:
Amend CUP Nos. 3307 and 3476 to allow expansion of existing fruit packing and storage facility

CEQA DOCUMENTATION: ☒ *Initial Study* ☐ *PER* ☐ *N/A*

PLEASE USE FILL-IN FORM OR PRINT IN BLACK INK. Answer all questions completely. Attach required site plans, forms, statements, and deeds as specified on the Pre-Application Review. Attach Copy of Deed, including Legal Description.

LOCATION OF PROPERTY: East side of Trimmer Springs Road
between Rio Vista Ave. and N. Piedra Road
Street address: 21083/21095 E. Trimmer Springs Road, Sanger, CA 93657

APN: 158-070-65 Parcel size: 28.83 acres Section(s)-Twp/Rg: S ____ - T ____ S/R ____ E

ADDITIONAL APN(s): 158-070-69, 76 and 77

I, Keith Gardner (*signature*), declare that I am the owner, or authorized representative of the owner, of the above described property and that the application and attached documents are in all respects true and correct to the best of my knowledge. The foregoing declaration is made under penalty of perjury.

Owner (Print or Type)	Address	City	Zip	Phone
Kings River Packing-Keith Gardner	21083 E, Trimmer Springs,	Sanger,	93657	559-287-2056
Applicant (Print or Type)	**Address**	**City**	**Zip**	**Phone**
Kings River Packing-Frank Flores	21083 E, Trimmer Springs,	Sanger,	93657	559-907-6176
Representative (Print or Type)	**Address**	**City**	**Zip**	**Phone**
EVR-Rob Tamaccio	1480 Broadway #2619, San Diego		92101	619-307-9770

CONTACT EMAIL: frankf@kingorange.com and rt@evr-eng.com

OFFICE USE ONLY (*PRINT FORM ON GREEN PAPER*)

Application Type / No.: CUP 3597 Fee: $
Application Type / No.: Fee: $
Application Type / No.: Fee: $
Application Type / No.: Fee: $
PER/Initial Study No.: IS 7410 Fee: $
Ag Department Review: Fee: $
Health Department Review: Fee: $
Received By: DC Invoice No.: TOTAL: $

UTILITIES AVAILABLE:

WATER: Yes ☒ / No ☐
Agency: Private Well

SEWER: Yes ☒ / No ☐
Agency: Private Septic System

STAFF DETERMINATION: This permit is sought under Ordinance Section:

Related Application(s):

Zone District: AE-20

Parcel Size:

Sect-Twp/Rg: ____ - T____ S/R____ E
APN # ___ - ___ - ___
APN # ___ - ___ - ___
APN # ___ - ___ - ___
APN # ___ - ___ - ___

THE COUNTY OF FRESNO 1856

Development Mail to!
Services Brad Bishel
21083 E. Trimmer Springs Rd.
Division Sanger, CA 93657

Pre-Application Review

Department of Public Works and Planning

NUMBER: 39295
APPLICANT: Brad Bishel
PHONE: (559) 787-2056

PROPERTY LOCATION: 21095 E. Trimmer Springs Road
APN: 158 - 070 - 77 ALCC: No ___ Yes # ___ VIOLATION NO. ___
CNEL: (No) Yes ___ (level) LOW WATER: No ___ (Yes) WITHIN ½ MILE OF CITY: (No) Yes ___
ZONE DISTRICT: AE-20 ; SRA: (No) Yes ___ HOMESITE DECLARATION REQ'D.: No ___ Yes ___
LOT STATUS:
Zoning: ( ) Conforms; (✓) Legal Non-Conforming lot; ( ) Deed Review Req'd (see Form #236)
Merger: May be subject to merger: (No) Yes ___ ZM# ___ Initiated ___ In process ___
Map Act: ( ) Lot of Rec. Map; ( ) On '72 rolls; (✓) Other Permit History ( ) Deeds Req'd (see Form #236)
SCHOOL FEES: No ___ (Yes) DISTRICT: Sanger Unified PERMIT JACKET: No ___ (Yes)
FMFCD FEE AREA: ( ) Outside (✓) District No.: Within a Rural Stream FLOOD PRONE: No ___ (Yes)
PROPOSAL Pre-Application for a Conditional Use Permit for an expansion of an existing fruit packing and storage facility.

COMMENTS: No Charge Pre-App. T.M. 10-11-17
ORD. SECTION(S): 816.3 A BY: Iawanda Williams DATE: 10/11/2017

GENERAL PLAN POLICIES:
LAND USE DESIGNATION: Agriculture
COMMUNITY PLAN:
REGIONAL PLAN: Kings River
SPECIFIC PLAN:
SPECIAL POLICIES: PF-C.17
SPHERE OF INFLUENCE:
ANNEX REFERRAL (LU-G17/MOU):

PROCEDURES AND FEES:
( )GPA: ___ ( )MINOR VA: ___
( )AA: ___ (X)HD: $ 992.00
(X)CUP: $2284.50 (amend) (X)AG COMM: $93.00
( )DRA: ___ ( )ALCC: ___
( )VA: ___ (X)IS/PER*: $3901.00
( )AT: ___ ( )Viol. (35%): ___
( )TT: ___ ( )Other: ___
Filing Fee: $ 7,270.50
Pre-Application Fee: Not Paid ~~$247.00~~
Total County Filing Fee: $7,270.50

COMMENTS: Air District ATA Application and/or other Air District Permits/Analysis may be required. Water-Short Area = Hydro testing may be required. Williamson Act Cancellation required.

FILING REQUIREMENTS:
(X) Land Use Applications and Fees
(X) This Pre-Application Review form
(X) Copy of Deed / Legal Description
(X) Photographs
( ) Letter Verifying Deed Review
(X) IS Application and Fees* * Upon review of project materials, an Initial Study (IS) with fees may be required.
(X) Site Plans - 4 copies (folded to 8.5"X11") + 1 - 8.5"x11" reduction
(X) Floor Plan & Elevations - 4 copies (folded to 8.5"X11") + 1 - 8.5"x11" reduction
(X) Project Description / Operational Statement (Typed)
( ) Statement of Variance Findings
( ) Statement of Intended Use (ALCC)
( ) Dependency Relationship Statement
( ) Resolution/Letter of Release from City of ___
Referral Letter # ___

OTHER FILING FEES:
(X) Archaeological Inventory Fee: $75 at time of filing
(Separate check to Southern San Joaquin Valley Info. Center)
(X) CA Dept. of Fish & Wildlife (DFW): ($50) ($50+$2,016.25)
(Separate check to Fresno County Clerk for pass-thru to DFW.
Must be paid prior to IS closure and prior to setting hearing date.)

PLU # 113 Fee: $247.00
Note: This fee will apply to the application fee if the application is submitted within six (6) months of the date on this receipt.

BY: Derek Chambers DATE: 10/17/2017
PHONE NUMBER: (559) 600-4205

NOTE: THE FOLLOWING REQUIREMENTS MAY ALSO APPLY:
( ) COVENANT
( ) MAP CERTIFICATE
( ) PARCEL MAP
( ) FINAL MAP
( ) FMFCD FEES
(X) ALUC or ALCC
(X) SITE PLAN REVIEW
(X) BUILDING PLANS
(X) BUILDING PERMITS
( ) WASTE FACILITIES PERMIT
(X) SCHOOL FEES - maybe
( ) OTHER (see reverse side)

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

INITIAL STUDY APPLICATION

INSTRUCTIONS

Answer all questions completely. An incomplete form may delay processing of your application. Use additional paper if necessary and attach any supplemental information to this form. Attach an operational statement if appropriate. This application will be distributed to several agencies and persons to determine the potential environmental effects of your proposal. Please complete the form in a legible and reproducible manner (i.e., USE BLACK INK OR TYPE).

OFFICE USE ONLY
IS No. 7410
Project No(s). Cup 3597
Application Rec'd.: Derek Chambers 11/17/2017

GENERAL INFORMATION

1. *Property Owner :* Hazelton Farm, Inc./ Kings River Packing-Keith Gardner *Phone/Fax* 559-787-2056
   Mailing Address: 21136 Trimmer Springs Road (*Street*) Sanger (*City*) CA 93657 (*State/Zip*)

2. *Applicant :* Kings River Packing-Frank Flores *Phone/Fax:* 559-907-6176
   Mailing Address: 21083 E. Trimmer Springs Road (*Street*) Sanger (*City*) CA 93657 (*State/Zip*)

3. *Representative:* EVR Consulting Engineers *Phone/Fax:* 619-307-9770
   Mailing Address: 1480 Broadway, #2619 (*Street*) San Diego (*City*) CA 92101 (*State/Zip*)

4. *Proposed Project:* Two-phase expansion of an existing commercial fruit packing and storage facility.

5. *Project Location:* The project site is located on the east side of Trimmer Springs Road, approx. 3 miles north of its intersection with Belmont Ave.

6. *Project Address:* 21083 E. Trimmer Springs Road, Sanger, CA 93657

7. *Section/Township/Range:* ____/____/____ 8. *Parcel Size:* 28.83 acres

9. *Assessor's Parcel No.* 158-070-65, 69, 76 and 77

10. *Land Conservation Contract No. (If applicable):* Williamson Act Contract No. 225

11. *What other agencies will you need to get permits or authorization from:*

____	*LAFCo (annexation or extension of services)*	____	*SJVUAPCD (Air Pollution Control District)*
____	*CALTRANS*	____	*Reclamation Board*
____	*Division of Aeronautics*	____	*Department of Energy*
____	*Water Quality Control Board*	____	*Airport Land Use Commission*
X	*Other* F.I.D.		

12. *Will the project utilize Federal funds or require other Federal authorization subject to the provisions of the National Environmental Policy Act (NEPA) of 1969?* ____ *Yes* X *No*

If so, please provide a copy of all related grant and/or funding documents, related information and environmental review requirements.

13. *Existing Zone District*[1]*:* AE-20

14. *Existing General Plan Land Use Designation*[1]*:* Agrilcultural

ENVIRONMENTAL INFORMATION

15. *Present land use:* The land to be used for this building is currently vacant, asphalt-paved land.
Describe existing physical improvements including buildings, water (wells) and sewage facilities, roads, and lighting. Include a site plan or map showing these improvements:
Existing fruit packing & storage facility, with a private water well and private septic systems. Lighting for the site is achieved with building wall packs and light poles.

Describe the major vegetative cover: Redwoods along street frontage. Citrus fruit orchards.

Any perennial or intermittent water courses? If so, show on map: Kings River and Gould Canal on southeast.

Is property in a flood-prone area? Describe:
Partially within Flood Zone X and Flood Zone AE

16. *Describe surrounding land uses (e.g., commercial, agricultural, residential, school, etc.):*

North: agricultural-citrus fruit orchard

South: agricultural-citrus fruit orchard

East: Kings River and FID canal

West: agricultural-citrus fruit orchard

17. *What land use(s) in the area may be impacted by your Project?:* Residential

18. *What land use(s) in the area may impact your project?:* None

19. *Transportation:*

NOTE: The information below will be used in determining traffic impacts from this project. The data may also show the need for a Traffic Impact Study (TIS) for the project.

A. *Will additional driveways from the proposed project site be necessary to access public roads?*
X *Yes* _____ *No*

B. *Daily traffic generation:*

I. ~~*Residential - Number of Units*~~ _____
Lot Size _____
Single Family _____
~~*Apartments*~~ _____

II. *Commercial - Number of Employees* _____
Number of Salesmen _____
Number of Delivery Trucks _____
Total Square Footage of Building _____

See attached Operational Statement

III. *Describe and quantify other traffic generation activities:* _____

20. *Describe any source(s) of noise from your project that may affect the surrounding area:* None

21. *Describe any source(s) of noise in the area that may affect your project:* None

22. *Describe the probable source(s) of air pollution from your project:* None

23. *Proposed source of water:*
(X) private well
( ) community system[3]--name: _____

24. *Anticipated volume of water to be used (gallons per day)[2]:* 4500

25. *Proposed method of liquid waste disposal:*
(X) septic system/individual
( ) community system[3]–name _____

26. *Estimated volume of liquid waste (gallons per day)[2]:* 4500

27. *Anticipated type(s) of liquid waste:* restroom facilities and fruit wash water

28. *Anticipated type(s) of hazardous wastes[2]:* None

29. *Anticipated volume of hazardous wastes[2]:* None

30. *Proposed method of hazardous waste disposal[2]:* None

31. *Anticipated type(s) of solid waste:* restroom facilities and rotted fruit

32. *Anticipated amount of solid waste (tons or cubic yards per day):* 10cy

33. *Anticipated amount of waste that will be recycled (tons or cubic yards per day):* one ton

34. *Proposed method of solid waste disposal:* commercial carrier, 3x per week

35. *Fire protection district(s) serving this area:* Fresno County Fire (Cal Fire)

36. *Has a previous application been processed on this site? If so, list title and date:* CUP January 2015

37. *Do you have any underground storage tanks (except septic tanks)? Yes*_____ *No* X

38. *If yes, are they currently in use? Yes*_____ *No*_____

TO THE BEST OF MY KNOWLEDGE, THE FOREGOING INFORMATION IS TRUE.

Keith Gardner
SIGNATURE

11-17-17
DATE

[1] *Refer to Development Services Conference Checklist*
[2] *For assistance, contact Environmental Health System, (559) 600-3357*
[3] *For County Service Areas or Waterworks Districts, contact the Resources Division, (559) 600-4259*

(Revised 5/2/16)

NOTICE AND ACKNOWLEDGMENT

INDEMNIFICATION AND DEFENSE

The Board of Supervisors has adopted a policy that applicants should be made aware that they may be responsible for participating in the defense of the County in the event a lawsuit is filed resulting from the County's action on your project. You may be required to enter into an agreement to indemnify and defend the County if it appears likely that litigation could result from the County's action. The agreement would require that you deposit an appropriate security upon notice that a lawsuit has been filed. In the event that you fail to comply with the provisions of the agreement, the County may rescind its approval of the project.

STATE FISH AND WILDLIFE FEE

State law requires that specified fees (effective January 1, 2017: $3,078.25 for an EIR; $2,216.25 for a (Mitigated/Negative Declaration) be paid to the California Department of Fish and Wildlife (CDFW) for projects which must be reviewed for potential adverse effect on wildlife resources. The County is required to collect the fees on behalf of CDFW. A $50.00 handling fee will also be charged, as provided for in the legislation, to defray a portion of the County's costs for collecting the fees.

The following projects are exempt from the fees:

1. *All projects statutorily exempt from the provisions of CEQA (California Environmental Quality Act).*

2. *All projects categorically exempt by regulations of the Secretary of Resources (State of California) from the requirement to prepare environmental documents.*

A fee exemption may be issued by CDFW for eligible projects determined by that agency to have "no effect on wildlife." That determination must be provided in advance from CDFG to the County at the request of the applicant. You may wish to call the local office of CDFG at (559) 222-3761 if you need more information.

Upon completion of the Initial Study you will be notified of the applicable fee. Payment of the fee will be required before your project will be forwarded to the project analyst for scheduling of any required hearings and final processing. The fee will be refunded if the project should be denied by the County.

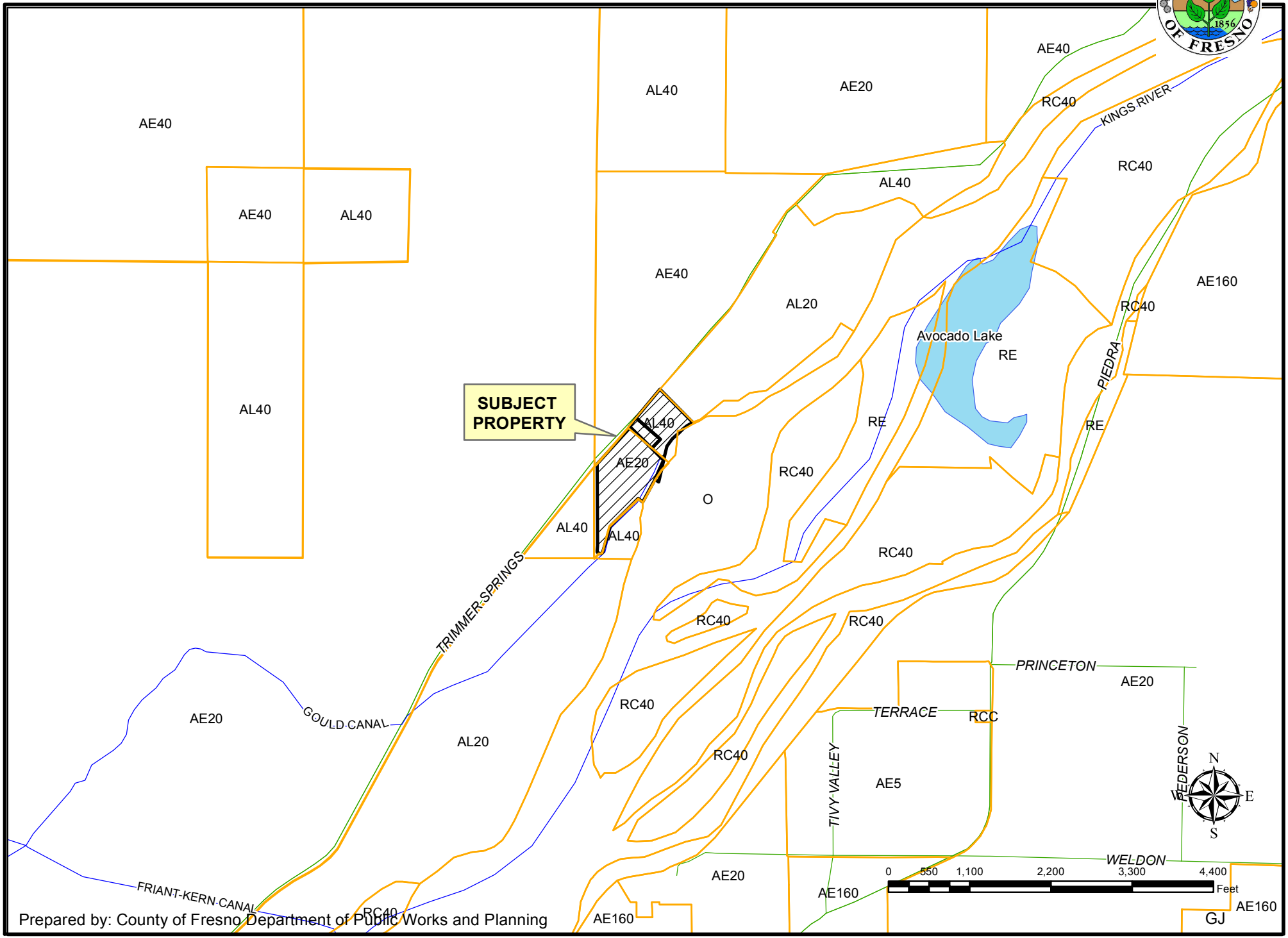
Keith Gardner

Applicant's Signature *Date*

DOCUMENT1

CUP 3597
STR 24 - 13/23

EXISTING ZONING MAP



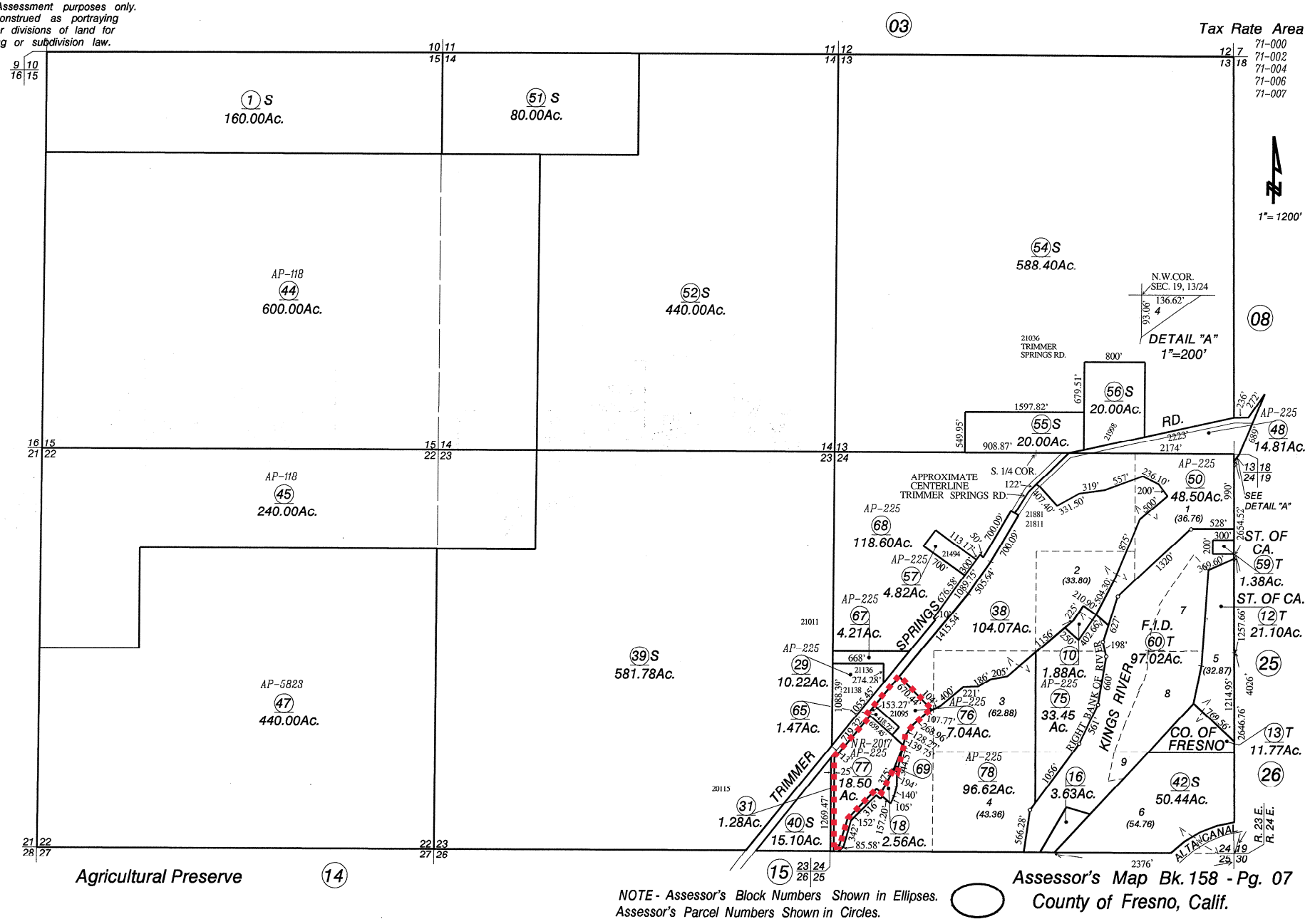
Prepared by: County of Fresno Department of Public Works and Planning

SUBDIVIDED LAND AND SEC.'S 13, 14, 15, 22, 23, 24, POR. SEC.'S 18 & 19, T. 13 S., R. 23 E., M. D. B. & M.

158-07

--- NOTE ---

This map is for Assessment purposes only. It is not to be construed as portraying legal ownership or divisions of land for purposes of zoning or subdivision law.



10/17/13

May 9, 2018

County of Fresno
Planning Department
2220 Tulare St.
Fresno, CA 93721

RE:	**Kings River Packing (KRP) Operational Statement**
Owner:	**Hazelton Farms, Inc.**
Project:	**Expansion of Existing Fruit Packing and Storage Facility**
Address:	**21083 and 21095 E. Trimmer Springs Road**
	Sanger, CA 93657
APN:	**158-070-65, ...69, ...76 and ...77**

To Whom It May Concern:

The proposed project will be located at 21083 & 21095 East Trimmer Springs Road, Sanger, Ca. 93657 on an existing 28.83 acre parcel. The proposed project involves a facility expansion that will be completed in two phases; Phase 1 consisting of the construction of a 77,500sf (approx.) metal building addition (Building 'E') on the north end, to be used as fruit cold storage and shipping office. There will also be a significant amount of site work, including a new loading dock, completed during the first phase. Phase 2 will consist of the construction a 173,000sf (approx.) metal building addition (Building 'F') on the south end, to be used for packing operations and a new main office. The use of the new buildings will be in line with the current operations of the existing commercial fruit packing facility. The land to be used for the proposed building is currently vacant, graded, asphalt-paved land.

The existing commercial fruit packing facility has been in operation since 1977 and was last approved under CUP 3476 in January 2015. The company's operation has consisted of the sorting and packing of oranges, lemons and other citrus fruits. Over the years, we have seen an increase in product demand, as well as an increase in the number of growers we service. This has prompted us to prepare this master site plan, in order to accommodate our future projected growth. As we grow, we will also add new automated equipment to increase the facility's efficiency.

The facility will operate year-around, with a peak season between January to April. The hours of operation will be six days per week, 24 hours per day, during the peak season. At peak season, we will operate two shifts: 1st shift, 6am to 3pm and the 2nd shift, 3pm to 12am. With the growth we've experienced in the past few years, we anticipate a yearly average of about 200 full-time employees, with up to 300 during the peak season and only 100 during the off season. These figures are based on the completion of Phase 2.

During the peak season we will have about 120 one-way truck trips per day, spread out throughout the day. During the off season we will only have about 5 truck trips per day, which consist of service deliveries and trash pickup. Access to the site is currently provided off of a paved road, East Trimmer Springs Road, from the north and the south. We anticipate 6 to 8 visitors per day. There will not be any caretakers living onsite.

The site will have the 374 auto parking stalls for visitors and employees, 8 ADA stalls and approximately 40 truck parking stalls on the north end. No goods are sold on-site. The product is shipped by truck on demand or is stored in cold storage until it is needed.

The facility currently produces approximately 4,500 gallons of liquid waste per day. The liquid waste consists of water used to wash the fruit. The wash water is recirculated and reused as wash water. It is then reclaimed and discharged into the surrounding fields. All other liquid waste is disposed of through the existing septic tanks and leach fields that are located on the site. The proposed building will not increase the amount of liquid waste being produced by the facility. Solid waste will be picked up by a commercial carrier on a weekly basis.

The facility's water will be provided by a new water well, which will be located on the property. The existing water well will be decommissioned. The facility uses approximately 4,500 gallons of water per day, during the peak season.

Onsite advertising consists of a 4'-0"x7'-0" pole sign, which is located at the main entrance to the site. The proposed buildings will not cause an unsightly appearance or produce dust, noise, glare or any odors. Lighting for the site is provided through a combination of wall-packs and pole-mounted lighting. There are no outdoor intercom systems. Facility communications are accomplished through the use of two-way radios.

The site is currently surrounded on three sides by orange orchards and the Kings River and an irrigation canal lie on the east side of the property. There is an existing landscape area in front of the existing main office and redwood trees along most of the Trimmer Springs street frontage.

Respectfully submitted,

Keith Gardner

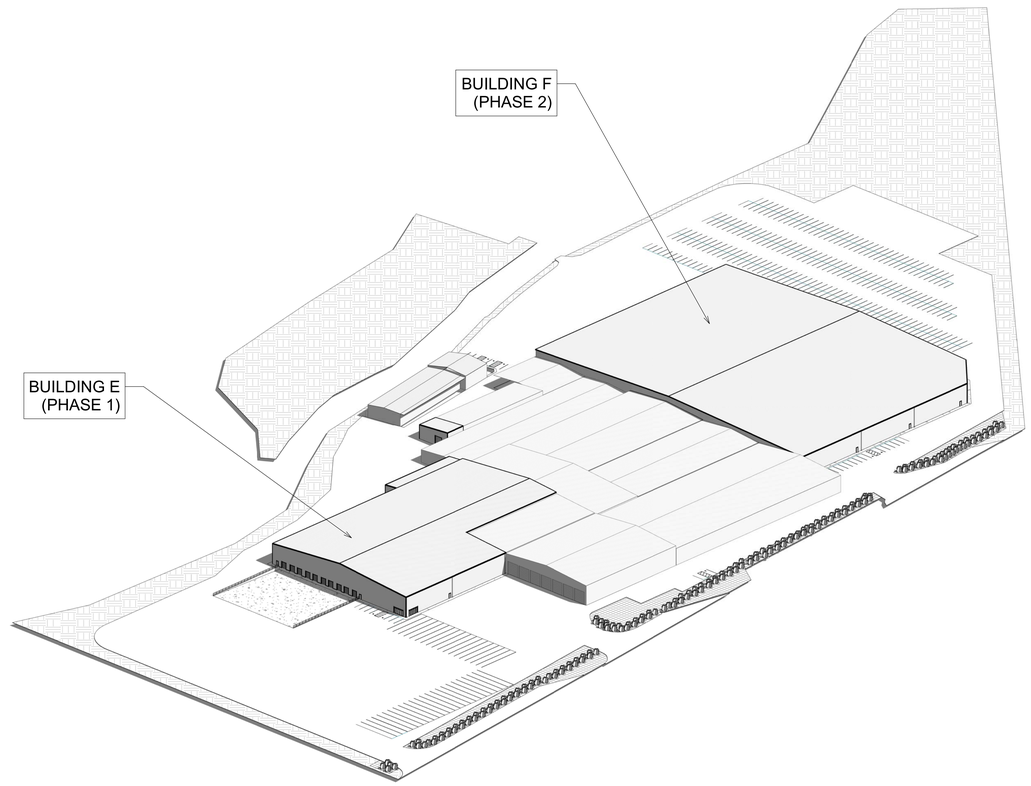
Keith Gardner
Kings River Packing

EXPANSION OF EXISTING PACKING AND STORAGE FACILITY

FOR

KINGS RIVER PACKING

21083 AND 21095 EAST TRIMMER SPRINGS ROAD
SANGER, CA 93657



PROJECT DATA:

PROJECT NAME: NEW WAREHOUSE FACILITY

SCOPE OF WORK: TWO-PHASE EXPANSION OF AN EXISTING COMMERCIAL FRUIT PACKING AND STORAGE FACILITY.

JURISDICTION: COUNTY OF FRESNO, CA

ZONING: AE-20 (EXCLUSIVE AGRICULTURAL DISTRICT)

ACCESSORS PARCEL NO.'S: 158-070-65, 158-070-69, 158-070-76, 158-070-77

GOVERNING CODES:

2016 CALIFORNIA BUILDING CODE
2016 CALIFORNIA FIRE CODE
2016 CALIFORNIA PLUMBING CODE
2016 CALIFORNIA MECHANICAL CODE
2016 CALIFORNIA ELECTRICAL CODE
2016 CALIFORNIA ENERGY CODE
APPLICABLE ORDINANCES AND AMMENDMENTS BY THE COUNTY OF FRESNO

OCCUPANCY CLASS AND CONSTRUCTION TYPE:

NEW PRE-ENGINEERED METAL BUILDING ADDITIONS - BUILDINGS E AND F

OCCUPANCY CLASS: S-2/B

CONSTRUCTION TYPE: II-B, FULLY SPRINKLERED

ALLOWABLE AREA: UNLIMITED AREA BUILDING PER CBC 507 (60' YARDS ALL SIDES)

EXISTING FLOOR AREA
FLOOR AREA PROPOSED: BLDG. E (77,500 SF), BLDG. F (173,000 SF)

VICINITY MAP:

LEGAL DESCRIPTION:

RECORDING REQUESTED BY:
Fresno County

AND WHEN RECORDED MAIL THIS DEED AND, UNLESS OTHERWISE SHOWN BELOW, MAIL TAX STATEMENTS TO RECORDING REQUESTED BY:

Hazelton Farm, Inc.
21136 Trimmer Springs Road
Sanger, CA 93657

3

FRESNO County Recorder
Paul Dictos, C.P.A.
DOC- 2013-0135237
Check Number 10466
Wednesday, SEP 25, 2013 11:05:46
Ttl Pd $25.00 Rcpt # 0003979296
JZG/R3/1-3

A.P.N.: 158-070-61, 65 & portion of 64 & 66

SPACE ABOVE THIS LINE IS FOR RECORDER'S USE

GRANT DEED

THE UNDERSIGNED GRANTOR(S) DECLARE(S)
DOCUMENTARY TRANSFER TAX IS $ [0] CITY TAX $ _____
[ ] computed on full value of property conveyed, or
[ ] computed on full value less value of liens or encumbrances remaining at time of sale.
[ ] unincorporated area of Fresno AND

FOR CONSIDERATION receipt of which is hereby acknowledged, Hazelton Farms, Inc., a California Corporation

hereby GRANT(S) to Hazelton Farms, Inc., a California Corporation

the following described real property in the
County of Fresno, State of California:

See Exhibit 'A' attached hereto and by reference made a part thereof.
This deed is being recorded to effectuate that certain Lot Line Adjustment No. 12-20 approved by County of Fresno.

Hazelton Farms, Inc., a California Corporation

Dated:

David Hines, Secretary & Chief Financial Officer

STATE OF CALIFORNIA
COUNTY OF FRESNO)SS.

On 09-19-13, 2013, before me, Dale G. Mell, **Notary Public**, personally appeared, David Hines, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.
I certify under PENALTY OF PERJURY under the laws of the State of California the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

DALE G. MELL
COMM. #1887272
Notary Public - California
Fresno County
My Comm. Expires Apr. 26, 2014

Signature _____ (This area for official notarial seal)

MAIL TAX STATEMENTS AS DIRECTED ABOVE

EXHIBIT 'A'

That portion of the Southwest quarter of Section 24, Township 13 South, Range 23 East, Mount Diablo Base and Meridian, according to the Official Plat thereof, more particularly described as follows:

Beginning at the Southwest corner of said Section 24:

Thence along the west line of said Section 24, North 00°05'00" West a distance of 1322.95 feet to the most northerly southeasterly right of way line of Trimmer Springs Road, said right of way described in the Deed granted to the County of Fresno recorded July 24, 1963 in Book 4886, Page 730, as Document No. 58374, Official Records Fresno County;

Thence along said southeasterly right of way, North 36°24'00" East a distance of 41.90 feet to a point on the easterly line of that parcel of land granted to Fresno Irrigation District by Deed recorded June 28, 1945 in Book 2286, Page 229, as Document No. 25504, Official Records Fresno County;

Thence along said easterly line, South 00°05'00" East a distance of 56.80 feet to the most southerly southeasterly right of way line of said Trimmer Springs Road;

Thence along said southeasterly right of way, North 39°16'35" East a distance of 1323.10 feet to the most easterly northeast corner of that parcel of land granted to Fresno County by Deed recorded February 20, 1963 in Book 4825, Page 53, as Document No. 15298, Official Records Fresno County, said point also being on the southwesterly boundary line of the land described in the Deed recorded December 30, 1971 in Book 5972, Page 928, as Document No. 104453, Official Records Fresno County;

Thence along said southwesterly boundary and its prolongation southeasterly, South 44°07'00" East a distance of 670.44 feet;

Thence South 63°55'36" West a distance of 107.77 feet;

Thence South 47°07'04" West a distance of 268.96 feet;

Thence South 35°11'07" West a distance of 128.27 feet;

Thence South 13°11'16" West a distance of 139.75 feet to the most easterly corner of the land described in the Certificate of Compliance recorded July 28, 1997 as Document No. 97094761, Official Records Fresno County;

Thence South 16°23'50" West a distance of 344.57 feet to the most easterly northeast corner of said parcel of land granted to Fresno Irrigation District;

Thence along the northeasterly line of said parcel of land granted to Fresno Irrigation District, North 62°45'00" West a distance of 32.77 feet to a point on the southeasterly boundary line of the land described in the Certificate of Compliance recorded July 28, 1997 as Document No. 97094761, Official Records Fresno County;

Thence along said southeasterly boundary line, South 29°09'00" West a distance of 375.00 feet;

Thence continuing along said southeasterly boundary line, North 50°32'00" West a distance of 79.90 feet;

DMA #11-095.02- PLA 12-20- Parcel A

2

Thence continuing along said southeasterly boundary line, South 39°30'00" West a distance of 101.47 feet;

Thence continuing along said southeasterly boundary line, South 43°45'00" West a distance of 419.10 feet;

Thence continuing along said southeasterly boundary line, South 12°42'00" West a distance of 145.00 feet;

Thence continuing along said southeasterly boundary line, South 18°33'00" West a distance of 210.11 feet;

Thence continuing along said southeasterly boundary line, South 54°18'00" West a distance of 32.42 feet;

Thence along the southerly boundary line of said Document No. 97094761, South 89°46'00" West a distance of 30.10 feet;

Thence continuing along said southerly boundary line, North 45°10'00" West a distance of 31.84 feet;

Thence South 00°05'00" East a distance of 60.82 feet to a point on the south line of said Section 24;

Thence along said south line, South 89°46'00" West a distance of 24.91 feet to the Point of Beginning.

PROFESSIONAL LAND SURVEYOR
DALE G. MELL
Renewal 09/30/2013
No. 8053
CALIFORNIA

DMA #11-095.02- PLA 12-20- Parcel A

3

OWNER:

HAZELTON FARM, INC. / KINGS RIVER PACKING
21083 EAST TRIMMER SPRINGS ROAD
SANGER, CA 93657

CONTACT: KEITH GARDNER
keith@kingorange.com
(559) 787-2056

PROJECT TEAM:

STRUCTURAL ENGINEER:

EVR CONSULTING ENGINEERS
1480 BROADWAY #2619
SAN DIEGO, CA 92101

CONTACT: ROB TAMACCIO, S.E., P.E., LEED AP
rt@evr-eng.com
(619) 307-9770

SHEET LIST (BY DISCIPLINE):

SPR, CUP AND INITIAL STUDY PLAN SUBMITTAL

OWNER

KINGS RIVER PACKING

BY | REVISION | DATE

CONSULTANT

EVR
CONSULTING ENGINEERS
1480 BROADWAY #2619
SAN DIEGO, CA 92101
(619) 307-9770

STAMP

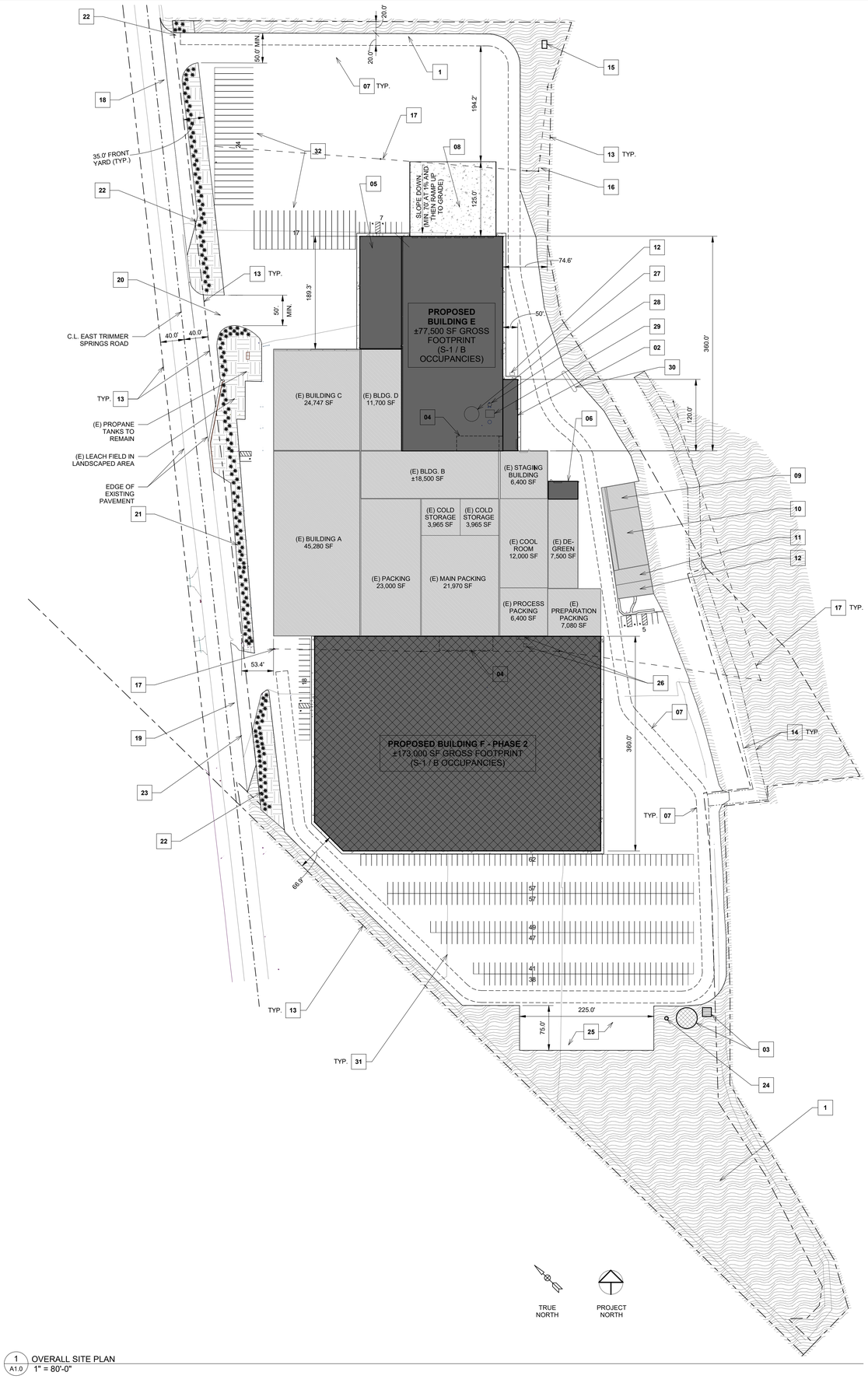
COVER SHEET

PLANT EXPANSION AND SITE IMPROVEMENTS
FOR
KINGS RIVER PACKING
21905 E. TRIMMER SPRINGS ROAD
SANGER, CA 93657

JOB NUMBER 171101
DESIGNED BY RT
DRAWN BY
DATE 11/17/2017
SHEET NUMBER CS1.0

11/16/2017 10:36:31 PM

C:\Users\Rob.Tan\Google Drive\EVR Engineers\Projects\171101-KRP Addition\Drawings\171101-KRP Addition_2017-11-12.rvt



1 OVERALL SITE PLAN
A1.0 1" = 80'-0"

SITE PLAN KEYNOTES

01 NEW PONDING BASIN (TO BE DESIGNED BY CIVIL ENGINEER)
02 REFRIGERATION EQUIPMENT AND ELECTRICAL ROOMS PER BUILDING E FLOOR PLAN
03 NEW FIRE TANK AND PUMP HOUSE
04 EXISTING ADMIN. AND ACCESSIBLE FACILTIES TO REMAIN
05 PROPOSED TWO-STORY SHIPPING OFFICE
06 NEW STORAGE BUILDING PER FLOOR PLAN
07 20' FIRE LANE
08 NEW CONCRETE PAVED LOADING DOCK APRON
09 EXISTING SWEAT BUILDING (2,000 SF)
10 EXISTING SWEAT BUILDING (5,000 SF)
11 EXISTING OFFICE (2,541 SF) - OWNER TO VERIFY FIRE SPRINKLER INSTALLATION
12 NEW 4,000 AMP PG&E TRANSFORMER
13 PROPERTY LINE
14 EXISTING F.I.D. ACCESS EASEMENT TO BE MAINTAINED AND REROUTED THRU SITE DURING PHASE 2
15 NEW 4,000 GPM ELECTRIC PUMP DEDICATED FOR FIRE TANK REFILL
16 EXISTING AG. PUMP ELECTRICAL SERVICE
17 EXISTING PG&E OVERHEAD SERVICE LINES TO BE REMOVED
18 NEW SITE ENTRANCE AND DECELERATION LANE AS REQUIRED
19 MODIFIED SITE MAIN ENTRANCE AND DECELERATION LANE AS REQUIRED
20 EXISTING SITE ENTRANCE TO BE MAINTAINED
21 EXISTING LANDSCAPING ALONG FRONTAGE
22 PROPOSED LANDSCAPING ALONG FRONTAGE
23 EXISTING UNDERGROUND PG&E VAULT
24 NEW WATER WELL
25 TRUCK PARKING AND ROLL-OFF CONTAINER STAGING AREA
26 EXISTING 4000 AMP PG&E TRANSFORMER AND SWITCHGEAR TO REMAIN
27 EXISTING 200,000 GALLON FIRE TANK TO BE REMOVED
28 EXISTING WATER WELL TO BE REMOVED
29 EXISTING 1,500 GPM PUMP HOUSE TO BE RELOCATED
30 EXISTING PROPANE TANK TO REMAIN
31 LIMITS OF EXISTING PAVING (NEW PAVING LIMITS TO BE DESIGNED BY CIVIL ENGINEER)
32 TRUCK PARKING STALLS

PARKING SUMMARY

MAXIMUM OF 300 EMPLOYEES DURING DURING BUSY SEASON

PARKING PROVIDED:

STANDARD PARKING STALLS (9' x 18') - 374 PROVIDED
ACCESSIBLE PARKING STALLS - 8 PROVIDED (INLCUDES 5 VAN ACCESSIBLE SPACES)
TRUCK PARKING STALLS (10' x 65') - 40 PROVIDED

ZONING SUMMARY (AE20 - SECTION 816.5)

YARDS REQUIRED AND PROVIDED:

FRONT YARD - 35' MIN.
REAR / SIDE YARDS - 20' MIN.

BUILDING HEIGHT:

MAX. 35' HEIGHT PERMITTED (SECTION 816.5-D)
A VARIANCE IS REQUESTED FOR THE RIDGE HEIGHTS SHOWN ON SHEETS A3.0 AND A5.0

SPR, CUP AND INITIAL STUDY PLAN SUBMITTAL

OWNER

KINGS RIVER PACKING

BY | DATE | REVISION

CONSULTANT

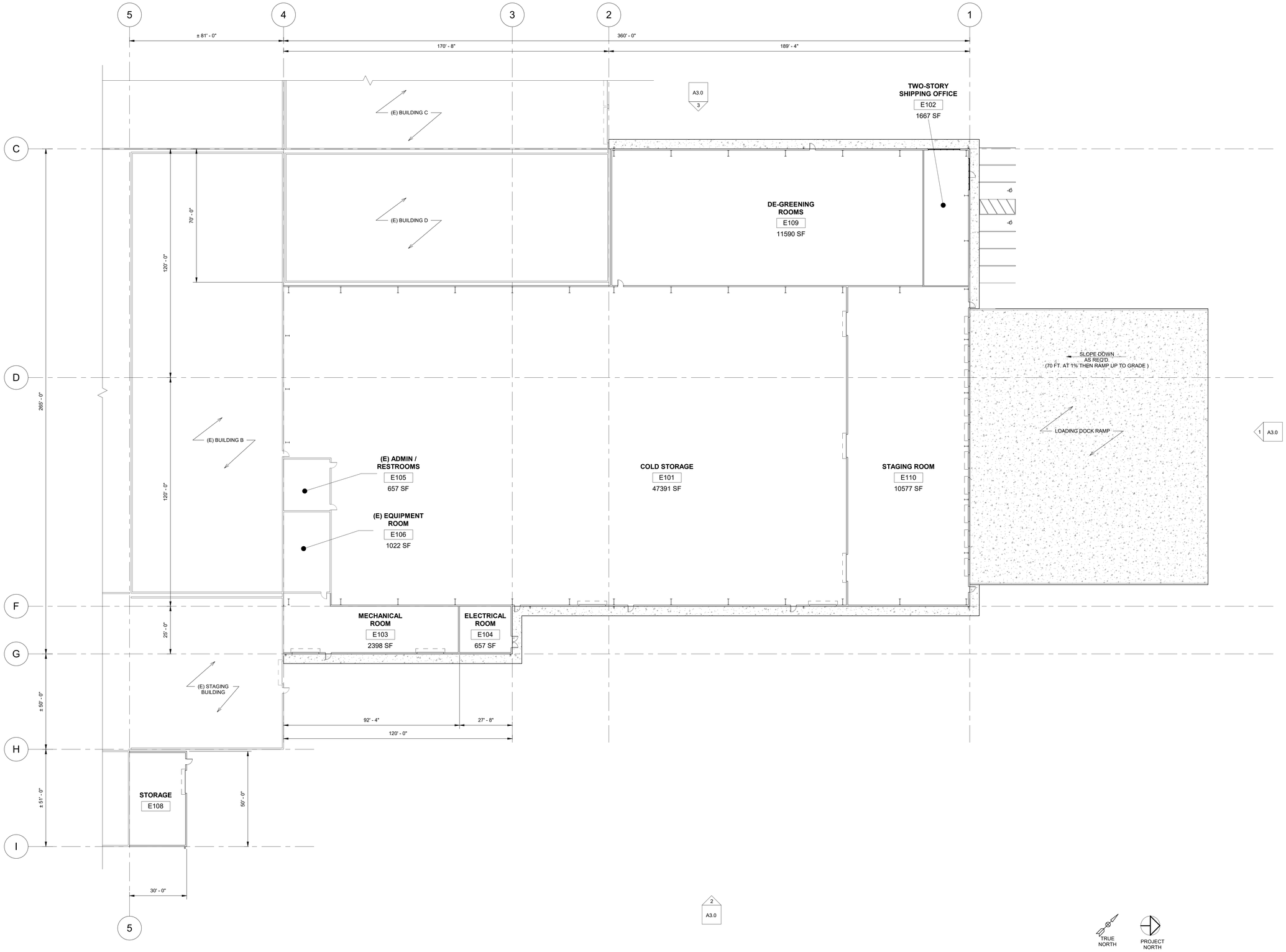
EVR
CONSULTING ENGINEERS
1480 BROADWAY #2619
SAN DIEGO, CA 92101
(619) 307-9770

STAMP

CONCEPT SITE AND DEVELOPMENT PLAN

PLANT EXPANSION AND SITE IMPROVEMENTS
FOR
KINGS RIVER PACKING
21905 E. TRIMMER SPRINGS ROAD
SANGER, CA 93657

JOB NUMBER 171101
DESIGNED BY RT
DRAWN BY
DATE 11/17/2017
SHEET NUMBER A1.0



1 A2.0 CONCEPT FLOOR PLAN - BUILDING E
1" = 20'-0"

SPR, CUP AND INITIAL STUDY PLAN SUBMITTAL

OWNER

KINGS RIVER PACKING

BY | REVISION | DATE

CONSULTANT

EVR
CONSULTING ENGINEERS
1480 BROADWAY #26219
SAN DIEGO, CA 92101
(619) 307-9770

STAMP

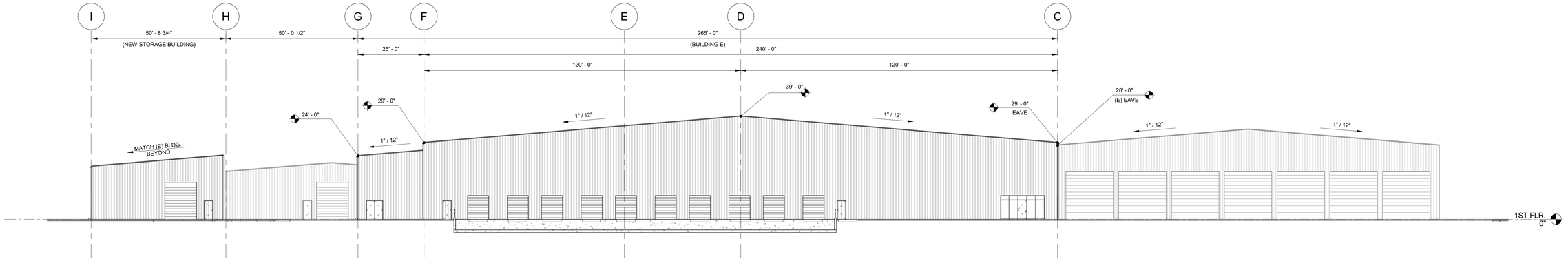
FLOOR PLAN - BUILDING E

PLANT EXPANSION AND SITE IMPROVEMENTS

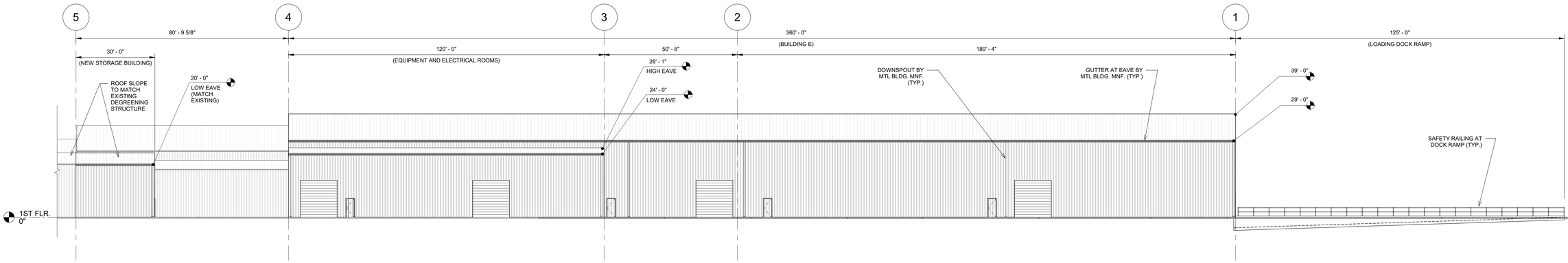
FOR
KINGS RIVER PACKING
21905 E. TRIMMER SPRINGS ROAD
SANGER, CA 93657

JOB NUMBER 171101
DESIGNED BY RT
DRAWN BY
DATE 11/17/2017
SHEET NUMBER A2.0

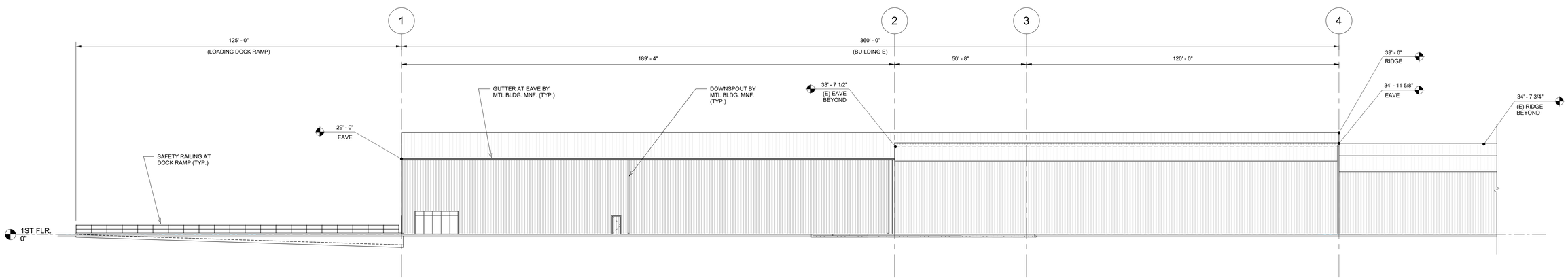
NOTE - THE COUNTY ZONING CODE SECTION 816.5(E) PERMITS MAX. 35' BUILDING HEIGHT IN ZONE AE-20. THIS PROJECT PROPOSES A VARIANCE TO THOSE MAXIMUM HEIGHTS AS SHOWN THIS SHEET



1 A3.0 BUILDING E - NORTH ELEVATION
1/16" = 1'-0"



2 A3.0 BUILDING E - EAST ELEVATION
1/16" = 1'-0"



3 A3.0 BUILDING E - WEST ELEVATION
1/16" = 1'-0"

SPR, CUP AND INITIAL STUDY PLAN SUBMITTAL

OWNER

KINGS RIVER PACKING

BY | REVISION | DATE

CONSULTANT

EVR
CONSULTING ENGINEERS
1480 BROADWAY #2619
SAN DIEGO, CA 92101
(619) 307-9770

STAMP

ELEVATIONS - BUILDING E

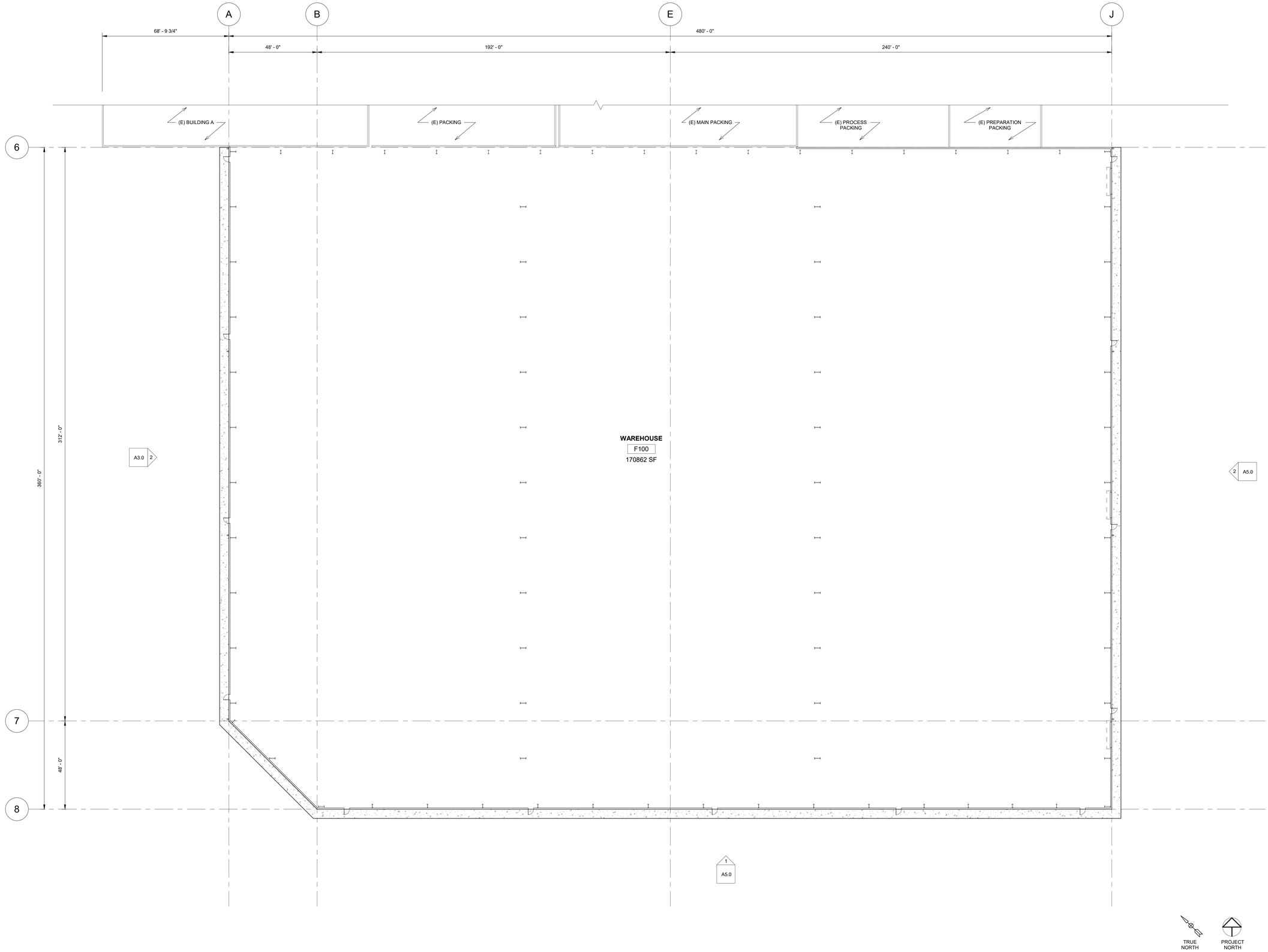
PLANT EXPANSION AND SITE IMPROVEMENTS

FOR
KINGS RIVER PACKING
21905 E. TRIMMER SPRINGS ROAD
SANGER, CA 93657

JOB NUMBER 171101
DESIGNED BY RT
DRAWN BY
DATE 11/17/2017
SHEET NUMBER A3.0

11/16/2017 10:30:14 PM

C:\Users\Rio Test\Google Drive\EVR Engineers\Projects\171101 - KRP Addition\Drawings\171101A-KRP Addition_2017-11-12.rvt



1 / A4.0 CONCEPT FLOOR PLAN - BUILDING F
1" = 20'-0"

SPR, CUP AND INITIAL STUDY PLAN SUBMITTAL

OWNER

KINGS RIVER PACKING

BY	REVISION	DATE

CONSULTANT

EVR
CONSULTING ENGINEERS
1480 BROADWAY #26619
SAN DIEGO, CA 92101
(619) 307-9770

STAMP

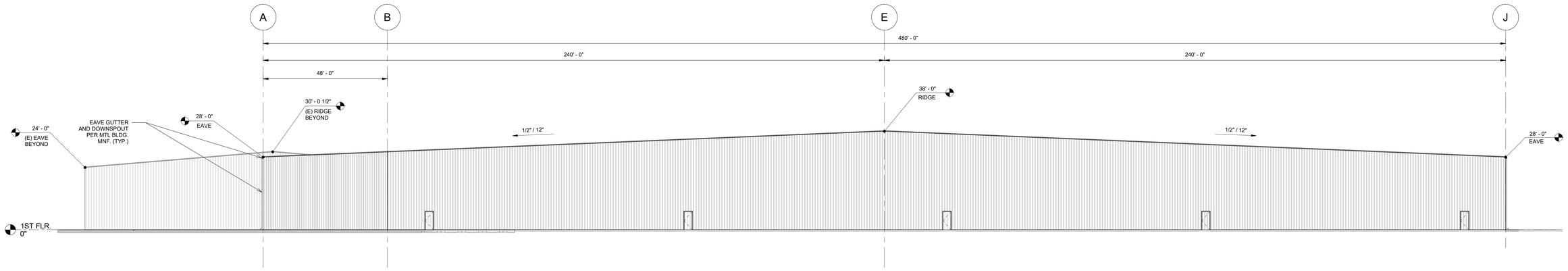
FLOOR PLAN - BUILDING F

PLANT EXPANSION AND SITE IMPROVEMENTS

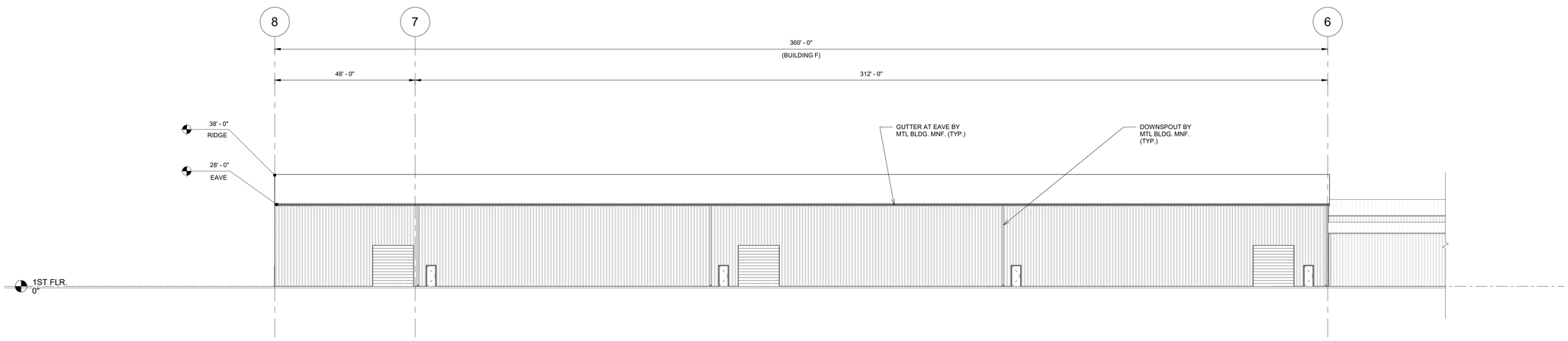
FOR
KINGS RIVER PACKING
21905 E. TRIMMER SPRINGS ROAD
SANGER, CA 93657

JOB NUMBER 171101
DESIGNED BY RT
DRAWN BY
DATE 11/17/2017
SHEET NUMBER A4.0

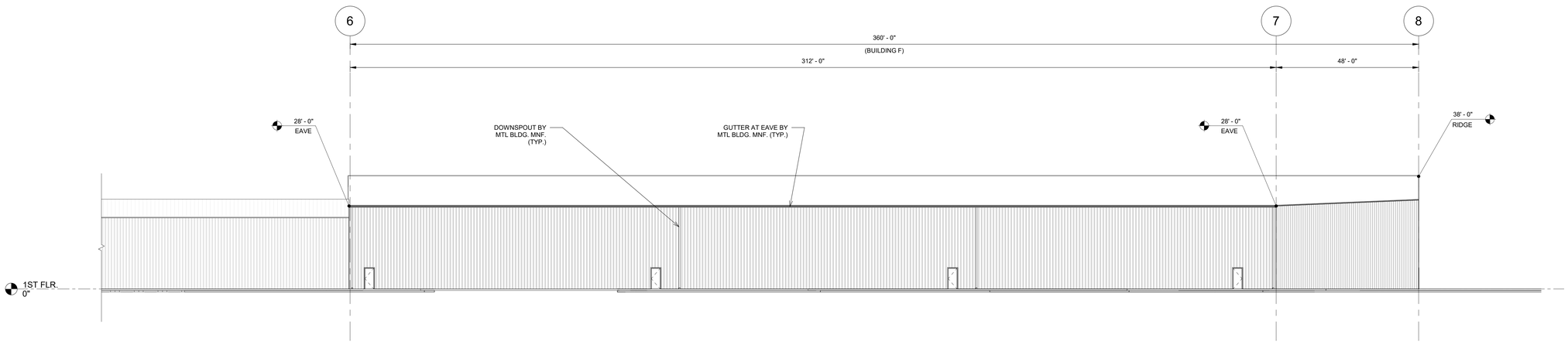
NOTE - THE COUNTY ZONING CODE SECTION 816.5(E) PERMITS MAX. 35' BUILDING HEIGHT IN ZONE AE-20. THIS PROJECT PROPOSES A VARIANCE TO THOSE MAXIMUM HEIGHTS AS SHOWN THIS SHEET



1 A5.0 BUILDING F - SOUTH ELEVATION
1/16" = 1'-0"



2 A5.0 BUILDING F - EAST ELEVATION
1/16" = 1'-0"



3 A5.0 BUILDING F - WEST ELEVATION
1/16" = 1'-0"

SPR, CUP AND INITIAL STUDY PLAN SUBMITTAL

OWNER

KINGS RIVER PACKING

BY	REVISION	DATE

CONSULTANT

EVR
CONSULTING ENGINEERS
1480 BROADWAY #2619
SAN DIEGO, CA 92101
(619) 307-9770

STAMP

ELEVATIONS - BUILDING F

PLANT EXPANSION AND SITE IMPROVEMENTS
FOR
KINGS RIVER PACKING
21905 E. TRIMMER SPRINGS ROAD
SANGER, CA 93657

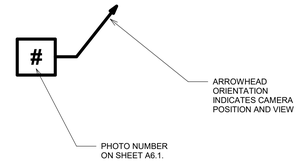
JOB NUMBER 171101
DESIGNED BY RT
DRAWN BY
DATE 11/17/2017
SHEET NUMBER A5.0

PHOTO KEY PLAN

NTS

NOTES:

1. SEE SHEET A6.1 FOR PHOTOS
2. THE PLAN SYMBOL INDICATES THE NUMBER OF THE PHOTO ON A6.1 AND DIRECTION OF VIEW:



TRUE NORTH

PROJECT NORTH

SPR, CUP AND INITIAL STUDY PLAN SUBMITTAL

OWNER

KINGS RIVER PACKING

BY | REVISION | DATE

CONSULTANT

EVR
CONSULTING ENGINEERS
1480 BROADWAY #2619
SAN DIEGO, CA 92101
(619) 307-9770

STAMP

PHOTO KEY MAP

PLANT EXPANSION AND SITE IMPROVEMENTS
FOR
KINGS RIVER PACKING
21905 E. TRIMMER SPRINGS ROAD
SANGER, CA 93657

JOB NUMBER 171101

DESIGNED BY RT

DRAWN BY

DATE 11/17/2017

SHEET NUMBER A6.0

CULTURAL RESOURCE ASSESSMENT

FOR THE EXPANSION OF EXISTING

FRUIT PACKING AND STORAGE FACILITY

FRESNO COUNTY CALIFORNIA

Prepared by

Melinda A. Peak
Peak & Associates, Inc.
3941 Park Drive, Suite 20-329
El Dorado Hills, CA 95762
(916) 939-2405

Prepared for

Kings River Packing
21083 E. Trimmer Springs Road
Sanger, CA
(559)787-2056

January 12, 2018
(Job #17-110)

INTRODUCTION

The project involves a facility expansion on a 28.83-acre group of parcels in Fresno County, California, currently in use as a commercial fruit-packing facility ("Project Area"). The facility is located at 21083 and 21095 E. Trimmer Springs Road, Sanger, California, south of E. Trimmer Springs Road and on the north side of the Kings River.

The project will take place in two phases; Phase 1 will consist of the construction of a 77,500sf metal building addition on the north end of Building E, to be used as fruit cold storage and a shipping office. Other work will be conducted on the site including a new loading dock. Phase 2 will consist of the construction of a 173,000sf metal building addition to Building F on the south end for packing operations and a new main office (Figure 1). Many portions of the overall Project Area have been graded and paved.

The site will have the 374 auto parking stalls for visitors and employees, 8 ADA stalls and approximately 40 truck parking stalls on the north end. No goods are sold on-site. The product is shipped by truck on demand or is stored in cold storage until it is needed.

The facility currently produces approximately 4,500 gallons of liquid waste per day. The liquid waste consists of water used to wash the fruit. The wash water is recirculated and reused as wash water. It is then reclaimed and used to irrigate the surrounding fields. All other liquid waste is disposed of through the existing septic tanks and leach fields that are located on the site. The proposed building will not increase the amount of liquid waste being produced by the facility. Solid waste will be picked up by a commercial carrier on a weekly basis.

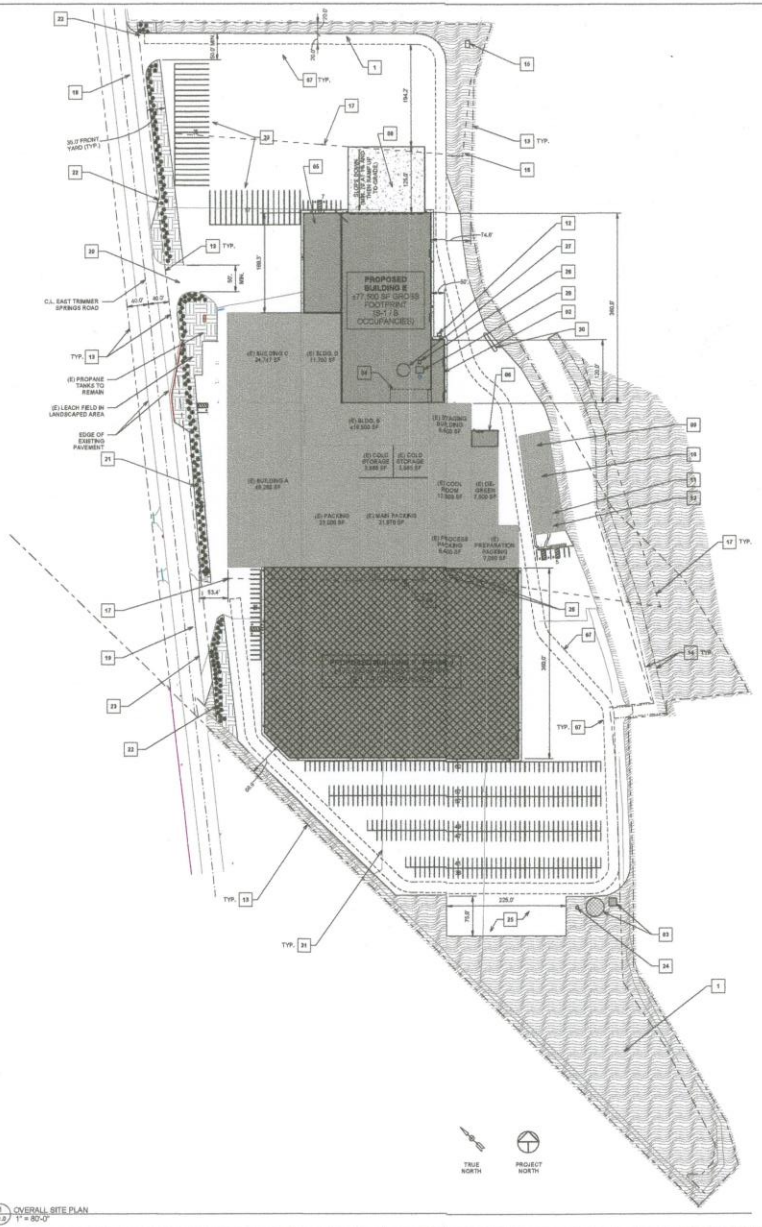
The facility's water will be provided by a new water well, which will be located on the property. The existing water well will be decommissioned. The facility uses approximately 4,500 gallons of water per day, during the peak season.

The Project Area is located within the southwest quarter of section 24, Township 13 South, Range 23 East, mapped on the Piedra USGS topographic quadrangle (Figure 2).

Melinda A. Peak, senior historian/archeologist with Peak & Associates, Inc. served as principal investigator for the study with Michael Lawson (resumes, Appendix 1), completing the field survey.

STATE REGULATIONS

State historic preservation regulations affecting this project include the statutes and guidelines contained in the California Environmental Quality Act (CEQA; Public Resources Code sections 21083.2 and 21084.1 and sections 15064.5 and 15126.4 (b) of the CEQA Guidelines). CEQA Section 15064.5 requires that lead agencies determine whether projects may have a significant effect on archaeological and historical resources. Public Resources Code Section 21098.1 further



1 OVERALL SITE PLAN
A1.0 1" = 80'-0"

SITE PLAN KEYNOTES

01 NEW PONDING BASIN (TO BE DESIGNED BY CIVIL ENGINEER)
02 REFRIGERATION EQUIPMENT AND ELECTRICAL ROOMS PER BUILDING E FLOOR PLAN
03 NEW FIRE TANK AND PUMP HOUSE
04 EXISTING ADMIN. AND ACCESSIBLE FACILITIES TO REMAIN
05 PROPOSED TWO-STORY SHIPPING OFFICE
06 NEW STORAGE BUILDING PER FLOOR PLAN
07 20' FIRE LANE
08 NEW CONCRETE PAVED LOADING DOCK APRON
09 EXISTING SWEAT BUILDING (2,000 SF)
10 EXISTING SWEAT BUILDING (5,000 SF)
11 EXISTING OFFICE (2,541 SF) - OWNER TO VERIFY FIRE SPRINKLER INSTALLATION
12 NEW 4,000 AMP PG&E TRANSFORMER
13 PROPERTY LINE
14 EXISTING F.I.O. ACCESS EASEMENT TO BE MAINTAINED AND REROUTED THRU SITE DURING PHASE 2
15 NEW 4,000 GPM ELECTRIC PUMP DEDICATED FOR FIRE TANK REFILL
16 EXISTING AG. PUMP ELECTRICAL SERVICE
17 EXISTING PG&E OVERHEAD SERVICE LINES TO BE REMOVED
18 NEW SITE ENTRANCE AND DECELERATION LANE AS REQUIRED
19 MODIFIED SITE MAIN ENTRANCE AND DECELERATION LANE AS REQUIRED
20 EXISTING SITE ENTRANCE TO BE MAINTAINED
21 EXISTING LANDSCAPING ALONG FRONTAGE
22 PROPOSED LANDSCAPING ALONG FRONTAGE
23 EXISTING UNDERGROUND PG&E VAULT
24 NEW WATER WELL
25 TRUCK PARKING AND ROLL-OFF CONTAINER STAGING AREA
26 EXISTING 4000 AMP PG&E TRANSFORMER AND SWITCHGEAR TO REMAIN
27 EXISTING 200,000 GALLON FIRE TANK TO BE REMOVED
28 EXISTING WATER WELL TO BE REMOVED
29 EXISTING 1,500 GPM PUMP HOUSE TO BE RELOCATED
30 EXISTING PROPANE TANK TO REMAIN
31 LIMITS OF EXISTING PAVING (NEW PAVING LIMITS TO BE DESIGNED BY CIVIL ENGINEER)
32 TRUCK PARKING STALLS

PARKING SUMMARY

MAXIMUM OF 300 EMPLOYEES DURING DURING BUSY SEASON
PARKING PROVIDED:
STANDARD PARKING STALLS (9' x 18') - 574 PROVIDED
ACCESSIBLE PARKING STALLS - 8 PROVIDED (INCLUDES 3 VAN ACCESSIBLE SPACES)
TRUCK PARKING STALLS (10' x 55') - 40 PROVIDED

ZONING SUMMARY (AE20 - SECTION 816.5)

YARDS REQUIRED AND PROVIDED:
FRONT YARD - 35' MIN.
REAR / SIDE YARDS - 20' MIN.
BUILDING HEIGHT:
MAX. 35' HEIGHT PERMITTED (SECTION 816.5-D)
A VARIANCE IS REQUESTED FOR THE RIDGE HEIGHTS SHOWN ON SHEETS A3.0 AND A5.0

KINGS RIVER PACKING

CONSULTING ENGINEERS

CONCEPT SITE AND DEVELOPMENT PLAN
PLANT EXPANSION AND SITE IMPROVEMENTS
FOR
KINGS RIVER PACKING
21900 E. TRIMMER SPRINGS ROAD
SANGER, CA 93657

JOB NUMBER 171101
DESIGNED BY RT
DRAWN BY
DATE 11/17/2017
SHEET NUMBER A1.0

Figure 1

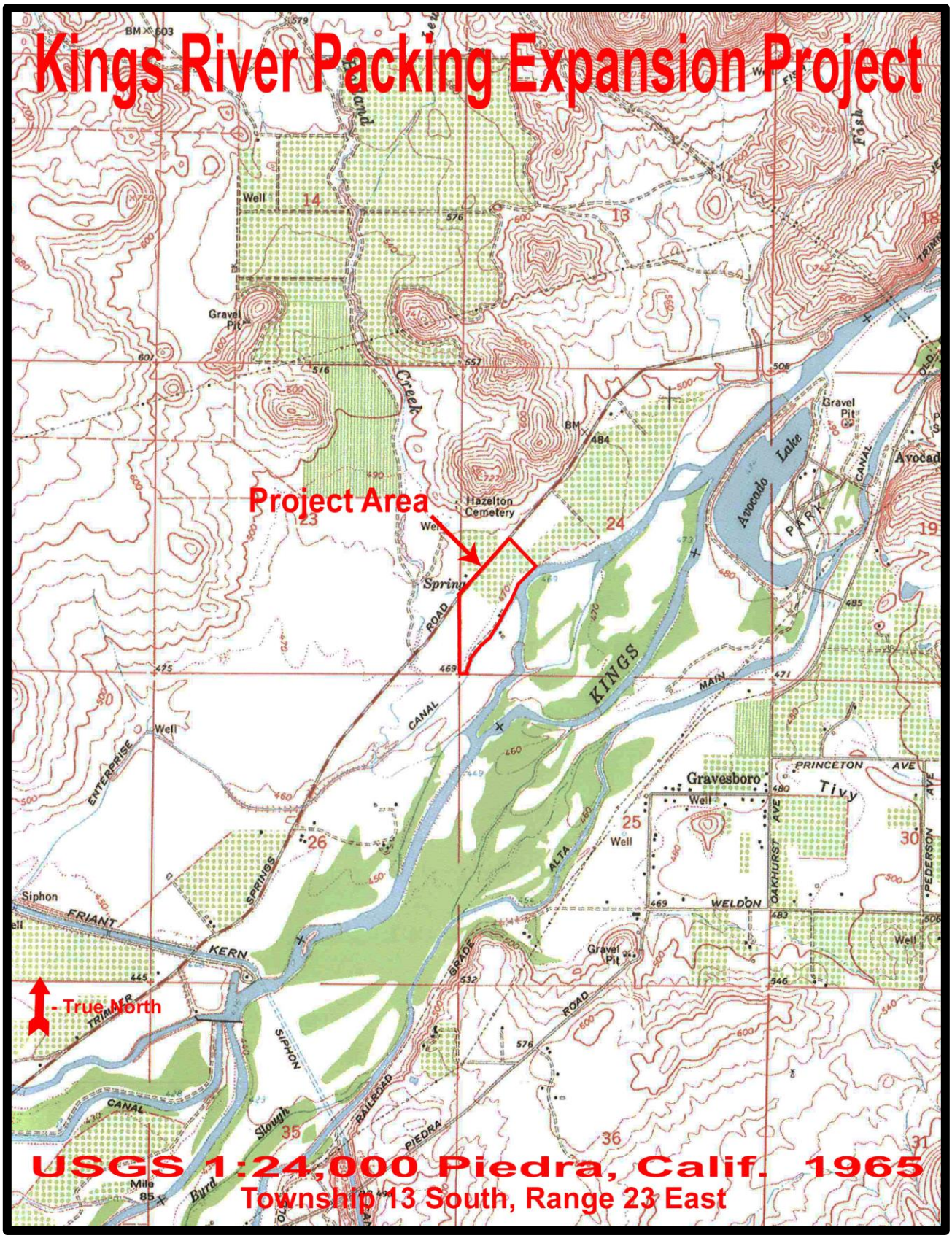

Kings River Packing Expansion Project
Project Area
True North
USGS 1:24,000 Piedra, Calif. 1965
Township 13 South, Range 23 East

Figure 2

cites: A project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

An "historical resource" includes, but is not limited to, any object, building, structure, site, area, place, record or manuscript that is historically or archaeologically significant (Public Resources Code section 5020.1).

Advice on procedures to identify such resources, evaluate their importance, and estimate potential effects is given in several agency publications such as the series produced by the Governor's Office of Planning and Research (OPR), *CEQA and Archaeological Resources,* 1994. The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities, including, but not limited to, museums, historical commissions, associations and societies be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of the antiquity and provides for the sensitive treatment and disposition of those remains (California Health and Safety Code Section 7050.5, California Public Resources Codes Sections 5097.94 et al).

The California Register of Historical Resources (Public Resources Code Section 5020 et seq.)

The State Historic Preservation Office (SHPO) maintains the California Register of Historical Resources (CRHR). Properties listed, or formally designated as eligible for listing, on the National Register of Historic Places are automatically listed on the CRHR, as are State Landmarks and Points of Interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

For the purposes of CEQA, an historical resource is a resource listed in, or determined eligible for listing in the California Register of Historical Resources. When a project will impact a site, it needs to be determined whether the site is an historical resource. The criteria are set forth in Section 15064.5(a) (3) of the CEQA Guidelines, and are defined as any resource that does any of the following:

A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

B. Is associated with the lives of persons important in our past;

C. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

D. Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, the CEQA Guidelines, Section 15064.5(a) (4) states:

The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code section 5020.1(j) or 5024.1.

California Health and Safety Code Sections 7050.5, 7051, And 7054

These sections collectively address the illegality of interference with human burial remains, as well as the disposition of Native American burials in archaeological sites. The law protects such remains from disturbance, vandalism, or inadvertent destruction, and establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project, including the treatment of remains prior to, during, and after evaluation, and reburial procedures.

California Public Resources Code Section 15064.5(e)

This law addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction. The section establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project and establishes the Native American Heritage Commission as the entity responsible to resolve disputes regarding the disposition of such remains.

Assembly Bill 52

Assembly Bill (AB) 52 establishes a formal consultation process for California tribes as part of CEQA and equates significant impacts on tribal cultural resources with significant environmental impacts. AB 52 defines a "California Native American Tribe" as a Native American tribe located in California that is on the contact list maintained by the Native American Heritage Commission. AB 52 requires formal consultation with California Native American Tribes prior to determining the level of environmental document if a tribe has requested to be informed by the lead agency of proposed projects. AB 52 also requires that consultation address project alternatives, mitigation measures, for significant effects, if requested by the California Native American Tribe, and that consultation be considered concluded when either the parties agree to measures to mitigate or avoid a significant effect, or the agency concludes that mutual agreement cannot be reached. Under AB 52, such measures shall be recommended for inclusion in the environmental document and adopted mitigation monitoring program if determined to avoid or lessen a significant impact on a tribal cultural resource.

CULTURAL SETTING

Archeology

The Central Valley region was among the first in the state to attract intensive fieldwork, and research has continued to the present day. This has resulted in a substantial accumulation of data, but the emphasis has been in the northern portion of the valley. In the early decades of the 1900s, E.J. Dawson explored numerous sites near Stockton and Lodi, later collaborating with W.E. Schenck (Schenck and Dawson 1929). By 1933, the focus of work was directed to the Cosumnes locality, where survey and excavation were conducted by the Sacramento Junior College (Lillard and Purves 1936).

Excavation data, in particular from the stratified Windmiller site (CA-SAC-107), suggested two temporally distinct cultural traditions. Later work at other mounds by Sacramento Junior College and the University of California, Berkeley, enabled the investigators to identify a third cultural tradition, intermediate between the previously postulated Early and Late Horizons. The three-horizon sequence, based on discrete changes in ornamental artifacts and mortuary practices, as well as on observed differences in soils within sites (Lillard, Heizer and Fenenga 1939), was later refined by Beardsley (1954). An expanded definition of artifacts diagnostic of each time period was developed, and its application extended to parts of the central California coast. Traits held in common allow the application of this system within certain limits of time and space to other areas of prehistoric central California.

In the southern San Joaquin Valley, with the exception of Hewes's excavation at CA-FRE-48 (the Tranquility Site), the foci of early investigations have been the old shorelines of the interior lakes; Tulare, Kern, and Buena Vista. In 1899, Dr. P. M. Jones directed fieldwork in the Buena Vista-Tulare Lake area of Kern County. Jones investigated 150 mounds and conducted trenching of several sites including CA-KER-53. In 1909, N. C. Nelson investigated prehistoric Site CA-KER-49, which is located to the west of Buena Vista Lake. Later, four surveys and excavations were conducted in the same locale under the auspices of the University of California. A compilation of these investigation results was published in 1926 by Gifford and Schenck.

As a result of this early work, an elaborate culture complex was defined for the late prehistoric period. This complex can be ascribed probably to the Yokuts and their direct ancestors. The material culture of this late temporal period complex included steatite vessels and beads, finely-made projectile points, pottery, shaped stone mortars, *Tivela* disc beads, use of asphaltum, and the presence of metates and manos. Flexed burials were the predominant interment mode. Earlier complexes underlying the late cultural expressions were represented by chipped stone crescents, large projectile points, atlatl spurs, and weights. Mortuary practices, generally thought to be related, include extended rather than flexed burial position, a situation analogous to that of the northern valley (Gifford and Schenck 1926; Lillard, Heizer, and Fenenga 1939; Moratto 1972).

Presence of "Early Man," although not found in direct association with extinct animals, is demonstrated by the frequency of chipped stone crescents and fluted points similar to those of the

Clovis-Folsom Complex in the American Southwest. Although fluted points have been found near the shores of Tulare Lake, an area that has also produced surface finds of extinct mammal bone of Pleistocene age, the association is not substantiated by controlled excavations and remains speculative (Riddell and Olsen 1969). Most of the point collection had been acquired by D. Witt over a period of 30 years.

Under the direction of Wedel (1941), the Civil Works Administration, in conjunction with the Smithsonian Institution, initiated the first major excavations using stratigraphic controls. Investigations of CA-KER-39 and CA-KER-60 as well as several smaller sites near Buena Vista Lake produced evidence of two distinct cultural entities or occupation periods. Wedel lacked methods for dating these two entities by cross-comparison of the assemblages, he tentatively stated that the early occupation at Buena Vista Lake appeared to be temporally older and less developed than the Early Horizon (Windmiller Pattern) of the Delta region. He compared this early component to the Oak Grove or Milling Stone culture of the Santa Barbara area (Rogers 1939). He divided the later cultural entity into two distinct phases, both clearly distinguished from the earlier cultural phase by artifact types. Wedel (1941:144-145) estimated that neither of these cultural periods exceeded 1500 B.P. (years Before the Present). Later, other investigators proposed far earlier ages for these early occupations, with dates ranging from 2000 to 7000 B.P. (Baumhoff and Olmstead 1963, 1964; Heizer 1964; Meighan 1959).

Later investigations in 1963 and 1964 at CA-KER-116 near Buena Vista Lake produced materials similar to Wedel's early occupation. These materials occurred in the lower levels of the "upper deposit," while an even deeper cultural deposit yielded materials similar to those of the San Dieguito Complex. Artifacts included a chipped stone crescent, crude point fragments, and an atlatl spur. Radiocarbon age determinations on shell from the lowest cultural levels returned a date of circa 8200 B.P. (Fredrickson and Grossman 1966, 1977; Fredrickson 1967).

Despite the previously mentioned investigations, the prehistory of the southern San Joaquin remains as yet poorly understood, without a tightly defined chronological sequence of cultural development.

Ethnology

Ethnographic literature is often uncertain in definition of cultural boundaries for Indian groups. Early displacement by white intrusion resulted in population shifts to avoid conflict with the Spanish, and later with the miners and settlers. The ravages of disease and warfare decimated the native people, further weakening cultural identity. Informants were often uncertain of original territories of the various tribal groupings.

The Foothill Yokuts were members of the Penutian language family which held all of the Central Valley, San Francisco Bay Area, and the Pacific Coast from Marin County to near Point Sur. The Yokuts differed from other ethnographic groups in California as they had true tribal divisions with group names (Kroeber 1925). Each tribe spoke a particular dialect, common to its members, but similar enough to other Yokuts that they were mutually intelligible (Kroeber 1925).

The Foothill Yokuts were a group of about 15 named tribes who occupied the western Sierra Nevada foothills from the Fresno River to the Kern River. A further subdivision separated the groups into northern, central and southern groups. The area controlled by individual groups varied over time. There is no information to indicate that there was a village in the project vicinity, but this does not preclude the possibility.

Trade was well developed, with mutually beneficial interchange of needed or desired goods. Obsidian, rare in the San Joaquin Valley, was obtained by trade with Paiute and Shoshoni groups on the eastern side of the Sierra Nevada, where numerous sources of this material are located, and to some extent from the Napa Valley to the north. Shell beads, obtained by the Yokuts from coastal people, and acorns, rare in the Great Basin, were among many items exported to the east by Yokuts traders (Davis 1961).

Economic subsistence was based on the acorn, with substantial dependency on gathering and processing of wild seeds and other vegetable foods. The rivers, streams, and sloughs which formed a maze within the valley provided abundant food resources such as fish, shellfish, and turtles. Game, wild fowl, and small mammals were trapped and hunted to provide protein augmentation of the diet. In general, the eastern portion of the San Joaquin Valley provided a lush environment of varied food resources, with the estimated large population centers reflecting this abundance (Cook 1955; Baumhoff 1963).

Settlements were oriented along the water ways, with their village sites normally placed adjacent to these features for their nearby water and food resources. House structures varied in size and shape (Latta 1949; Kroeber 1925). The housepit depressions ranged in diameter from between 3 to 18 meters.

Latta (1949:99) reported that a village of 200 to 300 Yokuts might have four or five large houses that were used for ten or twelve years or until a family member died, at which time the Indians burned the house in which the death had occurred. If a sick or aged person died outside the dwelling, the family did not burn the house. When a Northern Yokuts died, his body was cremated or buried in a flexed position. Southern tribes normally buried their dead, although they did cremate shamans, persons who died away from their village and, among the Tachi, persons of great importance.

The Yokuts experienced severe depopulation after contact with the Spanish and subsequent explores. The most devastating impacts of the Spanish colonization effort were not the result of military conflicts, but came from Old World diseases newly introduced to the native people.

Historical Context

The early recorded inhabitants of the region were members of the Yokuts tribe. Although the Spanish missions were established closer to the Pacific coast between 1769 and 1817, the general project area was first visited in the early 1800s by Spanish explorers, who visited the San Joaquin Valley with three goals: to search for runaway neophytes from the missions in the coastal regions,

to punish the Indian raiders, and to select sites for new missions. In 1806, a group led by Gabriel Moraga and Father Pedro Muñoz, left Mission San Juan Bautista heading north to about the Mokelumne River**.** They then turned south, and travelled along the edge of the mountains crossing the San Joaquin River and passing through Tejon Pass, arriving at Mission San Fernando. In 1815, José Dolores Pico marched an expedition group from Monterey into the region. Following the San Joaquin River, he passed through the area in search of runaways, traveling as far south as the Kern River. The expedition returned to the starting point in Monterey with nine prisoners and a number of horses.

After control of California passed from Spain to Mexico in 1822, Mexican explorations into the interior continued, with José Dolores Pico conducting a major expedition along the San Joaquin River in 1825-1826. This expedition was considered successful in that some neophytes were captured, hostile Indians killed, some of the tribal groups intimidated, and some stolen horses recovered. In 1828, Sebastián Rodríguez led a similar expedition into the same region. His expedition captured a number of neophytes as well as some of the stolen horses, an item that had become an important dietary staple for the Indian tribes in the San Joaquin Valley region (Beck and Haase 1974).

The expeditions did not leave physical evidence, but there were definitely effects to the Native American populations. Causing even more of an effect on the native population were the diseases brought in to the Native populations of the Central Valley in the early 1830s.

In Fresno County, there was only one early land grant, a rancho along the current southern border of the county: Laguna de Tache. The era of the Spanish and Mexican land grants did not directly affect the Project Area.

The extension of the railroad system throughout the San Joaquin Valley allowed the increased expansion of a market for the agricultural production of the region. A branch line of the Southern Pacific Railroad (first known as the Pollasky Railroad or the San Joaquin Railroad) was built through this region circa 1891. Other lines were extended from the main line in this region, with a branch of the Atkinson, Topeka and Santa Fe located south of the Kings River.

The Enterprise Canal was built in 1891 to deliver Kings River water to the agricultural areas to the west, enabling the settlement of large tracts of land in Fresno County.

Another feature that formerly crossed the Project Area is the Kings River Flume. The 1907 Fresno County Atlas shows the route of the system. A major engineering work, the 62-mile long v-shaped flume carried logs from a 4500-foot elevation to the mill and railroad at Sanger at a 300-foot elevation. The flume operated from 1890 to 1923.

The Hazelton Ranch is mentioned in the 1882 County history as a 3,800-acre ranch on the Kings River near the community of Centerville Wallace W. Elliott & Company 1882: 185). The lands of the ranch were considered to have plenty of water and timber. The 1907 County Historical Atlas shows the entirety of section 24 containing the Project Area to be owned by William Hazelton.

For the history of the current facility, according to the Kings River Packing's website:

Kings River Packing, Inc. is a family-owned business located in the San Joaquin Valley. Our company is proud to be a grower, shipper, and packer of quality oranges and lemons for more than 25 years.

Kings River Packing, Inc. was started by Douglas Hazelton in 1977. Mr. Hazelton is a fifth-generation farmer here in Sanger, CA. His great-great grandfather, William Hazelton, came to this area in 1853 and in 1866 returned home from a cattle trip with his saddle bags full of oranges. His wife planted the orange seeds and two trees grew. These were the first orange trees planted in Fresno County. In 1873, William started farming citrus and in 1876 recorded four bearing orange trees. The farming continued to grow and in 1961 Douglas' father, Ed, planted 5,450 citrus trees. Douglas continued the farming operation and with the help of his family he now farms over 600 acres of citrus. In 1977, Mr. Hazelton identified the need for a quality independent shipper and packer in the Sanger area. With the help of his daughters and sons-in-law, Douglas began packing his own fruit. Kings River Packing, Inc. was founded and the Hazelton family continues to pack high quality citrus.

Kings River Packing, Inc. is owned and operated by Mr. Hazelton and his two sons-in-law, David Hines and Keith Gardner. Both David and Keith are lifetime residents of Sanger, CA. They are also owners and operators of the farming entity in addition to farming their own citrus properties.

RESEARCH

A record search was conducted for the Project Area and a 0.125-mile radius around the Project Area at the Southern San Joaquin Valley Archaeological Information Center of the California Historical Resources Information System on December 15, 2017 (RS#17-551, Appendix 2).

A two-acre portion of the Project Area was surveyed with negative results in 1997 by Brian Wickstrom. There are no sites recorded within the Project Area. The Enterprise Canal, to the south of the Project Area, has been recorded as P-10-007030.

FIELD ASSESSMENT

Mike Lawson completed a field survey of the 28 acres comprising the Project Area on January 8, 2017 (Figure 3). Much of the Project Area is covered by buildings or paving. Survey was then limited primarily to the orchard areas.

The historic canal lies far enough away from the area of potential effect that it is not a concern for the study.

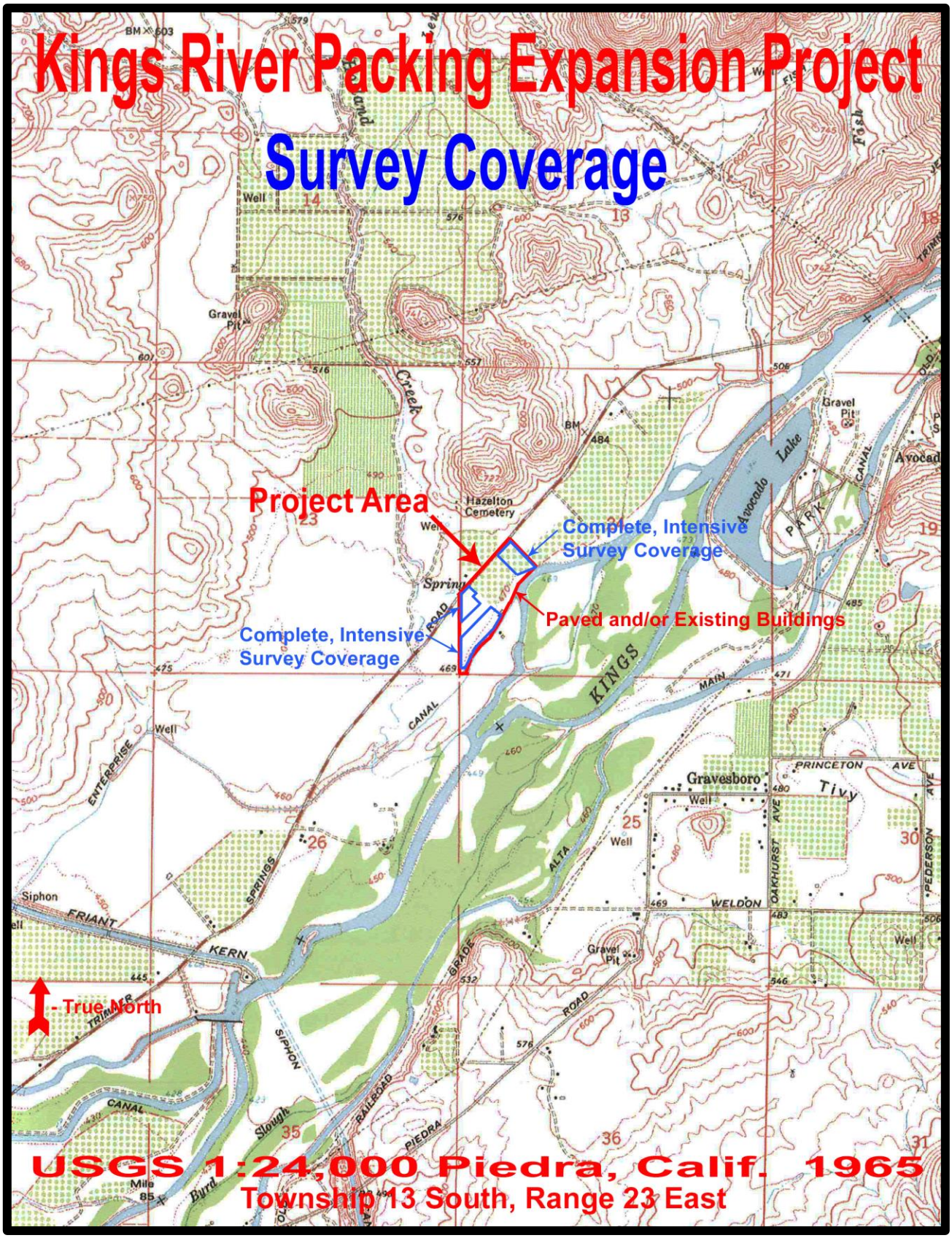

Kings River Packing Expansion Project
Survey Coverage
Project Area
Complete, Intensive Survey Coverage
Complete, Intensive Survey Coverage
Paved and/or Existing Buildings
True North
USGS 1:24,000 Piedra, Calif. 1965
Township 13 South, Range 23 East

Figure 3

The only visible soil on the property is along the Kings River for about two hundred feet at the north end of Project Area, and within the orchard blocks and their perimeter dirt roadways. The orchard sections have citrus trees of various species, with ample space between them and good weed control, allowing excellent visibility. It is unclear whether the orchards have been dug down slightly and leveled, or if the land under the packing buildings in-between them was filled and leveled, resulting in the northern orchard blocks being lower.

The soil at the bank of the River is sandy and has embedded cobbles visible, but no large boulders or other features which could have been used by local tribes for food processing. Likewise, no historic features or course modifications were visible along the steep bank.

The soils within the orchards is comprised of dark brown loam, somewhat sandy, with occasional rounded pebbles and small river cobbles. Close attention was given to changes in soil color or constituents, but none were noticed throughout the orchards.

Five to ten meter transects were used during the survey to allow sufficient inspection, with occasional closer observation in areas where mechanical or animal disturbance was evident.

No cultural resources were observed during this survey.

RECOMMENDATIONS

Although no prehistoric sites were found during the survey, there is a slight possibility that a site may exist and be totally obscured by vegetation, fill, or other historic activities, leaving no surface evidence. Should artifacts or unusual amounts of stone, bone, or shell be uncovered during construction activities, an archeologist should be consulted for on-the-spot evaluation of the finding. If the bone appears to be human, state law requires that the Fresno County Coroner be contacted. If the Coroner determines that the bone is human and is most likely Native American in origin, he must contact the Native American Heritage Commission (916-322-7791).

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APPENDIX 1

Resumes

PEAK & ASSOCIATES, INC.
RESUME

MELINDA A. PEAK **January 2018**
Senior Historian/Archeologist
3941 Park Drive, Suite 20 #329
El Dorado Hills, CA 95762
(916) 939-2405

PROFESSIONAL EXPERIENCE

Ms. Peak has served as the principal investigator on a wide range of prehistoric and historic excavations throughout California. She has directed laboratory analyses of archeological materials, including the historic period. She has also conducted a wide variety of cultural resource assessments in California, including documentary research, field survey, Native American consultation and report preparation.

In addition, Ms. Peak has developed a second field of expertise in applied history, specializing in site-specific research for historic period resources. She is a registered professional historian and has completed a number of historical research projects for a wide variety of site types.

Through her education and experience, Ms. Peak meets the Secretary of Interior Standards for historian, architectural historian, prehistoric archeologist and historic archeologist.

EDUCATION

M.A. - History - California State University, Sacramento, 1989
Thesis: *The Bellevue Mine: A Historical Resources Management Site Study in Plumas and Sierra Counties, California*
B.A. - Anthropology - University of California, Berkeley

PROJECTS

In recent years, Ms. Peak has led the team completing the cultural resource sections for General Plan and General Plan Updates, for a number of cities/neighborhoods including Campbell, Milpitas, Yountville, Manteca, The Springs, Sebastopol, Martinez, Brentwood, Colusa County and Foster City. Older General Plan efforts include Wheatland, Rocklin, Sheridan, Granite Bay and South Sutter County.

In recent months, Ms. Peak has completed a number of determinations of eligibility and effect documents in coordination with the Corps of Engineers for projects requiring federal permits, assessing the eligibility of a number of sites for the National Register of Historic Places.

She has also completed historical research projects on a wide variety of topics for a number of projects including the development of a winery in a ranch in Folsom, commercial buildings in the City of

Davis, a lumber mill in Clovis, older farmhouses dating to the 1860s, an early roadhouse, bridges, canals, former small town site, and a section of an electric railway line.

In recent years, Ms. Peak has prepared a number of cultural resource overviews and predictive models for blocks of land proposed for future development for general and specific plans. She has been able to direct a number of surveys of these areas, allowing the model to be tested.

Ms. Peak completed the cultural resource research and contributed to the text prepared for the DeSabla-Centerville PAD for the initial stage of the FERC relicensing. She also served cultural resource project manager for the FERC relicensing of the Beardsley-Donnells Project. For the South Feather Power Project and the Woodleaf-Palermo and Sly Creek Transmission Lines, her team completing the technical work for the project.

She served as principal investigator for the multi-phase Twelve Bridges Golf Club project in Placer County. She served as liaison with the various agencies, helped prepare the historic properties treatment plan, managed the various phases of test and data recovery excavations, and completed the final report on the analysis of the test phase excavations of a number of prehistoric sites. She is currently involved as the principal investigator for the Clover Valley Lakes project adjacent to Twelve Bridges in the City of Rocklin, coordinating contacts with Native Americans, the Corps of Engineers and the Office of Historic Preservation.

Ms. Peak has served as project manager for a number of major survey and excavation projects in recent years, including the many surveys and site definition excavations for the 172-mile-long Pacific Pipeline proposed for construction in Santa Barbara, Ventura and Los Angeles counties. She also completed an archival study in the City of Los Angeles for the project, and served as principal investigator for a major coaxial cable removal project for AT&T.

Additionally, she completed a number of small surveys, served as a construction monitor at several urban sites, and conducted emergency recovery excavations for sites found during monitoring. She has directed the excavations of several historic complexes in Sacramento, Placer and El Dorado Counties.

Ms. Peak is the author of a chapter and two sections of a published history (1999) of Sacramento County, *Sacramento: Gold Rush Legacy, Metropolitan Legacy*. She served as the consultant for a children's book on California, published by Capstone Press in 2003 in the land of Liberty series.

Michael D Lawson

Archaeologist
Sacramento CA

Resume

- 22 years of experience working in CRM, volunteer, and academic settings in California historic, proto historic, and prehistoric archaeology.

- Expertise in pedestrian survey, excavation, feature (including burial) exposure, laboratory techniques, research. Field positions include Crew Chief, Lead technician.

- Master flintnapper, focusing for 20 years on California/ Great Basin cutting tool and projectile forms and production techniques, as well as stone source research. Proto historic glass use for projectile points also a major focus. Research done in person at Phoebe Hurst Museum, Berkeley.

- 18 years of experience in traditional blacksmithing with focus on mid to late 19th century coal/charcoal forge techniques. Special interest in analysis of historic artifacts.

- 15 years independent study of late 19th century to mid-20th century farm and ranch equipment.

- Extensive independent study of historic era household, industrial and military items.

- Independent study of Yahi/Southern Yana occupation and survival strategy in the Mt. Lassen foothills, including field trips and research. Discoveries contributed to 3 publications.

- Current independent research project focus on Yahi adaptation strategy during time of hiding from 1870 to 1911 in Deer, Antelope and Mill Creek Canyons.

Education

- B.A. Anthropology with focus on archaeology. California State University Sacramento.
- A.A. General Education, lower division completed in Anthropology.

Field experience

Survey, excavation, photography conducted in 46 California and 3 Nevada Counties over 20 years.

Notable Historic archaeology projects include Virginia Town excavation of Gold Rush Era Chinese mining camp; test excavation and data recovery at stage stop on Green Valley Rd, Placer County; monitoring and collection of burial material at historic Kilgore cemetery, Rancho Cordova, Car; Monitoring, data recovery, photography, and artifact cataloguing for Sutter Street Revitalization Project, Phase One, Historic Folsom, CA; Monitoring, test excavation, data recovery at The Presidio of San Francisco, CA; Monitoring for 230 kV line installation for PG&E in historic San Francisco, Ca. to name just a few.

Prehistoric and Proto historic site project involvement highlights include survey, monitoring, excavation Twelve Bridges Golf Course, Lincoln, CA; survey, monitoring, excavation Clover Valley Lakes, Rocklin, CA,; survey of Diamond Valley, Alpine County, CA; Survey, excavation, burial care and monitoring of Feather River Levee Setback Project, Sutter County, CA; monitoring, excavation, burial care, Feather River West Levee Project, Yuba County, CA; survey, monitoring, excavation, and burial care Alamo Creek Detention Basin Project, Solano County, CA; monitoring, excavation, burial care, BART extension Project, San Jose, Milpitas, CA; Survey, excavation San Clemente Island, US Channel Islands, Los Angeles County, CA.

Additional Skills

Mike is known for extensive knowledge of historic and prehistoric artifacts and regularly instructs new undergraduates as well as graduates on artifact identification, use, manufacture and commonality.

Mike is also known for his willingness to share and teach his expertise in field techniques from surveying to excavation and feature work.

APPENDIX 2

Record Search

California Historical Resources Information System

Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

12/15/2017

Robert A. Gerry
Peak & Associates, Inc.
3941 Park Drive, Suite 20-329
El Dorado Hills, CA 95762

Re: Kings River Packing
Records Search File No.: 17-551

The Southern San Joaquin Valley Information Center received your record search request for the project area referenced above, located on the Piedra USGS 7.5's quads. The following reflects the results of the records search for the project area and the 0.125 mile radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☒ custom GIS maps ☐ shapefiles ☐ hand-drawn maps

Resources within project area:	None
Resources within 0.125 mile radius:	P-10-007030
Reports within project area:	FR-00018
Reports within 0.125 mile radius:	None

Resource Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed
OHP Historic Properties Directory:	☐ enclosed	☐ not requested	☒ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☒ not requested	☐ nothing listed

Caltrans Bridge Survey: Not available at SSJVIC; please see http://www.dot.ca.gov/hq/structur/strmaint/historic.htm

Ethnographic Information: Not available at SSJVIC

Historical Literature: Not available at SSJVIC

Historical Maps: Not available at SSJVIC; please see http://historicalmaps.arcgis.com/usgs/

Local Inventories: Not available at SSJVIC

GLO and/or Rancho Plat Maps: Not available at SSJVIC; please see http://www.glorecords.blm.gov/search/default.aspx#searchTabIndex=0&searchByTypeIndex=1 and/or http://www.oac.cdlib.org/view?docId=hb8489p15p;developer=local;style=oac4;doc.view=items

Shipwreck Inventory: Not available at SSJVIC; please see http://www.slc.ca.gov/Info/Shipwrecks.html

Soil Survey Maps: Not available at SSJVIC; please see http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

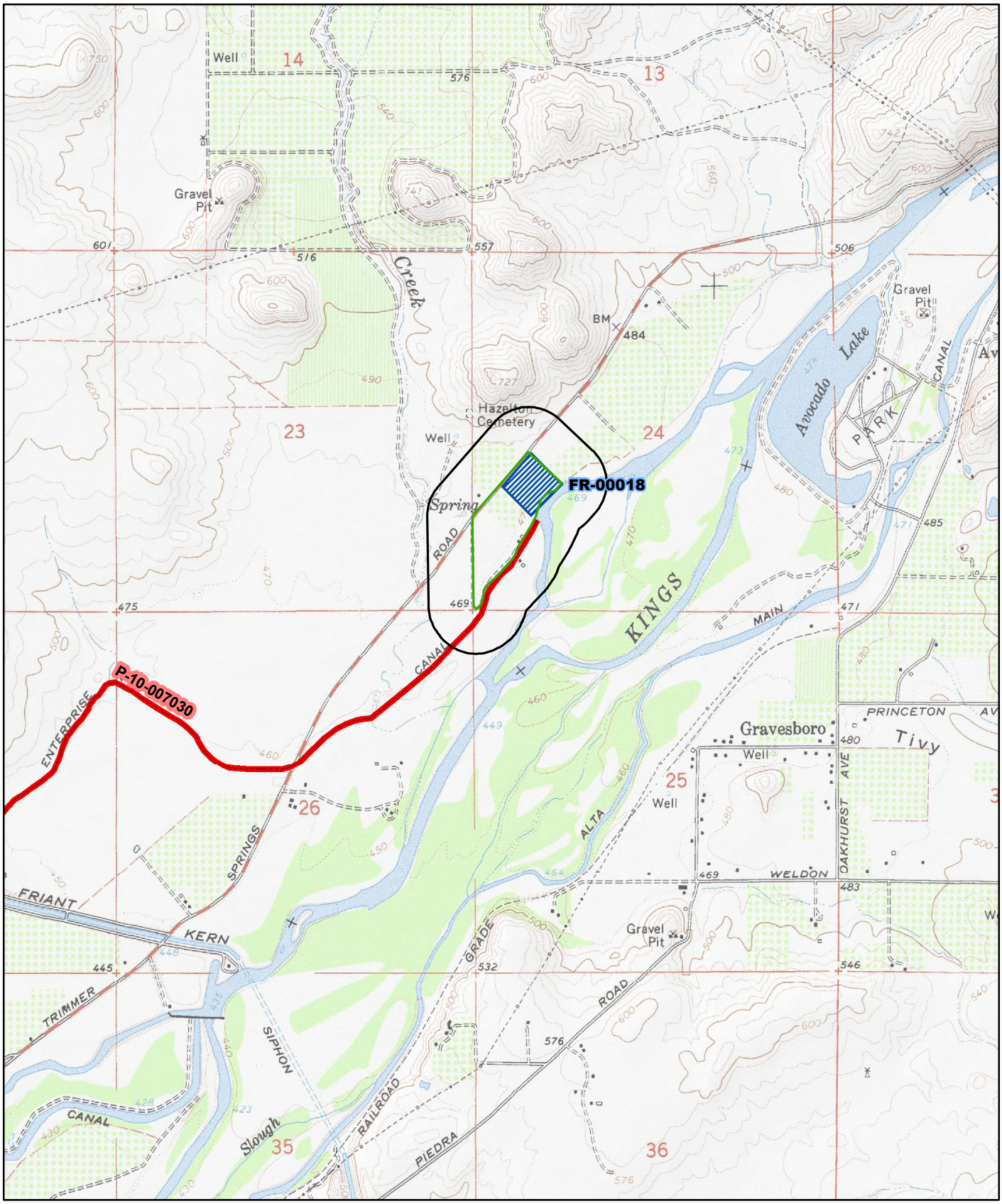
Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Celeste M. Thomson
Coordinator



May depict confidential cultural resource locations.
Do not distribute.

0 0.125 0.25 0.5 Miles

0 0.175 0.35 0.7 Kilometers

N

SSJVIC Record Search 17-551
Piedra 7.5'
Fresno County, CA

Resource List

SSJVIC Record Search 17-551

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-10-007030	CA-FRE-003825H	Resource Name - Gould Canal	Structure	Historic	HP20 (Canal/aqueduct)	2016 (Randy Baloian, Applied EarthWorks, Inc.)	FR-02846

Report List

SSJVIC Record Search 17-551

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
FR-00018	NADB-R - 1141023	1997	Wickstrom, Brian	A Cultural Resources Survey of the Two Acre Kings River Packing Plant Parcel on Trimmer Springs Road, Eastern Fresno County, California	California State University, Fresno	

PRECISION
CIVIL ENGINEERING, INC

1234 O Street
Fresno, California 93721
PHONE (559) 449-4500
FAX (559) 449-4515

Transportation Impact Study for

Kings River Packing Company Expansion

Sanger, California

CUP 3597

Prepared For:
Kings River Packing Company
21095 E. Trimmer Springs Road
Sanger, CA 93657

Prepared by:
David Schwegel, PE 67757, TE 2249
Kheng Vang, PE 63824, TE 2674

Date:
May 9, 2018

Job No.:
17-205

This Transportation Impact Study has been prepared under the direction of David Schwegel. Mr. Schwegel attests to the technical information contained therein and has judged the qualifications of recommendations, conclusions, and decisions are based on County of Fresno guidelines, general engineering standards, and California/Federal laws.

Table of Contents

1.0 Introduction

The Kings River Packing Company proposes a two-phase expansion of their existing fruit packing facility at 21083 and 21095 East Trimmer Springs Road in unincorporated Fresno County near Sanger, California. The operation has been in place since 1977 entailing the sorting and packing of oranges, lemons, and other citrus fruits. The expansion project is triggered by an increase in market product demand and growers serviced. Operations entail transporting unpacked citrus fruits from the farms to the facility via inbound field trucks. At the facility, these fruits are stored in refrigeration units and packed on-demand.

A small portion of the unpacked fruits come from adjacent orchards. These particular fruit products are transported to Kings River Packing Company via dirt roads, and therefore, do not impact the Fresno County roadway network.

Once packing is completed at the facility, the packed citrus fruit products are transported to distribution centers via outbound shipping trucks.

Figure 1: Regional and Vicinity Maps identify the project's location within the State of California and the Southwest Fresno County vicinity. The project is located approximately 25 miles northeast of downtown Fresno.

1.1 Site Description

The existing facility and expansion is located on a 28.83-acre site at 21083 and 21095 E. Trimmer Springs Road in unincorporated Fresno County near Sanger. The existing land use is Agricultural and the existing zoning is AE-20. Operations are fruit packing and storage. The Kings River and Fresno Irrigation District Canal border to the east. Agricultural (citrus fruit orchards) lands border to the north, south, and west.

1.2 Scope

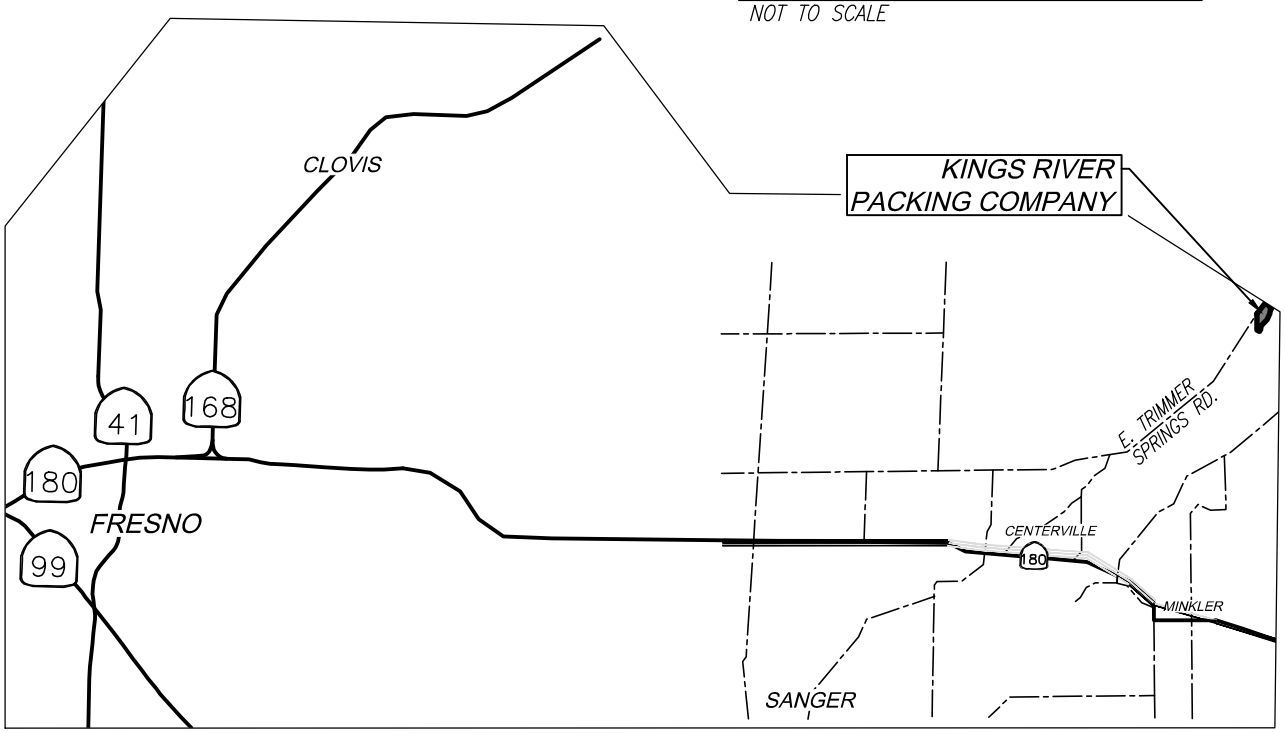
As approved during the scoping meeting on Wednesday, December 6, intersection operations were evaluated at (1) SR 180/Rio Vista, (2) SR 180/Reed, (3) SR 180/Oliver, and (4) Trimmer Springs Road/Site Access. Due to the closure and reconstruction of Belmont between Academy and Trimmer Springs and associated detouring operations, it was not practical to obtain counts at either Belmont/Oliver or SR 180/Oliver. This situation was noted during a field investigation conducted during the afternoon of Thursday, December 14, 2017. It was practical to derive counts at SR 180/Oliver from the other SR 180 counts and the Fresno COG travel demand modeling data. Existing intersection turning movements are contained within **Appendix E**.

Also, as approved during the same scoping meeting, roadway operations and structural conditions were evaluated at (A) Belmont west of Academy and (B) Trimmer Springs south of the site. Roadway capacity calculations are in **Appendix D**. Structural (Traffic Index) calculations are in **Appendix C**.

Finally, as approved during the same scoping meeting, the above referenced intersection

REGIONAL VICINITY MAP

NOT TO SCALE



VICINITY MAP

NOT TO SCALE

PRECISION CIVIL ENGINEERING, INC.	EXHIBIT	PROJECT NAME: KINGS RIVER PACKING COMPANY	FIGURE 1
	DESCRIPTION: REGIONAL AND VICINITY MAPS	03-07-2018 / 17-205	

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operational analyses were conducted under the following scenarios: (1) Existing, (2) Near-Term, (3) Near-Term Plus Phase One, (4) Cumulative, and (5) Cumulative Plus Full Build-out. Results of these analyses are summarized in **Appendix F**. Synchro data sheets are in **Appendices G to P**.

1.3 Project Description

The project entails a two-phase expansion of the existing facility with a maximum of 300 employees during peak season (January to April) with peak daily production typically being around three times the average daily production. **Appendix A** describes the methodology for projecting the number of employees in terms of bin production per employee. According to the analysis, it takes approximately 150 employees to meet the existing maximum daily production of 2,848 bins. It would take approximately 195 employees to meet the target maximum daily production of 3,500 bins under Phase One. It would take approximately 300 employees to meet the target maximum daily production of 5,000 bins under Full Build-out. The facility would operate six days a week and 24 hours a day with key concentrations of employees over two shifts: (1) 6:00 am to 3:00 pm, and (2) 3:00 pm to 12:00 am. A major element of the two-phase expansion is the inclusion of automated equipment for boosted efficiency resulting in no net increase in liquid waste. Three accesses would be provided onto Trimmer Springs Road including one to the north, one in the center, and one to the south. To ensure a conservative analysis, all volumes were combined into a single access.

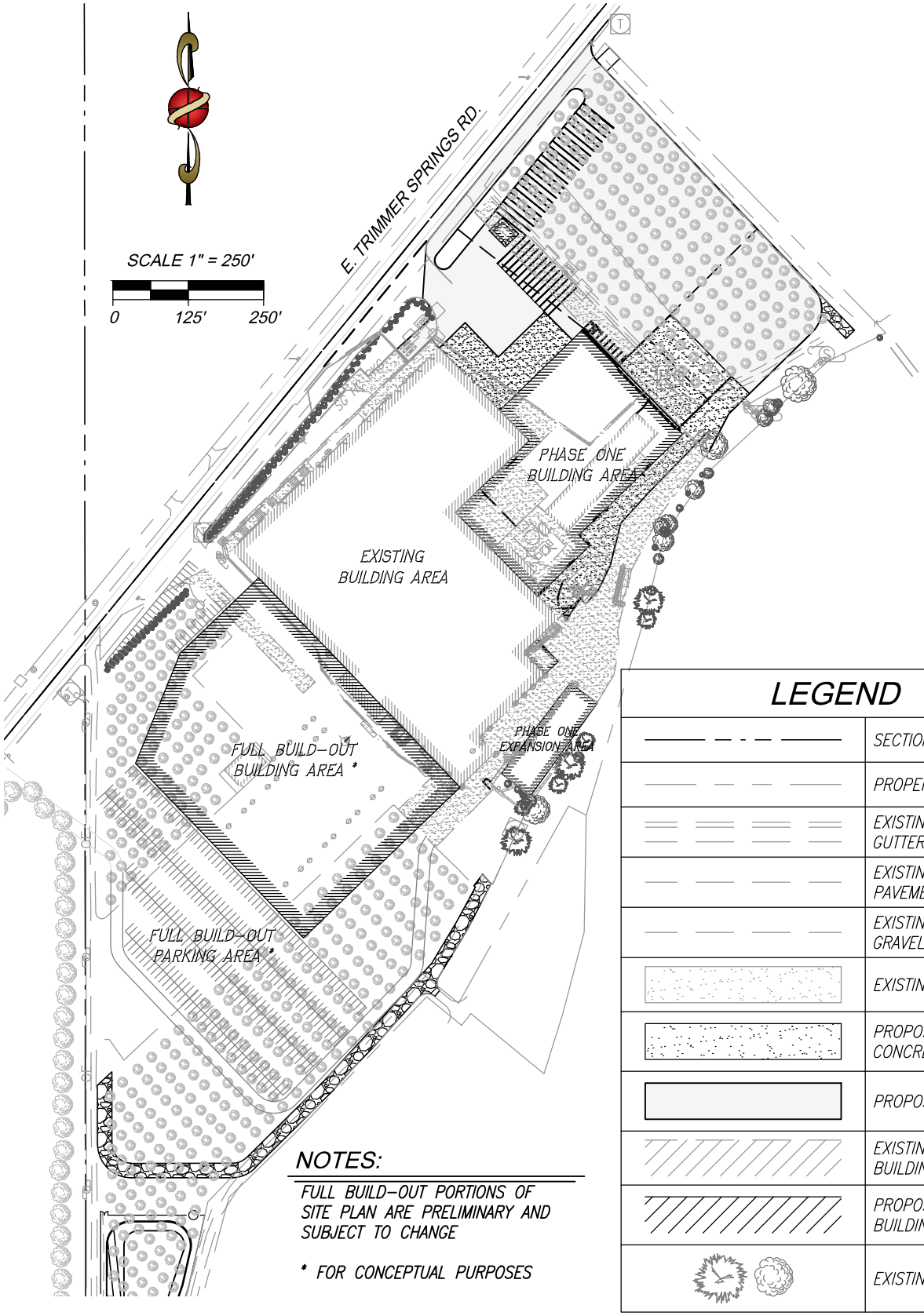
Figure 2: Site Plan shows the layout of the Phase One and Full Build-out elements relative to existing conditions.

1.4 Phase One Description

Phase One would add up to 45 additional employees for a total of 195 employees (including existing) to achieve the target maximum daily production of 3,500 bins per day. This phase would entail the construction of a 77,500-square-foot building (identified as Building E on the site plan) to the north containing a fruit cold storage facility and a shipping office. This phase will also entail the performance of site grading work and the construction of a new loading dock.

1.5 Full Build-out Description

Full Build-out (including existing and Phase One) would add up to 150 employees to the existing operation. This would bring the total number of employees up to 300 during peak season to achieve a maximum daily production of 5,000 bins per day. This phase would entail the construction of a 173,000-square-foot building to the south (identified as Building F) for packing operations and a new main office. Parking facilities at full build-out would include 374 standard spaces, 8 accessible spaces, and 40 truck spaces.



LEGEND

	SECTION LINE
	PROPERTY LINE
	EXISTING CURB & GUTTER
	EXISTING EDGE OF PAVEMENT
	EXISTING EDGE OF GRAVEL DRIVE
	EXISTING CONCRETE
	PROPOSED SITE CONCRETE
	PROPOSED PAVEMENT
	EXISTING SITE BUILDING
	PROPOSED SITE BUILDING
	EXISTING TREES

NOTES:

FULL BUILD-OUT PORTIONS OF SITE PLAN ARE PRELIMINARY AND SUBJECT TO CHANGE

* FOR CONCEPTUAL PURPOSES

PRECISION CIVIL ENGINEERING, INC.

EXHIBIT

DESCRIPTION: SITE PLAN

PROJECT NAME: KINGS RIVER PACKING COMPANY

03-07-2018 | 17-205

FIGURE 2

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2.0 Methodology

The scope entailed conducting capacity evaluations at four intersections, and capacity and structural integrity (Traffic Index) evaluations along two roadway segments.

2.1 Intersection Capacity Analysis

The analysis entailed the evaluation of capacity at three un-signalized intersections and one signalized intersection using Level of Service (LOS) based on *Highway Capacity Manual 2010* methodologies.

Table 1 defines the intersection capacity evaluation criteria at un-signalized intersections by LOS designation as a function of delay. This table also provides a narrative description of each designation. This methodology applies to all four study intersections under the Existing Conditions scenario; and SR 180 at (1) Rio Vista and (3) Oliver, and Trimmer Springs at the Site Access (4) under the remaining scenarios.

Table 1: Capacity at Un-Signalized Intersections

Designation	Delay (seconds per vehicle)	Description
A	0-10	Long, frequent gaps
B	10-15	Shorter, less frequent gaps, no more than 1 vehicle in queue
C	15-25	Less frequent gaps, 2 vehicles in queue
D	25-35	Less frequent gaps, 3 vehicles in queue
E	35-50	Long frequent gaps, 3 or more vehicles in queue
F	50+	Excessive delays waiting for suitable gaps, longer queues

Source: Transportation Research Board, *Highway Capacity Manual 2010*

Table 2 defines the intersection capacity evaluation criteria at signalized intersections by LOS designation as a function of delay. This table also provides a narrative description of each designation. This methodology applies to SR 180 at Reed (2) under the Near-Term with Phase One, Cumulative, and Cumulative with Full Build-out scenarios.

Table 2: Capacity at Signalized Intersections

Designation	Delay (seconds per vehicle)	Description
A	0-10	Some slowing on green, but most vehicles do not stop
B	10-20	Some vehicles stop, but most do not
C	20-35	More vehicles stop, but many still pass through without stopping
D	35-55	Most vehicles stop
E	55-80	Almost all vehicles stop, but are able to clear the intersection within one cycle
F	80+	All vehicles stop, and some may not be able to clear the intersection within one cycle

Source: Transportation Research Board, *Highway Capacity Manual 2010*

According to the *Draft Fresno County Traffic Impact Study Guidelines* (2014), an increase in delay of 5 seconds or more for the overall intersection is considered significant, and the Fresno County Level of Service Standard is "C" or better on County Roadways. This applies to the Site Access intersection.

According to the *Caltrans Guide for the Preparation of Traffic Impact Studies* (2002), the Level of Service Standard is "D" or better on the State Highway System. This applies to the three SR 180 intersections.

2.2 Roadway Capacity Analysis

The analysis entailed the evaluation of capacity along two segments of the Fresno County Road system based on Florida DOT and Caltrans methodologies.

Table 3 defines the capacity evaluation criteria along two roadway segments based on LOS as a function of Annual Average Daily Traffic (AADT) from the Florida LOS Tables. This methodology applies to capacity evaluations at Belmont west of Oliver (A) and Trimmer Springs south of the Site (B). While Belmont Avenue is signalized, it is not on the State Highway System. Therefore, the upper limits of the service flow rates along Belmont were reduced by 10 percent as directed by Florida DOT. The upper limits of the service flow rates along Trimmer Springs Road are based on uninterrupted flow highways with no reduction factors as directed by Florida DOT.

Table 3: Service Flow Rates along Roadway Segments

Designation	AADT (vehicles/day) Belmont Ave (1)	AADT (vehicles/day) Trimmer Springs Rd (2)
A		
B		4,700
C	12,960	8,400
D	14,580	14,300
E		28,600
F		

AADT: Annual Average Daily Traffic
Source: *Florida DOT Generalized Service Volume Tables*
1: Table 2: Generalized Annual Average Daily Volumes for Florida's Transitioning Areas for State Signalized Arterials Class I (>40 mph)
2: Table 3: Generalized Annual Average Daily Volumes for Florida's Rural Undeveloped Areas for Uninterrupted Flow Highways

According to the *Draft Fresno County Traffic Impact Study Guidelines* (2014), the Fresno County Level of Service Standard is "C" or better on County Roadways.

2.3 Roadway Structural Analysis

Roadway structural integrity is evaluated based on volumes by vehicle classification. The volumes are multiplied by the constants specific to the class of vehicle as indicated in Table 613.3A of the Caltrans *Highway Design Manual*. The summation of the volumes multiplied by the constants yields the Equivalent Single Axle Loads (ESALs). These ESAL values are then inserted into a formula to calculate the Traffic Index (TI). This TI methodology applies to structural integrity evaluations at Belmont west of Academy (A) and Trimmer Springs south of the Site (B).

According to the *Draft Fresno County Traffic Impact Study Guidelines* (2014), an increase in TI of 0.5 or more is considered significant.

3.0 Existing Conditions

The existing transportation system and topographical conditions were evaluated by studying satellite imagery and conducting a low-level field investigation of the site and the study area during the afternoon of Thursday, December 14, 2017.

3.1 Setting

Figure 3: Existing Setting defines the existing roadways, lane configurations, and intersection geometrics including taper lengths and storage lengths.

Table 4 describes the key roadways within the existing setting.

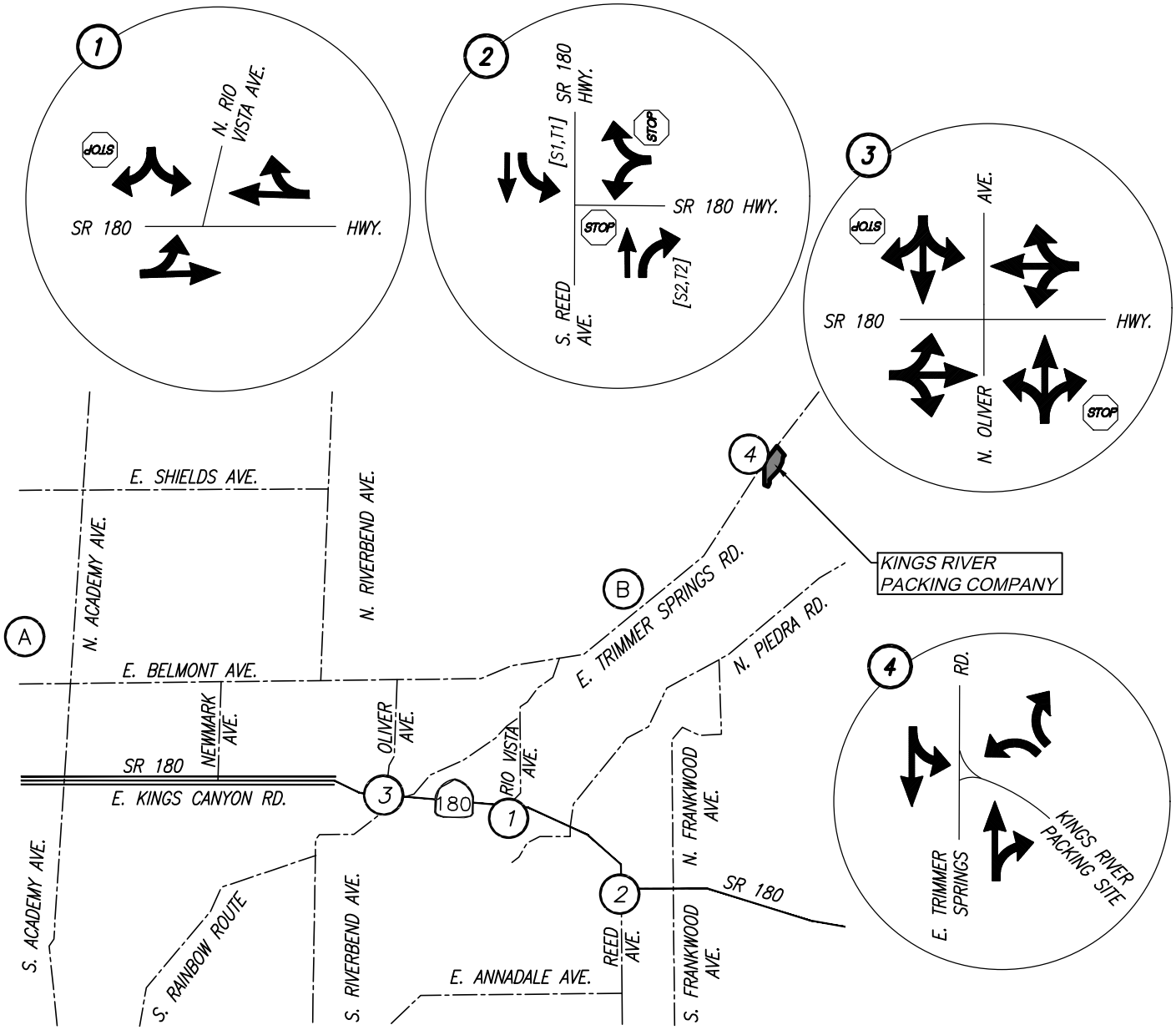
Table 4: Existing Setting: Key Roadways

Roadway	Divided or Un-Divided	Lanes	Posted Speed	Functional Classification
SR 180 w/o Oliver	Divided	4	65	Expressway
SR 180 e/o Oliver	Un-Divided	2	55	Super Arterial
Academy	Un-Divided	4	55	Arterial
Belmont	Un-Divided	2	55	Arterial
Oliver	Un-Divided	2	45	Arterial
Reed	Un-Divided	2	55	Rural Arterial
Trimmer Springs	Un-Divided	2	45	Rural Arterial
Rio Vista	Un-Divided	2	45	Collector

Source: *Fresno County General Plan Policy Document* (2000), Transportation & Circulation Element, Figures TR-1a to TR-1c

3.2 Volumes

Figure 4: Existing Volumes shows the existing intersection turning movement volumes that serve as the basis for the intersection operational analysis. For analysis purposes, 1 truck is equivalent to 2.5 passenger cars, as directed by Fresno County for trucks larger than Class 3. These volumes are expressed in Passenger Car Equivalents (PCE's). These PCE's were input into Synchro to conduct the intersection operational analyses. The volumes for (1) SR 180/Rio Vista and (2) SR 180/Reed were calculated from turning movement counts collected by Metro Traffic Data on Thursday, December 7, 2017 during the AM and PM peak hours. The volumes for (3) SR 180/Oliver were derived from the counts and travel demand modeling data provided by Fresno COG as indicated in **Appendix E**. The volumes for (4) Trimmer Springs/Site Access were derived from: (a) 24-hour segment counts collected by Metro Traffic Data on Thursday, December 7, (b) existing trip generation calculations based on ITE *Trip Generation* rates, and (c) travel demand modeling data provided by Fresno COG. **Appendix F** explains the calculation of the PCE's and the projection of near-term and cumulative traffic volumes from the Fresno COG Travel Demand Modeling data.



GEOMETRIC TABLE

	1	2	3	4	5	6	7	8	9	10
ACCELERATION										
STORAGE	140'	25'								
TAPER	100'	105'								

LEGEND:

- DIRECTION OF TRAVEL
- ## EXISTING TRAVEL SPEED
- STUDY INTERSECTIONS AND SEGMENTS
- %% TRIP DISTRIBUTION

TRAFFIC CONTROL

- STOP STOP SIGN
- SIGNALIZED INTERSECTION
- YIELD YIELD SIGN

- PROJECT LOCATION

LENGTHS (FEET)

- [A#] ACCELERATION
- [S#] STORAGE
- [T#] TAPER

SCALE 1" = 8000'

0 4000' 8000'

PRECISION CIVIL ENGINEERING, INC.

EXHIBIT	PROJECT NAME: KINGS RIVER PACKING COMPANY	FIGURE 3
DESCRIPTION: EXISTING SETTING	03-07-2018	17-205

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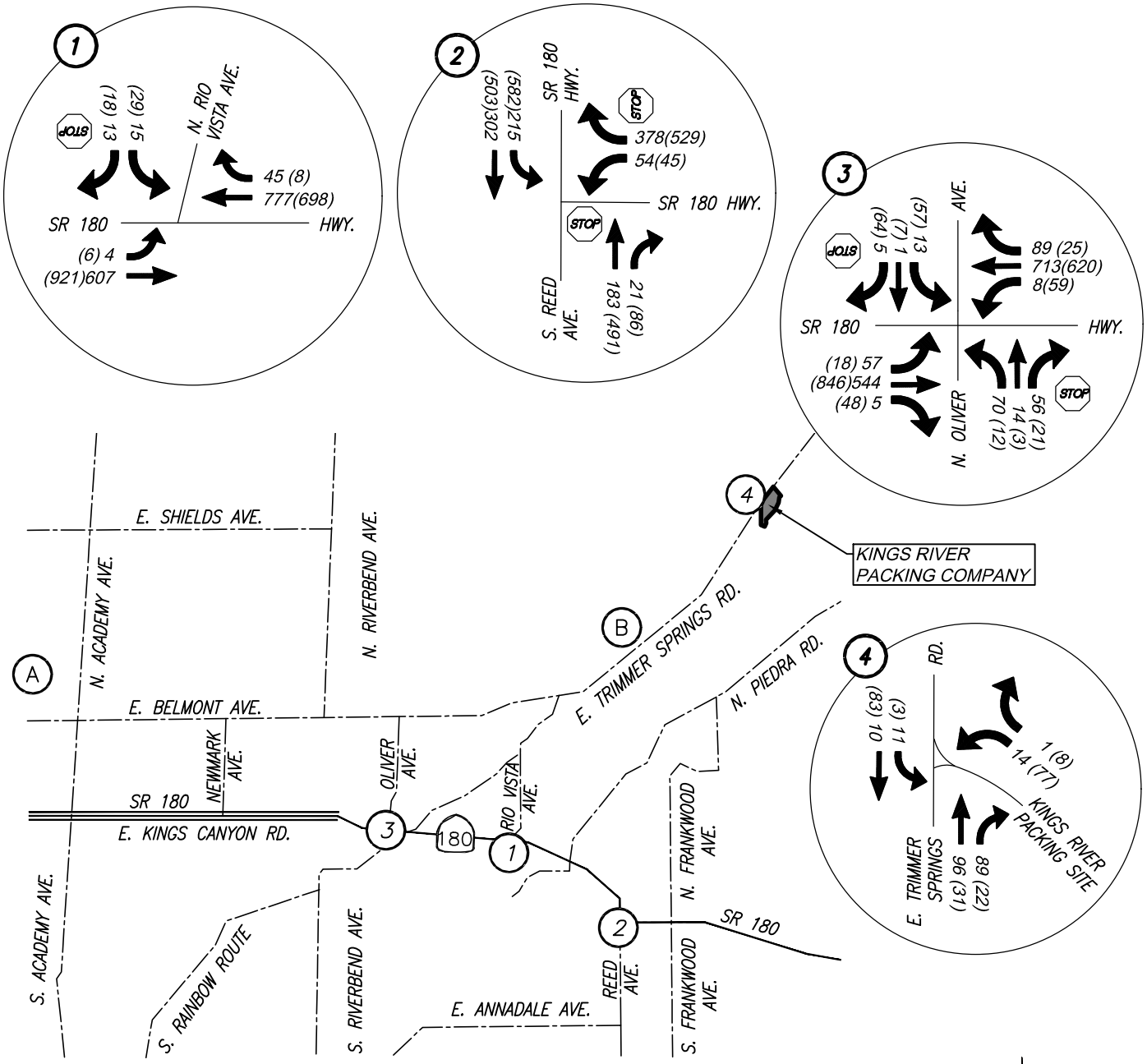

LEGEND:

- DIRECTION OF TRAVEL
- ## (##) AM (PM) PEAK HOUR PASSENGER CAR EQUIVALENTS
- TRAFFIC CONTROL
- STOP STOP SIGN
- SIGNALIZED INTERSECTION
- YIELD YIELD SIGN
- STUDY INTERSECTIONS AND SEGMENTS
- %% TRIP DISTRIBUTION
- PROJECT LOCATION

SCALE 1" = 8000'

0 4000' 8000'

PRECISION CIVIL ENGINEERING, INC.

EXHIBIT	PROJECT NAME: KINGS RIVER PACKING COMPANY	FIGURE 4
DESCRIPTION: EXISTING VOLUMES	03-07-2018	17-205

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3.3 Intersection Capacity

Appendices G (AM) and H (PM) contain the calculation reports for the evaluation of capacity at the un-signalized intersections based on the Highway Capacity Manual Methodology described in Section 2.

Table 5 shows the existing intersection conditions at the four study intersections. Reported results are for the worst-case movement. Peak Hour Factor is for actual intersection counts. For the SR 180 Intersections (1-3), Heavy Vehicle compositions are 4% for AM and 3% for PM. For the Site Access/Trimmer Springs Intersection (4), the Heavy Vehicle composition is 12% for both AM and PM. These percentages are based on actual counts. Intersection evaluations are based on the peak hour during the peak season of operation. The Operational analysis was conducted using Synchro 9 based on Highway Capacity Manual 2010 methodologies.

Table 5: Existing Intersection Conditions

	Existing	
	AM	PM
1: SR 180/Rio Vista	31.5 D	41.3 E
2: SR 180/Reed	21.1 C	423.4 F
3: SR 180/Oliver	234.8 F	418.1 F
4: Trimmer Springs/Site	10.2 B	10.0 B

Source: Trafficware, *Synchro 9*
Source: Transportation Research Board, *Highway Capacity Manual 2010*

3.4 Roadway Capacity

Appendix D contains the calculations for the evaluation of capacity along the two roadway segments. For analysis purposes, it was assumed that the segment counts obtained from Metro Traffic Data are representative of the traffic volumes along the entire segment. Peak Hour Factors are based on actual intersection counts.

Table 6 shows the existing operational conditions along roadway segments in terms of roadway capacity (service volume in vehicles per day). The roadway capacity calculations are based on standard 24-hour counts with reported values in Passenger Car Equivalents (PCE's) with 1 truck taken as the equivalent of 2.5 passenger cars as directed by Fresno County. These roadway capacity evaluations are based on the Average Annual Daily Traffic (AADT) as directed by Florida DOT.

Table 6: Existing Roadway Capacity Conditions

Intersection	LOS
A: Belmont w/o Academy	1,525 B
B: Trimmer Springs s/o Site	1,530 B

Source: *Florida DOT Generalized Service Volume Tables*
A: Table 2: Generalized Annual Average Daily Volumes for Florida's Transitioning Areas for State Signalized Arterials Class I (>40 mph)
B: Table 3: Generalized Annual Average Daily Volumes for Florida's Rural Undeveloped Areas for Uninterrupted Flow Highways

4.0 Phase One Impact Analysis

The Phase One Impact Analysis was conducted to assess the impact of Phase One of the Project relative to background traffic growth, infrastructure improvements, and development projects. Per the request of Fresno County at the December 6 Scoping Meeting, this analysis reflects the implementation of a 4.55-mile stretch of improvements along State Route 180 through the three analyzed intersections even through Phase One is likely to be open in advance of these improvements. At the time of this study, these improvements were fully funded and ready for construction. The cover sheet of these improvement plans is provided on the attached CD.

4.1 Setting

Table 7 describes the key roadways in the near-term setting reflecting the State Route 180 improvements. These improvements, approved by Caltrans District 6 on June 22, 2015, entail upgrading the 4.55-mile stretch of highway from a two-lane arterial to a four-lane divided expressway. Trimmer Springs gets rerouted from its current terminus at Kings Canyon to its new terminus at Oliver just north of SR 180.

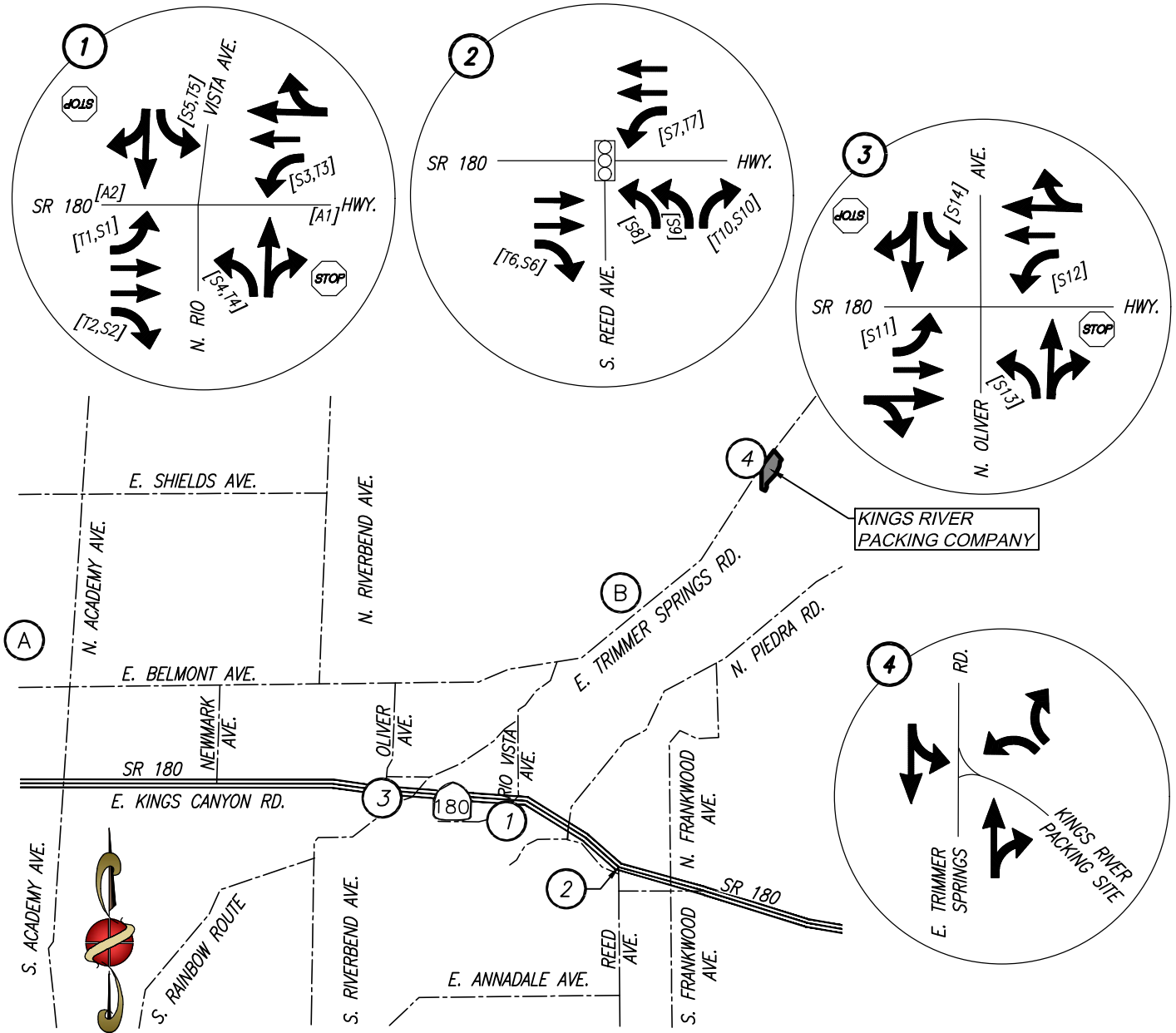
Table 7: Near-Term Setting: Key Roadways

Roadway	Divided or Un-Divided	Lanes	Posted Speed	Functional Classification
SR 180 w/o Oliver	Divided	4	65	Expressway
SR 180 e/o Oliver	Divided	4	65	Expressway
Academy	Un-Divided	4	55	Arterial
Belmont	Un-Divided	2	55	Arterial
Oliver	Un-Divided	2	45	Arterial
Reed	Un-Divided	4	55	Arterial
Trimmer Springs	Un-Divided	2	45	Rural Arterial
Rio Vista	Un-Divided	2	45	Collector

Source: *Fresno County General Plan Policy Document* (2000), Transportation & Circulation Element, Figures TR-1a to TR-1c
Caltrans District 6, *State Route 180 Improvements,* June 22, 2015

Figure 5: Near-Term Setting shows roadway characteristics, intersection lane configurations, and geometric conditions (including lengths of acceleration lanes, storage lanes, and tapers) that serve as the basis for the Near-Term analysis. This setting is reflective of improvements entailing converting Kings Canyon to a segmented roadway with cul-de-sacs while rerouting State Route 180 to the north. The specific changes by intersection are as follows:

- SR 180/Rio Vista (1) gets exclusive left-turn lanes on all approaches, and second through lanes and an acceleration lane in the eastbound and westbound directions.
- SR 180/Reed (2) becomes signalized with no pedestrian crossings. Westbound gets dual left-turn lanes and a single right-turn lane. Northbound gets dual through lanes and a single right-turn lane. Southbound gets dual through lanes and a single left-turn lane. For analysis purposes, this intersection would be rotated 90 degrees. The traffic volumes on the figure reflect this rotation. To ensure consistency in the application of growth projections, no



SCALE 1" = 8000'

0 4000' 8000'

GEOMETRIC TABLE

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
ACCELERATION	750'	780'												
STORAGE	500'	330'	560'	360'	260'	350'	420'	515'	400	400'	650'	550'	140'	320'
TAPER	100'	100'	100'	100'	100'	110'	115'			100'				

LEGEND:

- DIRECTION OF TRAVEL
- ## EXISTING TRAVEL SPEED
- STUDY INTERSECTIONS AND SEGMENTS
- %% TRIP DISTRIBUTION

TRAFFIC CONTROL

- STOP STOP SIGN
- SIGNALIZED INTERSECTION
- YIELD YIELD SIGN

- PROJECT LOCATION

LENGTHS (FEET)

- [A#] ACCELERATION
- [S#] STORAGE
- [T#] TAPER

PRECISION CIVIL ENGINEERING, INC.	EXHIBIT	PROJECT NAME: KINGS RIVER PACKING COMPANY	FIGURE 5
	DESCRIPTION: NEAR TERM SETTING	03-07-2018	17-205

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rotation was used in the projection of volumes in **Appendix F**.

- SR 180/Oliver (3) gets exclusive left-turn lanes on all approaches and second through lanes in the eastbound and westbound directions.

4.2 Volumes without Project

Figure 6: Near-Term Volumes shows the Near-Term without Phase One volumes. These volumes were obtained through linear interpolation of the existing and cumulative volumes calculated from existing counts, and existing and Full Build-out Fresno COG data. These volumes are expressed in Passenger Car Equivalents (PCE's). For analysis purposes, 1 truck (higher than Class 3) is equivalent to 2.5 passenger cars, as directed by Fresno County. As noted above, these volumes in Figure 6 reflect the 90-degree rotation of SR 180/Reed (2). This Fresno COG data is provided on a CD attached to this report.

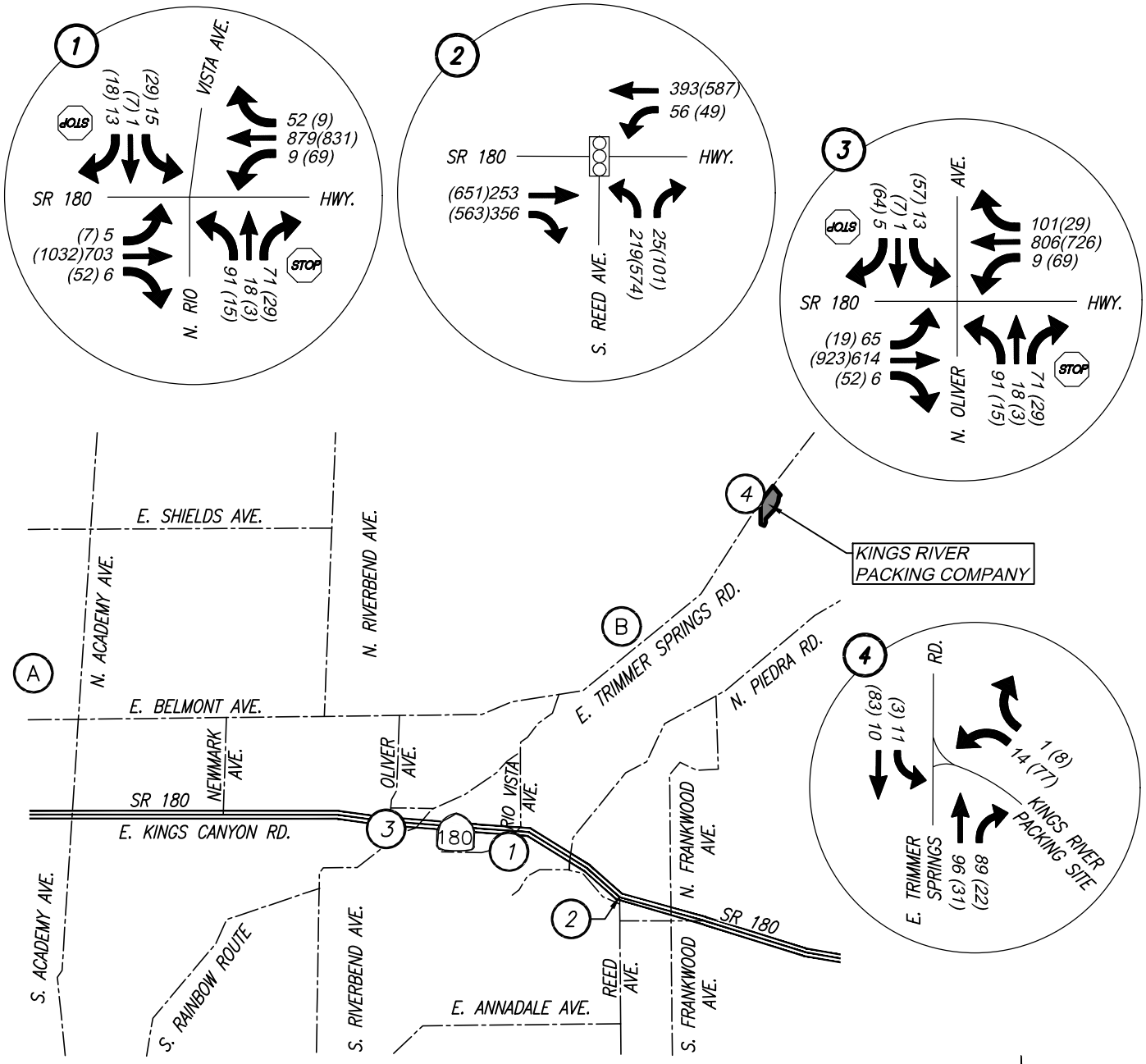
4.3 Trip Generation

Table 8 shows the results of the Phase One trip generation analysis. This analysis includes three components: (1) Combined Trucks and Employees, (2) Trucks Only, and (3) Employees Only. This trip generation only applies to the Level of Service analysis. A separate trip generation table shows the trip generation that applies to the TI analysis.

Table 8: Trip Generation: Phase One

Description	Employees	Weekday	AM Peak Hour			PM Peak Hour		
		Total	Enter	Exit	Total	Enter	Exit	Total
Combined Trucks and Employees								
Directional Split			84%	16%		21%	79%	
General Light Industrial (110) Rates (1)		3.02	0.37	0.07	0.44	0.09	0.33	0.42
Phase One Trips	195	589	71	14	86	18	64	82
Existing Trips	150	453	56	10	66	14	49	63
Net New Trips (2)	45	136	16	4	20	4	15	19
Trucks for Fruit Packing Operations (3)								
Peak Hour Rates (4)			0.25	0.05	0.15	0.06	0.22	0.14
Phase One Trips	195	276	34	7	41	8	30	38
Existing Trips	150	224	28	5	33	7	24	31
Net New Trips (2)	45	52	6	2	8	1	6	7
Trucks for Servicing the Facility (5)								
Phase One Trips	195	2	0	0	0	0	0	0
Existing Trips	150	2	0	0	0	0	0	0
Net New Trips (2)	45	0	0	0	0	0	0	0
Employees Only (6)								
Phase One Trips	195	313	38	7	45	10	34	44
Existing Trips	150	229	28	5	33	7	25	32
Net New Trips (2)	45	84	10	2	12	3	9	12

(1) Source: Institute of Transportation Engineers (ITE), *Trip Generation, Ninth Edition (2012)* for the General Light Industrial Land Use (ITE Land Use Code 110) as a function of employees
(2) Phase One Trips minus Existing Trips
(3) Inbound Field Trucks and Outbound Shipping Trucks
(4) Rate = (Combined Per Hour Trips) / (Combined Weekday Trips Per Appendix B)
(5) One Service Truck Making One Inbound and One Outbound Diverted Trip Per Day to Service the Facility
(6) Combined Trucks and Employees minus Trucks for Fruit Packing Operations per Appendix B



LEGEND:

DIRECTION OF TRAVEL

(##) AM (PM) PEAK HOUR PASSENGER CAR EQUIVALENTS

TRAFFIC CONTROL

STOP STOP SIGN

SIGNALIZED INTERSECTION

YIELD YIELD SIGN

STUDY INTERSECTIONS AND SEGMENTS

%% TRIP DISTRIBUTION

PROJECT LOCATION

SCALE 1" = 8000'

0 4000' 8000'

PRECISION CIVIL ENGINEERING, INC.	EXHIBIT	PROJECT NAME: KINGS RIVER PACKING COMPANY	FIGURE 6
	DESCRIPTION: NEAR TERM VOLUMES	03-07-2018	17-205

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4.3.1 Combined Trucks and Employees

Like Existing Conditions, Phase One of the Project is projected to generate a combination of truck trips and employee trips. The summation of these trips is the total trips. These total trips are calculated by multiplying the number of employees by the trip generation rates. These rates were obtained from the Institute of Transportation Engineers (ITE) *Trip Generation, Ninth Edition (2012)* for General Light Industrial (ITE Land Use Code 110) as a function of employees.

4.3.2 Trucks Only

The truck-only analysis consists of: (1) trucks associated with the actual operations of the Kings River Packing facility, and (2) trucks associated with servicing the facility.

Kings River Packing operations consist of both inbound field trucks and outbound shipping trucks. The field trucks bring unpackaged fruit products to Kings River Packing Company, unload these products, and leave the facility empty. The shipping trucks arrive at Kings River Packing Company empty, load up the packaged fruit products, and leave the facility full. Product volumes are organized into bins. Each truck holds 50 bins. Entering and exiting truck volumes are identical. They are carrying fruit products in either a packaged or unpackaged state. For analysis purposes, each truck makes two trips – one entering the facility and one exiting the facility.

Appendix A provides further elaboration on the calculation of truck trips as a function of maximum daily production. At the completion of Phase One, the facility will operate at a maximum daily production of 3,500 bins per day during peak season as indicated in **Appendix A** Table 4-3. This correlates to a total of 68 inbound field trucks and 70 outbound shipping trucks on the Fresno County roadway network not including the 2 inbound field trucks that come in from adjacent orchards. The facility currently operates at a total service volume of 2,848 bins per day during peak season. This correlates to 55 inbound field trucks and 57 outbound shipping trucks impacting the Fresno County roadway network. The volume of net new trucks is calculated by subtracting the existing trucks from the Phase One trucks as indicated in **Appendix A** Table 4-4. This results in 13 net new inbound field trucks and 13 net new outbound shipping trucks.

Associated with the analysis of the truck operations analysis was the calculation of rates for converting weekday truck trips to peak hour truck trips. These rates were obtained by taking the ratio of the peak hour to the daily trip generation values in the combined truck and employee analysis.

The analysis of trucks associated with servicing the facility entailed an evaluation of the number of trucks needed to remove solid waste based on the volume of waste generated and the number of bins needed. On completion of Phase One, this facility is projected to generate 7 cubic yards of solid waste based on a maximum daily production of 3,500 bins per day at peak season, and the assumption that an operating volume of 500 bins generates one cubic yard of solid waste. This correlates to 7 cubic yards with Phase One and 6 cubic yards under existing conditions

based on rounding the existing maximum daily production up to 3,000 bins per day.

The analysis of the rate of filling of the number of waste containers entailed researching a publication on container capacities. According to Figure 2 of the *Waste Management Desk Guide* by Stanley Ismart, Chief, GSA-NCR Waste Management Unit in Washington DC, front end load containers for solid waste range from 2 cubic yards to 10 cubic yards in size. The median load container size is the Top and End Loading Five Cubic Yard container (slightly larger than the Apartment Four Cubic Yard container). This volume correlates to completely filling up one of these five cubic yard-size containers and partially filling a second container every day. This volume is easily serviced by a single Front End Loader or Rear End Loader waste management truck with compaction capabilities. This correlates to 1 truck or 2 diverted truck trips per day that are already on the roadway network servicing the existing facility.

4.3.3 Employees Only

Employee Trip Generation was calculated by proportioning the peak season trucks over the weekday, AM, and PM peak periods according to ITE *Trip Generation* rates, and then subtracting these values from the total trip generation to yield the employee trip generation. **Table 12** shows the Phase One (with Existing Trips), Existing, and Net New Employee Trip Generation. **Appendix B** provides further elaboration on the calculation of total trips, truck-only trips, and employee only trips.

4.4 Trip Distribution

A trip distribution exhibit was prepared for the proposed two-phase expansion of the Kings River Packing Company facility on Trimmer Springs Road. This distribution was initially presented to Fresno County on November 15. It was approved during the Scoping Meeting on December 6.

The trip distribution analysis shows the dispersion of employee, visitor, packing company operations (arriving and departing trucks carrying unpackaged and packaged citrus fruit products), and site service trips (solid waste disposal trucks) throughout elements of the transportation network. Such elements include gates (points of entry to or exit from the network), paths (routes between gates and the site), and the site access intersections. According to the site plan, the project proposes three site accesses including one to the north, one in the center, and one to the south. The trip distribution percentages do not vary by type (truck, automobile) or purpose (employee, visitor, operations, service).

These trip distribution percentages were determined based on the following assumptions:

1. Trips would primarily originate and terminate to the southwest along the higher capacity roadways to the growing facilities, distribution centers, and municipalities.
2. Motorists and truck operators would prefer to use truck-designated and higher capacity roadways to traverse the network instead of more remote roadways with narrow bridges and steeper weight limit restrictions.

3. Employees, service truck operators, and produce-carrying truck operators are generally familiar with the roadway network. They will take the most direct pathways of least resistance.
4. While Phase One is likely to be fully operational in advance of the SR 180 improvements, the analysis is based on funded improvements being in place at the intersections of Rio Vista (1), Reed (2), and Oliver (3) along SR 180, as directed by Fresno County.
5. Growth within the nearby Fresno-Clovis Metropolitan Area would primarily be urban infill with some growth along the periphery.

Appendix B provides further elaboration on the trip distribution analysis.

4.5 Trip Assignment

Two trip assignment analyses were conducted during the initial summary assessment. These include one for total trips, and one for trucks only. For both exhibits, the Phase One trip generation values were multiplied by the trip distribution percentages to yield the link-specific trip assignments. These link-specific assignments apply to the peak season of operations. **Appendix B** shows these trip assignment values in tabular form.

Figure 7: Phase One Trip Assignment shows the Phase One Trip Assignment values for both total vehicles and trucks only along with the trip distribution percentages.

4.6 Volumes with Phase One

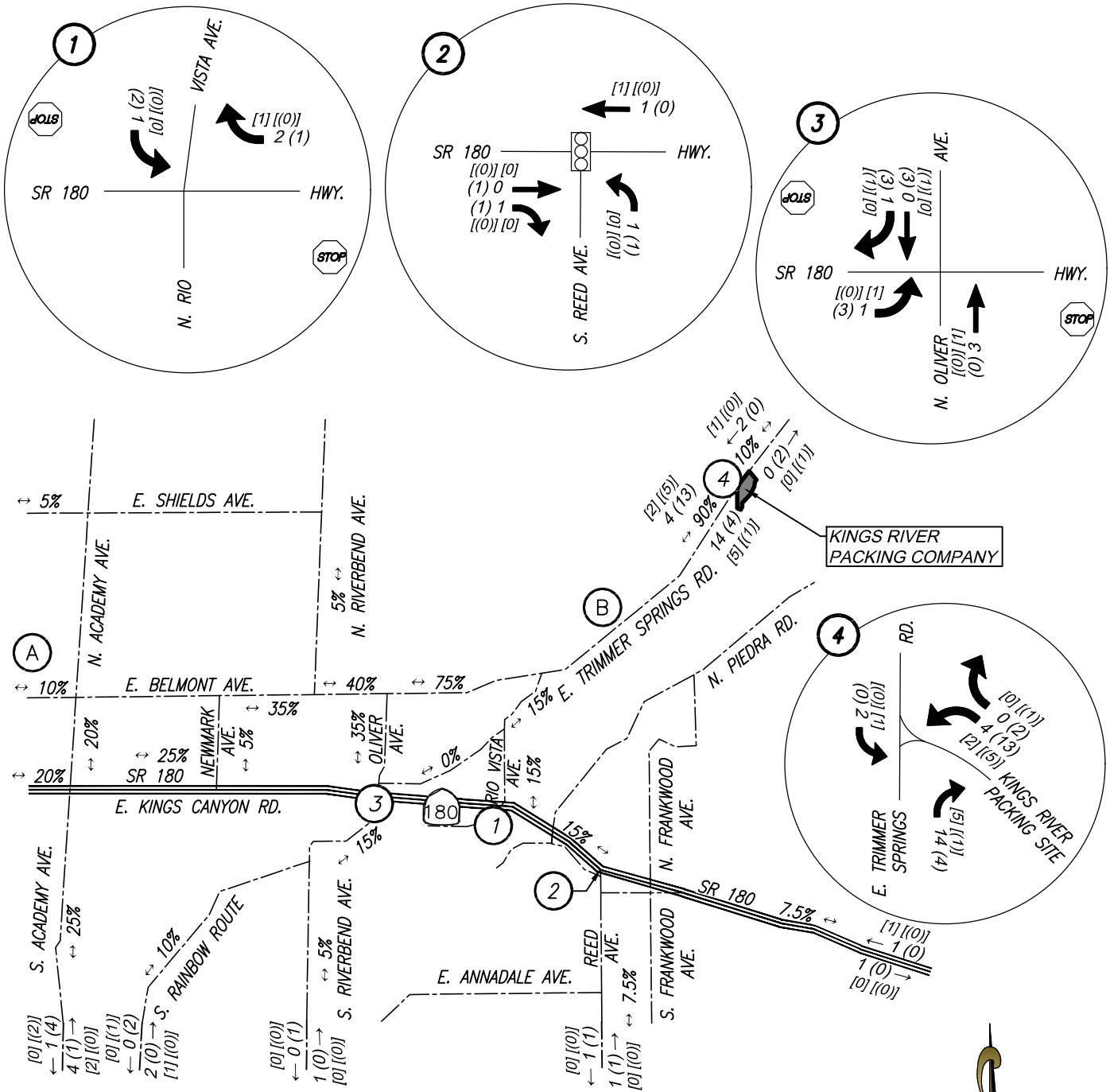
Figure 8: Near-Term Plus Phase One Volumes shows the passenger car equivalent (PCE) volumes used in the Near-Term Plus Phase One analysis. These values were obtained by adding the PCE's of the Phase One cars and trucks to the PCE's used in the Near-Term without Phase One analysis. **Appendix F** provides elaboration on the calculation of these traffic volumes. For analysis purposes, 1 truck is equivalent to 2.5 passenger cars, as directed by Fresno County.

4.7 Impacts on Intersection Operations

Appendices I (AM) and J (PM) contain the calculation reports for intersection operations without project. **Appendices K (AM) and L (PM)** contain the calculation reports for intersection operations with project. These calculations are based on the Highway Capacity Manual methodology described in Section 2.

Peak Hour Factors are based on the default of 0.92 at the three Caltrans intersections and 0.70 (AM) and 0.82 (PM) at the Site Access intersection.

Table 9 shows how Phase One would impact the study intersections. A 4% Heavy Vehicle percentage was used for the three SR 180 intersections (1, 2, 3). A 12% Heavy Vehicle percentage was used for the Site Access/Trimmer Springs (4) intersection. SR 180/Reed (2) was assumed signalized as shown on the Caltrans plans with a 5.8-second yellow time (65 MPH) eastbound and westbound and a 5.0-second yellow time (55 MPH) northbound. The proposed SR 180 improvements were assumed to be in place including a sufficiently wide median to



LEGEND:

	DIRECTION OF TRAVEL		TRAFFIC CONTROL		STUDY INTERSECTIONS AND SEGMENTS
## (##)	AM (PM) PEAK HOUR TOTAL VOLUME	STOP	STOP SIGN	↔%%	TRIP DISTRIBUTION
[##] [(##)]	AM (PM) TRUCK PEAK HOUR TOTAL VOLUMES		SIGNALIZED INTERSECTION		PROJECT LOCATION
		YIELD	YIELD SIGN		

SCALE 1" = 8000'

0 4000' 8000'

PRECISION CIVIL ENGINEERING, INC.	EXHIBIT	PROJECT NAME: KINGS RIVER PACKING COMPANY	FIGURE 7
	DESCRIPTION: NEAR TERM PHASE ONE TRIP ASSIGNMENT	03-07-2018	17-205

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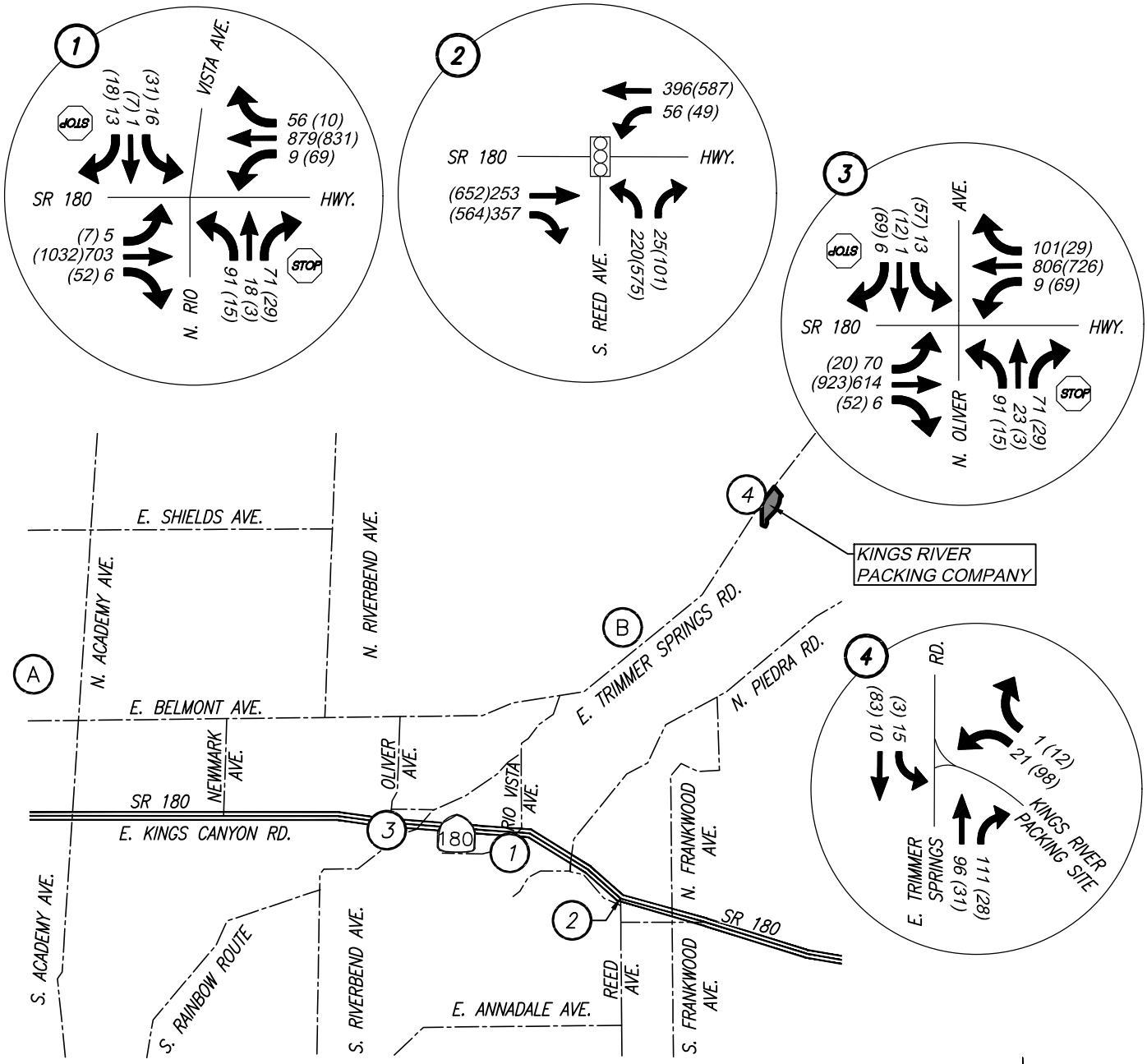

LEGEND:

- DIRECTION OF TRAVEL
- ## (##) AM (PM) PEAK HOUR PASSENGER CAR EQUIVALENTS
- TRAFFIC CONTROL
- STOP STOP SIGN
- SIGNALIZED INTERSECTION
- YIELD YIELD SIGN
- STUDY INTERSECTIONS AND SEGMENTS
- %% TRIP DISTRIBUTION
- PROJECT LOCATION

SCALE 1" = 8000'

0 4000' 8000'

PRECISION CIVIL ENGINEERING, INC.	EXHIBIT	PROJECT NAME: KINGS RIVER PACKING COMPANY	FIGURE 8
	DESCRIPTION: NEAR TERM PLUS PHASE ONE VOLUMES	03-07-2018	17-205

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accommodate median storage. Reported results are for either the intersection as a whole (signalized Intersection No. 2) or the worst-case movement (remaining intersections). Synchro 9 does not have a report creation function based on Highway Capacity Manual 2010 methodologies that reflects these geometric conditions. Therefore, the Highway Capacity Manual 2000 reporting was used for the un-signalized analyses along SR 180. Synchro 9 also does not have a report creation function that accommodates an approach speed of higher than 55 MPH at a signalized intersection. Therefore, the Highway Capacity Manual 2000 reporting was used for the signalized analysis of SR 180/Reed (2).

Table 9: Phase One Impact on Intersection Operations

	Without Phase One		With Phase One	
	AM	PM	AM	PM
1: SR 180/Rio Vista	23.2 C	30.0 D	23.2 C	30.4 D
2: SR 180/Reed	8.1 A	10.8 B	8.1 A	10.8 B
3: SR 180/Oliver	26.8 D	30.6 D	27.5 D	30.7 D
4: Trimmer Springs/Site	10.2 B	10.0 B	10.5 B	10.3 B

Source: Trafficware, *Synchro 9*
Source: Transportation Research Board, *Highway Capacity Manual 2010*

4.8 Impacts on Roadway Segment Operations

Appendix D contains the calculation reports for the evaluation of capacity and along the two roadway segments based on the Florida DOT methodology described in Section 2.

Table 10 shows how Phase One would impact the roadway segments.

Table 10: Phase One Impact on Roadway Segment Operations

	Without Phase One		With Phase One	
	Volume	LOS	Volume	LOS
A: Belmont w/o Academy	1,600	B	1,609	B
B: Trimmer Springs s/o Site	1,530	B	1,592	B

Source: *Florida DOT Generalized Service Volume Tables*
A: Table 2: Generalized Annual Average Daily Volumes for Florida's Transitioning Areas for State Signalized Arterials Class I (>40 mph)
B: Table 3: Generalized Annual Average Daily Volumes for Florida's Rural Undeveloped Areas for Uninterrupted Flow Highways

5.0 Full Build-out Impact Analysis

The Full Build-out Impact Analysis was conducted to assess the impact of the Full Build-out of the project relative to the existing project. This impact analysis accounts for background traffic growth, infrastructure improvements, and development projects through the Fresno COG planning horizon.

5.1 Setting

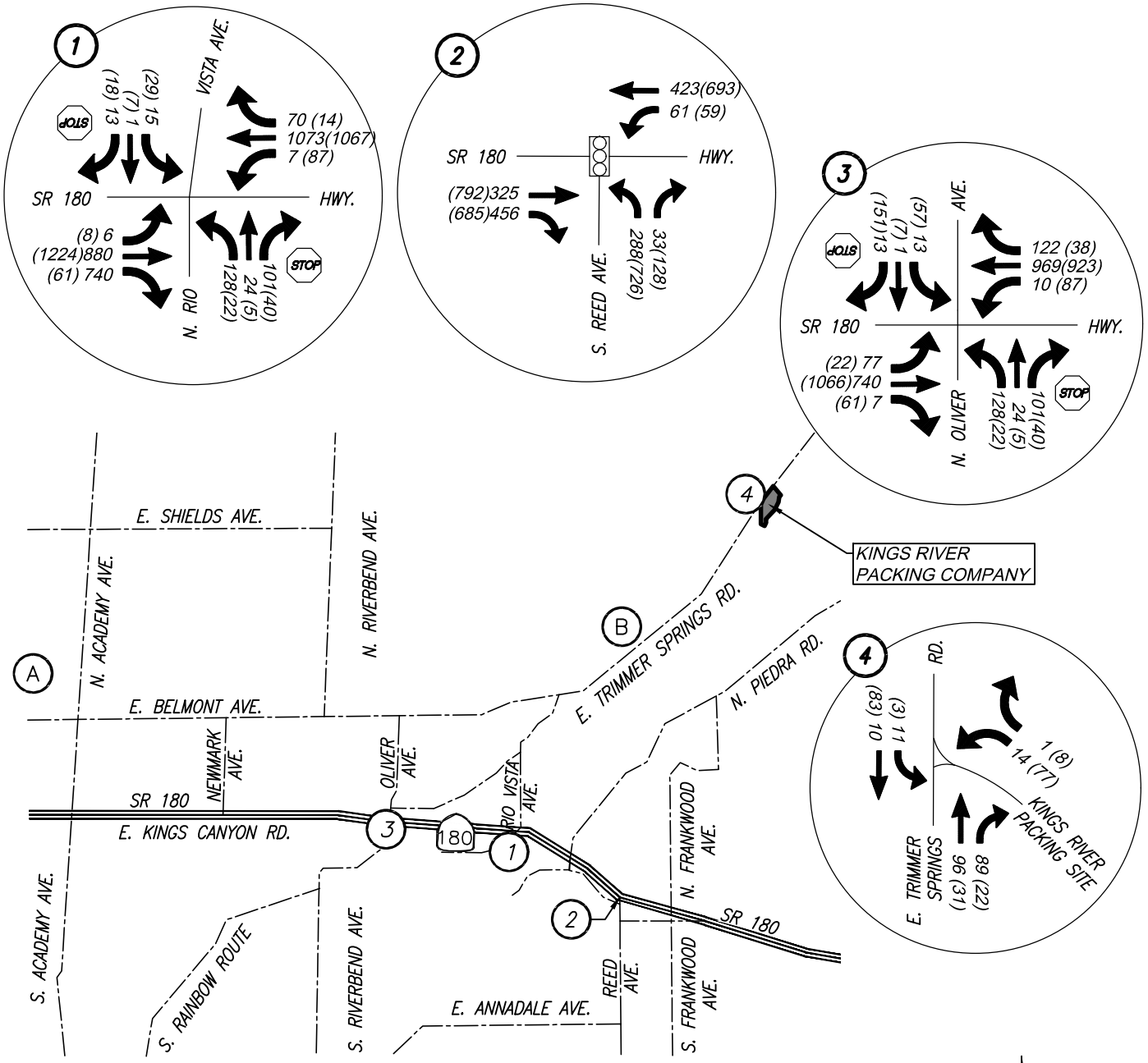
The Full Build-out setting assumes the completion of the SR 180 improvements which are projected to come online around 2020. These improvement plans were made available by Fresno County. The cover sheet of these improvement plans is provided on the attached CD.

5.2 Volumes without Project

Figure 9: Cumulative Volumes shows the cumulative without project traffic volumes obtained from existing counts and the existing and full build-out travel demand model runs from Fresno COG. These volumes are expressed as Passenger Car Equivalents (PCE's). **Appendix F** shows the traffic volume projections at the intersections. For analysis purposes, 1 truck (higher than Class 3) is equivalent to 2.5 passenger cars, as directed by Fresno County.

5.3 Trip Generation

Table 11 shows the results of the Full Build-out trip generation analysis. Like the Phase One analysis, this analysis includes three components: (1) Combined Trucks and Employees, (2) Trucks Only, and (3) Employees Only. This trip generation only applies to the Level of Service analysis. A separate trip generation table shows the trip generation that applies to the TI analysis.



LEGEND:

- DIRECTION OF TRAVEL
- ## (##) AM (PM) PEAK HOUR PASSENGER CAR EQUIVALENTS

TRAFFIC CONTROL

- STOP STOP SIGN
- SIGNALIZED INTERSECTION
- YIELD YIELD SIGN

- STUDY INTERSECTIONS AND SEGMENTS
- %% TRIP DISTRIBUTION
- PROJECT LOCATION

SCALE 1" = 8000'

0 4000' 8000'

PRECISION CIVIL ENGINEERING, INC.	EXHIBIT	PROJECT NAME: KINGS RIVER PACKING COMPANY	FIGURE 9
	DESCRIPTION: CUMULATIVE VOLUMES	03-07-2018	17-205

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Table 11: Trip Generation: Full Build-out

Description	Employees	Weekday	AM Peak Hour			PM Peak Hour		
		Total	Enter	Exit	Total	Enter	Exit	Total
Combined Trucks and Employees								
Directional Split			84%	16%		21%	79%	
General Light Industrial (110) Rates (1)		3.02	0.37	0.07	0.44	0.09	0.33	0.42
Full Build-out Trips	300	906	111	21	132	27	99	126
Existing Trips	150	453	56	10	66	14	49	63
Net New Trips (2)	150	453	55	11	66	13	50	63
Trucks for Fruit Packing Operations (3)								
Peak Hour Rates (4)			0.25	0.05	0.15	0.06	0.22	0.14
Full Build-out Trips	300	396	49	9	58	12	43	55
Existing Trips	150	224	28	5	33	7	24	31
Net New Trips (2)	150	172	21	4	25	5	19	24
Trucks for Servicing the Facility (5)								
Full Build-out Trips	300	2	0	0	0	0	0	0
Existing Trips	150	2	0	0	0	0	0	0
Net New Trips (2)	150	0	0	0	0	0	0	0
Employees Only (6)								
Full Build-out Trips	300	510	62	12	74	15	56	71
Existing Trips	150	229	28	5	33	7	25	32
Net New Trips (2)	150	281	34	7	41	8	31	39

(1) Source: Institute of Transportation Engineers (ITE), *Trip Generation, Ninth Edition (2012)* for the General Light Industrial Land Use (ITE Land Use Code 110) as a function of employees
(2) Phase One Trips minus Existing Trips
(3) Inbound Field Trucks and Outbound Shipping Trucks
(4) Rate = (Combined Per Hour Trips) / (Combined Weekday Trips Per Appendix B)
(5) One Service Truck Making One Inbound and One Outbound Diverted Trip Per Day to Service the Facility
(6) Combined Trucks and Employees minus Trucks for Fruit Packing Operations per Appendix B

5.3.1 Combined Trucks and Employees

Like Existing and Phase One Conditions, the Full Build-out of the Project is projected to generate a combination of truck trips and employee trips. The summation of these trips is the total trips. These total trips are calculated by multiplying the number of employees by the rates obtained from the Institute of Transportation Engineers (ITE) *Trip Generation, Ninth Edition (2012)* for the General Light Industrial Land Use (ITE Land Use Code 110) as a function of employees.

5.3.2 Trucks Only

Appendix A provides further elaboration on the calculation of truck trips as a function of maximum daily production under Full Build-out conditions. This methodology is the same as that of Phase One methodology, except that Full Build-out involves more trucks. At the completion of Full Build-out, the facility will operate at a maximum daily production of 5,000 bins per day during peak season. This correlates to a total of 98 inbound field trucks and 100 outbound shipping trucks on the Fresno County roadway network not including the 2 inbound field trucks that come from adjacent orchards. This information is indicated in **Appendix A** Table 4-3. Net new truck generation for Full Build-out is calculated by subtracting out the trip generation for the existing facility. The resulting net new truck generation is 43 inbound field trucks and 43 outbound shipping trucks as indicated in **Appendix A** Table 4-4.

As in the Phase One analysis, weekday truck trips were converted to peak hour truck trips by calculating the ratio of the peak hour to the weekday trips in the combined truck and employee analysis.

The analysis of the impact of service trucks for solid waste removal also uses the same methodology as that of the Phase One analysis. The difference is in the total amount of solid waste. On completion of Full Build-out, this facility is projected to generate 10 cubic yards of solid waste based on a maximum daily production of 5,000 bins per day at peak season and an operating volume of 500 bins generating one cubic yard of solid waste. This correlates to 10 cubic yards with Full Build-out and 6 cubic yards under existing conditions based on rounding the existing maximum daily production up to 3,000 bins per day. The same assumption of dual five-cubic yard receptacles from the Existing and Phase One analyses apply to this Full Build-out analysis. The only difference is that both receptacles would be full. There would be no difference in the number of service truck trips under existing conditions as they are already servicing the existing facility.

5.3.3 Employees Only

Employee Trip Generation at Full Build-out was calculated using the same methodology as described in the Phase One analysis. **Table 21** shows the Full Build-out (with Existing Trips), Existing, and Net New Employee Trip Generation.

Appendix B provides further elaboration on the calculation of total trips, truck-only trips, and employee only trips under Full Build-out conditions.

5.4 Trip Distribution

The trip distribution analysis for Full Build-out was conducted using the same methodology as in the Phase One analysis. The trip distribution percentages and assumptions are unchanged.

Appendix B provides further elaboration on the trip distribution analysis under Full Build-out conditions.

5.5 Trip Assignment

The Trip Assignment Analysis for Full Build-out was conducted for both total trips (combined trucks and employees) and truck-only trips using the same methodology as described in the Phase One analysis. **Appendix B** shows these trip assignment values in tabular form.

Figure 10: Full Build-out Trip Assignment shows the total and truck-only trip assignments along with the trip distribution percentages.

5.6 Volumes with Full Build-out

Figure 11: Cumulative Plus Full Build-out Volumes shows the passenger car equivalent (PCE) volumes used in the Full Build-out Impact Analysis under with Project conditions. These values were obtained by adding the PCE's of the Full Build-out cars and trucks to the PCE's used in the Cumulative without Project analysis. **Appendix F** provides elaboration on the calculation of these traffic volumes. For analysis purposes, 1 truck is equivalent to 2.5 passenger cars, as directed by Fresno County.

5.7 Impacts on Intersection Operations

Appendices M (AM) and N (PM) contain the calculation reports for intersection operations without project. **Appendices O (AM) and P (PM)** contain the calculation reports for intersection operations with project. These calculations are based on the Highway Capacity Manual methodology described in Section 2.

Table 12 shows the impact of the Full Build-out of the Project on the study intersections using the same peak hour factor, heavy vehicle, and related assumptions, while noting the same Synchro reporting limitations as before.

Table 12: Impact of Full Build-out on Intersection Operations

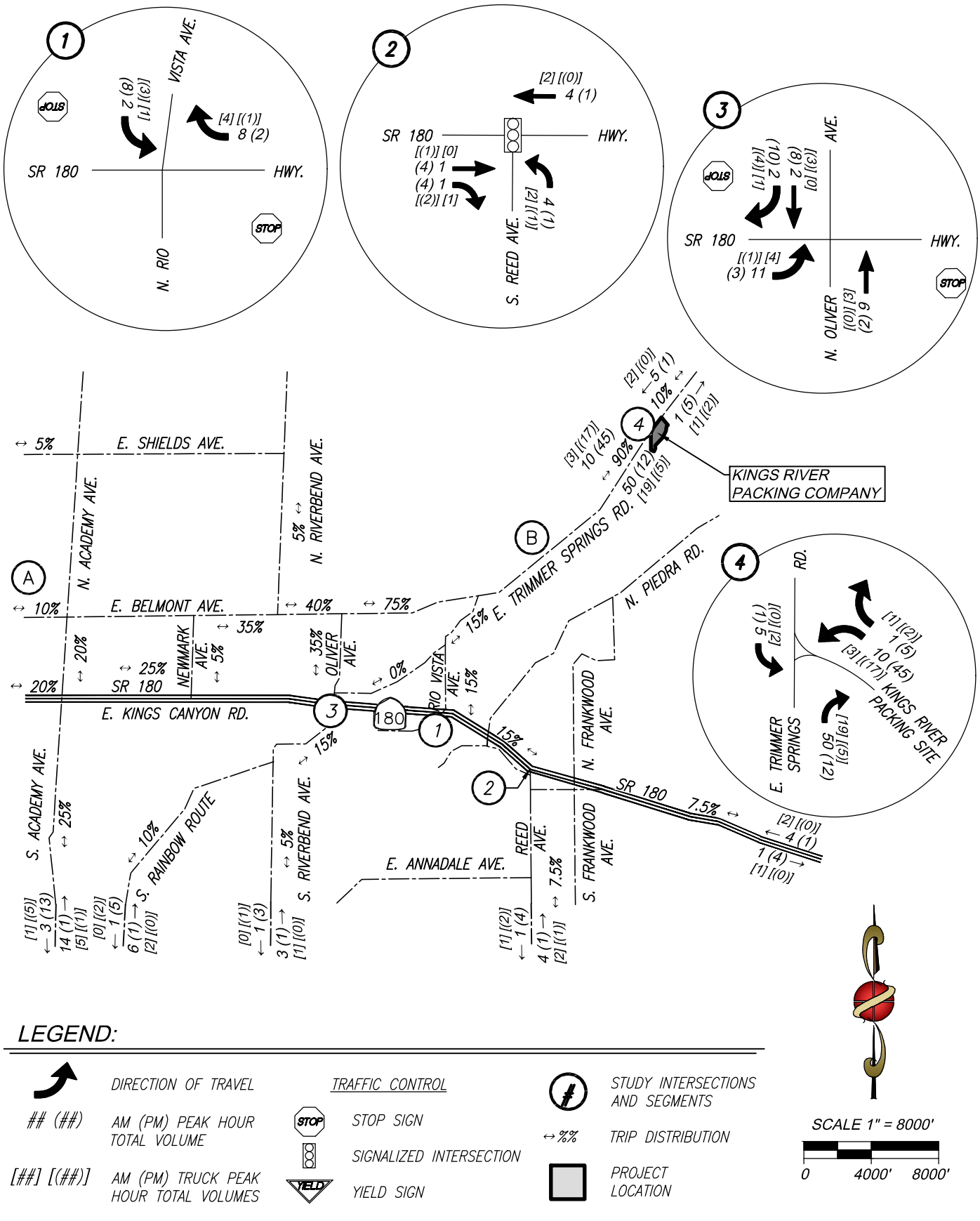
	Without Project		With Full Build-out	
	AM	PM	AM	PM
1: SR 180/Rio Vista	44.2 E	52.8 F	44.2 E	62.7 F
2: SR 180/Reed	8.5 A	12.6 B	8.6 A	12.6 B
3: SR 180/Oliver	58.3 F	54.4 F	71.8 F	58.5 F
4: Trimmer Springs/Site	10.2 B	10.0 B	11.0 B	10.9 B

Source: Trafficware, *Synchro 9*
Source: Transportation Research Board, *Highway Capacity Manual 2010*

5.8 Impacts on Roadway Segment Operations

Appendix D contains the calculation reports for the evaluation of capacity along the two roadway segments based on the Florida DOT methodology described in Section 2.

Table 13 shows how the Full Build-out of the Project would impact the operation of the roadway



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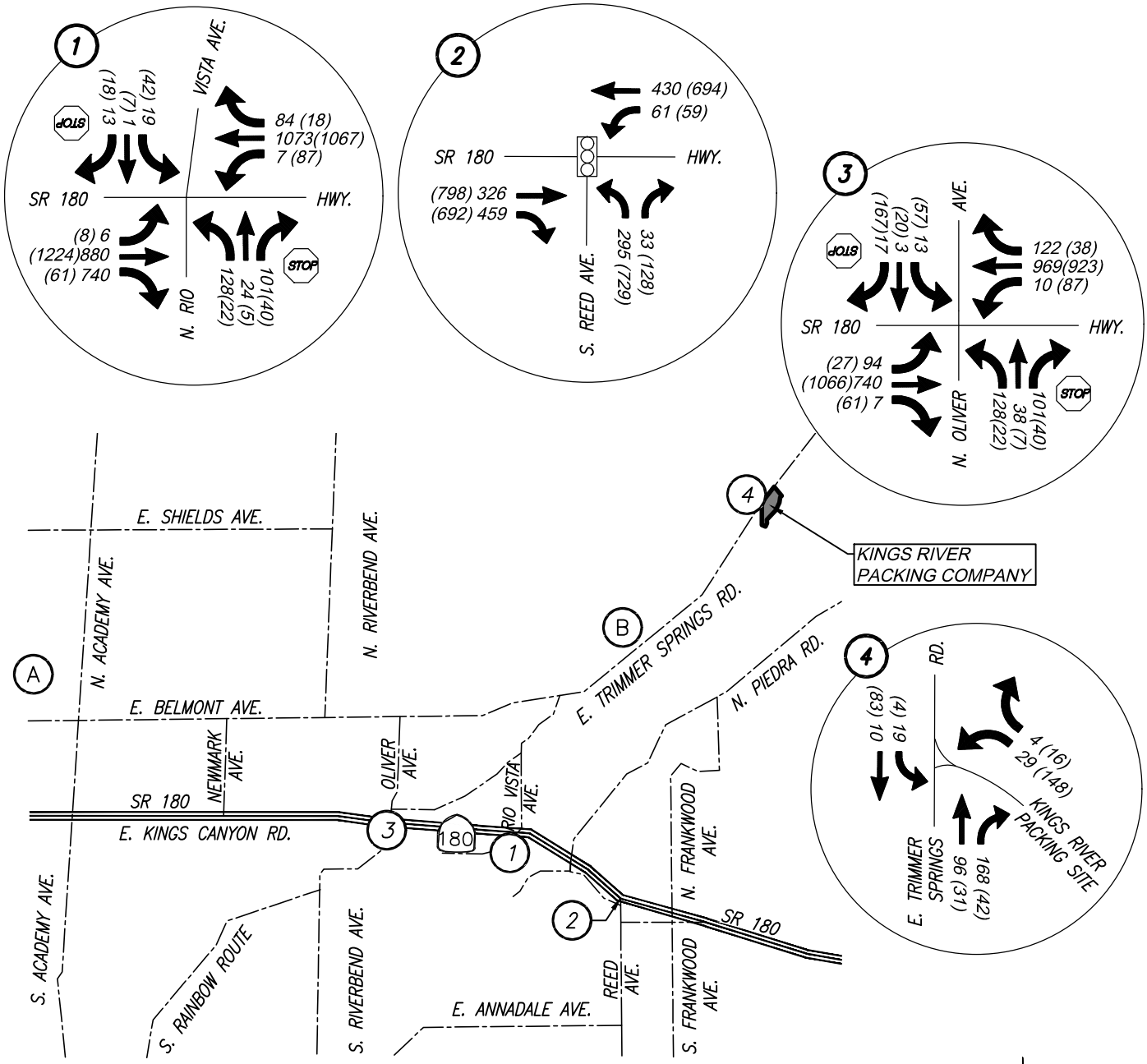
PRECISION CIVIL ENGINEERING, INC.

EXHIBIT	PROJECT NAME: KINGS RIVER PACKING COMPANY		FIGURE 10
DESCRIPTION: CUMULATIVE FULL BUILD-OUT TRIP ASSIGNMENT	03-07-2018	17-205	



LEGEND:

- DIRECTION OF TRAVEL
- ## (##) AM (PM) PEAK HOUR PASSENGER CAR EQUIVALENTS
- TRAFFIC CONTROL
- STOP STOP SIGN
- SIGNALIZED INTERSECTION
- YIELD YIELD SIGN
- STUDY INTERSECTIONS AND SEGMENTS
- %% TRIP DISTRIBUTION
- PROJECT LOCATION

SCALE 1" = 8000'

0 4000' 8000'

PRECISION CIVIL ENGINEERING, INC.	EXHIBIT	PROJECT NAME: KINGS RIVER PACKING COMPANY	FIGURE 11
	DESCRIPTION: CUMULATIVE PLUS FULL BUILD-OUT VOLUMES	03-07-2018 / 17-205	

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segments.

Table 13: Impact of Full Build-out on Roadway Segment Operations

	Without Project		With Full Build-out	
	Volume	LOS	Volume	LOS
A: Belmont w/o Academy	1,735	B	1,755	B
B: Trimmer Springs s/o Site	1,530	B	1,723	B

Source: *Florida DOT Generalized Service Volume Tables*
A: Table 2: Generalized Annual Average Daily Volumes for Florida's Transitioning Areas for State Signalized Arterials Class I (>40 mph)
B: Table 3: Generalized Annual Average Daily Volumes for Florida's Rural Undeveloped Areas for Uninterrupted Flow Highways

5.9 Impacts on Roadway Segment Structural Sections

Appendix C contains the calculation reports for the evaluation of structural integrity (Traffic Index or TI) along the two roadway segments. These structural integrity calculations are based on: (1) 24-hour vehicle and vehicle classification counts obtained by Metro Traffic Data on Wednesday, December 20, 2017; (2) 24-hour vehicle counts obtained by Metro Traffic Data on Thursday, December 7, 2017; (3) Fresno COG travel demand modeling projections, and (4) the Average Annual Daily Truck Traffic (AADTT) calculated in **Appendix A** Table 1-1. The AADT calculations reduces the existing peak one way truck trips to 80 trucks per day, as previously allowed by the previous CUP. Based on the field data provided the existing production exceeded the 80 truck trips on some of the weeks. Table 4-2. For analysis purposes, it was assumed that project-generated truck trips were Class 9, as this was the predominant five-axle vehicle noted in the vehicle classification counts along Trimmer Springs.

Given the significant fluctuation in packing operations from week to week, it was necessary to obtain 24-hour counts during two different weeks for comparison purposes to gauge this fluctuation. The 24-hour counts obtained on December 7 were higher than those obtained on December 20. Therefore, an adjustment factor was applied to the vehicle classification counts to convert them to the higher values as indicated on the tables in **Appendix C**.

The Fresno COG travel demand modeling projections were used to calculate growth factors over the 20-year planning horizon as indicated on the tables in **Appendix C**.

The AADTT values calculated in **Appendix A** Table 4-2 were applied to the roadway segments by multiplying the AADTT value by the segment-specific trip distribution percentage. While the trip distribution analysis only shows 10% on Belmont west of Academy, a distribution of 40% was used to reflect Belmont west of Oliver. This was to assess conditions based on Belmont being open to through traffic.

Table 14 summarizes the Average Daily Truck trips that was used to calculate TI.

Table 14: Project Truck Trips (AADT) for TI Analysis

	Outbound Enter (2)	Shipping Exit (3)	Inbound Enter (4)	Field (1) Exit (5)	Total Trips
Full Build-out	31	31	29	29	120
Phase One	22	22	20	20	84
Existing (6)	13	13	11	11	48

(1) Excludes 2 from Adjacent Orchards via Dirt Roads
(2) Arrives Empty
(3) Leaves Full
(4) Arrives Full
(5) Leaves Empty
(6) Based on Table 1-1 in Appendix A.

Table 15 summarizes the TI analysis and results.

Table 15: TI Results

	Without Project			With Project			Impact
	ESAL	Calculated	Rounded	ESAL	Calculated	Rounded	
Belmont west of Academy EB	366,140	7.99	8.0	421,260	8.12	8.0	No
Belmont west of Academy WB	375,320	8.01	8.0	430,440	8.14	8.0	No
Trimmer Springs south of Site NB	718,900	8.65	8.5	1,173,640	9.17	9.0	Yes
Trimmer Springs south of Site SB	806,160	8.77	9.0	1,260,900	9.25	9.5	Yes
Belmont: Oliver-Rio Vista EB	718,900	8.65	8.5	1,090,960	9.09	9.0	Yes
Belmont: Oliver-Rio Vista WB	806,160	8.77	9.0	1,178,220	9.18	9.0	No

Sources: *Caltrans Highway Design Manual* (November 20, 2017), Metro Traffic Data (December 2017)
A TI impact of $\geq$ 0.5 is considered significant per Fresno County Draft Traffic Impact Study Guidelines (2014).
Determination of significance is based on rounded results.

6.0 Findings and Recommendations

6.1 Findings

Findings from the Existing Conditions Analysis and the Phase One and Full Build-out Impact Analyses are as follows:

6.1.1 Existing Conditions

Table 16 summarizes the Intersection LOS.

Table 16: Summary of Existing Intersection Conditions

	Existing	
	AM	PM
1: SR 180/Rio Vista	31.5 D	41.3 E
2: SR 180/Reed	21.1 C	423.4 F
3: SR 180/Oliver	234.8 F	418.1 F
4: Trimmer Springs/Site	10.2 B	10.0 B

Source: Trafficware, *Synchro 9*
Source: Transportation Research Board, *Highway Capacity Manual 2010*

Table 17 summarizes the Segment LOS.

Table 17: Summary of Existing Roadway Capacity Conditions

Intersection	LOS
A: Belmont w/o Academy	1,525 B
B: Trimmer Springs s/o Site	1,530 B

Source: *Florida DOT Generalized Service Volume Tables*
A: Table 2: Generalized Annual Average Daily Volumes for Florida's Transitioning Areas for State Signalized Arterials Class I (>40 mph)
B: Table 3: Generalized Annual Average Daily Volumes for Florida's Rural Undeveloped Areas for Uninterrupted Flow Highways

Scenario-specific findings are as follows:

1. All intersections along SR 180 (1-3) currently operate at an unacceptable Level of Service of E or F during one or both peak hours, thereby justifying the proposed and fully funded improvements.
2. The Site Access Intersection along Trimmer Springs Road (4) currently operates at an acceptable Level of Service of B.
3. Both roadway segments currently operate at an acceptable Level of Service B.
4. A revised Operational Statement was provided to Fresno County in May 2018 indicating that the 80 one-way truck-cap was only exceeded occasionally.

6.1.2 Phase One Impacts

Table 18 summarizes the impacts on Intersection LOS.

Table 18: Summary of Phase One Impacts on Intersection Operations

	Without Phase One		With Phase One	
	AM	PM	AM	PM
1: SR 180/Rio Vista	23.2 C	30.0 D	23.2 C	30.4 D
2: SR 180/Reed	8.1 A	10.8 B	8.1 A	10.8 B
3: SR 180/Oliver	26.8 D	30.6 D	27.5 D	30.7 D
4: Trimmer Springs/Site	10.2 B	10.0 B	10.5 B	10.3 B

Source: Trafficware, *Synchro 9*
Source: Transportation Research Board, *Highway Capacity Manual 2010*

Table 19 summarizes the impacts on Segment LOS.

Table 19: Summary of Phase One Impacts on Roadway Segment Operations

	Without Phase One		With Phase One	
	Volume	LOS	Volume	LOS
A: Belmont w/o Academy	1,600	B	1,609	B
B: Trimmer Springs s/o Site	1,530	B	1,592	B

Source: *Florida DOT Generalized Service Volume Tables*
A: Table 2: Generalized Annual Average Daily Volumes for Florida's Transitioning Areas for State Signalized Arterials Class I (>40 mph)
B: Table 3: Generalized Annual Average Daily Volumes for Florida's Rural Undeveloped Areas for Uninterrupted Flow Highways

Scenario-specific findings are as follows:

1. Phase One will not increase overall intersection delays by more than 5 seconds, which is considered a less than significant impact.
2. Phase One will not change the Level of Service designation along either roadway segment, which is considered a less than significant impact.

6.1.3 Full Build-out Impacts

Table 20 summarizes the impacts on Intersection LOS.

Table 20: Summary of Impacts of Full Build-out on Intersection Operations

	Without Project		With Full Build-out	
	AM	PM	AM	PM
1: SR 180/Rio Vista	44.2 E	52.8 F	44.2 E	62.7 F
2: SR 180/Reed	8.5 A	12.6 B	8.6 A	12.6 B
3: SR 180/Oliver	58.3 F	54.4 F	71.8 F	58.5 F
4: Trimmer Springs/Site	10.2 B	10.0 B	11.0 B	10.9 B

Source: Trafficware, *Synchro 9*

Source: Transportation Research Board, *Highway Capacity Manual 2010*

Table 21 summarizes the impacts on Segment LOS.

Table 21: Summary of Impacts of Full Build-out on Roadway Segment Operations

	Without Project		With Full Build-out	
	Volume	LOS	Volume	LOS
A: Belmont w/o Academy	1,735	B	1,755	B
B: Trimmer Springs s/o Site	1,530	B	1,723	B

Source: *Florida DOT Generalized Service Volume Tables*
A: Table 2: Generalized Annual Average Daily Volumes for Florida's Transitioning Areas for State Signalized Arterials Class I (>40 mph)
B: Table 3: Generalized Annual Average Daily Volumes for Florida's Rural Undeveloped Areas for Uninterrupted Flow Highways

Table 22 summarizes trip generation used to calculate TI.

Table 22: Trip Generation for TI Analysis

	Outbound Enter (2)	Shipping Exit (3)	Inbound Enter (4)	Field (1) Exit (5)	Total Trips
Full Build-out	31	31	29	29	120
Phase One	22	22	20	20	84
Existing	13	13	11	11	48

(1) Excludes 2 from Adjacent Orchards via Dirt Roads
(2) Arrives Empty
(3) Leaves Full
(4) Arrives Full
(5) Leaves Empty

Table 23 summarizes the TI results.

Table 23: TI Results

	Without Project			With Project			Impact
	ESAL	Calculated	Rounded	ESAL	Calculated	Rounded	
Belmont west of Academy EB	366,140	7.99	8.0	421,260	8.12	8.0	No
Belmont west of Academy WB	375,320	8.01	8.0	430,440	8.14	8.0	No
Trimmer Springs south of Site NB	718,900	8.65	8.5	1,173,640	9.17	9.0	Yes
Trimmer Springs south of Site SB	806,160	8.77	9.0	1,260,900	9.25	9.5	Yes
Belmont: Oliver-Rio Vista EB	718,900	8.65	8.5	1,090,960	9.09	9.0	Yes
Belmont: Oliver-Rio Vista WB	806,160	8.77	9.0	1,178,220	9.18	9.0	No

Sources: *Caltrans Highway Design Manual* (November 20, 2017), Metro Traffic Data (December 2017)
A TI impact of $\geq$ 0.5 is considered significant per Fresno County Draft Traffic Impact Study Guidelines

(2014).
Determination of significance is based on rounded results.

Scenario-specific findings are as follows:

1. While the project will not pose a significant impact on overall intersection operations at SR 180/Rio Vista (1) and SR 180/Oliver (3) under Full Build-out conditions, the delay on certain side street left-turn movements may increase by more than five seconds. Caltrans was consulted for the scope of the study. In the conditions of approval, the response from Caltrans was no comment.
2. Full Build-out will not change the Level of Service designation along either roadway segment, which is considered a less than significant impact.
3. Full Build-out will not change the TI on Belmont West of Academy in either the Eastbound or Westbound Directions, which is considered a less than significant impact.
4. Full Build-out will increase the TI on Northbound Trimmer Springs by 0.5 from 8.5 to 9.0, which is considered a significant impact.
5. Full Build-out will increase the TI on Southbound Trimmer Springs by 0.5 from 9.0 to 9.5, which is considered a significant impact.
6. Full Build-out will increase the TI on Eastbound Belmont between Oliver and Rio Vista by 0.5 from 8.5 to 9.0 which is considered a significant impact.
7. Full Build-out will not change the TI on Westbound Belmont between Oliver and Rio Vista, which is considered a less than significant impact.

6.2 Recommendations

Recommendations are as follows:

1. Explore Transportation Demand Management (TDM) options such as employee carpooling to reduce roadway impacts and on-site parking demand.
2. Provide Site Frontage Improvements and Clear Delineation of Site Access Locations to minimize conflicts between motorists and trucks. No median storage or deceleration lanes would be needed at the site accesses. These accesses are projected to continue to operate at an acceptable Level of Service of B under Full Build-out conditions, and storage lengths are projected to continue to be adequate through Full Build-out. Right turn lanes will be provided anyway to facilitate operations and enhance safety.
3. Conduct a follow-up LOS analysis at SR 180/Oliver (3) after the completion of the SR 180 improvements to capture the effects of revised patterns in background traffic generated by these improvements if any.
4. Conduct a TI analysis on Oliver between SR 180 and Belmont following the completion of the SR 180 improvements to: (a) reflect Belmont being improved and open to through traffic, and (b) capture the effects of revised patterns in background traffic generated by the SR 180 improvements if any.

Appendix A: Facility Production and Daily Truck Trip Generation

Month	week	Weekly Bin Count incoming	Capped Weekly Bin Count incoming	Average Daily Bins (1)	Average Daily Inbound Field Trucks (2)	Average Daily Outbound Shipping Trucks (3)	Average Daily Adjusted incoming trucks (4)	Average Daily Offroad incoming trucks (5)	Average Daily Onroad incoming trucks	Average Daily Adjusted Ougoing trucks (4)	**Total Oneway Truck Trips**
October	week 1	0	0	0.0	0.0	0.0	0	0	0	0	**0**
	week 2	2217	2217	369.5	16.0	16.0	16	(2)	14	16	**30**
	week 3	5243	5243	873.8	36.0	36.0	36	(4)	32	36	**68**
	week 4	5810	5810	968.3	40.0	40.0	40	(5)	35	40	**75**
November	week 1	6777	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 2	8624	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 3	4031	4031	671.8	28.0	28.0	28	(3)	25	28	**53**
	week 4	6944	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
December	week 1	6798	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 2	7376	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 3	7355	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 4	10877	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
January	week 1	7668	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 2	4512	4512	752.0	32.0	32.0	32	(4)	28	32	**60**
	week 3	6768	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 4	17089	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
February	week 1	6759	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 2	14047	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 3	10712	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 4	9330	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
March	week 1	9108	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 2	14322	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 3	13605	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 4	9944	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
April	week 1	10833	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 2	11093	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 3	5091	5091	848.5	34.0	34.0	34	(4)	30	34	**64**
	week 4	7261	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
May	week 1	5214	5214	869.0	36.0	36.0	36	(4)	32	36	**68**
	week 2	6638	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 3	6353	6000	1000.0	40.0	40.0	40	(5)	35	40	**75**
	week 4	3085	3085	514.2	22.0	22.0	22	(3)	19	22	**41**
June	week 1	1694	1694	282.3	12.0	12.0	12	(1)	11	12	**23**
	week 2	1190	1190	198.3	8.0	8.0	8	(1)	7	8	**15**
	week 3	551	551	91.8	4.0	4.0	4	0	4	4	**8**
	week 4	802	802	133.7	6.0	6.0	6	(1)	5	6	**11**
July	week 1	537	537	89.5	4.0	4.0	4	0	4	4	**8**
	week 2	236	236	39.3	2.0	2.0	2	0	2	2	**4**
	week 3	340	340	56.7	4.0	4.0	4	0	4	4	**8**
	week 4	480	480	80.0	4.0	4.0	4	0	4	4	**8**
August	week 1	260	260	43.3	2.0	2.0	2	0	2	2	**4**
	week 2	465	465	77.5	4.0	4.0	4	0	4	4	**8**
	week 3	168	168	28.0	2.0	2.0	2	0	2	2	**4**
	week 4	0	0	0.0	0.0	0.0	0	0	0	0	**0**

Total 258,207

Total Capped 179,926

Ex AADT (6) = 72 Trucks

Baseline AADT capped = 48 Trucks

(1) Average 6 day work week.

(2) 50 bins per truck. One truck is 2 one-way trips.

(3) Outgoing trucks is equivalent to incoming trucks.

(4) Incoming trucks capped at 20 trucks oneway incoming & 20 trucks oneway outgoing per day based on previous operational statement.

(5) Offroad trucks assuming 11.4% of incoming trucks uses adjacent offroad routes.

(6) AADT = Total Bins /(50 bins per truck x 300 days)

1_Weekly_Statistics

Table 1-1: Bin Statistics by Week and Month (FY 15/16)

Month	Week No. 1	Week No. 2	Week No. 3	Week No. 4	Total for Month
October 2015	0	2,217	5,243	5,810	13,270
November 2015	6,777	8,624	4,031	6,944	26,376
December 2015	6,798	7,376	7,355	10,877	32,406
January 2016	7,668	4,512	6,768	17,089	36,037
February 2016	6,759	14,047	10,712	9,330	40,848
March 2016	9,108	14,322	13,605	9,944	46,979
April 2016	10,833	11,093	5,091	7,261	34,278
May 2016	5,214	6,638	6,353	3,085	21,290
June 2016	1,694	1,190	551	802	4,237
July 2016	537	236	340	480	1,593
August 2016	260	465	168	0	893
Subtotal (FY 15/16)					258,207
Overall Weekly Average in Bins = (258,207 Annual Bins)/(42 Weeks)					6,148
Weekly Peaking Factor = (17,089 Peak)/(6,148 Average)					2.78
Typical Existing Daily Production in Bins (Table 1-2) (Baseline)					1,000

Table 1-2: Typical Daily Operations

Production Timeframe	Bins Per Truck	Number of Truck Loads (1), (2), (3), (4)	Working Days	Total Production (Bins)
Day	50	20	1	1,000
(1) Total Outbound Shipping Trucks (Table 2-2)				20
(2) Total Inbound Field Trucks (Table 2-2)				20
(3) Field Trucks from Adjacent Orchards (Table 2-2)				2
(4) Total Trucks Impacting County Roadways (1)+(2)-(3)				38

2_Production Details

Table 2-1: Breakdown by Shipment (Calendar Year 2016)		
Product	ID	Bins
Blood	95-16	1,358
Cara Caras	65-16	7,923
Lemons	30-16	7,666
	31-16	15,873
Mandarins	80-16	2,506
	81-16	961
	82-16	4,017
	83-16	2,211
	84-16	83
	88-16	18,646
	89-16	1,664
	91-16	463
	92-16	752
	94-16	2,761
Minneolas	70-16	5,191
Navels	1-16	12,579
	2-16	12,209
	3-16	13,132
	40-16	17,761
	41-16	13,676
	4-16	43,819
	5-16	57,964
Valencias	50-16	14,858
Total Bins (Calendar Year 2016)		258,073

Table 2-2: Existing Production Statistics (Calendar Year 2016)

Metric	Quantity	Explanation
Total Annual Production in Bins	258,073	Table 2-1: Total (Calendar Year 2016)
Typical Daily Operations in Bins	1,000	Table 1-2
Typical Outbound Shipping Trucks	13	(1,000 bins)/(50 bins per truck) = 20 Trucks Minus 7 Trucks = 13 Trucks to ensure a conservative analysis
Total Bins from Adjacent Orchards (2016)	29,316	Arrival from Adjacent Orchards via Dirt Roads with no impact on County Road System
Inbound Field Bins (2016)	228,757	(258,073 Bins) - (29,316 Bins from Adjacent Orchards) = 228,757 Field Bins
Inbound Field Bins (Day)	908	(228,757 Annual Inbound Field Bins)/((42 Weeks)*(6 Days Per Week)) = 908 Bins
Inbound Field Trucks from Paved Roads	11	(908 Field Bins)/(50 Bins Per Truck) = 18.16 - Round down to 18 Trucks Minus 7 Trucks = 11 Trucks to ensure a conservative analysis
Inbound Field Trucks from Orchards (Day)	2	(1,000 Total Bins-902 Field Bins)/(50 Bins per Truck) = 1.96 - Round Up to 2

Table 2-3: Phase One Production Statistics (Calendar Year 2022)

Metric	Quantity	Explanation
Target Daily Production in Bins	1,100	
Outbound Shipping Trucks	22	(3,500 bins)/(50 bins per truck) = 70 Trucks
Inbound Field Trucks from Orchards	2	Table 2-2
Inbound Field Trucks from Paved Roads	20	(70 Outbound Shipping Trucks) - (2 Inbound Field Trucks from Orchards) = 68 Trucks

Table 2-4: Full Build-out Production Statistics (Calendar Year 2035)

Metric	Quantity	Explanation
Target Daily Production in Bins	1,550	
Outbound Shipping Trucks	31	(5,000 bins)/(50 bins per truck) = 100 Trucks
Inbound Field Trucks from Orchards	2	Table 2-2
Inbound Field Trucks from Paved Roads	29	(100 Outbound Shipping Trucks) - (2 Inbound Field Trucks from Orchards) = 98 Trucks

Table 4-1: Summary of Total Truck Trips (AADT)

Development Stage	Outbound Shipping		Inbound Field (1)		Total Trips
	Enter (2)	Exit (3)	Enter (4)	Exit (5)	
Full Build-out (2035)	31	31	29	29	120
Phase One (2022)	22	22	20	20	84
Existing (2016)	13	13	11	11	48

(1): Excludes 2 from Adjacent Orchards via Dirt Roads
(2): Arrives Empty
(3): Leaves Full
(4): Arrives Full
(5): Leaves Empty

Table 4-2: Summary of Net New Truck Trips (Development Stage Less Existing)

Development Stage	Outbound Shipping		Inbound Field (1)		Total Trips
	Enter (2)	Exit (3)	Enter (4)	Exit (5)	
Full Build-out (2035)	18	18	18	18	72
Phase One (2022)	9	9	9	9	36

(1): Excludes 2 from Adjacent Orchards via Dirt Roads
(2): Arrives Empty
(3): Leaves Full
(4): Arrives Full
(5): Leaves Empty

Appendix B: Total, Truck, and Employee Trip Generation, Distribution, and Assignment

1_Total_Trip_Generation

Table 1.1: Input Parameters

Code	Land Use	Phase	Employees	Weekday			AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
110	General Light Industrial	Existing	150	1.51	1.51	3.02	0.37	0.07	0.44	0.09	0.33	0.42
110	General Light Industrial	Existing Plus Phase One	195	1.51	1.51	3.02	0.37	0.07	0.44	0.09	0.33	0.42
110	General Light Industrial	Existing Plus Full Build-out	300	1.51	1.51	3.02	0.37	0.07	0.44	0.09	0.33	0.42
110	General Light Industrial	Phase One Only	45	1.51	1.51	3.02	0.37	0.07	0.44	0.09	0.33	0.42
110	General Light Industrial	Full Build-out Only	150	1.51	1.51	3.02	0.37	0.07	0.44	0.09	0.33	0.42

Table 1.2: Total Trip Generation

Code	Land Use	Phase	Employees	Weekday			AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
110	General Light Industrial	Existing	150	227	226	453	56	10	66	14	49	63
110	General Light Industrial	Existing Plus Phase One	195	295	294	589	72	14	86	18	64	82
110	General Light Industrial	Existing Plus Full Build-out	300	453	453	906	111	21	132	27	99	126
110	General Light Industrial	Phase One Only	45	68	68	136	16	4	20	4	15	19
110	General Light Industrial	Full Build-out Only	150	226	227	453	55	11	66	13	50	63

2_Existing

Table 2.1: Gate

No	Description	Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
1	Trimmer Springs North	10.0%	22.7	22.6	45.3	5.6	1.0	6.6	1.4	4.9	6.3
2	SR 180 East	7.5%	17.0	17.0	34.0	4.2	0.8	5.0	1.1	3.7	4.7
3	Reed South	7.5%	17.0	17.0	34.0	4.2	0.8	5.0	1.1	3.7	4.7
4	Riverbend South	5.0%	11.4	11.3	22.7	2.8	0.5	3.3	0.7	2.5	3.2
5	Rainbow Southwest	10.0%	22.7	22.6	45.3	5.6	1.0	6.6	1.4	4.9	6.3
6	Academy South	25.0%	56.8	56.5	113.3	14.0	2.5	16.5	3.5	12.3	15.8
7	SR 180 West	20.0%	45.4	45.2	90.6	11.2	2.0	13.2	2.8	9.8	12.6
8	Belmont West	10.0%	22.7	22.6	45.3	5.6	1.0	6.6	1.4	4.9	6.3
9	Riverbend North-Shields West	5.0%	11.4	11.3	22.7	2.8	0.5	3.3	0.7	2.5	3.2
	Total	100.0%									

Table 2.2: Path

Ltr		Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
A	Academy: SR 180-Belmont	20.0%	45.4	45.2	90.6	11.2	2.0	13.2	2.8	9.8	12.6
B	Newmark: SR 180-Belmont	5.0%	11.4	11.3	22.7	2.8	0.5	3.3	0.7	2.5	3.2
C	Oliver: SR 180-Belmont	35.0%	79.5	79.1	158.6	19.6	3.5	23.1	4.9	17.2	22.1
D	SR 180: Newmark-Oliver	20.0%	45.4	45.2	90.6	11.2	2.0	13.2	2.8	9.8	12.6
E	Belmont: Riverbend-Oliver	40.0%	90.8	90.4	181.2	22.4	4.0	26.4	5.6	19.6	25.2

Table 2.3: Intersection

No		Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
1	Belmont/Academy	30.0%	68.1	67.8	135.9	16.8	3.0	19.8	4.2	14.7	18.9
2	Belmont/Oliver	75.0%	170.3	169.5	339.8	42.0	7.5	49.5	10.5	36.8	47.3
3	SR 180/Oliver	35.0%	79.5	79.1	158.6	19.6	3.5	23.1	4.9	17.2	22.1
4	SR 180/Academy	45.0%	102.2	101.7	203.9	25.2	4.5	29.7	6.3	22.1	28.4

Table 2.4: Site

Ltr	Description	Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
N	North	30.0%	68.1	67.8	135.9	16.8	3	19.8	4.2	14.7	18.9
C	Central	40.0%	90.8	90.4	181.2	22.4	4	26.4	5.6	19.6	25.2
S	South	30.0%	68.1	67.8	135.9	16.8	3	19.8	4.2	14.7	18.9
	Total	100.0%									

3_Phase_One

Table 3.1: Gate

No	Description	Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
1	Trimmer Springs North	10.0%	6.8	6.8	13.6	1.6	0.4	2.0	0.4	1.5	1.9
2	SR 180 East	7.5%	5.1	5.1	10.2	1.2	0.3	1.5	0.3	1.1	1.4
3	Reed South	7.5%	5.1	5.1	10.2	1.2	0.3	1.5	0.3	1.1	1.4
4	Riverbend South	5.0%	3.4	3.4	6.8	0.8	0.2	1.0	0.2	0.8	1.0
5	Rainbow Southwest	10.0%	6.8	6.8	13.6	1.6	0.4	2.0	0.4	1.5	1.9
6	Academy South	25.0%	17.0	17.0	34.0	4.0	1.0	5.0	1.0	3.8	4.8
7	SR 180 West	20.0%	13.6	13.6	27.2	3.2	0.8	4.0	0.8	3.0	3.8
8	Belmont West	10.0%	6.8	6.8	13.6	1.6	0.4	2.0	0.4	1.5	1.9
9	Riverbend North-Shields West	5.0%	3.4	3.4	6.8	0.8	0.2	1.0	0.2	0.8	1.0
	Total	100.0%									

Table 3.2: Path

Ltr		Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
A	Academy: SR 180-Belmont	20.0%	13.6	13.6	27.2	3.2	0.8	4.0	0.8	3.0	3.8
B	Newmark: SR 180-Belmont	5.0%	3.4	3.4	6.8	0.8	0.2	1.0	0.2	0.8	1.0
C	Oliver: SR 180-Belmont	35.0%	23.8	23.8	47.6	5.6	1.4	7.0	1.4	5.3	6.7
D	SR 180: Newmark-Oliver	20.0%	13.6	13.6	27.2	3.2	0.8	4.0	0.8	3.0	3.8
E	Belmont: Riverbend-Oliver	40.0%	27.2	27.2	54.4	6.4	1.6	8.0	1.6	6.0	7.6

Table 3.3: Intersection

No		Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
1	Belmont/Academy	30.0%	20.4	20.4	40.8	4.8	1.2	6.0	1.2	4.5	5.7
2	Belmont/Oliver	75.0%	51.0	51.0	102.0	12.0	3.0	15.0	3.0	11.3	14.3
3	SR 180/Oliver	35.0%	23.8	23.8	47.6	5.6	1.4	7.0	1.4	5.3	6.7
4	SR 180/Academy	45.0%	30.6	30.6	61.2	7.2	1.8	9.0	1.8	6.8	8.6

Table 3.4: Site

Ltr	Description	Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
N	North	30.0%	20.4	20.4	40.8	4.8	1.2	6	1.2	4.5	5.7
C	Central	40.0%	27.2	27.2	54.4	6.4	1.6	8	1.6	6	7.6
S	South	30.0%	20.4	20.4	40.8	4.8	1.2	6	1.2	4.5	5.7
	Total	100.0%									

4_Full_Build_out

Table 4.1: Gate

No	Description	Percentage	Weekday			AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
1	Trimmer Springs North	10.0%	22.6	22.7	45.3	5.5	1.1	6.6	1.3	5.0	6.3
2	SR 180 East	7.5%	17.0	17.0	34.0	4.1	0.8	5.0	1.0	3.8	4.7
3	Reed South	7.5%	17.0	17.0	34.0	4.1	0.8	5.0	1.0	3.8	4.7
4	Riverbend South	5.0%	11.3	11.4	22.7	2.8	0.6	3.3	0.7	2.5	3.2
5	Rainbow Southwest	10.0%	22.6	22.7	45.3	5.5	1.1	6.6	1.3	5.0	6.3
6	Academy South	25.0%	56.5	56.8	113.3	13.8	2.8	16.5	3.3	12.5	15.8
7	SR 180 West	20.0%	45.2	45.4	90.6	11.0	2.2	13.2	2.6	10.0	12.6
8	Belmont West	10.0%	22.6	22.7	45.3	5.5	1.1	6.6	1.3	5.0	6.3
9	Riverbend North-Shields West	5.0%	11.3	11.4	22.7	2.8	0.6	3.3	0.7	2.5	3.2
	Total	100.0%									

Table 4.2: Path

Ltr		Percentage	Weekday			AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
A	Academy: SR 180-Belmont	20.0%	45.2	45.4	90.6	11.0	2.2	13.2	2.6	10.0	12.6
B	Newmark: SR 180-Belmont	5.0%	11.3	11.4	22.7	2.8	0.6	3.3	0.7	2.5	3.2
C	Oliver: SR 180-Belmont	35.0%	79.1	79.5	158.6	19.3	3.9	23.1	4.6	17.5	22.1
D	SR 180: Newmark-Oliver	20.0%	45.2	45.4	90.6	11.0	2.2	13.2	2.6	10.0	12.6
E	Belmont: Riverbend-Oliver	40.0%	90.4	90.8	181.2	22.0	4.4	26.4	5.2	20.0	25.2

Table 4.3: Intersection

No		Percentage	Weekday			AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
1	Belmont/Academy	30.0%	67.8	68.1	135.9	16.5	3.3	19.8	3.9	15.0	18.9
2	Belmont/Oliver	75.0%	169.5	170.3	339.8	41.3	8.3	49.5	9.8	37.5	47.3
3	SR 180/Oliver	35.0%	79.1	79.5	158.6	19.3	3.9	23.1	4.6	17.5	22.1
4	SR 180/Academy	45.0%	101.7	102.2	203.9	24.8	5.0	29.7	5.9	22.5	28.4

Table 4.4: Site

Ltr	Description	Percentage	Weekday			AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
N	North	30.0%	67.8	68.1	135.9	16.5	3.3	19.8	3.9	15.0	18.9
C	Central	40.0%	90.4	90.8	181.2	22.0	4.4	26.4	5.2	20.0	25.2
S	South	30.0%	67.8	68.1	135.9	16.5	3.3	19.8	3.9	15.0	18.9
	Total	100.0%									

1_Truck_Trip_Generation

Table T1.1: Input Parameters

Code	Land Use	Phase	Employees	Weekday			AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
110	General Light Industrial	Existing	150	1.51	1.51	3.02	0.37	0.07	0.44	0.09	0.33	0.42
110	General Light Industrial	Existing Plus Phase One	195	1.51	1.51	3.02	0.37	0.07	0.44	0.09	0.33	0.42
110	General Light Industrial	Existing Plus Full Build-out	300	1.51	1.51	3.02	0.37	0.07	0.44	0.09	0.33	0.42
110	General Light Industrial	Phase One Only	45	1.51	1.51	3.02	0.37	0.07	0.44	0.09	0.33	0.42
110	General Light Industrial	Full Build-out Only	150	1.51	1.51	3.02	0.37	0.07	0.44	0.09	0.33	0.42

Table T1.2: Total Trip Generation

Code	Land Use	Phase	Employees	Weekday			AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
110	General Light Industrial	Existing	150	227	226	453	56	10	66	14	49	63
110	General Light Industrial	Existing Plus Phase One	195	295	294	589	72	14	86	18	64	82
110	General Light Industrial	Existing Plus Full Build-out	300	453	453	906	111	21	132	27	99	126
110	General Light Industrial	Phase One Only	45	68	68	136	16	4	20	4	15	19
110	General Light Industrial	Full Build-out Only	150	226	227	453	55	11	66	13	50	63

Table T1.3: Trip Generation Proportions

Code	Land Use	Phase	Employees	Weekday			AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
110	General Light Industrial	Existing	150	227	226	453	0.25	0.04	0.15	0.06	0.22	0.14
110	General Light Industrial	Existing Plus Phase One	195	295	294	589	0.24	0.05	0.15	0.06	0.22	0.14
110	General Light Industrial	Existing Plus Full Build-out	300	453	453	906	0.25	0.05	0.15	0.06	0.22	0.14
110	General Light Industrial	Phase One Only	45	68	68	136	0.24	0.06	0.15	0.06	0.22	0.14
110	General Light Industrial	Full Build-out Only	150	226	227	453	0.24	0.05	0.15	0.06	0.22	0.14

Table T1.4: Peak Season Truck Trip Generation

Code	Land Use	Phase	Employees	Weekday			AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
110	General Light Industrial	Existing	150	112	112	224	28	5	33	7	24	31
110	General Light Industrial	Existing Plus Phase One	195	138	138	276	34	7	41	8	30	38
110	General Light Industrial	Existing Plus Full Build-out	300	198	198	396	49	9	58	12	43	55
110	General Light Industrial	Phase One Only	45	26	26	52	6	2	8	1	6	7
110	General Light Industrial	Full Build-out Only	150	86	86	172	21	4	25	5	19	24

2_Existing

Table T2.1: Gate

No	Description	Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
1	Trimmer Springs North	10.0%	11.2	11.2	22.4	2.8	0.5	3.3	0.7	2.4	3.1
2	SR 180 East	7.5%	8.4	8.4	16.8	2.1	0.4	2.5	0.5	1.8	2.3
3	Reed South	7.5%	8.4	8.4	16.8	2.1	0.4	2.5	0.5	1.8	2.3
4	Riverbend South	5.0%	5.6	5.6	11.2	1.4	0.3	1.7	0.4	1.2	1.6
5	Rainbow Southwest	10.0%	11.2	11.2	22.4	2.8	0.5	3.3	0.7	2.4	3.1
6	Academy South	25.0%	28.0	28.0	56.0	7.0	1.3	8.3	1.8	6.0	7.8
7	SR 180 West	20.0%	22.4	22.4	44.8	5.6	1.0	6.6	1.4	4.8	6.2
8	Belmont West	10.0%	11.2	11.2	22.4	2.8	0.5	3.3	0.7	2.4	3.1
9	Riverbend North-Shields West	5.0%	5.6	5.6	11.2	1.4	0.3	1.7	0.4	1.2	1.6
	Total	100.0%									

Table T2.2: Path

Ltr		Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
A	Academy: SR 180-Belmont	20.0%	22.4	22.4	44.8	5.6	1.0	6.6	1.4	4.8	6.2
B	Newmark: SR 180-Belmont	5.0%	5.6	5.6	11.2	1.4	0.3	1.7	0.4	1.2	1.6
C	Oliver: SR 180-Belmont	35.0%	39.2	39.2	78.4	9.8	1.8	11.6	2.5	8.4	10.9
D	SR 180: Newmark-Oliver	20.0%	22.4	22.4	44.8	5.6	1.0	6.6	1.4	4.8	6.2
E	Belmont: Riverbend-Oliver	40.0%	44.8	44.8	89.6	11.2	2.0	13.2	2.8	9.6	12.4

Table T2.3: Intersection

No		Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
1	Belmont/Academy	30.0%	33.6	33.6	67.2	8.4	1.5	9.9	2.1	7.2	9.3
2	Belmont/Oliver	75.0%	84.0	84.0	168.0	21.0	3.8	24.8	5.3	18.0	23.3
3	SR 180/Oliver	35.0%	39.2	39.2	78.4	9.8	1.8	11.6	2.5	8.4	10.9
4	SR 180/Academy	45.0%	50.4	50.4	100.8	12.6	2.3	14.9	3.2	10.8	14.0

Table T2.4: Site

Ltr	Description	Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
N	North	30.0%	33.6	33.6	67.2	8.4	1.5	9.9	2.1	7.2	9.3
C	Central	40.0%	44.8	44.8	89.6	11.2	2.0	13.2	2.8	9.6	12.4
S	South	30.0%	33.6	33.6	67.2	8.4	1.5	9.9	2.1	7.2	9.3
	Total	100.0%									

3_Phase_One

Table T3.1: Gate

No	Description	Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
1	Trimmer Springs North	10.0%	2.6	2.6	5.2	0.6	0.2	0.8	0.1	0.6	0.7
2	SR 180 East	7.5%	2.0	2.0	3.9	0.5	0.2	0.6	0.1	0.5	0.5
3	Reed South	7.5%	2.0	2.0	3.9	0.5	0.2	0.6	0.1	0.5	0.5
4	Riverbend South	5.0%	1.3	1.3	2.6	0.3	0.1	0.4	0.1	0.3	0.4
5	Rainbow Southwest	10.0%	2.6	2.6	5.2	0.6	0.2	0.8	0.1	0.6	0.7
6	Academy South	25.0%	6.5	6.5	13.0	1.5	0.5	2.0	0.3	1.5	1.8
7	SR 180 West	20.0%	5.2	5.2	10.4	1.2	0.4	1.6	0.2	1.2	1.4
8	Belmont West	10.0%	2.6	2.6	5.2	0.6	0.2	0.8	0.1	0.6	0.7
9	Riverbend North-Shields West	5.0%	1.3	1.3	2.6	0.3	0.1	0.4	0.1	0.3	0.4
	Total	100.0%									

Table T3.2: Path

Ltr		Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
A	Academy: SR 180-Belmont	20.0%	5.2	5.2	10.4	1.2	0.4	1.6	0.2	1.2	1.4
B	Newmark: SR 180-Belmont	5.0%	1.3	1.3	2.6	0.3	0.1	0.4	0.1	0.3	0.4
C	Oliver: SR 180-Belmont	35.0%	9.1	9.1	18.2	2.1	0.7	2.8	0.4	2.1	2.5
D	SR 180: Newmark-Oliver	20.0%	5.2	5.2	10.4	1.2	0.4	1.6	0.2	1.2	1.4
E	Belmont: Riverbend-Oliver	40.0%	10.4	10.4	20.8	2.4	0.8	3.2	0.4	2.4	2.8

Table T3.3: Intersection

No		Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
1	Belmont/Academy	30.0%	7.8	7.8	15.6	1.8	0.6	2.4	0.3	1.8	2.1
2	Belmont/Oliver	75.0%	19.5	19.5	39.0	4.5	1.5	6.0	0.8	4.5	5.3
3	SR 180/Oliver	35.0%	9.1	9.1	18.2	2.1	0.7	2.8	0.4	2.1	2.5
4	SR 180/Academy	45.0%	11.7	11.7	23.4	2.7	0.9	3.6	0.5	2.7	3.2

Table T3.4: Site

Ltr	Description	Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
N	North	30.0%	7.8	7.8	15.6	1.8	0.6	2.4	0.3	1.8	2.1
C	Central	40.0%	10.4	10.4	20.8	2.4	0.8	3.2	0.4	2.4	2.8
S	South	30.0%	7.8	7.8	15.6	1.8	0.6	2.4	0.3	1.8	2.1
	Total	100.0%									

4_Full_Build_out

Table T4.1: Gate

No	Description	Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
1	Trimmer Springs North	10.0%	8.6	8.6	17.2	2.1	0.4	2.5	0.5	1.9	2.4
2	SR 180 East	7.5%	6.5	6.5	12.9	1.6	0.3	1.9	0.4	1.4	1.8
3	Reed South	7.5%	6.5	6.5	12.9	1.6	0.3	1.9	0.4	1.4	1.8
4	Riverbend South	5.0%	4.3	4.3	8.6	1.1	0.2	1.3	0.3	1.0	1.2
5	Rainbow Southwest	10.0%	8.6	8.6	17.2	2.1	0.4	2.5	0.5	1.9	2.4
6	Academy South	25.0%	21.5	21.5	43.0	5.3	1.0	6.3	1.3	4.8	6.0
7	SR 180 West	20.0%	17.2	17.2	34.4	4.2	0.8	5.0	1.0	3.8	4.8
8	Belmont West	10.0%	8.6	8.6	17.2	2.1	0.4	2.5	0.5	1.9	2.4
9	Riverbend North-Shields West	5.0%	4.3	4.3	8.6	1.1	0.2	1.3	0.3	1.0	1.2
	Total	100.0%									

Table T4.2: Path

Ltr		Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
A	Academy: SR 180-Belmont	20.0%	17.2	17.2	34.4	4.2	0.8	5.0	1.0	3.8	4.8
B	Newmark: SR 180-Belmont	5.0%	4.3	4.3	8.6	1.1	0.2	1.3	0.3	1.0	1.2
C	Oliver: SR 180-Belmont	35.0%	30.1	30.1	60.2	7.4	1.4	8.8	1.8	6.7	8.4
D	SR 180: Newmark-Oliver	20.0%	17.2	17.2	34.4	4.2	0.8	5.0	1.0	3.8	4.8
E	Belmont: Riverbend-Oliver	40.0%	34.4	34.4	68.8	8.4	1.6	10.0	2.0	7.6	9.6

Table T4.3: Intersection

No		Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
1	Belmont/Academy	30.0%	25.8	25.8	51.6	6.3	1.2	7.5	1.5	5.7	7.2
2	Belmont/Oliver	75.0%	64.5	64.5	129.0	15.8	3.0	18.8	3.8	14.3	18.0
3	SR 180/Oliver	35.0%	30.1	30.1	60.2	7.4	1.4	8.8	1.8	6.7	8.4
4	SR 180/Academy	45.0%	38.7	38.7	77.4	9.5	1.8	11.3	2.3	8.6	10.8

Table T4.4: Site

Ltr	Description	Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
N	North	30.0%	25.8	25.8	51.6	6.3	1.2	7.5	1.5	5.7	7.2
C	Central	40.0%	34.4	34.4	68.8	8.4	1.6	10.0	2.0	7.6	9.6
S	South	30.0%	25.8	25.8	51.6	6.3	1.2	7.5	1.5	5.7	7.2
	Total	100.0%									

1_Employee_Trip_Generation

Table E1.1: Input Parameters

Code	Land Use	Phase	Employees	Weekday			AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
110	General Light Industrial	Existing	150	1.51	1.51	3.02	0.37	0.07	0.44	0.09	0.33	0.42
110	General Light Industrial	Existing Plus Phase One	195	1.51	1.51	3.02	0.37	0.07	0.44	0.09	0.33	0.42
110	General Light Industrial	Existing Plus Full Build-out	300	1.51	1.51	3.02	0.37	0.07	0.44	0.09	0.33	0.42
110	General Light Industrial	Phase One Only	45	1.51	1.51	3.02	0.37	0.07	0.44	0.09	0.33	0.42
110	General Light Industrial	Full Build-out Only	150	1.51	1.51	3.02	0.37	0.07	0.44	0.09	0.33	0.42

Table E1.2: Total Trip Generation

Code	Land Use	Phase	Employees	Weekday			AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
110	General Light Industrial	Existing	150	227	226	453	56	10	66	14	49	63
110	General Light Industrial	Existing Plus Phase One	195	295	294	589	72	14	86	18	64	82
110	General Light Industrial	Existing Plus Full Build-out	300	453	453	906	111	21	132	27	99	126
110	General Light Industrial	Phase One Only	45	68	68	136	16	4	20	4	15	19
110	General Light Industrial	Full Build-out Only	150	226	227	453	55	11	66	13	50	63

Table E1.3: Trip Generation Proportions

Code	Land Use	Phase	Employees	Weekday			AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
110	General Light Industrial	Existing	150	227	226	453	0.25	0.04	0.15	0.06	0.22	0.14
110	General Light Industrial	Existing Plus Phase One	195	295	294	589	0.24	0.05	0.15	0.06	0.22	0.14
110	General Light Industrial	Existing Plus Full Build-out	300	453	453	906	0.25	0.05	0.15	0.06	0.22	0.14
110	General Light Industrial	Phase One Only	45	68	68	136	0.24	0.06	0.15	0.06	0.22	0.14
110	General Light Industrial	Full Build-out Only	150	226	227	453	0.24	0.05	0.15	0.06	0.22	0.14

Table E1.4: Peak Season Truck Trip Generation

Code	Land Use	Phase	Employees	Weekday			AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
110	General Light Industrial	Existing	150	112	112	224	28	5	33	7	24	31
110	General Light Industrial	Existing Plus Phase One	195	138	138	276	34	7	41	8	30	38
110	General Light Industrial	Existing Plus Full Build-out	300	198	198	396	49	9	58	12	43	55
110	General Light Industrial	Phase One Only	45	26	26	52	6	2	8	1	6	7
110	General Light Industrial	Full Build-out Only	150	86	86	172	21	4	25	5	19	24

Table E1.5: Employee Trip Generation (Total-Truck)

Code	Land Use	Phase	Employees	Weekday			AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
110	General Light Industrial	Existing	150	115	114	229	28	5	33	7	25	32
110	General Light Industrial	Existing Plus Phase One	195	157	156	313	38	7	45	10	34	44
110	General Light Industrial	Existing Plus Full Build-out	300	255	255	510	62	12	74	15	56	71
110	General Light Industrial	Phase One Only	45	42	42	84	10	2	12	3	9	12
110	General Light Industrial	Full Build-out Only	150	140	141	281	34	7	41	8	31	39

2_Phase_One

Table E2.1: Gate

No	Description	Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
1	Trimmer Springs North	10.0%	4.2	4.2	8.4	1.0	0.2	1.2	0.3	0.9	1.2
2	SR 180 East	7.5%	3.2	3.2	6.3	0.8	0.2	0.9	0.2	0.7	0.9
3	Reed South	7.5%	3.2	3.2	6.3	0.8	0.2	0.9	0.2	0.7	0.9
4	Riverbend South	5.0%	2.1	2.1	4.2	0.5	0.1	0.6	0.2	0.5	0.6
5	Rainbow Southwest	10.0%	4.2	4.2	8.4	1.0	0.2	1.2	0.3	0.9	1.2
6	Academy South	25.0%	10.5	10.5	21.0	2.5	0.5	3.0	0.8	2.3	3.0
7	SR 180 West	20.0%	8.4	8.4	16.8	2.0	0.4	2.4	0.6	1.8	2.4
8	Belmont West	10.0%	4.2	4.2	8.4	1.0	0.2	1.2	0.3	0.9	1.2
9	Riverbend North-Shields West	5.0%	2.1	2.1	4.2	0.5	0.1	0.6	0.2	0.5	0.6
	Total	100.0%									

Table E2.2: Path

Ltr		Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
A	Academy: SR 180-Belmont	20.0%	8.4	8.4	16.8	2.0	0.4	2.4	0.6	1.8	2.4
B	Newmark: SR 180-Belmont	5.0%	2.1	2.1	4.2	0.5	0.1	0.6	0.2	0.5	0.6
C	Oliver: SR 180-Belmont	35.0%	14.7	14.7	29.4	3.5	0.7	4.2	1.1	3.2	4.2
D	SR 180: Newmark-Oliver	20.0%	8.4	8.4	16.8	2.0	0.4	2.4	0.6	1.8	2.4
E	Belmont: Riverbend-Oliver	40.0%	16.8	16.8	33.6	4.0	0.8	4.8	1.2	3.6	4.8

Table E2.3: Intersection

No		Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
1	Belmont/Academy	30.0%	12.6	12.6	25.2	3.0	0.6	3.6	0.9	2.7	3.6
2	Belmont/Oliver	75.0%	31.5	31.5	63.0	7.5	1.5	9.0	2.3	6.8	9.0
3	SR 180/Oliver	35.0%	14.7	14.7	29.4	3.5	0.7	4.2	1.1	3.2	4.2
4	SR 180/Academy	45.0%	18.9	18.9	37.8	4.5	0.9	5.4	1.4	4.1	5.4

Table E2.4: Site

Ltr	Description	Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
N	North	30.0%	12.6	12.6	25.2	3.0	0.6	3.6	0.9	2.7	3.6
C	Central	40.0%	16.8	16.8	33.6	4.0	0.8	4.8	1.2	3.6	4.8
S	South	30.0%	12.6	12.6	25.2	3.0	0.6	3.6	0.9	2.7	3.6
	Total	100.0%									

3_Full_Build_out

Table E3.1: Gate

No	Description	Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
1	Trimmer Springs North	10.0%	14.0	14.1	28.1	3.4	0.7	4.1	0.8	3.1	3.9
2	SR 180 East	7.5%	10.5	10.6	21.1	2.6	0.5	3.1	0.6	2.3	2.9
3	Reed South	7.5%	10.5	10.6	21.1	2.6	0.5	3.1	0.6	2.3	2.9
4	Riverbend South	5.0%	7.0	7.1	14.1	1.7	0.4	2.1	0.4	1.6	2.0
5	Rainbow Southwest	10.0%	14.0	14.1	28.1	3.4	0.7	4.1	0.8	3.1	3.9
6	Academy South	25.0%	35.0	35.3	70.3	8.5	1.8	10.3	2.0	7.8	9.8
7	SR 180 West	20.0%	28.0	28.2	56.2	6.8	1.4	8.2	1.6	6.2	7.8
8	Belmont West	10.0%	14.0	14.1	28.1	3.4	0.7	4.1	0.8	3.1	3.9
9	Riverbend North-Shields West	5.0%	7.0	7.1	14.1	1.7	0.4	2.1	0.4	1.6	2.0
	Total	100.0%									

Table E3.2: Path

Ltr		Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
A	Academy: SR 180-Belmont	20.0%	28.0	28.2	56.2	6.8	1.4	8.2	1.6	6.2	7.8
B	Newmark: SR 180-Belmont	5.0%	7.0	7.1	14.1	1.7	0.4	2.1	0.4	1.6	2.0
C	Oliver: SR 180-Belmont	35.0%	49.0	49.4	98.4	11.9	2.5	14.4	2.8	10.9	13.7
D	SR 180: Newmark-Oliver	20.0%	28.0	28.2	56.2	6.8	1.4	8.2	1.6	6.2	7.8
E	Belmont: Riverbend-Oliver	40.0%	56.0	56.4	112.4	13.6	2.8	16.4	3.2	12.4	15.6

Table E3.3: Intersection

No		Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
1	Belmont/Academy	30.0%	42.0	42.3	84.3	10.2	2.1	12.3	2.4	9.3	11.7
2	Belmont/Oliver	75.0%	105.0	105.8	210.8	25.5	5.3	30.8	6.0	23.3	29.3
3	SR 180/Oliver	35.0%	49.0	49.4	98.4	11.9	2.5	14.4	2.8	10.9	13.7
4	SR 180/Academy	45.0%	63.0	63.5	126.5	15.3	3.2	18.5	3.6	14.0	17.6

Table E3.4: Site

Ltr	Description	Percentage	Weekday Enter	Weekday Exit	Weekday Total	AM Peak Hour Enter	AM Peak Hour Exit	AM Peak Hour Total	PM Peak Hour Enter	PM Peak Hour Exit	PM Peak Hour Total
N	North	30.0%	42.0	42.3	84.3	10.2	2.1	12.3	2.4	9.3	11.7
C	Central	40.0%	56.0	56.4	112.4	13.6	2.8	16.4	3.2	12.4	15.6
S	South	30.0%	42.0	42.3	84.3	10.2	2.1	12.3	2.4	9.3	11.7
	Total	100.0%									

Appendix C: Roadway Structural Integrity (Traffic Index)

Table S-1: A: Belmont west of Academy				
Direction	With Project	Without Project	Impact	Significant?
Eastbound	8.12	7.99	0.13	NO
Westbound	8.14	8.01	0.13	NO
Significant: ≥ 0.5				

Table S-2: B: Trimmer Springs south of Site				
Direction	With Project	Without Project	Impact	Significant?
Northbound	9.17	8.65	0.52	YES
Southbound	9.25	8.77	0.48	NO
Significant: ≥ 0.5				

Table S-3: C: Belmont: Between Oliver and Rio Vista				
Direction	With Project	Without Project	Impact	Significant?
Eastbound	9.09	8.65	0.44	NO
Westbound	9.18	8.77	0.41	NO
Significant: ≥ 0.5				

A_Belmont west of Academy Eastbound

Table A-1: ESAL and TI Calculations

Vehicle Type	EX Vol (1)	Adj. Factor (2)	Rev EX Vol (3)	20-YR Exp Fac (4)	FUT Vol (5)	Avg (6)	20-Year Const (7)	ESAL (8)	Project (9)	Avg + Project (10)	20-Year Const (11)	ESAL (12) with Proj
2-Axle (Class 4, 5)	5	1.23	6	1.13	7	7	1,380	9,660	0	7	1,380	9,660
3-Axle (Class 6)	5	1.23	6	1.13	7	7	3,680	25,760	0	7	3,680	25,760
4-Axle (Class 7)	0	1.23	0	1.13	0	0	5,880	-	0	0	5,880	-
5-Axle (≥ Class 8)	18	1.23	22	1.13	25	24	13,780	330,720	4	28	13,780	385,840
Total ESAL								366,140				421,260
TI (Calculated)								**7.99**				**8.12**
TI (Rounded)								**8.0**				**8.0**

(1) Metro Traffic Data, Inc. Wed, Dec 20, 2017
(2) Table A-2
(3) Revised Existing Volume = (Volume) * (Adjustment Factor)
(4) Table A-3
(5) Future Volume = (Revised Existing Volume) * (Expansion Factor)
(6) Average = ((Future Volume)+(Revised Existing Volume))/2
(7) Table 613.3A (ESAL Constants), Caltrans, Highway Design Manual (November 20, 2017)
(8) ESAL = (Average) * (20-Year Constant)
(9) Project-Generated Truck Traffic = (Net New Truck Traffic in Direction for Cumulative) * (Trip Distribution Percentage) = (36) * (.1) = 4.
While only 10% of the trips impact Belmont west of Academy, 40% of the trips impact Belmont west of Oliver. The higher percentage was used to ensure a conservative analysis.
(10) (Average) + (Project-Generated Truck Traffic)
(11) Table 613.3A (ESAL Constants), Caltrans, Highway Design Manual (November 20, 2017)
(12) ESAL = (Average + Project) * (20-Year Constant)

Table A-2: Adjustment Factor Calculation

	Dec 7 (2)	Dec 20 (3)
Daily Volume (1)	687	558
Adjustment Factor (4)	1.23	

(1) Total in Eastbound Direction
(2) Metro Traffic Data: Thurs Dec 7, 2017
(3) Metro Traffic Data: Wed Dec 20, 2017
(4) (Dec 7)/(Dec 20)

Table A-3: Expansion Factor Calculation

	2015 (2)	2035 (3)
Fresno COG (1)	431	485
Exp Factor (4)	1.13	

(1) Total in Eastbound Direction
(2) Fresno COG Daily (2015)
(3) Fresno COG Daily (2035)
(4) (2035 Value)/(2015 Value)

A_Belmont west of Academy Westbound

Table A-4: ESAL and TI Calculations

Vehicle Type	EX Vol (1)	Adj. Factor (2)	Rev EX Vol (3)	20-YR Exp Fac (4)	FUT Vol (5)	Avg (6)	20-Year Const (7)	ESAL (8)	Project (9)	Avg + Project (10)	20-Year Const (11)	ESAL (12) with Proj
2-Axle (Class 4, 5)	6	1.30	8	1.15	9	9	1,380	12,420	0	9	1,380	12,420
3-Axle (Class 6)	3	1.30	4	1.15	5	5	3,680	18,400	0	5	3,680	18,400
4-Axle (Class 7)	0	1.30	0	1.15	0	0	5,880	-	0	0	5,880	-
5-Axle (≥ Class 8)	18	1.30	23	1.15	26	25	13,780	344,500	4	29	13,780	399,620
Total ESAL								375,320				430,440
TI (Calculated)								**8.01**				**8.14**
TI (Rounded)								**8.0**				**8.0**

(1) Metro Traffic Data, Inc. Wed, Dec 20, 2017
(2) Table A-2
(3) Revised Existing Volume = (Volume) * (Adjustment Factor)
(4) Table A-3
(5) Future Volume = (Revised Existing Volume) * (Expansion Factor)
(6) Average = ((Future Volume)+(Revised Existing Volume))/2
(7) Table 613.3A (ESAL Constants), Caltrans, Highway Design Manual (November 20, 2017)
(8) ESAL = (Average) * (20-Year Constant)
(9) Project-Generated Truck Traffic = (Net New Truck Traffic in Direction for Cumulative) * (Trip Distribution Percentage) = (36) * (.1) = 4.
While only 10% of the trips impact Belmont west of Academy, 40% of the trips impact Belmont west of Oliver. The higher percentage was used to ensure a conservative analysis.
(10) (Average) + (Project-Generated Truck Traffic)
(11) Table 613.3A (ESAL Constants), Caltrans, Highway Design Manual (November 20, 2017)
(12) ESAL = (Average + Project) * (20-Year Constant)

Table A-5: Adjustment Factor Calculation

	Dec 7 (2)	Dec 20 (3)
Daily Volume (1)	617	474
Adjustment Factor (4)	1.30	

(1) Total in Westbound Direction
(2) Metro Traffic Data: Thurs Dec 7, 2017
(3) Metro Traffic Data: Wed Dec 20, 2017
(4) (Dec 7)/(Dec 20)

Table A-6: Expansion Factor Calculation

	2015 (2)	2035 (3)
Fresno COG (1)	426	490
Exp Factor (4)	1.15	

(1) Total in Westbound Direction
(2) Fresno COG Daily (2015)
(3) Fresno COG Daily (2035)
(4) (2035 Value)/(2015 Value)

B_Trimmer Springs South of Site Northbound

Table B-1: ESAL and TI Calculations

Vehicle Type	EX Vol (1)	Adj. Factor (2)	Rev EX Vol (3)	20-YR Exp Fac (4)	FUT Vol (5)	Avg (6)	20-Year Const (7)	ESAL (8)	Project (9)	Avg + Project (10)	20-Year Const (11)	ESAL (12) with Proj
2-Axle (Class 4, 5)	14	1.38	19	1.00	19	19	1,380	26,220	0	19	1,380	26,220
3-Axle (Class 6)	1	1.38	1	1.00	1	1	3,680	3,680	0	1	3,680	3,680
4-Axle (Class 7)	0	1.38	0	1.00	0	0	5,880	-	0	0	5,880	-
5-Axle (≥Class 8)	36	1.38	50	1.00	50	50	13,780	689,000	33	83	13,780	1,143,740
Total ESAL								718,900				1,173,640
TI (Calculated)								**8.65**				**9.17**
TI (Rounded)								**8.5**				**9.0**

(1) Metro Traffic Data, Inc. Wed, Dec 20, 2017
(2) Table A-2
(3) Revised Existing Volume = (Volume) * (Adjustment Factor)
(4) Table A-3
(5) Future Volume = (Revised Existing Volume) * (Expansion Factor)
(6) Average = ((Future Volume)+(Revised Existing Volume))/2
(7) Table 613.3A (ESAL Constants), Caltrans, Highway Design Manual (November 20, 2017)
(8) ESAL = (Average) * (20-Year Constant)
(9) Project-Generated Truck Traffic = (Net New Truck Traffic in Direction for Cumulative) * (Trip Distribution Percentage) = (36) * (.9) = 33.
(10) (Average) + (Project-Generated Truck Traffic)
(11) Table 613.3A (ESAL Constants), Caltrans, Highway Design Manual (November 20, 2017)
(12) ESAL = (Average + Project) * (20-Year Constant)

Table B-2: Adjustment Factor Calculation

	Dec 7 (2)	Dec 20 (3)
Daily Volume (1)	637	462
Adjustment Factor (4)	1.38	

(1) Total in Northbound Direction
(2) Metro Traffic Data: Thurs Dec 7, 2017
(3) Metro Traffic Data: Wed Dec 20, 2017
(4) (Dec 7)/(Dec 20)

Table B-3: Expansion Factor Calculation

	2015 (2)	2035 (3)
Fresno COG (1)	758	758
Exp Factor (4)	1.00	

(1) Total in Northbound Direction
(2) Fresno COG Daily (2015)
(3) Fresno COG Daily (2035)
Values: (2035) < (2015). Use (2015)
(4) (2035 Value)/(2015 Value)

B_Trimmer Springs South of Site Southbound

Table B-4: ESAL and TI Calculations

Vehicle Type	EX Vol (1)	Adj. Factor (2)	Rev EX Vol (3)	20-YR Exp Fac (4)	FUT Vol (5)	Avg (6)	20-Year Const (7)	ESAL (8)	Project (9)	Avg + Project (10)	20-Year Const (11)	ESAL (12) with Proj
2-Axle (Class 4, 5)	11	1.37	15	1.00	15	15	1,380	20,700	0	15	1,380	20,700
3-Axle (Class 6)	0	1.37	0	1.00	0	0	3,680	-	0	0	3,680	-
4-Axle (Class 7)	0	1.37	0	1.00	0	0	5,880	-	0	0	5,880	-
5-Axle (≥Class 8)	42	1.37	57	1.00	57	57	13,780	785,460	33	90	13,780	1,240,200
Total ESAL								806,160				1,260,900
TI (Calculated)								**8.77**				**9.25**
TI (Rounded)								**9.0**				**9.5**

(1) Metro Traffic Data, Inc. Wed, Dec 20, 2017
(2) Table A-2
(3) Revised Existing Volume = (Volume) * (Adjustment Factor)
(4) Table A-3
(5) Future Volume = (Revised Existing Volume) * (Expansion Factor)
(6) Average = ((Future Volume)+(Revised Existing Volume))/2
(7) Table 613.3A (ESAL Constants), Caltrans, Highway Design Manual (November 20, 2017)
(8) ESAL = (Average) * (20-Year Constant)
(9) Project-Generated Truck Traffic = (Net New Truck Traffic in Direction for Cumulative) * (Trip Distribution Percentage) = (36) * (.9) = 33.
(10) (Average) + (Project-Generated Truck Traffic)
(11) Table 613.3A (ESAL Constants), Caltrans, Highway Design Manual (November 20, 2017)
(12) ESAL = (Average + Project) * (20-Year Constant)

Table B-5: Adjustment Factor Calculation

	Dec 7 (2)	Dec 20 (3)
Daily Volume (1)	668	489
Adjustment Factor (4)	1.37	

(1) Total Southbound Direction
(2) Metro Traffic Data: Thurs Dec 7, 2017
(3) Metro Traffic Data: Wed Dec 20, 2017
(4) (Dec 7)/(Dec 20)

Table B-6: Expansion Factor Calculation

	2015 (2)	2035 (3)
Fresno COG (1)	760	760
Exp Factor (4)	1.00	

(1) Total in Southbound Direction
(2) Fresno COG Daily (2015)
(3) Fresno COG Daily (2035)
Values: (2035) < (2015). Use (2015)
(4) (2035 Value)/(2015 Value)

C_Belmont: Oliver-Rio Vista: Eastbound

Table B-1: ESAL and TI Calculations

Vehicle Type	EX Vol (1)	Adj. Factor (2)	Rev EX Vol (3)	20-YR Exp Fac (4)	FUT Vol (5)	Avg (6)	20-Year Const (7)	ESAL (8)	Project (9)	Avg + Project (10)	20-Year Const (11)	ESAL (12) with Proj
2-Axle (Class 4, 5)	14	1.38	19	1.00	19	19	1,380	26,220	0	19	1,380	26,220
3-Axle (Class 6)	1	1.38	1	1.00	1	1	3,680	3,680	0	1	3,680	3,680
4-Axle (Class 7)	0	1.38	0	1.00	0	0	5,880	-	0	0	5,880	-
5-Axle (≥Class 8)	36	1.38	50	1.00	50	50	13,780	689,000	27	77	13,780	1,061,060
Total ESAL								718,900				1,090,960
TI (Calculated)								**8.65**				**9.09**
TI (Rounded)								**8.5**				**9.0**

(1) Metro Traffic Data, Inc. Wed, Dec 20, 2017
(2) Table A-2
(3) Revised Existing Volume = (Volume) * (Adjustment Factor)
(4) Table A-3
(5) Future Volume = (Revised Existing Volume) * (Expansion Factor)
(6) Average = ((Future Volume)+(Revised Existing Volume))/2
(7) Table 613.3A (ESAL Constants), Caltrans, Highway Design Manual (November 20, 2017)
(8) ESAL = (Average) * (20-Year Constant)
(9) Project-Generated Truck Traffic = (Net New Truck Traffic in Direction for Cumulative) * (Trip Distribution Percentage) = (36) * (.75) = 27.
(10) (Average) + (Project-Generated Truck Traffic)
(11) Table 613.3A (ESAL Constants), Caltrans, Highway Design Manual (November 20, 2017)
(12) ESAL = (Average + Project) * (20-Year Constant)

Table B-2: Adjustment Factor Calculation

	Dec 7 (2)	Dec 20 (3)
Daily Volume (1)	637	462
Adjustment Factor (4)	1.38	

(1) Total in Northbound Direction
(2) Metro Traffic Data: Thurs Dec 7, 2017
(3) Metro Traffic Data: Wed Dec 20, 2017
(4) (Dec 7)/(Dec 20)

Table B-3: Expansion Factor Calculation

	2015 (2)	2035 (3)
Fresno COG (1)	758	758
Exp Factor (4)	1.00	

(1) Total in Northbound Direction
(2) Fresno COG Daily (2015)
(3) Fresno COG Daily (2035)
Values: (2035) < (2015). Use (2015)
(4) (2035 Value)/(2015 Value)

C_Belmont: Oliver-Rio Vista: Westbound

Table B-4: ESAL and TI Calculations

Vehicle Type	EX Vol (1)	Adj. Factor (2)	Rev EX Vol (3)	20-YR Exp Fac (4)	FUT Vol (5)	Avg (6)	20-Year Const (7)	ESAL (8)	Project (9)	Avg + Project (10)	20-Year Const (11)	ESAL (12) with Proj
2-Axle (Class 4, 5)	11	1.37	15	1.00	15	15	1,380	20,700	0	15	1,380	20,700
3-Axle (Class 6)	0	1.37	0	1.00	0	0	3,680	-	0	0	3,680	-
4-Axle (Class 7)	0	1.37	0	1.00	0	0	5,880	-	0	0	5,880	-
5-Axle (≥Class 8)	42	1.37	57	1.00	57	57	13,780	785,460	27	84	13,780	1,157,520
Total ESAL								806,160				1,178,220
TI (Calculated)								**8.77**				**9.18**
TI (Rounded)								**9.0**				**9.0**

(1) Metro Traffic Data, Inc. Wed, Dec 20, 2017
(2) Table A-2
(3) Revised Existing Volume = (Volume) * (Adjustment Factor)
(4) Table A-3
(5) Future Volume = (Revised Existing Volume) * (Expansion Factor)
(6) Average = ((Future Volume)+(Revised Existing Volume))/2
(7) Table 613.3A (ESAL Constants), Caltrans, Highway Design Manual (November 20, 2017)
(8) ESAL = (Average) * (20-Year Constant)
(9) Project-Generated Truck Traffic = (Net New Truck Traffic in Direction for Cumulative) * (Trip Distribution Percentage) = (36) * (.75) = 27.
(10) (Average) + (Project-Generated Truck Traffic)
(11) Table 613.3A (ESAL Constants), Caltrans, Highway Design Manual (November 20, 2017)
(12) ESAL = (Average + Project) * (20-Year Constant)

Table B-5: Adjustment Factor Calculation

	Dec 7 (2)	Dec 20 (3)
Daily Volume (1)	668	489
Adjustment Factor (4)	1.37	

(1) Total Southbound Direction
(2) Metro Traffic Data: Thurs Dec 7, 2017
(3) Metro Traffic Data: Wed Dec 20, 2017
(4) (Dec 7)/(Dec 20)

Table B-6: Expansion Factor Calculation

	2015 (2)	2035 (3)
Fresno COG (1)	760	760
Exp Factor (4)	1.00	

(1) Total in Southbound Direction
(2) Fresno COG Daily (2015)
(3) Fresno COG Daily (2035)
Values: (2035) < (2015). Use (2015)
(4) (2035 Value)/(2015 Value)

Appendix D: Roadway Segment Capacity

A_Belmont west of Academy

Scenario	Cars, Light Trucks (1)	Heavy Trucks (2)	Total (3)	Segment LOS
Existing (2017)	1,355	68	1,525	B
Near-Term (2022)	1,422	71	1,600	B
Near-Term Plus Phase One	1,426	73	1,609	B
Cumulative (2035)	1,542	77	1,735	B
Cumulative Plus Full Build-out	1,550	82	1,755	B

(1) Two Axles, Up to Class 5
(2) Three or More Axles, Class 6 and Higher
(3) One Heavy Truck with a Passenger Car Equivalent of 2.5

B_Trimmer Springs south of Kings River Packing Co

Scenario	Cars, Light Trucks (1)	Heavy Trucks (2)	Total (3)	Segment LOS
Existing (2017)	1,235	118	1,530	B
Near-Term (2022)	1,235	118	1,530	B
Near-Term Plus Phase One	1,259	133	1,592	B
Cumulative (2035)	1,235	118	1,530	B
Cumulative Plus Full Build-out	1,310	165	1,723	B

(1) Two Axles, Up to Class 5
(2) Three or More Axles, Class 6 and Higher
(3) One Heavy Truck with a Passenger Car Equivalent of 2.5

Appendix E: Existing Intersection Turning Movements

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:

Precision Civil Engineering, Inc.
1234 "O" Street
Fresno, CA 93721

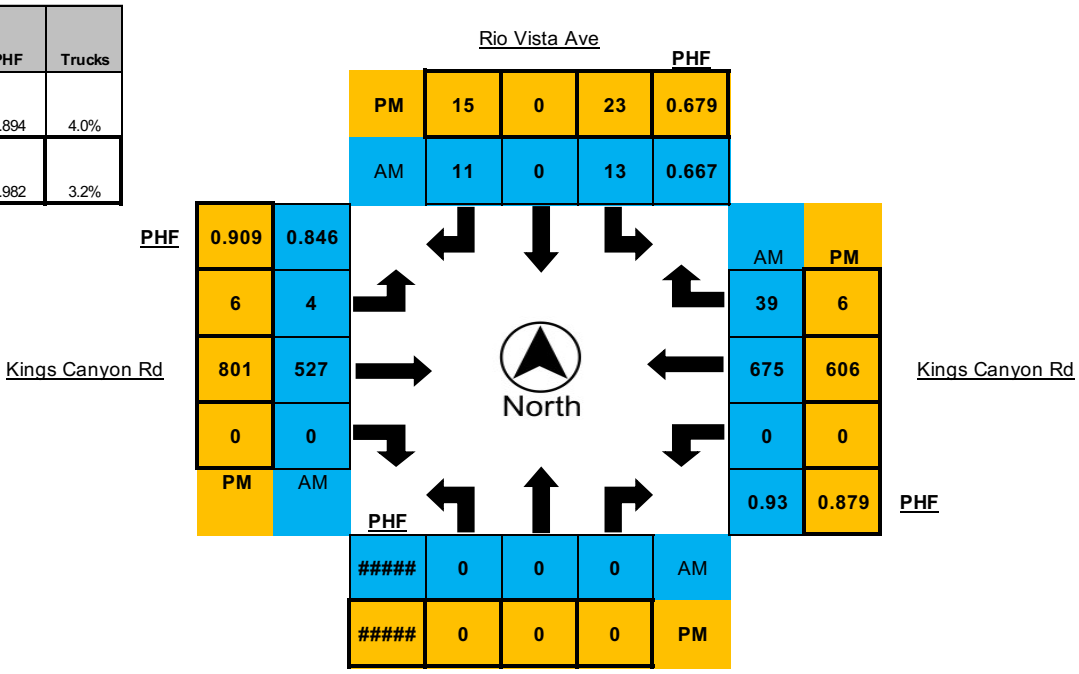
LOCATION Kings Canyon Rd @ Rio Vista Ave
LATITUDE 36.7320
COUNTY Fresno
LONGITUDE -119.4771
COLLECTION DATE Thursday, December 7, 2017
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:00 AM - 7:15 AM	0	0	0	0	3	0	2	1	0	113	0	5	0	169	15	6
7:15 AM - 7:30 AM	0	0	0	0	7	0	2	1	1	139	0	7	0	168	9	6
7:30 AM - 7:45 AM	0	0	0	0	1	0	5	0	1	156	0	6	0	185	7	4
7:45 AM - 8:00 AM	0	0	0	0	2	0	2	0	2	119	0	7	0	153	8	8
8:00 AM - 8:15 AM	0	0	0	0	4	0	2	2	1	109	0	10	0	141	5	8
8:15 AM - 8:30 AM	0	0	0	0	1	0	2	2	3	112	0	12	0	139	1	1
8:30 AM - 8:45 AM	0	0	0	0	1	0	3	0	7	135	0	11	0	125	2	9
8:45 AM - 9:00 AM	0	0	0	0	3	0	1	1	3	93	0	10	0	112	2	11
TOTAL	**0**	**0**	**0**	**0**	**22**	**0**	**19**	**7**	**18**	**976**	**0**	**68**	**0**	**1192**	**49**	**53**

	Northbound				Southbound				Eastbound				Westbound			
Time	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	0	0	0	0	5	0	4	3	5	175	0	4	0	173	1	1
4:15 PM - 4:30 PM	0	0	0	0	6	0	4	1	0	196	0	7	0	153	1	2
4:30 PM - 4:45 PM	0	0	0	0	3	0	2	0	0	222	0	7	0	135	1	9
4:45 PM - 5:00 PM	0	0	0	0	9	0	5	1	1	208	0	4	0	145	3	7
5:00 PM - 5:15 PM	0	0	0	0	3	0	2	0	2	190	0	5	0	165	0	3
5:15 PM - 5:30 PM	0	0	0	0	6	0	3	1	0	180	0	4	0	155	2	3
5:30 PM - 5:45 PM	0	0	0	0	4	0	2	2	2	189	0	7	0	143	2	5
5:45 PM - 6:00 PM	0	0	0	0	4	0	0	1	1	174	0	4	0	89	0	1
TOTAL	**0**	**0**	**0**	**0**	**40**	**0**	**22**	**9**	**11**	**1534**	**0**	**42**	**0**	**1158**	**10**	**31**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:00 AM - 8:00 AM	0	0	0	0	13	0	11	2	4	527	0	25	0	675	39	24
4:00 PM - 5:00 PM	0	0	0	0	23	0	15	5	6	801	0	22	0	606	6	19

	PHF	Trucks
AM	0.894	4.0%
PM	0.982	3.2%



Metro Traffic Data Inc.
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Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

Precision Civil Engineering, Inc.
1234 "O" Street
Fresno, CA 93721

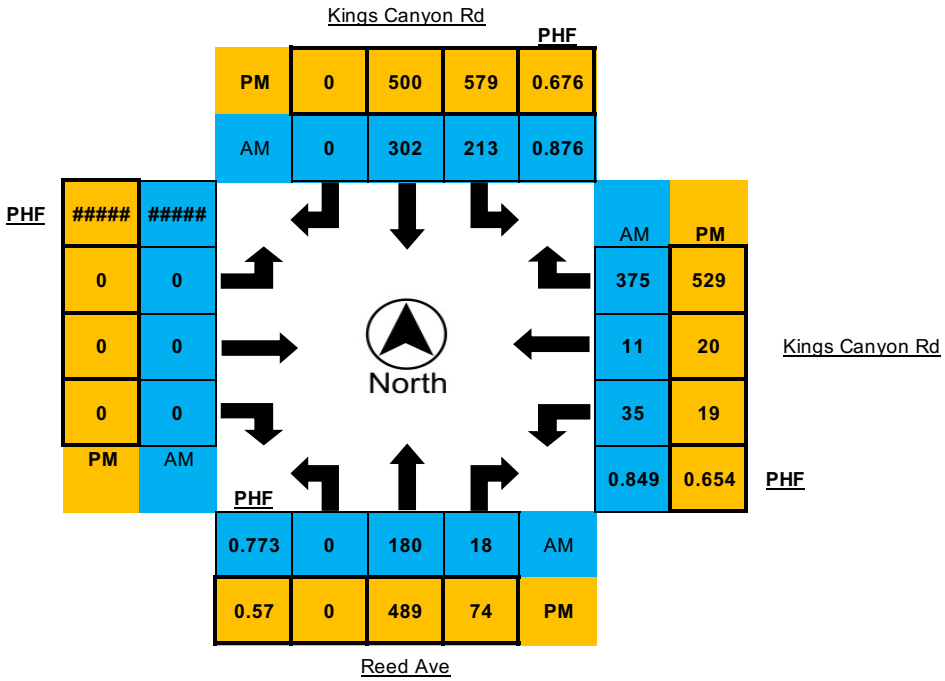
LOCATION Kings Canyon Rd @ Reed Ave
LATITUDE 36.7202
COUNTY Fresno
LONGITUDE -119.4573
COLLECTION DATE Thursday, December 7, 2017
WEATHER Clear

	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	38	4	3	47	59	0	7	0	0	0	0	9	3	112	3
7:15 AM - 7:30 AM	0	60	4	1	65	81	0	6	0	0	0	0	10	2	89	2
7:30 AM - 7:45 AM	0	53	4	3	52	95	0	4	0	0	0	0	9	4	81	4
7:45 AM - 8:00 AM	0	29	6	5	49	67	0	5	0	0	0	0	7	2	93	2
8:00 AM - 8:15 AM	0	58	1	2	43	56	0	8	0	0	0	0	4	4	63	4
8:15 AM - 8:30 AM	0	39	3	0	51	49	0	9	0	0	0	0	4	0	64	0
8:30 AM - 8:45 AM	0	49	4	6	42	71	0	11	0	0	0	0	6	4	60	4
8:45 AM - 9:00 AM	0	41	4	8	41	58	0	6	0	0	0	0	3	3	55	3
TOTAL	**0**	**367**	**30**	**28**	**390**	**536**	**0**	**56**	**0**	**0**	**0**	**0**	**52**	**22**	**617**	**22**

	Northbound				Southbound				Eastbound				Westbound			
Time	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	0	221	26	4	205	194	0	18	0	0	0	0	6	4	207	4
4:15 PM - 4:30 PM	0	90	20	4	146	114	0	9	0	0	0	0	5	4	129	4
4:30 PM - 4:45 PM	0	110	18	8	141	117	0	7	0	0	0	0	5	9	113	9
4:45 PM - 5:00 PM	0	68	10	1	87	75	0	4	0	0	0	0	3	3	80	3
5:00 PM - 5:15 PM	0	57	4	2	97	89	0	5	0	0	0	0	5	1	70	1
5:15 PM - 5:30 PM	0	83	10	0	89	75	0	3	0	0	0	0	4	1	72	1
5:30 PM - 5:45 PM	0	87	8	2	111	98	0	6	0	0	0	0	1	7	62	7
5:45 PM - 6:00 PM	0	47	6	2	82	62	0	6	0	0	0	0	5	2	45	2
TOTAL	**0**	**763**	**102**	**23**	**958**	**824**	**0**	**58**	**0**	**0**	**0**	**0**	**34**	**31**	**778**	**31**

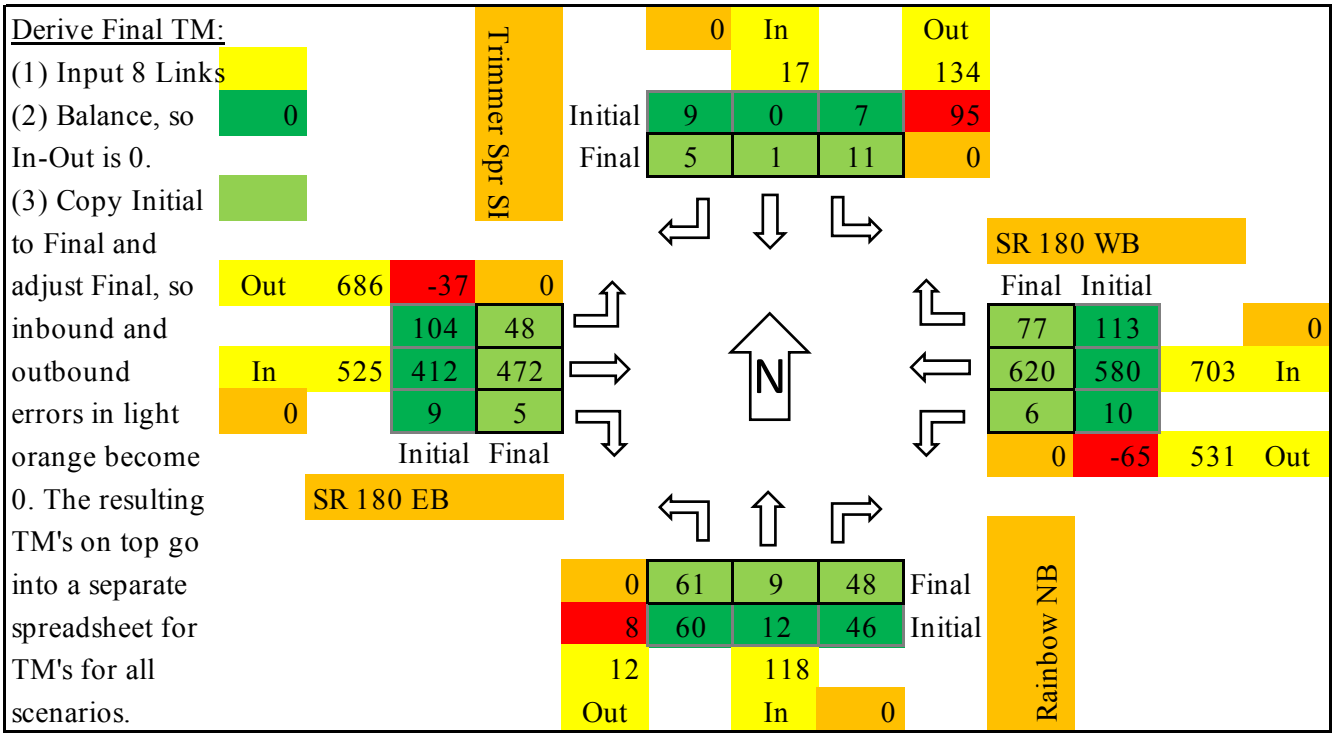
	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:00 AM - 8:00 AM	0	180	18	12	213	302	0	22	0	0	0	0	35	11	375	11
4:00 PM - 5:00 PM	0	489	74	17	579	500	0	38	0	0	0	0	19	20	529	20

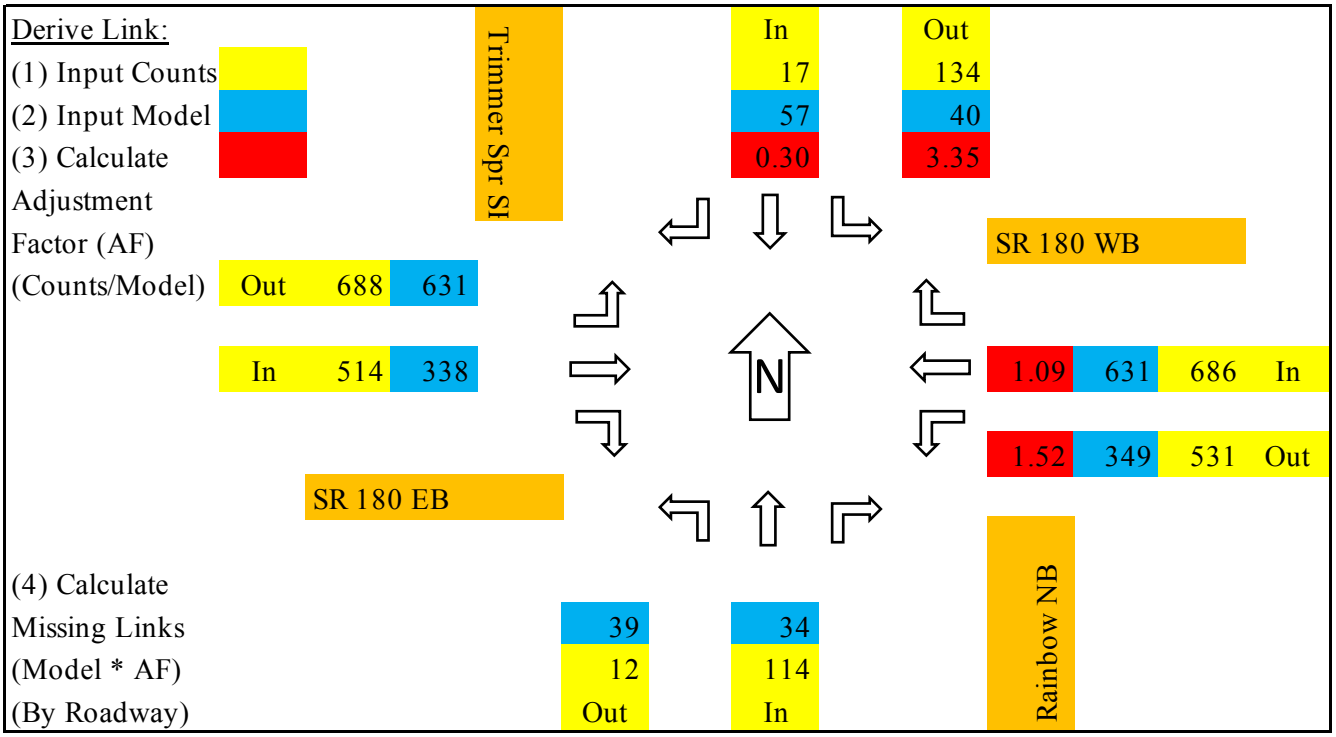
	PHF	Trucks
AM	0.912	4.0%
PM	0.640	3.4%



3: SR 180/Oliver-Rainbow: Existing

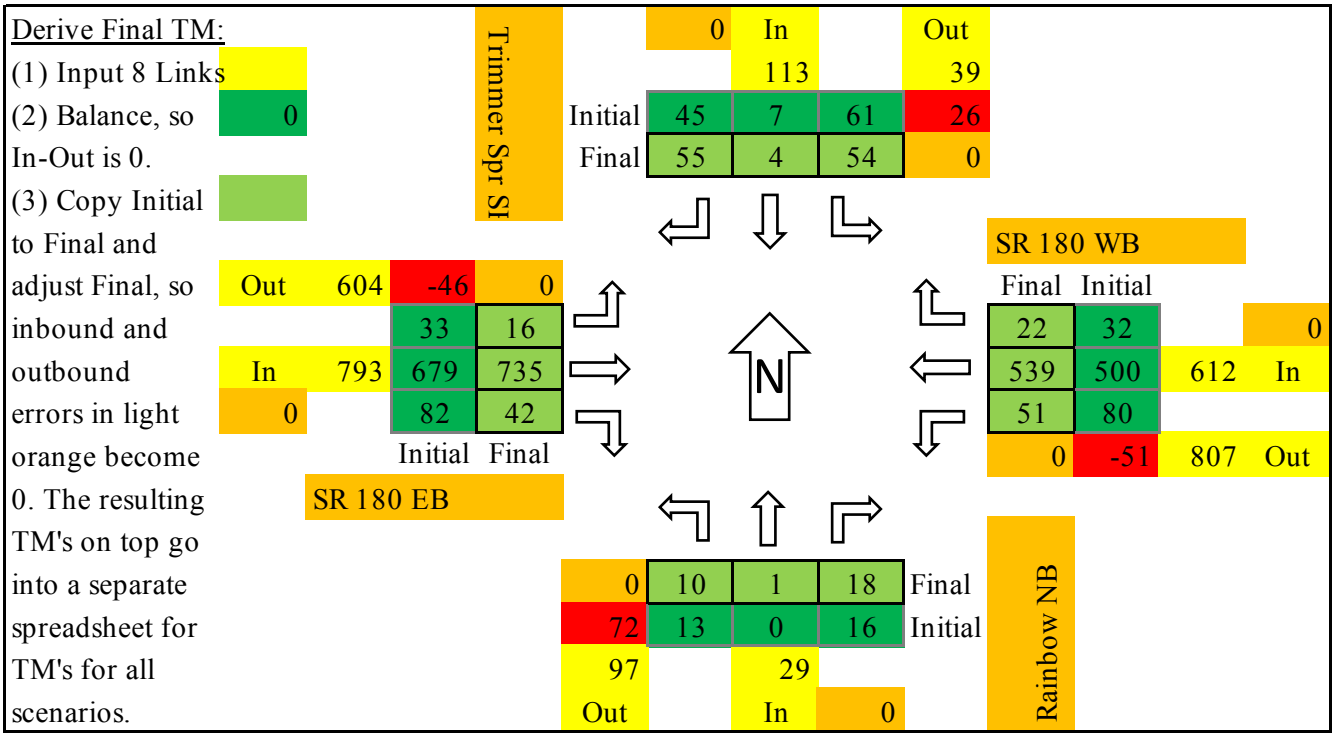
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
AM Volume	48	472	5	6	620	77	61	9	48	11	1	5

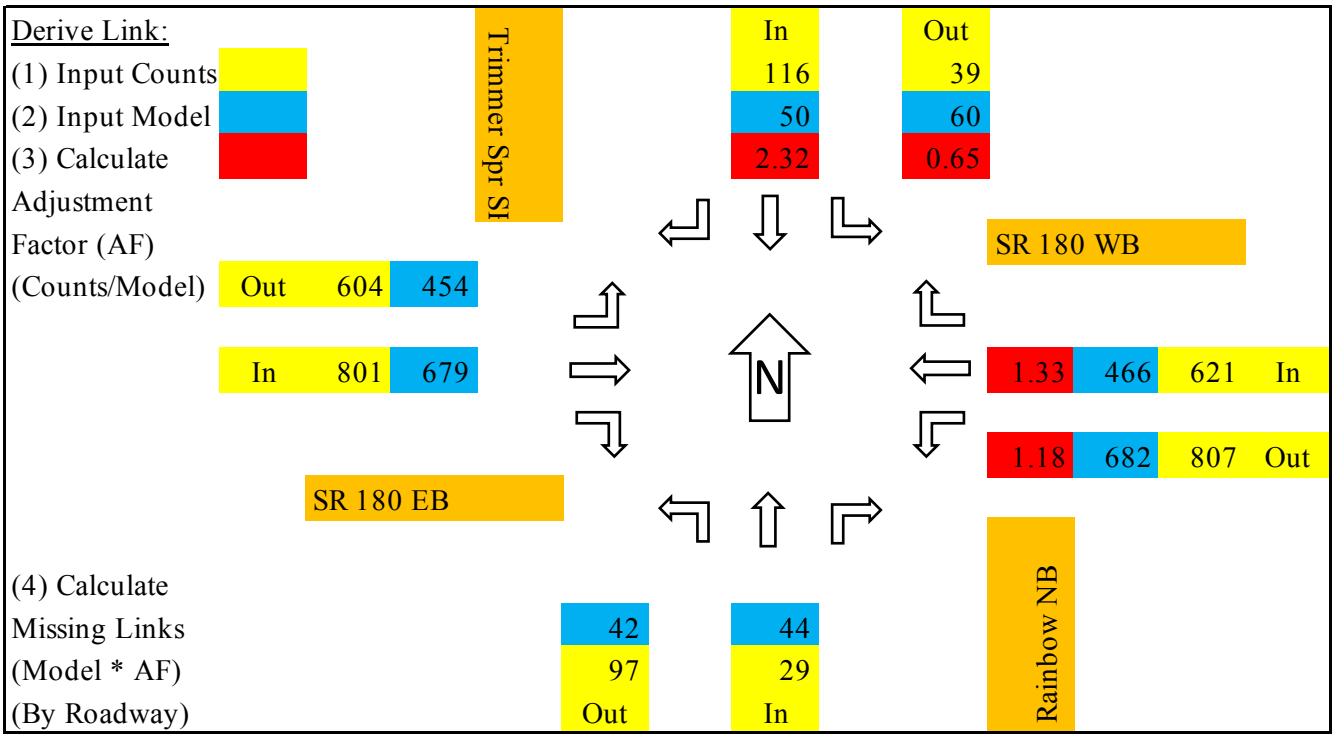




3: SR 180/Oliver-Rainbow: Existing

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
PM Volume	16	735	42	51	539	22	10	1	18	54	4	55





Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

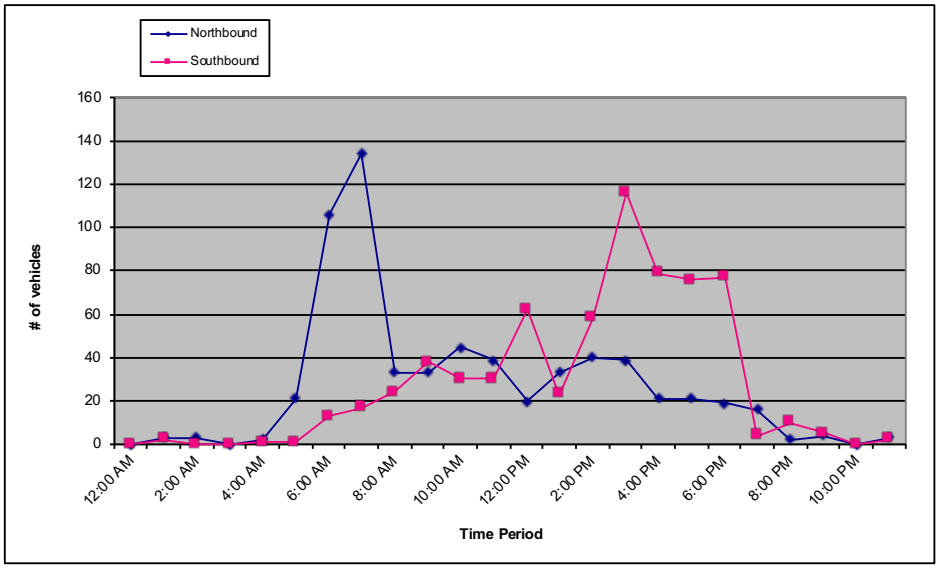
24 Hour Volume Report

Prepared For: **Precision Civil Engineering, Inc.**
1234 "O" Street
Fresno, CA 93721

LOCATION Trimmer Springs Rd, south of Kings River Packing
LATITUDE 36.7818222
COUNTY Fresno
LONGITUDE -119.4302903
COLLECTION DATE Thursday, December 7, 2017
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	3	0	0	**3**	2	0	0	0	**2**	**5**
2:00 AM	1	0	2	0	**3**	0	0	0	0	**0**	**3**
3:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
4:00 AM	0	0	0	2	**2**	0	0	0	1	**1**	**3**
5:00 AM	2	1	6	12	**21**	0	0	0	1	**1**	**22**
6:00 AM	16	15	22	53	**106**	0	0	7	6	**13**	**119**
7:00 AM	63	43	19	9	**134**	11	1	4	1	**17**	**151**
8:00 AM	11	7	7	8	**33**	12	7	5	0	**24**	**57**
9:00 AM	8	13	4	8	**33**	2	13	15	8	**38**	**71**
10:00 AM	8	7	12	18	**45**	12	6	9	3	**30**	**75**
11:00 AM	13	13	6	7	**39**	12	3	8	7	**30**	**69**
12:00 PM	9	3	4	4	**20**	31	10	8	13	**62**	**82**
1:00 PM	3	12	11	7	**33**	7	4	5	7	**23**	**56**
2:00 PM	9	12	10	9	**40**	7	15	16	20	**58**	**98**
3:00 PM	8	11	9	11	**39**	27	31	38	20	**116**	**155**
4:00 PM	11	3	5	2	**21**	24	16	20	19	**79**	**100**
5:00 PM	4	8	2	7	**21**	17	13	19	27	**76**	**97**
6:00 PM	8	5	4	2	**19**	51	15	6	5	**77**	**96**
7:00 PM	1	5	1	9	**16**	0	1	3	0	**4**	**20**
8:00 PM	0	0	2	0	**2**	1	3	2	4	**10**	**12**
9:00 PM	1	0	3	0	**4**	3	0	2	0	**5**	**9**
10:00 PM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
11:00 PM	0	0	3	0	**3**	0	0	0	2	**2**	**5**
Total	**48.8%**				**637**	**51.2%**				**668**	
	1305										

AM%	**44.1%**	**AM Peak**	**206**	**6:30 am to 7:30 am**	**AM P.H.F.**	**0.70**
PM%	**55.9%**	**PM Peak**	**155**	**3:15 pm to 4:15 pm**	**PM P.H.F.**	**0.82**



Metro Traffic Data Inc.
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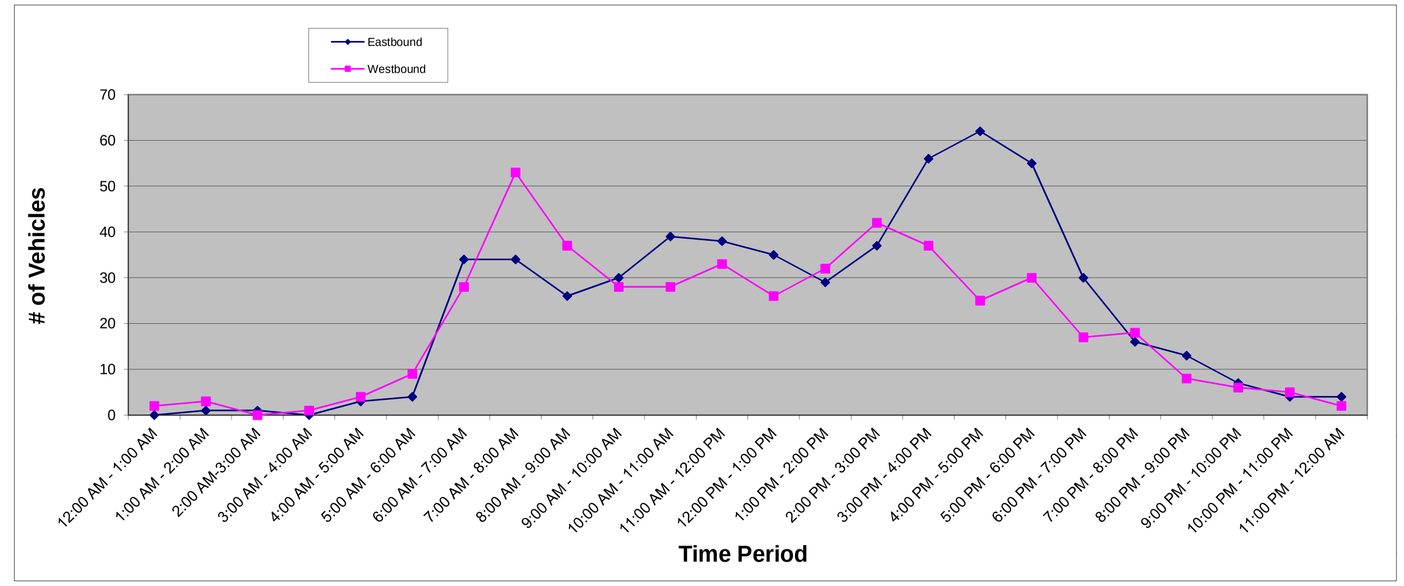
Prepared For:

Precision Civil Engineering, Inc.
1234 "O" Street
Fresno, CA 93721

Description	Belmont Ave, west of Academy Ave
Survey Date	Wednesday, December 20, 2017
Latitude	36.750092
Longitude	-119.5580654
Number of Lanes	2
Total Volume	1032
HV Percentage	5.3%
AM Peak Period	6:45am-7:45am
AM Peak Volume	94
AM PHF	0.69
PM Peak Period	3:15pm-4:15pm
PM Peak Volume	113
PM PHF	0.81

Class 1 - Motorcycles, 2 axles
Class 2 - Passenger cars, 2 axles
Class 3 - Pickup trucks, vans, 2 axles
Class 4 - Busses
Class 5 - Single unit, 2 axle, 6 tires
Class 6 - Single unit truck, 3 axles
Class 7 - Single unit, 4 axles
Class 8 - Double unit, < 5 axles
Class 9 - Double unit, 5 axles
Class 10 - Double unit, > 5 axles
Class 11 - Multi unit, 5 axles
Class 12 - Multi unit, 6 axles
Class 13 - Multi unit, > 6 axles
Class 14 - Unclassifiable

1st First 15 minute interval
2nd Second 15 minute interval
3rd Third 15 minute interval
4th Fourth 15 minute interval
T Hourly Total



Eastbound

Hour	Class 1					Class 2					Class 3					Class 4					Class 5					Class 6					Class 7				
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM - 2:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM - 6:00 AM	0	0	0	0	0	0	0	3	0	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM - 7:00 AM	0	0	0	0	0	0	2	5	7	14	6	1	3	10	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM - 8:00 AM	0	0	1	0	1	1	1	2	4	8	4	2	6	6	18	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	0	0	0	0
8:00 AM - 9:00 AM	0	0	0	0	0	2	1	2	7	12	3	2	6	2	13	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
9:00 AM - 10:00 AM	0	0	0	0	0	2	4	6	4	16	3	4	2	2	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM - 11:00 AM	0	0	0	0	0	4	2	6	5	17	6	5	4	4	19	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
11:00 AM - 12:00 PM	0	0	0	0	0	5	4	9	5	23	5	2	4	1	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM - 1:00 PM	0	0	0	0	0	8	3	7	5	23	3	2	3	3	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM - 2:00 PM	0	0	0	0	0	4	2	8	5	19	4	3	1	1	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM - 3:00 PM	0	0	0	0	0	3	6	8	4	21	4	6	4	1	15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
3:00 PM - 4:00 PM	0	0	0	0	0	5	11	9	13	38	3	6	2	7	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 5:00 PM	0	0	1	0	1	13	5	7	8	33	14	4	3	3	24	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	0	0	0	9	10	10	6	35	4	5	6	4	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM - 7:00 PM	0	0	0	0	0	9	5	4	6	24	1	1	1	0	3	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0
7:00 PM - 8:00 PM	0	0	0	0	0	4	1	2	4	11	1	1	1	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM - 9:00 PM	0	0	0	0	0	4	2	3	2	11	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM - 10:00 PM	0	0	0	0	0	3	0	4	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM - 11:00 PM	0	0	0	0	0	2	1	0	0	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM - 12:00 AM	0	0	0	0	0	1	0	0	2	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2					322					206					0					5					5					0				
Percentage	0.4%					57.7%					36.9%					0.0%					0.9%					0.9%					0.0%				

Hour	Class 8					Class 9					Class 10					Class 11					Class 12					Class 13					Class 14					Total
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:00 AM - 6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
9:00 AM - 10:00 AM	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
10:00 AM - 11:00 AM	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39
11:00 AM - 12:00 PM	0	0	0	0	0	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38
12:00 PM - 1:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35
1:00 PM - 2:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
2:00 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37
3:00 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56
4:00 PM - 5:00 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	55
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
7:00 PM - 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
8:00 PM - 9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
9:00 PM - 10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	1					13					0					3					1					0					0					558
Percentage	0.2%					2.3%					0.0%					0.5%					0.2%					0.0%					0.0%					100.0%

10:45am-11:45am AM PK 40 AM PHF 0.77 3:15pm-4:15pm PM PK 76 PM PHF 0.68 HV Percent 5.0%

Westbound

Hour	Class 1					Class 2					Class 3					Class 4					Class 5					Class 6					Class 7				
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T
12:00 AM - 1:00 AM	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM - 2:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	2	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM - 6:00 AM	0	0	0	0	0	0	1	2	1	4	0	1	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM - 7:00 AM	0	0	0	0	0	4	5	6	5	20	3	1	1	3	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM - 8:00 AM	0	0	0	0	0	7	9	13	1	30	1	5	9	4	19	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
8:00 AM - 9:00 AM	0	0	0	0	0	6	5	6	5	22	4	4	1	4	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM - 10:00 AM	0	0	0	0	0	2	3	4	5	14	4	3	2	4	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM - 11:00 AM	0	0	0	0	0	2	7	6	1	16	3	2	2	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM - 12:00 PM	0	0	0	0	0	6	5	3	4	18	2	4	4	2	12	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
12:00 PM - 1:00 PM	0	0	0	0	0	3	6	7	3	19	4	1	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM - 2:00 PM	0	0	0	0	0	7	5	5	5	22	0	3	2	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM - 3:00 PM	0	0	0	0	0	4	7	5	4	20	3	2	6	7	18	0	0	0	0	0	0	0	1	0	1	0	0	2	0	2	0	0	0	0	0
3:00 PM - 4:00 PM	0	0	0	0	0	5	7	7	6	25	2	4	1	4	11	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
4:00 PM - 5:00 PM	0	0	0	0	0	3	3	4	4	14	4	2	0	2	8	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	0	0	0	4	6	6	4	20	4	1	3	0	8	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0
6:00 PM - 7:00 PM	0	0	0	0	0	2	6	1	2	11	1	1	1	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM - 8:00 PM	0	0	0	0	0	3	3	6	4	16	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM - 9:00 PM	0	0	0	0	0	2	2	1	2	7	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM - 10:00 PM	0	0	0	0	0	1	0	2	0	3	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM - 11:00 PM	0	0	0	0	0	1	1	0	1	3	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM - 12:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0					290					157					0					6					3					0				
Percentage	0.0%					61.2%					33.1%					0.0%					1.3%					0.6%					0.0%				

Hour	Class 8					Class 9					Class 10					Class 11					Class 12					Class 13					Class 14					Total
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:00 AM - 6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
7:00 AM - 8:00 AM	0	0	1	0	1	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37
9:00 AM - 10:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
10:00 AM - 11:00 AM	0	0	0	0	0	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	28
11:00 AM - 12:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33
12:00 PM - 1:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
1:00 PM - 2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
2:00 PM - 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	42
3:00 PM - 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
5:00 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
6:00 PM - 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	17
7:00 PM - 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
8:00 PM - 9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
9:00 PM - 10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	1					11					0					3					0					3					0					474
Percentage	0.2%					2.3%					0.0%					0.6%					0.0%					0.6%					0.0%					100.0%

6:45am-7:45am AM PK 56 AM PHF 0.58 2:30pm-3:30pm PM PK 44 PM PHF 0.79 HV Percent 5.7%

Description	Trimmer Springs Rd, south of Kings River Packing
Survey Date	Wednesday, December 20, 2017
Latitude	36.781822
Longitude	-119.4302903
Number of Lanes	2
Total Volume	951
HV Percentage	10.9%
AM Peak Period	6:30am-7:30am
AM Peak Volume	208
AM PHF	0.70
PM Peak Period	5:15pm-6:15pm
PM Peak Volume	163
PM PHF	0.65

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

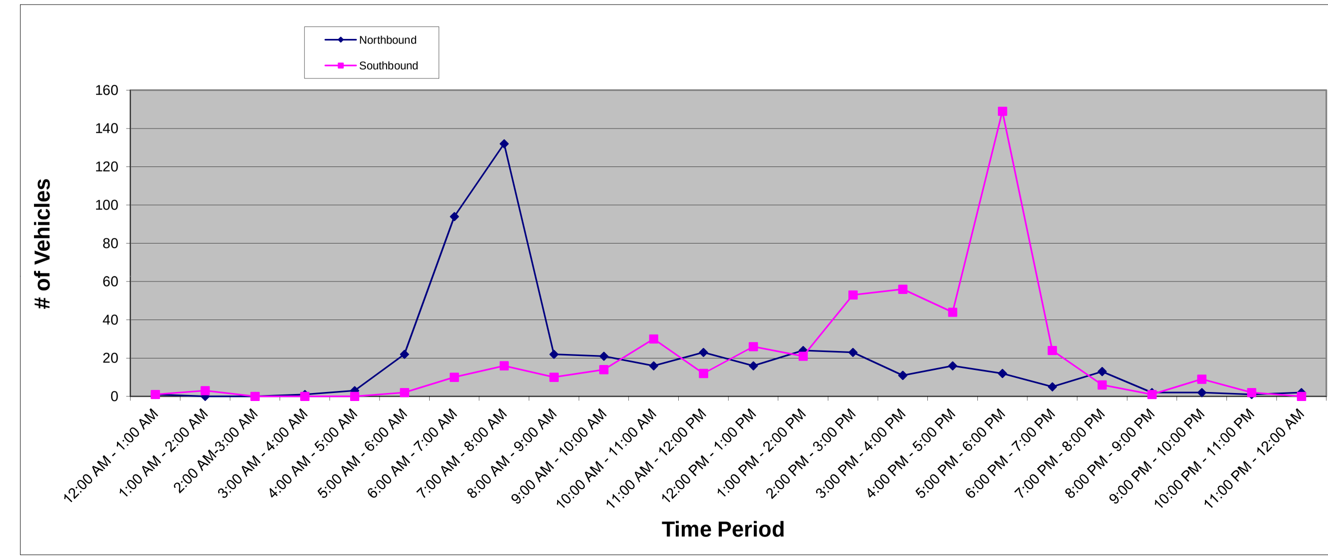
800-975-6938 Phone/Fax
www.metrotraffic data.com

Prepared For:

Precision Civil Engineering, Inc.
1234 "O" Street
Fresno, CA 93721

Class 1 - Motorcycles, 2 axles
Class 2 - Passenger cars, 2 axles
Class 3 - Pickup trucks, vans, 2 axles
Class 4 - Busses
Class 5 - Single unit, 2 axle, 6 tires
Class 6 - Single unit truck, 3 axles
Class 7 - Single unit, 4 axles
Class 8 - Double unit, < 5 axles
Class 9 - Double unit, 5 axles
Class 10 - Double unit, > 5 axles
Class 11 - Multi unit, 5 axles
Class 12 - Multi unit, 6 axles
Class 13 - Multi unit, > 6 axles
Class 14 - Unclassifiable

1st First 15 minute interval
2nd Second 15 minute interval
3rd Third 15 minute interval
4th Fourth 15 minute interval
T Hourly Total



Northbound

Hour	Class 1					Class 2					Class 3					Class 4					Class 5					Class 6					Class 7				
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM - 6:00 AM	0	0	0	0	0	1	0	7	10	18	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM - 7:00 AM	0	0	0	0	0	8	8	16	42	74	0	2	10	6	18	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
7:00 AM - 8:00 AM	0	0	0	0	0	56	46	6	3	111	10	3	4	3	20	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
8:00 AM - 9:00 AM	0	0	0	0	0	2	8	3	1	14	1	4	1	1	7	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
9:00 AM - 10:00 AM	0	0	0	0	0	0	0	1	2	3	5	2	2	4	13	0	0	0	0	0	0	1	1	1	3	0	0	0	0	0	0	0	0	0	0
10:00 AM - 11:00 AM	0	0	0	0	0	3	4	1	1	9	2	1	2	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM - 12:00 PM	0	0	0	0	0	4	0	5	1	10	4	4	1	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM - 1:00 PM	0	0	0	0	0	2	2	1	4	9	0	0	0	3	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
1:00 PM - 2:00 PM	0	0	0	0	0	1	2	1	1	5	4	2	1	4	11	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
2:00 PM - 3:00 PM	0	0	0	0	0	2	2	3	3	10	1	1	4	2	8	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
3:00 PM - 4:00 PM	0	0	0	0	0	1	2	0	2	5	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
4:00 PM - 5:00 PM	0	0	0	0	0	1	1	0	1	3	2	3	1	1	7	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	0	0	0	1	2	0	0	3	1	2	1	0	4	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
6:00 PM - 7:00 PM	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0
7:00 PM - 8:00 PM	0	0	0	0	0	0	1	2	6	9	0	0	1	1	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
8:00 PM - 9:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM - 10:00 PM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM - 12:00 AM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0					292					119					0					14					1					0				
Percentage	0.0%					63.2%					25.8%					0.0%					3.0%					0.2%					0.0%				

Hour	Class 8					Class 9					Class 10					Class 11					Class 12					Class 13					Class 14					Total
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	
12:00 AM - 1:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:00 AM - 6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
6:00 AM - 7:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	132
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
9:00 AM - 10:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
10:00 AM - 11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
11:00 AM - 12:00 PM	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
12:00 PM - 1:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
1:00 PM - 2:00 PM	0	0	0	1	1	2	0	0	3	5	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
2:00 PM - 3:00 PM	0	0	0	0	0	2	0	1	0	3	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
3:00 PM - 4:00 PM	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
4:00 PM - 5:00 PM	0	0	0	0	0	2	1	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
5:00 PM - 6:00 PM	0	0	0	0	0	1	1	0	1	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
6:00 PM - 7:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
7:00 PM - 8:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
8:00 PM - 9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:00 PM - 10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	2					26					0					8					0					0					0					462
Percentage	0.4%					5.6%					0.0%					1.7%					0.0%					0.0%					0.0%					100.0%

6:30am-7:30am AM PK 189 AM PHF 0.72 1:45pm-2:45pm PM PK 27 PM PHF 0.75 HV Percent 11.0%

Southbound

Hour	Class 1					Class 2					Class 3					Class 4					Class 5					Class 6					Class 7				
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	1	1	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM - 6:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	6	6	0	1	2	0	3	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
7:00 AM - 8:00 AM	0	0	0	0	0	7	0	0	2	9	1	2	2	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 9:00 AM	0	0	0	0	0	2	0	1	0	3	2	3	0	1	6	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
9:00 AM - 10:00 AM	0	0	0	0	0	1	0	0	0	1	3	2	3	2	10	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
10:00 AM - 11:00 AM	0	0	0	0	0	5	5	3	0	13	4	6	3	2	15	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
11:00 AM - 12:00 PM	0	0	0	0	0	1	1	3	0	5	1	0	1	5	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM - 1:00 PM	0	0	0	0	0	3	3	1	4	11	5	3	1	1	10	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
1:00 PM - 2:00 PM	0	0	0	0	0	1	1	1	5	8	2	4	2	2	10	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
2:00 PM - 3:00 PM	1	0	0	0	1	3	0	23	10	36	2	0	1	3	6	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
3:00 PM - 4:00 PM	0	0	0	0	0	15	12	5	3	35	2	5	8	3	18	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
4:00 PM - 5:00 PM	0	0	0	0	0	7	2	6	4	19	4	0	6	5	15	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
5:00 PM - 6:00 PM	0	0	0	0	0	10	44	53	18	125	0	5	7	5	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM - 7:00 PM	0	0	0	0	0	13	3	2	1	19	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
7:00 PM - 8:00 PM	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
8:00 PM - 9:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM - 10:00 PM	0	0	0	0	0	0	5	3	0	8	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1					304					131					0					11					0					0				
Percentage	0.2%					62.2%					26.8%					0.0%					2.2%					0.0%					0.0%				

Hour	Class 8					Class 9					Class 10					Class 11					Class 12					Class 13					Class 14					Total
	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	1st	2nd	3rd	4th	T	
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
2:00 AM-3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM - 6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:00 AM - 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
9:00 AM - 10:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
10:00 AM - 11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
11:00 AM - 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
12:00 PM - 1:00 PM	0	0	0	0	0	1	0	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
1:00 PM - 2:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	21
2:00 PM - 3:00 PM	1	0	0	0	1	1	1	1	1	4	0	0	0	0	0	2	1	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53
3:00 PM - 4:00 PM	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56
4:00 PM - 5:00 PM	0	0	0	0	0	2	3	0	1	6	0	0	0	0	0	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44
5:00 PM - 6:00 PM	0	0	1	1	2	1	3	0	0	4	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	149
6:00 PM - 7:00 PM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
7:00 PM - 8:00 PM	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
8:00 PM - 9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
9:00 PM - 10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3					26					1					11					0					1					0					489
Percentage	0.6%					5.3%					0.2%					2.2%					0.0%					0.2%					0.0%					100.0%

9:45am-10:45am AM PK 30 AM PHF 0.62 5:15pm-6:15pm PM PK 153 PM PHF 0.62 HV Percent 10.8%

Appendix F: Intersection Turning Movement, LOS, and Queuing Results

Table 1-1: SR 180/Rio Vista AM: Volume, LOS, Queuing

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Analysis												
Total Volume	4	527			675	39				13		11
Truck Volume	0	53			68	4				1		1
PCE Volume	4	607			777	45				15		13
Delay, LOS										31.5 D		
Queue (feet)										25		
Near-Term Analysis												
Total Volume	5	611	6	7	763	44	79	12	62	13	1	11
Truck Volume	0	61	0	1	77	5	8	4	6	1	0	1
PCE Volume	5	703	6	9	879	52	91	18	71	15	1	13
Delay, LOS	10.4 B			9.4 A			23.2 C	14.8 B	14.8 B	22.6 C	12.9 B	12.9 B
Queue (feet)	25			25			50	25	25	25	25	25
Near-Term Plus Phase One Analysis												
Total Volume						2				1		
Truck Volume						1				0		
PCE Volume	5	703	6	9	879	56	91	18	71	16	1	13
Delay, LOS	10.4 B			9.4 A			23.2 C	14.8 B	14.8 B	22.8 C	12.9 B	12.9 B
Queue (feet)	25			25			50	25	25	25	25	25
Cumulative Analysis												
Total Volume	6	764	642	7	932	61	111	16	87	13	1	11
Truck Volume	0	77	65	0	94	6	11	5	9	1	0	1
PCE Volume	6	880	740	7	1073	70	128	24	101	15	1	13
Delay, LOS	11.7 B			15.8 C			44.2 E	19.3 C	19.3 C	30.9 D	15.6 C	15.6 C
Queue (feet)	25			25			100	50	50	25	25	25
Cumulative Plus Full Build-out Analysis												
Total Volume						8				2		
Truck Volume						4				1		
PCE Volume	6	880	740	7	1073	84	128	24	101	19	1	13
Delay, LOS	11.8 B			15.8 C			44.2 E	19.4 C	19.4 C	32.1 D	15.8 C	15.8 C
Queue (feet)	25			25			100	50	50	25	25	25

PCE Volume: Passenger Car Equivalent Volume: 1 Truck = 2.5 Passenger Cars

Sources: Metro Traffic Data, Fresno COG, Synchro 9 Per Highway Capacity Manual (2010)

Table 1-2: SR 180/Rio Vista AM: Growth Projections

	EB	WB	NB	SB
Existing 2015	339	599	40	57
Near-Term 2022	392	678	40	57
Near-Term Factor	1.16	1.13	1	1
Cumulative 2035	490	824	40	57
Cumulative Factor	1.45	1.38	1	1

Source: Fresno COG: Peak Hour Specific Approach Volume

(1) If (2035 Volume) < (2015 Volume), then 2015 Volume was also used for the 2035 Volume.

(2) If no Minor Roadway Volume Provided, then Major Roadway Volume was also used for Minor Roadway Approaches.

(3) Factors were applied to Total and Truck Volumes for Near-Term and Cumulative Analyses.

(4) For Near-Term, missing volumes and projections came from SR 180/Oliver-Rainbow.

Table 1-3: SR 180/Rio Vista PM: Volume, LOS, Queuing

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Analysis												
Total Volume	6	801			606	6				23		15
Truck Volume	0	80			61	1				4		2
PCE Volume	6	921			698	8				29		18
Delay, LOS	0.1 A	0.2 A								41.3 E		
Queue (feet)	25									50		
Near-Term Analysis												
Total Volume	7	897	46	60	721	7	13	1	24	23	4	15
Truck Volume	0	90	4	6	73	1	1	1	3	4	2	2
PCE Volume	7	1032	52	69	831	9	15	3	29	29	7	18
Delay, LOS	10.0 A			12.2 B			27.3 D	14.6 B	14.6 B	30.0 D	18.0 C	18.0 C
Queue (feet)	25			25			25	25	25	25	25	25
Near-Term Plus Phase One Analysis												
Total Volume						1				2		
Truck Volume						0				0		
PCE Volume	7	1032	52	69	831	10	15	3	29	31	7	18
Delay, LOS	10.0 A			12.2 B			27.3 D	14.6 B	14.6 B	30.4 D	18.0 C	18.0 C
Queue (feet)	25			25			25	25	25	25	25	25
Cumulative Analysis												
Total Volume	8	1065	53	76	927	11	19	2	34	23	4	15
Truck Volume	0	106	5	7	93	2	2	2	4	4	2	2
PCE Volume	8	1224	61	87	1067	14	22	5	40	29	7	18
Delay, LOS	11.3 B			14.5 B			40.2 E	18.1 C	18.1 C	52.8 F	25.9 D	25.9 D
Queue (feet)	25			25			25	25	25	50	25	25
Cumulative Plus Full Build-out Analysis												
Total Volume						2				8		
Truck Volume						1				3		
PCE Volume	8	1224	61	87	1067	18	22	5	40	42	7	18
Delay, LOS	11.3 B			14.5 B			40.2 E	18.1 C	18.1 C	62.7 F	25.9 D	25.9 D
Queue (feet)	25			25			25	25	25	50	25	25

PCE: Passenger Car Equivalent: 1 Truck = 2.5 Passenger Cars

Sources: Metro Traffic Data, Fresno COG, Synchro 9 Per Highway Capacity Manual (2010)

Table 1-4: SR 180/Rio Vista PM: Growth Projections

	EB	WB	NB	SB
Existing 2015	675	429	60	50
Near-Term 2022	753	509	60	50
Near-Term Factor	1.12	1.19	1	1
Cumulative 2035	899	658	60	50
Cumulative Factor	1.33	1.53	1	1

Source: Fresno COG: Peak Hour Specific Approach Volume

(1) If (2035 Volume) < (2015 Volume), then 2015 Volume was also used for the 2035 Volume.

(2) If no Minor Roadway Volume Provided, then Major Roadway Volume was also used for Minor Roadway Approaches.

(3) Factors were applied to Total and Truck Volumes for Near-Term and Cumulative Analyses.

(4) For Near-Term, missing volumes and projections came from SR 180/Oliver-Rainbow.

Table 2-1: SR 180/Reed AM: Volume, LOS, Queuing

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Analysis												
Total Volume				46		375		180	18	213	302	
Truck Volume				5		2		2	2	1	0	
PCE Volume				54		378		183	21	215	302	
Delay, LOS					21.1 C		12.6 B		8.3 A	14.4 B	17.2 C	
Queue (feet)												
Near-Term Analysis												
Total Volume				48		390		216	22	251	356	
Truck Volume				5		2		2	2	1	0	
PCE Volume				56		393		219	25	253	356	
Delay, LOS	8.1 A											
Queue (feet)		50	50	25	75		50		25			
Near-Term Plus Phase One Analysis												
Total Volume						1		1		0	1	
Truck Volume						1		0		0	0	
PCE Volume				56		396		220	25	253	357	
Delay, LOS	8.1 A											
Queue (feet)		50	50	25	75		50		25			
Cumulative Analysis												
Total Volume				52		420		283	28	322	456	
Truck Volume				6		2		3	3	2	0	
PCE Volume				61		423		288	33	325	456	
Delay, LOS	8.5 A											
Queue (feet)		50	50	50	75		75		25			
Cumulative Plus Full Build-out Analysis												
Total Volume						4		4		1	1	
Truck Volume						2		2		0	1	
PCE Volume				61		430		295	33	326	459	
Delay, LOS	8.6 A											
Queue (feet)		50	50	50	75		75		25			

PCE: Passenger Car Equivalent: 1 Truck = 2.5 Passenger Cars

Sources: Metro Traffic Data, Fresno COG, Synchro 9 Per Highway Capacity Manual (2010)

NT, CUM: WBR becomes WBT, NBT beccomes NBL, SBL becomes EBT, SBT becomes EBR

Table 2-2: SR 180/Reed AM: Growth Projections

	EB	WB	NB	SB
Existing 2015		333	272	302
Near-Term 2022		347	327	356
Near-Term Factor		1.04	1.2	1.18
Cumulative 2035		373	428	455
Cumulative Factor		1.12	1.57	1.51

Source: Fresno COG: Peak Hour Specific Approach Volume

(1) If (2035 Volume) < (2015 Volume), then 2015 Volume was also used for the 2035 Volume.

(2) If no Minor Roadway Volume Provided, then Major Roadway Volume was also used for Minor Roadway Approaches.

(3) Factors were applied to Total and Truck Volumes for Near-Term and Cumulative Analyses.

Table 2-3: SR 180/Reed PM: Volume, LOS, Queuing

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Analysis												
Total Volume				39		529		489	74	579	500	
Truck Volume				4		0		1	8	2	2	
PCE Volume				45		529		491	86	582	503	
Delay, LOS				302.6 F			281.9 F			423.4F		
Queue (feet)												
Near-Term Analysis												
Total Volume				43		587		572	87	648	560	
Truck Volume				4		0		1	9	2	2	
PCE Volume				49		587		574	101	651	563	
Delay, LOS	10.8 B											
Queue (feet)		125	75	50	125		125		50			
Near-Term Plus Phase One Analysis												
Total Volume						0		1		1	1	
Truck Volume						0		0		0	0	
PCE Volume				49		587		575	101	652	564	
Delay, LOS	10.8 B											
Queue (feet)		125	75	50	125		125		50			
Cumulative Analysis												
Total Volume				51		693		724	110	787	680	
Truck Volume				5		0		1	12	3	3	
PCE Volume				59		693		726	128	792	685	
Delay, LOS	12.6 B											
Queue (feet)		175	75	50	150		150		50			
Cumulative Plus Full Build-out Analysis												
Total Volume						1		1		4	4	
Truck Volume						0		1		1	2	
PCE Volume				59		694		729	128	798	692	
Delay, LOS	12.6 B											
Queue (feet)		175	75	50	150		150		50			

PCE: Passenger Car Equivalent: 1 Truck = 2.5 Passenger Cars

Sources: Metro Traffic Data, Fresno COG, Synchro 9 Per Highway Capacity Manual (2010)

NT, CUM: WBR becomes WBT, NBT beccomes NBL, SBL becomes EBT, SBT becomes EBR

Table 2-4: SR 180/Reed PM: Growth Projections

	EB	WB	NB	SB
Existing 2015		186	277	596
Near-Term 2022		206	324	670
Near-Term Factor		1.11	1.17	1.12
Cumulative 2035		243	411	808
Cumulative Factor		1.31	1.48	1.36

Source: Fresno COG: Peak Hour Specific Approach Volume

(1) If (2035 Volume) < (2015 Volume), then 2015 Volume was also used for the 2035 Volume.

(2) If no Minor Roadway Volume Provided, then Major Roadway Volume was also used for Minor Roadway Approaches.

(3) Factors were applied to Total and Truck Volumes for Near-Term and Cumulative Analyses.

Table 3-1: SR 180/Oliver-Rainbow AM: Volume, LOS, Queuing

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Analysis												
Total Volume	48	472	5	6	620	77	61	9	48	11	1	5
Truck Volume	6	48	0	1	62	8	6	3	5	1	0	0
PCE Volume	57	544	5	8	713	89	70	14	56	13	1	5
Delay, LOS	10.1 B			8.7 A			234.8F			68.1 F		
Queue (feet)	25			25			250			25		
Near-Term Analysis												
Total Volume	54	533	6	7	701	87	79	12	62	11	1	5
Truck Volume	7	54	0	1	70	9	8	4	6	1	0	0
PCE Volume	65	614	6	9	806	101	91	18	71	13	1	5
Delay, LOS	10.9 B			9.0 A			26.8 D	15.3 C	15.3 C	22.9 C	13.4 B	13.4 B
Queue (feet)	25			25			50	25	25	25	25	25
Near-Term Plus Phase One Analysis												
Total Volume	3							3			0	1
Truck Volume	1							1			0	0
PCE Volume	70	614	6	9	806	101	91	23	71	13	1	6
Delay, LOS	10.9 B			9.0 A			27.5 D	15.4 C	15.4 C	23.1 C	13.1 B	13.1 B
Queue (feet)	25			25			50	25	25	25	25	25
Cumulative Analysis												
Total Volume	65	642	7	8	843	105	111	16	87	11	1	5
Truck Volume	8	65	0	1	84	11	11	5	9	1	0	5
PCE Volume	77	740	7	10	969	122	128	24	101	13	1	13
Delay, LOS	12.4 B			9.6 A			58.3 F	20.6 C	20.6 C	30.9 D	14.2 B	14.2 B
Queue (feet)	25			25			125	50	50	25	25	25
Cumulative Plus Full Build-out Analysis												
Total Volume	11							9			2	2
Truck Volume	4							3			0	1
PCE Volume	94	740	7	10	969	122	128	38	101	13	3	17
Delay, LOS	12.6 B			9.6 A			71.2 F	22.0 C	22.0 C	32.4 D	14.2 B	14.2 B
Queue (feet)	25			25			150	50	50	25	25	25

PCE: Passenger Car Equivalent: 1 Truck = 2.5 Passenger Cars

Sources: Metro Traffic Data, Fresno COG, Synchro 9 Per Highway Capacity Manual (2010)

Table 3-2: SR 180/Oliver-Rainbow AM: Growth Projections

	EB	WB	NB	SB
Existing 2015	338	631	34	57
Near-Term 2022	381	710	44	57
Near-Term Factor	1.13	1.13	1.29	1
Cumulative 2035	460	856	62	57
Cumulative Factor	1.36	1.36	1.82	1

Source: Fresno COG: Peak Hour Specific Approach Volume

(1) If (2035 Volume) < (2015 Volume), then 2015 Volume was also used for the 2035 Volume.

(2) If no Minor Roadway Volume Provided, then Major Roadway Volume was also used for Minor Roadway Approaches.

(3) Factors were applied to Total and Truck Volumes for Near-Term and Cumulative Analyses.

Table 3-3: SR 180/Oliver-Rainbow PM: Volume, LOS, Queuing

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Analysis												
Total Volume	16	735	42	51	539	22	10	1	18	54	4	55
Truck Volume	1	74	4	5	54	2	1	1	2	2	2	6
PCE Volume	18	846	48	59	620	25	12	3	21	57	7	64
Delay, LOS	9.2 A			10.7 B			83.8 F			418.1F		
Queue (feet)	25			25			50			300		
Near-Term Analysis												
Total Volume	17	801	46	60	631	26	13	1	24	54	4	55
Truck Volume	1	81	4	6	63	2	1	1	3	2	2	6
PCE Volume	19	923	52	69	726	29	15	3	29	57	7	64
Delay, LOS	9.7 A			11.4 B			26.7 D	14.1 B	14.1 B	30.6 D	14.3 B	14.3 B
Queue (feet)	25			25			25	25	25	50	25	25
Near-Term Plus Phase One Analysis												
Total Volume	1							0			3	3
Truck Volume	0							0			1	1
PCE Volume	20	923	52	69	726	29	15	3	29	57	12	69
Delay, LOS	9.7 A			11.4 B			26.9 D	14.1 B	14.1 B	30.7 D	14.3 B	14.3 B
Queue (feet)	25			25			25	25	25	50	25	25
Cumulative Analysis												
Total Volume	20	926	53	76	803	33	19	2	34	54	4	55
Truck Volume	1	93	5	7	80	3	2	2	4	2	2	64
PCE Volume	22	1066	61	87	923	38	22	5	40	57	7	151
Delay, LOS	10.7 B			12.8 B			48.1 E	16.8 C	16.8 C	54.4 F	19.2 C	19.2 C
Queue (feet)	25			25			25	25	25	75	50	50
Cumulative Plus Full Build-out Analysis												
Total Volume	3							2			8	10
Truck Volume	1							0			3	4
PCE Volume	27	1066	61	87	923	38	22	7	40	57	20	167
Delay, LOS	10.8 B			12.8 B			53.7 F	16.9 C	16.9 C	55.2 F	20.0 C	20.0 C
Queue (feet)	25			25			25	25	25	75	75	75

PCE: Passenger Car Equivalent: 1 Truck = 2.5 Passenger Cars

Sources: Metro Traffic Data, Fresno COG, Synchro 9 Per Highway Capacity Manual (2010)

Table 3-4: SR 180/Oliver-Rainbow PM: Growth Projections

	EB	WB	NB	SB
Existing 2015	679	466	44	50
Near-Term 2022	740	546	58	50
Near-Term Factor	1.09	1.17	1.32	1
Cumulative 2035	853	694	83	50
Cumulative Factor	1.26	1.49	1.89	1

Source: Fresno COG: Peak Hour Specific Approach Volume

(1) If (2035 Volume) < (2015 Volume), then 2015 Volume was also used for the 2035 Volume.

(2) If no Minor Roadway Volume Provided, then Major Roadway Volume was also used for Minor Roadway Approaches.

(3) Factors were applied to Total and Truck Volumes for Near-Term and Cumulative Analyses.

Table 4-1: Trimmer Springs/Site Access AM: Volume, LOS, Queuing

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Analysis												
Total Volume				9		1		84	50	6	8	
Truck Volume				3		0		8	26	3	1	
PCE Volume				14		1		96	89	11	10	
Delay, LOS				10.2 B						7.9 A		
Queue (feet)				25						25		
Near-Term Analysis												
Total Volume				9		1		84	50	6	8	
Truck Volume				3		0		8	26	3	1	
PCE Volume				14		1		96	89	11	10	
Delay, LOS				10.2 B		10.2 B				7.9 A		
Queue (feet)				25		25				25		
Near-Term Plus Phase One Analysis												
Total Volume				4		0			14	2		
Truck Volume				2		0			5	1		
PCE Volume				21		1		96	111	15	10	
Delay, LOS				10.5 B						8.0 A		
Queue (feet)				25		25				25	25	
Cumulative Analysis												
Total Volume				9		1		84	50	6	8	
Truck Volume				3		0		8	26	3	1	
PCE Volume				14		1		96	89	11	10	
Delay, LOS				10.2 B						7.9 A		
Queue (feet)				25								
Cumulative Plus Full Build-out Analysis												
Total Volume				10		1			50	5		
Truck Volume				3		1			19	2		
PCE Volume				29		4		96	168	19	10	
Delay, LOS				11.0 B						8.3 A		
Queue (feet)				25					25			

PCE: Passenger Car Equivalent: 1 Truck = 2.5 Passenger Cars

Sources: Metro Traffic Data, Fresno COG, Synchro 9 Per Highway Capacity Manual (2010)

Table 4-2: Trimmer Springs/Site Access AM: Growth Projections

	EB	WB	NB	SB
Existing 2015		1	44	61
Near-Term 2022		1	44	61
Near-Term Factor		1	1	1
Cumulative 2035		1	44	61
Cumulative Factor		1	1	1

Source: Fresno COG: Peak Hour Specific Approach Volume

(1) If (2035 Volume) < (2015 Volume), then 2015 Volume was also used for the 2035 Volume.

(2) If no Minor Roadway Volume Provided, then Major Roadway Volume was also used for Minor Roadway Approaches.

(3) Factors were applied to Total and Truck Volumes for Near-Term and Cumulative Analyses.

Table 4-3: Trimmer Springs/Site Access PM: Volume, LOS, Queuing

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing Analysis												
Total Volume				44		5		26	13	1	72	
Truck Volume				22		2		3	6	1	7	
PCE Volume				77		8		31	22	3	83	
Delay, LOS				10.0 B						7.4 A		
Queue (feet)				25								
Near-Term Analysis												
Total Volume				44		5		26	13	1	72	
Truck Volume				22		2		3	6	1	7	
PCE Volume				77		8		31	22	3	83	
Delay, LOS				10.0 B						7.4 A		
Queue (feet)				25								
Near-Term Plus Phase One Analysis												
Total Volume				13		2			4	0		
Truck Volume				5		1			1	0		
PCE Volume				98		12		31	28	3	83	
Delay, LOS				10.3 B						7.5 A		
Queue (feet)				25								
Cumulative Analysis												
Total Volume				44		5		26	13	1	72	
Truck Volume				22		2		3	6	1	7	
PCE Volume				77		8		31	22	3	83	
Delay, LOS				10.0 B						7.4 A		
Queue (feet)				25								
Cumulative Plus Full Build-out Analysis												
Total Volume				45		5			12	1		
Truck Volume				17		2			5	0		
PCE Volume				148		16		31	42	4	83	
Delay, LOS				10.9 B						7.5 A		
Queue (feet)				25								

PCE: Passenger Car Equivalent: 1 Truck = 2.5 Passenger Cars

Sources: Metro Traffic Data, Fresno COG, Synchro 9 Per Highway Capacity Manual (2010)

Table 4-4: Trimmer Springs/Site Access PM: Growth Projections

	EB	WB	NB	SB
Existing 2015		1	65	55
Near-Term 2022		1	65	55
Near-Term Factor		1	1	1
Cumulative 2035		1	65	55
Cumulative Factor		1	1	1

Source: Fresno COG: Peak Hour Specific Approach Volume

(1) If (2035 Volume) < (2015 Volume), then 2015 Volume was also used for the 2035 Volume.

(2) If no Minor Roadway Volume Provided, then Major Roadway Volume was also used for Minor Roadway Approaches.

(3) Factors were applied to Total and Truck Volumes for Near-Term and Cumulative Analyses.

Appendix G: Existing Analysis AM (Synchro)

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	607	777	45	15	13
Future Vol, veh/h	4	607	777	45	15	13
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	89	89	89	89	89	89
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	4	682	873	51	17	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	924	0	-	0	1589	898
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	691	-
Critical Hdwy	4.14	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.236	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	731	-	-	-	117	335
Stage 1	-	-	-	-	394	-
Stage 2	-	-	-	-	494	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	731	-	-	-	116	335
Mov Cap-2 Maneuver	-	-	-	-	116	-
Stage 1	-	-	-	-	394	-
Stage 2	-	-	-	-	490	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	31.5
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	731	-	-	-	167
HCM Lane V/C Ratio	0.006	-	-	-	0.188
HCM Control Delay (s)	10	0	-	-	31.5
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Yield
Traffic Volume (vph)	54	378	183	21	215	302
Future Volume (vph)	54	378	183	21	215	302
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	59	415	201	23	236	332

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	474	201	23	236	332
Volume Left (vph)	59	0	0	236	0
Volume Right (vph)	415	0	23	0	0
Hadj (s)	-0.43	0.07	-0.63	0.57	0.07
Departure Headway (s)	5.5	6.9	6.2	7.0	6.4
Degree Utilization, x	0.72	0.39	0.04	0.46	0.59
Capacity (veh/h)	632	480	535	501	536
Control Delay (s)	21.1	13.1	8.3	14.4	17.2
Approach Delay (s)	21.1	12.6		16.1	
Approach LOS	C	B		C	

Intersection Summary			
Delay	17.3		
Level of Service	C		
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	22.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	57	544	5	8	713	89	70	14	56	13	1	5
Future Vol, veh/h	57	544	5	8	713	89	70	14	56	13	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	62	591	5	9	775	97	76	15	61	14	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	872	0	0	597	0	0	1562	1607	594	1597	1562	823
Stage 1	-	-	-	-	-	-	718	718	-	841	841	-
Stage 2	-	-	-	-	-	-	844	889	-	756	721	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	765	-	-	970	-	-	90	104	501	85	111	370
Stage 1	-	-	-	-	-	-	417	430	-	356	378	-
Stage 2	-	-	-	-	-	-	355	359	-	397	429	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	765	-	-	970	-	-	79	90	501	58	96	370
Mov Cap-2 Maneuver	-	-	-	-	-	-	79	90	-	58	96	-
Stage 1	-	-	-	-	-	-	367	378	-	313	371	-
Stage 2	-	-	-	-	-	-	342	353	-	294	377	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.1	234.8	68.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	121	765	-	-	970	-	-	77
HCM Lane V/C Ratio	1.258	0.081	-	-	0.009	-	-	0.268
HCM Control Delay (s)	234.8	10.1	0	-	8.7	0	-	68.1
HCM Lane LOS	F	B	A	-	A	A	-	F
HCM 95th %tile Q(veh)	9.8	0.3	-	-	0	-	-	1

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	1	96	89	11	10
Future Vol, veh/h	14	1	96	89	11	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	20	1	137	127	16	14

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	247	201	0	0	264	0
Stage 1	201	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.52	6.32	-	-	4.22	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.408	-	-	2.308	-
Pot Cap-1 Maneuver	720	815	-	-	1244	-
Stage 1	809	-	-	-	-	-
Stage 2	951	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	711	815	-	-	1244	-
Mov Cap-2 Maneuver	711	-	-	-	-	-
Stage 1	809	-	-	-	-	-
Stage 2	939	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	4.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	717	1244	-
HCM Lane V/C Ratio	-	-	0.03	0.013	-
HCM Control Delay (s)	-	-	10.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Appendix H: Existing Analysis PM (Synchro)

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	921	698	8	29	18
Future Vol, veh/h	6	921	698	8	29	18
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	98	98	98	98	98	98
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	940	712	8	30	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	720	0	-	0	1668	716
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	952	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	877	-	-	-	105	428
Stage 1	-	-	-	-	482	-
Stage 2	-	-	-	-	373	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	877	-	-	-	104	428
Mov Cap-2 Maneuver	-	-	-	-	104	-
Stage 1	-	-	-	-	482	-
Stage 2	-	-	-	-	368	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	41.3
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	877	-	-	-	146
HCM Lane V/C Ratio	0.007	-	-	-	0.328
HCM Control Delay (s)	9.1	0	-	-	41.3
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Yield
Traffic Volume (vph)	45	529	491	86	582	503
Future Volume (vph)	45	529	491	86	582	503
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64
Hourly flow rate (vph)	70	827	767	134	909	786

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	897	767	134	909	786
Volume Left (vph)	70	0	0	909	0
Volume Right (vph)	827	0	134	0	0
Hadj (s)	-0.49	0.05	-0.65	0.55	0.05
Departure Headway (s)	6.5	7.8	7.1	8.2	7.7
Degree Utilization, x	1.62	1.67	0.27	2.06	1.67
Capacity (veh/h)	561	464	499	448	474
Control Delay (s)	302.6	329.1	11.5	503.4	331.0
Approach Delay (s)	302.6	281.9		423.4	
Approach LOS	F	F		F	

Intersection Summary			
Delay	355.9		
Level of Service	F		
Intersection Capacity Utilization	103.3%	ICU Level of Service	G
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	32.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	846	48	59	620	25	12	3	21	57	7	64
Future Vol, veh/h	18	846	48	59	620	25	12	3	21	57	7	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	20	920	52	64	674	27	13	3	23	62	8	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	701	0	0	972	0	0	1839	1814	946	1814	1827	688
Stage 1	-	-	-	-	-	-	985	985	-	816	816	-
Stage 2	-	-	-	-	-	-	854	829	-	998	1011	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.14	6.54	6.24	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.14	5.54	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.236	-	-	3.536	4.036	3.336	3.536	4.036	3.336
Pot Cap-1 Maneuver	887	-	-	701	-	-	57	77	314	~ 60	76	443
Stage 1	-	-	-	-	-	-	296	324	-	368	388	-
Stage 2	-	-	-	-	-	-	351	382	-	291	315	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	887	-	-	701	-	-	37	62	314	~ 46	61	443
Mov Cap-2 Maneuver	-	-	-	-	-	-	37	62	-	~ 46	61	-
Stage 1	-	-	-	-	-	-	281	308	-	350	330	-
Stage 2	-	-	-	-	-	-	246	325	-	254	299	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.9	83.8	$ 418.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	82	887	-	-	701	-	-	85
HCM Lane V/C Ratio	0.477	0.022	-	-	0.091	-	-	1.637
HCM Control Delay (s)	83.8	9.2	0	-	10.7	0	-	$ 418.1
HCM Lane LOS	F	A	A	-	B	A	-	F
HCM 95th %tile Q(veh)	2	0.1	-	-	0.3	-	-	11.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.9

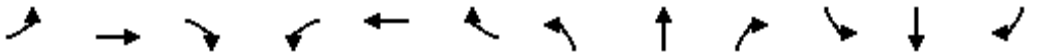
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	77	8	31	22	3	83
Future Vol, veh/h	77	8	31	22	3	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	94	10	38	27	4	101

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	160	51	0	0	65	0
Stage 1	51	-	-	-	-	-
Stage 2	109	-	-	-	-	-
Critical Hdwy	6.52	6.32	-	-	4.22	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.408	-	-	2.308	-
Pot Cap-1 Maneuver	808	989	-	-	1476	-
Stage 1	947	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	806	989	-	-	1476	-
Mov Cap-2 Maneuver	806	-	-	-	-	-
Stage 1	947	-	-	-	-	-
Stage 2	888	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	820	1476	-
HCM Lane V/C Ratio	-	-	0.126	0.002	-
HCM Control Delay (s)	-	-	10	7.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Appendix I: Near-Term Analysis AM (Synchro)



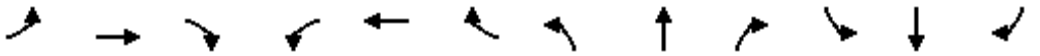
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	703	6	9	879	52	91	18	71	15	1	13
Future Volume (Veh/h)	5	703	6	9	879	52	91	18	71	15	1	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	764	7	10	955	57	99	20	77	16	1	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1012			771			1286	1806	382	1482	1784	506
vC1, stage 1 conf vol							774	774		1004	1004	
vC2, stage 2 conf vol							512	1032		479	781	
vCu, unblocked vol	1012			771			1286	1806	382	1482	1784	506
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			67	92	87	93	100	97
cM capacity (veh/h)	669			827			296	242	610	220	247	506

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	
Volume Total	5	382	382	7	10	637	375	99	97	16	15	
Volume Left	5	0	0	0	10	0	0	99	0	16	0	
Volume Right	0	0	0	7	0	0	57	0	77	0	14	
cSH	669	1700	1700	1700	827	1700	1700	296	464	220	473	
Volume to Capacity	0.01	0.22	0.22	0.00	0.01	0.37	0.22	0.33	0.21	0.07	0.03	
Queue Length 95th (ft)	1	0	0	0	1	0	0	36	19	6	2	
Control Delay (s)	10.4	0.0	0.0	0.0	9.4	0.0	0.0	23.2	14.8	22.6	12.9	
Lane LOS	B				A			C	B	C	B	
Approach Delay (s)	0.1				0.1			19.0		17.9		
Approach LOS								C		C		

Intersection Summary					
Average Delay	2.2				
Intersection Capacity Utilization	44.3%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	253	356	56	393	219	25
Future Volume (vph)	253	356	56	393	219	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3471	1553	1736	3471	3367	1553
Flt Permitted	1.00	1.00	0.58	1.00	0.95	1.00
Satd. Flow (perm)	3471	1553	1064	3471	3367	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	275	387	61	427	238	27
RTOR Reduction (vph)	0	265	0	0	0	20
Lane Group Flow (vph)	275	122	61	427	238	7
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	9.3	9.3	9.3	9.3	7.5	7.5
Effective Green, g (s)	9.3	9.3	9.3	9.3	7.5	7.5
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.25	0.25
Clearance Time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1090	487	334	1090	853	393
v/s Ratio Prot	0.08			c0.12	c0.07	
v/s Ratio Perm		0.08	0.06			0.00
v/c Ratio	0.25	0.25	0.18	0.39	0.28	0.02
Uniform Delay, d1	7.6	7.6	7.4	7.9	8.9	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	0.3	0.2	0.2	0.0
Delay (s)	7.7	7.8	7.6	8.2	9.1	8.3
Level of Service	A	A	A	A	A	A
Approach Delay (s)	7.8			8.1	9.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	29.6	Sum of lost time (s)	12.8
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	614	6	9	806	101	91	18	71	13	1	5
Future Volume (Veh/h)	65	614	6	9	806	101	91	18	71	13	1	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	71	667	7	10	876	110	99	20	77	14	1	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	986			674			1276	1818	337	1514	1767	493
vC1, stage 1 conf vol							812	812		951	951	
vC2, stage 2 conf vol							464	1006		562	816	
vCu, unblocked vol	986			674			1276	1818	337	1514	1767	493
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			99			62	90	88	93	100	99
cM capacity (veh/h)	684			900			263	201	653	215	239	516

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	71	445	229	10	584	402	99	97	14	6
Volume Left	71	0	0	10	0	0	99	0	14	0
Volume Right	0	0	7	0	0	110	0	77	0	5
cSH	684	1700	1700	900	1700	1700	263	446	215	433
Volume to Capacity	0.10	0.26	0.13	0.01	0.34	0.24	0.38	0.22	0.07	0.01
Queue Length 95th (ft)	9	0	0	1	0	0	42	20	5	1
Control Delay (s)	10.9	0.0	0.0	9.0	0.0	0.0	26.8	15.3	22.9	13.4
Lane LOS	B			A			D	C	C	B
Approach Delay (s)	1.0			0.1			21.1		20.0	
Approach LOS							C		C	

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	50.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	1.1

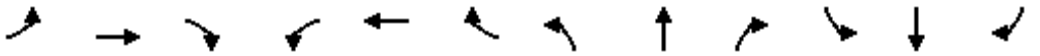
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	1	96	89	11	10
Future Vol, veh/h	14	1	96	89	11	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	20	1	137	127	16	14

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	247	201	0	0	264	0
Stage 1	201	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.52	6.32	-	-	4.22	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.408	-	-	2.308	-
Pot Cap-1 Maneuver	720	815	-	-	1244	-
Stage 1	809	-	-	-	-	-
Stage 2	951	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	711	815	-	-	1244	-
Mov Cap-2 Maneuver	711	-	-	-	-	-
Stage 1	809	-	-	-	-	-
Stage 2	939	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	4.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	717	1244	-
HCM Lane V/C Ratio	-	-	0.03	0.013	-
HCM Control Delay (s)	-	-	10.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Appendix J: Near-Term Analysis PM (Synchro)



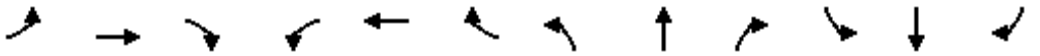
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1032	52	69	831	9	15	3	29	29	7	18
Future Volume (Veh/h)	7	1032	52	69	831	9	15	3	29	29	7	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	1122	57	75	903	10	16	3	32	32	8	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	913			1179			1764	2201	561	1668	2253	456
vC1, stage 1 conf vol							1138	1138		1058	1058	
vC2, stage 2 conf vol							626	1063		610	1195	
vCu, unblocked vol	913			1179			1764	2201	561	1668	2253	456
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			87			91	98	93	82	94	96
cM capacity (veh/h)	730			577			177	179	466	176	144	546

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	
Volume Total	8	561	561	57	75	602	311	16	35	32	28	
Volume Left	8	0	0	0	75	0	0	16	0	32	0	
Volume Right	0	0	0	57	0	0	10	0	32	0	20	
cSH	730	1700	1700	1700	577	1700	1700	177	410	176	304	
Volume to Capacity	0.01	0.33	0.33	0.03	0.13	0.35	0.18	0.09	0.09	0.18	0.09	
Queue Length 95th (ft)	1	0	0	0	11	0	0	7	7	16	8	
Control Delay (s)	10.0	0.0	0.0	0.0	12.2	0.0	0.0	27.3	14.6	30.0	18.0	
Lane LOS	A				B			D	B	D	C	
Approach Delay (s)	0.1				0.9			18.6		24.4		
Approach LOS								C		C		

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	50.6%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	651	563	49	587	574	101
Future Volume (vph)	651	563	49	587	574	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3471	1553	1736	3471	3367	1553
Flt Permitted	1.00	1.00	0.38	1.00	0.95	1.00
Satd. Flow (perm)	3471	1553	699	3471	3367	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	708	612	53	638	624	110
RTOR Reduction (vph)	0	386	0	0	0	58
Lane Group Flow (vph)	708	226	53	638	624	52
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	15.1	15.1	15.1	15.1	13.0	13.0
Effective Green, g (s)	15.1	15.1	15.1	15.1	13.0	13.0
Actuated g/C Ratio	0.37	0.37	0.37	0.37	0.32	0.32
Clearance Time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1281	573	258	1281	1070	493
v/s Ratio Prot	c0.20			0.18	c0.19	
v/s Ratio Perm		0.15	0.08			0.03
v/c Ratio	0.55	0.39	0.21	0.50	0.58	0.11
Uniform Delay, d1	10.2	9.5	8.8	10.0	11.7	9.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.4	0.4	0.3	0.8	0.1
Delay (s)	10.7	10.0	9.2	10.3	12.5	9.9
Level of Service	B	A	A	B	B	A
Approach Delay (s)	10.4			10.2	12.1	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	40.9	Sum of lost time (s)	12.8
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	923	52	69	726	29	15	3	29	57	7	64
Future Volume (Veh/h)	19	923	52	69	726	29	15	3	29	57	7	64
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	1003	57	75	789	32	16	3	32	62	8	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	821			1060			1692	2044	530	1532	2057	410
vC1, stage 1 conf vol							1074	1074		955	955	
vC2, stage 2 conf vol							618	971		577	1102	
vCu, unblocked vol	821			1060			1692	2044	530	1532	2057	410
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			88			91	98	93	69	95	88
cM capacity (veh/h)	791			641			182	193	488	202	165	585

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	21	669	391	75	526	295	16	35	62	78
Volume Left	21	0	0	75	0	0	16	0	62	0
Volume Right	0	0	57	0	0	32	0	32	0	70
cSH	791	1700	1700	641	1700	1700	182	432	202	464
Volume to Capacity	0.03	0.39	0.23	0.12	0.31	0.17	0.09	0.08	0.31	0.17
Queue Length 95th (ft)	2	0	0	10	0	0	7	7	31	15
Control Delay (s)	9.7	0.0	0.0	11.4	0.0	0.0	26.7	14.1	30.6	14.3
Lane LOS	A			B			D	B	D	B
Approach Delay (s)	0.2			1.0			18.0		21.5	
Approach LOS							C		C	

Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	50.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	3.9

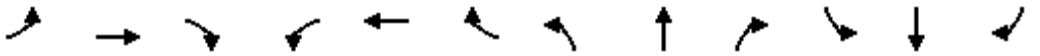
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	77	8	31	22	3	83
Future Vol, veh/h	77	8	31	22	3	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	94	10	38	27	4	101

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	160	51	0	0	65	0
Stage 1	51	-	-	-	-	-
Stage 2	109	-	-	-	-	-
Critical Hdwy	6.52	6.32	-	-	4.22	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.408	-	-	2.308	-
Pot Cap-1 Maneuver	808	989	-	-	1476	-
Stage 1	947	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	806	989	-	-	1476	-
Mov Cap-2 Maneuver	806	-	-	-	-	-
Stage 1	947	-	-	-	-	-
Stage 2	888	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	820	1476	-
HCM Lane V/C Ratio	-	-	0.126	0.002	-
HCM Control Delay (s)	-	-	10	7.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Appendix K: Near-Term Plus Phase One Analysis AM (Synchro)



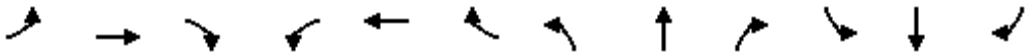
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	703	6	9	879	56	91	18	71	16	1	13
Future Volume (Veh/h)	5	703	6	9	879	56	91	18	71	16	1	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	764	7	10	955	61	99	20	77	17	1	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1016			771			1286	1810	382	1484	1786	508
vC1, stage 1 conf vol							774	774		1006	1006	
vC2, stage 2 conf vol							512	1036		479	781	
vCu, unblocked vol	1016			771			1286	1810	382	1484	1786	508
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			67	92	87	92	100	97
cM capacity (veh/h)	666			827			296	241	610	219	247	505

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	
Volume Total	5	382	382	7	10	637	379	99	97	17	15	
Volume Left	5	0	0	0	10	0	0	99	0	17	0	
Volume Right	0	0	0	7	0	0	61	0	77	0	14	
cSH	666	1700	1700	1700	827	1700	1700	296	464	219	472	
Volume to Capacity	0.01	0.22	0.22	0.00	0.01	0.37	0.22	0.33	0.21	0.08	0.03	
Queue Length 95th (ft)	1	0	0	0	1	0	0	36	20	6	2	
Control Delay (s)	10.4	0.0	0.0	0.0	9.4	0.0	0.0	23.2	14.8	22.8	12.9	
Lane LOS	B				A			C	B	C	B	
Approach Delay (s)	0.1				0.1			19.0		18.1		
Approach LOS								C		C		

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	44.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	253	357	56	396	220	25
Future Volume (vph)	253	357	56	396	220	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3471	1553	1736	3471	3367	1553
Flt Permitted	1.00	1.00	0.58	1.00	0.95	1.00
Satd. Flow (perm)	3471	1553	1064	3471	3367	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	275	388	61	430	239	27
RTOR Reduction (vph)	0	266	0	0	0	20
Lane Group Flow (vph)	275	122	61	430	239	7
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	9.3	9.3	9.3	9.3	7.5	7.5
Effective Green, g (s)	9.3	9.3	9.3	9.3	7.5	7.5
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.25	0.25
Clearance Time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1090	487	334	1090	853	393
v/s Ratio Prot	0.08			c0.12	c0.07	
v/s Ratio Perm		0.08	0.06			0.00
v/c Ratio	0.25	0.25	0.18	0.39	0.28	0.02
Uniform Delay, d1	7.6	7.6	7.4	7.9	8.9	8.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	0.3	0.2	0.2	0.0
Delay (s)	7.7	7.8	7.6	8.2	9.1	8.3
Level of Service	A	A	A	A	A	A
Approach Delay (s)	7.8			8.1	9.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	29.6	Sum of lost time (s)	12.8
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	614	6	9	806	101	91	23	71	13	1	6
Future Volume (Veh/h)	70	614	6	9	806	101	91	23	71	13	1	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	667	7	10	876	110	99	25	77	14	1	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	986			674			1288	1828	337	1526	1777	493
vC1, stage 1 conf vol							822	822		951	951	
vC2, stage 2 conf vol							466	1006		575	826	
vCu, unblocked vol	986			674			1288	1828	337	1526	1777	493
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			99			61	87	88	93	100	99
cM capacity (veh/h)	684			900			257	197	653	211	236	516

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	76	445	229	10	584	402	99	102	14	8
Volume Left	76	0	0	10	0	0	99	0	14	0
Volume Right	0	0	7	0	0	110	0	77	0	7
cSH	684	1700	1700	900	1700	1700	257	416	211	450
Volume to Capacity	0.11	0.26	0.13	0.01	0.34	0.24	0.39	0.25	0.07	0.02
Queue Length 95th (ft)	9	0	0	1	0	0	43	24	5	1
Control Delay (s)	10.9	0.0	0.0	9.0	0.0	0.0	27.5	16.4	23.3	13.1
Lane LOS	B			A			D	C	C	B
Approach Delay (s)	1.1			0.1			21.9		19.6	
Approach LOS							C		C	

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	51.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	1.4

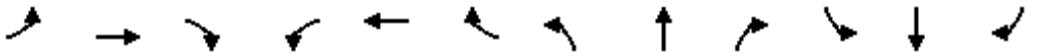
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	1	96	111	15	10
Future Vol, veh/h	21	1	96	111	15	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	30	1	137	159	21	14

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	273	216	0	0	296	0
Stage 1	216	-	-	-	-	-
Stage 2	57	-	-	-	-	-
Critical Hdwy	6.52	6.32	-	-	4.22	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.408	-	-	2.308	-
Pot Cap-1 Maneuver	696	799	-	-	1210	-
Stage 1	797	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	684	799	-	-	1210	-
Mov Cap-2 Maneuver	684	-	-	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	925	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	4.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	689	1210	-
HCM Lane V/C Ratio	-	-	0.046	0.018	-
HCM Control Delay (s)	-	-	10.5	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Appendix L: Near-Term Plus Phase One Analysis PM (Synchro)



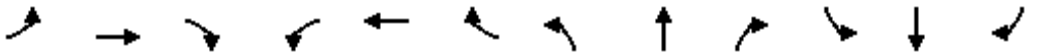
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1032	52	69	831	10	15	3	29	31	7	18
Future Volume (Veh/h)	7	1032	52	69	831	10	15	3	29	31	7	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	1122	57	75	903	11	16	3	32	34	8	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	914			1179			1764	2202	561	1669	2254	457
vC1, stage 1 conf vol							1138	1138		1058	1058	
vC2, stage 2 conf vol							626	1064		610	1195	
vCu, unblocked vol	914			1179			1764	2202	561	1669	2254	457
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			87			91	98	93	81	94	96
cM capacity (veh/h)	729			577			177	179	466	176	144	545

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	
Volume Total	8	561	561	57	75	602	312	16	35	34	28	
Volume Left	8	0	0	0	75	0	0	16	0	34	0	
Volume Right	0	0	0	57	0	0	11	0	32	0	20	
cSH	729	1700	1700	1700	577	1700	1700	177	410	176	304	
Volume to Capacity	0.01	0.33	0.33	0.03	0.13	0.35	0.18	0.09	0.09	0.19	0.09	
Queue Length 95th (ft)	1	0	0	0	11	0	0	7	7	17	8	
Control Delay (s)	10.0	0.0	0.0	0.0	12.2	0.0	0.0	27.3	14.6	30.4	18.0	
Lane LOS	A				B			D	B	D	C	
Approach Delay (s)	0.1				0.9			18.6		24.8		
Approach LOS								C		C		

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	50.7%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	652	564	49	587	575	101
Future Volume (vph)	652	564	49	587	575	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3471	1553	1736	3471	3367	1553
Flt Permitted	1.00	1.00	0.38	1.00	0.95	1.00
Satd. Flow (perm)	3471	1553	698	3471	3367	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	709	613	53	638	625	110
RTOR Reduction (vph)	0	387	0	0	0	58
Lane Group Flow (vph)	709	226	53	638	625	52
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	15.1	15.1	15.1	15.1	13.0	13.0
Effective Green, g (s)	15.1	15.1	15.1	15.1	13.0	13.0
Actuated g/C Ratio	0.37	0.37	0.37	0.37	0.32	0.32
Clearance Time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1281	573	257	1281	1070	493
v/s Ratio Prot	c0.20			0.18	c0.19	
v/s Ratio Perm		0.15	0.08			0.03
v/c Ratio	0.55	0.39	0.21	0.50	0.58	0.11
Uniform Delay, d1	10.2	9.5	8.8	10.0	11.7	9.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.4	0.3	0.8	0.1
Delay (s)	10.7	10.0	9.2	10.3	12.5	9.9
Level of Service	B	A	A	B	B	A
Approach Delay (s)	10.4			10.2	12.1	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	40.9	Sum of lost time (s)	12.8
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	923	52	69	726	29	15	3	29	57	12	69
Future Volume (Veh/h)	20	923	52	69	726	29	15	3	29	57	12	69
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	1003	57	75	789	32	16	3	32	62	13	75
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	821			1060			1702	2046	530	1534	2059	410
vC1, stage 1 conf vol							1076	1076		955	955	
vC2, stage 2 conf vol							626	971		579	1104	
vCu, unblocked vol	821			1060			1702	2046	530	1534	2059	410
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			88			91	98	93	69	92	87
cM capacity (veh/h)	791			641			178	193	488	201	165	585

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	22	669	391	75	526	295	16	35	62	88
Volume Left	22	0	0	75	0	0	16	0	62	0
Volume Right	0	0	57	0	0	32	0	32	0	75
cSH	791	1700	1700	641	1700	1700	178	432	201	425
Volume to Capacity	0.03	0.39	0.23	0.12	0.31	0.17	0.09	0.08	0.31	0.21
Queue Length 95th (ft)	2	0	0	10	0	0	7	7	31	19
Control Delay (s)	9.7	0.0	0.0	11.4	0.0	0.0	27.2	14.1	30.7	15.7
Lane LOS	A			B			D	B	D	C
Approach Delay (s)	0.2			1.0			18.2		21.9	
Approach LOS							C		C	

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	50.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	4.5

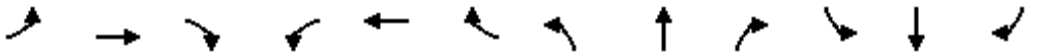
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	98	12	31	28	3	83
Future Vol, veh/h	98	12	31	28	3	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	120	15	38	34	4	101

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	164	55	0	0	72	0
Stage 1	55	-	-	-	-	-
Stage 2	109	-	-	-	-	-
Critical Hdwy	6.52	6.32	-	-	4.22	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.408	-	-	2.308	-
Pot Cap-1 Maneuver	804	984	-	-	1467	-
Stage 1	943	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	802	984	-	-	1467	-
Mov Cap-2 Maneuver	802	-	-	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	888	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	819	1467	-
HCM Lane V/C Ratio	-	-	0.164	0.002	-
HCM Control Delay (s)	-	-	10.3	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0	-

Appendix M: Cumulative Analysis AM (Synchro)



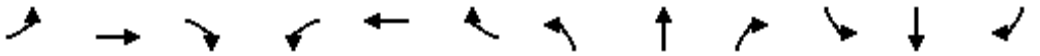
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	880	740	7	1073	70	128	24	101	15	1	13
Future Volume (Veh/h)	6	880	740	7	1073	70	128	24	101	15	1	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	957	804	8	1166	76	139	26	110	16	1	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1242			1761			1584	2229	478	1836	2995	621
vC1, stage 1 conf vol							971	971		1220	1220	
vC2, stage 2 conf vol							614	1258		616	1775	
vCu, unblocked vol	1242			1761			1584	2229	478	1836	2995	621
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			38	86	79	90	99	97
cM capacity (veh/h)	546			342			224	182	528	155	104	425

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	
Volume Total	7	478	478	804	8	777	465	139	136	16	15	
Volume Left	7	0	0	0	8	0	0	139	0	16	0	
Volume Right	0	0	0	804	0	0	76	0	110	0	14	
cSH	546	1700	1700	1700	342	1700	1700	224	387	155	353	
Volume to Capacity	0.01	0.28	0.28	0.47	0.02	0.46	0.27	0.62	0.35	0.10	0.04	
Queue Length 95th (ft)	1	0	0	0	2	0	0	91	39	8	3	
Control Delay (s)	11.7	0.0	0.0	0.0	15.8	0.0	0.0	44.2	19.3	30.9	15.6	
Lane LOS	B				C			E	C	D	C	
Approach Delay (s)	0.0				0.1			31.8		23.5		
Approach LOS								D		C		

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	62.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	325	456	61	423	288	33
Future Volume (vph)	325	456	61	423	288	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3471	1553	1736	3471	3367	1553
Flt Permitted	1.00	1.00	0.54	1.00	0.95	1.00
Satd. Flow (perm)	3471	1553	987	3471	3367	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	353	496	66	460	313	36
RTOR Reduction (vph)	0	333	0	0	0	26
Lane Group Flow (vph)	353	163	66	460	313	10
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	10.4	10.4	10.4	10.4	8.4	8.4
Effective Green, g (s)	10.4	10.4	10.4	10.4	8.4	8.4
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.27	0.27
Clearance Time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1142	511	324	1142	895	412
v/s Ratio Prot	0.10			c0.13	c0.09	
v/s Ratio Perm		0.11	0.07			0.01
v/c Ratio	0.31	0.32	0.20	0.40	0.35	0.02
Uniform Delay, d1	7.9	7.9	7.6	8.2	9.4	8.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.4	0.3	0.2	0.2	0.0
Delay (s)	8.1	8.3	7.9	8.4	9.6	8.6
Level of Service	A	A	A	A	A	A
Approach Delay (s)	8.2			8.4	9.5	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	31.6	Sum of lost time (s)	12.8
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	740	7	10	969	122	128	24	101	13	1	13
Future Volume (Veh/h)	77	740	7	10	969	122	128	24	101	13	1	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	84	804	8	11	1053	133	139	26	110	14	1	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1186			812			1539	2184	406	1834	2122	593
vC1, stage 1 conf vol							976	976		1142	1142	
vC2, stage 2 conf vol							563	1208		693	980	
vCu, unblocked vol	1186			812			1539	2184	406	1834	2122	593
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	85			99			29	81	81	91	99	97
cM capacity (veh/h)	573			797			197	140	589	153	185	444

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	84	536	276	11	702	484	139	136	14	15
Volume Left	84	0	0	11	0	0	139	0	14	0
Volume Right	0	0	8	0	0	133	0	110	0	14
cSH	573	1700	1700	797	1700	1700	197	365	153	406
Volume to Capacity	0.15	0.32	0.16	0.01	0.41	0.28	0.71	0.37	0.09	0.04
Queue Length 95th (ft)	13	0	0	1	0	0	112	42	7	3
Control Delay (s)	12.4	0.0	0.0	9.6	0.0	0.0	58.3	20.6	30.9	14.2
Lane LOS	B			A			F	C	D	B
Approach Delay (s)	1.2			0.1			39.6		22.3	
Approach LOS							E		C	

Intersection Summary				
Average Delay	5.3			
Intersection Capacity Utilization	58.7%	ICU Level of Service		B
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	1.1

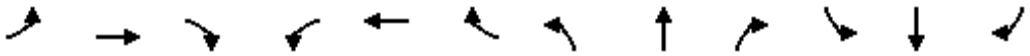
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	1	96	89	11	10
Future Vol, veh/h	14	1	96	89	11	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	20	1	137	127	16	14

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	247	201	0	0	264	0
Stage 1	201	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.52	6.32	-	-	4.22	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.408	-	-	2.308	-
Pot Cap-1 Maneuver	720	815	-	-	1244	-
Stage 1	809	-	-	-	-	-
Stage 2	951	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	711	815	-	-	1244	-
Mov Cap-2 Maneuver	711	-	-	-	-	-
Stage 1	809	-	-	-	-	-
Stage 2	939	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	4.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	717	1244	-
HCM Lane V/C Ratio	-	-	0.03	0.013	-
HCM Control Delay (s)	-	-	10.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Appendix N: Cumulative Analysis PM (Synchro)



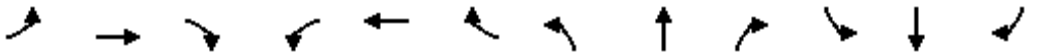
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1224	61	87	1067	14	22	5	40	29	7	18
Future Volume (Veh/h)	8	1224	61	87	1067	14	22	5	40	29	7	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	1330	66	95	1160	15	24	5	43	32	8	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1175			1396			2142	2713	665	2086	2772	588
vC1, stage 1 conf vol							1348	1348		1358	1358	
vC2, stage 2 conf vol							794	1365		728	1414	
vCu, unblocked vol	1175			1396			2142	2713	665	2086	2772	588
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			80			81	96	89	70	91	96
cM capacity (veh/h)	579			476			126	122	398	106	84	448

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	
Volume Total	9	665	665	66	95	773	402	24	48	32	28	
Volume Left	9	0	0	0	95	0	0	24	0	32	0	
Volume Right	0	0	0	66	0	0	15	0	43	0	20	
cSH	579	1700	1700	1700	476	1700	1700	126	322	106	200	
Volume to Capacity	0.02	0.39	0.39	0.04	0.20	0.45	0.24	0.19	0.15	0.30	0.14	
Queue Length 95th (ft)	1	0	0	0	18	0	0	17	13	29	12	
Control Delay (s)	11.3	0.0	0.0	0.0	14.5	0.0	0.0	40.2	18.1	52.8	25.9	
Lane LOS	B				B			E	C	F	D	
Approach Delay (s)	0.1				1.1			25.5		40.2		
Approach LOS								D		E		

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	56.9%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	792	685	59	693	726	128
Future Volume (vph)	792	685	59	693	726	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3471	1553	1736	3471	3367	1553
Flt Permitted	1.00	1.00	0.28	1.00	0.95	1.00
Satd. Flow (perm)	3471	1553	507	3471	3367	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	861	745	64	753	789	139
RTOR Reduction (vph)	0	467	0	0	0	31
Lane Group Flow (vph)	861	278	64	753	789	108
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	16.6	16.6	16.6	16.6	15.1	15.1
Effective Green, g (s)	16.6	16.6	16.6	16.6	15.1	15.1
Actuated g/C Ratio	0.37	0.37	0.37	0.37	0.34	0.34
Clearance Time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1294	579	189	1294	1142	526
v/s Ratio Prot	c0.25			0.22	c0.23	
v/s Ratio Perm		0.18	0.13			0.07
v/c Ratio	0.67	0.48	0.34	0.58	0.69	0.21
Uniform Delay, d1	11.6	10.7	10.0	11.2	12.7	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.6	1.1	0.7	1.8	0.2
Delay (s)	12.9	11.3	11.1	11.8	14.5	10.6
Level of Service	B	B	B	B	B	B
Approach Delay (s)	12.2			11.8	13.9	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	44.5	Sum of lost time (s)	12.8
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	1066	61	87	923	38	22	5	40	57	7	151
Future Volume (Veh/h)	22	1066	61	87	923	38	22	5	40	57	7	151
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	1159	66	95	1003	41	24	5	43	62	8	164
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1044			1225			2100	2474	612	1886	2486	522
vC1, stage 1 conf vol							1240	1240		1214	1214	
vC2, stage 2 conf vol							860	1234		673	1273	
vCu, unblocked vol	1044			1225			2100	2474	612	1886	2486	522
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			83			78	96	90	53	93	67
cM capacity (veh/h)	650			554			107	137	431	132	108	494

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	24	773	452	95	669	375	24	48	62	172
Volume Left	24	0	0	95	0	0	24	0	62	0
Volume Right	0	0	66	0	0	41	0	43	0	164
cSH	650	1700	1700	554	1700	1700	107	352	132	424
Volume to Capacity	0.04	0.45	0.27	0.17	0.39	0.22	0.22	0.14	0.47	0.41
Queue Length 95th (ft)	3	0	0	15	0	0	20	12	53	48
Control Delay (s)	10.7	0.0	0.0	12.8	0.0	0.0	48.1	16.8	54.4	19.2
Lane LOS	B			B			E	C	F	C
Approach Delay (s)	0.2			1.1			27.3		28.5	
Approach LOS							D		D	

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	62.6%	ICU Level of Service		B
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	3.9

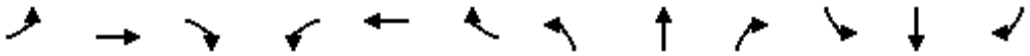
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	77	8	31	22	3	83
Future Vol, veh/h	77	8	31	22	3	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	94	10	38	27	4	101

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	160	51	0	0	65	0
Stage 1	51	-	-	-	-	-
Stage 2	109	-	-	-	-	-
Critical Hdwy	6.52	6.32	-	-	4.22	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.408	-	-	2.308	-
Pot Cap-1 Maneuver	808	989	-	-	1476	-
Stage 1	947	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	806	989	-	-	1476	-
Mov Cap-2 Maneuver	806	-	-	-	-	-
Stage 1	947	-	-	-	-	-
Stage 2	888	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	820	1476	-
HCM Lane V/C Ratio	-	-	0.126	0.002	-
HCM Control Delay (s)	-	-	10	7.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Appendix O: Cumulative Plus Full Build-out Analysis AM (Synchro)



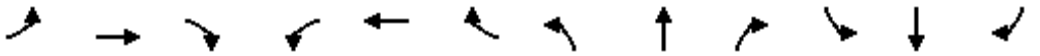
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	880	740	7	1073	84	128	24	101	19	1	13
Future Volume (Veh/h)	6	880	740	7	1073	84	128	24	101	19	1	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	957	804	8	1166	91	139	26	110	21	1	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1257			1761			1584	2244	478	1843	3002	628
vC1, stage 1 conf vol							971	971		1228	1228	
vC2, stage 2 conf vol							614	1273		616	1775	
vCu, unblocked vol	1257			1761			1584	2244	478	1843	3002	628
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			38	86	79	86	99	97
cM capacity (veh/h)	538			342			224	179	528	154	104	421

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	
Volume Total	7	478	478	804	8	777	480	139	136	21	15	
Volume Left	7	0	0	0	8	0	0	139	0	21	0	
Volume Right	0	0	0	804	0	0	91	0	110	0	14	
cSH	538	1700	1700	1700	342	1700	1700	224	385	154	350	
Volume to Capacity	0.01	0.28	0.28	0.47	0.02	0.46	0.28	0.62	0.35	0.14	0.04	
Queue Length 95th (ft)	1	0	0	0	2	0	0	91	39	12	3	
Control Delay (s)	11.8	0.0	0.0	0.0	15.8	0.0	0.0	44.2	19.4	32.1	15.8	
Lane LOS	B				C			E	C	D	C	
Approach Delay (s)	0.0				0.1			31.9		25.3		
Approach LOS								D		D		

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	62.5%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	326	459	61	430	295	33
Future Volume (vph)	326	459	61	430	295	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3471	1553	1736	3471	3367	1553
Flt Permitted	1.00	1.00	0.54	1.00	0.95	1.00
Satd. Flow (perm)	3471	1553	986	3471	3367	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	354	499	66	467	321	36
RTOR Reduction (vph)	0	333	0	0	0	26
Lane Group Flow (vph)	354	166	66	467	321	10
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	10.6	10.6	10.6	10.6	8.5	8.5
Effective Green, g (s)	10.6	10.6	10.6	10.6	8.5	8.5
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.27	0.27
Clearance Time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1153	516	327	1153	897	413
v/s Ratio Prot	0.10			c0.13	c0.10	
v/s Ratio Perm		0.11	0.07			0.01
v/c Ratio	0.31	0.32	0.20	0.41	0.36	0.02
Uniform Delay, d1	7.9	8.0	7.6	8.2	9.5	8.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.4	0.3	0.2	0.2	0.0
Delay (s)	8.1	8.3	7.9	8.5	9.7	8.7
Level of Service	A	A	A	A	A	A
Approach Delay (s)	8.2			8.4	9.6	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	31.9	Sum of lost time (s)	12.8
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	740	7	10	969	122	128	38	101	13	3	17
Future Volume (Veh/h)	94	740	7	10	969	122	128	38	101	13	3	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	102	804	8	11	1053	133	139	41	110	14	3	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1186			812			1580	2220	406	1878	2158	593
vC1, stage 1 conf vol							1012	1012		1142	1142	
vC2, stage 2 conf vol							568	1208		736	1016	
vCu, unblocked vol	1186			812			1580	2220	406	1878	2158	593
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	82			99			23	67	81	90	98	96
cM capacity (veh/h)	573			797			180	126	589	139	177	444

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	102	536	276	11	702	484	139	151	14	21
Volume Left	102	0	0	11	0	0	139	0	14	0
Volume Right	0	0	8	0	0	133	0	110	0	18
cSH	573	1700	1700	797	1700	1700	180	295	139	365
Volume to Capacity	0.18	0.32	0.16	0.01	0.41	0.28	0.77	0.51	0.10	0.06
Queue Length 95th (ft)	16	0	0	1	0	0	128	68	8	5
Control Delay (s)	12.6	0.0	0.0	9.6	0.0	0.0	71.8	29.4	33.8	15.5
Lane LOS	B			A			F	D	D	C
Approach Delay (s)	1.4			0.1			49.7		22.8	
Approach LOS							E		C	

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	59.6%	ICU Level of Service	B	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	1.6

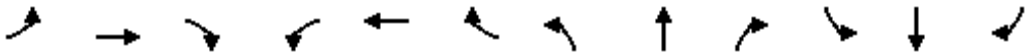
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	4	96	168	19	10
Future Vol, veh/h	29	4	96	168	19	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	41	6	137	240	27	14

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	326	257	0	0	377	0
Stage 1	257	-	-	-	-	-
Stage 2	69	-	-	-	-	-
Critical Hdwy	6.52	6.32	-	-	4.22	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.408	-	-	2.308	-
Pot Cap-1 Maneuver	648	758	-	-	1129	-
Stage 1	763	-	-	-	-	-
Stage 2	929	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	632	758	-	-	1129	-
Mov Cap-2 Maneuver	632	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	907	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	5.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	645	1129	-
HCM Lane V/C Ratio	-	-	0.073	0.024	-
HCM Control Delay (s)	-	-	11	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Appendix P: Cumulative Plus Full Build-out Analysis PM (Synchro)



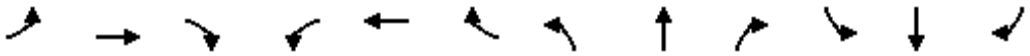
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1224	61	87	1067	18	22	5	40	42	7	18
Future Volume (Veh/h)	8	1224	61	87	1067	18	22	5	40	42	7	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	1330	66	95	1160	20	24	5	43	46	8	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh)		2			2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1180			1396			2142	2718	665	2088	2774	590
vC1, stage 1 conf vol							1348	1348		1360	1360	
vC2, stage 2 conf vol							794	1370		728	1414	
vCu, unblocked vol	1180			1396			2142	2718	665	2088	2774	590
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			80			81	96	89	57	90	96
cM capacity (veh/h)	576			476			126	122	398	106	84	446

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	
Volume Total	9	665	665	66	95	773	407	24	48	46	28	
Volume Left	9	0	0	0	95	0	0	24	0	46	0	
Volume Right	0	0	0	66	0	0	20	0	43	0	20	
cSH	576	1700	1700	1700	476	1700	1700	126	322	106	200	
Volume to Capacity	0.02	0.39	0.39	0.04	0.20	0.45	0.24	0.19	0.15	0.43	0.14	
Queue Length 95th (ft)	1	0	0	0	18	0	0	17	13	46	12	
Control Delay (s)	11.3	0.0	0.0	0.0	14.5	0.0	0.0	40.2	18.1	62.7	25.9	
Lane LOS	B				B			E	C	F	D	
Approach Delay (s)	0.1				1.1			25.5		48.8		
Approach LOS								D		E		

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	57.6%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	798	692	59	694	729	128
Future Volume (vph)	798	692	59	694	729	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3471	1553	1736	3471	3367	1553
Flt Permitted	1.00	1.00	0.27	1.00	0.95	1.00
Satd. Flow (perm)	3471	1553	501	3471	3367	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	867	752	64	754	792	139
RTOR Reduction (vph)	0	470	0	0	0	30
Lane Group Flow (vph)	867	282	64	754	792	109
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	16.8	16.8	16.8	16.8	15.2	15.2
Effective Green, g (s)	16.8	16.8	16.8	16.8	15.2	15.2
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.34	0.34
Clearance Time (s)	6.8	6.8	6.8	6.8	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1301	582	187	1301	1142	526
v/s Ratio Prot	c0.25			0.22	c0.24	
v/s Ratio Perm		0.18	0.13			0.07
v/c Ratio	0.67	0.48	0.34	0.58	0.69	0.21
Uniform Delay, d1	11.7	10.7	10.0	11.2	12.8	10.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.6	1.1	0.6	1.8	0.2
Delay (s)	13.0	11.3	11.1	11.8	14.6	10.7
Level of Service	B	B	B	B	B	B
Approach Delay (s)	12.2			11.8	14.0	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	44.8	Sum of lost time (s)	12.8
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	1066	61	87	923	38	22	7	40	57	20	167
Future Volume (Veh/h)	27	1066	61	87	923	38	22	7	40	57	20	167
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	1159	66	95	1003	41	24	8	43	62	22	182
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1044			1225			2134	2484	612	1898	2496	522
vC1, stage 1 conf vol							1250	1250		1214	1214	
vC2, stage 2 conf vol							884	1234		684	1283	
vCu, unblocked vol	1044			1225			2134	2484	612	1898	2496	522
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)							6.6	5.6		6.6	5.6	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			83			74	94	90	52	79	63
cM capacity (veh/h)	650			554			91	134	431	130	105	494

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	29	773	452	95	669	375	24	51	62	204
Volume Left	29	0	0	95	0	0	24	0	62	0
Volume Right	0	0	66	0	0	41	0	43	0	182
cSH	650	1700	1700	554	1700	1700	91	320	130	353
Volume to Capacity	0.04	0.45	0.27	0.17	0.39	0.22	0.26	0.16	0.48	0.58
Queue Length 95th (ft)	3	0	0	15	0	0	24	14	55	86
Control Delay (s)	10.8	0.0	0.0	12.8	0.0	0.0	58.5	18.4	55.9	28.2
Lane LOS	B			B			F	C	F	D
Approach Delay (s)	0.2			1.1			31.2		34.7	
Approach LOS							D		D	

Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	64.3%	ICU Level of Service		C
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	5.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	148	16	31	42	4	83
Future Vol, veh/h	148	16	31	42	4	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	12	12	12	12	12	12
Mvmt Flow	180	20	38	51	5	101

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	174	63	0	0	89	0
Stage 1	63	-	-	-	-	-
Stage 2	111	-	-	-	-	-
Critical Hdwy	6.52	6.32	-	-	4.22	-
Critical Hdwy Stg 1	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-	-
Follow-up Hdwy	3.608	3.408	-	-	2.308	-
Pot Cap-1 Maneuver	793	974	-	-	1446	-
Stage 1	935	-	-	-	-	-
Stage 2	889	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	790	974	-	-	1446	-
Mov Cap-2 Maneuver	790	-	-	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	885	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	805	1446	-
HCM Lane V/C Ratio	-	-	0.248	0.003	-
HCM Control Delay (s)	-	-	10.9	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0	-