Mitigated Negative Declaration

New School No. 4
Masterson Street/Paladino Drive, Bakersfield, CA

Bakersfield City School District
August 2019

Prepared for:
Bakersfield City School District
1501 Feliz Drive
Bakersfield, California 93307

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Acronyms & Abbreviations

Acronym	Description
µg/m^3	microgram/one millionth of a gram
ALUCP	Airport Land Use Compatibility Plan
BCSD	Bakersfield City School District
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emission Estimator Model
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDE	California Department of Education
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dB	decibels
DOC	California Department of Conservation
DSA	California Department of the State Architect
DTSC	California Department of Toxic Substances Control
FMMP	United States Department of Conservation, Farmland Mapping and Monitoring Program
GAMAQI	Guidance for Assessing and Mitigating Air Quality Impacts
GSP	Groundwater Sustainability Plan
KRGSA	Kern River Groundwater Sustainability Agency
kW	kilowatt
MBGP	Metropolitan Bakersfield General Plan
MBHCP	Metropolitan Bakersfield Habitat Conservation Plan
MM	Mitigation Measure
MND	Mitigated Negative Declaration
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
O_3	ozone
PM_{10}	Particulate Matter 10 micrometers or smaller
$PM_{2.5}$	Particulate Matter 2.5 micrometers or smaller
PPB	parts per billion

PPM ..... parts per million
PRC ..... Public Resources Code
PUD ..... Planned Unit Development
RWQCB ..... Regional Water Quality Control Board
SGMA ..... Sustainable Groundwater Management Act
SJVAB ..... San Joaquin Valley Air Basin
SJVAPCD ..... San Joaquin Valley Air Pollution Control District
SPAL ..... Small Project Analysis Level
SR ..... State Route
SWRCB ..... (California) State Water Resources Contorol Board
USACE ..... United States Army Corps of Engineers
USFWS ..... United States Fish and Wildlife Service

1 Introduction

The Bakersfield City School District (BCSD or District) is proposing to acquire and construct a new school on approximately 24 acres of portions of Parcels 10 and 11 of Parcel Map 11013 (approximately 50.06 acres overall) (APNs 531-012-(02 & 03)). The Project is generally located at the southwest corner of Masterson Street and Paladino Drive in the incorporated city of Bakersfield in Kern County. The school buildings will encompass approximately 95,400 square feet, to be constructed in two phases. Planned capacity will be approximately 785 students. Construction of the school will begin in 2021 and the school is planned to open in August 2023. A complete Project description is provided in **Chapter 2.**

1.1 Lead Agency

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Section 15367, the BCSD is the public agency designated by resolution of the District Board of Education as Lead Agency for this Project. The District is located at:

Bakersfield City School District Office
1301 Baker Street
Bakersfield, CA, 93305
Telephone (661) 631-4600

Maintenance and Operations Office
1501 Feliz Drive
Bakersfield, CA 93307
Telephone (661) 631-5883

1.2 Purpose and Intended Use of the Initial Study/Mitigated Negative Declaration

The District, as Lead Agency has determined based on information gathered in the Initial Study (IS), that the environmental evaluation of the activities involved in the new school construction project can be achieved through the preparation of a Mitigated Negative Declaration (MND). This document, together with a Notice of Intent to Adopt the MND, will be circulated and published for a period of 30 days for review by the public, agencies aside from the Lead Agency having approval authority over the Project (Responsible Agencies), and agencies having jurisdiction over natural resources affected by the Project (Trustee Agencies). Other agencies and the public may also contribute comments. The written and oral comments received both during the public review period and during public meetings to consider adoption of the MND will be considered by the Board of Education prior to adoption by the District. Contributors of timely written comments will receive written responses addressing their comments.

Pursuant to the California Code of Regulations (CCR) Title 5 and the California Education Code, completion of an environmental analysis pursuant to CEQA is one of the requirements of the

California Department of Education (CDE) for final site approval. The CDE will review the adopted CEQA document as part of its site approval process.

A number of other agencies in addition to the District and the CDE may serve as Responsible or Trustee Agencies pursuant to the CEQA Guidelines Sections 15381 and 15386, respectively. This IS/MND may provide environmental information to these agencies and other public agencies which may be required to grant approvals, or which may be needed to coordinate with other agencies as part of implementation of the Project. These agencies may include, but may not be limited to:

- California Department of Education (CDE)
- California Department of Toxic Substances Control (DTSC)
- California Division of the State Architect (DSA)
- California State Water Resources Control Board (SWRCB)
- San Joaquin Valley Air Pollution Control District (SJVAPCD)
- Central Valley Regional Water Quality Control Board (RWQCB)
- City of Bakersfield

1.3 Documents Incorporated by Reference

All or part of documents or regulations which are a matter of public record may provide general information and background for this Project. The following documents or regulations are incorporated into this IS/MND by reference (CEQA Guidelines Section 15150).

Table 1-1. Documents Incorporated by Reference

Document	Document Location
California Code of Regulations (CCR), Title 5 (Education)	https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I836118C0D47E11DEBC02831C6D6C108E&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default)&bhcp=1
CCR, Title 24 (California Building Standards Code)	http://www.bsc.ca.gov/Home/Current2013Codes.aspx
California Code of Regulations, Title 22, Division 4.5 (DTSC)	https://www.dtsc.ca.gov/LawsRegsPolicies/Title22/
California Health and Safety Code, Division 20, Chapter 6.8, Section 25300, et. seq.	https://www.dtsc.ca.gov/LawsRegsPolicies/Regs/upload/Complete-2017-HSC.pdf
Metropolitan Bakersfield General Plan	https://bakersfieldcity.us/civicax/filebank/blobdload.aspx?BlobID=31381
City of Bakersfield Zoning Ordinance	https://bakersfield.municipal.codes/Code/17
San Joaquin Valley Air Pollution Control District, Guidance for Assessing and Mitigating Air Quality Impacts, Small Project Analysis Level	http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI-SPAL.PDF
San Joaquin Valley Air Pollution Control District, Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA in December 2009	http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf
City in the Hills Environmental Impact Report (SCH 2000011101), July 25, 2000	Kern County Library

2 Project Description

2.1 Project Title

Bakersfield City School District – New School No. 4

2.2 Description of Project

The Bakersfield City School District is proposing to acquire and construct a new school, currently identified as New School No. 4. The school will encompass approximately 95,400 square feet, to be constructed in two phases. School capacity is planned for approximately 785 students. The school would be constructed on approximately 24 acres of portions of Parcels 10 and 11 of Parcel Map 11013 (approximately 50.06 acres overall) (APNs 531-012-(02 & 03)). School buildings will total approximately 95,400 square feet as listed in **Table 2-1**.

Table 2-1. Planned Buildings

Planned Buildings		
Building Purpose	**Square Footage (each)/ Description**	**Phase**
Administration Building	11,000	I
Multi-Purpose Building)	16,000	I
Classroom Modules (8)	7,800	I
Clinic Building)	4,000	I
Parking Lot	2,000	I
Turf play fields play courts	±8 acres	I
Pre-Kindergarten Building	2,000	II
Solar photovoltaic Electric Generation System	100-240 kWh	II

School construction is planned to begin in 2021 and be completed by 2023. Construction will be completed in two phases. The school is planned to open in August 2023. Architectural plans for the new school are not currently finalized. It is anticipated that the school will gain access from a local street located on the west side of the school site, with limited access available off of Masterson Street and Paladino Drive. Playing fields and/or play courts will be oriented on the eastern portion of the project site near Masterson Street.

The project will include improvements along public street rights-of-way and utility easements as well as the construction of infrastructure in accordance with the standards, specifications and policies of the City of Bakersfield (City) for new development.

2.3 Project Location

The Project is generally located at the southwest corner of Masterson Street and Paladino Drive in the incorporated City of Bakersfield in Kern County. (Figure 2-1). The Project is within Section 17, Township 29 South, Range 29 East, Mount Diablo Base & Meridian (MDBM.) and is shown on the Oil Center USGS 7.5' Map quadrangle. shown on **Figure 2-3**.

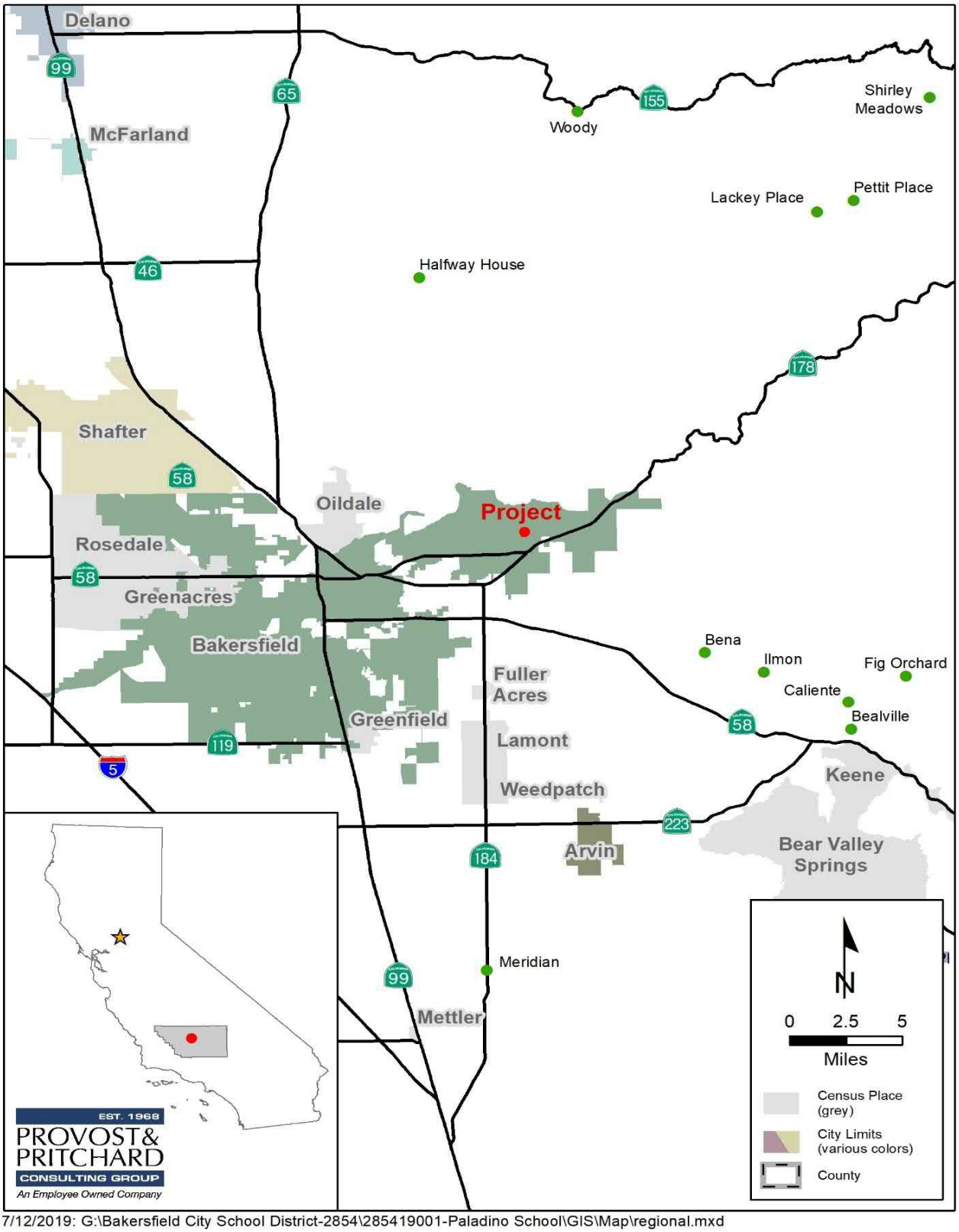

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Figure 2-1: Vicinity Map

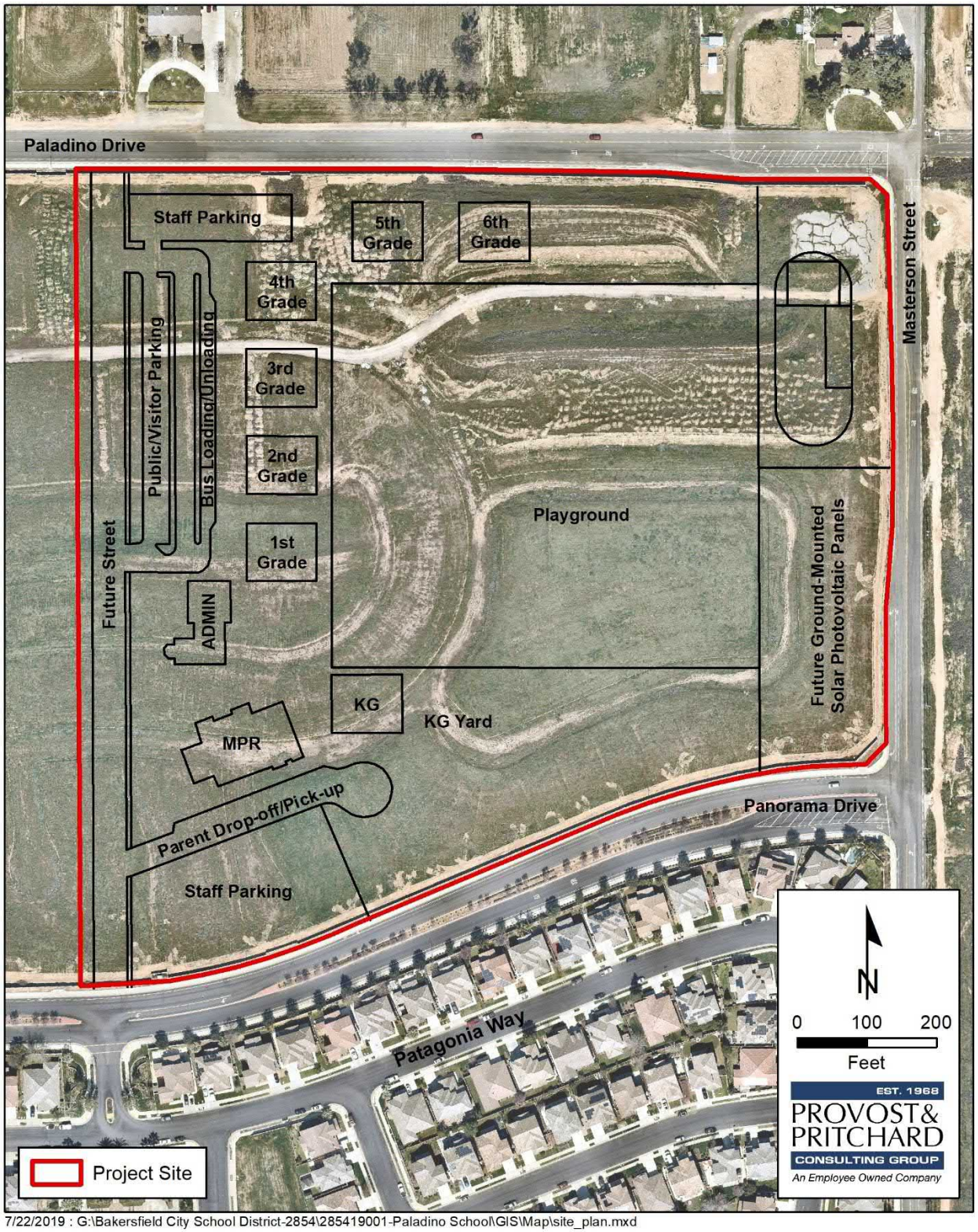

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Figure 2-2: Site Plan

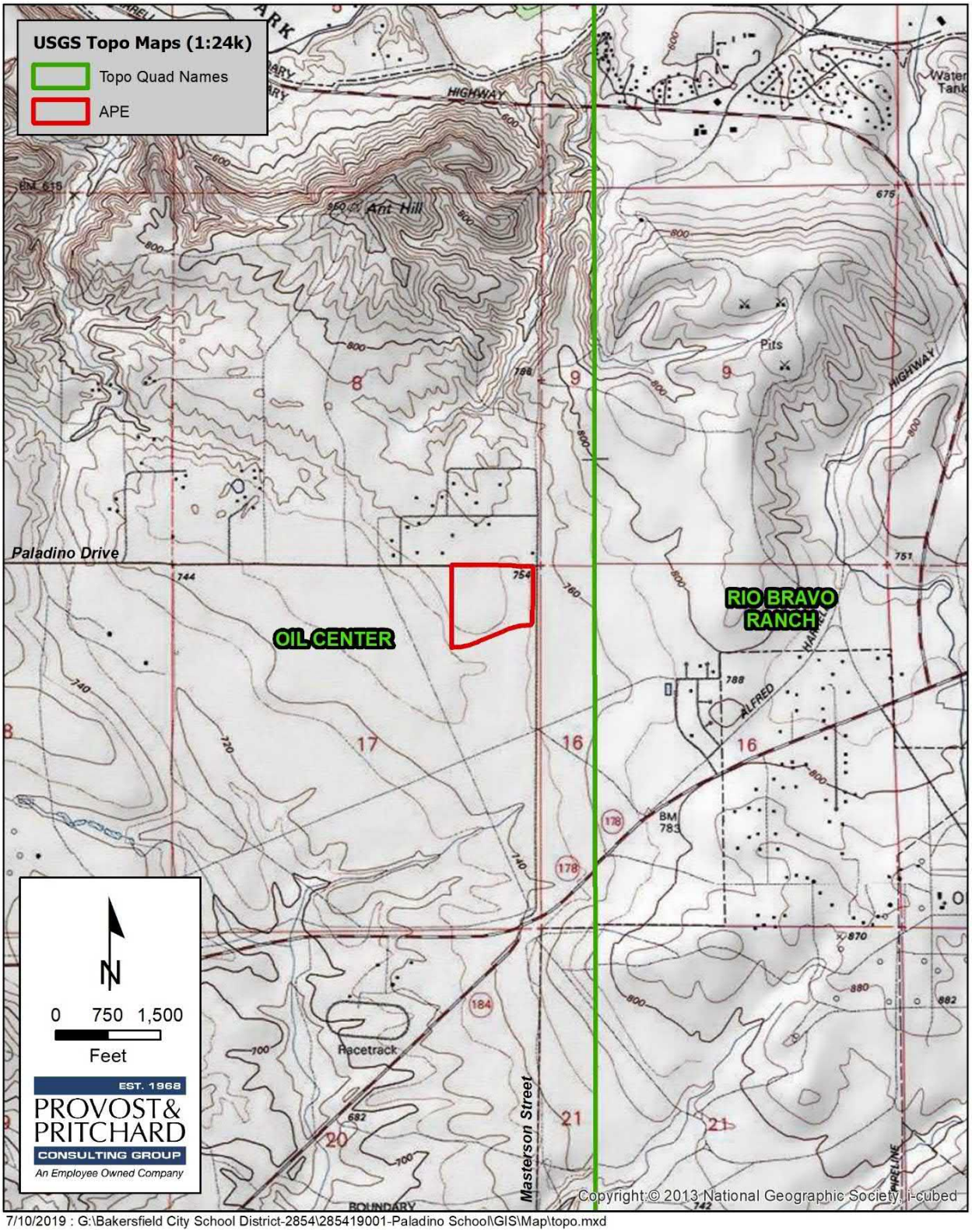

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Figure 2-3: Topography Map

2.3.1 Surrounding Land Uses

Table 2-2 lists surrounding land uses in the Project area. General Plan designations are illustrated in **Figure 2-4**. Zoning is illustrated in **Figure 2-5**.

Table 2-2: Surrounding Land Uses

Surrounding Land Uses			
Direction	**General Plan**	**Zoning**	**Existing Uses**
North	Low Density Residential	R-S-2.5A (Residential Suburban- 2.5 acre minimum)	Single Family Residences
South	Low Density Residential	PUD (Planned Unit Development)	Single Family Residences
East	Low Density Residential	R-1 (One Family Dwelling)	Single Family Residences
West	Low Density Residential	PUD (Planned Unit Development)	Undeveloped land, Single Family Residences

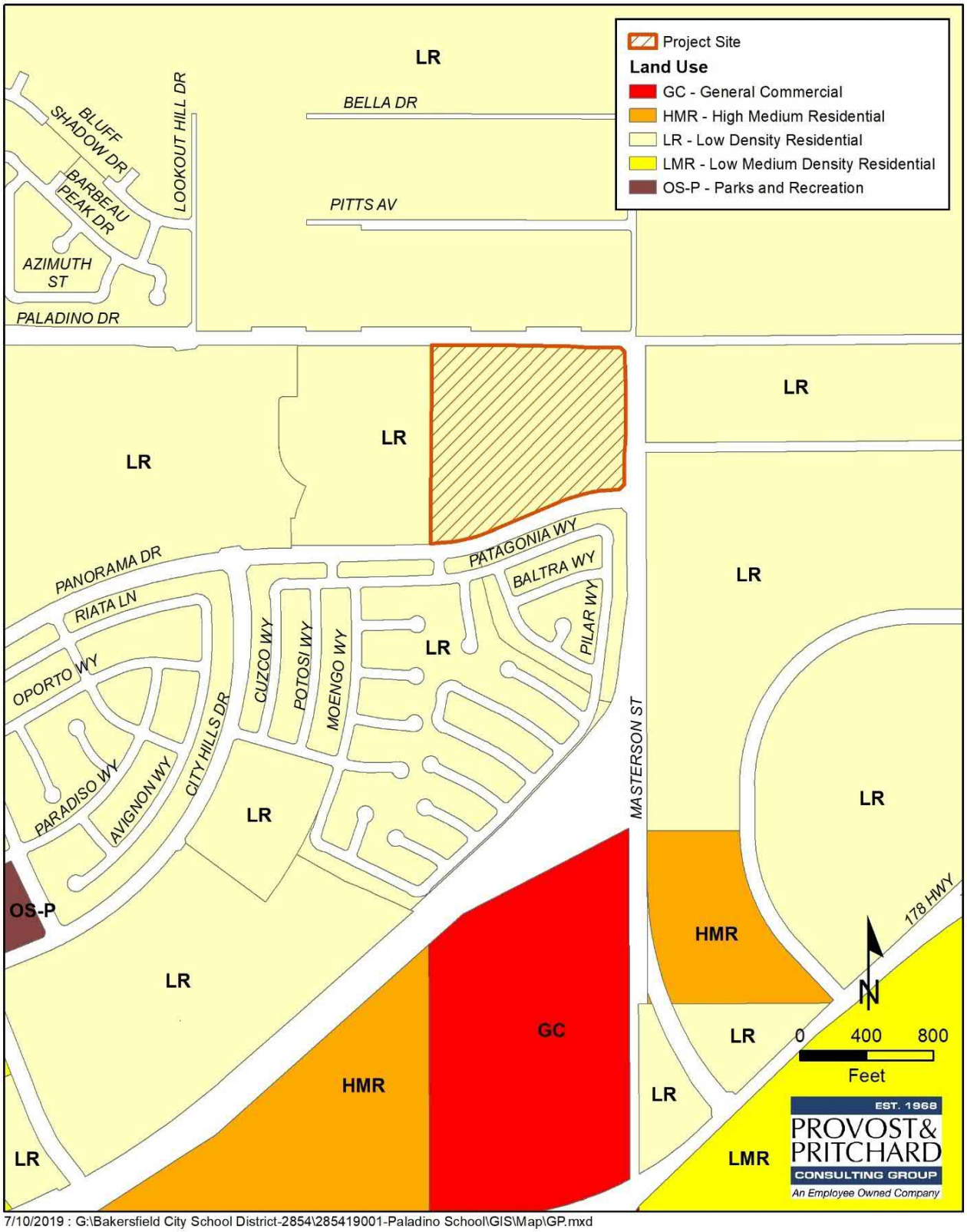

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Figure 2-4: General Plan Designations

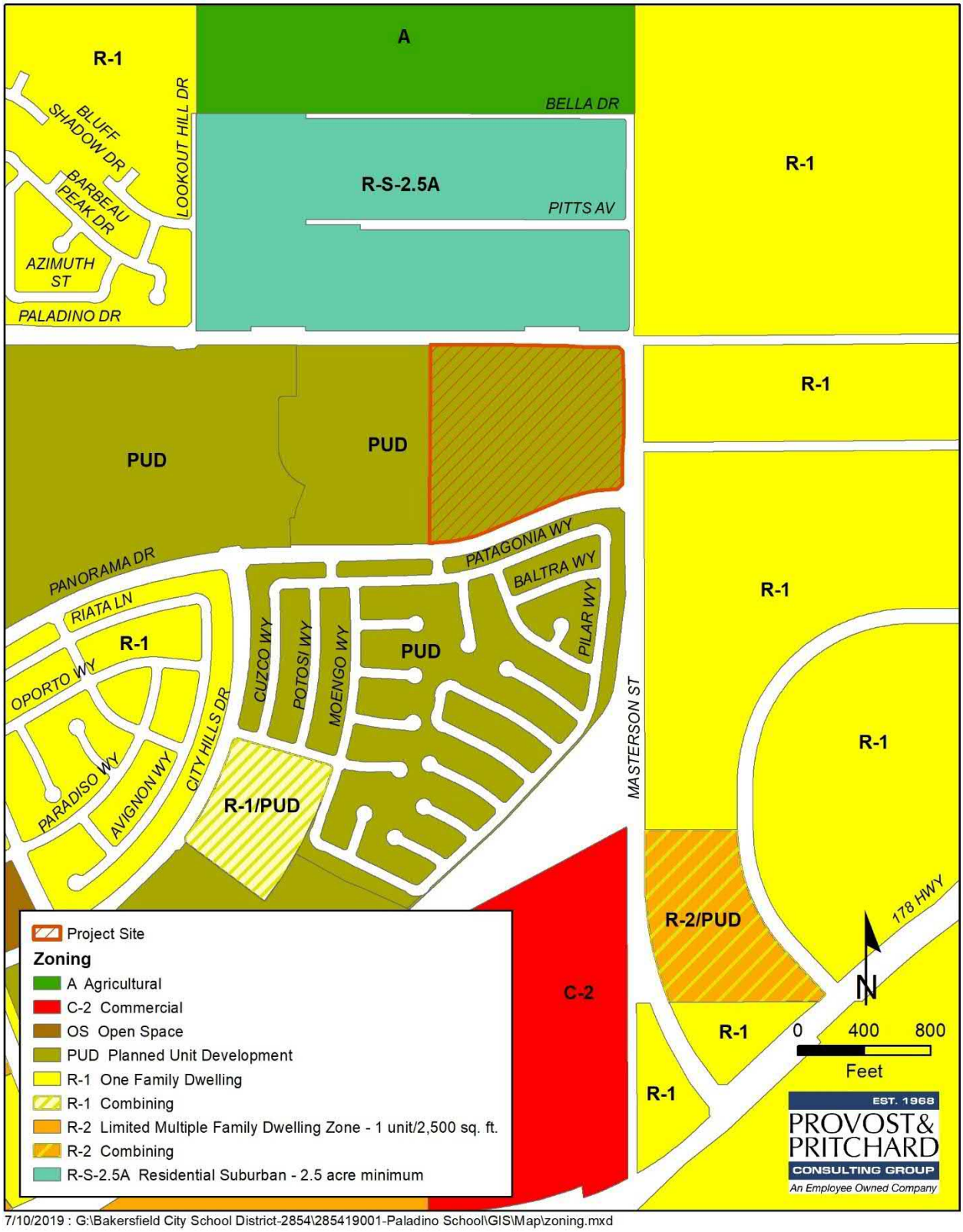

Figure 2-5: Zoning

3 Environmental Impact Assessment

This Chapter presents the CEQA Guidelines Appendix G Checklist and contains the environmental analysis for all impact areas, mandatory findings of significance, and mitigation measures. The CEQA Guidelines provide the following environmental checklist to allow lead agencies to meet the requirements for an initial study by meeting the requirements of the CEQA Guidelines. Specific to schools, the checklist has been tailored pursuant to EC Section 17213 and PRC Section 21151.8(a)1.

Potential environmental impacts are separated into the following categories:

- **Less Than Significant with Mitigation Incorporated.** This category applies where the incorporation of mitigation measures would reduce an effect from "Potentially Significant" to "Less Than Significant" levels. The lead agency must describe the mitigation measure(s) and briefly explain how such mitigation would reduce the effect to a less than significant level (mitigation measures from earlier analyses may be cross-referenced).
- **Less Than Significant Impact.** This category is identified when the Project would result in impacts below the threshold of significance and no mitigation measures are required.
- **No Impact.** This category applies when a Project would not create an impact in the specific environmental issue area. "No Impact" answers do not require a detailed explanation if they are adequately supported by the information sources cited by the lead agency, which show that the impact does not apply to the specific Project (e.g., the Project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on Project-specific factors as well as general standards (e.g., the Project will not expose sensitive receptors to pollutants, based on a Project-specific screening analysis.)

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, as indicated by the checklist and subsequent discussion on the following pages.

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

DETERMINATION: (To be completed by the Lead Agency)
On the basis of this initial evaluation:

☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

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

Signature

August 19, 2019
Date

Steve McClain
Printed Name

Assistant Superintendent
Title

3.1 Aesthetics

Aesthetics				
Except as provided in Public Resources Code Section 21099, would the project:	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
Public views are those that are experienced from publicly accessible vantage points. If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

3.1.1 Discussion of Impacts

3.1.1-a) Would the project have a substantial adverse effect on a scenic vista?

a) Less than Significant Impact. A scenic vista is generally regarded as a viewpoint that provides a distant view of highly valued natural or man-made landscape features for the benefit of the general public. Within the Metropolitan Bakersfield area, scenic vistas include the Kern River corridor. Scenic resources include landscapes and features that are visually or aesthetically pleasing. Scenic resources contribute positively to a distinct community or region and may infer a visual benefit upon communities. Other types of typical scenic resources within Metropolitan Bakersfield include landscaped open spaces such as parks and golf courses.

The Project is within the general vicinity of the Kern River corridor, However, in terms of the scale of building heights, development of the site as a school would be consistent with existing urban residential development in the area. The school would not introduce any new obstructions to the view of scenic vistas that may be present in the distance. Therefore, the Project would have a less than significant impact on scenic vistas.

Mitigation Measures

No mitigation is warranted.

3.1.1-b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

b) No Impact. As there are no existing trees, rock outcroppings, or historic buildings onsite, the Project would not remove or damage any such trees, structures, or formations. The Project is not located within a state scenic highway. Therefore, the Project will have no impact.

Mitigation Measures

No mitigation is warranted.

3.1.1-c) In urbanized areas, would the project conflict with applicable zoning and other regulations governing scenic quality?

c) No Impact. The Project is not within a zone designated for its scenic quality. As there are no unique qualities or scenic attributes associated with the Project, the Project Site, or its vicinity, the Project is not subject to any regulations governing scenic quality and will consequently have no impact.

Mitigation Measures

No mitigation is warranted.

3.1.1-d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

d) Less than Significant Impact. The Project, an elementary school, will be equipped with illumination necessary for safety and security. Lighting installed at the Project site will be appropriately placed and/or shielded to minimize light trespass affecting day or nighttime views. Lighting equipment installed as part of the Project would utilize current technologies for intensity and energy usage that reduce light spillage and glare and may or may not incorporate motion activated lighting in lieu of lighting that is constant. Accordingly, the Project would not create significant new sources of light or glare that would substantially affect day or nighttime views.

Mitigation Measures

No mitigation is warranted.

3.2 Agriculture and Forestry Resources

Agriculture and Forest Resources				
Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

3.2.1 Discussion of Impacts

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation (DOC) as an optional model to use in assessing impacts to agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

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

a) No Impact. The Project is located within a developed urban setting on land that is not classified as farmland or agricultural land. The site is designated *Urban or Built Up Land* in the DOC's Farmland Mapping and Monitoring Program (FMMP). The *Urban or Built Up Land* classification is assigned to land identified by the Department of Conservation as being occupied by structures with

a building density of at least 1 unit to 1.5 acres, or approximately 6 structures within a 10-acre area. This classification is given to land developed with uses that are residential, industrial, commercial, or institutional; public administration uses; railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures; and for other developed purposes. The site is not designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, therefore, there will be no impact.

Mitigation Measures

No mitigation is warranted.

3.2.1-b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

b) No Impact. The Project is zoned PUD (Planned Unit Development), in an urbanized neighborhood. The PUD zoning is a classification that does not allow farmland or agricultural land uses. Neither the Project site nor its surrounding land uses are currently under Williamson Act contract. Consequently, there will be no impact.

Mitigation Measures

No mitigation is warranted.

3.2.1-c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

c) No Impact. The Project is not within the vicinity of forest land, timberland, or land subject to Timberland production. There will be no impact.

Mitigation Measures

No mitigation is warranted.

3.2.1-d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

d) No Impact. As the Project is not located within or near forest land, the Project does not have the potential to affect any forest land resources. There will be no impact.

Mitigation Measures

No mitigation is warranted.

3.2.1-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 use or conversion of forest land to non-forest use?

e) No Impact. For reasons discussed in **Sections 3.2.1(a) through (d)**. There will be no impact.

Mitigation Measures

No mitigation is warranted.

3.3 Air Quality

Air Quality					
Would the project:		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d)	Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?	☐	☐	☒	☐

3.3.1 Discussion of Impacts

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

The San Joaquin Valley Air Pollution Control District (SJVAPCD) has published guidance on determining applicability, significance of impacts, and potential mitigation of significant impacts, in its Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI). In GAMAQI, the air district has deemed projects listed in **Table 3-1** to have a less than significant impact on air quality due to criteria pollutant emissions and as such are excluded from quantifying criteria pollutant emissions for CEQA purposes. Pursuant to GAMAQI , based on its size and type, the Project qualifies as a Small Project Analysis Level (SPAL) project.[1] Though excluded from quantifying criteria pollutant emissions for purposes of determining significance on air quality, the Project's air quality and greenhouse gas emissions were modeled using the California Air Pollution Control Officers Association's California Emission Estimator Model (CalEEMod), Version 2016.3.2 for purposes of further discussion. The CalEEMod modeling results are included as **Appendix A**.

[1] (San Joaquin Valley Air Pollution Control District, March 1, 2017), Table 5-3(e)

Table 3-1. SJVAPCD Small Project Analysis Level by Project Type

SJVAPCD Small Project Analysis Level by Project Type[2]	
Land Use Category	**Project Size**
Elementary School	1,875 students
Junior High School	1,680 students
High School	1,325 students
Junior College (2 year)	1,100 students
University/College (4 year)	716 students

3.3.1-a) Would the project conflict with or obstruct implementation of the applicable air quality plan? and

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

a-b) Less than Significant Impact Applicable plans within the San Joaquin Valley Air Basin (SJVAB) are implemented for purposes of achieving attainment of criteria pollutants in accordance with the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS). The California Air Resources Board (CARB) is the agency responsible for establishing CAAQS, which in many cases are more stringent than the NAAQS, and for protecting the public from the harmful effects of air pollution by developing statewide plans, programs, and actions to reduce air pollution and fight climate change. The SJVAPCD develops basin specific plans aimed at achieving attainment. Air quality standards and the air basin's attainment status are listed in **Table 3-2.**

[2] (San Joaquin Valley Air Pollution Control District, March 1, 2017), Table 5-3 (e)

Table 3-2: San Joaquin Valley Summary of Air Quality Standards & Attainment Designations

Summary of Ambient Air Quality Standards & Attainment Designation[3]					
Pollutant	Averaging Time	California Standards*		National Standards*	
		Concentration*	Attainment Status	Primary	Attainment Status
Ozone (O_3)	1-hour	0.09 ppm	Non- Attainment/ Severe	–	No Federal Standard
	8-hour	0.070 ppm	Non- Attainment	0.075 ppm	Non-Attainment (Extreme)**
Particulate Matter (PM_{10})	AAM	20 µg/m³	Non-Attainment	–	Attainment
	24-hour	50 µg/m³		150 µg/m³	
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m³	Non-Attainment	12 µg/m³	Non-Attainment
	24-hour	No Standard		35 µg/m³	
Carbon Monoxide (CO)	1-hour	20 ppm	Attainment/ Unclassified	35 ppm	Attainment/ Unclassified
	8-hour	9 ppm		9 ppm	
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	Attainment	0.053 ppm	Attainment/ Unclassified
	1-hour	0.18 ppm		0.100 ppb	
Sulfur Dioxide (SO_2)	AAM	–	Attainment	0.03 ppm	Attainment/ Unclassified
	24-hour	0.04 ppm		0.14 ppm	
	3-hour	–		--	
	1-hour	0.25 ppm		75 ppb	
Lead	30-day Average	1.5 µg/m³	Attainment	–	No Designation/ Classification
	Calendar Quarter	–		1.5 µg/m³	
	Rolling 3-Month Average	–		0.15 µg/m³	
Sulfates	24-hour	25 µg/m³	Attainment	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m³)	Unclassified		
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m³)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/km-visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70%.	Unclassified		

** For more information on standards visit :http//ww.arb.ca.gov.research/aaqs/aaqs2.pdf*
*** No federal 1-hour standard. Reclassified extreme nonattainment for the federal 8-hour standard May 5, 2010.*
****Secondary Standard*
Updated: July 30, 2019

[3] (San Joaquin Valley Air Pollution Control District, 2019)

As a result of the air basin being in nonattainment/severe status for the State 1-hour standard for Ozone (O_3); nonattainment status for the State 8-hour O_3 standard; nonattainment/ extreme status for the national 8-hour O_3 standard; nonattainment for the State standard for particulate matter 10 micrometers or smaller (PM_{10}), and both State and national standard for particulate matter 2.5 micrometers or smaller ($PM_{2.5}$), those criteria pollutants are of greatest concern in local air quality plans within the SJVAB. Utilizing results from the CalEEMod emissions modeling (**Appendix A**), lists the Project's construction-related emission of criteria pollutants for the anticipated construction year beginning in 2021 and ending in 2023. **Table 3-3** lists the Project's operation-related emission of criteria pollutants for operational year 2023.

Table 3-3. Project Construction-Related Emissions (Maximum Daily Emissions)

Short-Term Construction-Generated Emissions of Criteria Air Pollutants					
Source	Annual Emissions (Tons/Year)[1]				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction (2021) - unmitigated	0.35	3.47	2.72	0.66	0.40
Construction (2021) - mitigated	0.35	3.47	2.72	0.34	0.23
Construction (2022) - unmitigated	0.85	1.71	1.77	0.12	0.09
Construction (2022) - mitigated	0.85	1.71	1.77	0.12	0.09
SJVAPCD Significance Thresholds:	***10***	***10***	***100***	***15***	***15***
Mitigated Emissions Exceed SJVAPCD Thresholds?	***No***	***No***	***No***	***No***	***No***

Table 3-4. Project Operational Emissions (Unmitigated)

Operational Emissions of Criteria Air Pollutants (Unmitigated)					
Source	Annual Emissions (Tons/Year)[1]				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Area	0.4396	—	—	—	—
Energy	0.0129	0.1174	—	—	—
Mobile	0.1968	1.9339	1.9145	0.6138	0.1689
Total	**0.6493**	**2.0513**	**1.9145**	**0.6138**	**0.1689**
SJVAPCD Significance Thresholds:	***10***	***10***	***100***	***15***	***15***
Exceed SJVAPCD Thresholds?	***No***	***No***	***No***	***No***	***No***

1. *Project emissions for waste and water were determined to be negligible.*
2. *Emissions were quantified using CalEEMod, Version 2016.3.2. Refer to* ***Appendix A*** *for modeling results and assumptions. Totals may not sum due to rounding.*

As previously stated, air quality plans within the SJVAB are primarily adopted for the purpose of reducing criteria pollutants. As demonstrated in **Table 3-2,** the SJVAB is not in attainment with the applicable standards for ozone, PM_{10}, and $PM_{2.5}$. A project that would exceed established thresholds for criteria pollutants would be considered to have a significant impact on the implementation of air quality plans and would also constitute a cumulatively considerable net increase of criteria pollutants for which the air basin is in non-attainment. **Table 3-3** and **Table 3-4,** respectively, demonstrate that the Project does not exceed the SJVPCD's established significance thresholds for any

component or phase of the Project. Therefore, even were it not exempt under SJVAPCD's SPAL, the Project would be considered to have a less than significant impact on the implementation of air quality plans and would not constitute a cumulatively considerable net increase of criteria pollutants for which the air basin is in non-attainment.

Mitigation Measures

No mitigation is warranted.

3.3.1-c) Would the project expose sensitive receptors to substantial pollutant concentrations? and

3.3.1-d) Would the project result in other emissions (such as those leading to odors adversely affecting substantial number of people?

c-d) Less than Significant Impact. The Project consists of the construction of an elementary school. The nature of an educational use is to protect the students and employees, who are sensitive receptors utilizing the site, from exposure to substantial pollutant concentrations and odors that could substantially affect them. By its nature, this type of use is not expected to generate, handle, or transport substantial pollutant concentrations, nor is the Project expected to generate other emissions or odors during its construction or operation.

CEQA generally does not require an analysis of the effects that existing environmental conditions might have on a project. It does, however, require an analysis of how environmental conditions might adversely affect a project's users where the project has the potential to worsen existing environmental hazards. Specific to schools, PRC Section 21151.8(2)(A) and EC Section 17213(b) require notification in writing and consultation with the air pollution control district and administering agency to identify both permitted and nonpermitted facilities within one-quarter mile of the school that might reasonably be anticipated to emit or handle hazardous or extremely hazardous substances or materials. Locally, the Emergency Services Agency, Fire Department, and/or air pollution control board are the administering agencies for identification and permitting facilities emitting, storing, or handling hazardous or extremely hazardous substances or materials.

On July 30, 2019, the SJVAPCD and Bakersfield Fire Department, administering agencies within the Project area, were contacted via email to obtain consultation regarding potential emissions and to obtain written identification of facilities within the Project vicinity. No facilities meeting the criteria of PRC Section 21151.8(2)(A) and EC Section 17213(b) were identified by either administering agency. **Appendix B** provides documentation of the written request for consultation/ identification of facilities and the responses from the administering agencies. Therefore, there are no impacts related to pollutant concentrations affecting the Project nor generated by the Project.

Mitigation Measures

No mitigation is warranted.

3.4 Biological Resources

Biological Resources				
Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
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?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

3.4.1 Discussion of Impacts

Methodology: A reconnaissance-level field survey of the Project site and surrounding area was conducted on July 11, 2019 by Provost & Pritchard biologist, Brooke Fletcher. A report entitled – *Bakersfield City School District: Paladino School, Biological Evaluation* (*Biological Report*) dated July 2019, containing the results of the field survey and the biologist's recommendations is included as **Appendix C**. The survey consisted of walking through the Project area while identifying and noting land uses, biological habitats and communities, and plant and animal species encountered. The site and surrounding areas were assessed for suitable habitats of various wildlife species.

The analysis was based on the resources known to exist or with the potential to exist within the Project site and surrounding areas. Sources of information used in preparation of the analysis included: the California Department of Fish and Wildlife (CDFW) California Natural Diversity

Database; the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation system; the California Native Plant Society Online Inventory of Rare and Endangered Vascular Plants of California; CalFlora's online database of California native plants; the Jepson Herbarium online database; U.S. Fish and Wildlife Service (USFWS) Environmental Conservation Online System; the NatureServe Explorer online database; the United States Department of Agriculture Natural Resources Conservation Service Plants Database; the CDFW California Wildlife Habitat Relationships database; the California Herps online database; and various manuals, reports, and references related to plants and animals of the San Joaquin Valley region.

The field survey of the Project site included an appropriate level of detail to assess the significance of potential impacts to sensitive biological resources resulting from the Project. The analysis included general descriptions of features of the Project that could be subject to the jurisdiction of federal and/or State agencies, such as the U.S. Army Corps of Engineers (USACE), CDFW, RWQCB and SWRCB. The field investigation did not include a formal wetland delineation or focused surveys for special status species.

3.4.1-a) Would the project 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?

a) Less than Significant Impact. The applicable local or regional plans, policies, or regulations are found in the adopted Metropolitan Bakersfield Habitat Conservation Plan (MBHCP). Although the proposed location of Paladino School lies within the mapped boundaries of the MBHCP area, the Project, which involves the development of a public school, is not subject to City or County permitting and therefore not required to comply with the adopted elements of the MBHCP. Candidate, sensitive, or special status species identified within the MBHCP are also those identified as candidate, sensitive, or special status species by the CDFW. Tables 1 and 2 of the *Biological Report* (**Appendix B**) lists all species identified as a candidate, sensitive, or special status species by the CDFW and those listed as candidate, sensitive, or special status by the USFWS.

Special Status Animal Species

The *Biological Report* found 19 published accounts of special status animal species having the potential to be present (Table 1 of the *Biological Report (***Appendix C**). However, after completing the biological survey, the biologist determined 16 were absent or unlikely to occur within the Project area due to past or ongoing disturbance and/or absence of suitable habitat. In addition to the disturbance of nesting raptors, migratory birds and special status birds, the 3-remaining candidate, sensitive, or special status animal species determined by the biologist to be potentially impacted are: 1) burrowing owl; 2) San Joaquin kit fox and, 3) American badger.

Nesting Raptors, migratory birds, and special status birds: The *Biological Report* determined that the Project does not involve the removal of any trees or shrubs, and habitats onsite are suboptimal for foraging and nesting due to frequent disturbance and adjacent urban development. A swath of superior nesting and foraging habitat in the vicinity is available in the form of the Kern River riparian corridor or the expanse of undeveloped grassland at the base of the foothills in Kern County

Burrowing owl. No burrowing owl individuals were observed by the biologist at the time of the field survey. Several suitable burrows were identified as being present by the biologist. Burrowing owls have been documented in the vicinity. The biologist determined the Project site contains suitable breeding and foraging habitat for the burrowing owl. Project activities were determined by the biologist to have the following potentially adverse impacts:

- If burrowing owls were nesting at the time of ground disturbance, individuals could be injured or killed by burrow collapse.
- Project-related construction in the vicinity could also disturb nesting owls, causing a breeding pair to abandon their nest.
- Wintering owls in the vicinity would be expected to fly away from disturbance, but given their fossorial nature, extra care should be taken to ensure protection of this species prior to ground disturbance.
- Removal of active burrows could be considered a significant impact if there were not an abundance of alternative suitable burrows in the Project's vicinity.

San Joaquin kit fox. San Joaquin kit fox have been documented in the Project vicinity, and suitable burrows were observed during the field survey. The biologist determined that given the frequent disturbance and adjacent urban development, the Project site represents suitable, but suboptimal foraging and denning habitat for this species. The *Biological Report* concluded that if a kit fox were present onsite during ground-disturbance, it could be injured or killed by construction activities. Projects that result in the mortality of special status species are considered a violation of State and federal laws and are considered a potentially significant impact under CEQA.

American badger. The *Biological Report* found no American badger individuals or sign. No claw marks, tracks, or scat were observed, however, the *Biological Report* concluded that the Project site could serve as suitable denning or foraging habitat for this species. The *Biological Report* further determined that given the frequent disturbance and adjacent urban uses, habitats of the Project site are likely suboptimal and could discourage habitation, foraging, or dispersal movements through this area. However, the *Biological Report* concluded that if an American badger were present onsite during ground-disturbance, it could be injured or killed by construction activities. Projects that result in the mortality of special status species are considered a violation of State and federal laws and are considered a potentially significant impact under CEQA.

Special Status Plant Species

The *Biological Report* determined that 22 special status plant species have been documented in the Project vicinity, including Bakersfield cactus (*Opuntia basilaris var. treleasei*). Table 2 of the *Biological Report* (**Appendix B**), lists the plant species documented in the Project vicinity, but concludes that all 22 species are either absent from or unlikely to occur within the Project area due to past and ongoing disturbance and/or the absence of suitable habitat. Therefore, implementation of the Project will have no effect on individual plants or regional populations of any special status plant species, including the Bakersfield cactus.

Biological Report Conclusions and Recommendations

The Project has the potential to result in adverse effects, either directly or indirectly, on nesting raptors, migratory birds, and special status birds including burrowing owls. The Project also has the potential to result in adverse effects, either directly or indirectly, on San Joaquin kit fox and

American badgers. The Project does not have the potential to adversely affect any special status plants due to past and ongoing disturbance and/or the absence of suitable habitat. Potentially significant impacts of the Project may be mitigated to a level of insignificance with incorporation of Mitigation Measures (MM) BIO-1 through BIO-10

Mitigation Measures

BIO-1: *(WEAP Training):* Prior to initiating construction activities (including staging and mobilization), the District shall ensure that all personnel associated with Project construction attend mandatory Worker Environmental Awareness Program (WEAP) training. The WEAP training shall be conducted by a qualified biologist, to aid workers in identifying special status resources that may occur in the Project area. The specifics of this program shall include identification of the sensitive species and suitable habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information, along with photographs or illustrations of sensitive species with potential to occur onsite, shall also be prepared for distribution to all contractors, their employees, and all other personnel involved with construction of the Project. All employees shall sign a form documenting that they have attended WEAP training and understand the information presented to them.

BIO-2 *(Hours of Construction):* The District shall restrict hours of ***c***onstruction to daylight hours to reduce disturbance to wildlife that could be foraging within work areas.

BIO-3 *(Pre-construction Survey- Nesting Raptors, migratory birds, and special status birds):* If the District must conduct construction activities within nesting bird season (February 1 to August 31), a qualified biologist shall conduct pre-construction surveys for active nests within 30 days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 500 feet. If no active nests are observed, no further mitigation is required.

BIO-4 *(Establish Buffers- Nesting Raptors, migratory birds, and special status birds):* On discovery of any active nests near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged.

BIO-5 *(Pre-construction Take Avoidance Survey- burrowing owls and suitable burrows):* A qualified biologist shall conduct a pre-construction take avoidance survey for burrowing owls and suitable burrows, in accordance with CDFW's *Staff Report on Burrowing Owl Mitigation* (2012), within 30 days prior to the start of construction activities. The survey shall include the proposed work area and surrounding lands within 500 feet. If no burrowing owl individuals or suitable burrows are observed, no further mitigation is required.

BIO-6 *(Avoidance- burrowing owls and suitable burrows):* If an active burrowing owl burrow is detected, the occurrence shall be reported to the Fresno Field Office of CDFW and the CNDDB, and disturbance-free buffers shall be implemented in accordance with CDFW's 2012 *Staff Report on Burrowing Owl Mitigation,* as outlined in the table below:

Location	Time of Year	Level of Disturbance		
		Low	Medium	High
Nesting sites	Apr 1 – Aug 15	200 meters	500 meters	500 meters
Nesting sites	Aug 16 – Oct 15	200 meters	200 meters	500 meters
Nesting sites	Oct 16 – Mar 31	50 meters	100 meters	500 meters

BIO-7 ***(Consultation with CDFW and Passive Relocation- burrowing owls and suitable burrows):*** If a qualified biologist determines that avoidance of an active burrowing owl burrow is not feasible, CDFW shall be immediately consulted to determine the best course of action, which may include passive relocation during non-breeding season. Passive relocation and/or burrow exclusion shall not take place without coordination with CDFW and preparation of an approved exclusion and relocation plan.

BIO-8 ***(Pre-construction Survey- San Joaquin kit fox):*** Within 30 days prior to the start of construction, a pre-construction survey for San Joaquin kit fox shall be conducted on and within 200 feet of proposed work areas. If an active kit fox den is detected within or adjacent to the Project area, construction shall be delayed, and CDFW and USFWS shall be consulted to determine the best course of action.

BIO-9 ***(Minimization- San Joaquin kit fox):*** The Project shall observe all minimization and protective measures from the Construction and On-Going Operational Requirements of the USFWS 2011 *Standardized Recommendations*, including, but not limited to: construction speed limits, covering of pipes, installation of escape structures, restriction of herbicide and rodenticide use, proper disposal of food items and trash, prohibition of pets and firearms, and completion of an employee education program.

BIO-10 ***(Mortality Reporting- San Joaquin kit fox):*** The Sacramento Field Office of USFWS and the Fresno Field Office of CDFW shall be notified in writing within three working days in the event of the accidental death or injury to a San Joaquin kit fox during construction. Notification must include the date, time, and location of the incident and any other pertinent information.

3.4.1-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 or U.S. Fish and Wildlife Service?

b) Less than Significant Impact. No additional riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS was determined to be present on the Project site. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is warranted.

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

c) No Impact. The project is not within or near a State- or federally protected wetland, marsh, vernal pool, or coastal region. The *Biological Report* determined that the only potential aquatic resource onsite at the time of the field survey was a small excavated basin. While not included in the Biological Report, it was determined that the purpose of the basin is to collect stormwater runoff during construction. The basin is a temporary basin, with the permanent stormwater basin for the Project and its surrounding vicinity being located at the entrance of the City in the Hills community near State Route (SR) 178. At the time of the field survey, the basin was completely dry and the filled with tumbleweeds.

No activities involving removal, filling, hydraulic interruption or other activities that have the potential to effect wetlands are associated with the Project. Typical wetlands, vernal pools, streams, and other potentially regulated water features were absent from the Project site and the vicinity. The Biological Report determined it is reasonable to assume that Waters of the U.S. are absent from the Project area. Therefore, the Project does not have the potential to adversely affect state or federally protected wetlands.

Mitigation Measures

No mitigation is warranted.

3.4.1-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?

d) No Impact. Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation.

The *Biological Report* determined that Project site does not contain any features likely to serve as a wildlife movement corridor. Furthermore, the Project is located within the City of Bakersfield in a region undergoing intensive development and urbanization, resulting in an increase in traffic and disturbance related to human activities which would discourage dispersal and migration. Therefore, the Project will not impact wildlife movement corridors or impeded the movement of any wildlife species.

Mitigation Measures

No mitigation is warranted.

3.4.1-e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

e) Less than Significant Impact with Mitigation Incorporated. The project is similar to other urban development included in local policies and ordinances within the City of Bakersfield. There are no sensitive tree species present or documented to be within the Project vicinity. There are no existing policies and ordinances adopted specifically for tree preservation, however the applicable policy or plan adopted for purposes of protecting biological resources would be the MBHCP. The relevant biological species that have the potential to be affected by the Project are discussed in Section 3.4.2-a. Adherence to MM BIO-1 thru BIO -10 would render potential impacts less than significant.

Mitigation Measures

Refer to MM BIO-1 through BIO 10

3.4.1-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?

f) Less than Significant Impact with Mitigation Incorporated. As previously discussed, the applicable, adopted Habitat Conservation Plan in the area is currently the MBHCP, adopted by the City of Bakersfield and the County of Kern for protection of biological resources within Metropolitan Bakersfield. The District is not currently a party to the MBHCP nor is it covered under the associated incidental take permit. The City and County are preparing a new Natural Communities Conservation Plan (NCCP)/HCP entitled the Bakersfield NCCP/HCP. Associated with the Bakersfield NCCP/HCP is incidental take coverage for all urban development within Metropolitan Bakersfield, which may include schools, hospitals, and public utilities that are not under the jurisdiction of the city but provide services and support to the urban community. The Bakersfield NCCP/HCP may be adopted prior to or during construction of the Project. If adopted, and if it is determined schools are to be included, adherence with MM BIO-1 through BIO-10 would be consistent with the anticipated conditions of the plan. There are no other applicable adopted HCP, NCCP, local, regional, or State plans. Consequently, Project impacts are less than significant with mitigation incorporated.

Mitigation Measures

Refer to MM BIO-1 through BIO-10

3.5 Cultural Resources

Cultural Resources				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

3.5.1 Discussion of Impacts

Methodology: A report entitled *Archaeological Investigation for Kern Canyon Ranch, Oil Center, CA 7.5' USGS Topographic Quadrangle, Kern County California* (Cultural Resources Report (**Appendix D**)), was prepared by Robert A. Schiffman and dated October 21, 1999. The Kern Canyon Ranch project was subsequently identified as the City in the Hills project and community. The *Cultural Resources Report* was among the technical reports included in the City in the Hills Environmental Impact Report (SCH 2000011101) (*City in the Hills EIR*) hereby incorporated by reference.

The *City in the Hills EIR* was prepared for the development of a residential subdivision on the Project site. The *City in the Hills EIR* encompassed 694 acres within Section 17, the SE ¼ of the SE ¼ of Section 18, and the extreme NE portion (8.9 acres) of Section 19, Township 29 South, Range 29 East. In general, the area included in the *City in the Hills EIR* is bounded by Highway 178 on the south, Masterson Street on the east, Paladino Drive on the north, and undeveloped Vineland Road/Queen Street (one mile east of Morning Drive) on the west. Therefore, the Project, which is located in Section 17, Township 29S, Range 29E, M.D.B.M, was included in field investigations conducted for the City in the Hills project.

The *Cultural Resources Report* evaluated the potential for historical or archaeological significance collectively known as Cultural Resources to be present onsite. Due to the nature of Cultural Resources, the *Cultural Resources Report* is considered appropriate for use in evaluating the potential to impact existing resources on the Project site. The report includes field investigations which are detailed in the *Cultural Resources Report.*

The on-site field investigations were conducted by Mr. Schiffman and his associates by walking transects through all of the lands included in the Cultural Resources Report,

As a result of the field investigations, two archaeological sites (archaeological remains) and 8 isolated artifacts consisting of naturally occurring cobbles of small cobbles of chalcedonym chert, and fine-grained quartzite were found. The 8 isolated artifacts we determined to be capable of being used in

the production of chipped stone tools, such as scrapping and cutting tools and projectile points. However, the quality of the materials was of poor quality. Both of the archaeological sites were determined not to constitute a significant archaeological resource requiring further field work or preservation. The report determined that there were no artifacts of historical significance present on the Project site.

3.5.1-a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

a) No Impact. The Project site is vacant, graded land that has been routinely disked for weed control. There are no structures on the Project site. Therefore, there are no historical resources as defined in Public Resources Code, Section 15064.5, and no impact will occur.

Mitigation Measures

No mitigation is warranted

3.5.1-b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

b) Less than Significant Impact with Mitigation Incorporated. As discussed in the *Cultural Resources Report* included as **Appendix D**, potentially significant archaeological artifacts found during field investigations in 1999 were determined not to constitute significant archaeological resources. The surface of the Project site has subsequently been graded and routinely disked for weed control. The potential exists for archaeological resources to be unearthed during excavation activities. Therefore, with incorporation of MM CULT-1, impacts to archaeological resources that may potentially exist below ground surface will be less than significant.

Mitigation Measures

CULT - 1: Should archaeological remains or artifacts be unearthed during any stage of project activities, work in the area of discovery shall cease until the area is evaluated by a qualified archaeologist. If mitigation is warranted, the project proponent shall abide by recommendations of the archaeologist.

3.5.1-c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

c) Less than Significant Impact with Mitigation Incorporated. There is no evidence or record that the project has the potential to be an unknown burial site or the site of buried human remains. In the unlikely event of such a discovery, mitigation shall be implemented. With incorporation of MM CULT-2, impacts resulting from the discovery of remains interred on the project site would be less than significant.

Mitigation Measures

CULT - 2: In the event that any human remains are discovered on the project site, the Kern County Coroner must be notified of the discovery (California Health and Safety Code, Section

7050.5) and all activities in the immediate area of the find or in any nearby area reasonably suspected to overlie adjacent human remains must cease until appropriate and lawful measures have been implemented. If the Coroner determines that the remains are not recent, but rather of Native American origin, the Coroner shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours to permit the NAHC to determine the Most Likely Descendent of the deceased Native American.

3.6 Energy

Energy				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

3.6.1 Discussion of Impacts

3.6.1-a) Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

a) Less than Significant Impact. The California Building Standards Code (California Code of Regulations (CCR), Title 24, Part 2), establishes building codes in California. CCR Title 24, Part 6 herein referred to as Title 24, establishes the standards for building energy in California. Title 24 applies to all buildings that are heated and/or mechanically cooled and are defined under the California Building Code as A, B, E, H, N, R, or S occupancies. Title 24, the Building Energy Efficiency Standards, which became effective on January 1, 2017 are also applicable to school construction. Effective January 1, 2014 the most recent version of the California Green Building Standards (CALGreen) contains mandatory provisions for the inspection of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet.

The Project includes the construction of ground-mounted solar photovoltaic energy collectors generating up to 240 kWh of energy (solar system) during Phase II of Project implementation. As inclusion of an onsite solar system is not a requirement of Title 24, the Project would exceed Title 24 energy reduction standards.

Current regulations for construction equipment, heavy-duty equipment, and earthmoving equipment used in construction contributes to reductions in energy as well as reduction in pollutant emissions. California implemented its In-Use Off-Road Diesel Fueled Fleets regulations (off-road regulation) which applies to all self-propelled off-road diesel vehicles 25 horsepower or greater and most two-engine vehicles. The Small Off-Road Engines program was implemented by California to apply to categories of outdoor powered equipment and specialty vehicles often used in construction.

With the incorporation of Title 24 energy standards, implementation of the solar energy system, and regulation of construction vehicles and equipment, the Project would have a less than significant

impact on energy resources and would not result in wasteful or unnecessary consumption of energy resources during project operation or construction.

Mitigation Measures

No mitigation is warranted

3.6.1-b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

b) Less than Significant Impact. In September 2018 the California Renewables Portfolio Standard Program (Senate Bill 100) was signed into effect, expanding the State's commitment to clean energy through mandate and to reduce emissions of greenhouse gases. The bill specifically requires that 50 percent of California's electricity be provided by renewable resources by 2025 and 60 percent by 2030, towards the goal of 100 percent zero-carbon electricity by 2045.

The Project includes plans to reduce the school's consumption of nonrenewable energy by the installation of solar photovoltaic panels. Other Project construction and operating equipment will contribute to energy efficiency in furtherance of State goals. By incorporating energy reduction standards that exceed Title 24 requirements, into the Project, the Project will have a less than significant impact on State or local plans for renewable energy or energy efficiency.

Mitigation Measures

No mitigation is warranted

3.7 Geology and Soils

Geology and Soils				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause potentially substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☒	☐	☐
ii) Strong seismic ground shaking?	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

3.7.1 Discussion of Impacts

Methodology: A report entitled *Phase I Environmental Site Assessment for SE ¼ of SE ¼ Section 18, T29S, R29E in Bakersfield, California* (*Phase 1 Report-adjacent property*) (**Appendix E**)), was prepared by Soils Engineering, Inc. and dated October 1998. The *Phase 1 Report-adjacent property* evaluated among other things, the potential for hazards related to earthquake faults and surface ruptures and soil stability to occur on the adjacent property. While not specifically prepared for the subject Project, findings and implications of information contained in the report are relative to the Project due to proximity. The Phase 1 report was among the technical reports included in the *City in the Hills EIR*.

3.6.1-a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

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

ii) Strong seismic ground shaking?

VI-a-iii) Seismic-related ground failure, including liquefaction?

VI-a-iv) Landslides?

a) Less than Significant Impact with Mitigation Incorporated. The *Phase 1 Report-adjacent property*, identified a surface rupture from an unnamed fault within the property that was subject to the report (SE ¼ of SE ¼ Section 18, T29S, R29E). The property is located immediately east of the eastern boundary of the Project. The identified surface rupture is within 57 yards of the Project. Several active faults also exist within 20 miles of the Project. Active faults include: the Kern Gorge Fault located approximately 4.6 miles northeast of the Project, the Edison Fault located approximately 6.5 miles south of the Project, and the White Wolf Fault, located approximately 15.3 miles south of the Project. The Garlock Fault, located approximately 34 miles south, is the closest major fault.

The California Building Code (CBC) utilizes risk-targeted maximum considered earthquake spectral response accelerations to create seismic design maps. Furthermore, the DSA provides school specific seismic design and guidance for the review of building structures located within mapped seismic design areas. The Project is not located within a mapped seismic design area identified by the DSA.

The typically recommended setback distance for building construction near an active normal fault is 50 feet.[4] This distance is recommended for protection of buildings, structures, and persons from immediate risks associated with movement from earthquakes. Project building placement is planned to be oriented along the western portion of the 24 acres selected for construction of the school. Through placement of structures greater than 50 feet away from the know surface ruptures, the Project's potential to result in substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault or experience strong seismic ground shaking during an earthquake is reduced.

The CBC utilizes risk-targeted maximum considered earthquake spectral response accelerations to create seismic design maps. Furthermore, the DSA provides school specific seismic design and guidance for the review of building structures located within mapped seismic design areas. The Project is not located within a mapped seismic design area identified by the DSA.

[4] (McCalpin, 1987)

There are no water bodies or atmospheric conditions that would cause soil in the Project vicinity to become or remain wet for extended periods. In addition, the topography of the Project site and its vicinity is relatively flat. Liquefaction is the process by which sediment that is very wet starts to behave like a liquid as a result of ground shaking. Landslides are associated with the downward movement of earth or artificial fill on sloping ground. Consequently, seismic-related ground failure from liquefaction and landslides is not likely to occur and there are no impacts associated with the potential for landslides.

The Project has the potential to result in loss, injury, or death involving rupture of the known earthquake fault located adjacent to the Project, however impacts could be reduced to less than significant levels through incorporation of MM GEO-1.

Mitigation Measures

> **GEO-1:** Prior to submitting final building construction plans to the DSA, the District shall obtain a Geotechnical Report to identify the absence or presence of faults or ruptures on the Project site. The Geotechnical Report shall include recommendations for the location of buildings and structures and building setback distances from and faults or ruptures identified.

3.7.1-b) Would the project result in substantial soil erosion or the loss of topsoil?

b) Less than Significant Impact. Due to the relatively flat topography of the site, substantial erosion is not anticipated to occur. Topsoil will be watered during construction operations to prevent fugitive soil and dust migration. Where watering is determined to be ineffective or impractical, local regulations require soil binding to prevent the loss of topsoil during construction. During Project operation, all unpaved surfaces will be covered with ornamental landscaping and/or permanent soil binders to prevent the loss of topsoil. Impacts related to soil erosion and/or loss of topsoil are less than significant.

Mitigation Measures

> No mitigation is warranted

3.7.1-c) Would the project 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?

c) Less than Significant Impact. As discussed in **Sections 3.7.1-a** and **b**, the potential for landslide or liquefaction is considered unlikely. Lateral spreading, subsidence, and collapse both on-site and off-site are also considered unlikely or less than significant for reasons previously discussed in these sections.

Mitigation Measures

> No mitigation is warranted

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

d) Less than Significant Impact with Mitigation Incorporated. The soils type of the Project site is Delano sandy loam, 0 to 2% slopes. This soils type can be described as dominated by sand particles and is characterized as containing enough clay and sediment to provide some structure and fertility. Soils containing clay are characterized as having minor expansive characteristics. Expansive soils are known as soils with high shrink-swell potential. Structures built on or in close proximity to expansive soils are prone to damage from movement as the water content of the soil increases or decreases. The Project area was identified in *the City in the Hills EIR* as potentially having soils that are classified as an expansive soil type in Chapter 18 of the CBE, the most recently adopted building code that replaced the Uniform Building Code in California. Impacts related to expansive soils may be reduced through design and construction based on engineering recommendations achieved by additional sampling and soil testing. With incorporation of MM GEO-2, impacts are less than significant.

Mitigation Measures

> **GEO-2:** Prior to submitting final building construction plans to the DSA, the District shall obtain site specific soils testing by a qualified engineer for purposes of identifying the soil's plasticity index, expansion index, and other relative characteristics. If soils are determined to be expansive, the engineer shall include recommendations for the design and construction of foundations.

3.7.1-e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?

e) No Impact. The Project will be connected to the City's sewer and wastewater disposal system. It will not be necessary to utilize septic tanks for the Project; therefore, there is no impact related to the soil's capacity to support the use of septic tanks or alternative wastewater disposal systems.

Mitigation Measures

No mitigation is warranted

3.7.1-f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

f) Less than Significant Impact. The only known unique paleontological resources within the Project's vicinity are located within the Sharktooth Mountain or Sharktooth Hill bonebed (bonebed). There are no other known unique geologic features within the Project's vicinity.

The bonebed is a single, relatively thin horizon of fossil producing layer that is generally 6 to 8-inches thick in the vicinity of the Project. The fossils are from the Middle Miocene age (15 to 16 million years old) and represent the vertebrate of marine mammals primarily consisting of sharks. The bonebed is found at elevations ranging between 600 and 700 feet. The *City in the Hills EIR* determined that grading operations at elevations ranging between 600 and 700 feet have the

potential to impact the bonebed. Few fossils have been found at elevations above 680 feet. The Project is located at elevations above 700 feet and is therefore unlikely to produce any unique paleontological resources. Therefore, the Project will have a less than significant impact.

Mitigation Measures

No mitigation is warranted

3.8 Greenhouse Gas Emissions

Greenhouse Gas Emissions				
Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

3.8.1 Discussion of Impacts

Methodology: The SJVAPCD adopted its *Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* in December 2009. The Guidance addressed two methods of demonstrating compliance: The use of performance-based standards in the assessment of new projects or quantification of project specific GHG emissions. The performance-based standards are a method of establishing specifications for project design elements using Best Performance Standards (BPS). BPS are defined as the most effective achieved in-practice means of reducing or limiting GHG emissions from a GHG emissions source. Projects utilizing BPS and complying with an approved GHG emission reduction plan or mitigation are determined to have a less than significant individual or cumulative impact. Using the quantification method, projects determined to have reduced or mitigated GHG emissions by 29%, consistent with targets established in the CARB's Assembly Bill 32 (AB 32) Scoping Plan (first adopted in 2008).[5]

Construction of the Project is anticipated to begin in early 2021, with the Project becoming operational in August 2023.

The Project would utilize BPS and would be required to comply with an approved GHG emission reduction plan or mitigation are determined to have a less than significant individual or cumulative impact. In accordance with the quantification method, the Project's GHG emissions were estimated using CalEEMod, Version 2016.3.2 (Refer to **Appendix A** for modeling results and assumptions). The Project would generate GHGs during its construction and operational phases as listed below.

[5] (San Joaquin Valley Air Pollution Control District, 2009)

Table 3-5. Short-Term Construction Generated GHG Emissions

Short-Term Construction-Generated GHG Emissions	
Construction Year	Emissions (MT CO_2e)(1)
Unmitigated GHG Emissions	243.31
Mitigated GHG Emissions	243.31

Table 3-6. Project Operational-Year 2023 GHG Emissions

Project Operational-Year 2023 GHG Emissions	
Emissions Description	Emissions (MT CO_2e)(1)
Area	0.0150
Energy	223.0146
Mobile	936.6696
Waste	72.0457
Water	10.5997
Total	**1,242.3445**

3.8.1-a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

a) Less than Significant Impact. The Project's GHG emissions would occur during its construction and operations. Estimated construction-generated emissions are summarized in **Table 3-6**. As indicated, construction of the proposed project would generate maximum mitigated and unmitigated emissions of approximately 243 metric tons of carbon dioxide equivalent ($MTCO_2e$). Considering the construction period is short lived and has the potential to produce approximately 199 metric tons of unmitigated and mitigated carbon dioxide equivalent, the impact would be less than significant.

As summarized in **Table 3-6**, the Project's mitigated operational baseline GHG emissions would reduce its mitigated year 2021 operational GHG emissions from 175.95 $MTCO_2e$ to 45.37 $MTCO_2e$ for a reduction of approximately 74%. The Project's emissions include sources such as site-generated vehicle use, which has changed significantly over the lifetime of the Project. Emissions listed in **Table 3-6** demonstrate that the Project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment in comparison to a baseline year 2000 condition, which allow for a reasonable inference of its initial year 1961 conditions. Therefore, the Project would have a less than significant impact.

Mitigation Measures

No mitigation is warranted

3.8.1-b) Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

b) Less than Significant Impact. Applicable plans adopted in California for purposes of reducing the emissions of GHGs are primarily attributable to the California Global Warming Solutions Act of 2006 (Assembly Bill (AB) 32) which created a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in California. AB 32 required CARB to develop a Scoping Plan that describes the approach California will take to reduce GHG to achieve the goal of reducing emissions to 1990 levels by 2020 by reducing GHG emissions 29% percent below "business as usual" on a per-project basis. The first Scoping Plan was approved by CARB in 2008 with a mandate to update the Scoping Plan every five years. CARB approved the first update in May 2014. In 2016, Senate Bill 32 (SB 32) and AB 197 were passed. SB 32 codified an overarching 2030 GHG emissions reduction target of 40 percent below 1990 levels. AB 197 provided additional direction for developing the Scoping Plan. CARB is in the process of preparing an update to the Scoping Plan to the 2030 target of 40 percent below 1990 levels. Therefore, until the next Scoping Plan is adopted, the target currently in effect is to reduce GHG emissions by 29%. Regionally, the SJVAPCD adopted its Climate Change Action Plan (CCAP) in August 2008 to assist the district in achieving the AB 32 targets. The *Guidance for Valley Land Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* previously discussed in this report, was prepared to assist land use agencies in achieving the goals of the CCAP and to implement CARB's Scoping Plan on a regional level.

Consistent with the discussion above regarding adopted plans, policies, and regulations for purposes of reducing GHGs, and as demonstrated in Section 3.8.1-a for Project specific GHS emissions, implementation of the Proposed Project is anticipated to provide GHG reductions consistent with AB 32, SJVAPCD, and local plans and policies. Therefore, the Project will not conflict with the applicable plans, policies, and regulations implemented for reducing the emissions of GHGs, nor will the proposed Project have a significant impact on the environment.

Mitigation Measures

No mitigation is warranted

3.9 Hazards and Hazardous Materials

Hazards and Hazardous Materials					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g)	Expose people or structures either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒
***Education Code* Section 17213 and/or *Public Resources Code* Section 21151.8(a)(1):**					
i)	Is/is not the site of a current or former hazardous waste disposal or solid waste disposal site (or unless a former solid waste disposal site which the district board has concluded that the wastes have been removed), and	N/A			
j)	Is/is not a hazardous substance release site identified by the Department of Toxic Substances Control in a current list adopted pursuant to Section 25356 for removal or remedial action pursuant to Chapter 6.8 of Division 20 of the *Health and Safety Code*, and	N/A			
k)	Is/is not a site that contains one or more pipelines, situated underground or aboveground, that carries hazardous substances, extremely hazardous substances, or hazardous wastes, unless the pipeline is a natural gas line which is used only to supply natural	N/A			

Hazards and Hazardous Materials		
	gas to that school or neighborhood or other nearby schools, and	
l)	Is (or is not) within 500 feet of the edge of the closest traffic lane of a freeway or other busy traffic corridor as defined in *Education Code* Section 17213(d)(9) and *Public Resources Code* 21151.8(b)(9).	N/A

3.9.1 Discussion of Impacts

3.9.1-a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

a) No Impact. The Project is an educational use for elementary students (grades K through 6). The Project is strictly prohibited by operation of law from routinely transporting, using, or disposing of hazardous materials at or near the school site. There would be no impact.

Mitigation Measures

No mitigation is warranted

3.9.1-b) Would the project 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?

b) No Impact. The Project is an educational use for elementary students (grades K through 6). The Project is strictly prohibited by law from creating significant hazards to the public or the environment. There is no reasonably foreseeable upset, or accident conditions associated with the school that would be anticipated to result in the release of hazardous materials into the environment. There would be no impact.

Mitigation Measures

No mitigation is warranted

3.9.1-c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

c) No Impact. The Project is an educational use for elementary students (grades K through 6). The Project is strictly prohibited by law from emitting or handling hazardous or acutely hazardous materials, substances, or waste. Therefore, the Project is not anticipated to emit or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of any other existing or proposed school. There would be no impact.

Mitigation Measures

No mitigation is warranted

3.9.1-d) Would the project 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?

d) No Impact. On July 29, 2019 a search of the Hazardous Waste Substance List (Cortese), *EnviroStor* database was conducted using the addresses associated with the Project. The *EnviroStor* database is the DTSC's data management system for tracking, permitting, enforcing and disclosing sites known to have been contaminated in California, compiled pursuant to Government Code Section 65962.5 and Chapter 6.8 of Division 20 of the Health and Safety Code Section 25356 (California Department of Health Services, related to schools). The *Envirostor* database search results for the Project and its vicinity were negative, indicating that the Project is not located on a site that is included on the applicable list. There would be no impact.

Mitigation Measures

No mitigation is warranted

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

e) No Impact. The Kern County Airport Land Use Compatibility Plan (ALUCP) was adopted in November 2012 to cover all of Kern County, including its incorporated cities. The ALUCP identifies airport influence areas that consists of identified areas that could be affected by present or future aircraft operations at an existing public airport. The Project is not located within any of the identified airport influence area. The nearest public airports are the Bakersfield Municipal Airport located approximately 8.2 miles southwest of the Project, and Meadows Field Airport located approximately 8.8 miles west/northwest of the Project. Therefore, the project would have no impact related to safety hazards or excessive noise for students attending or staff working in the Project area.

Mitigation Measures

No mitigation is warranted

3.9.1-f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

f) No Impact. Adopted emergency response plans and emergency evacuations plans within the area are prepared by the Kern County Emergency Management Department in coordination with the emergency operations department of the incorporated cities within Kern County. Currently adopted plans applicable to the Project consist of a Sheltering Operations Plan, Federal Communications Code Emergency Administration System Plan, Hazard Mitigation Plan, Terrorism Plan, Emergency Operations Plan, and Isabella Dam Failure Inundation Plan. These plans collectively provide the foundation for addressing responses to the various types of emergencies reasonably foreseeable in the county. Schools are identified beneficiaries and critical target populations within each of the adopted plans. Therefore, the Project would not physically interfere with adopted emergency plans.

Mitigation Measures

No mitigation is warranted

3.9.1-g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

g) No Impact. The Project is not located within a State Responsibility Area, Local Agency Very-High Fire Hazard Severity Zone, or Wildland-Urban Interface Fire Area as designated by either the City of Bakersfield Fire Department (the local enforcement agency) or the State. Accordingly, the Project is not anticipated to have either a direct or indirect impact related to exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires.

Mitigation Measures

No mitigation is warranted

Education Code Section 17213 and/or Public Resources Code Section 21151.8(a)(1):

3.9.2-h) Is (or is not) the site of a current or former hazardous waste disposal or solid waste disposal site (or unless a former solid waste disposal site which the district board has concluded that the wastes have been removed), and

Is Not. As previously discussed in **Section 3.9.1-d**, the Project is not the site of a former hazardous waste disposal or solid waste disposal site.

3.9.2-i) Is (or is not) a hazardous substance release site identified by the Department of Toxic Substances Control in a current list adopted pursuant to Section 25356 for removal or remedial action pursuant to Chapter 6.8 of Division 20 of the *Health and Safety Code*, and

Is Not. As previously discussed in **Section 3.9.1-d**, the Project is not a hazardous substance release site identified by the Department of Toxic Substances Control in a current list adopted pursuant to Chapter 6.8 of Division 20 of the Health and Safety Code Section 25356 for removal or remedial action of identified hazardous substance release sites.

3.9.2-j) Is (or is not) a site that contains one or more pipelines, situated underground or aboveground, that carries hazardous substances, extremely hazardous substances, or hazardous wastes, unless the pipeline is a natural gas line which is used only to supply natural gas to that school or neighborhood or other nearby schools, and

Is Not. The City of Bakersfield maintains maps of pipelines, situated underground or aboveground, that carry hazardous substances, extremely hazardous substances, or hazardous wastes. On August 6, 2019 these maps were reviewed for purposes of determining the location of such pipelines in relationship to the Project. There are no identified hazardous pipelines carrying hazardous substances or wastes.

3.9.2-k) Is (or is not) within 500 feet of the edge of the closest traffic lane of a freeway or other busy traffic corridor as defined in *Education Code* Section 17213(d)(9) and *Public Resources Code* 21151.8(b)(9

Is Not. There are no busy streets or traffic corridors within the vicinity of the school that would pose traffic or pedestrian safety issues. Both the Education Code (Section 17213(d)(9)) and Public Resources Code (Section 21151.8(b)(9)) define busy traffic corridors in urban areas as those roadways having average daily traffic of 100,000 vehicles. The most traveled roadway in the vicinity of the school is SR 178, located approximately 0.7 miles south of the school.

3.10 Hydrology and Water Quality

Hydrology and Water Quality					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Violate any water quality standards or waste discharge requirements, or otherwise degrade surface or ground water quality?	☐	☐	☒	☐
b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
	(i) Result substantial erosion or siltation on-or off-site;	☐	☐	☒	☐
	(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or offsite;	☐	☐	☒	☐
	(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff	☐	☐	☒	☐
	(iv) Impede or redirect flood flows?	☐	☐	☒	☐
d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

3.10.1 Discussion of Impacts

3.10.1-a Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

a) Less Than Significant Impact. The Project would utilize existing water delivery systems of CalWater, the water purveyor within the area. Liquid waste discharged from the Project site would be conveyed to wastewater treatment plants operated by the City. Stormwater would be discharged in compliance with the City and County of Kern 2014 Storm Water Management Plan and associated Waste Discharge Requirements (NPDES Permit No. CA0083399, Order No. R5-2013-0153). Therefore, the Project would have a less than significant impact related to the degradation of surface or ground water quality.

Mitigation Measures

No mitigation is warranted

3.10.1-b) Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

b) Less Than Significant Impact. The Project is located within and subject to the management plans of the Kern River Groundwater Sustainability Agency (KRGSA). Pursuant to the Sustainable Groundwater Management Act (SGMA), a groundwater sustainability plan (GSP) must be adopted by January 2020. The KRGSA has not yet adopted a GSP. The Project would provide for the educational needs of approximately 785 students and associated staff. These individuals currently reside within the groundwater basin and consume its groundwater supplies. Consequently, the Project's incremental groundwater use would not substantially deplete groundwater supplies nor interfere substantially with groundwater recharge such that the Project would impede sustainable groundwater management of the basin. Consequently, the Project's impacts are less than significant.

Mitigation Measures

No mitigation is warranted

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

- **(i) result in substantial erosion or siltation on- or off-site;**
- **(ii) (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;**
- **(iii) (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or**
- **(iv) impede or redirect flood flows?**

c) Less Than Significant Impact. The Project is located approximately 1.55-miles south of the Kern River, the nearest stream or river. The Project is located in an urbanized area, and on a site that had no previous impervious surfaces. Urban development within the area includes existing stormwater drainage systems designed with the capacity to handle development such as the Project.

With construction of streets, homes, driveways, accessory structures, etc. a typical medium density residential subdivision would result in less than 15% pervious surfaces (smaller lot to building ratio than single-family residential subdivisions). The Project, which will be comprised of approximately 95,400 square feet of buildings and no more than 7.5 acres of impervious surfaces (parking lots, sidewalks, driveways, etc.), will have approximately 60% pervious surfaces consisting of extensive landscaping, turfed playfields, and the ground surface beneath the solar collectors. The Project's building to parcel size ratio represents an overall reduced footprint of impervious surfaces as compared to the previously planned, medium-density residential subdivision.

As previously discussed, the existing stormwater drainage basin was sized and sited within the Project's vicinity to accommodate surface runoff from development of the Project site and its surrounding community. At the time the basin was sized, the Project site was planned for the development of medium density, single-family residences. The stormwater drainage basin is located at the entrance to the City in the Hills Subdivision, of which the project is a part. The Project would be required to connect to the existing drainage system and will not result in substantial erosion or siltation on- or off-site, substantially increase the rate or amount of surface runoff in a manner that would result in flooding, create or contribute runoff water which would exceed the capacity of the existing stormwater drainage systems, provide substantial additional sources of polluted runoff, or impede or redirect flood flows. Project impacts would be less than significant.

Mitigation Measures

No mitigation is warranted

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

d) No Impact. In 2008, the USACE completed an updated map of areas around and within Metropolitan Bakersfield that would likely be flooded in the unlikely event of failure of the Lake Isabella Dam. While the majority of Metropolitan Bakersfield does lie within the flood inundation area, the Project is located outside of the inundation area due to the elevation of the Project site in relationship to the Kern River corridor. The Project is also not located within a tsunami or seiche zone. There would be no impact.

Mitigation Measures

No mitigation is warranted

3.10.1-e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

e) Less Than Significant Impact. As discussed in **Section 3.10.2-a**, the Project would be required to comply with the City and County of Kern's 2014 Storm Water Management Plan and associated Waste Discharge Requirements. As previously discussed regarding the Project; impact on water supplies, the Project would not result in a substantial impact on groundwater resources or the ability to recharge the groundwater basin, such that it would obstruct implementation of the KRGSA or SGMA groundwater management plans and/or goals. Therefore, the Project would result in less than significant impacts related to said plans.

Mitigation Measures

No mitigation is warranted

3.11 Land Use and Planning

Land Use and Planning					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

3.11.1 Discussion of Impacts

3.11.1-a) Would the project physically divide an established community?

a) No Impact. The Project consists of the construction of an elementary school in support of land uses in the Project's vicinity. The Project site is part of an existing urban development. The school is a use that is physically compatible with the surrounding land uses. The Project does not propose any physical changes that would physically divide the community. There will be no impact.

Mitigation Measures

No mitigation is warranted

3.11.1-b) Would the project cause a significant environmental impact due to a 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?

b) Less Than Significant Impact. The Metropolitan Bakersfield General Plan (MBGP) and City of Bakersfield Municipal Code, Title 17, Zoning Ordinance, both recognize and encourage the compatible relationship between schools and surrounding residential uses. The Project site is designated Low Density Residential (LR) within the MBGP. It is zoned PUD (Planned Unit Development) in the City of Bakersfield Zoning ordinance. Schools are not listed as allowable uses within either the LR General Plan designation or PUD zone. The MBGP recognizes that schools have a direct bearing on the General Plan and that schools are among the special districts that are important for planning purposes, identifying suitable land with the Public Schools (PS) designation. However, the General Plan map does not make provisions for the location of public schools in advance of need.

Where the MBGP identifies land as PS, such lands are typically and commonly located within residential subdivisions. Therefore, impacts associated with conflicts between the residential zoning of the site and the Project are considered less than significant.

Mitigation Measures

No mitigation is warranted

3.12 Mineral Resources

Mineral Resources					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐
b)	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

3.12.1 Discussion of Impacts

3.12.1-a) Would the project 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?

a) Less Than Significant Impact. The Project is located within an area that once had a significant number of productive oil wells. Department of Oil Gas and Geothermal Resources records indicate an exploratory well was once drilled on the Project site; however, no subsequent oil well was ever permitted on the site. Such actions are an indicator that oil was not present. There are no other identified mineral resources associated with the site. Additional oil production within the Project's vicinity is now unlikely due to significant urban development. The Project would have less than significant impacts.

Mitigation Measures

No mitigation is warranted

3.12.1-b) Would the project 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?

b) No Impact. The Project is not located on site that is delineated in the local general plan, any specific plans, or other land use plans as a locally important mineral resource recovery site. As such, there will be no impact.

Mitigation Measures

No mitigation is warranted

3.13 Noise

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

3.13.1 Discussion of Impacts

Methodology: A report entitled *Environmental Noise Assessment, New School No. 4, Bakersfield, CA* (*Noise Study* (**Appendix F**)), was prepared by WJV Acoustics, Inc. (WJVA), dated July 17, 2019. The *Noise Study* was prepared to determine if significant noise impacts would be produced by the project and to describe mitigation measures for noise if significant impacts were determined. The noise study utilized the preliminary site plan provided by the District, a draft of the *Traffic Impact Study* (refer to **Appendix G**), and a Project site visit to reach its conclusions and recommendations.

The *Noise Study* states that applicable standards for noise levels that apply to the Project are contained in Chapter VII of the MBGP. For transportation noise sources the MBGP, Noise Element sets a standard of 65 decibels (dB). For non-transportation noise sources, the Noise Element applies hourly noise level performance standards at the property-line of residential and other noise-sensitive uses.

3.13.2-a) Would the project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

a) Less Than Significant Impact with Mitigation Incorporated. Noise sensitive uses include residences, schools, hospitals, transient lodging (hotels/motels) and recreational areas. There are no other schools within the Project's vicinity. There are no hospitals, hotels, or motels within the Project's vicinity. The nearest recreational areas (parks) are 0.6 miles west of the Project and 0.8 miles south/southwest of the Project.

For purposes of determining increases in ambient noise levels, measurements of existing ambient noise levels in the Project's vicinity were conducted by WJVA on July 8, 2019. Results of said measurements are provided in Table V of the *Noise Study* (**Appendix F**). Table VI of the *Noise Study* compares the measured noise to the predicted or Project generated noise. From this information, the *Noise Study* determined that the predicted traffic noise level was 0.6 dB and 0.4 dB lower than the measured noise level along Paladino Drive and Panorama Drive, respectively, for the traffic conditions observed at the time of the noise measurements. Table VII of the *Noise Study* calculates traffic noise exposure for 2021 traffic conditions (representing baseline conditions), with and without the Project, along roadways within the Project area. Based on Table VII, the *Noise Study* determined that traffic noise exposure would be expected to increase from Project baseline conditions, between approximately 0.9 dB to 2.4 dB as a result of the Project. Lastly, Table VIII summarizes calculated traffic noise exposure for 2035 cumulative traffic conditions, both with and without the Project, along roadways in the Project area as expressed in calculated Community Noise Equivalent Level (CNEL). From Table VIII, the Noise Study determines that traffic noise exposure for 2035 cumulative conditions at most existing residential land uses in the Project vicinity would be expected to increase by approximately 0.3 dB to 1.8 dB as a result of the Project. Noise levels described in Tables VII and VIII do not take into consideration site specific shielding such as building orientation or building construction but represent the generalized "worst-case" assessment of traffic noise levels.

As detailed in the *Noise Study*, WJVA quantified noise levels from school activities using noise measurement conducted at similar existing schools during hours expected to have the most traffic and activities. WJVA determined noise levels at approximately 50 feet from buses to be in the range of 65-73 dB during loading, unloading, idling and while engaging brakes. Measured noise levels from students gathering or playing at distances of approximately 50-225 feet from a microphone were in the range of 53-63 dB.

The distance to the nearest residences is approximately 150-300 feet from the Project. Typical construction noise is described in Table IX of the *Noise Study* at distances of 50, 100 and 300 feet. At a distance of 150 feet, maximum construction noise levels would be expected to range between 72 and 84 dB. While, construction noise impacts would exceed the 65-dB noise level standard, construction activities would be temporary in nature and would most likely occur only during daytime hours.

The Project has the potential to generate noise that results in both temporary and permanent increases in ambient noise levels in the Project's vicinity. Permanent noise levels generated by vehicle traffic and school activities would not exceed applicable noise level standards and would

therefore be less than significant. Temporary construction noise levels may exceed applicable noise levels standards if they occurred during nighttime hours. As a result, the Project shall adhere to MM NOI-1 and NOI-2 to reduce impacts related to construction noise.

Mitigation Measures

> **NOI-1:** During construction all construction activities shall be limited to being conducted between the hours of six a.m. and nine p.m. on weekdays, and between eight a.m. and nine p.m. on weekends.
>
> **NOI-2:** All construction equipment and vehicles shall utilize commonly accepted engineering controls for noise suppression and/or be equipped with Best Available Technology for noise control and ground vibration.

3.13.1-b) Would the project generate excessive groundborne vibration or groundborne noise levels?

b) Less Than Significant Impact with Mitigation Incorporated. Vibration would generally occur during Project construction. Because no sonic booms, blasting, pile driving, pavement breaking, demolition, diesel locomotives, or rail-car coupling would occur, the Project would not be anticipated to generate significant noise from vibrations. After Project buildout, it is not expected that school operational activities would result in any vibration impacts at nearby residences. Typical vibration levels during construction, at distances of 25 feet and 100 feet are summarized in Table X of the *Noise Study*. Impacts related to generation of excessive groundborne vibration or groundborne levels would be limited to hours of construction and would be temporary in nature. Therefore, construction related groundborne noise and vibration would be less than significant with incorporation of MM NOI-1 and NOI-2.

Mitigation Measure(s):

> Refer to **NOI-1** and **NOI-2.**

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

c) No Impact. The Project is not located within the vicinity of a private airstrip, airport land use plan nor within two miles of a public airport, or a public use airport. Therefore, there will be no impact.

Mitigation Measure(s):

> No mitigation is warranted**.**

3.14 Population and Housing

Population and Housing					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b)	Displace substantial numbers of existing people housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.14.1 Discussion of Impacts

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

a) Less Than Significant Impact. The Project will not directly induce population growth. The Project is proposed as a result of and in support of existing population growth. While the Project may indirectly induce population growth due to jobs created by the school, such growth has been both planned for and accounted for in plans adopted by local jurisdictions and responsible agencies. Therefore, the Project will have a less than significant impact related to population growth.

Mitigation Measure(s):

No mitigation is warranted**.**

3.14.2-b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

b) No Impact. The Project will not require the demolition of any buildings or structures. The Project will therefore not displace any existing residences or people. There would be no impact.

Mitigation Measure(s):

No mitigation is warranted**.**

3.15 Public Services

Public Services					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	Fire protection?	☐	☐	☒	☐
	Police protection?	☐	☐	☒	☐
	Schools?	☐	☐	☒	☐
	Parks?	☐	☐	☒	☐
	Other public facilities?	☐	☐	☒	☐

3.15.1 Discussion of Impacts

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

a) Less Than Significant Impact. The Project would insignificantly impact public services in the jurisdiction related to fire protection, police protection, parks, or other public facilities. The Project would provide for a new student enrollment of approximately 785 students, bringing additional responsibility for fire and police protection at the site. However, the students and associated staff are residents of other areas of the community for which fire protection services are currently required. As the school would include recreational areas for students, park needs would not be affected by the school expansion. The Project would not significantly affect service ratios, response times, or other performance objectives for any of these public services or other related public services nor require construction of any related facilities. Project impacts would be less than significant.

Mitigation Measure(s):

No mitigation is warranted.

3.16 Recreation

Recreation					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.16.1 Discussion of Impacts

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

a) Less Than Significant Impact. As previously stated, the Project would include recreational areas for students on the school site, so existing neighborhood and regional parks would not be significantly affected. The physical deterioration of park facilities associated with the Project would be considered less than significant.

Mitigation Measure(s):

No mitigation is warranted**.**

3.16.1-b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

a) Less Than Significant Impact. Recreational facilities planned in conjunction with the Project involve the construction of an elementary school play yard. Students attending the school are currently residents of the City of Bakersfield. Both students and staff of the school are accounted for in City of Bakersfield park and recreational facility- park acreage/population ratios. The MBGP establishes a park land to population ratio of 2.5 usable acres of park for each 1,000 population.[6] As such, the Project would have a less than significant impact resulting from the construction or expansion of recreational facilities and the environmental consequences of facility construction.

[6] City of Bakersfield, Metropolitan Bakersfield General Plan, Chapter XI-Parks Element, Park Classifications and Standards.

Mitigation Measure(s):

No mitigation is warranted**.**

3.17 Transportation

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

3.17.1 Discussion of Impacts

Methodology: A report entitled *Traffic Study, Elementary School Site, SW Corner of Paladino Dr & Masterson St, Bakersfield, CA* (*Traffic Study* (**Appendix F**)), was prepared by Ruettgers & Schuler, Civil Engineers (R&S), dated July 2019. The *Traffic Study* was prepared to evaluate the potential traffic impacts of the proposed elementary school site. The *Traffic Study* calculated trip generation and design hour volumes using the *Institute of Transportation Engineers, Trip Generation, 10th Edition.* Future traffic volumes were calculated using annual growth rates provided in KernCOG 2040 traffic model data.[7]

Existing roadway descriptions within the Project's vicinity that are analyzed in the *Traffic Study* include:

> Alfred Harrell Highway: A two-lane freeway extending north from Mt. Vernon Avenue to Hart Park, terminating at SR 178 (to the south of SR 178 Alfred Harrell Highway becomes Comanche Drive). Alfred Harrell Highway provides access to residential and recreational land uses to the northeast of Bakersfield.
>
> City Hills Drive. A two-lane divided collector with curb, gutter, sidewalk, and bike lanes from Vineland Road to Panorama Drive. It provides access to residential and recreational land uses to the northeast of Bakersfield.
>
> Masterson Street. A two-lane arterial that extends north from SR 178 to Pitts Avenue just beyond Paladino Drive. Between SR 178 and Paladino Drive, Masterson Street is improved adjacent to development. North of Paladino Drive, Masterson street is not improved where

[7] (Kern Council of Governments, 2019)

it is adjacent to developments. It provides access to residential land uses as well as State Route 178.

Paladino Drive. A two-lane arterial at various stages of widening and improvement adjacent to development. It currently extends east from Morning Drive to Masterson Street. A future extension of Paladino Drive, as a collector is, is planned to continue from Masterson Street to Alfred Harrell Highway. Paladino Drive provides access to residential land uses, as well as to the proposed elementary school site.

Panorama Drive. A two-lane divided collector that is fully improved between Vineland Drive and City Hills Drive and is improved adjacent to development between City Hills Drive and Masterson Street. It provides access to residential land uses as well as to the proposed elementary school site.

State Route 178. An east-west highway providing access from Bakersfield to Lake Isabella and Ridgecrest. As called out in the General Plan, construction has recently been completed on an upgrade to State Route 178 to make it a multilane freeway east of Fairfax Road as well as the addition of a new interchange at Morning Drive.

Vineland Road. A two-lane arterial that extends south from Paladino Drive to City Hills Drive. Another segment of Vineland Road lies along the west side of Paul L Cato Middle School just north of State Route 178.

Valley Lane. A two-lane collector that extends approximately a half mile north from Paladino Drive. Valley Lane is improved adjacent to development and provides access to residential land uses as well as to the California Water Services treatment plan for northeast Bakersfield.

3.17.1-a) Would the project conflict with a program, plan, ordinance or policy for the circulation system, including transit, roadway, bicycle and pedestrian facilities?

a) Less Than Significant Impact. The City of Bakersfield adopted a transportation impact fee program to fund improvements in the Metropolitan Bakersfield transportation system to accommodate future growth in January 1997 known as the Traffic Impact Fee Program (fee program). In July 2009 the City Council approved Phase IV of the program to adopt a regional program (Regional Traffic Impact Fee Program (RTIF)) and project development through 2035. The fee program applies to any person that applies to the City for issuance of a building permit and those which will generate or attract additional traffic. The fee program is codified in the Bakersfield Municipal Code, Section 15.84.040.

The Project does not include any circulation changes that have the potential to conflict with transportation, circulation, transit, roadway, bicycle, and/or pedestrian facilities, plans, programs, or ordinances (collectively referred to as "transportation"). The Project would involve the creation of an internal local street to provide access to the school.

Adopted plans and programs in the Project area for purposes of addressing transportation, are made up of both local and regional plans. Locally, the Circulation Element of the MBGP and City of Bakersfield Bicycle Transportation Plan describe and plan for local transportation. Regionally,

transportation plans include: Regional Transportation Plan, Regional Transportation Improvement Plan, Intelligent Transportation Systems Plan, Kern Region Active Transportation Plan, and the City of Bakersfield's RTIF program. Local and regional plans, programs, and policies encourage and support both active transportation and public transportation. In accordance with the terms of the City's RTIF program, since the Project will not apply for building permits from the City and does not generate significant additional traffic, the Project will not conflict with the RTIF program. The BCSD The BCSD also encourages active transportation, including pedestrian and bicycle activity and provides bus transportation for students that reside greater than two miles from a school. District policies are consistent with the goals and policies of local and regional transportation plans, and would therefore, not conflict with local and regional transportation plans, programs, ordinances, or policies.

Mitigation Measure(s):

No mitigation is warranted**.**

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

b) Less Than Significant Impact. CEQA Guidelines Section 15064.3(b) establishes criteria for analyzing transportation impacts. For land use projects, such as new or expanded schools, the applicable criteria would be to determine if the project would exceed an established threshold of significance.

The City of Bakersfield generally utilizes three performance criteria or thresholds for determining whether traffic forecasted to be generated by a project would cause a significant impact and therefore require mitigation. The performance criteria established by the City of Bakersfield is consistent with the County's congestion management plan. First, a significant impact is found where the addition of project traffic causes the level of service of an intersection or roadway segment to drop below Level of Service (LOS) C. Second, a significant impact is found if an intersection or roadway segment operates below LOS C in the base year prior to the addition of project traffic, and the added project traffic lowers the level of service below its pre-project status. Third, mitigation is required if the addition of the project traffic creates an additional control or average delay per vehicle of more than 5 seconds to the existing or projected congestion at an intersection already or projected to operate at LOS D, E, or F. The following is a discussion of the findings of the *Traffic Study* (**Appendix F**) for each of the City's performance criteria:

1. Does the addition of project traffic cause the level of service of an intersection or roadway segment to drop below LOS C?

Table 3 of the *Traffic Study* lists the Unsignalized Levels of Service at the existing roadway intersections described above for morning (AM) traffic. Table 4 of the *Traffic Study* lists the Unsignalized Levels of Service for evening (PM) traffic. As demonstrated in these tables, intersections in the Project's vicinity currently operate at LOS A and LOS B. For forecasted years 2023 and 2025 when the Project is fully operational, the subject intersections with Project generated traffic included, are forecasted to remain at or below LOS B. Therefore, the Project will not cause the level of service to exceed this performance standard established by the City.

2. Would intersection or roadway segments operate below LOS C in the base year prior to the addition of project traffic, and would the added project traffic lower the level of service below its pre-project status?

As discussed in item number 1 above and as demonstrated in Tables 3 and 4 of the *Traffic Study* (**Appendix F**), the intersections listed above currently operate at LOS A or LOS B in the base year prior to the addition of the Project's traffic. Tables 3 and 4 of the *Traffic Study* determined that the subject intersections with Project generated traffic included, will only lower the level of service at the Project entrance/Calle Way & Panorama Drive to LOS B during the AM. The Project will not lower the LOS during the PM at any of the subject intersections. Therefore, the Project will not cause the level of service to exceed LOS C, the performance standard established by the City.

3. Would the project traffic create an additional control or average delay per vehicle of more than 5 seconds to the existing or projected congestion at an intersection already or projected to operate at LOS D, E, or F?

A Project would create an additional control or average delay per vehicle of more than 5 seconds added to the existing or projected congestion at an intersection already or projected to operate at LOS D, E or F, if it: A) lowered the LOS for the roadway; or b) warranted the addition of a signal within any of the applicable roadways. As previously discussed, the Project would not add significant traffic to any of the applicable roadways such that the roadways would be lowered below LOS C. Therefore, the Project would not impact item 3.A.

Tables 5a, 5b, 6a, and 6b list volumes currently experienced at existing traffic signals and adds the cumulative impacts of existing traffic to traffic forecasted to be generated by known future projects and traffic forecasted to be generated by the Project in the vicinity. The tables demonstrate that the cumulative impacts of the existing traffic, plus known future project, plus the Project will not result in increases that warrant additional traffic control devices. Therefore, as evaluated by performance standards established by the City, the Project will not create an additional control or average delay causing the level of service to exceed LOS C, and will not warrant the addition of a signal within any of the applicable roadways.

The traffic study determined the Project would not warrant additional traffic control devices. The Project is not subject to permitting by the City, and the Project does not warrant any additional traffic control devices to allow traffic in the Project area to remain at or below LOS C. The Project does not conflict with or result in inconsistencies with CEQA Guidelines Section 15064.3.

Mitigation Measure(s):

No mitigation is warranted**.**

3.17.1-c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

c) No Impact. The Project does not include any street or roadway design features, including sharp curves or dangerous intersections. No uses are associated with the Project that have the potential to present an incompatibility, such as would occur with farm equipment versus urban transportation patterns and vehicles. Therefore, the Project would have no impact as a result of geometric design features.

Mitigation Measure(s):

No mitigation is warranted**.**

3.17.1-d) Would the project result in inadequate emergency access?

d) Less Than Significant Impact. As discussed in Section 3.17.1 (b), the Project would not generate traffic significant enough to require additional traffic control devices in its vicinity. Ingress and egress to the Project will be provided from two directions off of a planned local street on the west side of the Project. Ingress and egress to the Project may also be gained off of Paladino and/or Masterson Street, thereby providing adequate emergency ingress and egress.

Corrective measures required under CDE's oversight for incidental and emergency access also result in the mitigation of potential conflicts related to emergency access. Therefore, impacts related to emergency access are considered less than significant.

Mitigation Measure(s):

No mitigation is warranted**.**

3.18 Tribal Cultural Resources

Tribal Cultural Resources					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i)	Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☐	☐	☒
ii)	A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

3.18.1 Discussion of Impacts

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

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

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

a-i and ii) No Impact. AB 52 Tribal Consultation provides California Native American Tribes the ability to establish, through a formal notice letter, a standing request to consult with a lead agency regarding any proposed projects subject to CEQA in the geographic area with which the tribe is traditionally and culturally affiliated. However, AB 52 requires the affirmative action of requesting

consultation by the tribal organization. The BCSD has not received any requests for consultation pursuant to AB 52 from any area tribe.

Although not required by CEQA, for purposes of ensuring that future Projects initiated by the District have no potential to result in a substantial adverse change in the significance of a tribal cultural resource, the District's consultant Provost & Pritchard Consulting Group, mailed letters via certified mail to all tribes with known affiliations in the area on January 16, 2019. The letters identified the District as a lead agency under CEQA and provided an opportunity for the tribes to request consultation on future projects.

As previously discussed in Section 3.5, the *Cultural Resources Report* determined there are no listed or eligible historical resources on the Project site. It was also determined in the *Cultural Resources Report* that there are no artifacts of historical significance present on the Project site. The Project will have no impact.

Mitigation Measure(s):

No mitigation is warranted**.**

3.19 Utilities and Service Systems

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

3.19.1 Discussion of Impacts

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

a) Less Than Significant Impact. The Project would obtain water service by California Water Service, the wastewater treatment and storm water drainage systems operated by the City of Bakersfield. Electric power and natural gas are supplied by Pacific Gas & Electric Company, and telecommunications facilities are supplied by various providers currently serving the area. The Project would not result in the construction of new and/or expanded facilities. The Project site was initially evaluated in the *City in the Hills EIR* for purposes of developing approximately 115 medium-density single-family lots, a project which was determined to result in less than significant impacts. Development of the site as a public school would represent a reduction in demand for utilities previously planned for the area. The Project would have a less than significant impact.

Mitigation Measure(s):

No mitigation is warranted.

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

b) Less Than Significant Impact. The Project would be served by California Water Service, water purveyor within the Project area. The most recently published Urban Water Management Plan, dated June 2016 for the Bakersfield District, indicates the water purveyor would have sufficient water supplies to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years. The Project would have less than significant impacts on water supplies.

Mitigation Measure(s):

No mitigation is warranted**.**

3.19.2-c) Would the project 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?

c) Less Than Significant Impact. The Project is currently served by the wastewater treatment provider that will serve the project. The Project does not represent a significant increase in capacity for the site that it would significantly impact the wastewater treatment provider's capacity to serve its commitments. Impacts are less than significant.

Mitigation Measure(s):

No mitigation is warranted**.**

3.19.2-d) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

d) Less Than Significant Impact. The City of Bakersfield, Solid Waste Division provides solid waste transport and disposal services for the Project site. The Bakersfield Solid Waste Division has adequate capacity to serve the Project's transport and disposal needs. Solid Waste generated would be disposed offsite at the Bena Landfill, operated by the Kern County Waste Management Agency. The Bena Landfill is located at 2951 Neumarkel Road, approximately 20 miles east of the Project. The Bena Landfill and has a projected 65-75-year lifespan with a capacity of 70 million cubic yards. As of July 2013, the landfill had a remaining capacity of 53,000,000 cubic yards and an anticipated closure date of April 1, 2046.[8]

The Kern County Integrated Waste Management Plan, which addresses solid waste reduction goals for all of Kern County provides the standards for the attainment of solid waste reduction goals. The

[8] (CalRecycle, 2019)

Project would generate an insignificant additional amount of solid waste and would not impair the attainment of solid waste reduction goals.

Mitigation Measure(s):

No mitigation is warranted**.**

3.19.2-e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

d) Less Than Significant Impact. The Project would be serviced by providers that are in compliance with federal, State, and local management and reduction statutes and regulations related to solid waste, which may include both organic and in-organic waste.

California Education Code Section 32370-32370, encourages each school district to establish and maintain solid waste reduction programs. Public Resources Code, Sections 42620-42622 require that CalRecycle provide assistance to school districts in establishing and implementing source reduction and recycling programs. In consideration of the state's reduction goals, the District will arrange for organic waste recycling as required. Therefore, the Project has no direct management responsibilities for solid waste regulation, however, the Project would have a less than significant impact relative to compliance with federal, State, and local management and reduction statutes and regulations related to solid waste.

Mitigation Measure(s):

No mitigation is warranted**.**

3.20 Wildfire

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

3.20.1 Discussion of Impacts

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

3.20.1-a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

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

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

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

a-d) No Impact. The Project is not located in or near a state responsibility area nor classified as a very high fire hazard severity zone. The Project site is within an urbanized area. The Project is not located on sloping land, areas subject to frequent prevailing wind conditions, or an area of wildland-urban interface. The wildland-urban interface is defined as areas where homes are built near or among lands prone to wildland fire. The Project area is not considered to be in or near a wildland and would therefore have no impact.

Mitigation Measure(s):

No mitigation is warranted**.**

3.21 Mandatory Findings of Significance

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

3.21.1 Impact Assessment

3.21.1-a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

a) Less Than Significant Impact with Mitigation Incorporated. The Project does not have the potential to substantially degrade the quality of the environment. The Project does not have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or threaten to eliminate a plant or animal community. The Project is in an area known to be inhabited by urban kit fox and may result in impacts that can be mitigated to a less than significant level with implementation of mitigation measures. The Project was determined to be unlikely to have the potential to eliminate important examples of the major periods of California history or prehistory.

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

b) Less Than Significant Impact with Mitigation Incorporated. With incorporated mitigation for the Project's impact on biological resources, The Project's incremental effects are both individually and cumulatively less than significant when viewed in connection with the effects of past, current, and reasonably foreseeable future projects.

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

c) Less Than Significant Impact. The Project' would not result in any direct or indirect environmental effects that will cause substantial adverse effects on human beings.

4 Mitigation Monitoring and Reporting Program

Mitigation Monitoring and Reporting Program				
Number	**Mitigation Measure/Condition of Approval**	**When Monitoring is to Occur**	**Agency Responsible for Monitoring**	**Verification of Compliance**
Biological Resources				
BIO-1	***(WEAP Training):*** Prior to initiating construction activities (including staging and mobilization), the District shall ensure that all personnel associated with Project construction attend mandatory Worker Environmental Awareness Program (WEAP) training. The WEAP training shall be conducted by a qualified biologist, to aid workers in identifying special status resources that may occur in the Project area. The specifics of this program shall include identification of the sensitive species and suitable habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information, along with photographs or illustrations of sensitive species with potential to occur onsite, shall also be prepared for distribution to all contractors, their employees, and all other personnel involved with construction of the Project. All employees shall sign a form documenting that they have attended WEAP training and understand the information presented to them.	Prior to Commencement of Construction Activities	BCSD	
BIO-2	***(Hours of Construction):*** The District shall restrict hours of ***c***onstruction to daylight hours to reduce disturbance to wildlife that could be foraging within work areas.	During Construction Activities	BCSD	
BIO-3	***(Pre-construction Survey- Nesting Raptors, migratory birds, and special status birds):*** If the District must conduct construction activities within nesting bird season (February 1 to August 31), a qualified biologist shall conduct pre-construction surveys for active nests within 30 days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 500 feet. If no active nests are observed, no further mitigation is required.	Prior to Commencement of Construction Activities	BCSD	
BIO-4	***(Establish Buffers- Nesting Raptors, migratory birds, and special status birds):*** On discovery of any active nests near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged.	During Construction Activities	BCSD	

<table>
<tr><th colspan="5">Mitigation Monitoring and Reporting Program</th></tr>
<tr><th>Number</th><th>Mitigation Measure/Condition of Approval</th><th>When Monitoring is to Occur</th><th>Agency Responsible for Monitoring</th><th>Verification of Compliance</th></tr>
<tr><td>BIO-5</td><td>(Pre-construction Take Avoidance Survey- burrowing owls and suitable burrows): A qualified biologist shall conduct a pre-construction take avoidance survey for burrowing owls and suitable burrows, in accordance with CDFW's Staff Report on Burrowing Owl Mitigation (2012), within 30 days prior to the start of construction activities. The survey shall include the proposed work area and surrounding lands within 500 feet. If no burrowing owl individuals or suitable burrows are observed, no further mitigation is required.</td><td>Prior to Commencement of Construction Activities</td><td>BCSD</td><td></td></tr>
<tr><td>BIO-6</td><td>(Avoidance- burrowing owls and suitable burrows): If an active burrowing owl burrow is detected, the occurrence shall be reported to the Fresno Field Office of CDFW and the CNDDB, and disturbance-free buffers shall be implemented in accordance with CDFW's 2012 Staff Report on Burrowing Owl Mitigation, as outlined in the table below:
<table>
<tr><th rowspan="2">Location</th><th rowspan="2">Time of Year</th><th colspan="3">Level of Disturbance</th></tr>
<tr><th>Low</th><th>Medium</th><th>High</th></tr>
<tr><td>Nesting sites</td><td>Apr 1 – Aug 15</td><td>200 meters</td><td>500 meters</td><td>500 meters</td></tr>
<tr><td>Nesting sites</td><td>Aug 16 – Oct 15</td><td>200 meters</td><td>200 meters</td><td>500 meters</td></tr>
<tr><td>Nesting sites</td><td>Oct 16 – Mar 31</td><td>50 meters</td><td>100 meters</td><td>500 meters</td></tr>
</table></td><td>During Construction Activities</td><td>BCSD</td><td></td></tr>
<tr><td>BIO-7</td><td>(Consultation with CDFW and Passive Relocation- burrowing owls and suitable burrows): If a qualified biologist determines that avoidance of an active burrowing owl burrow is not feasible, CDFW shall be immediately consulted to determine the best course of action, which may include passive relocation during non-breeding season. Passive relocation and/or burrow exclusion shall not take place without coordination with CDFW and preparation of an approved exclusion and relocation plan.</td><td>Upon Occurrence/In the Event</td><td>BCSD/CDFW</td><td></td></tr>
<tr><td>BIO-8</td><td>(Pre-construction Survey- San Joaquin kit fox): Within 30 days prior to the start of construction, a pre-construction survey for San Joaquin kit fox shall be conducted on and within 200 feet of proposed work areas. If an active kit fox den is detected within or adjacent to the Project area, construction shall be delayed, and CDFW and USFWS shall be consulted to determine the best course of action.</td><td>Prior to Commencement of Construction Activities</td><td>BCSD</td><td></td></tr>
</table>

Mitigation Monitoring and Reporting Program				
Number	**Mitigation Measure/Condition of Approval**	**When Monitoring is to Occur**	**Agency Responsible for Monitoring**	**Verification of Compliance**
BIO-9	***(Minimization- San Joaquin kit fox):*** The Project shall observe all minimization and protective measures from the Construction and On-Going Operational Requirements of the USFWS 2011 *Standardized Recommendations*, including, but not limited to: construction speed limits, covering of pipes, installation of escape structures, restriction of herbicide and rodenticide use, proper disposal of food items and trash, prohibition of pets and firearms, and completion of an employee education program.	During Construction Activities	BCSD	
BIO-10	***(Mortality Reporting- San Joaquin kit fox):*** The Sacramento Field Office of USFWS and the Fresno Field Office of CDFW shall be notified in writing within three working days in the event of the accidental death or injury to a San Joaquin kit fox during construction. Notification must include the date, time, and location of the incident and any other pertinent information.	Upon Occurrence/In the Event	BCSD/CDFW	
Cultural Resources				
CULT-1	Should archaeological remains or artifacts be unearthed during any stage of project activities, work in the area of discovery shall cease until the area is evaluated by a qualified archaeologist. If mitigation is warranted, the project proponent shall abide by recommendations of the archaeologist.	During Construction Activities	BCSD	
CULT-2	In the event that any human remains are discovered on the project site, the Kern County Coroner must be notified of the discovery (California Health and Safety Code, Section 7050.5) and all activities in the immediate area of the find or in any nearby area reasonably suspected to overlie adjacent human remains must cease until appropriate and lawful measures have been implemented. If the Coroner determines that the remains are not recent, but rather of Native American origin, the Coroner shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours to permit the NAHC to determine the Most Likely Descendent of the deceased Native American.	During Construction Activities	BCSD	
Geology and Soils				
GEO-1	Prior to submitting final building construction plans to the DSA, the District shall obtain a Geotechnical Report to identify the absence or presence of faults or ruptures on the Project site. The Geotechnical Report shall include recommendations for the location of buildings and structures and building setback distances from and faults or ruptures identified.	Prior to Plan Submittal	BCSD/DSA	

Mitigation Monitoring and Reporting Program				
Number	**Mitigation Measure/Condition of Approval**	**When Monitoring is to Occur**	**Agency Responsible for Monitoring**	**Verification of Compliance**
GEO-2	Prior to submitting final building construction plans to the DSA, the District shall obtain site specific soils testing by a qualified engineer for purposes of identifying the soil's plasticity index, expansion index, and other relative characteristics. If soils are determined to be expansive, the engineer shall include recommendations for the design and construction of foundations.		BCSD/DSA	
	Noise			
NOI-1	During construction all construction activities shall be limited to being conducted between the hours of six a.m. and nine p.m. on weekdays, and between eight a.m. and nine p.m. on weekends.	During Construction Activities	BCSD	
NOI-2	All construction equipment and vehicles shall utilize commonly accepted engineering controls for noise suppression and/or be equipped with Best Available Technology for noise control and ground vibration.	During Construction Activities	BCSD	

Appendix A: California Emissions Estimator Model (CALEEMod) Results

BCSD New School No. 4

San Joaquin Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	785.00	Student	1.51	65,628.65	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Educational- Elementary School
785 Students

Construction Phase - No demolition is necessary.

Trips and VMT - No demolition necessary

On-road Fugitive Dust - No demolition necessary

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	PhaseEndDate	1/28/2021	12/31/2020
tblTripsAndVMT	WorkerTripNumber	13.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.6615	1.5848	1.4629	2.8700e-003	0.0463	0.0735	0.1198	0.0163	0.0708	0.0871	0.0000	242.3494	242.3494	0.0384	0.0000	243.3103
Maximum	**0.6615**	**1.5848**	**1.4629**	**2.8700e-003**	**0.0463**	**0.0735**	**0.1198**	**0.0163**	**0.0708**	**0.0871**	**0.0000**	**242.3494**	**242.3494**	**0.0384**	**0.0000**	**243.3103**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.6615	1.5848	1.4629	2.8700e-003	0.0367	0.0735	0.1103	0.0114	0.0708	0.0823	0.0000	242.3492	242.3492	0.0384	0.0000	243.3101
Maximum	**0.6615**	**1.5848**	**1.4629**	**2.8700e-003**	**0.0367**	**0.0735**	**0.1103**	**0.0114**	**0.0708**	**0.0823**	**0.0000**	**242.3492**	**242.3492**	**0.0384**	**0.0000**	**243.3101**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**20.62**	**0.00**	**7.96**	**29.92**	**0.00**	**5.60**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2021	3-31-2021	0.3753	0.3753
2	4-1-2021	6-30-2021	0.5483	0.5483
3	7-1-2021	9-30-2021	0.5543	0.5543
		Highest	0.5543	0.5543

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3026	7.0000e-005	7.2100e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0140	0.0140	4.0000e-005	0.0000	0.0150
Energy	8.8900e-003	0.0808	0.0679	4.8000e-004		6.1400e-003	6.1400e-003		6.1400e-003	6.1400e-003	0.0000	221.9668	221.9668	7.7500e-003	2.8700e-003	223.0146
Mobile	0.1968	1.9339	1.9145	0.0101	0.6080	5.7900e-003	0.6138	0.1635	5.4300e-003	0.1689	0.0000	935.3145	935.3145	0.0542	0.0000	936.6696
Waste						0.0000	0.0000		0.0000	0.0000	29.0805	0.0000	29.0805	1.7186	0.0000	72.0457
Water						0.0000	0.0000		0.0000	0.0000	0.6037	7.9781	8.5819	0.0624	1.5400e-003	10.5997
Total	**0.5083**	**2.0148**	**1.9896**	**0.0105**	**0.6080**	**0.0120**	**0.6199**	**0.1635**	**0.0116**	**0.1751**	**29.6842**	**1,165.2735**	**1,194.9577**	**1.8430**	**4.4100e-003**	**1,242.3445**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3026	7.0000e-005	7.2100e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0140	0.0140	4.0000e-005	0.0000	0.0150
Energy	8.8900e-003	0.0808	0.0679	4.8000e-004		6.1400e-003	6.1400e-003		6.1400e-003	6.1400e-003	0.0000	221.9581	221.9581	7.7500e-003	2.8700e-003	223.0058
Mobile	0.1968	1.9339	1.9145	0.0101	0.6080	5.7900e-003	0.6138	0.1635	5.4300e-003	0.1689	0.0000	935.3145	935.3145	0.0542	0.0000	936.6696
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.6037	7.9781	8.5819	0.0624	1.5400e-003	10.5997
Total	**0.5083**	**2.0148**	**1.9896**	**0.0105**	**0.6080**	**0.0120**	**0.6199**	**0.1635**	**0.0116**	**0.1751**	**0.6037**	**1,165.2647**	**1,165.8685**	**0.1244**	**4.4100e-003**	**1,170.2901**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**97.97**	**0.00**	**2.43**	**93.25**	**0.00**	**5.80**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2021	12/31/2020	5	0	
2	Site Preparation	Site Preparation	1/29/2021	2/1/2021	5	2	
3	Grading	Grading	2/2/2021	2/5/2021	5	4	
4	Building Construction	Building Construction	2/6/2021	11/12/2021	5	200	
5	Paving	Paving	11/13/2021	11/26/2021	5	10	
6	Architectural Coating	Architectural Coating	11/27/2021	12/10/2021	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 98,443; Non-Residential Outdoor: 32,814; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

BCSD New School No. 4 - San Joaquin Valley Air Basin, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	28.00	11.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5600e-003	0.0174	7.5600e-003	2.0000e-005		7.7000e-004	7.7000e-004		7.0000e-004	7.0000e-004	0.0000	1.5118	1.5118	4.9000e-004	0.0000	1.5241
Total	**1.5600e-003**	**0.0174**	**7.5600e-003**	**2.0000e-005**	**5.8000e-003**	**7.7000e-004**	**6.5700e-003**	**2.9500e-003**	**7.0000e-004**	**3.6500e-003**	**0.0000**	**1.5118**	**1.5118**	**4.9000e-004**	**0.0000**	**1.5241**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0554	0.0554	0.0000	0.0000	0.0555
Total	**3.0000e-005**	**2.0000e-005**	**2.1000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0554**	**0.0554**	**0.0000**	**0.0000**	**0.0555**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.2600e-003	0.0000	2.2600e-003	1.1500e-003	0.0000	1.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5600e-003	0.0174	7.5600e-003	2.0000e-005		7.7000e-004	7.7000e-004		7.0000e-004	7.0000e-004	0.0000	1.5118	1.5118	4.9000e-004	0.0000	1.5241
Total	**1.5600e-003**	**0.0174**	**7.5600e-003**	**2.0000e-005**	**2.2600e-003**	**7.7000e-004**	**3.0300e-003**	**1.1500e-003**	**7.0000e-004**	**1.8500e-003**	**0.0000**	**1.5118**	**1.5118**	**4.9000e-004**	**0.0000**	**1.5241**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0554	0.0554	0.0000	0.0000	0.0555
Total	**3.0000e-005**	**2.0000e-005**	**2.1000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0554**	**0.0554**	**0.0000**	**0.0000**	**0.0555**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5800e-003	0.0287	0.0127	3.0000e-005		1.2800e-003	1.2800e-003		1.1700e-003	1.1700e-003	0.0000	2.4767	2.4767	8.0000e-004	0.0000	2.4968
Total	**2.5800e-003**	**0.0287**	**0.0127**	**3.0000e-005**	**9.8300e-003**	**1.2800e-003**	**0.0111**	**5.0500e-003**	**1.1700e-003**	**6.2200e-003**	**0.0000**	**2.4767**	**2.4767**	**8.0000e-004**	**0.0000**	**2.4968**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.2000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1109	0.1109	0.0000	0.0000	0.1110
Total	**6.0000e-005**	**4.0000e-005**	**4.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1109**	**0.1109**	**0.0000**	**0.0000**	**0.1110**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.8300e-003	0.0000	3.8300e-003	1.9700e-003	0.0000	1.9700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5800e-003	0.0287	0.0127	3.0000e-005		1.2800e-003	1.2800e-003		1.1700e-003	1.1700e-003	0.0000	2.4767	2.4767	8.0000e-004	0.0000	2.4968
Total	**2.5800e-003**	**0.0287**	**0.0127**	**3.0000e-005**	**3.8300e-003**	**1.2800e-003**	**5.1100e-003**	**1.9700e-003**	**1.1700e-003**	**3.1400e-003**	**0.0000**	**2.4767**	**2.4767**	**8.0000e-004**	**0.0000**	**2.4968**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.2000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1109	0.1109	0.0000	0.0000	0.1110
Total	**6.0000e-005**	**4.0000e-005**	**4.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1109**	**0.1109**	**0.0000**	**0.0000**	**0.1110**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1813	1.3636	1.2899	2.2000e-003		0.0684	0.0684		0.0661	0.0661	0.0000	181.5476	181.5476	0.0324	0.0000	182.3579
Total	**0.1813**	**1.3636**	**1.2899**	**2.2000e-003**		**0.0684**	**0.0684**		**0.0661**	**0.0661**	**0.0000**	**181.5476**	**181.5476**	**0.0324**	**0.0000**	**182.3579**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5500e-003	0.1213	0.0221	3.1000e-004	7.2900e-003	3.4000e-004	7.6300e-003	2.1100e-003	3.3000e-004	2.4300e-003	0.0000	29.4262	29.4262	2.2500e-003	0.0000	29.4824
Worker	0.0109	7.1400e-003	0.0741	2.1000e-004	0.0224	1.5000e-004	0.0225	5.9500e-003	1.4000e-004	6.0900e-003	0.0000	19.4033	19.4033	5.1000e-004	0.0000	19.4161
Total	**0.0145**	**0.1284**	**0.0962**	**5.2000e-004**	**0.0297**	**4.9000e-004**	**0.0302**	**8.0600e-003**	**4.7000e-004**	**8.5200e-003**	**0.0000**	**48.8295**	**48.8295**	**2.7600e-003**	**0.0000**	**48.8985**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1813	1.3636	1.2899	2.2000e-003		0.0684	0.0684		0.0661	0.0661	0.0000	181.5474	181.5474	0.0324	0.0000	182.3577
Total	**0.1813**	**1.3636**	**1.2899**	**2.2000e-003**		**0.0684**	**0.0684**		**0.0661**	**0.0661**	**0.0000**	**181.5474**	**181.5474**	**0.0324**	**0.0000**	**182.3577**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5500e-003	0.1213	0.0221	3.1000e-004	7.2900e-003	3.4000e-004	7.6300e-003	2.1100e-003	3.3000e-004	2.4300e-003	0.0000	29.4262	29.4262	2.2500e-003	0.0000	29.4824
Worker	0.0109	7.1400e-003	0.0741	2.1000e-004	0.0224	1.5000e-004	0.0225	5.9500e-003	1.4000e-004	6.0900e-003	0.0000	19.4033	19.4033	5.1000e-004	0.0000	19.4161
Total	**0.0145**	**0.1284**	**0.0962**	**5.2000e-004**	**0.0297**	**4.9000e-004**	**0.0302**	**8.0600e-003**	**4.7000e-004**	**8.5200e-003**	**0.0000**	**48.8295**	**48.8295**	**2.7600e-003**	**0.0000**	**48.8985**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8700e-003	0.0387	0.0443	7.0000e-005		2.0800e-003	2.0800e-003		1.9100e-003	1.9100e-003	0.0000	5.8825	5.8825	1.8600e-003	0.0000	5.9291
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.8700e-003**	**0.0387**	**0.0443**	**7.0000e-005**		**2.0800e-003**	**2.0800e-003**		**1.9100e-003**	**1.9100e-003**	**0.0000**	**5.8825**	**5.8825**	**1.8600e-003**	**0.0000**	**5.9291**

3.6 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.7000e-004	1.7200e-003	0.0000	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4504	0.4504	1.0000e-005	0.0000	0.4507
Total	**2.5000e-004**	**1.7000e-004**	**1.7200e-003**	**0.0000**	**5.2000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4504**	**0.4504**	**1.0000e-005**	**0.0000**	**0.4507**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8700e-003	0.0387	0.0443	7.0000e-005		2.0800e-003	2.0800e-003		1.9100e-003	1.9100e-003	0.0000	5.8825	5.8825	1.8600e-003	0.0000	5.9291
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.8700e-003**	**0.0387**	**0.0443**	**7.0000e-005**		**2.0800e-003**	**2.0800e-003**		**1.9100e-003**	**1.9100e-003**	**0.0000**	**5.8825**	**5.8825**	**1.8600e-003**	**0.0000**	**5.9291**

3.6 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.7000e-004	1.7200e-003	0.0000	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4504	0.4504	1.0000e-005	0.0000	0.4507
Total	**2.5000e-004**	**1.7000e-004**	**1.7200e-003**	**0.0000**	**5.2000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4504**	**0.4504**	**1.0000e-005**	**0.0000**	**0.4507**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4563					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	**0.4574**	**7.6300e-003**	**9.0900e-003**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**9.0000e-005**	**0.0000**	**1.2788**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	8.0000e-005	7.9000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2079	0.2079	1.0000e-005	0.0000	0.2080
Total	**1.2000e-004**	**8.0000e-005**	**7.9000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2079**	**0.2079**	**1.0000e-005**	**0.0000**	**0.2080**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4563					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	**0.4574**	**7.6300e-003**	**9.0900e-003**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**9.0000e-005**	**0.0000**	**1.2788**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	8.0000e-005	7.9000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2079	0.2079	1.0000e-005	0.0000	0.2080
Total	**1.2000e-004**	**8.0000e-005**	**7.9000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2079**	**0.2079**	**1.0000e-005**	**0.0000**	**0.2080**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1968	1.9339	1.9145	0.0101	0.6080	5.7900e-003	0.6138	0.1635	5.4300e-003	0.1689	0.0000	935.3145	935.3145	0.0542	0.0000	936.6696
Unmitigated	0.1968	1.9339	1.9145	0.0101	0.6080	5.7900e-003	0.6138	0.1635	5.4300e-003	0.1689	0.0000	935.3145	935.3145	0.0542	0.0000	936.6696

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Elementary School	1,012.65	0.00	0.00	1,594,880	1,594,880
Total	1,012.65	0.00	0.00	1,594,880	1,594,880

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Elementary School	0.517262	0.031316	0.171418	0.114437	0.017015	0.004840	0.021467	0.112166	0.001792	0.001507	0.005146	0.000939	0.000694

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	134.0180	134.0180	6.0600e-003	1.2500e-003	134.5431
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	134.0267	134.0267	6.0600e-003	1.2500e-003	134.5519
NaturalGas Mitigated	8.8900e-003	0.0808	0.0679	4.8000e-004		6.1400e-003	6.1400e-003		6.1400e-003	6.1400e-003	0.0000	87.9401	87.9401	1.6900e-003	1.6100e-003	88.4627
NaturalGas Unmitigated	8.8900e-003	0.0808	0.0679	4.8000e-004		6.1400e-003	6.1400e-003		6.1400e-003	6.1400e-003	0.0000	87.9401	87.9401	1.6900e-003	1.6100e-003	88.4627

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Elementary School	1.64794e+006	8.8900e-003	0.0808	0.0679	4.8000e-004		6.1400e-003	6.1400e-003		6.1400e-003	6.1400e-003	0.0000	87.9401	87.9401	1.6900e-003	1.6100e-003	88.4627
Total		**8.8900e-003**	**0.0808**	**0.0679**	**4.8000e-004**		**6.1400e-003**	**6.1400e-003**		**6.1400e-003**	**6.1400e-003**	**0.0000**	**87.9401**	**87.9401**	**1.6900e-003**	**1.6100e-003**	**88.4627**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Elementary School	1.64794e+006	8.8900e-003	0.0808	0.0679	4.8000e-004		6.1400e-003	6.1400e-003		6.1400e-003	6.1400e-003	0.0000	87.9401	87.9401	1.6900e-003	1.6100e-003	88.4627
Total		**8.8900e-003**	**0.0808**	**0.0679**	**4.8000e-004**		**6.1400e-003**	**6.1400e-003**		**6.1400e-003**	**6.1400e-003**	**0.0000**	**87.9401**	**87.9401**	**1.6900e-003**	**1.6100e-003**	**88.4627**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Elementary School	460713	134.0267	6.0600e-003	1.2500e-003	134.5519
Total		**134.0267**	**6.0600e-003**	**1.2500e-003**	**134.5519**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Elementary School	460683	134.0180	6.0600e-003	1.2500e-003	134.5431
Total		**134.0180**	**6.0600e-003**	**1.2500e-003**	**134.5431**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3026	7.0000e-005	7.2100e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0140	0.0140	4.0000e-005	0.0000	0.0150
Unmitigated	0.3026	7.0000e-005	7.2100e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0140	0.0140	4.0000e-005	0.0000	0.0150

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0456					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2563					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.7000e-004	7.0000e-005	7.2100e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0140	0.0140	4.0000e-005	0.0000	0.0150
Total	**0.3026**	**7.0000e-005**	**7.2100e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0140**	**0.0140**	**4.0000e-005**	**0.0000**	**0.0150**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0456					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2563					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.7000e-004	7.0000e-005	7.2100e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0140	0.0140	4.0000e-005	0.0000	0.0150
Total	**0.3026**	**7.0000e-005**	**7.2100e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0140**	**0.0140**	**4.0000e-005**	**0.0000**	**0.0150**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

Use Water Efficient Landscaping

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	8.5819	0.0624	1.5400e-003	10.5997
Unmitigated	8.5819	0.0624	1.5400e-003	10.5997

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Elementary School	1.90303 / 4.8935	8.5819	0.0624	1.5400e-003	10.5997
Total		**8.5819**	**0.0624**	**1.5400e-003**	**10.5997**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Elementary School	1.90303 / 4.8935	8.5819	0.0624	1.5400e-003	10.5997
Total		**8.5819**	**0.0624**	**1.5400e-003**	**10.5997**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	29.0805	1.7186	0.0000	72.0457

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Elementary School	143.26	29.0805	1.7186	0.0000	72.0457
Total		**29.0805**	**1.7186**	**0.0000**	**72.0457**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Elementary School		0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B: Administering Agency Consultation

Louise Palmer

From: Howard Wines <hwines@bakersfieldfire.us>
Sent: Tuesday, July 30, 2019 4:23 PM
To: Louise Palmer
Subject: RE: Consultation Regarding Potential Emissions Near a Proposed School

Nothing within a ¼ mi.. Bear Mt. Co-Gen. is a CAA Title V regulated point source of air emission (approx.. 2 mi. west of the subject property). Additionally, Citadel Exploration in the Kern Bluff Oilfield (approx.. 1 mi. west) may periodically operate a heater unit under an Air Dist. permit. Both sites handle hazardous materials in addition to air emissions.

From: Louise Palmer <LPalmer@ppeng.com>
Sent: Tuesday, July 30, 2019 2:02 PM
To: Howard Wines <hwines@bakersfieldfire.us>
Subject: Consultation Regarding Potential Emissions Near a Proposed School

Good Afternoon Howard,

The Bakersfield City School District is proposing to construct a new school at the southwest corner of Masterson and Paladino in the City in the Hills area. We have done a preliminary review of the area and were unable to identify any locations within ¼ mile of the site that may potentially handle or emit hazardous emissions. Can you please examine your records to see if you concur?

A topo map of the area and a site map are attached.

Louise Palmer
Provost & Pritchard Consulting Group
1800 30th Street, Suite 280
Bakersfield, CA 93301
Office: (661) 616-5900
Fax: (661) 616-5890
E-mail: lpalmer@ppeng.com
Website: http://www.ppeng.com

San Joaquin Valley
Air Pollution Control District
1990 E. Gettysburg Avenue, Fresno, CA 93726-0244
www.valleyair.org

Office Use Only
CONTROL NUMBER

PUBLIC RECORDS REQUEST FORM

ATTENTION REQUESTOR: To expedite your request for District records, please fill out this form completely. Identify specifically the type of records you are requesting. Please limit your request to one facility or site address for each request form filed. Additional forms or pages may be used if requesting information for more than one facility or site address. Requests should reasonably describe identifiable records prepared, owned, used or retained by the District**.** District staff is available to assist you in identifying those records on the District's possession. The District is not required by law to create a new record or list from an existing record. By submission of this form I hereby agree to reimburse the District for the direct cost of duplicating the requested records in accordance with Gov. Code Sec. 6253(b).

REQUESTOR INFORMATION

NAME: Louise Palmer DATE: 07/30/2019

COMPANY: Provost & Pritchard Consulting Group

MAILING ADDRESS: 1800 30th Street, Suite 280

CITY: Bakersfield STATE: CA ZIP CODE: 93301

PHONE #: 661-616-5900 FAX #: 661-616-5890 EMAIL: lpalmer@ppeng.com

DOCUMENTS REQUESTED

- ☐ Permit Application(s)
- ☐ Permit(s) to Operate
- ☐ Authorities to Construct
- ☐ Engineering Evaluations
- ☐ Emissions Inventory Statement(s)
- ☐ Health Risk Assessment(s)
- ■ New School Site Review (Toxic Sources within ¼ mile)
- ☐ Site Inspection Report(s)
- ☐ Source Test Report(s)
- ☐ Complaint Investigation Report(s)
- ☐ Enforcement Action(s)
- ☐ Asbestos Notification(s)/Record(s)
- ☐ Air Monitoring Data
- ☐ Other (***please detail below***)

If requesting any records not listed above, please describe below in detail. If you need assistance, please call (559) 230-6000.

DATE OF DOCUMENTS REQUESTED: From: To:

FACILITY/ADDRESS FOR WHICH INFORMATION IS REQUESTED (*If Applicable*)

FACILITY NAME: BCSD -New School No. 4 FACILITY ID # (***if known***):

FACILITY ADDRESS: southwest corner Masterson Street and Paladino Drive

CITY: Bakersfield STATE: CA ZIP CODE: 93306

METHOD OF DELIVERY (*Check all that apply*)

- ☐ Pick Up
- ☐ US Mail
- ☐ FAX (Max 30 pages)
- ☐ CD/DVD
- ■ Email (Max 5 MB)
- ☐ Other:
- ☐ Inspection of records only, no copies required (District will contact you to setup up an appointment to view records)

☐ I request that the District contact me prior to completing the records request if the cost exceeds $_____

PUBLIC RECORD RELEASE REQUEST FOR

SW corner of Masterson St. and Paladino Dr. Bakersfield, CA, 93306
PRR Request #: C-2019-7-21

Proposed Location:
The proposed site is to be located at the southwest corner of Masterson St. and Paladino Dr. (LatLong 35.412285, -118.879093) in Bakersfield, CA.

The San Joaquin Valley Air Pollution District has reviewed the location according to Public Resource Code 21151.8 and makes the following conclusions:

Permitted Facilities:

- Permitted facilities are located within a ¼ mile.

FACID	FNAME	FSTREET	FCITY	LAT	LONG
6710	CALIFORNIA WATER	PALADINO &	BAKERSFIELD	35.41251	-118.878759

Freeway, High Volume Roadways, & Railways:

- The District recommends the PRR applicant contact CALTRANs and/or their local transportation agency to identify freeways and busy traffic corridors as defined in the Health and Safety Code.
- No Railways are located within a ¼ mile.

Other Facilities:

- There are agricultural facilities within ¼ mile of the proposed school site. These sources may reasonably be anticipated to emit hazardous compounds or handle hazardous materials from the operation of internal combustion engines driving irrigation pumps, gasoline dispensing tanks, application of pesticides, or other agricultural-related operations.

Prepared by
Keanu Morin
Technical Services

Appendix C: Biological Resources Report

Bakersfield City School District: Paladino School

Biological Evaluation

Prepared by:
Brooke Fletcher, Wildlife Biologist

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An Employee Owned Company

July 2019

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APPENDICES

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1 Introduction

In order to account for Bakersfield's growing population and eastern expansion, Bakersfield City School District (BCSD or District) is proposing the development of a new public elementary school, currently identified as New School No. 4 or Paladino School, for its location at the intersection of Paladino Drive and Masterson Street.

The following technical report, prepared by Provost & Pritchard Consulting Group, in compliance with the California Environmental Quality Act (CEQA), includes a description of the biological resources present or with potential to occur within the Project site and surrounding areas and evaluates potential Project-related impacts to those resources.

1.1 Project Description

The Project site consists of the eastern half of an undeveloped lot surrounded by recently constructed residential subdivisions on the west and south. Scattered rural residences are present to the north and although lands to the east are currently undeveloped, the entire area is planned for low density residential development. In order to accommodate existing and projected future demands, BCSD is proposing to construct a new elementary school on an approximately 24-acre site southwest of the intersection of Paladino Drive and Masterson Street. Construction will occur in two phases between 2021 and 2023, and upon completion, buildings will total approximately 95,400 square feet, allowing capacity for approximately 785 students.

1.2 Report Objectives

Construction activities such as those proposed by BCSD could potentially damage biological resources or modify habitats that are crucial for sensitive plant and wildlife species. In cases such as these, development may be regulated by state or federal agencies, subject to provisions of California Environmental Quality Act (CEQA), and/or addressed by local regulatory agencies.

This report addresses issues related to the following:

1) The presence of sensitive biological resources onsite, or with the potential to occur onsite.
2) The federal, state, and local regulations regarding these resources.
3) Mitigation measures that may be required to reduce the magnitude of anticipated impacts and/or comply with permit requirements of state and federal resource agencies.

Therefore, the objectives of this report are:

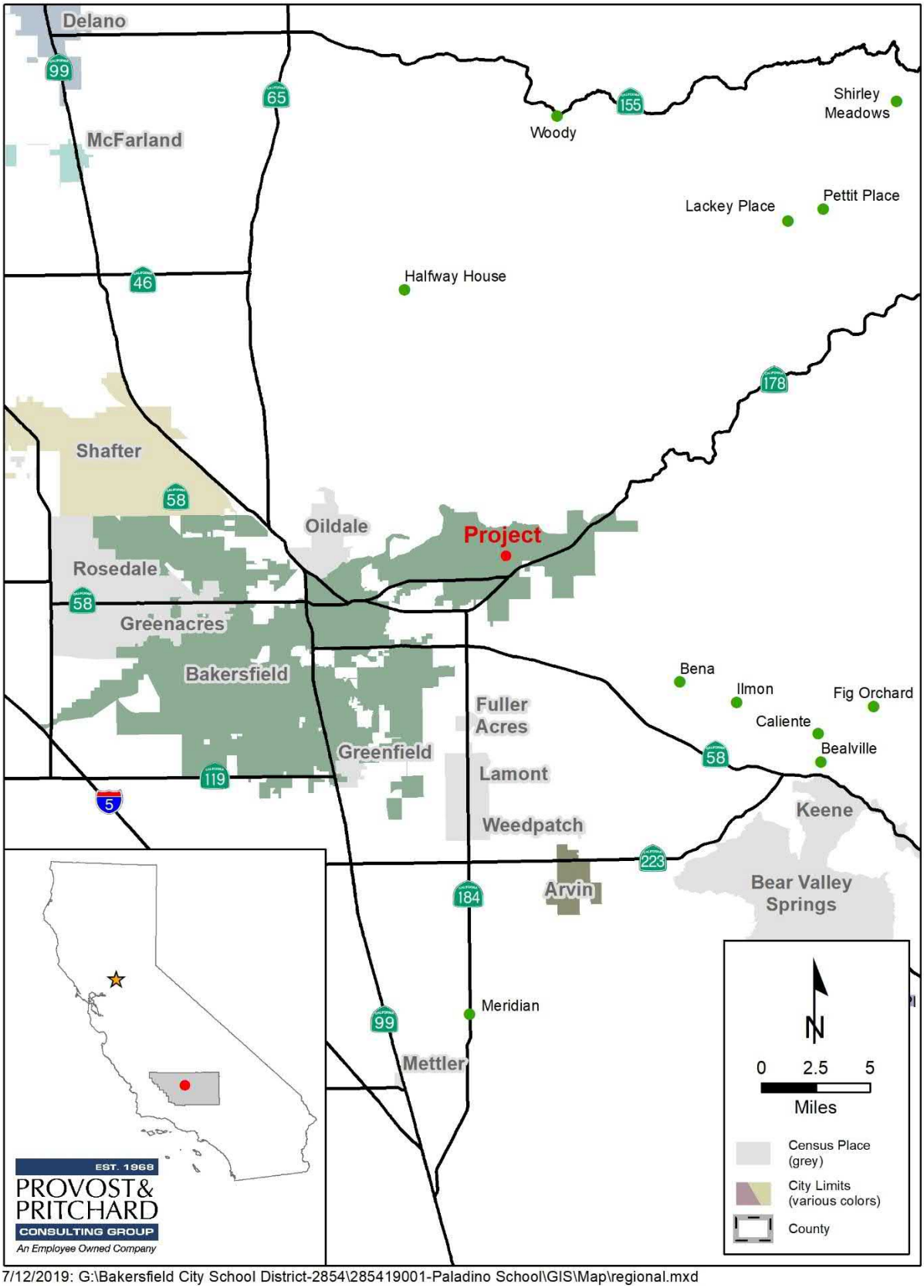
1) Summarize all site-specific information related to existing biological resources.
2) Make reasonable inferences about the biological resources that could occur onsite based on habitat suitability and the proximity of the site to a species' known range.
3) Summarize all state and federal natural resource protection laws that may be relevant to the Project.
4) Identify and discuss Project impacts to biological resources likely to occur onsite within the context of CEQA or state or federal laws.
5) Identify and publish a set of avoidance and mitigation measures that would reduce impacts to a less-than-significant level (as identified by CEQA) and are generally consistent with recommendations of the resource agencies for affected biological resources.

1.3 Study Methodology

A reconnaissance-level field survey of the Project site and surrounding area was conducted on July 11, 2019 by Provost & Pritchard biologist, Brooke Fletcher. The survey consisted of walking through the Project area while identifying and noting land uses, biological habitats and communities, and plant and animal species encountered. Furthermore, the site and surrounding areas were assessed for suitable habitats of various wildlife species.

Ms. Fletcher conducted an analysis of potential Project-related impacts to biological resources based on the resources known to exist or with the potential to exist within the Project site and surrounding areas. Sources of information used in preparation of this analysis included: the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB); the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) system; the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California; CalFlora's online database of California native plants; the Jepson Herbarium online database (Jepson eFlora); U.S. Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS); the NatureServe Explorer online database; the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Plants Database; the California Department of Fish and Wildlife (CDFW) California Wildlife Habitat Relationships (CWHR) database; the California Herps online database; and various manuals, reports, and references related to plants and animals of the San Joaquin Valley region.

The field survey conducted included an appropriate level of detail to assess the significance of potential impacts to sensitive biological resources resulting from the Project. Furthermore, the field survey was sufficient to generally describe those features of the Project that could be subject to the jurisdiction of federal and/or State agencies, such as the U.S. Army Corps of Engineers (USACE), CDFW, Regional Water Quality Control Board (RWQCB) and State Water Resources Control Board (SWRCB). The field investigation did not include a formal wetland delineation or focused surveys for special status species.



7/12/2019: G:\Bakersfield City School District-2854\285419001-Paladino School\GIS\Map\regional.mxd

Figure 1. Regional Location Map

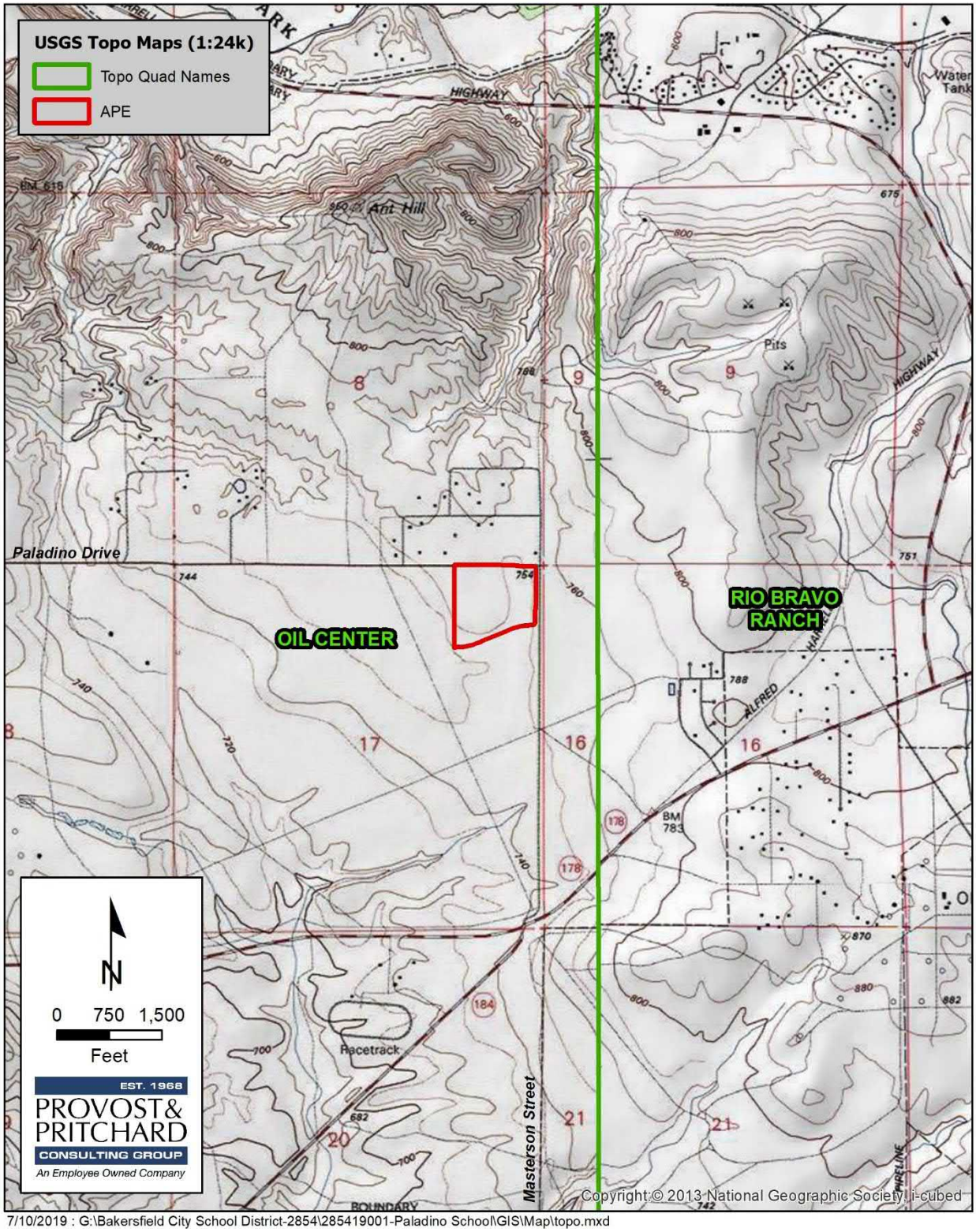


Figure 2. Topographic Quadrangle Map

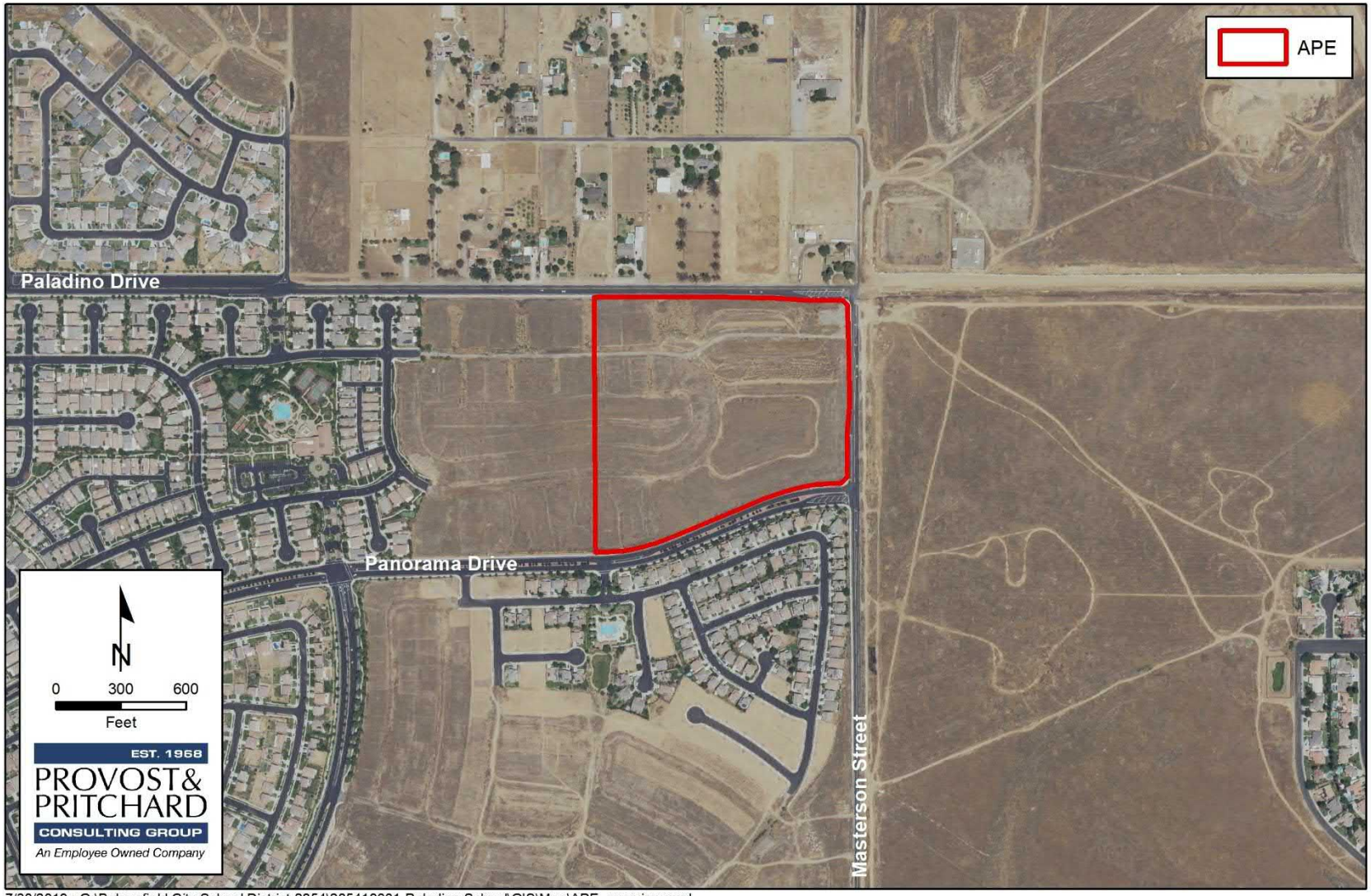


Figure 3. Area of Potential Effect (APE) Map

2 Existing Conditions

2.1 Regional Setting

The Project site is located in the City of Bakersfield in central Kern County, which lies within the lower San Joaquin Valley, part of the Great Valley of California (See **Figure 1**). The Valley is bordered by the Sierra Nevada Mountain Ranges to the east, the Coast Ranges to the west, the Klamath Mountains and Cascade Range to the north, and the Transverse Ranges and Mojave Desert to the south. The City of Bakersfield is located within the southernmost region of the Valley, approximately 30 miles east and north of the Transverse Ranges and 170 miles west of the Mojave Desert.

Bakersfield typically experiences a hot desert climate with long, dry summers followed by short, cool winters. Summer temperatures often reach above 90 degrees Fahrenheit, and the humidity is generally low. Winter temperatures are often below 60 degrees Fahrenheit during the day and rarely exceed 70 degrees. On average, the City of Bakersfield receives approximately 6.5 inches of precipitation in the form of rainfall yearly, most of which occurs between December and March.

The Project site is located at an elevation of approximately 750 to 760 feet above mean sea level, near the base of the foothills of the Greenhorn Mountains, part of the Sierra Nevada mountain range. The Project is located approximately 1.5 miles south of the Kern River, within the Lake Ming-Kern River watershed; Hydrologic Unit Code (HUC): 180300030110 and the Kern Island Canal-Frontal Kern Lake Bed watershed; Hydrologic Unit Code (HUC): 180300031201 (EPA, 2019).

The Project lies entirely within the Kern County Groundwater Subbasin of the San Joaquin Valley Groundwater Basin. (DWR, 2019).

2.2 Project Site

As illustrated on **Figure 3**, the Project site consists of the eastern half of an approximate 50-acre undeveloped parcel of land southwest of the intersection of Paladino Drive and Masterson Street. Portions of the northeast corner of the site are paved and the paved extension of Summit Pass Drive, runs east-west through the APE, connecting the adjacent development to Masterson Street. The site is accessible by paved roads. Representative photographs of the Project site and surrounding lands are available in **Appendix A** at the end of this document.

2.3 Biological Communities

One biological community was identified within the Project area: ruderal non-native annual grassland. Similar non-native grassland is present to the east, across Masterson Street. Urban development is present to the north, south, and to the west beyond the undeveloped parcel of land. Project areas are accessible by paved roads and compacted dirt roads. The habitats of the Project area and surrounding lands are disturbed or frequently maintained and therefore of relatively low quality for most native wildlife species.

2.3.1 Ruderal Non-Native Annual Grassland

At the time of the field survey, the Project area was composed of a ruderal, vacant lot of land. Portions of northeast corner near the intersection of Paladino Drive and Masterson Street were paved, and there was a paved road running east-west through the site (Summit Pass Drive alignment), which was being used as access for construction equipment and vehicles associated with development to the west. On each side of the paved access road, there were large earthen berms which contained an abundance of burrows. The remainder

of the site had been graded and the outline of what appeared to be tentative lot lines and roadways for a subdivision were visible. A small, ruderal excavated basin was observed in the northern portion of the Project site. At the time of the field survey, the basin was completely dry and filled with tumbleweeds. The site's northern boundary was clearly delineated by the presence of a large cinder block fence running east-west, parallel to Paladino Drive. Lands north of Paladino Drive were developed with rural residences and ranches, and associated accessory structures consisting of corrals, stables, barns, and scattered pasture or fallow fields. The southern boundary was also marked by the presence of a similar cinder block fence, parallel to Panorama Drive. Lands south of Panorama Drive were developed into a residential subdivision. The eastern boundary was defined by the sidewalk associated with the Masterson Street right-of-way. Lands east of Masterson Street were composed of ruderal non-native annual grassland, similar to the Project site. The Project's western boundary was not delineated by the presence of a fence or landmark. Instead, the location was matched to coordinates and digital maps in the field. Lands adjacent to the west are composed of identical habitat to the Project site. There was a newly developed residential subdivision approximately 800 feet west of the Project's western boundary.

Ruderal habitats are characterized by a high level of human disturbance and absence of vegetation or dominated by non-native plant species. Although this lot is likely disked for weed abatement and fire control seasonally, at the time of the field survey, the majority of the site was overgrown with weedy, non-native, annual grasses and forbs. Nearly all of the vegetation observed was invasive and/or associated with areas of disturbance, such as the following species which were observed onsite: russian thistle (*Salsola tragus*), tumbleweed (*Amarnathus albus*), wild oats (*Avena fatua*), prickly lettuce (*Lactuca serriola*), common mustard (*Brassica rapa*), black mustard (*Brassica nigra*), foxtail (*Bromus madritensis*) and (*Hordeum murinum*), ripgut brome (*Bromus diandrus*), yellow star thistle (*Centaurea solstitialis*), and horse nettle (*Solanum elaeagnifolium*). The following native vegetation was observed: cattle saltbush (*Atriplex polycarpa*), alkali heliotrope (*Heliotropum curassavicum*), and doveweed (*Croton setiger*).

This ruderal lot of land represents low-quality habitat for most wildlife species; however, at the time of the field survey, an abundance of burrows were present onsite, especially on the two large earthen berms. Several burrows were determined to be active based on the presence of recent tracks, scat, or other sign, such as prey remnants, cut grass, or mounds of freshly excavated dirt. Unfortunately, the loose, sandy soils of the berms were not conducive to preserving tracks for identification purposes. Prey remnants were observed at the entrance of at three burrows measuring at least six inches in diameter, and canid scat consistent with kit fox, was present at the entrance of one burrow. The following fossorial mammals were observed during the field survey: California ground squirrel (*Otospermophilus beecheyi*), desert cottontail (*Sylvilagus audobonii*), black tailed jack rabbit (*Lepus californicus*), and deer mouse (*Peromyscus maniculatus*). In addition, coyote (*Canis latrans*) and kit fox (*Vulpes macrotis mutica*) tracks and scat were observed throughout the Project area. Although suboptimal, given the fragmented location and frequent human disturbance, the Project site does represent denning and foraging habitat for carnivorous mammals and raptors.

The absence of trees and shrubs makes the Project area generally unsuitable for most avian species. However, disturbance tolerant ground nesting birds, such as the killdeer (*Charadrius vociferous*) could potentially nest along the bare ground or sparsely vegetated areas onsite. However, the presence of predators and frequent human disturbance would make that unlikely. No active or inactive nests were observed at the time of the field survey, and observations of avian species were limited to the following: mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), Cooper's hawk (*Accipiter cooperii*), and American crow (*Corvus brachyrhynchos*).

Several San Joaquin fence lizards (*Sceloporus occidentalis biseriatus*) were observed basking onsite and retreating into small burrows and crevices. No other reptile or amphibian species were observed at the time of the field survey, although some species undoubtedly occur, especially those relatively tolerant of disturbance. The small excavated basin onsite could collect water seasonally and serve as breeding habitat for amphibians, such as the American bullfrog (*Lithobates catesbeianus*) or California toad (*Anaxyrus boreas halophilus*). Additional reptile and amphibian species expected to occur onsite or pass through include California whiptail (*Aspidoscelis*

tigris munda), Pacific gophersnake (*Pituophis catenifer catenifer*), California kingsnake (*Lampropeltis californiae*), and western side-blotched lizard (*Uta stansburiana elegans*).

2.4 Soils

Two soil mapping units representing one soil series were identified within the Project area: Delano sandy loam, 0 to 2 percent slopes and Delano sandy loam, 2 to 5 percent slopes. Neither of the mapped soils are classified as hydric soils. Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions such that under sufficiently wet conditions hydrophytic vegetation is supported.

Delano sandy loam, 0 to 2 percent slopes comprises 90.6 percent of the mapped Project area, and Delano sandy loam, 2 to 5 percent slopes comprises 9.4 percent of the mapped Project area. The Delano series consists of very deep, well drained soils formed in alluvium derived from weathered granitoid rock. Both of these soils are non-saline to very slightly saline, with moderately slow permeability and medium runoff class. These soils are considered Prime farmland if they are irrigated and are often used for growing citrus, fruits, nuts, and row crops. Undeveloped areas typically support a cover of annual grasses and forbs.

The complete Natural Resources Conservation Service (NRCS) Web Soil Survey report is available in **Appendix C** at the end of this document.

2.5 Natural Communities of Special Concern

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, or home to special status species. CDFW is responsible for the classification and mapping of all-natural communities in California. Just like the special status plant and animal species, these natural communities of special concern can be found within the CNDDB.

According to CNDDB, there are no recorded observations of natural communities of special concern with potential to occur within the Project area or immediate vicinity. Additionally, no natural communities of special concern were observed during the biological survey.

2.6 Designated Critical Habitat

The USFWS often designates areas of "Critical Habitat" when it lists species as threatened or endangered. Critical Habitat is a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.

According to CNDDB and IPaC, designated critical habitat is absent from the Project area and vicinity.

2.7 Wildlife Movement Corridors

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation.

The Project site does not contain any features likely to serve as a wildlife movement corridor. Furthermore, the Project is located within the City of Bakersfield in a region undergoing intensive development and urbanization, resulting in an increase in traffic and disturbance related to human activities which would discourage dispersal and migration.

2.8 Special Status Plants and Animals

California contains several "rare" plant and animal species. In this context, "rare" is defined as species known to have low populations or limited distributions. As the human population grows, resulting in urban expansion which encroaches on the already limited suitable habitat, these sensitive species become increasingly more vulnerable to extirpation. State and Federal regulations have provided the CDFW and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to California. Numerous native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Other formal designations include "candidate" for listing or "species of special concern" by CDFW. The California Native Plant Society (CNPS) has its list of native plants considered rare, threatened, or endangered. Collectively these plants and animals are referred to as "special status species."

A thorough search of the CNDDB for published accounts of special status plant and animal species was conducted for the *Oil Center*7.5-minute quadrangle that contains the Project site in its entirety, and for the 8 surrounding quadrangles: *North of Oildale, Knob Hill, Pine Mountain, Oildale, Rio Bravo Ranch, Gosford, Lamont,* and *Edison*. These species, and their potential to occur within the Project area are listed in **Table 1** and **Table 2** on the following pages. Raw data obtained from CNDDB is available in **Appendix B** at the end of this document. Other sources of information utilized in the preparation of this analysis included the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California, CalFlora's online database of California native plants, the Jepson Herbarium online database (Jepson eFlora), U.S. Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS), the NatureServe Explorer online database, the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Plants Database, the California Department of Fish and Wildlife (CDFW) California Wildlife Habitat Relationships (CWHR) database, ebird.org, and the California Herps online database. **Figure 2** shows the Project's 7.5-minute quadrangle, according to USGS Topographic Maps.

Table 1. List of Special Status Animals with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	Occurrence on Project Site
American badger (*Taxidea taxus*)	CSC	Grasslands, savannas, and mountain meadows near timberline are preferred. Most abundant in drier open spaces of shrub and grassland. Burrows in soil.	**Possible.** Although no American badger individuals or sign were observed during the field survey, suitable burrows were present. The Project site represents suitable breeding and foraging habitat, although the ground disturbance associated with adjacent development projects may discourage habitation, foraging, and/or dispersal movements. The nearest observation of this species was recorded in 2008, approximately 2.5 miles southwest of the Project site.
Bakersfield legless lizard (*Anniella grinnelli*)	CSC	Inhabits sparsely vegetated areas with moist, loose soil, including beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Often found underneath leaf litter, rocks, and logs.	**Unlikely.** The Project site is generally unsuitable for this species as riparian features, moist soils, and sand dunes are absent. There are several recorded observations of this species along Kern River and west of downtown Bakersfield, approximately 11 miles west-southwest of the Project site and along sand dunes of Caliente Creek approximately 9 miles south.
blunt-nosed leopard lizard (*Gambelia sila*)	FE, CE, CFP	Inhabits semi-arid grasslands, alkali flats, low foothills, canyon floors, large washes, and arroyos, usually on sandy, gravelly, or loamy substrate, sometimes on hardpan. Often found where there are abundant rodent burrows. Typically absent from areas of dense vegetation and steep slopes. Cannot survive on lands under cultivation. Known to bask on kangaroo rat mounds and often seeks shelter at the base of shrubs, in small mammal burrows, or in rock piles. Adults may excavate shallow burrows but rely on deeper pre-existing rodent burrows for hibernation and reproduction.	**Unlikely.** There are numerous historic (pre-1994) recorded observations of this species in the vicinity of the Project; however, in the past 25 years, there have only been three recorded occurrences: one in 2004, approximately 2.5 miles northwest of the site; one in 2006, approximately 2 miles south of the site; and one in 2006, approximately 3 miles southwest of the site. (See expanded discussion in **Section 3.4.2**)
burrowing owl (*Athene cunicularia*)	CSC	Resides in open, dry annual or perennial grasslands, deserts, and scrublands with low growing vegetation. Nests underground in existing burrows created by burrowing mammals, most often ground squirrels.	**Possible.** Suitable breeding and foraging habitat in the form of ground squirrel burrows and grassland is present onsite. Although no burrowing owl individuals or owl sign were observed at the time of the field survey, suitable burrows were present. There are several recent observations of this species in the vicinity of the Project. The nearest recorded observation was reported in 2006 on the undeveloped parcel directly east of the Project site.

Species	Status	Habitat	Occurrence on Project Site
California glossy snake (*Arizona elegans occidentalis*)	CSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers open areas with loose soil for easy burrowing.	**Unlikely.** The Project area is outside of the accepted current distribution range of this species. There are 6 historic (pre-1994) observations and 1 recent (2013) observation of this species in the vicinity of the Project. The 2013 occurrence was reported at a location approximately 9 miles southeast of the Project site. There have been no recorded observations of this species within 5 miles of the Project area.
California legless lizard (*Anniella sp.*)	CSC	Inhabits a variety of habitats which contain moist, loose soils and plant cover. Often can be found under objects such as rocks, boards, driftwood, and logs.	**Unlikely.** The Project site is generally unsuitable for this species as riparian features, moist soils, and sand dunes are absent. There have been no recorded observations of this species in the vicinity of the Project in over 40 years. The nearest record belongs to an occurrence approximately 3.5 miles east-northeast of the site reported in 1956.
Nelson's antelope squirrel (*Ammospermophilus nelsoni*)	CT	Found in the western San Joaquin Valley on dry, sparsely vegetated loamy soils. Relies heavily on existing small mammal burrows.	**Unlikely.** The only CNDDB record of this species in the vicinity belongs to historic collection records from 1911 at a location along the Kern River approximately 3 miles northwest of the Project site. According to the Bakersfield Habitat Conservation Plan species account, there are no presumed extant CNDDB occurrences east of State Route 99, and this species is presumed extirpated from the region which contains the Project. Modeled habitat maps (City of Bakersfield, CNDDB, and CWHR) describe the Project area as unsuitable habitat for this species.
northern leopard frog (*Lithobates pipiens*)	CSC	Inhabits grassland, wet meadows, potholes, forests, woodland, brushlands, springs, canals, bogs, marshes, and reservoirs. Generally prefers permanent water with abundant riparian vegetation.	**Absent.** Suitable habitat is absent from the Project area. The Project area is outside of the accepted historic and current range of native populations. The only CNDDB record of this species in the vicinity corresponds to individuals collected in 1965 which were deemed transplants outside of their native range.
pallid bat (*Antrozous pallidus)*	CSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods, and occasionally takes insects in flight. Prefers to roost in rock crevices, but may also use tree cavities, caves, bridges, and other man-made structures.	**Unlikely.** Roosting habitat is absent and foraging habitat is marginal, at best for this species. In 1998 this species was recorded roosting beneath a railroad trellis over Caliente Creek, approximately 9 miles southeast of the Project.

Species	Status	Habitat	Occurrence on Project Site
relictual slender salamander (*Batrachoseps relictus*)	CSC	Found close to surface water under boards, rotting logs, rocks and surface litter. Inhabits lower montane coniferous forests, riparian scrub, and riparian woodland on the western slope of the Sierra Nevada.	**Absent.** Suitable habitat is absent from the Project area. The only CNDDB record in the vicinity corresponds to an observation from 1967 at an undisclosed location "under rocks by water" east of the Project area. The status of this observation has since been updated to "possibly extirpated."
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Underground dens with multiple entrances in alkali sink, valley grassland, and woodland in valleys and adjacent foothills.	**Likely.** Kit fox tracks, scat, and several suitable burrows were observed during the field survey. The Project site represents suitable breeding and foraging habitat for this species. The Project is located within Satellite Recovery Area 10 and approximately 20 miles northeast of the nearest known Core Population in western Kern county (USFWS, 2010).
Sierra night lizard (*Xantusia vigilis sierra*)	CSC	Inhabits rocky outcrops, under exfoliating granite caps and flakes. Found only on the western edge of the Greenhorn Mountains in Kern County.	**Absent.** The Project area is outside of this species' accepted distribution range. This species only occurs north of the Kern River on the western edge of the Greenhorn Mountains.
Swainson's hawk (*Buteo swainsoni*)	CT	Nests in large trees in open areas adjacent to grasslands, grain or alfalfa fields, or livestock pastures suitable for supporting rodent populations.	**Unlikely.** Nesting habitat is absent, but marginal foraging habitat is present. Swainson's hawks are uncommon in this portion of the Kern County. CNDDB records include one historic (1935) collection of eggs at an unknown location in the vicinity of Bakersfield. There are no other recorded observations of this species in the vicinity of the Project.
Tipton kangaroo rat *(Dipodomys nitratoides nitratoides*)	FE, CE	Burrows in soil. Often found in grassland and shrubland.	**Unlikely.** The Project area is outside (north and east) of the accepted geographic distribution of this species (USFWS, 2010). The nearest observation of this species was recorded in 1911 approximately 2.5 miles north-northwest of the Project site.
tricolored blackbird (*Agelaius tricolor*)	CCE, CSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found on dairy farm forage fields.	**Unlikely.** Nesting habitat is absent onsite and in the vicinity. Foraging habitat is marginal, at best.
Tulare grasshopper mouse (*Onychomys torridus tularensis*)	CSC	Typically inhabit arid shrubland communities in hot, arid grassland and shrubland associations. Diet consists almost exclusively of arthropods.	**Unlikely.** There are no recorded observations of this species in the vicinity of the Project in over 100 years.

Species	Status	Habitat	Occurrence on Project Site
valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Lives in mature elderberry shrubs of the Central Valley and foothills. Adults are active March to June.	**Absent.** Suitable elderberry habitat is absent within Project areas. Furthermore, the Project is not located within the presumed historical range or presumed current distribution of this species. In 2014 USFWS published findings suggesting that previous CNDDB observations of this species south of Fresno County should be discounted. (See expanded discussion in **Section 3.4.2**)
western mastiff bat (*Eumops perotis californicus*)	CSC	Found in open, arid to semi-arid habitats, including dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas, where it feeds on insects in flight. Roosts most commonly in crevices in cliff faces but may also use high buildings and tunnels.	**Unlikely**. Roosting and breeding habitat is absent from the Project area and surrounding lands, but this species may occasionally forage over the Project site. The only recorded observation of this species in the vicinity corresponds to historic collections from unknown locations in the vicinity of Bakersfield.
western pond turtle (*Emys marmorata*)	CSC	An aquatic turtle of ponds, marshes, slow-moving rivers, streams, and irrigation ditches with riparian vegetation. Requires adequate basking sites and sandy banks or grassy open fields to deposit eggs.	**Absent.** Suitable aquatic habitat is absent from the Project area and the vicinity. Upland habitat for nesting and wintering is absent.

Table 2. List of Special Status Plants with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	Occurrence on Project Site
Bakersfield cactus (*Opuntia basilaris var. treleasei*)	FE, CE, CNPS 1B	Grows in grasslands, low-hills, and coarse, well-drained granitic sands on bluffs at elevations between 393 feet and 492 feet, according to Jepson, 2019. However, the USFWS 5-year review states that this species occurs at elevations between 460 to 1,800 feet. Found in the southern portion of the San Joaquin Valley and foothills of the Tehachapi Mountains. Blooms March – April.	**Absent.** This species was not observed within the Project area at the time of the field survey. **The disturbed (graded and disked) nature of the Project site is generally unsuitable for this species and would not support a population of Bakersfield cactus.**
Bakersfield smallscale (*Atriplex tularensis*)	CE, CNPS 1A	This facultative species is equally likely to occur in wetlands and non-wetlands, often found in alkali seeps as well as Chenopod scrub at elevations between 295 feet and 656 feet. Blooms June – October.	**Absent.** This species is presumed extinct and was not observed during the field survey. There is one historic observation of this species in the vicinity of the Project, but the status has since been updated to "extirpated."
Calico monkeyflower (*Diplacus pictus*)	CNPS 1B	Found in bare ground around gooseberry bushes or around granite rock outcrops in broadleaved upland forests and cismontane woodlands at elevations between 442 feet and 4101 feet. Blooms March – May.	**Absent.** Suitable habitat is absent from the Project site. This species has not been observed in the vicinity of the Project in over 35 years.
California jewelflower (*Caulanthus californicus*)	FE, CE, CNPS 1B	Found in the San Joaquin Valley and Western Traverse Ranges. Occurs on flats and slopes, generally in non-alkaline grassland at elevations between 230 feet and 3280 feet. Blooms February – April.	**Absent.** This species is presumed extirpated in the vicinity of the Project (CalFlora, CNPS, and CNDDB, 2019).
California satintail (*Imperata brevifolia*)	CNPS 2B	Although this facultative species is equally likely to occur in wetlands and non-wetlands, it is often found in wet springs, meadows, streambanks, and floodplains at elevations below 1600 feet. Blooms September – May.	**Absent.** Suitable habitat is absent from the Project site. The only recorded observation in the vicinity corresponds to a historic collection from 1896 at an unknown location described generally as "Bakersfield."
California screw moss (*Tortula californica*)	CNPS 1B	Grows on sandy soils at elevations between 32 feet and 4790 feet. Found primarily along the coast of southern California, as well as the Channel Islands.	**Absent.** This species was not observed during the field survey. The only recorded observation in the vicinity corresponds to an undated collection at an unknown location in the vicinity of Hart Memorial Park.

Species	Status	Habitat	Occurrence on Project Site
Comanche Point layia (*Layia leucopappa*)	CNPS 1B	Often found with weedy grasses on dry hills in clay soils. Occurs in the San Joaquin Valley and foothills at elevations between 328 feet and 1148 feet. Blooms March – April.	**Unlikely.** The sandy soils onsite are generally unsuitable for this species. The only recorded observation of this species in the vicinity corresponds to a historic seed collection from 1935 at an unknown location southeast of Bakersfield.
hispid salty bird's-beak (*Chloropyron molle ssp. hispidum*)	CNPS 1B	Often occurs in damp, alkaline soils at elevations below 425 feet. Found in wetlands, as well as meadows, seeps, and valley and foothill grasslands. Blooms June – July.	**Absent.** This species was not observed during the field survey, which was conducted during the blooming period. The only recorded observations of this species in the vicinity of the Project correspond to historic (1927 and 1946) records at unknown locations near Bakersfield and Lamont.
Horn's milk-vetch (*Astralagus hornii var. hornii*)	CNPS 1B	This facultative species is most frequently found in the San Joaquin Valley and Sierra Nevada foothills in the alkali soils of lake margins, meadows, seeps, and playas at elevations between 196 feet and 984 feet. Blooms May – September.	**Absent.** Suitable habitat is absent from the Project site. This species was not observed during the field survey, which was conducted during the blooming period. The only recorded observations of this species in the vicinity of the Project correspond to historic (1939 and 1945) records at unknown locations near Bakersfield and Greenfield.
Kern mallow (*Eremalche parryi ssp. kernensis*)	FE, CNPS 1B	Occurs in the southern most portion of the San Joaquin Valley and surrounding foothills in grasslands, juniper woodlands, and Chenopod scrublands. Grows in sandy to clay soils, in dry, open areas at elevations between 328 feet to 3280 feet. Blooms March – May.	**Unlikely.** The nearest recorded observation of this species was reported in 1988 at a location approximately 3 miles north of the Project site. This species was not observed during the field survey.
Oil neststraw (*Stylocline citroleum*)	CNPS 1B	Occurs in valley and foothill areas of central and southern California in oil-producing areas. Grows in Clay soils at elevations between 196 feet to 984 feet. Blooms March – April.	**Absent.** Suitable habitat is absent from the Project site. The only recorded observation of this species in the vicinity corresponds to a historic collection from 1935 at an unknown location approximately 2 miles east of Bakersfield.
Piute Mountains navarretia (*Navarretia setiloba*)	CNPS 1B	Grows in red clay soils or gravelly loamy soils in woodlands and grasslands associated with pinyon pines and junipers. Occurs in the southern San Joaquin Valley and surrounding foothill areas at elevations between 1640 feet and 6900 feet. Blooms April – June.	**Absent.** Suitable habitat is absent from the Project site and the Project is located below the accepted elevation range of this species.
recurved larkspur (*Delphinium recurvatum*)	CNPS 1B	Found in the San Joaquin Valley and other parts of California. Occurs in poorly drained, fine, alkaline soils in	**Unlikely**. This species was not observed during the field survey. The nearest recorded observation of this species was reported in 2008 in grassland habitat

Species	Status	Habitat	Occurrence on Project Site
		grassland at elevations between 100 feet and 1965 feet. Most often found in non-wetlands, but occasionally found in wetlands. Blooms March – June.	approximately 11 miles north of the Project.
rose-flowered larkspur (*Delphinium purpusii*)	CNPS 1B	This species occurs in a variety of habitats in the Sierra Nevada and Tehachapi mountain and foothill areas, including chaparral and woodlands. Grows at elevations between 984 feet and 4265 feet. Blooms March – May.	**Absent.** Suitable habitat is absent from the Project site. The Project is located below the accepted altitudinal range of this species.
San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	FT, CE, CNPS 1B	Found in the San Joaquin Valley and the Sierra Nevada foothills in bare dark clay in valley grassland and foothill woodland communities at elevations between 325 feet and 2950 feet. Blooms March – May.	**Absent.** Clay soils required by this species are absent from the Project site.
San Joaquin woollythreads (*Monolopia congdonii*)	FE, CNPS 1B	Occurs in the San Joaquin Valley in sandy soils in shadescale shrub and grasslands at elevations between 300 feet and 2300 feet. Found primarily in non-wetlands, but occasionally found in wetlands. Blooms February – May.	**Unlikely.** This species was not observed during the field survey. This species is presumed extirpated from the region north of Bakersfield which contains the Project (CNPS and CNDDB, 2019).
Shevock's golden-aster (*Heterotheca shevockii*)	CNPS 1B	This species grows in ditches, crevices, and shallow sands in the southern Sierra Nevada foothills. It is classified as facultative upland, usually occurring in chaparral and foothill woodlands, but occasionally found in riparian wetland areas. Grows at elevations between 1312 feet and 2624 feet. Blooms August – September.	**Absent.** Suitable habitat is absent from the Project site.
spiny-sepaled button-celery (*Eryngium spinosepalum*)	CNPS 1B	Found in the Sierra Nevada foothills and portions of the San Joaquin Valley. Occurs in vernal pools, swales, and roadside ditches at elevations between 325 feet and 4160 feet in valley grassland, freshwater wetlands, and riparian communities. Blooms April – July.	**Absent.** Vernal pool habitat is absent from the Project site and surrounding areas.

Species	Status	Habitat	Occurrence on Project Site
striped adobe-lily (*Fritillaria striata*)	CT, CNPS 1B	Found in the Sierra Nevada foothills in adobe soil within valley grassland and foothill woodland communities at elevations below 3300 feet. Blooms February – April.	**Absent**. Soils required by this species are absent from the Project site.
Tejon poppy (*Eschscholzia lemmonii ssp. kernensis)*	CNPS 1B	Occurs in the grasslands of the southern portion of the San Joaquin valley and the foothills of the Transverse mountain range. Found in elevations between 656 feet and 3280 feet. Blooms March – April.	**Unlikely.** This species is typically found in adobe or clay soils on slopes within the foothills. The sandy soils onsite are generally unsuitable for this species. The nearest recorded observation of this species corresponds to a historic (1937) collection from an unknown location near China Grade, mapped as best guess approximately 5 miles west of the Project site. There are recent (2011 and 2015) recorded observations of this species in the foothill region approximately 6 miles north of the Project site.
Tracy's eriastrum (*Eriastrum tracyi*)	CR, CNPS 3	Grows in gravelly shale or clay in open areas of valley and foothill grasslands in San Joaquin valley, as well as chaparral and cismontane woodlands. Found in elevations between 1312 feet and 3280 feet. Blooms May – August.	**Absent.** Suitable habitat is absent from the Project site and the Project is located below the accepted altitudinal range of this species.
Vasek's clarkia (*Clarkia tembloriensis ssp. calientensis*)	CNPS 1B	Associated with the genus *Isomeris* and found with other *Clarkia* species in the southern Sierra Nevada foothills at or around 1640 feet in elevation. Typically found on north-facing slopes in grassland communities. Blooms April – May.	**Absent.** Suitable habitat is absent from the Project site and the Project is located below the accepted altitudinal range of this species.

EXPLANATION OF OCCURRENCE DESIGNATIONS AND STATUS CODES

Present:	Species observed on the site at time of field surveys or during recent past
Likely:	Species not observed on the site, but it may reasonably be expected to occur there on a regular basis
Possible:	Species not observed on the site, but it could occur there from time to time
Unlikely:	Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient
Absent:	Species not observed on the site, and precluded from occurring there due to absence of suitable habitat

STATUS CODES

FE	Federally Endangered
FT	Federally Threatened
FPE	Federally Endangered (Proposed)
FPT	Federally Threatened (Proposed)
FC	Federal Candidate

CE	California Endangered
CT	California Threatened
CCT	California Threatened (Candidate)
CFP	California Fully Protected
CSC	California Species of Concern
CWL	California Watch List
CCE	California Endangered (Candidate)
CR	California Rare

CNPS LISTING

1A	Plants Presumed Extirpated in California	2A	Plants Presumed Extirpated in California, but more common elsewhere
1B	Plants Rare, Threatened, or Endangered in California and elsewhere	2B	Plants Rare, Threatened, or Endangered in California, but more common elsewhere

3 Impacts and Mitigation

3.1 Significance Criteria

3.1.1 CEQA

General plans, area plans, and specific projects are subject to the provisions of CEQA. The purpose of CEQA is to assess the impacts of proposed projects on the environment prior to project implementation. Impacts to biological resources are just one type of environmental impact assessed under CEQA and vary from project to project in terms of scope and magnitude. Projects requiring removal of vegetation may result in the mortality or displacement of animals associated with this vegetation. Animals adapted to humans, roads, buildings, and pets may replace those species formerly occurring on a site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. Such impacts may be considered either "significant" or "less than significant" under CEQA. According to the CEQA Guidelines, "significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered "significant" if they would:

- 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 CDFW or USFWS;

- 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 CDFW or USFWS;

- 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;

- 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;

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

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

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make a "mandatory finding of significance" if the project has the potential to:

> "Substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species cause a fish or wildlife population to drop below self-sustaining levels threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened

species, or eliminate important examples of the major periods of California history or prehistory."

3.2 Relevant Goals, Policies, and Laws

3.2.1 The Metropolitan Bakersfield General Plan

The Metropolitan Bakersfield General Plan sets forth the following goals and policies that protect biological resources and which have potential relevance to the Project:

- Conserve and enhance Bakersfield's biological resources in a manner which facilitates orderly development and reflects the sensitivities and constraints of these resources.
- To conserve and enhance habitat areas for designated "sensitive" animal and plant species.
- Direct development away from "sensitive biological resource" areas, unless effective mitigation measures can be implemented.

3.2.2 Metropolitan Bakersfield Habitat Conservation Plan

The Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) is a program in which an applicant is required to pay mitigation fees for the development of previously undeveloped lands as part of the project's City or County permitting process in order to offset impacts to sensitive species and/or associated habitats. Although the proposed location of Paladino School lies within the mapped boundaries of the MBHCP area, the Project, which involves the development of a public school, is not subject to City or County permitting and therefore not required to comply with the adopted elements of the MBHCP.

3.2.3 Threatened and Endangered Species

Permits may be required from the USFWS and/or CDFW if activities associated with a Project have the potential to result in the "take" of a species listed as threatened or endangered under the federal and/or state Endangered Species Acts. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). The CDFW and the USFWS are responding agencies under CEQA. Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.2.4 Designated Critical Habitat

When species are listed as threatened or endangered, the USFWS often designates areas of "Critical Habitat" as defined by section 3(5)(A) of the federal Endangered Species Act (ESA). Critical Habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical Habitat is a tool that supports the continued conservation of imperiled species by guiding cooperation with the federal government. Designations only affect federal agency actions or federally funded or permitted activities. Critical Habitat does not prevent activities that occur within the designated area. Only activities that involve a federal permit, license, or funding and are likely to destroy or adversely modify Critical Habitat will be affected.

3.2.5 Migratory Birds

The Federal Migratory Bird Treaty Act (MBTA: 16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the Secretary of the Interior. The name of the act is misleading, as it actually covers almost all bird's native to the United States, even those that are non-migratory. The MBTA encompasses whole birds, parts of birds, and bird nests and eggs. Additionally, California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the MBTA (Section 3513), as well as any other native non-game bird (Section 3800).

3.2.6 Birds of Prey

Birds of prey are protected in California under provisions of Fish and Game Code (Section 3503.5), which states that it is unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks and eagles) or Strigiformes (owls), as well as their nests and eggs. The bald eagle and golden eagle are afforded additional protection under the federal Bald and Golden Eagle Protection Act (16 USC 668), which makes it unlawful to kill birds or their eggs.

3.2.7 Nesting Birds

In California, protection is afforded to the nests and eggs of all birds. California Fish and Game Code (Section 3503) states that it is "unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Breeding-season disturbance that causes nest abandonment and/or loss of reproductive effort is considered a form of "take" by the CDFW.

3.2.8 Wetlands and other "Jurisdictional Waters"

The U.S. Army Corps of Engineers (USACE) regulates the filling or grading of Waters of the United States (Waters of the U.S.) under the authority of Section 404 of the Clean Water Act. Natural drainage channels and adjacent wetlands may be considered Waters of the U.S. or "jurisdictional waters" subject to the jurisdiction of the USACE. The extent of jurisdiction has been defined in the Code of Federal Regulations (CFR) and clarified by federal courts.

On June 29, 2015 the U.S. Environmental Protection Agency (EPA) and USACE jointly issued the Clean Water Rule (33 CFR 328.3) as a synthesis of statute, science, and U.S. Supreme Court decisions. The Clean Water Rule (33 CFR 328.3) defines Waters of the U.S. to include the following:

1) All waters used in interstate or foreign commerce (also known as "traditional navigable waters"), including all waters subject to the ebb and flow of the tide;
2) All interstate waters including interstate wetlands;
3) The territorial seas;
4) All impoundments of Waters of the U.S.;
5) All tributaries of waters defined in Nos. 1 through 4 above, where "tributary" refers to a water (natural or constructed) that contributes flow to another water and is characterized by the physical indicators of a bed and bank and an Ordinary High-Water Mark (OHWM);
6) Adjacent waters, defined as either (a) located in whole or in part within 100 feet of the OHWM of waters defined in Nos. 1 through 5 above, or (b) located in whole or in part within the 100-year floodplain and within 1,500 feet of the OHWM of waters defined in Nos. 1 through 5 above;

7) Western vernal pools, prairie potholes, Carolina bays and Delmarva bays, pocosins, and Texas coastal prairie wetlands, if determined on a case-specific basis to have a significant nexus to waters defined in Nos. 1 through 3 above;
8) Waters that do not meet the definition of adjacency, but are determined on a case-specific basis to have a significant nexus to waters defined in Nos. 1 through 3 above, and are either (a) located in whole or in part within the 100-year floodplain of waters defined in Nos. 1 through 3 above, or (b) located within 4,000 feet of the OHWM of waters defined in Nos. 1 through 5 above.

The 2015 rule also redefines exclusions from jurisdiction, which include:

1) Waste treatment systems;
2) Prior converted cropland;
3) Artificially irrigated areas that would revert to dry land should application of irrigation water to the area cease;
4) Groundwater;
5) Stormwater control features constructed to convey treat or store stormwater created in dry land; and
6) Three types of ditches: (a) ditches with ephemeral flow that are not a relocated or excavated tributary, (b) ditches with intermittent flow that are not a relocated or excavated tributary or that do not drain wetlands, and (c) ditches that do not flow, either directly or through another water, to a traditional navigable water.

A ditch may be a Water of the U.S. only it if meets the definition of "tributary" and is not otherwise excluded under the provision.

As determined by the United States Supreme Court in its 2001 *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (*SWANCC*) decision, channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. Similarly, in its 2006 consolidated *Carabell/Rapanos* decision, the U.S. Supreme Court ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a navigable and therefore jurisdictional water. Furthermore, the Supreme Court clarified that the Environmental Protection Agency (EPA) and the USACE will not assert jurisdiction over ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The USACE regulates the filling or grading of Waters of the U.S. under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by "ordinary high-water marks" on opposing channel banks. All activities that involve the discharge of dredge or fill material into Waters of the U.S. are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the RWQCB issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards.

Under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board has regulatory authority to protect the water quality of all surface water and groundwater in the State of California ("Waters of the State"). Nine RWQCBs oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into Waters of the State through the issuance of various permits and orders. Discharges into Waters of the State that are also Waters of the U.S. require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 Clean Water Act permit. Discharges into all Waters of the State, even those that are not also Waters of the U.S., require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB. The RWQCB also administers the Construction Storm Water Program and the federal

National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one or more acres of soil must obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, storm water, or other pollutants into a Water of the U.S. may require a NPDES permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a Notification of Lake or Streambed Alteration. If CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

The only potential aquatic resource onsite at the time of the field survey was a small excavated basin. The purpose of the basin is unclear, but it may be used to collect stormwater runoff from the newly developed roads and subdivisions in the vicinity. The square basin measured approximately 45 feet on each side, covering an area of approximately 2,000 square feet. At the time of the field survey, the basin was completely dry and the filled with tumbleweeds. Typical wetlands, vernal pools, streams, and other potentially regulated water features were absent from the Project site and the vicinity. Therefore, it is reasonable to assume that Waters of the U.S. are absent from the Project area. Furthermore, since the Project proposes disturbance to an area greater than one acre, the applicant will be required to obtain a Construction General Permit from the RWQCB, which will ensure impacts to potential Waters of the State remain less than significant.

3.3 Potentially Significant Project-Related Impacts and Mitigation

As discussed in **Section 1**, the Project includes the development of a new school southwest of the intersection of Paladino Drive and Masterson Street in eastern Bakersfield.

Species identified as candidate, sensitive, or special status species in local or regional plans policies or regulations by CDFW or the USFWS that have the potential to be impacted by the construction phase of the Project are identified below with corresponding mitigation measures.

3.3.1 General Mitigation Measures

Prior to the start of construction, all personnel associated with construction of the Project shall be trained to be able to identify these candidate, sensitive, or special status species in order to prevent impacts to sensitive resources; therefore, the following general mitigation measures shall be implemented:

> ***Mitigation Measure 3.3.1a (WEAP Training):*** Prior to initiating construction activities (including staging and mobilization), all personnel associated with Project construction shall attend mandatory Worker Environmental Awareness Program (WEAP) training. The WEAP training shall be conducted by a qualified biologist, to aid workers in identifying special status resources that may occur in the Project area. The specifics of this program shall include identification of the sensitive species and suitable habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information, along with photographs or illustrations of sensitive species with potential to occur onsite, shall also be prepared for distribution to all contractors, their employees, and all other personnel involved with construction of the Project. All employees shall sign a form documenting that they have attended WEAP training and understand the information presented to them.

Mitigation Measure 3.3.1b (Operational Hours): Construction shall be conducted during daylight hours to reduce disturbance to wildlife that could be foraging within work areas.

3.3.2 Project-Related Mortality and/or Disturbance of Nesting Raptors, Migratory Birds, and Special Status Birds

At the time of the field survey, the Project site did not contain any trees or shrubs, and therefore suitable nesting habitat for most avian species was absent. However, there were trees large enough to support a raptor nest in the vicinity, and disturbance tolerant ground-nesting birds, such as the killdeer (*Charadrius vociferous*) could nest on the bare ground or compacted dirt roads onsite. If a killdeer were nesting onsite during construction, an individual could be killed or injured by Project-related activities. Furthermore, construction activities could disturb nesting birds elsewhere onsite or in the vicinity, resulting in nest abandonment. Project construction activities that adversely affect the nesting success of raptors and migratory birds or result in the mortality of individual birds constitutes a violation of State and federal laws and is considered a significant impact under CEQA.

The Project does not involve the removal of any trees or shrubs, and habitats onsite are suboptimal for foraging and nesting due to frequent disturbance and adjacent urban development. A swath of superior nesting and foraging habitat in the vicinity is available in the form of the Kern River riparian corridor or the expanse of undeveloped grassland at the base of the foothills in Kern County. For these reasons, loss of nesting and/or foraging habitat would not be considered a potentially significant impact under CEQA.

Implementation of the following measures will reduce potential impacts to nesting birds to a less than significant level under CEQA and will ensure compliance with State and federal laws protecting these avian species. Avian species requiring additional protective measures, such as the burrowing owl, will be discussed in detail in the following sections.

The following measures will be implemented during or prior to the start of construction:

Mitigation Measure 3.3.2a (Avoidance): The Project's construction activities shall occur, if feasible, between September 1 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.

Mitigation Measure 3.3.2b (Pre-construction Survey): If activities must occur within nesting bird season (February 1 to August 31), a qualified biologist shall conduct pre-construction surveys for active nests within 30 days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 500 feet. If no active nests are observed, no further mitigation is required.

Mitigation Measure 3.3.2c (Establish Buffers): On discovery of any active nests near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged.

3.3.3 Project-Related Mortality and/or Disturbance of Burrowing Owl

Burrowing owls (*Athene cunicularia*) were once considered abundant in California, but populations have been declining, and are now classified as a Species of Special Concern in California. Burrowing owls breed in open grasslands and a variety of human-modified habitats with similar features. They are typically found within ground squirrel burrows in prairies, low-growing agricultural fields, airports, and golf courses. 12 % of the

State's population resides in the southern Central Valley region, with the highest concentrations in Tulare and Kern Counties (Wilkinson and Siegel, 2010). Approximately 30% of breeding sites are located along irrigation canals, 10% are found within fallow fields, and 10% are found within field crops (Wilkerson and Siegel, 2010). Nesting burrowing owls are found at low elevations, in open areas with few trees or other raptor perching sites. They prefer low-growing vegetation around burrows and are attracted to soil disturbance, especially from ground squirrels. Most burrowing owls are migratory, but many in California, especially within the Central Valley region, are year-round residents. Those that do migrate often exhibit site fidelity and will return to the same burrow locations year after year.

Although no burrowing owl individuals were observed at the time of the field survey, several suitable burrows were present, and this species has been documented in the vicinity. The Project site does contain suitable breeding and foraging habitat for the burrowing owl. An abundance of ground squirrels and associated burrows were observed. Each burrow was inspected for owl sign (feathers, whitewash, prey remnants, pellets, decorative materials). Although prey remnants were observed at the entrance of a few of the burrows, no other owl sign was observed.

The Project involves grading and ground-disturbance associated with the development of a school, parking lot, and other associated features. If burrowing owls were nesting at the time of ground disturbance, individuals could be injured or killed by burrow collapse. Project-related construction in the vicinity could also disturb nesting owls, causing a breeding pair to abandon their nest. Project activities resulting in injury or mortality of burrowing owl individuals or that adversely affect nesting success would be considered a significant impact under CEQA. Wintering owls in the vicinity would be expected to fly away from disturbance, but given their fossorial nature, extra care should be taken to ensure protection of this species prior to ground disturbance. Removal of active burrows could be considered a significant impact if there were not an abundance of alternative suitable burrows in the Project's vicinity.

Implementation of the following measures, derived from the CDFW 2012 *Staff Report on Burrowing Owl Mitigation,* will reduce potential impacts to burrowing owls to a less than significant level, and will ensure compliance with State and federal laws protecting this species.

> ***Mitigation Measure 3.3.3a (Pre-construction Take Avoidance Survey):*** A qualified biologist shall conduct a pre-construction take avoidance survey for burrowing owls and suitable burrows, in accordance with CDFW's *Staff Report on Burrowing Owl Mitigation* (2012), within 30 days prior to the start of construction activities. The survey shall include the proposed work area and surrounding lands within 500 feet. If no burrowing owl individuals or suitable burrows are observed, no further mitigation is required.
>
> ***Mitigation Measure 3.3.3b (Avoidance):*** If an active burrowing owl burrow is detected, the occurrence shall be reported to Fresno Field Office of CDFW and the CNDDB, and disturbance-free buffers shall be implemented in accordance with CDFW's 2012 *Staff Report on Burrowing Owl Mitigation,* as outlined in the table below:

Location	Time of Year	Level of Disturbance		
		Low	Medium	High
Nesting sites	April 1 – August 15	200 meters	500 meters	500 meters
Nesting sites	August 16 – October 15	200 meters	200 meters	500 meters
Nesting sites	October 16 – March 31	50 meters	100 meters	500 meters

Mitigation Measure 3.3.3c (Consultation with CDFW and Passive Relocation): If a qualified biologist determines that avoidance of an active burrowing owl burrow is not feasible, CDFW shall be immediately consulted to determine the best course of action, which may include passive relocation during non-breeding season. Passive relocation and/or burrow exclusion shall not take place without coordination with CDFW and preparation of an approved exclusion and relocation plan.

3.3.4 Project-Related Impacts to San Joaquin Kit Fox

San Joaquin kit fox have been documented in the Project vicinity, and suitable burrows were observed during the field survey. Given the frequent disturbance and adjacent urban development, the Project site represents suitable, but suboptimal foraging and denning habitat for this species. If a kit fox were present onsite during ground-disturbance, it could be injured or killed by construction activities. Projects that result in the mortality of special status species are considered a violation of State and federal laws and are considered a potentially significant impact under CEQA.

General mitigation measure 3.3.1a (WEAP Training) requires all construction personnel to attend a mandatory education program, which will include a detailed description of the San Joaquin kit fox and habitat requirements, color photographs or illustrations, an explanation of the conservation status of this species and its coverage under State and federal regulations, penalties for violating said regulations, and a list of required measures to reduce impacts to the species during construction. General mitigation measure 3.3.1b (Operational Hours) limits construction activities to daylight hours which would reduce the likelihood of encountering a kit fox onsite.

Implementation of the following measures will further reduce potential impacts to the San Joaquin kit fox to a less than significant level under CEQA and will ensure compliance with State and federal laws protecting this species.

The following measures derived from the USFWS 2011 *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance* will be implemented:

Mitigation Measure 3.3.4a (Pre-construction Survey): Within 30 days prior to the start of construction, a pre-construction survey for San Joaquin kit fox shall be conducted on and within 200 feet of proposed work areas. If an active kit fox den is detected within or adjacent to the Project area, construction will be delayed, and CDFW and USFWS shall be consulted to determine the best course of action.

Mitigation Measure 3.3.4b (Minimization): The Project shall observe all minimization and protective measures from the Construction and On-Going Operational Requirements of the USFWS 2011 *Standardized Recommendations*, including, but not limited to: construction speed limits, covering of pipes, installation of escape structures, restriction of herbicide and rodenticide use, proper disposal of food items and trash, prohibition of pets and firearms, and completion of an employee education program.

Mitigation Measure 3.3.4c (Mortality Reporting): The Sacramento Field Office of USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in the case of the

accidental death or injury to a San Joaquin kit fox during construction. Notification must include the date, time, and location of the incident and any other pertinent information.

3.3.5 Project-Related Impacts to American Badger

American badger (*Taxidea taxus*), a State species of special concern, has been documented in the Project vicinity, and suitable burrows were observed at the time of the field survey. Although no American badger individuals or sign (claw marks, tracks, or scat) were observed, the Project site could serve as suitable denning or foraging habitat for this species. However, given the frequent disturbance and adjacent urban uses, habitats of the Project site are likely suboptimal and could discourage habitation, foraging, or dispersal movements through this area. If an American badger were present onsite during ground-disturbance, it could be injured or killed by construction activities. Projects that result in the mortality of special status species are considered a violation of State and federal laws and are considered a potentially significant impact under CEQA.

Mitigation measures discussed in **Sections 3.3.1** and **Section 3.3.34** will provide protection to the American badger; however, implementation of the following measure will further reduce potential impacts to the American badger to a less than significant level under CEQA, and will ensure compliance with State and federal laws protecting this species.

The following measure will be implemented prior to the start of construction:

> ***Mitigation Measure 3.3.5a (Pre-construction Survey):*** Concurrent with the pre-construction survey for San Joaquin kit fox discussed above in **Section 3.3.4**, and within 30 days prior to the start of construction, a pre-construction survey for American badger shall be conducted on and within 200 feet of proposed work areas. If an active American badger den is detected within or adjacent to the Project area, construction will be delayed, and CDFW shall be consulted to determine the best course of action.

3.4 Less Than Significant Project-Related Impacts

3.4.1 Project-Related Impacts to Special Status Plant Species

22 special status plant species have been documented in the Project vicinity, including Bakersfield cactus (*Opuntia basilaris var. treleasei*), Bakersfield smallscale (*Atriplex tularensis*), Calico monkeyflower (*Diplacus pictus*), California jewelflower (*Caulanthus californicus*), California satintail (*Imperata brevifolia*), California screw moss (*Tortula californica*), Comanche Point layia (*Layia leucopappa*), hispid salty bird's-beak (*Chloropyron mole ssp. hispidum*), Horn's milk-vetch (*Astralagus hornii var. hornii*), Kern mallow (*Eremalche parryi ssp. kernensis*), oil neststraw (*Stylocline citroleum*), Piute Mountains navarretia (*Navarettia setiloba*), recurved larkspur (*Delphinium recurvatum*), rose-flowered larkspur (*Delphinium purpusii*), San Joaquin adobe sunburst (*Pseudobahia peirsonii*), San Joaquin woollythreads (*Monolopia congdonii*), Shevock's golden-aster (*Heterotheca shevockii*), spiny-sepaled button-celery (*Eryngium spinosepalum*), striped adobe-lily (*Fritillaria striata*), Tejon poppy (*Eschscholzia lemmonii ssp. kernensis*), Tracy's eriastrum (*Eriastrum tracyi*), and Vasek's clarkia (*Clarkia tembloriensis ssp. calientensis*).
As explained in **Table 2**, all of the aforementioned plant species are either absent from or unlikely to occur within the Project area due to past and ongoing disturbance and/or the absence of suitable habitat. As described in Section 2.3.1, the site had been graded and appears to be disked on a regular basis. Given the disturbed nature of the site, a population of rare plants would not be expected to persist within the Project's APE. Therefore, the implementation of the Project will have no effect on individual plants or regional populations of these special status plant species. Mitigation measures are not warranted.

3.4.2 Project-Related Impacts to Special Status Animal Species Absent From, or Unlikely to Occur on, the Project Site

After completing a biological survey, 5 of the 19 published accounts of special status animal species were declared absent from the Project area, one of which is the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*).

In 2014, USFWS published *Withdrawal of the Proposed Rule To Remove the Valley Elderberry Longhorn Beetle From the Federal List of Endangered and Threatened Wildlife*, in which the presumed historical range and the presumed extant range of the valley elderberry longhorn beetle is redefined. Very few of the records involve observation of an adult valley elderberry longhorn beetle; the majority are based exclusively on observation of exit holes, which may not be an accurate depiction of occupancy. There are several problems with recording an observation of a sensitive species based on an ambiguous sign, such as an exit hole. Two subspecies of elderberry longhorn beetle exist: the valley elderberry longhorn beetle and the California elderberry longhorn beetle. These two subspecies are so similar that experts are only able to distinguish between the two with certainty by adult male coloration. Thus, species accounts may be unreliable in areas where range overlaps and the sex of the subject is not specified. The document further states that all observations south of Fresno County should be discounted as they likely represent the California elderberry longhorn beetle.

The endangered blunt-nosed leopard lizard (*Gambelia sila*) is protected by State and federal regulations and is known to occur in Kern County in the vicinity of Bakersfield. This species typically inhabits grassland and scrub habitats with areas of sparse vegetation and small mammal burrows, which it utilizes for aestivation and reproduction. Several environmental and planning documents, including biological evaluation reports, biological assessments, biological opinions, and pre-construction survey reports were reviewed for recent projects in the vicinity to determine the likelihood for this species to occur onsite. In 2003, Paul Pruett and consulting herpetologist, Robert Hansen conducted six days of protocol-level surveys for blunt-nosed leopard lizard for a 600-acre project area approximately 1.5 miles southwest of the Bakersfield School Project site. Additionally, several sets of focused surveys for blunt-nosed leopard lizard were conducted for various projects related to Bakersfield's Thomas Roads Improvement Program, such as the widening of State Route 178, less than one mile south of the Project. Dates of these surveys ranged from 2008 to 2016, and no blunt-nosed leopard lizards were detected. Furthermore, a USFWS biological opinion (81420-2010-F-0865-R003) summarizes the results of extensive protocol-level surveys, pre-construction surveys, and monitoring reports from 2008 to 2015 in which no blunt-nosed leopard lizard or sign was observed within a project area located less than one mile south of the Bakersfield School Project described in this report. As part of the BMHCP, pre-construction surveys for blunt-nosed leopard lizard are required prior to the issuance of a grading permit. Said reports prepared for Tracts 7337, 7242, and 6444, which are all located in the Project's vicinity, were reviewed by Provost & Pritchard on July 18, 2019. The reports all concluded that blunt-nosed leopard lizard individuals were not present at the time of any of the surveys. Blunt-nosed leopard lizard individuals were not observed during the biological reconnaissance survey of the Project site which was conducted on July 11, 2019 under optimum activity conditions as defined by CDFW's 2004 *Approved Survey Methodology for Blunt-Nosed Leopard Lizard.*

Of the 19 regionally occurring special status species, 16 are considered absent or unlikely to occur within the Project area due to past or ongoing disturbance and/or absence of suitable habitat. As explained in **Table 1**, the following 5 species were deemed absent from the Project area: northern leopard frog (*Lithobates pipiens*), relictual salamander (*Batrachoseps relictus*), Sierra night lizard (*Xantusia vigilis sierra*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and western pond turtle (*Emys marmorata*). The following 11 species were deemed unlikely to occur within the Project area: Bakersfield legless lizard (*Anniella grinnelli*), blunt-nosed leopard lizard (*Gambelia sila*), California glossy snake (*Arizona elegans occidentalis*), California legless lizard (*Anniella sp.*), Nelson's antelope squirrel (*Ammospermophilus nelsoni*), pallid bat (*Antrozous pallidus*), Swainson's hawk (*Buteo swainsoni*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), tricolored blackbird (*Agelaius*

tricolor), Tulare grasshopper mouse (*Onychomys torridus tularensis*), and western mastiff bat (*Eumops perotis californicus*). Since it is highly unlikely that these species would occur onsite, implementation of the Project should have no impact on these 16 special status species through construction mortality, disturbance, or loss of habitat, and mitigation measures are not warranted.

3.4.3 Project-Related Impacts to Wildlife Movement Corridors

As discussed in **Section 2.7**, the Project site does not contain features likely to serve as a wildlife movement corridor. Therefore, the Project will not impact wildlife movement corridors or impeded the movement of any wildlife species. Mitigation is not warranted.

3.4.4 Project-Related Impacts to Critical Habitat

Designated critical habitat is absent from the Project area and surrounding lands. Therefore, there will be no impact to critical habitat, and mitigation is not warranted.

3.4.5 Local Policies or Habitat Conservation Plans

Project design appears to be consistent with the goals and policies of the Metropolitan Bakersfield General Plan. As discussed in **Section 3.2.2**, the Project, which involves the development of a public school, is not subject to City or County permitting and therefore not required to comply with the adopted elements of the MBHCP. Mitigation is not warranted.

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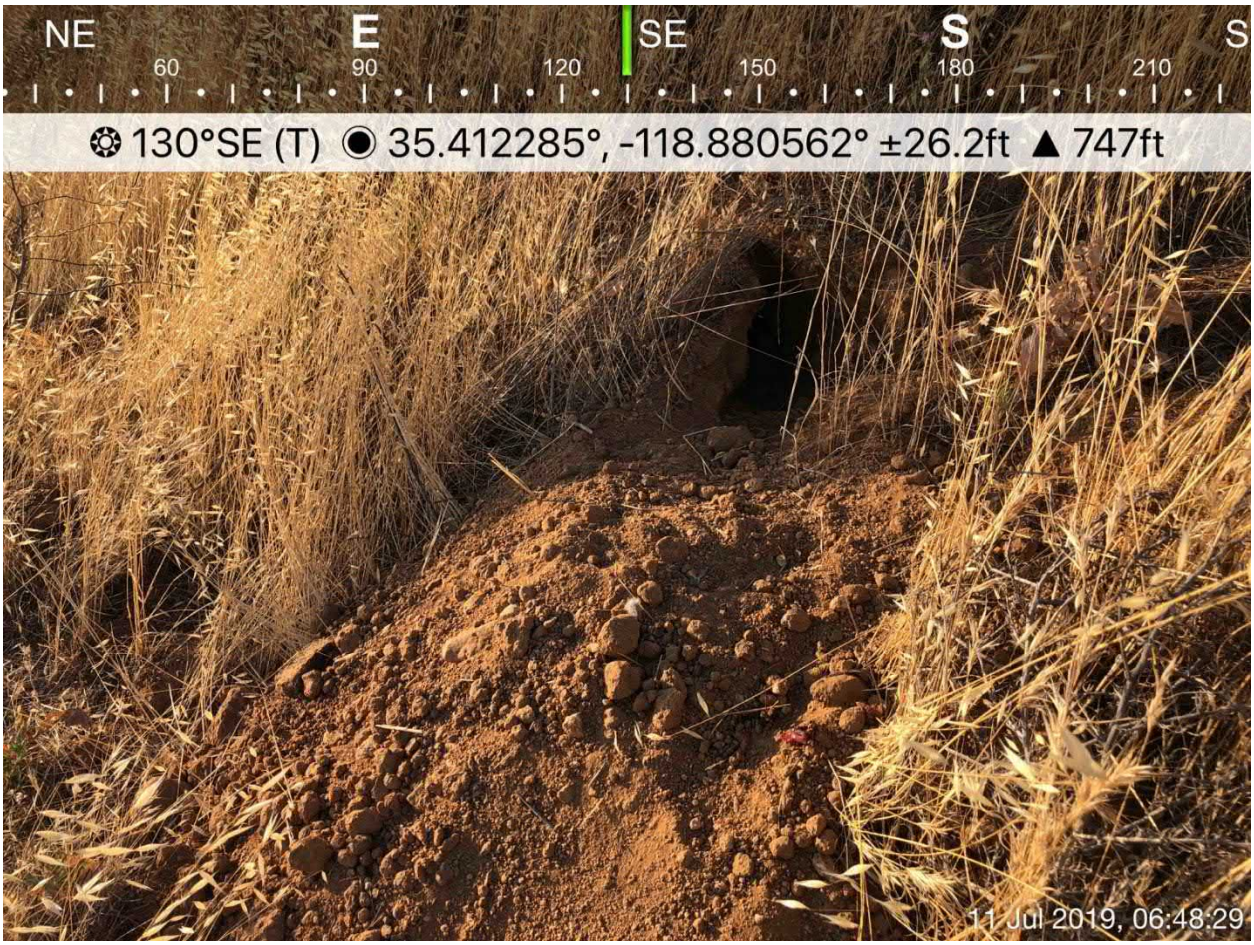
Appendix A. Selected Photographs of the Project Site



Photograph 1: Freshly excavated burrow with prey remnants at the entrance.

Photograph 2: Deer mouse (*Peromyscus maniculatus*) onsite.

Photograph 3: Overview of the site from the northwest corner.

Photograph 4: Ruderal, excavated basin onsite.

Photograph 5: Kit fox scat at the entrance of a rodent burrow onsite.

Photograph 6: Kit fox scat onsite.

Photograph 7: Overview of the site from the northeast corner. Pavement is visible in the foreground.

Photograph 8: Overview of the northern site boundary and the cinder block fence along Paladino Drive.

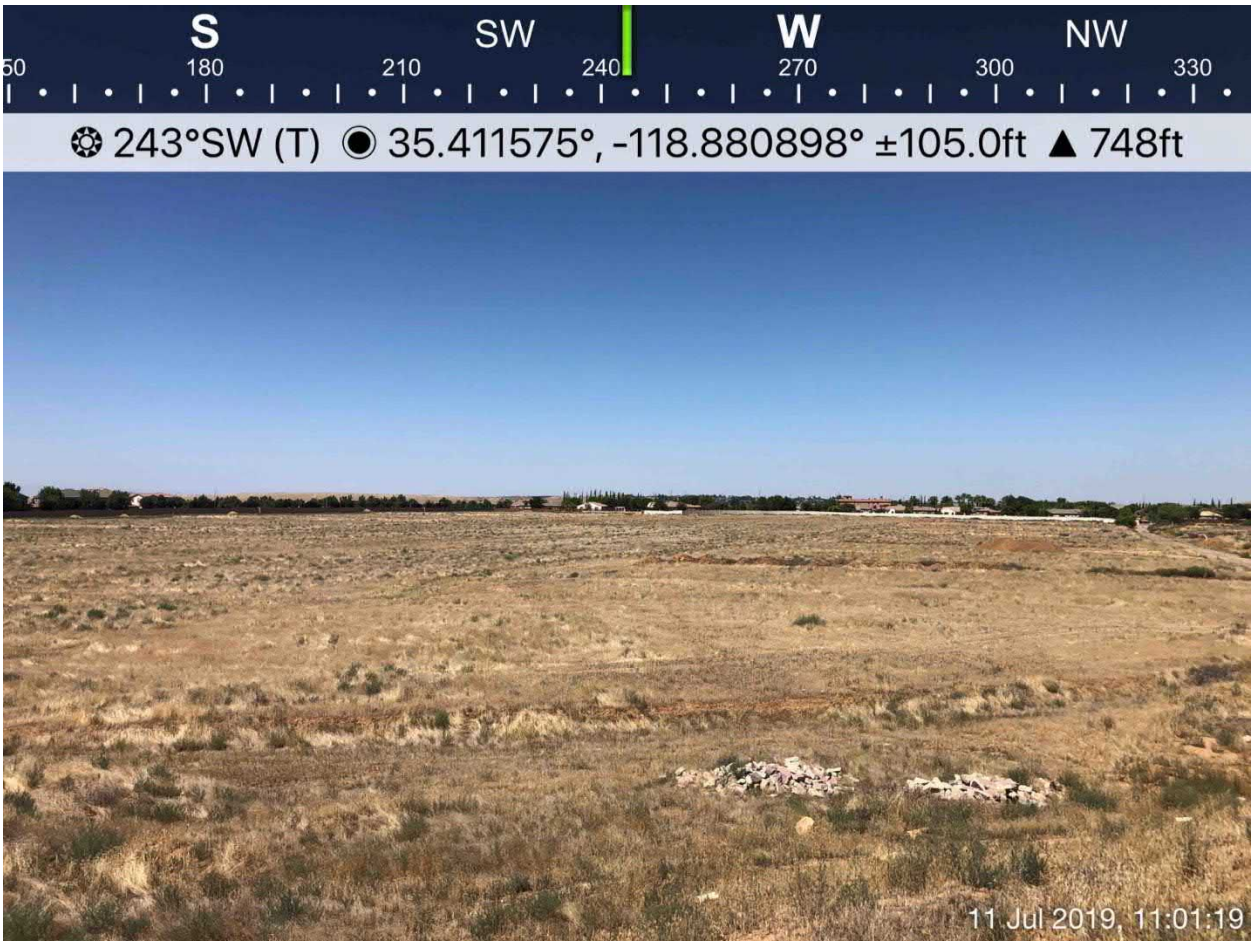
Photograph 9: Overview of the site and surrounding uses to the east and south.

Photograph 10: Small mammal burrow with kit fox scat at the entrance.

Photograph 11: Small mammal burrow with ground squirrel scat and prey remnants at the entrance.

Photograph 12: Overview of one of the large earthen berms onsite. Both berms were riddled with burrows.

Photograph 13: Overview of the paved road through the Project site and the berms on either side. This road was being used for construction access at the time of the field survey.



Photograph 14: Overview of the Project site. It is evident this site has been graded and shaped. The lot lines and outlines of proposed roads are visible.

Photograph 15: Overview of existing ground disturbance onsite.

Photograph 16: Overview of the site from the southeast corner. The cinder block fence running along the southern border and the adjacent residential subdivision is visible in this photo.

Appendix B. CNDDB Query Results

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (North of Oildale (3511951) OR Knob Hill (3511858) OR Pine Mountain (3511857) OR Oildale (3511941) OR Oil Center (3511848) OR Rio Bravo Ranch (3511847) OR Gosford (3511931) OR Lamont (3511838) OR Edison (3511837))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
An andrenid bee *Andrena macswaini*	IIHYM35130	None	None	G2	S2	
Bakersfield cactus *Opuntia basilaris var. treleasei*	PDCAC0D055	Endangered	Endangered	G5T1	S1	1B.1
Bakersfield legless lizard *Anniella grinnelli*	ARACC01050	None	None	G2G3	S2S3	SSC
Bakersfield smallscale *Atriplex tularensis*	PDCHE04240	None	Endangered	GX	SX	1A
blunt-nosed leopard lizard *Gambelia sila*	ARACF07010	Endangered	Endangered	G1	S1	FP
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S3	SSC
calico monkeyflower *Diplacus pictus*	PDSCR1B240	None	None	G2	S2	1B.2
California glossy snake *Arizona elegans occidentalis*	ARADB01017	None	None	G5T2	S2	SSC
California jewelflower *Caulanthus californicus*	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
California legless lizard *Anniella sp.*	ARACC01070	None	None	G3G4	S3S4	SSC
California satintail *Imperata brevifolia*	PMPOA3D020	None	None	G4	S3	2B.1
California screw moss *Tortula californica*	NBMUS7L090	None	None	G2G3	S2S3	1B.2
Coastal and Valley Freshwater Marsh *Coastal and Valley Freshwater Marsh*	CTT52410CA	None	None	G3	S2.1	
Comanche Point layia *Layia leucopappa*	PDAST5N0A0	None	None	G1	S1	1B.1
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	None	G3G4	S1S2	
Great Valley Cottonwood Riparian Forest *Great Valley Cottonwood Riparian Forest*	CTT61410CA	None	None	G2	S2.1	
hispid salty bird's-beak *Chloropyron molle ssp. hispidum*	PDSCR0J0D1	None	None	G2T1	S1	1B.1
hoary bat *Lasiurus cinereus*	AMACC05030	None	None	G5	S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Hoover's eriastrum *Eriastrum hooveri*	PDPLM03070	Delisted	None	G3	S3	4.2
Horn's milk-vetch *Astragalus hornii var. hornii*	PDFAB0F421	None	None	G4G5T1T2	S1	1B.1
Kern mallow *Eremalche parryi ssp. kernensis*	PDMAL0C031	Endangered	None	G3G4T3	S3	1B.2
Kern shoulderband *Helminthoglypta callistoderma*	IMGASC2080	None	None	G1	S1	
moestan blister beetle *Lytta moesta*	IICOL4C020	None	None	G2	S2	
monarch - California overwintering population *Danaus plexippus pop. 1*	IILEPP2012	None	None	G4T2T3	S2S3	
Morrison's blister beetle *Lytta morrisoni*	IICOL4C040	None	None	G1G2	S1S2	
Nelson's antelope squirrel *Ammospermophilus nelsoni*	AMAFB04040	None	Threatened	G2	S2S3	
northern leopard frog *Lithobates pipiens*	AAABH01170	None	None	G5	S2	SSC
oil neststraw *Stylocline citroleum*	PDAST8Y070	None	None	G3	S3	1B.1
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G5	S3	SSC
Piute Mountains navarretia *Navarretia setiloba*	PDPLM0C0S0	None	None	G2	S2	1B.1
recurved larkspur *Delphinium recurvatum*	PDRAN0B1J0	None	None	G2?	S2?	1B.2
relictual slender salamander *Batrachoseps relictus*	AAAAD02070	None	None	G1	S1	SSC
rose-flowered larkspur *Delphinium purpusii*	PDRAN0B1G0	None	None	G3	S3	1B.3
San Joaquin adobe sunburst *Pseudobahia peirsonii*	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
San Joaquin kit fox *Vulpes macrotis mutica*	AMAJA03041	Endangered	Threatened	G4T2	S2	
San Joaquin Pocket Mouse *Perognathus inornatus*	AMAFD01060	None	None	G2G3	S2S3	
San Joaquin woollythreads *Monolopia congdonii*	PDASTA8010	Endangered	None	G2	S2	1B.2
Shevock's golden-aster *Heterotheca shevockii*	PDAST4V0T0	None	None	G2	S2	1B.3
Sierra night lizard *Xantusia vigilis sierrae*	ARACK01032	None	None	G5T1	S1	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
spiny-sepaled button-celery *Eryngium spinosepalum*	PDAPI0Z0Y0	None	None	G2	S2	1B.2
Stabilized Interior Dunes *Stabilized Interior Dunes*	CTT23100CA	None	None	G1	S1.1	
striped adobe-lily *Fritillaria striata*	PMLIL0V0K0	None	Threatened	G1	S1	1B.1
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S3	
Tejon poppy *Eschscholzia lemmonii ssp. kernensis*	PDPAP0A071	None	None	G5T2	S2	1B.1
Tipton kangaroo rat *Dipodomys nitratoides nitratoides*	AMAFD03152	Endangered	Endangered	G3T1T2	S1S2	
Tracy's eriastrum *Eriastrum tracyi*	PDPLM030C0	None	Rare	G3Q	S3	3.2
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Tulare grasshopper mouse *Onychomys torridus tularensis*	AMAFF06021	None	None	G5T1T2	S1S2	SSC
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T2	S2	
Valley Saltbush Scrub *Valley Saltbush Scrub*	CTT36220CA	None	None	G2	S2.1	
Vasek's clarkia *Clarkia temblorensis ssp. calientensis*	PDONA05141	None	None	G3T1	S1	1B.1
western mastiff bat *Eumops perotis californicus*	AMACD02011	None	None	G5T4	S3S4	SSC
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC

Record Count: 54

Appendix C. Soil Report

United States Department of Agriculture

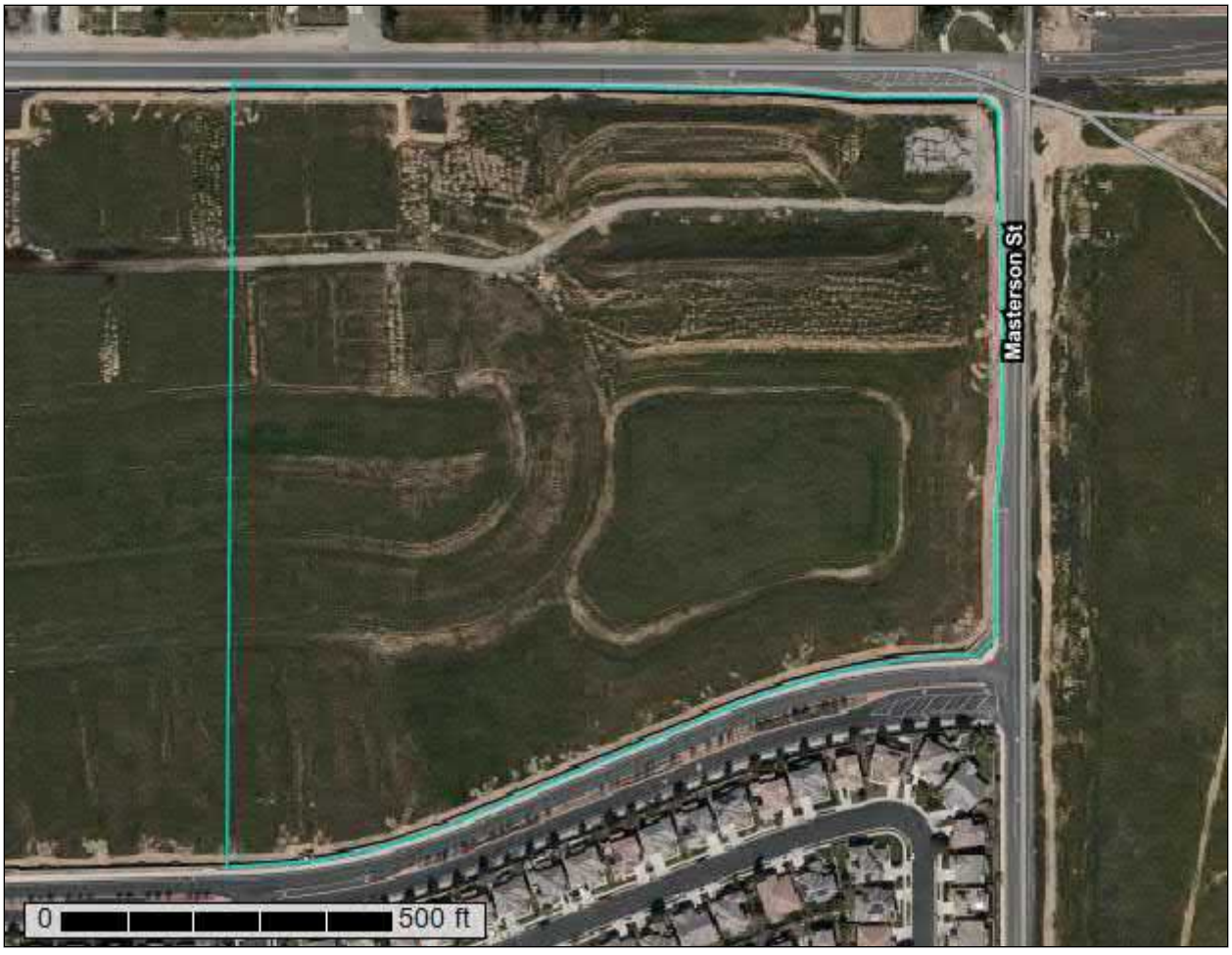
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Kern County, California, Northwestern Part

BCSD- Paladino School



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Map Scale: 1:2,770 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kern County, California, Northwestern Part
Survey Area Data: Version 11, Sep 14, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 25, 2019—Mar 15, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
138	Delano sandy loam, 0 to 2 percent slopes	24.4	90.6%
139	Delano sandy loam, 2 to 5 percent slopes	2.5	9.4%
Totals for Area of Interest		**26.9**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Kern County, California, Northwestern Part

138—Delano sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hkhj
Elevation: 300 to 700 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 260 to 290 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Delano and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Delano

Setting

Landform: Terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

Ap - 0 to 11 inches: sandy loam
Bt - 11 to 42 inches: clay loam
C - 42 to 63 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Cuyama
Percent of map unit: 4 percent
Hydric soil rating: No

Exeter
Percent of map unit: 4 percent
Hydric soil rating: No

Wasco
Percent of map unit: 3 percent
Hydric soil rating: No

Kimberlina
Percent of map unit: 2 percent
Hydric soil rating: No

Zerker
Percent of map unit: 2 percent
Hydric soil rating: No

139—Delano sandy loam, 2 to 5 percent slopes

Map Unit Setting
National map unit symbol: hkhk
Elevation: 300 to 700 feet
Mean annual precipitation: 6 to 9 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 260 to 290 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Delano and similar soils: 85 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Delano

Setting
Landform: Fan remnants
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile
Ap - 0 to 11 inches: sandy loam
Bt - 11 to 42 inches: clay loam
C - 42 to 63 inches: sandy loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Cuyama

Percent of map unit: 4 percent
Hydric soil rating: No

Zerker

Percent of map unit: 3 percent
Hydric soil rating: No

Premier

Percent of map unit: 3 percent
Hydric soil rating: No

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Appendix D: Cultural Resources Report

ARCHAEOLOGICAL INVESTIGATION

FOR

KERN CANYON RANCH

Oil Center, CA 7.5' USGS Topographic Quadrangle

Kern County, California

Key Words:
Surface survey
2 Marginal Sites, 8 isolates
Yokuts
664.4
Portions of Sec. 17-20, T29S.; R29E.

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MANAGEMENT SUMMARY/ ABSTRACT

The following report documents the archaeological field survey for the proposed Kern Canyon Ranch, located in the eastern portion of the city of Bakersfield. Kern County, California. This project, encompassing 664.4 acres of land is being planned primarily for future residential development with a lesser amount of commercial development along Highway 178. This property. which is currently undeveloped, is located adjacent to, and north of State Highway 178.

The purpose of this investigation was threefold: 1. locate and evaluate any archaeological resources present within the study area, 2. assess their potential to yield significant cultural information, and 3. develop guidelines to reduce impacts to such remains. As a result of this investigation two prehistoric archaeological sites were found and recorded. In addition 8 of isolated cultural remains were found and recorded. Neither of the two sites or the eight isolated artifacts are considered significant cultural resources. Therefore, they require no further field work at this time.

There were no problems affecting the results of the survey with all portions of the study area examined. Overall, ground visibility varied from fair to good, enabling a fairly complete examination of the property. Based on this study, it is concluded that no significant cultural resources are known to be present. It is also unlikely that

significant remains will be unearthed during any development of the Kern Canyon Ranch property. Therefore, no additional field work is required at this time. As long as the recommendations suggested below are followed, it is recommended that archaeological clearance be granted to this development project.

UNDERTAKING

It has been argued that most areas have the potential to contain cultural resource materials. A records search from the Southern San Joaquin Information, first conducted in 1998 and recently updated (September 1999) reported that several previous archaeological surveys had been conducted in the general region. These earlier studies resulted in the identification of 10 archaeological sites and a number of isolated artifacts, though no remains are known to be on or immediately adjacent to the study area. As a result of the general proximity of known resources, it was recommended by the Southern San Joaquin Information Center that a cultural resources investigation be carried out prior to any development. Due to their recommendation and according to CEQA guidelines, a cultural resources investigation was performed.

The study area is located adjacent and north of Highway 178, between Highway 178 and Paladino Road, a paved road one mile to the north. It is bordered by Masterson

Road (paved) on the east and a dirt road along most of the western boundary. It is located north of the Mesa Marin race track. Prior impacts to the property include a north - south sewer line near the western boundary, a dirt road just north of the fence which separates Highway 178 from the property, a gas pipeline along the southern boundary, a dirt road that cuts diagonally from near the middle of the northern boundary to the southeast corner of the property and an east - west phone line that cuts diagonally across the section of land. The land also appears to have been partially graded, probably to control vegetation. There has been little development in the general area. To the south is Mesa Marin, a new residential tract to the east of the race way, and ranch homes along the north side of Paladino Road. Open lands extend to the east and west and the Kern Oil Field is located west to the in the adjoining section.

Specifically, Kern Canyon Ranch includes all of Section 17, the SW 1/4 of the SW 1/4 of Section 18, and small portions of the Ne 1/4 of the NE 1/4 of Section 19 and the NW 1/4 of the NW 1/4 of Section 20, Township 29S, Range 29E, as depicted on the Oil Center, 7.5' U.S.G.S. Topographic Quadrangle. The areas investigated by this study are identified in Appendix 3, Map 1.

The study area was examined and this report prepared by Robert A. Schiffman, consulting archaeologist, along with the assistance of Stephen B. Andrews. Brief

resumes are found in Appendix 1. The field work was completed in September and October, 1999.

NATURAL SETTING

The proposed residential development is located in the eastern portion of the city of Bakersfield. Although residential development has taken place to the north and southeast, and roads and a race track are located adjacent to the property, the study area remains undeveloped. The few impacts to the land are minimal. It also appears that the study area may have been graded at one time, possibly to control surface vegetation. The principal vegetation is a sparse to moderate grass cover, along with low brush. This is consistent with other undeveloped lands in the vicinity.

The elevation varies from 724' to 754' above sea level with the land sloping downhill from northeast to southwest. The southern portion of the parcel is more irregular, with gently rolling areas cut by marginal run off channels. The northern and eastern portions are flatter. The soil is a light brown, fine grained material, identified as a Plio-Pleistocene non-marine deposit on the Bakersfield Geologic Sheet. Scattered across the surface were small pebbles, an occasional hand sized cobble and a few larger rocks, mostly in the southwest and western portions of the property. Most were granitic in origin, though sedimentary and meta-sedimentary rocks were also

present. While small cobbles could have served various cultural uses, most of the rocks were of poor quality. Occasionally, a harder, rounder cobble was found and it is likely that appropriate stones were collected and used. This is verified by the recording of several hand tools. In addition, several small pebbles and hand sized cobbles of chalcedony were found that would have supplied a resource materials for chipped stone tool manufacture. Several pieces of this materials showed evidence of being altered (flaked) and flakes of this material were found on the property.

While marginal seasonal run off channels are present, there is no evidence that a usable or reliable source of fresh water existed on the property. The nearest sources of water would have been Cottonwood and the Kern River, several miles to the east or north. Neither were there any significant plant resources on or immediately adjacent to the property that would distinguish it from adjacent parcels. Ground visibility was good for most of the parcel.

CULTURAL SETTING

Prior to the field survey, a literature search was conducted at the Southern San Joaquin Valley Information Center. According to the archaeological record files, Eleven (11) prior field surveys have taken place within a one mile radius of section 17. As a result of prior investigations 6 archaeological sites and 3 isolated artifacts

were found and recorded, none within the study. The following is a brief statement on the nature and findings of these earlier studies. They are presented in chronological order.

The earliest study in the general area was a small parcel as part of a project for the Kern Bluff Co-generation Project, located ½ mile to the east in Section 16. This project is located with the Kern Oil Field. No archaeological sites were reccrded by this survey of approximately 20 acres (Pruett 1988). The second study examined a linear corridor for the Mojave Pipeline which goes from California to Arizona. A small site in section 7, just under one mile distance, was recorded. A portion of this survey crossed the eastern portion and bordered west one half of the northern boundary of the present study area. No remains were found along this segment of the proposed corridor (McGuire 1990). A second study in 1990 examined alternative pipeline routes for the Mojave Pipeline project. This segment of the pipeline extending from the center of section 18 to the west southward and then turbned east in the northern portion of section 19 and extending along Highway 178 near the southern border of the current study area boundaries. This particular corridor identified 4 historical archaeological sites, associated with early production within the Kern Oil Field. These sites consisted of concrete footings and historic trash and debris and an irrigation ditch. None of these sites appear to be significant resources McGuire 1990).

The fourth study surveyed a for a proposed residential development to the east in section 16. No resources were found (Schiffman 1990). In 1992 a study was performed for the extension of Morning Drive in east Bakersfield. This study was located in a portion of section 7 to the northwest. No remains were reported (Par 1992). In 1993, a linear corridor was surveyed for a sewer line which crosses in two directions through section 20 and extending through section 16 before turning north. A portion of this project borders the southern and western sides of Section 17. An historic site, consisting of a concrete culvert built in 1929 across the extension of east Niles Street in section 20. No other resources were reported. This is not a significant resource (Valdez 1993).

The next study examined a 20 acre parcel for a proposed residential project in section 20. No cultural resources were found (Schiffman 1996). In 1998 a assessment of 8 acres for a proposed motor cross track took place. Located in the western side of section 20, no resources were found by this study (Pruett 1998). The second survey in 1998 examined a corridor for a proposed bike path route through a portion of section. In 1999, an alternate and parallel bike corridor was examined. No resources were found along either of these two proposed bike path routes (Pruett 1998, 1999). The last survey conducted in 1998 surveyed a large parcel in section 20 to the south for a proposed residential housing development. No archaeological remains were found (Schiffman 1998).

In addition to the sites reported above, one additional site and three isolated artifacts were found in section 21 to the south. All of these remains were prehistoric. The site is described as a small concentration of chipped stone remains including 9 flakes and one core. No buried deposited was present and the site is not a significant resource (McGuire 1990). The three isolated artifacts were also found in section 21. All were described as crypto-crystalline flakes and are not significant remains.

According to the information center, none of the above identified resources were significant and there are no known significant archaeological remains within or near the current study area. For more information regarding previous surveys, the reader should contact the Archaeological Information Center.

The aboriginal population who occupied the general region were the Yokuts (Latta 1977). The Yokuts lived in variable sized communities throughout the San Joaquin Valley and adjacent foothills. Their subsistence level was based on hunting and gathering, with small groups of people moving throughout their territorial range on a seasonal basis. Various plants were collected, animals trapped and hunted, and shellfish collected from the sloughs and marsh areas. Principal villages were generally in close proximity to reliable sources of fresh water. Day use areas, seasonal camps or hunting-kill sites could be found throughout their territory, as a result of various activities engaged in by this culture. Though not abundant, the

presence of a small amount of useful stone for hand tools and chipped stone artifacts allows for the possibility that these materials could have been gathered from the study area. Significant plant resources were not available. There are no known principal villages reported within or adjacent to the study area. It is likely that Native American peoples traversed the general region during a variety of hunting, foraging and other cultural activities, though it is unlikely that groups lived on the property.

RESEARCH DESIGN

The examination of previous surveys and sites found in the general region, along with personal experience, assisted with the development of a research design. The prehistoric archaeological sites and isolated artifacts recorded in the general region area are primarily associated chipped stone remains. These items are by-products of the manufacture of cutting and scraping tools. Historic remains commonly consist of discarded trash, concrete remains and what has ben described as an irrigation ditch. The density of known sites for the region appears to be low.

In regards to aboriginal sites, the lack of substantial natural resources has affected the possible diversity and extent of site remains. The probable subsistence-settlement pattern of aboriginal peoples in the area would likely have been restricted to day activities such as hunting and gathering forays that traversed the region. Short

term camping may also have taken place, but with the Kern River nearby to the north, individuals would likely have gone north for any length of habitation. Also, due to the absence of abundant and significant resources on and immediately adjacent to the study area, combined with the dry and exposed setting of the property, it is unlikely that any significant remains or sites were ever present within the study area boundaries. Any remains at all would likely have been used by very small groups, limiting the amount and diversity of any cultural materials. Overall, the nature and limitation of local resources and the environmental setting of the project area are not particularly conducive to extensive occupation or use.

Based on the above observations and opinions, it was hypothesized that any cultural resources present in the area would be limited to small lithic scatters and isolated artifacts. This is consistent with the prehistoric remains found in section 21 to the southeast. And, since the study area is not part of the Kern Oil Field, historic remains were not anticipated.

Evaluation for this hypothesis would examine the nature and limits of any cultural remains found. Sites supporting this premise would consist of small areas containing sparse lithic scatters and hand tools. Isolated artifacts would consist of waste or worked flakes, projectile points, associated with hunting activities and possibly ground stone tool remains.

One of the principal goals of cultural resource investigations is the determination of significance for any archaeological resources found within a study area. Therefore, in addition to the predictive hypothesis of the research design, the underlying objective of this study was to evaluate the significance of any archaeological sites or remains found. The criteria upon which the designation of "unique" or "significant" is made is based on Appendix K, of CEQA. This document indicates that the importance or "uniqueness" of an archaeological resources is based on whether that site:

1. is associated with a person or event recognized as significant in California or American history, or of recognized scientific importance in prehistory.
2. can provide information useful in answering scientifically consequential and reasonable research questions which are of demonstrable public interest.
3. Has a special or particular quality such as oldest, best example or largest of its type.
4. Is at least 100 years old and possesses substantial stratigraphic integrity.
5. Involves important research questions that can be answered only through archaeological methods.

If it is determined that an archaeological resource is unique, then efforts are required to protect and preserve that resource. If the remains or sites do not meet the criteria, that is, "non-unique archaeological resources" they require no further consideration.

FIELD METHODOLOGY

The on-site field survey was conducted by one person, who walked transects through the project areas. Transects were spaced approximately 50 meters apart, providing sufficient coverage of the study area and were walked in a north south direction. The exposed roadways were also examined. Particular attention was given to the marginal drainage areas and any place where exposed rock concentrations were observed. For most of the parcel, there were no problems affecting the results of the survey. Ground visibility varied from poor to good with most of the parcel affording good visibility.

When archaeological remains were found, the area around the discovery was thoroughly inspected for additional cultural remains and then recorded. It is believed that the strategy used to survey the small parcel was likely to identify any significant archaeological sites that might be present.

RESULTS OF FIELD INVESTIGATION

In September and October 1999, the archaeological survey of the study area was completed. As a result of this investigation two archaeological sites and 8 isolated artifacts were found. Besides the artifactual remains, also found were several naturally occurring small cobbles of chalcedony, chert, and a fine grained quartzite. All of these materials can be used in the production of chipped stone tools, such as scraping and cutting tools and projectile points. Most of the rocks of these materials were unaltered. The fact that remains were found in the area would indicate that local native American peoples were aware of them. However, the quality of some of the materials examined was of poor quality. The following is a brief description of these remains.

Site 1: This site consists of a marginal uni-face grinding hand tool (mano), also used as a hammer stone, a chalcedony core and two flakes. Spread over an area approximately 10 x 20 meters, this site did not appear to contain a buried cultural deposit. None of the flakes showed signs of retouch. This site does not constitute a significant archaeological resource.

Site 2: This site consists of a chalcedony core, marginal hammer stone and 4 flakes of chalcedony. This site occupies an area approximately 15 x 30 meters in size. The

core was small in size and none of the flakes showed signs of retouch. There was no evidence of a buried cultural deposit. This site is not considered a significant cultural resource.

In addition to the two marginal sites, a total of 8 isolated artifacts were found. Six were chipped stone flakes and two were small cores. Four of the flakes were a dull light brown chert and one was chalcedony and one was quartzite. Both cores were a. light colored chert. None of these items were formal tools or significant cultural resources. See the isolate artifact records for more information.

Upon completion of this investigation, a copy of this report will be sent to the Southern San Joaquin Valley Information Center.

DISCUSSION/ INTERPRETATION

The discovery of archaeological remains is not surprising, considering the size of the parcel and the proximity to known prehistoric remains nearby. The nature and marginal quality or character of the remains found is also not surprising, considering the distance from water, the exposed nature of the property and the lack of significant plant or other important resources. There is no special quality about the location of the parcel that would have attracted aboriginal peoples to do anymore

than traverse the property on-route to other locals. Hunting was possible as was the gathering of small nodules of crypto-crystalline materials. It is realistic to assume that each site was the result of a single, one time only activity, as the property had little to offer aboriginal peoples. While it is still possible that additional archaeological remains might be present, it is unlikely that are significant remains will be found within the study area boundary. It is also a possibility that grading that took place in the past may have disturbed or destroyed additional sites, though the potential for large or significant sites being present there is very minimal. This was anticipated by the research design and is consistent with the environmental setting.

MANAGEMENT CONSIDERATIONS

While an on-site field survey allows researchers to draw conclusions about site presence or absence, there is always the possibility that buried remains or isolated artifacts could be found during construction and earth disturbing activities. While there was no indication of buried remains, it is possible that natural erosional and/or depositional processes, along with grading, may have obscured other cultural remains that may be present. Another impact to archaeological remains are several recent fires on the property. The fires, along with fire control efforts may have damaged or destroyed cultural remains. Based on the field assessment the following recommendation may be considered.

1. Should archaeological remains be unearthed during any stage of development, work in the area of discovery be stopped until the finds can be evaluated, and if necessary, mitigated prior to the resumption of development.

REFERENCES

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Southern San Joaquin Information Center, CSUB.

APPENDICES

Appendix 1: Qualifications of Personnel

Appendix 2: Records Search

Appendix 3: Project Location Map

Appendix 4: Archaeological Site and Isolate Artifact Records (Confidential).

Appendix 1:- Qualifications of Personnel

Principal Archaeologist:-

Robert A. Schiffman. B.A. 1969, CSU Northridge; M.A. 1971, UC Santa Barbara. Professor of Anthropology, Bakersfield College, 1972- present. Has 27 years field experience in Kern and Tulare Counties. Has written over 300 environmental reports and has several publications.

Assistant:-

Stephen B. Andrews. B.A. 1967, CSU Fresno; Teaching Credential, 1968, CSU Fresno. 1969- Present, Teacher. Graduate Work in Anthropology at CSU Bakersfield. Has 30 years field experience in California archaeology. Has written several articles and has a number of publications.

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

FRESNO
KERN
KINGS
MADERA
TULARE

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To: Harold W. Robertson **(RS# 98-158)**
Porter – Robertson Engineering & Surveying, Inc.
1200 21st Street
Bakersfield. CA 93301

RE: Porter-Robertson Job # 97-970; Development north of Mesa Marin Raceway

County: Kern

Map(s): Oil Center and Rio Bravo Ranch 7.5's

The Archaeological Information Center is under contract to the State Office of Historic Preservation and is responsible for the local management of the California Historical Resources Inventories. The Center is funded by research fees and a grant from the State Office of Historic Preservation. The Information Center does not conduct fieldwork and is not affiliated with any archaeological consultants who conduct fieldwork. A referral list of individuals who meet the Secretary of the Interior's standards for their profession is available upon request.

CULTURAL RESOURCES RECORDS SEARCH

The following are the results of a search of the cultural resources files at the Southern San Joaquin Valley Archaeological Information Center. These files include known and recorded archaeological and historic sites, inventory and excavation reports filed with this office, and properties listed on the National Register of Historic Places (3/98), the California Historical Landmarks, the California Inventory of Historic Resources, and the California Points of Historical Interest. The following summarizes the known historical resources information currently available for this subject property based in part on the sources outlined above.

PRIOR CULTURAL RESOURCE INVENTORIES OF THE SUBJECT PROPERTY AND THE SURROUNDING AREAS

According to the information in our files, there have been three linear surveys conducted along the boundaries and intersecting a portion of the project area.

1. KE-641) McGuire, Kelly-1990-Survey for the Mojave Pipeline Corridor in California and Arizona.
2. KE-642) McGuire, Kelly-1990-Mojave Pipeline Corridor: Mesa Marin Reroute
3. KE-1744) Valdez, S.-1993-Survey for Proposed NE Sewer Line, Bakersfield

PRIORITY

(RS# 98-158)

There have been seven surveys conducted within a mile radius of the project area.

KNOWN CULTURAL RESOURCES ON THE SUBJECT PROPERTY AND SURROUNDING AREAS

There are no recorded sites within the project area and it is not known if resources exist there. There are 10 recorded cultural resource sites within a mile radius.

There are no known cultural resources within the project area that are listed in the National Register of Historic Places, California Inventory of Historic Places, California Historic Resource Inventory or the California State Historic Landmarks.

RECOMMENDATIONS

Prior to any ground disturbance activities, we recommend that a qualified professional archaeologist conduct a field survey of the entire project area. Only general information is provided to developers, planners, and engineers. Site and survey locational information is confidential and available only to qualified professionals or the landowners of record. A current referral list of qualified professionals who meet the Secretary of the Interior Standards in their profession and conduct work in this area is enclosed.

If you have any questions or comments, please don't hesitate to contact me at (805) 664-2289.

By

Adele Baldwin
Assistant Coordinator

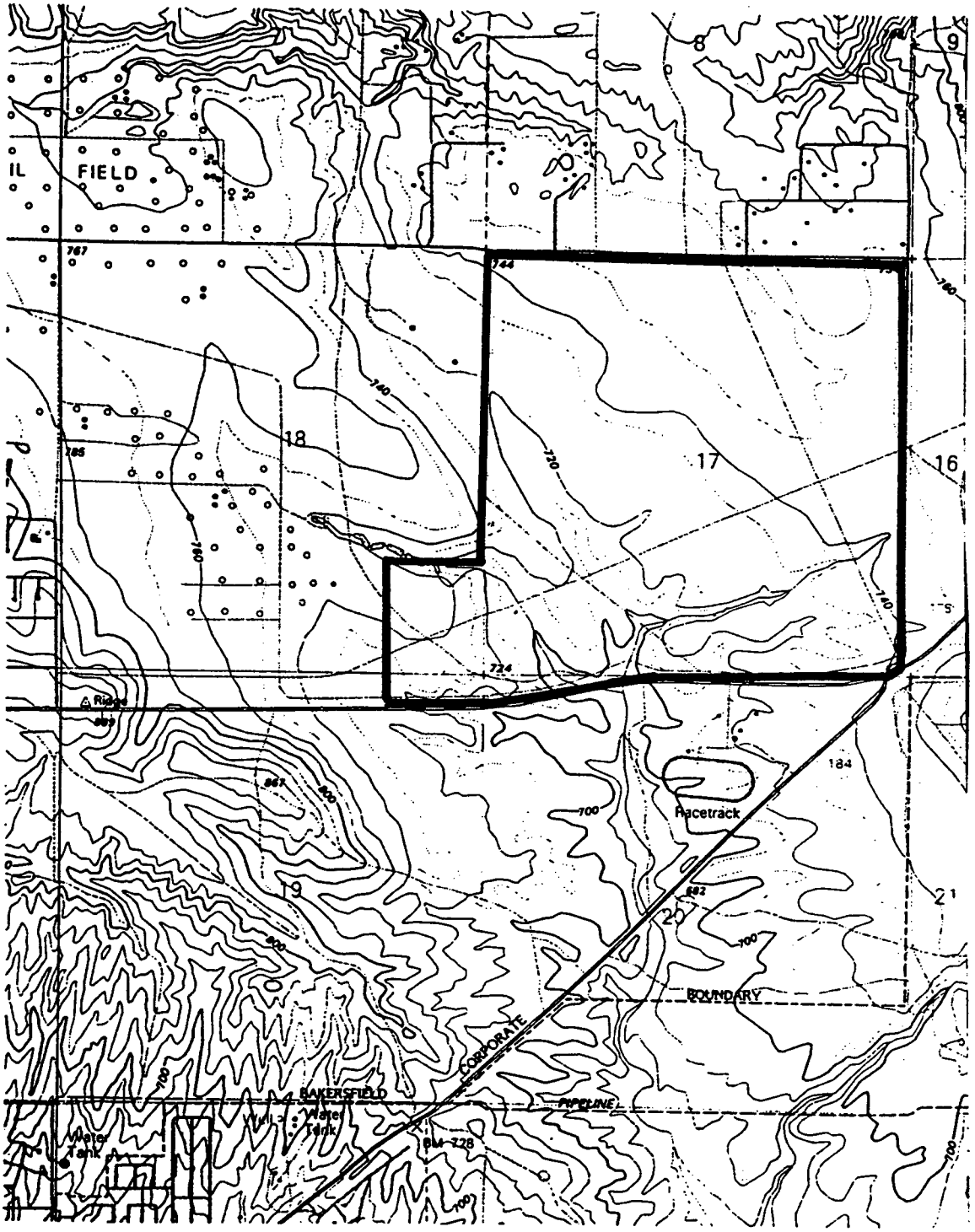
Date: May 29, 1998

Fee: $135.00/hr. (Priority)

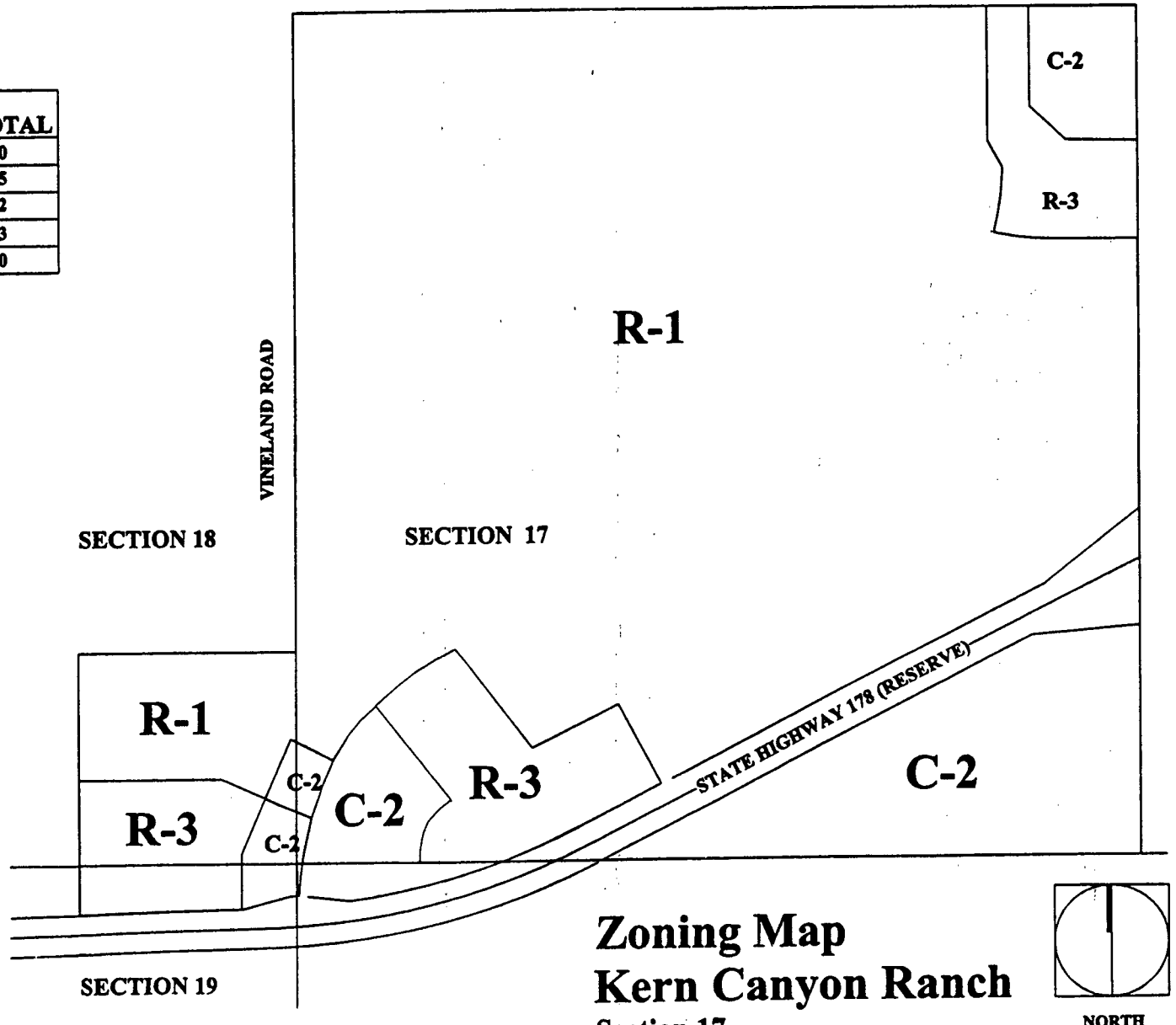
PRIORITY

Invoice # 8035

PROJECT LOCATION MAP
Oil Center 7.5' U.S.G.S. Topographic Quadrangle



ZONE	SECTION 17	18	19	SUBTOTAL
R-1	481.0	24.0	—	505.0
R-3	44.0	13.2	7.3	64.5
C-2	87.8	2.8	1.6	92.2
FREEWAY	27.3	—	—	27.3
TOTAL	640.1	40.0	8.9	689.0



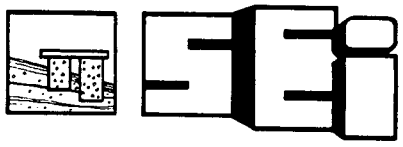
Zoning Map
Kern Canyon Ranch
Section 17
Mountain View Bravo. LLC

8-12-99
Scale: 1"=1000'

NORTH

EDAW

Appendix E: Phase 1 Environmental Site Assessment (Adjacent Property)



SOILS ENGINEERING, INC.

PHASE 1 ENVIRONMENTAL SITE ASSESSMENT

For

SE 1/4 of SE 1/4 Section 18, T29S, R29E
in
Bakersfield, California

Prepared For:

NASCA Inc.
11200 Lake Ming Avenue
Bakersfield, CA. 93306

File No. 98-8477

Prepared By:

Soils Engineering, Inc.
4700 District Blvd.
Bakersfield, CA. 93313

February, 1998

SOILS ENGINEERING, INC.

February 17, 1998

File No. 97-8477

Mr. John Cicerone
NASCA Valley Inc.
11200 Lake Ming Avenue
Bakersfield, CA. 93306

Subject: Phase 1 - Environmental Assessment
For SE 1/4 of SE 1/4 Sec. 18, T29S, R29E
Bakersfield, California
APN#387-030-15

Mr. Cicerone:

In accordance with your request and authorization, Soils Engineering, Inc. (SEI) has performed a Phase 1 - Environmental Site Assessment for the above described property in Bakersfield, California.

Our preliminary assessment indicates that there is a very low potential that the site has been contaminated by hazardous materials. The site has been vacant land since at least1937 and may have been used for grazing. No suspected hazardous materials were observed during our site visit. SEI recommends no further assessment of this site.

Within a one mile radius of the site no current activities were found which process, store or transport hazardous materials in sufficient quantity or in a mode which might have measurable effect on the environmental integrity of the subject site. No sites were found in our search of available or "reasonably ascertainable" State or Federal government records within the ASTM E-1527 search radius around the subject property for the databases shown on Table ES-1 and orphan summary, page ES5 (Appendix A). Oilfield activities on the neighboring property to the west (in northwest corner) does not appear to have effected the subject site.

A Phase I ESA comprises a number of individual elements whose basic nature and extent are determined in accordance with the standard of care applicable to Phase I ESAs. The standard of care is commonly defined as the care applied by the ordinary practitioner at the time and in the area where the ESA was performed. We believe that we have complied with the applicable standard of care and that we have complied as well with Phase I ESA practices and service scope elements recommended by the American Society for Testing and Materials (ASTM).

The accompanying report is an instrument of service of ***Soils Engineering, Inc.*** The report summarizes our findings and relates our opinions with respect to the potential for hazardous materials to exist at the site at levels likely to warrant mitigation pursuant to current guidelines regulated by the California EPA and California Water Quality Control Board and defined in Titles 22 and 23 of CCR in the state of California. Note that our findings and opinions are based on information that we obtained on given dates, through records review, site review, and related activities. It is possible that other information exists or subsequently has become known, just as it is possible for conditions we observed to have changed after our observation. For these and associated reason, Soils Engineering, Inc. and many of its peers routinely advise clients for ESA services that it would be a mistake to place unmerited faith in findings and opinions conveyed via ESA reports. ***Soils Engineering, Inc.*** cannot under any circumstances warrant or guarantee that not finding indicators of hazardous materials means that hazardous materials do not exist on the site. Additional research, including invasive testing, can reduce the risks to you, but no techniques now commonly employed can eliminate these risks altogether. Soils Engineering, Inc. will be pleased to provide more information in this regard. Please call us for assistance (805) 831-5100.

Sincerely,
SOILS ENGINEERING, INC.

Robert J. Becker, R.G.
5076, Expires 2/28/99

L. Thomas Bayne, REA
05614, GE 00125

Distribution: Addressee (2)

REGISTERED GEOLOGIST
ROBERT J. BECKER
No. 5076
REN 2/28/99
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
LOUIS THOMAS BAYNE
No. 000125
Exp. 3/31/98
GEOTECHNICAL
STATE OF CALIFORNIA

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APPENDICES

I. LIST OF ILLUSTRATIONS

SOILS ENGINEERING, INC.

PHASE 1 - ENVIRONMENTAL SITE ASSESSMENT
For
NASCA Valley Inc.

Southeast 1/4 of Southeast 1/4 of Section 18, T29S, R29E
in
Bakersfield, California

February 17, 1998

1.0 *Executive Summary*

Soils Engineering, Inc. (SEI) has conducted a Phase 1 Environmental Site Assessment at a property located at the southeast 1/4 of the southeast 1/4 of Section 18, Township 29 South, Range 29 East in Bakersfield, California (see Assessor's Map, Appendix B and Location Map, Plate 1). The following is an Executive Summary of the investigation conducted between February 5, and February 17, 1998.

1.1 *Property Use* - The site is currently undeveloped and may have been used for livestock grazing. No permanent structures currently exist at the site. The available aerial photos (1937 to 1990, Appendix C) indicate vacant land was at the site until present time.

Building Permits were reviewed at the County Of Kern with the following permits listed for the site:

- None

1.2 *Purpose and Scope* - The purpose of the site assessment was to determine from visual observations, from surveys of historical literature, from interviews with persons having knowledge of the site and its use, whether any obvious hazardous substances exist or may have existed on the subject property.

1.3 *Environmental Issues* - The results of our investigation indicate a low probability that the site has been contaminated by the use, storage, or transportation of hazardous materials from either on-site or off-site activities. The most salient environmental issues noted in our investigation are as follows:

- Oilfield activities have occurred on properties to the west which have included; drilling numerous oil wells, installing pipelines and storage tanks related to the production of oil from these wells. It appears that these activities have not impacted the subject site. These activities may have effected the property due west of the site, although no sign of contamination was observed.

- Mobil Oil Company previously owned this property, but no information was found indicating any oil related activities have occurred on the property.

- A subsurface fault has been mapped in the area of the southwest section of the property. A geologic investigation may be necessary to locate the exact position of this fault in relationship to any permanent structures that may be built on the property.

- No further environmental assessment of this site is recommended.

2.0 *Site Reconnaissance*

The site location is shown on Plate 1, Site Location Map.

2.1 *On-Site Properties* - A site reconnaissance was conducted on February 12, 1998 consisting of walking the property and taking photographs (see Plate 3 and photos).

The project site covers approximately 40 acres bounded by vacant land all around and dirt roads on the south and east sides.

The site consists of Parcel 15 of Book 387, page 3, APN# 387-030-15 owned by Arthur D. & Diane G. Guy since April 1, 1992 (see enclosed assessors map, Appendix B). The site is undeveloped except for a few dirt roads, a line of power poles and sewer line ditches along the property boundaries.

The majority of the site is rolling grasslands with patches of dirt and scattered rocks dissected by a few dirt roads and drainage ditches. A line of power poles trends northeasterly through the property beginning near the southwest corner of the property and continuing 300 to 400 feet south of the northeast corner. A few dead animal carcases were observed on the property indicating livestock grazing may have occurred on the property in the past. A few old tires were observed on the property along with traces of trash. While I was on the property a couple of motorcycle riders were observed driving through the mud and doing jumps. This kind of activity can attribute to small quantities of oil and gasoline spills, but none were observed on the property.

To the south of the site is a couple hundred feet of vacant land before Highway 178 is encountered. Directly west of the subject site, similar vacant land was observed with no environmental threats observed other than oilfield related activities on the neighboring property further to the west. A sewer line tench appears to outline the property boundary between these two properties. A sewer line trench also appeared to separate the subject site and the property to the north. The property to the north was similar to the subject site with rolling grassland dissected by a small stream bed. Some sheep were observed grazing on the property to the northeast. See Plate 2 for Plot Plan.

The site appears to be in good shape with no sumps, staining, underground storage tanks, oil well pumping equipment or other environmental concerns evident.

2.2 *Oil Wells and Water Wells* - No oil wells either active or abandoned were indicated on Map 439, prepared by the California Division of Oil and Gas. Within 1/4 mile

to the west there are a number of oil wells indicated which are part of the Kern Bluff Oil Field (see portion of Map 439 in Appendix A).

There was one (1)State or Federal water well within one-mile of the site indicated by GEOCHECK (Appendix A). Water contamination has been reported for the public water supply system information (EPA-FRDS) for the test well located over 2 miles west of the site. Note: PWS System is not always the same as the well location. "Geocheck Version 2.1 Summary" gives Federal and State water well information for wells within the target area.

2.3 *Gross Site Area* - The project site covers a gross area of approximately 40 acres.

2.4 *Adjacent Off-site Properties* - Adjacent properties are predominately vacant land used for grazing or lying idle. Highway 178 is just south of the site and Morning Drive is within ½ mile to the east.

2.5 *Off-site Properties Within a one mile Radius* - No sites within a one-mile radius were listed to have had releases of hazardous wastes or store hazardous materials. A review of files at the Kern County Environmental Health Services Department indicate that no off-site properties are an environmental threat to the subject site.

The sites listed within 1/8 of a mile mentioned include the following:

- None

2.6 *Previous Site Development* - A review of available aerial photos of the subject site indicates that the property may have been used for grazing livestock with no permanent structures present. See Appendix C for copies of aerial photo's.

1937 Aerial Photograph -Shows Vacant Land with a few dirt roads on the property.

1952 Aerial Photograph - Shows vacant land with drainage ditch on north side evident, oil field activities evident to the west of the property.

1957 Aerial Photograph - Shows vacant land. Two dirt roads trending northwesterly and power poles trending northeasterly.

1975 Aerial Photograph - Shows vacant land with dirt road and power poles traversing site.

1990 Aerial Photograph - Shows vacant land with dirt road trending northwesterly and power lines trending northeasterly. Mesa Marin Raceway present to the southeast. Possible oil field sump located on neighboring property to the west (northwest corner).

2.7 *Source of Potable Water* - Water service is supplied for domestic use by the East Niles Community Storage District.

2.8 *Sewage Disposal* - Sewage is handled by the City of Bakersfield.

3.0 *Property Use*

Available records kept by Kern County Environmental Health Services Department, and the Building Department, etc., indicate that the property has not been developed and has been used primarily for grazing animals or has been idle.

3.1 *Chronology of Former Property Use* - Site usage, as indicated on aerial photographs (Appendix C), City Directories and Building Permits have indicated that this land has been vacant. This use has included the following:

- Vacant land 1937 to 1990.

A list of aerial photographs is given on QA-QC Form C-3 (Appendix D).

3.2 *Rationale For Research Period* - The research period for records dates from 1930's to present, the earliest records retained in the archives of the County of Kern, and available databases.

3.3 *Sources* - A review was made of environmental records maintained by government agencies and private sources. The contents of that review are included in Appendix A. The list of Federal, State, and Local databases searched is summarized on Page ES1[1] and described on pages A10 to A26 of the EDR-Radius Map with GEOCHECK (Appendix A). In addition, the following total sources were researched:

Building Permits -County Of Kern building permits were reviewed from the mid 1950's to the present. The following permits on or near the subject property were listed.

- None

California Division of Oil and Gas Maps - Records were researched for the period circa 1940 to the present. No oil or gas wells are indicated on the subject property. Oil wells are indicated within 1/4 mile to the west of the property which is part of the Kern Bluff Oil Field..

Kern County Department of Environmental Health Services - Kern County Health records were reviewed. The following information was found on file for the sites close enough to be considered a possible threat to the subject

---

[1] Environmental Data Resources, Inc.(EDR); THE EDR-RADIUS MAP - WITH GEOCHECK; 02228311.1r, February10, 1998.

property:

- None Listed.

4.0 *Current Property Uses*

4.1 The site is not occupied and may have been used for grazing of stock animals. A few dirt roads provide access to the property. See Plate 2 for current site plan.

5.0 *Current and Historical Regulatory Review of the Subject Site*

5.1 *The subject site* did not appear on any of the data base searches conducted.

5.2 A summary of the list of government records searched is contained in Appendix A in the sections titled "REVIEW OF ENVIRONMENTAL RECORDS MAINTAINED BY GOVERNMENT AGENCIES AND PRIVATE SOURCES," Executive Summary 1 and "GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING," pages A10 through A26.

6.0 *Review of Title Documents*

6.1 *Other than Utility Easements*, no easements are shown that would indicate use of the property for process, storage, disposal or transportation of hazardous materials.

6.2 *Owners* -The current owners of the property are Arthur D. & Diane G. Guy since April 1, 1992 when they purchased the property from the Mobil Oil Company.

7.0 *Geology and Hydrology*

7.1 *The site* consists of gently sloping hills with various elevation changes matching the elevations of the majority of the surrounding land. General topographic slope is to the northeast (see Topographic Map, Plate 4).

7.1.1 ***Geologic Setting*** - The project site rests on Pliocene-Pleistocene non-marine sediments, identified as QP on geologic maps. Near surface soils within the zone of influence of future developments are estimated to consist of interbedded silty sand, sand, loose rocks, silt and clay layers overlying granitic Mesozoic bedrock. These sediments were derived in the Greenhorn Mountains to the east of the site. A subsurface fault has been mapped trending northwesterly from the southwest section of the site (Seismic Hazard Atlas, Oil Center Map). See Plate 8 for location of fault in reference to the property.

7.1.2 ***Surface Lithology*** - Earth materials expected in the region of the site consist of interbedded silty sand, sand, silts and clays, along with loose rocks. These soils are classified as SM, SP and SW, ML and CL, respectively, in the Unified Soils Classification System.

7.2 ***Hydrology***

7.2.1 ***Unconfined Aquifer*** - The depth to the unconfined aquifer as shown on maps prepared by the Kern Water Agency, and dated February, 1996, is approximately 200 feet just to the south of the site (see Plate 5). The general groundwater gradient in the area of the site is to the southwest (Kern County Water Agency, Water Supply Report, January, 1998).

7.2.1.1 Perched Water, Ground Water or Seepage - No perched water levels beneath the site are shown on groundwater maps dated July 1995.

7.2.1.2 Groundwater Quality - Maps prepared by the Kern County Water Agency, dated July 1991 indicate total dissolved solids in the range of 500 ppm for the unconfined aquifer for specific well sites to the

north of the site.

7.2.2 ***PLATE 4 "TOPOGRAPHIC MAP,"*** depicts general site topography including elevation contour lines, closest water wells given on Federal and State databases, and closest public water wells.

7.2.3 *Water Wells* - Water wells within one mile of the property were researched. A list of the wells and the data bases searched are provided in the appendix in the section titled "GEOCHECK VERSION 2.1 ADDENDUM, FEDERAL DATABASE WELL INFORMATION," page A1 to A9. Depth to water in wells is provided on Plate 5 taken from Kern County Water Agency Report on Improvement District, No. 4, February, 1996.

7.2.4 *The California Regional Water Quality Control Board* - Leaking Underground Storage Tank (LUST) records were reviewed. A list of agencies with LUST information are given on page A13 to A23. As the regulatory agency for the California Regional Quality Water Control Board, the Kern County Environmental Health Services Division maintains a data base of underground storage tanks and leaking underground storage tanks in the Kern County area, including the subject site. Two independent data base searches were performed, one by Environmental Data Resources Inc.,[2] and one by the Kern County Environmental Health Services Division.

8.0 **"OIL AND GAS WELL LOCATION MAP 439,"** was reviewed. No active or abandoned oil or gas wells were indicated on the site. Oil wells were located within 1/4 mile to the west of the site as part of the Kern Bluff Oil Field.

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[2] Environmental Data Base Resources, Inc., THE EDR-RADIUS MAP WITH GEOCHECK - ™, Inquiry No.: 02228311.1r, February10, 1998.

9.0 ***Surrounding Properties*** - PLATE 6, "OVERVIEW MAP" shows the locations of sites which were listed on one of the DATABASES searched (See Section 5.2, "REVIEW OF ENVIRONMENTAL RECORDS MAINTAINED BY GOVERNMENT AGENCIES AND PRIVATE SOURCES").

9.1 *Data Base Search* - No sites were mapped within a one mile radius of the site (see Overview Map, Plate 6). For more detail on these sites see Plate 7, Detail Map.

9.2 *Orphan Summary List* - The data base search indicated a number of addresses were insufficient to plot on the site on the site overview map. A list of these sites is provided on "Orphan Summary Sheet," page 10 and ES3.

10.0 *Conclusions and Recommendations*

10.1 *Conclusions and Recommendations* - The results of our investigation indicate a low probability that the property has been contaminated by the use, storage, or transportation of hazardous materials from either on-site or off-site activities. The most salient environmental issues noted in our investigation are as follows:

- Oilfield activities have occurred on neighboring properties to the west which have included; drilling numerous oil wells, installing pipelines and storage tanks related to the production of oil from these wells. It appears that these activities have not impacted the subject site.

- Mobil Oil Company previously owned this property, but no information was found indicating any oil related activities have occurred on the property.

- A subsurface fault has been mapped in the area of the southwest section of the property. A geologic investigation may be necessary to locate the exact position of this fault in relationship to any permanent structures that may be built on the

property.

10.2 Recommendations

- No further environmental work is recommended.

11.0 *Attachments*

11.1 *Location Map*- Plate 1 , "Location Map" shows the location of the site with relationship to roads and land features.

11.2 *Plot Plan* - Plate 2 , "PLOT PLAN" shows the location and lot configuration of the property.

11.3 *Photo Vantage Plot* - Plate 3 , "PHOTO VANTAGE PLOT" shows the location and direction of photos taken at the site. See attached for pictures.

11.4 *Topographic Map* - Plate 4. The property location referenced to major city streets and State, Federal and public supply wells with topographic elevations is attached as the "TOPOGRAPHIC MAP," Plate 4.

11.5 *Depth To Water In Wells* - Plate 5, Presents the property location referenced to depth to water of the unconfined aquifer in the neighboring area as determined by the Kern County Water Agency.

11.6 *Overview Map* - Plate 6, The property location referenced to neighboring streets and potentially environmental sensitive sites up to 1 mile away is attached as the "OVERVIEW MAP," Plate 6.

11.7 *Detail Map* - Plate 7, The property location referenced to neighboring streets and potentially environmental sensitive sites within 1/2 mile is attached as the "DETAIL

MAP," Plate 7.

11.8 *Fault Map - Plate 8*, The property location referenced to faulting in the area.

11.9 Appendix A - *EDR Report* contains the Environmental Data Base Resources, Inc., THE EDR-RADIUS MAP WITH GEOCHECK - ™, Inquiry No.: 0228311.1r, February 10, 1998.

11.10 Appendix B - *Assessors Map* contains a copy of the assessors map for the property.

11.11 Appendix C - *Aerial Photo's* contains copies of available aerial photo's (1937 to 1990).

11.12 Appendix D - *Quality Assurance/Quality Control*

11.13.1 *A site inspection check list* has been completed as a part of the site reconnaissance survey and is attached on *QA/QC Form C-1.*

11.13.2 *Form QA/QC - C-2* provides a checklist of summary of historical research items included in the scope of the investigation.

11.13.3 *A list of aerial photographs* reviewed are given on *QA/QC Form C-3*

11.13.4 *Areas excluded from review* because of inaccessibility or for other causes, not included in the site reconnaissance are listed on *QA/QC - C-4.*

12.0 *Statement of Qualifications*

12.1 *This preliminary site assessment* was prepared by *Mr. Robert J. Becker*, a California Registered Geologist (RG-5076) and reviewed by *Mr. L. Thomas Bayne* a Registered California EPA Environmental Assessor (REA-05614). *Mr. Becker* has a Bachelor

of Science degree from Oregon State University with a major in geology. *Mr. Becker* is also registered in the States of Oregon (RG) and Nevada (Environmental Manager). *Mr. Bayne* has obtained a Master of Science in Civil Engineering from the University of California at Berkeley with emphasis in Geotechnical Engineering; a current professional license as a Civil Engineer issued by the states of California, Nevada and Arizona; a current professional license as a Geotechnical Engineer issued by the State of California; a current Engineering Contractors License (General Engineering A and Haz) issued by the State of California.

12.2 *Mr. Becker* and *Mr. Bayne* have performed numerous preliminary environmental assessments and site characterizations, and risk assessments for known contamination on raw land, on existing residential, commercial, and industrial properties for public and private sector clientele. *Mr. Beckers* experience includes; installation of monitoring wells, vapor extraction system installations and operation, bioremediation of contaminated soil, groundwater treatment system installations and operation, and risk assessments. *Mr. Baynes* experience includes supervising the planning and installation of monitoring wells, managing monitoring and testing operations for the construction of Type 2 hazardous waste disposal facilities and planning site grading for closure and post closure of Type 2 hazardous waste facilities including: MP Disposal on Round Mountain Road; Eastside Disposal Facility on Round Mountain Road; Petroleum Waste Disposal Facility Buttonwillow, California; Morton Recycling, Maricopa, California; Community Recycling, Lamont, California; Valley Waste Disposal, surface disposal ponds at Broadcreek #2, Fellows, California; and Taft Disposal Facility, Taft, California.

13.0 *References*

- Environmental Data Resources; The EDR-Radius Map with Geo-Check, 1998;

- California Division of Oil and Gas Maps (Portion of Map 439);

- Aerial Photographs - Kern County Map Room

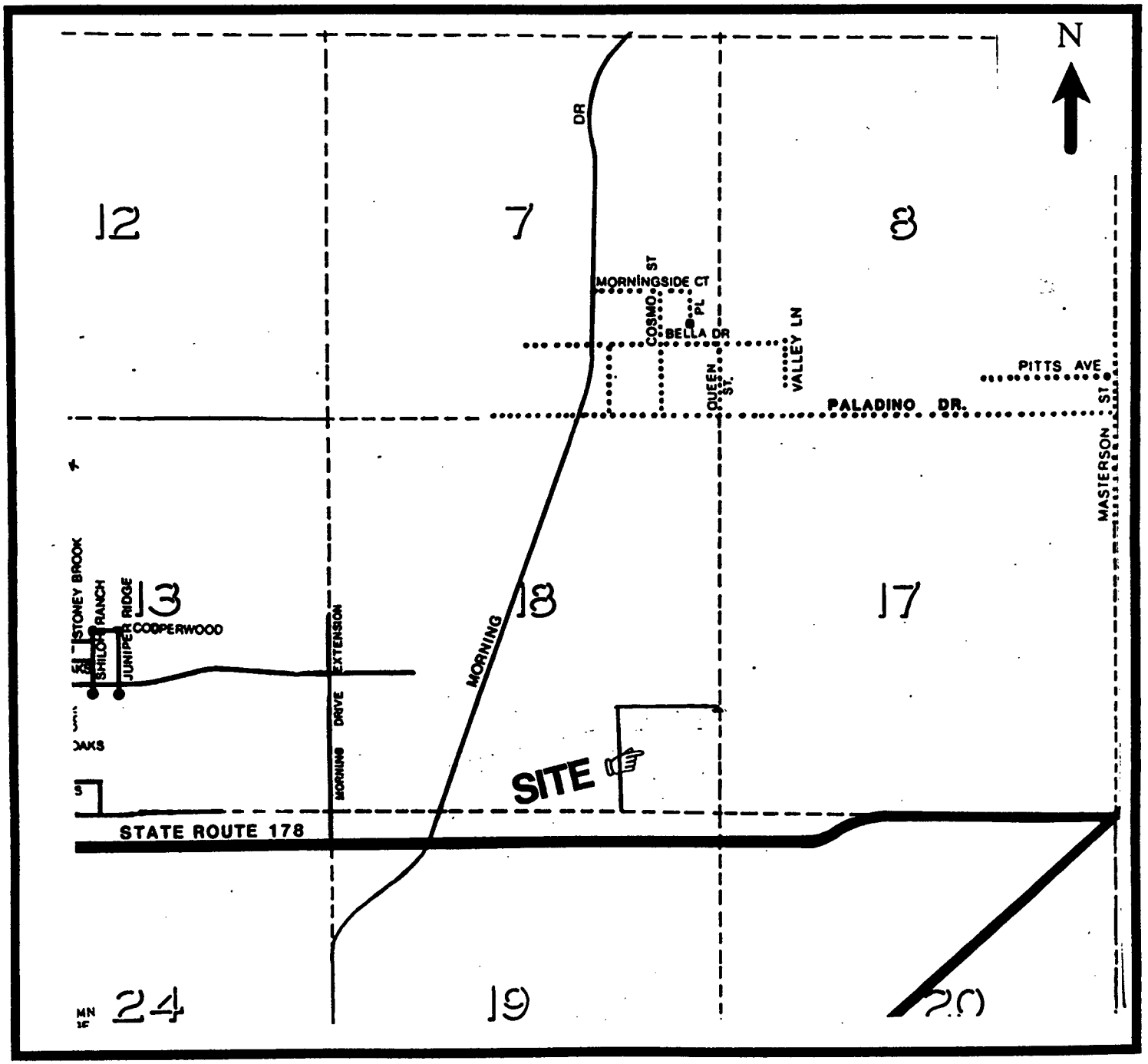
- Kern County Water Agency Water Supply Report 1995, dated January, 1998.

- USGS Quadrangle Map & Seismic Hazard Atlas, Oil Center Quad.

- California Division of Mines and Geology - Geologic Map of California- Bakersfield Sheet.

Location Map
SE 1/4 of SE 1/4 of Sec 18, T29S, 29E
Bakersfield, California

File No. 98-8477
February,1998

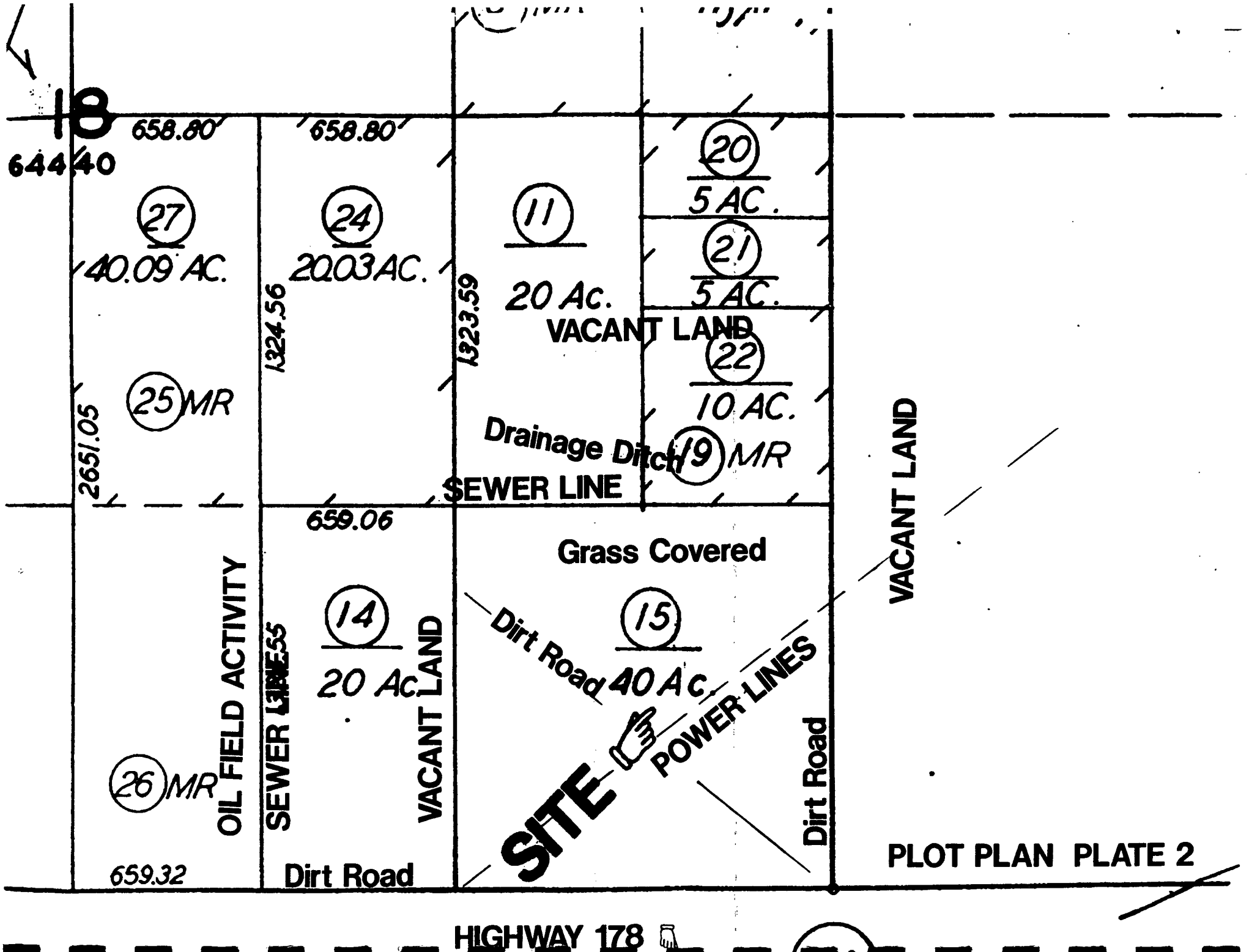


Location Map

SE 1/4 of SE 1/4, Sec 18, T29S, R29E

Bakersfield, California

PLATE 1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658.80
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24
20.03 AC.
11
20 Ac.
VACANT LAND
20
5 AC.
21
5 AC.
22
10 AC.
19 MR
25 MR
1324.56
1323.59
2651.05
Drainage Ditch
SEWER LINE
659.06
Grass Covered
14
20 Ac.
15
40 Ac.
Dirt Road
VACANT LAND
VACANT LAND
OIL FIELD ACTIVITY
SEWER LINES
26 MR
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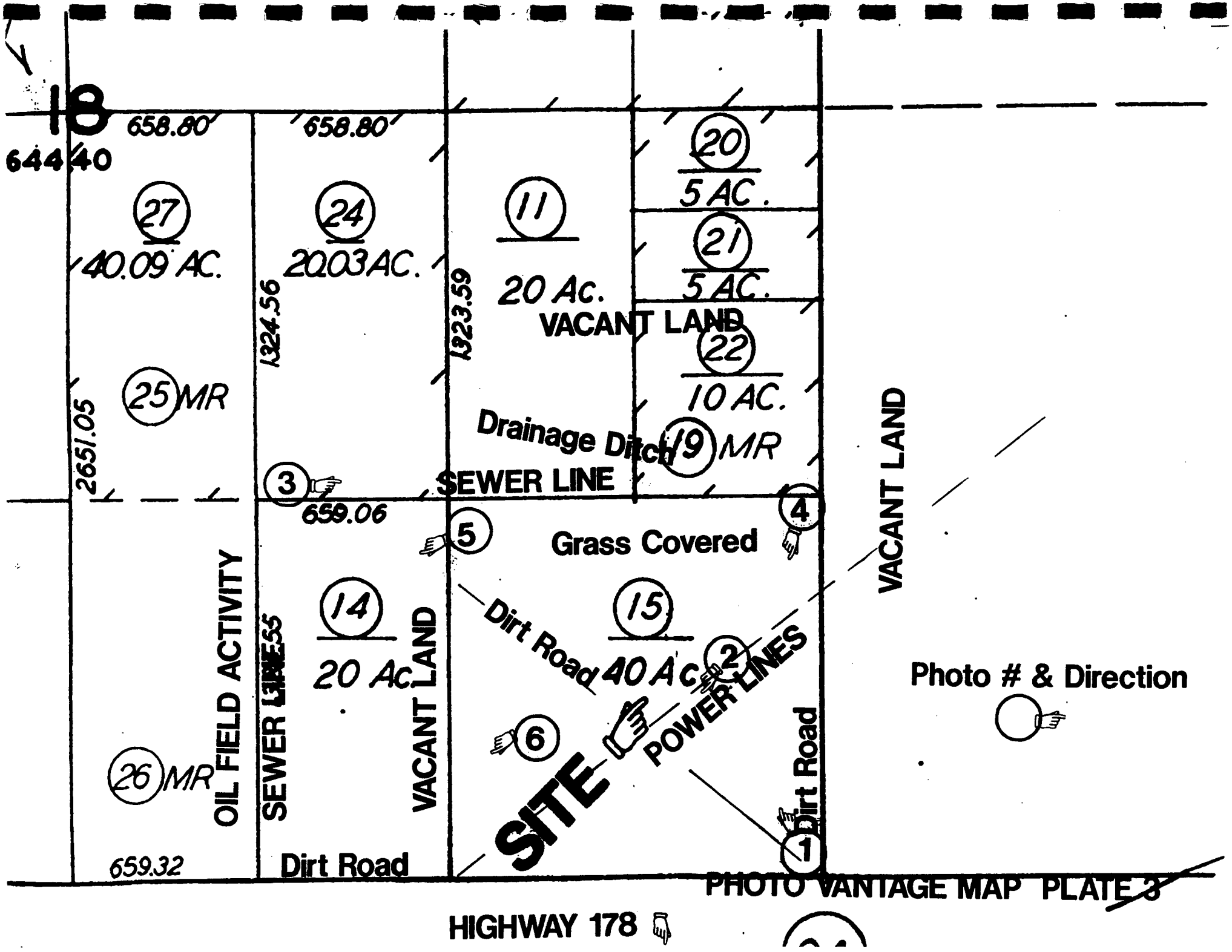
Dirt Road
SITE
POWER LINES
Dirt Road
PLOT PLAN PLATE 2
HIGHWAY 178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21
5 AC.
1324.56
1323.59
22
10 AC.
25 MR
2651.05
Drainage Ditch
19 MR
SEWER LINE
3
659.06
4
5
Grass Covered
VACANT LAND
14
20 Ac.
15
40 Ac.
Dirt Road
2
POWER LINES
OIL FIELD ACTIVITY
SEWER LINE
VACANT LAND
6
SITE
Photo # & Direction
26 MR
Dirt Road
1
659.32
Dirt Road
PHOTO VANTAGE MAP PLATE 3
HIGHWAY 178

Photo 1: Looking North From Southeast Corner Of Site

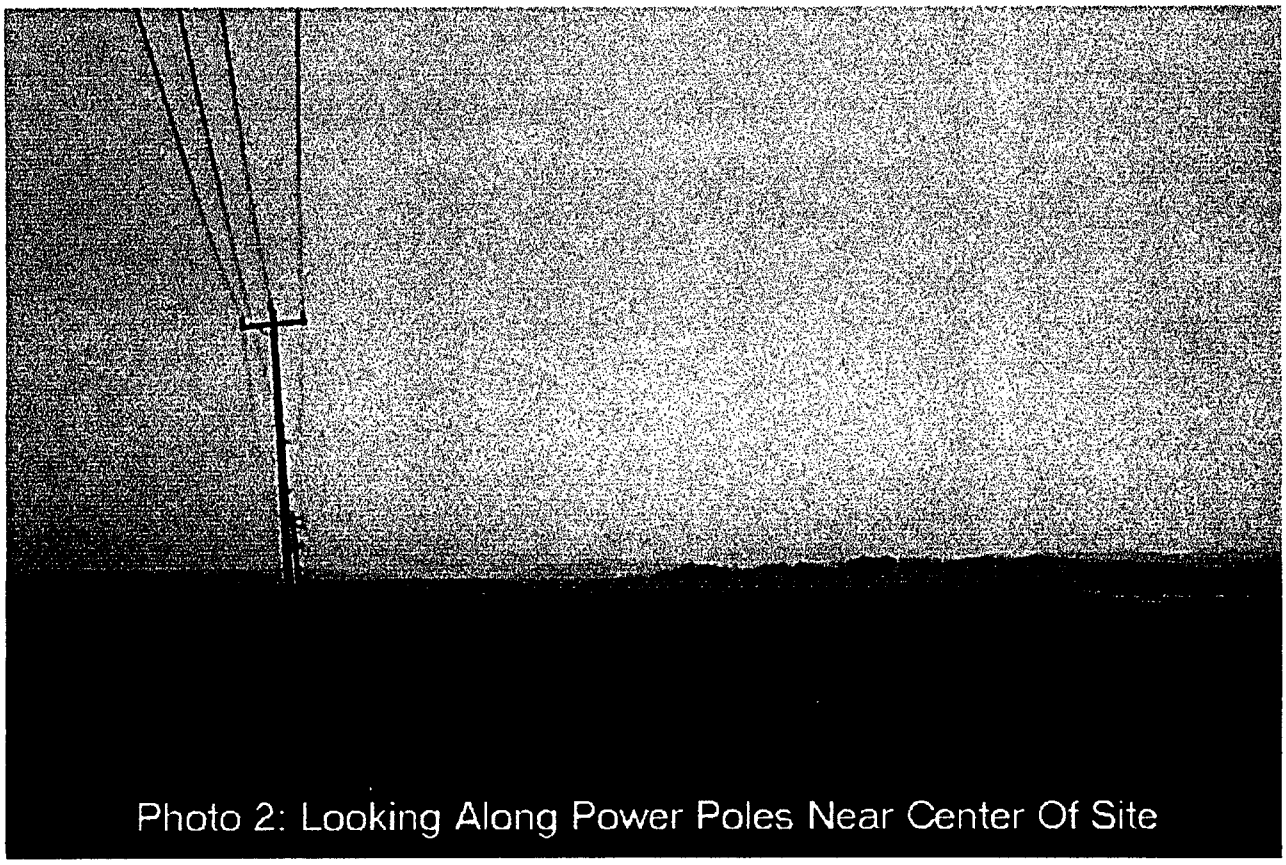


Photo 2: Looking Along Power Poles Near Center Of Site

Photo 3: Looking Along Sewer Line Trench

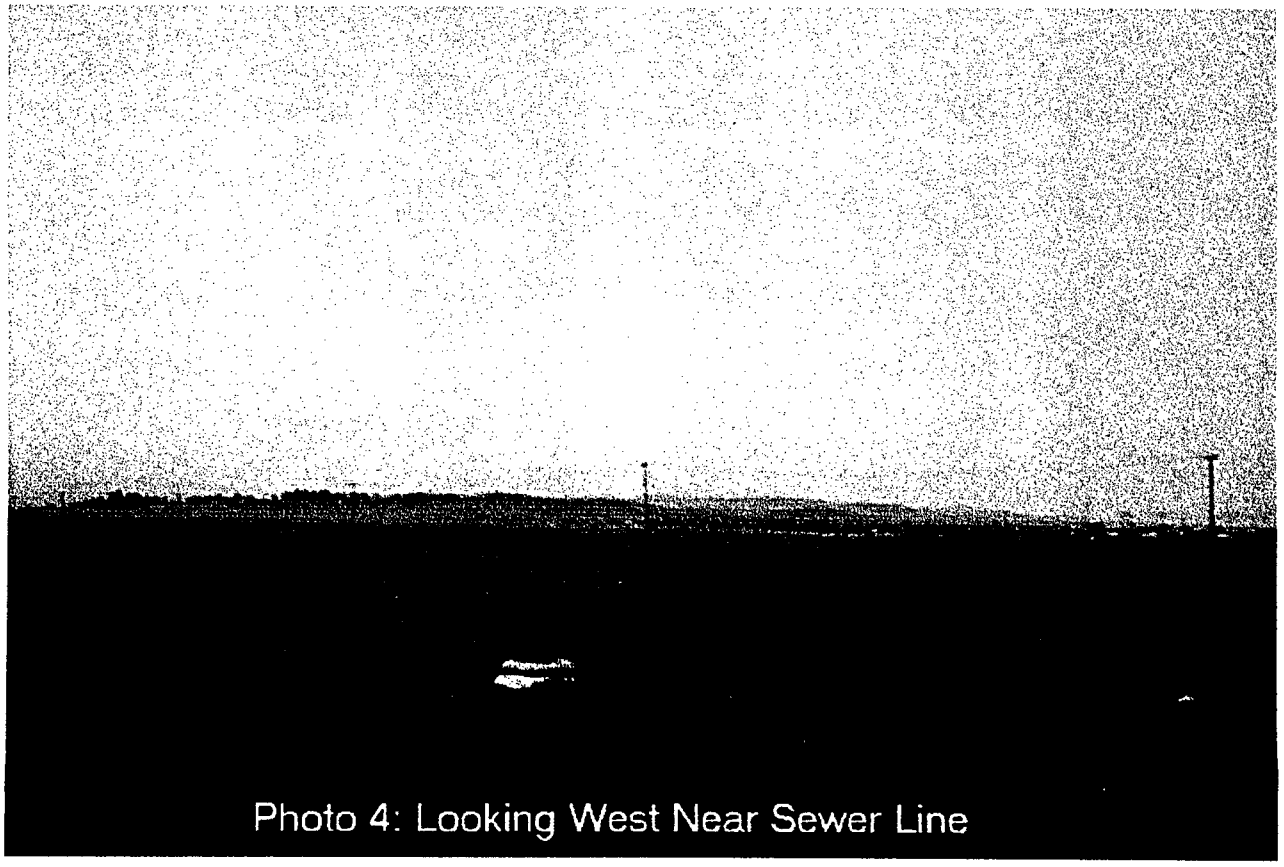


Photo 4: Looking West Near Sewer Line

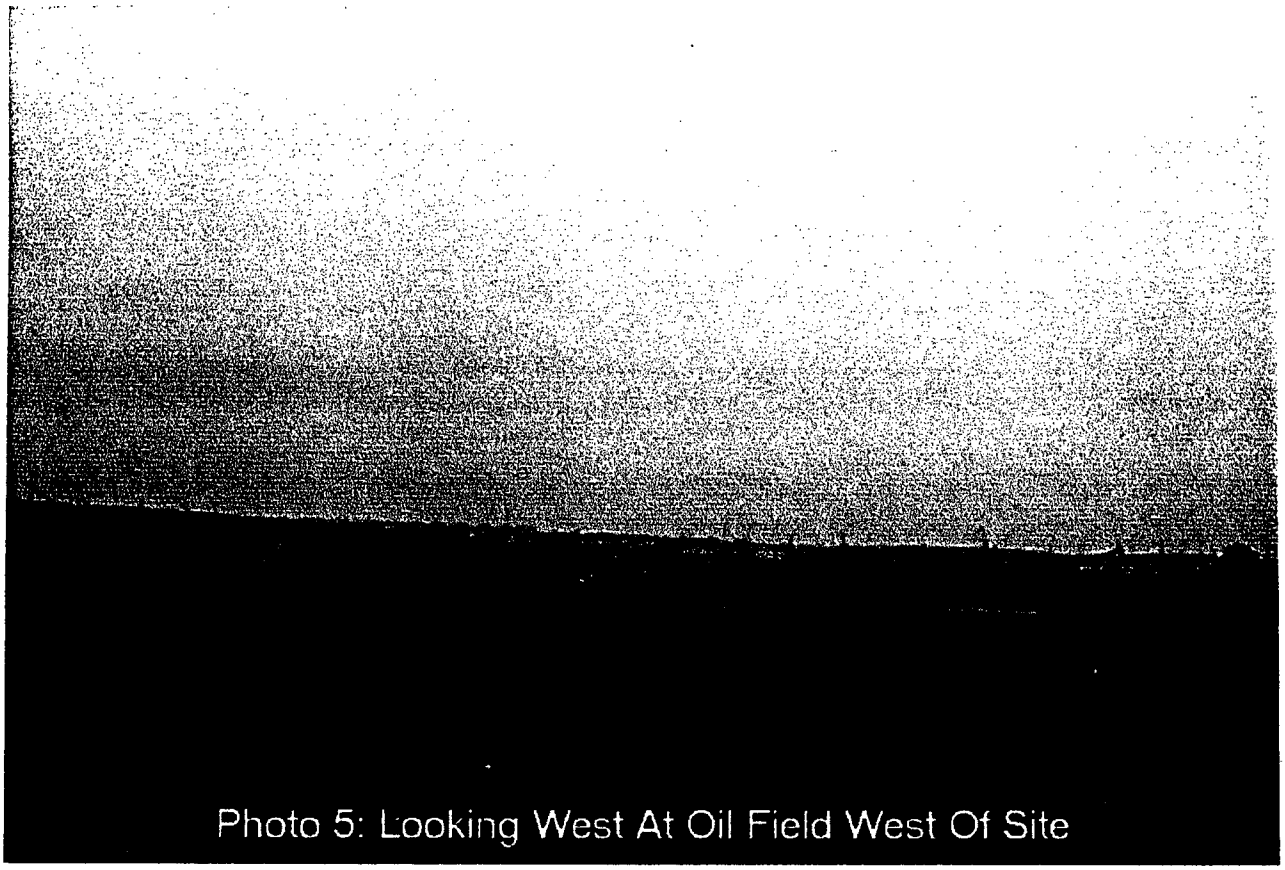


Photo 5: Looking West At Oil Field West Of Site

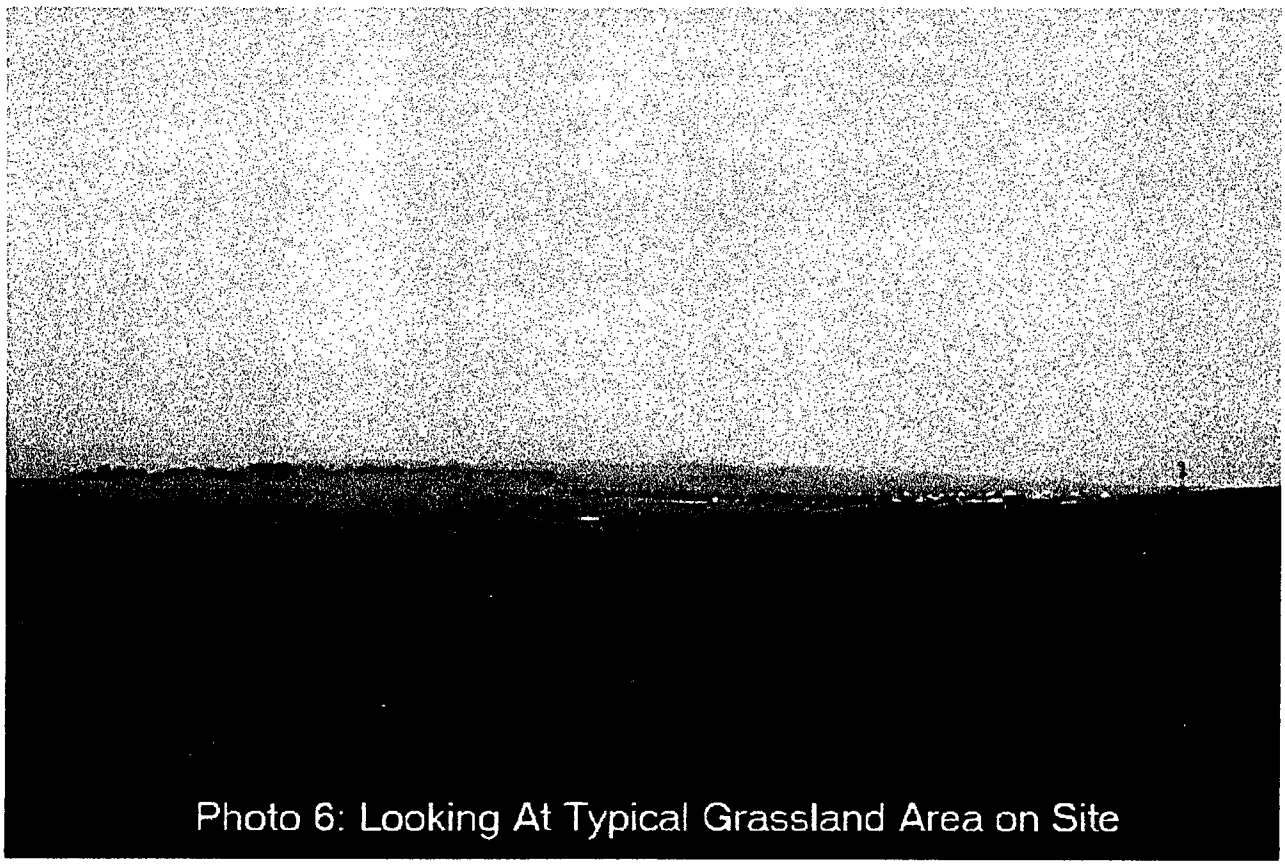
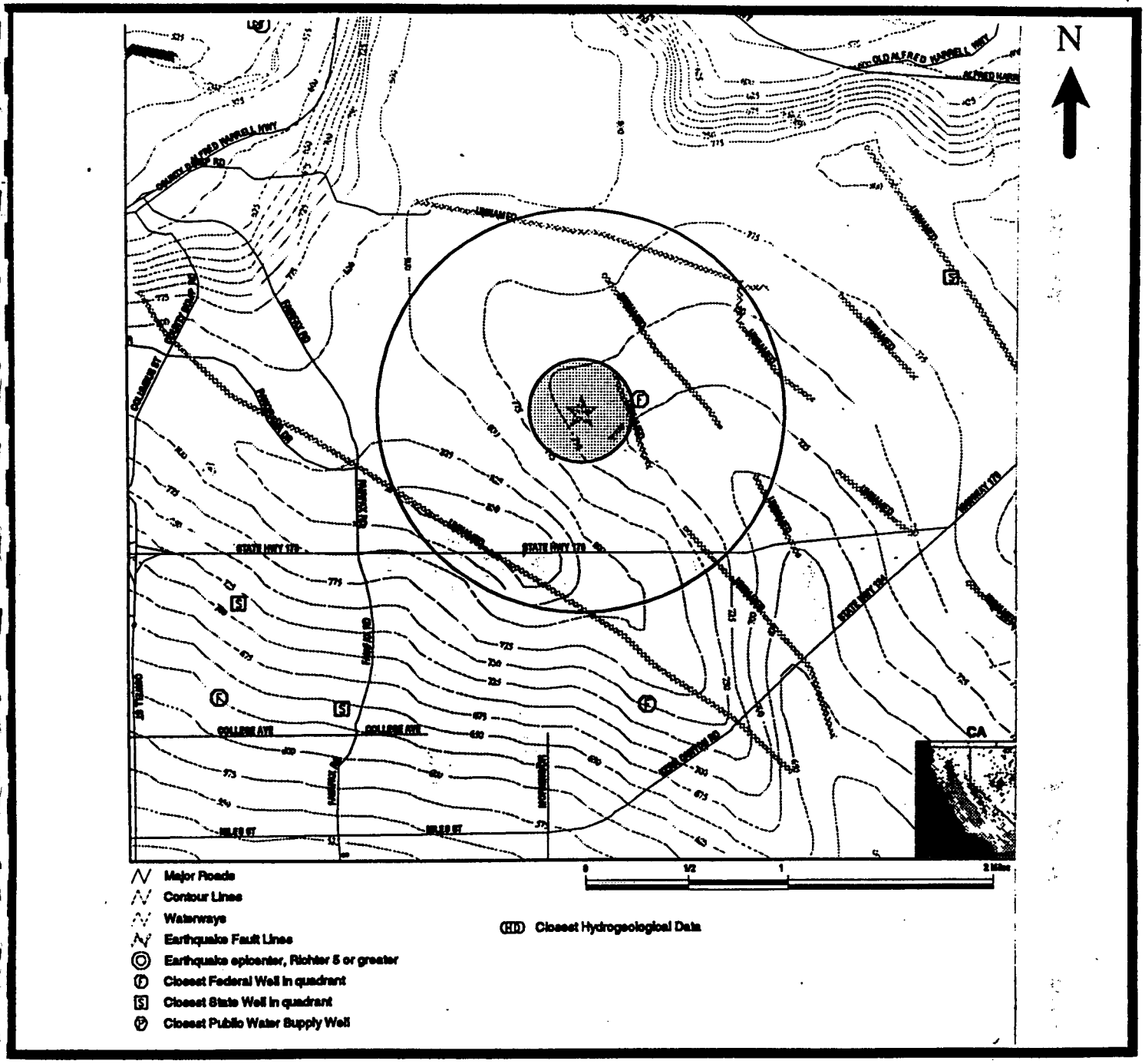


Photo 6: Looking At Typical Grassland Area on Site

Topographic Map
SE 1/4 of SE 1/4 of Sec 18, T29S, 29E
Bakersfield, California

File No. 98-8477
February,1998



Topographic Map

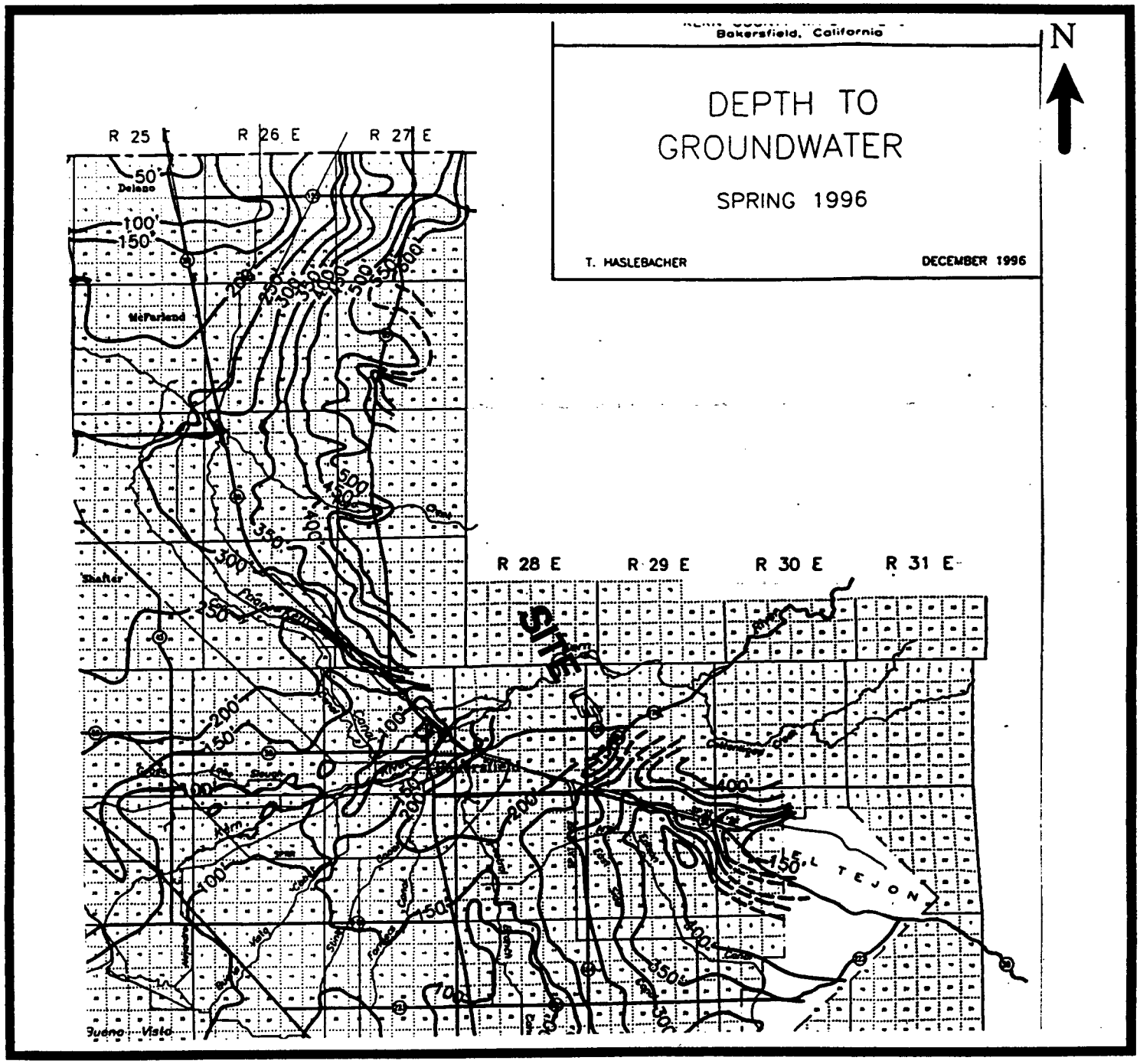
SE 1/4 of SE 1/4, Sec 18, T29S, R29E

Bakersfield, California

PLATE 4

Depth To Water Map
SE 1/4 of SE 1/4 of Sec 18, T29S, 29E
Bakersfield, California

File No. 98-8477
February,1998



Depth To Water Map

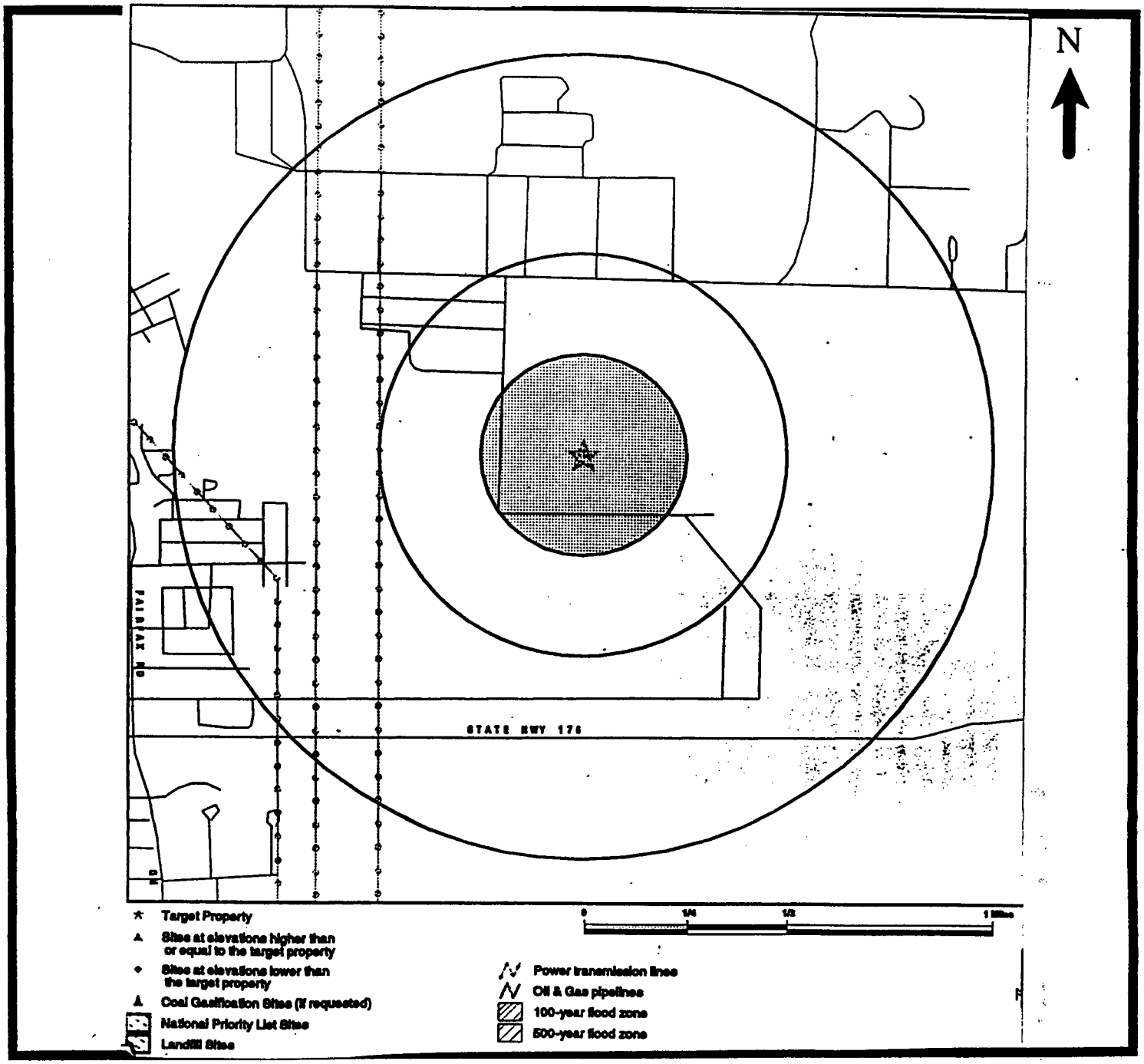
SE 1/4 of SE 1/4, Sec 18, T29S, R29E

Bakersfield, California

PLATE 5

Overview Map
SE 1/4 of SE 1/4 of Sec 18, T29S, 29E
Bakersfield, California

File No. 98-8477
February,1998



Overview Map

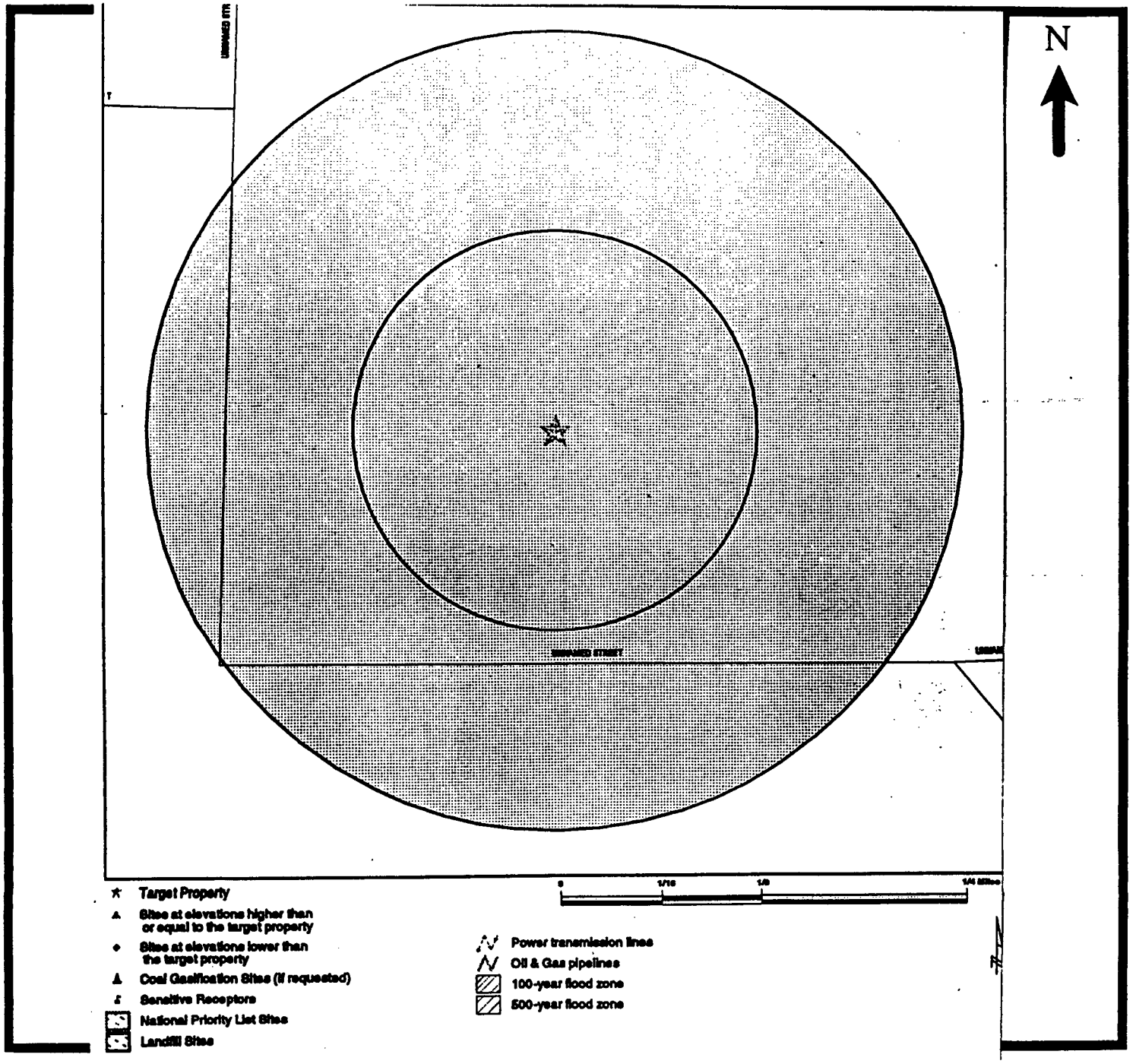
SE 1/4 of SE 1/4, Sec 18, T29S, R29E

Bakersfield, California

PLATE 6

Detail Map
SE 1/4 of SE 1/4 of Sec 18, T29S, 29E
Bakersfield, California

File No. 98-8477
February,1998



Detail Map

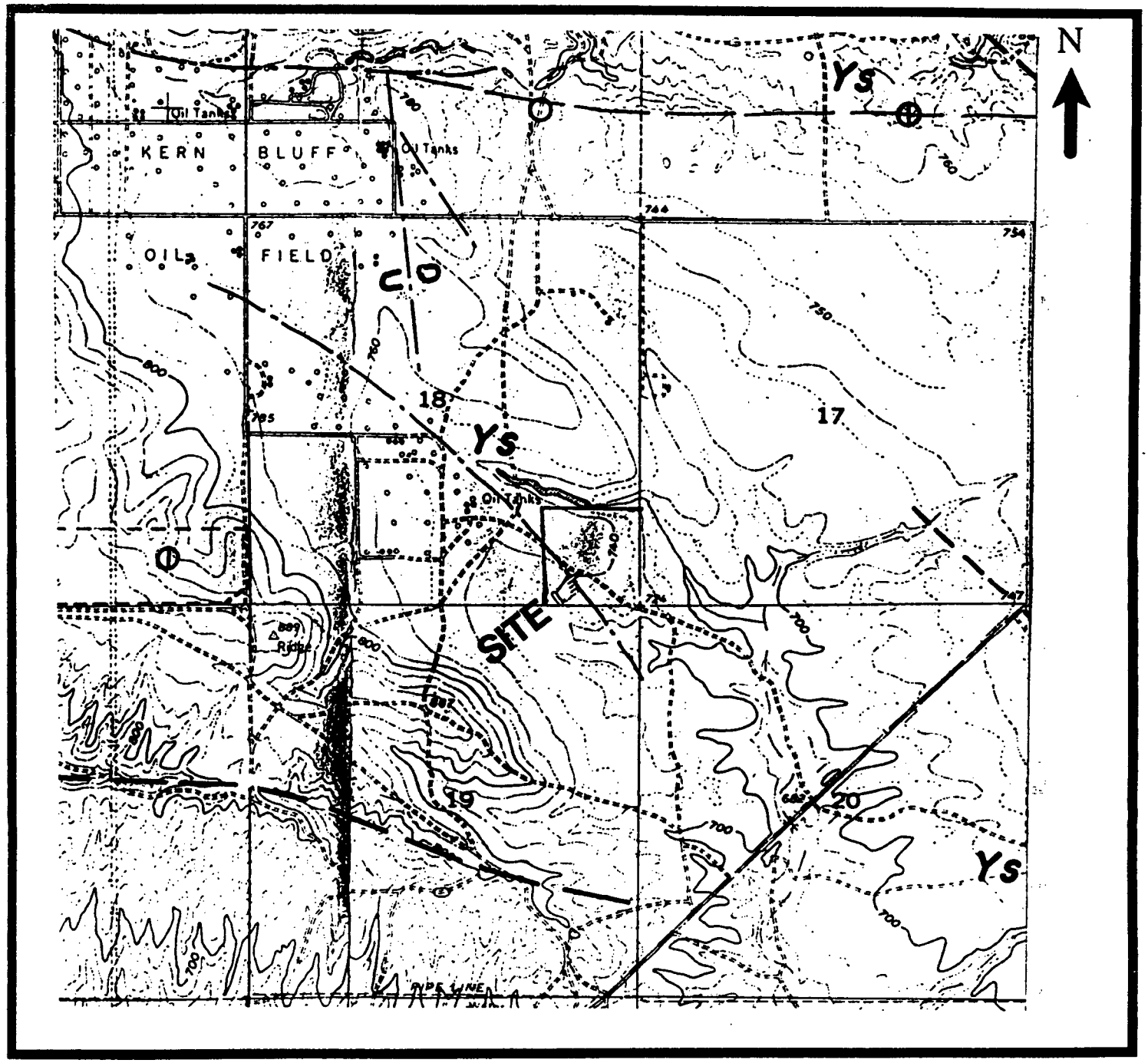
SE 1/4 of SE 1/4, Sec 18, T29S, R29E

Bakersfield, California

PLATE 7

Fault Location Map
SE 1/4 of SE 1/4 of Sec 18, T29S, 29E
Bakersfield, California

File No. 98-8477
February,1998



Fault Location Map

SE 1/4 of SE 1/4, Sec 18, T29S, R29E

Bakersfield, California

PLATE 8

Appendix A

EDR-Radius Map
with
GeoCheck

The EDR-Radius Map
with GeoCheck™

Nasca Valley
Morning Dr
Bakersfield, CA 93306

Inquiry Number: 0228311.1r

February 10, 1998

Environmental Data Resources, Inc.
an edr company

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-97. Search distances are per ASTM standard or custom distances requested by the user.

The address of the subject property for which the search was intended is:

MORNING DR
BAKERSFIELD, CA 93306

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the subject property or within the ASTM E 1527-97 search radius around the subject property for the following Databases:

NPL:	National Priority List
Delisted NPL:	NPL Deletions
RCRIS-TSD:	Resource Conservation and Recovery Information System
AWP:	AWP
Cal-Sites:	Cal-Sites
Notify 65:	Notify 65
CHMIRS:	California Hazardous Material Incident Report System
Cortese:	Cortese
Toxic Pits:	Toxic Pits
CERCLIS:	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP:	Comprehensive Environmental Response, Compensation, and Liability Information System
CORRACTS:	Corrective Action Report
SWF/LF:	State Landfill
LUST:	Leaking Underground Storage Tank Information System
UST:	Hazardous Substance Storage Container Database
Ca. FID:	CA FID
AST:	Aboveground Petroleum Storage Tank Facilities
RAATS:	RCRA Administrative Action Tracking System
WMUDS:	WMUDS/SWAT
HAZNET:	HAZNET
RCRIS-SQG:	Resource Conservation and Recovery Information System
RCRIS-LQG:	Resource Conservation and Recovery Information System
HMIRS:	Hazardous Materials Information Reporting System
PADS:	PCB Activity Database System
ERNS:	Emergency Response Notification System
FINDS:	Facility Index System
TRIS:	Toxic Chemical Release Inventory System
TSCA:	Toxic Substances Control Act
MLTS:	Material Licensing Tracking System
NPL Lien:	NPL Liens
CA SLIC:	CA SLIC regions.
Ca. BEP:	CA Bond Exp. Plan
ROD:	ROD
CONSENT:	Superfund (CERCLA) Consent Decrees
Ca. WDS:	CA WDS
S Bay Reg. 2:	South Bay Region 2
Coal Gas:	Former Manufactured gas (Coal Gas) Sites.

Unmapped (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Search Results:

Search results for the subject property and the search radius, are listed below:

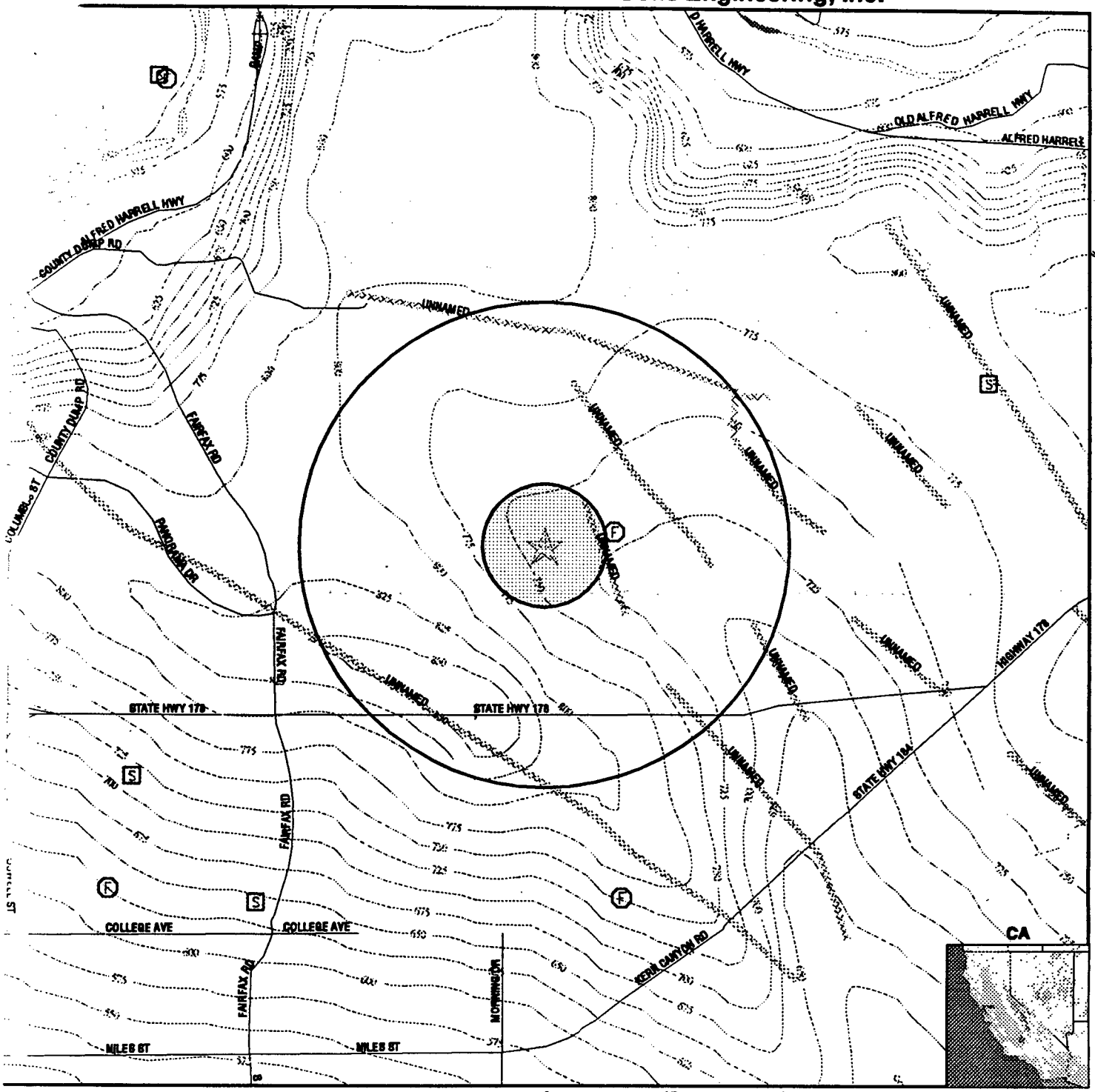
Subject Property:

The subject property was not listed in any of the databases searched by EDR.

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
KERN COUNTY LANDFILL	Cal-Sites
PANORAMA BURN DUMP SITE	Cal-Sites
UNION OIL STATION	Cortese, LUST
MOBIL, WOODY PRODUCTION FAC.	Toxic Pits
BEAR MOUNTAIN LIMITED SUPPLIMENTAL	SWF/LF
METROPOLITAN RECYCLING COMPLEX	SWF/LF
NEG DEC LOKERN FARMS COMPOSTING FA	SWF/LF
HONDO CHEMICAL,INC	SWF/LF
CHINA GRADE SANITARY LANDFILL	SWF/LF
BAKERSFIELD SANITARY LANDFILL	SWF/LF
BAKERSFIELD S.L.F. (BENA)	SWF/LF
WILLIAMS STREET WASTE TIRE PILE	SWF/LF
E. PLANTZ WASTE TIRE PILE	SWF/LF
KERN FRONT DISPOSAL SITE	SWF/LF
CAL WESTERN FUELS PROCESSING	SWF/LF
ARCO CLASS II SURFACE IMPOUN & LAN	SWF/LF
EAPW 5-97 PRICE ENVIRONMENTAL SERV	SWF/LF
WEST OILDALE BURN DUMP	SWF/LF
DOWNS AVENUE DUMP	SWF/LF
KISSACK SEPTIC DISPOSAL SITE	SWF/LF, Ca. WDS
GOLER ROAD ILLEGAL DUMP	SWF/LF
WELDON #1 BD	SWF/LF
TEXACO-KERN RIVER SLF	SWF/LF
SVESTCO INC SEPTAGE SITE	SWF/LF
GREENHORN BD	SWF/LF
CYRUS CANYON DS	SWF/LF
WILLIAM BROS/ELK HILLS NORTH	SWF/LF
WILLIAM BROS/ELK HILLS SOUTH	SWF/LF
DELANO BD	SWF/LF
DEBORD SEPTIC DISPOSAL	SWF/LF
GARONE SEPTAGE DISPOSAL SITE	SWF/LF
FNF DISPOSAL AREA	SWF/LF
HONDO RECLAMATION PLAN	SWF/LF
SCOFIELD ROAD BURN DUMP	SWF/LF
SOUTHERN PACIFIC-EDISON	LUST
VALLEY TREE & CONSTRUCTION	WMUDS
KARR & SONS RANCH	WMUDS
1X JAMISON HILL CO	HAZNET
SANTA FE ENERGY CO/EAST KERN	HAZNET
HALLIBURTON SERVICES	HAZNET
OTT,JIM & SON TRUCKING	RCRIS-SQG, FINDS

TOPOGRAPHIC MAP - 0228311.1r - Solls Engineering, Inc.



- Major Roads
- Contour Lines
- Waterways
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Closest Federal Well in quadrant
- Closest State Well in quadrant
- Closest Public Water Supply Well

(HD) Closest Hydrogeological Data

TARGET PROPERTY:	Nasca Valley	CUSTOMER:	Solls Engineering, Inc.
ADDRESS:	Morning Dr	CONTACT:	Bob Becker
ITY/STATE/ZIP:	Bakersfield CA 93306	INQUIRY #:	0228311.1r
AT/LONG:	35.4064 / 118.9103	DATE:	February 10, 1998 5:33 pm

GEOCHECK VERSION 2.1
SUMMARY

TARGET PROPERTY COORDINATES

Latitude (North):	35.406380 - 35 24' 23.0"
Longitude (West):	118.910332 - 118 54' 37.2"
Universal Transverse Mercator:	Zone 11
UTM X (Meters):	326530.8
UTM Y (Meters):	3919587.8

GEOLOGIC AGE IDENTIFICATION†

Geologic Code:	Tm
Era:	Cenozoic
System:	Tertiary
Series:	Miocene

ROCK STRATIGRAPHIC UNIT†

Category:	Stratified Sequence

GROUNDWATER FLOW INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, including well data collected on nearby properties, regional groundwater flow information (from deep aquifers), or surface topography.‡

General Topographic Gradient:	General East
General Hydrogeologic Gradient:	No hydrogeologic data available.
Site-Specific Hydrogeological Data*:	
Search Radius:	2.0 miles
Status:	Not found

USGS TOPOGRAPHIC MAP ASSOCIATED WITH THIS SITE

Target Property:	2435118-D8 OIL CENTER, CA

FEDERAL DATABASE WELL INFORMATION

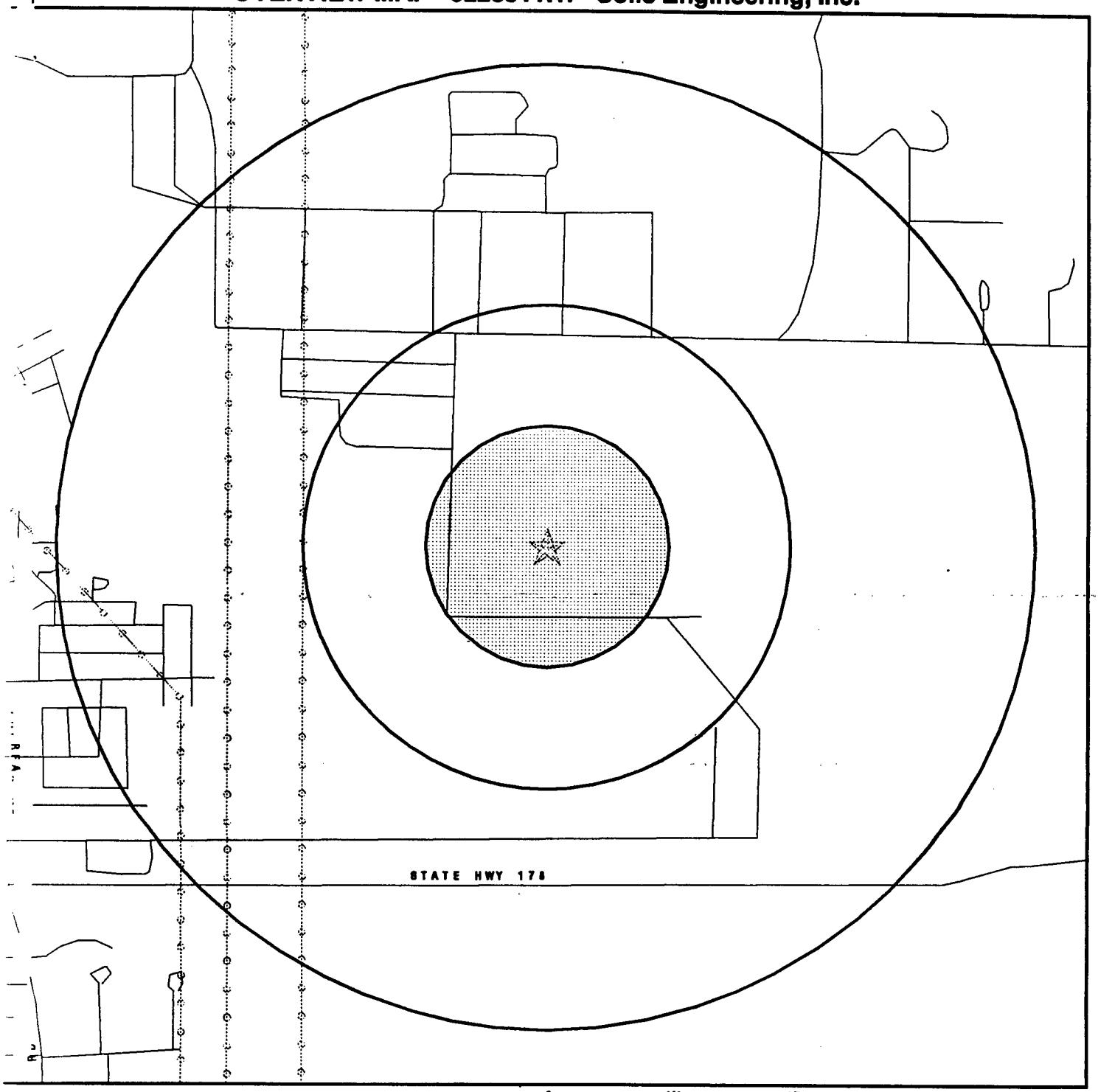
WELL QUADRANT	DISTANCE FROM TP	LITHOLOGY	DEPTH TO WATER TABLE
Northern	>2 Miles	Not Reported	Not Reported
Eastern	1/4 - 1/2 Mile	Not Reported	Not Reported
Southern	1 - 2 Miles	Not Reported	393 ft.
Western	>2 Miles	Not Reported	Not Reported

STATE DATABASE WELL INFORMATION

WELL QUADRANT	DISTANCE FROM TP
Northern	>2 Miles
Eastern	1 - 2 Miles
Southern	1 - 2 Miles
Western	1 - 2 Miles

† Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).
‡ U.S. EPA Ground Water Handbook, Vol I: Ground Water and Contamination, Office of Research and development EPA/625/6-90/016a,Chapter 4, page 78, September 1990.

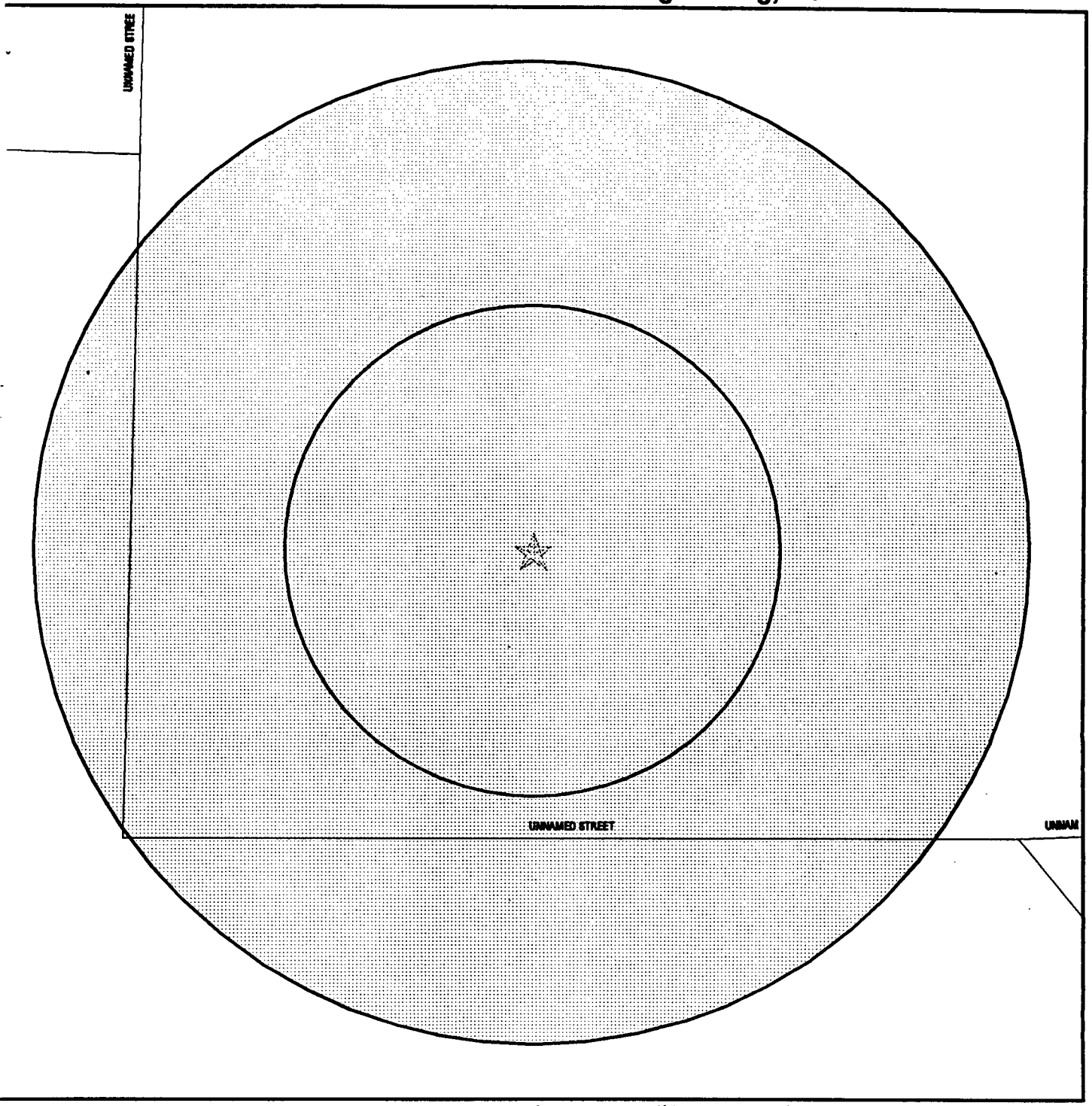
OVERVIEW MAP - 0228311.1r - Soils Engineering, Inc.



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites (if requested)
- National Priority List Sites
- Landfill Sites
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone

TARGET PROPERTY:	Nasca Valley	CUSTOMER:	Soils Engineering, Inc.
ADDRESS:	Morning Dr	CONTACT:	Bob Becker
ITY/STATE/ZIP:	Bakersfield CA 93306	INQUIRY #:	0228311.1r
AT/LONG:	35.4064 / 118.9103	DATE:	February 10, 1998 5:29 pm

DETAIL MAP - 0228311.1r - Soils Engineering, Inc.



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Coal Gasification Sites (if requested)

Sensitive Receptors

National Priority List Sites

Landfill Sites

Power transmission lines

Oil & Gas pipelines

100-year flood zone

500-year flood zone

TARGET PROPERTY:	Nasca Valley	CUSTOMER:	Soils Engineering, Inc.
ADDRESS:	Morning Dr	CONTACT:	Bob Becker
ITY/STATE/ZIP:	Bakersfield CA 93306	INQUIRY #:	0228311.1r
AT/LONG:	35.4064 / 118.9103	DATE:	February 10, 1998 5:31 pm

MAP FINDINGS SUMMARY SHOWING ALL SITES

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
NPL		1.000	0	0	0	0	NR	0
Delisted NPL		TP	NR	NR	NR	NR	NR	0
RCRIS-TSD		0.500	0	0	0	NR	NR	0
AWP		1.000	0	0	0	0	NR	0
Cal-Sites		1.000	0	0	0	0	NR	0
Notify 65		1.000	0	0	0	0	NR	0
CHMIRS		1.000	0	0	0	0	NR	0
Cortese		1.000	0	0	0	0	NR	0
Toxic Pits		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		TP	NR	NR	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	0	NR	NR	0
UST		0.250	0	0	NR	NR	NR	0
CA FID		0.250	0	0	NR	NR	NR	0
AST		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
WMUDS/SWAT		0.500	0	0	0	NR	NR	0
HAZNET		0.250	0	0	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
CA SLIC		0.500	0	0	0	NR	NR	0
CA Bond Exp. Plan		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
CONSENT		1.000	0	0	0	0	NR	0
CA WDS		TP	NR	NR	NR	NR	NR	0
South Bay Region 2		TP	NR	NR	NR	NR	NR	0
Coal Gas		1.000	0	0	0	0	NR	0

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

NO SITES FOUND

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)	Facility ID
BAKERSFIELD	1000138262	OTT,JIM & SON TRUCKING	ROUTE 5 BOX 208	93306	RCRIS-SQG, FINDS	
BAKERSFIELD	S101480470	KERN COUNTY LANDFILL	ALFRED HARELL HIGHWAY, MCMINNI	93306	Cal-Sites	15490013
BAKERSFIELD	S102360398	BEAR MOUNTAIN LIMITED SUPPLIMENTAL	APN 436-060-11 SEC 12, T29S, R		SWF/LF	15-AA-0321
BAKERSFIELD	S101613629	VALLEY TREE & CONSTRUCTION	PO BOX 6275	93306	WMUDS	
BAKERSFIELD	S101310701	KARR & SONS RANCH	CORCORAN ROAD N/O HWY 46		WMUDS	
BAKERSFIELD	S100926937	1X JAMISON HILL CO	SO EAST CORNER STATE HWY 58		HAZNET	
BAKERSFIELD	S102360402	METROPOLITAN RECYCLING COMPLEX	SO END MT VERNON DR, ST RT 58		SWF/LF	15-AA-0326
BAKERSFIELD	S100944401	SANTA FE ENERGY CO/EAST KERN	GLENVILLE WOODY HWY		HAZNET	
BAKERSFIELD	S101307239	UNION OIL STATION	LERDO HWY (NO STREET NBR)		Cortese, LUST	15-000072
BAKERSFIELD	S102509346	NEG DEC LOKERN FARMS COMPOSTING FA	LOKERN RD. SOUTH 1/2 OF T29S R		SWF/LF	15-AA-0340
BAKERSFIELD	S102360384	HONDO CHEMICAL,INC	3.5 MILES N. OF HWY 46 OFF COR		SWF/LF	15-AA-0301
BAKERSFIELD	S102360330	CHINA GRADE SANITARY LANDFILL	3 MI NE BAKERSFIELD		SWF/LF	15-AA-0048
BAKERSFIELD	S102360327	BAKERSFIELD SANITARY LANDFILL	1 MI NE MT VERNON / PANORAMA		SWF/LF	15-AA-0044
BAKERSFIELD	S102360376	BAKERSFIELD S.L.F. (BENA)	NO OF SO. PACIFIC / SANTA FE		SWF/LF	15-AA-0273
BAKERSFIELD	S102360496	WILLIAMS.STREET WASTE TIRE PILE	NORTH OF 705 WILLIAMS ST		SWF/LF	15-TI-0121
BAKERSFIELD	S102360513	E. PLANTZ WASTE TIRE PILE	1903 E. PLANTZ		SWF/LF	15-TI-0501
BAKERSFIELD	S102360489	KERN FRONT DISPOSAL SITE	T28S, R27E, SECTION 27		SWF/LF	15-CR-0086
BAKERSFIELD	S102360380	CAL WESTERN FUELS PROCESSING	1 MI S / 1/3 MI E/O HWYS 184		SWF/LF	15-AA-0296
BAKERSFIELD	S100925109	MOBIL, WOODY PRODUCTION FAC.	SECTION 22, T29S, R21E MDB / M		Toxic Pits	
BAKERSFIELD	S102360363	ARCO CLASS II SURFACE IMPOUN & LAN	28 MI SW BAKERSFIELD		SWF/LF	15-AA-0251
BAKERSFIELD	S100936577	HALLIBURTON SERVICES	TANDARD RD N HWY 99 / 7		HAZNET	
BAKERSFIELD	S102564439	PANORAMA BURN DUMP SITE	3500 THRU 3908 PANORAMA DRIVE	93306	Cal-Sites	15880001
BAKERSFIELD	S102685979	EAPW 5-97 PRICE ENVIRONMENTAL SERV	SOUTH UNION AVENUE		SWF/LF	15-AA-0343
EDISON	S102437880	SOUTHERN PACIFIC-EDISON	? EDISON HWY	93306	LUST	5T15000144
KERN COUNTY	S102360471	WEST OILDALE BURN DUMP	BETW HWY 99 / ROBERTS LN		SWF/LF	15-CR-0066
KERN COUNTY	S102360470	DOWNS AVENUE DUMP	DOWNS AVE X RIDGECREST BLVD		SWF/LF	15-CR-0065
KERN COUNTY	S102003527	KISSACK SEPTIC DISPOSAL SITE	HANNING FLAT		SWF/LF, Ca. WDS	15-CR-0048
KERN COUNTY	S102360456	GOLER ROAD ILLEGAL DUMP	1 MI N OF GOLER RD X RANDSBURG		SWF/LF	15-CR-0050
KERN COUNTY	S102360443	WELDON #1 BD	SW/4 NE/4 NE/4 S24 T27S R35E		SWF/LF	15-CR-0036
KERN COUNTY	S102360326	TEXACO-KERN RIVER SLF	1 MI NE/O GETTY OIL OFC-CHINA		SWF/LF	15-AA-0005
KERN COUNTY	S102360455	SVESTCO INC SEPTAGE SITE	NW/4,NE/4,NW/4 SEC34,T 9N,R19N		SWF/LF	15-CR-0049
KERN COUNTY	S102360418	GREENHORN BD	NW/4,SE/4 SEC 20, T25S, R32E		SWF/LF	15-CR-0011
KERN COUNTY	S102360474	CYRUS CANYON DS	S OF KERN VALLEY SLF IN CYRUS		SWF/LF	15-CR-0069
KERN COUNTY	S102360458	WILLIAM BROS/ELK HILLS NORTH	T30S R24E SEC27		SWF/LF	15-CR-0052
KERN COUNTY	S102360459	WILLIAM BROS/ELK HILLS SOUTH	T31S R24E SEC10		SWF/LF	15-CR-0053
KERN COUNTY	S102360464	DELANO BD	T25S, R25E, SECTION 23		SWF/LF	15-CR-0058
KERN COUNTY	S102360453	DEBORD SEPTIC DISPOSAL	T11N, R27W, SECTION 20		SWF/LF	15-CR-0046
KERN COUNTY	S102360454	GARONE SEPTAGE DISPOSAL SITE	T31S, R28E, SECTION 27		SWF/LF	15-CR-0047
KERN COUNTY	S102360488	FNF DISPOSAL AREA	T30S R31E, SECTION 35		SWF/LF	15-CR-0085
KERN COUNTY	S102360403	HONDO RECLAMATION PLAN	1/4 MI S OF JAMES RD., N OF OI		SWF/LF	15-AA-0327
KERN COUNTY	S102360486	SCOFIELD ROAD BURN DUMP	SCOFIELD RD		SWF/LF	15-CR-0083

GEOCHECK VERSION 2.1 ADDENDUM
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (Northern Quadrant)

BASIC WELL DATA

Site ID:	352603118561601	Distance from TP:	>2 Miles
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1978	County:	Kern
Altitude:	490.00 ft.	State:	California
Well Depth:	200.00 ft.	Topographic Setting:	Valley flat
Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
Date Measured:	Not Reported	Prim. Use of Water:	Domestic

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (Eastern Quadrant)

BASIC WELL DATA

Site ID:	352426118541901	Distance from TP:	1/4 - 1/2 Mile
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1948	County:	Kern
Altitude:	748.00 ft.	State:	California
Well Depth:	1171.00 ft.	Topographic Setting:	Not Reported
Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
Date Measured:	Not Reported	Prim. Use of Water:	Industrial

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (Southern Quadrant)

BASIC WELL DATA

Site ID:	352307118541701	Distance from TP:	1 - 2 Miles
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	1958	County:	Kern
Altitude:	695.00 ft.	State:	California
Well Depth:	1023.00 ft.	Topographic Setting:	Not Reported
Depth to Water Table:	392.80 ft.	Prim. Use of Site:	Withdrawal of water
Date Measured:	12061958	Prim. Use of Water:	Domestic

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
FEDERAL DATABASE WELL INFORMATION

Well Closest to Target Property (Western Quadrant)

BASIC WELL DATA

Site ID:	352309118563001	Distance from TP:	>2 Miles
Site Type:	Single well, other than collector or Ranney type		
Year Constructed:	Not Reported	County:	Kern
Altitude:	625.00 ft.	State:	California
Well Depth:	840.00 ft.	Topographic Setting:	Not Reported
Depth to Water Table:	Not Reported	Prim. Use of Site:	Withdrawal of water
Date Measured:	Not Reported	Prim. Use of Water:	Public supply

LITHOLOGIC DATA

Not Reported

WATER LEVEL VARIABILITY

Not Reported

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

Water Wells:

Well Within >2 Miles of Target Property (Northern Quadrant)

Water System Information:

Prime Station Code:	29S/28E-02G01 M	User ID:	CYA
FRDS Number Number:	1500561001	County:	Kern
District Number:	12	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Untreated
Source Lat/Long:	352604.0 1185618.0	Precision:	0.5 Mile (30 Seconds)
Source Name:	WELL 01		
System Number:	1500561		
System Name:	ROUND MOUNTAIN MUTUAL WATER		
Owner Type:	Not Reported		
Organization That Operates System:	Not Reported		
Pop Served:	56	Connections:	Not Reported
Area Served:	Not Reported		

Sample Information: * Only Findings Above Detection Level Are Listed

Sample Collected:	03/14/1993	Findings:	7.000 PC/L
Chemical:	GROSS ALPHA		
Sample Collected:	03/14/1993	Findings:	2.000 PC/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	03/14/1993	Findings:	13.500 PIC/L
Chemical:	URANIUM		

Well Within 1 - 2 Miles of Target Property (Eastern Quadrant)

Water System Information:

Prime Station Code:	29S/29E-08R01 M	User ID:	CYA
FRDS Number Number:	1502210001	County:	Kern
District Number:	12	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Untreated
Source Lat/Long:	352458.0 1185242.0	Precision:	0.5 Mile (30 Seconds)
Source Name:	WELL 01		
System Number:	1502210		
System Name:	PANORAMA WELL ASSOCIATION		
Owner Type:	Not Reported		
Organization That Operates System:	P.O. BOX 3159 BAKERSFIELD, CA 93385		
Pop Served:	37	Connections:	Not Reported
Area Served:	Not Reported		

Well Within 1 - 2 Miles of Target Property (Southern Quadrant)

Water System Information:

Prime Station Code:	L15/006-015FLIN	User ID:	CYA
FRDS Number Number:	1510006015	County:	Kern
District Number:	12	Station Type:	STREAM/AMBNT
Water Type:	Surface Water	Well Status:	Distribution System Sample Point Treated
Source Lat/Long:	352306.0 1185552.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	THM SAMP SITE-3209 FLINTRIDGE (E4)-KCWAS		

GEOCHECK VERSION 2.1
STATE DATABASE WELL INFORMATION

System Number: 1510006
System Name: EAST NILES CSD
Owner Type: Not Reported
Organization That Operates System:
P O BOX 6038
BAKERSFIELD, CA 93306
Pop Served: 21500 Connections: BAKERSFIE
Area Served: LD-VIC

Sample Information: * Only Findings Above Detection Level Are Listed

Sample Collected:	06/16/1993	Findings:	2.500 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	06/16/1993	Findings:	73.000 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	06/16/1993	Findings:	75.500 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	09/30/1993	Findings:	2.900 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	09/30/1993	Findings:	28.500 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	09/30/1993	Findings:	31.400 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	12/15/1993	Findings:	28.000 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	12/15/1993	Findings:	6.300 UG/L
Chemical:	BROMOFORM (THM)		
Sample Collected:	12/15/1993	Findings:	32.000 UG/L
Chemical:	DIBROMOCHLOROMETHANE (THM)		
Sample Collected:	12/15/1993	Findings:	15.600 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	12/15/1993	Findings:	81.900 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	01/06/1994	Findings:	16.500 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	01/06/1994	Findings:	3.300 UG/L
Chemical:	BROMOFORM (THM)		
Sample Collected:	01/06/1994	Findings:	6.700 UG/L
Chemical:	DIBROMOCHLOROMETHANE (THM)		
Sample Collected:	01/06/1994	Findings:	25.500 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	01/06/1994	Findings:	52.000 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	04/30/1994	Findings:	9.400 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	04/30/1994	Findings:	1.300 UG/L
Chemical:	DIBROMOCHLOROMETHANE (THM)		
Sample Collected:	04/30/1994	Findings:	53.200 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	04/30/1994	Findings:	64.000 UG/L
Chemical:	TOTAL TRIHALOMETHANES		

Sample Collected:	06/09/1995	Findings:	5.100 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	06/09/1995	Findings:	70.000 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	06/09/1995	Findings:	75.100 UG/L
Chemical:	TOTAL TRIHALOMETHANES		

Well Within 1 - 2 Miles of Target Property (Western Quadrant)

Water System Information:

Prime Station Code:	L15/006-017WING	User ID:	CYA
FRDS Number Number:	1510006017	County:	Kern
District Number:	12	Station Type:	STREAM/AMBNT
Water Type:	Surface Water	Well Status:	Distribution System Sample Point Treated
Source Lat/Long:	352333.0 1185624.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	THM SAMP SITE - 5310 WINGFOOT (E6)-KCWAS		
System Number:	1510006		
System Name:	EAST NILES CSD		
Owner Type:	Not Reported		
Organization That Operates System:			
	P O BOX 6038		
	BAKERSFIELD, CA 93306		
Pop Served:	21500	Connections:	BAKERSFIE
Area Served:	LD-VIC		

Sample Information: * Only Findings Above Detection Level Are Listed

Sample Collected:	06/16/1993	Findings:	2.400 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	06/16/1993	Findings:	1.800 UG/L
Chemical:	DIBROMOCHLOROMETHANE (THM)		
Sample Collected:	06/16/1993	Findings:	73.400 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	06/16/1993	Findings:	77.600 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	09/30/1993	Findings:	4.200 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	09/30/1993	Findings:	40.200 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	09/30/1993	Findings:	44.400 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	12/15/1993	Findings:	22.900 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	12/15/1993	Findings:	5.100 UG/L
Chemical:	BROMOFORM (THM)		
Sample Collected:	12/15/1993	Findings:	27.900 UG/L
Chemical:	DIBROMOCHLOROMETHANE (THM)		
Sample Collected:	12/15/1993	Findings:	11.000 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	12/15/1993	Findings:	66.900 UG/L
Chemical:	TOTAL TRIHALOMETHANES		

Sample Collected:	01/06/1994	Findings:	9.000 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	01/06/1994	Findings:	3.100 UG/L
Chemical:	BROMOFORM (THM)		
Sample Collected:	01/06/1994	Findings:	1.900 UG/L
Chemical:	DIBROMOCHLOROMETHANE (THM)		
Sample Collected:	01/06/1994	Findings:	24.700 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	01/06/1994	Findings:	38.700 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	04/30/1994	Findings:	9.300 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	04/30/1994	Findings:	1.200 UG/L
Chemical:	DIBROMOCHLOROMETHANE (THM)		
Sample Collected:	04/30/1994	Findings:	50.500 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	04/30/1994	Findings:	61.100 UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	06/09/1995	Findings:	5.400 UG/L
Chemical:	BROMODICHLORMETHANE (THM)		
Sample Collected:	06/09/1995	Findings:	88.800 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	06/09/1995	Findings:	94.200 UG/L
Chemical:	TOTAL TRIHALOMETHANES		

GEOCHECK VERSION 2.1
PUBLIC WATER SUPPLY SYSTEM INFORMATION

Searched by Nearest PWS.

PWS SUMMARY:

PWS ID:	CA1000003	PWS Status:	Active	Distance from TP:	>2 Miles
Date Initiated:	June / 1977	Date Deactivated:	Not Reported	Dir relative to TP:	West
PWS Name:	BEARCREEK WATER IMPROVEMENT GENE OLDERSHAW BEAR CREEK HUNTINGTON LAKE, CA 93629				
Addressee / Facility:	System Owner/Responsible Party GENE OLDERSHAW 1116 S RADCLIFF AVENUE BAKERSFIELD, CA 93305				
Facility Latitude:	35 23 36		Facility Longitude:	118 59 12	
City Served:	Not Reported				
Treatment Class:	Untreated		Population Served:	Under 101 Persons	

PWS currently has or has had major violation(s): Yes

Violations information not reported.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM RECORDS:

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA/NTIS
Telephone: 703-413-0223
CERCLIS: CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 08/01/97
Date Made Active at EDR: 11/28/97
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 10/01/97
Elapsed ASTM days: 58
Date of Last EDR Contact: 01/05/98

ERNS: Emergency Response Notification System
Source: EPA/NTIS
Telephone: 202-260-2342
ERNS: Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/01/97
Date Made Active at EDR: 10/09/97
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 08/29/97
Elapsed ASTM days: 41
Date of Last EDR Contact: 12/01/97

NPL: National Priority List
Source: EPA
Telephone: 703-603-8852
NPL: National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC).

Date of Government Version: 09/25/97
Date Made Active at EDR: 11/28/97
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 09/26/97
Elapsed ASTM days: 63
Date of Last EDR Contact: 01/02/98

RCRIS: Resource Conservation and Recovery Information System
Source: EPA/NTIS
Telephone: 800-424-9346
RCRIS: Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 07/01/97
Date Made Active at EDR: 11/28/97
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 09/13/97
Elapsed ASTM days: 76
Date of Last EDR Contact: 11/03/97

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS: CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 10/01/97
Date Made Active at EDR: 12/05/97
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 11/06/97
Elapsed ASTM days: 29
Date of Last EDR Contact: 01/05/98

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FEDERAL NON-ASTM RECORDS:

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
BRS: The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/95
Database Release Frequency: Biennially
Date of Last EDR Contact: 12/22/97
Date of Next Scheduled EDR Contact: 03/23/98

CONSENT: Superfund (CERCLA) Consent Decrees
Source: EPA Regional Offices
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: Varies
Database Release Frequency: Varies
Date of Last EDR Contact: Varies
Date of Next Scheduled EDR Contact: N/A

FINDS: Facility Index System
Source: EPA/NTIS
Telephone: 703-908-2493
FINDS: Facility Index System. FINDS contains both facility information and "pointers" to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/01/97
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/23/98
Date of Next Scheduled EDR Contact: 04/06/98

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4526
HMIRS: Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/96
Database Release Frequency: Annually
Date of Last EDR Contact: 01/27/98
Date of Next Scheduled EDR Contact: 04/27/98

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/28/97
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/12/98
Date of Next Scheduled EDR Contact: 04/13/98

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 205-564-4267
NPL LIENS: Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 11/24/97
Date of Next Scheduled EDR Contact: 02/23/98

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-260-3936
PADS: PCB Activity Database. PADS identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 03/27/97
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 11/17/97
Date of Next Scheduled EDR Contact: 02/16/98

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RAATS: RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 12/15/97
Date of Next Scheduled EDR Contact: 03/16/98

ROD: Records Of Decision
Source: NTIS
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 03/31/95
Database Release Frequency: Annually
Date of Last EDR Contact: 12/12/97
Date of Next Scheduled EDR Contact: 03/02/98

TRIS: Toxic Chemical Release Inventory System
Source: EPA/NTIS
Telephone: 202-260-1531
TRIS: Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/95
Database Release Frequency: Annually
Date of Last EDR Contact: 12/23/97
Date of Next Scheduled EDR Contact: 03/30/98

TSCA: Toxic Substances Control Act
Source: EPA/NTIS
Telephone: 202-260-1444
TSCA: Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site. USEPA has no current plan to update and/or re-issue this database.

Date of Government Version: 01/31/95
Database Release Frequency: Annually
Date of Last EDR Contact: 12/15/97
Date of Next Scheduled EDR Contact: 03/16/98

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STATE OF CALIFORNIA ASTM RECORDS:

BEP: Bond Expenditure Plan
Source: Department of Health Services
Telephone: 916-255-2118
BEP: Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/89
Date Made Active at EDR: 08/02/94
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 07/27/94
Elapsed ASTM days: 6
Date of Last EDR Contact: 05/31/94

CAL-SITES (AWP): Annual Workplan
Source: California Environmental Protection Agency
Telephone: 916-323-3400
CAL-SITES (AWP): Known Hazardous Waste Sites. California DTSC's Annual Workplan (AWP), formerly BEP, identifies known hazardous substance sites targeted for cleanup.

Date of Government Version: 11/04/97
Date Made Active at EDR: 12/20/97
Database Release Frequency: Annually
Date of Data Arrival at EDR: 11/21/97
Elapsed ASTM days: 29
Date of Last EDR Contact: 11/05/97

CAL-SITES (ASPIS): Calsites
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
CAL-SITES (ASPIS): The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database.

Date of Government Version: 10/03/97
Date Made Active at EDR: 12/05/97
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 11/07/97
Elapsed ASTM days: 28
Date of Last EDR Contact: 12/16/97

CHMIRS: California Hazardous Material Incident Report System
Source: Office of Emergency Services
Telephone: 916-464-3277
CHMIRS: California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/94
Date Made Active at EDR: 04/24/95
Database Release Frequency: Annually
Date of Data Arrival at EDR: 03/13/95
Elapsed ASTM days: 42
Date of Last EDR Contact: 12/01/97

CORTESE: Cortese
Source: CAL EPA/Office of Emergency Information
Telephone: 916-327-1848
CORTESE: Identified Hazardous Waste and Substance Sites. The database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration.

Date of Government Version: 12/31/94
Date Made Active at EDR: 04/04/95
Database Release Frequency: Annually
Date of Data Arrival at EDR: 01/23/95
Elapsed ASTM days: 71
Date of Last EDR Contact: 01/29/98

LUST: Leaking Underground Storage Tank Information System
Source: State Water Resources Control Board
Telephone: 916-445-6532
LUST: Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 10/01/97
Date Made Active at EDR: 12/23/97
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 11/25/97
Elapsed ASTM days: 28
Date of Last EDR Contact: 11/13/97

NOTIFY 65: Proposition 65
Source: State Water Resources Control Board
Telephone: 916-657-0696
NOTIFY 65: Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/93
Date Made Active at EDR: 11/19/93
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 11/01/93
Elapsed ASTM days: 18
Date of Last EDR Contact: 10/29/97

SWF/LF (SWIS): Solid Waste Information System
Source: Integrated Waste Management Board
Telephone: 916-255-4035
SWF/LF (SWIS): Active, Closed and Inactive Landfills. SWF/LF records typically contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 2004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 09/01/97
Date Made Active at EDR: 10/31/97
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 10/01/97
Elapsed ASTM days: 30
Date of Last EDR Contact: 12/01/97

TOXIC PITS: Toxic Pits
Source: State Water Resources Control Board
Telephone: 916-227-4364
TOXIC PITS: Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/95
Date Made Active at EDR: 09/26/95
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 08/30/95
Elapsed ASTM days: 27
Date of Last EDR Contact: 11/12/97

CA UST:

UST: Hazardous Substance Storage Container Database
Source: State Water Resources Control Board
Telephone: 916-227-4408
UST: The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/90
Date Made Active at EDR: 02/12/91
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 01/25/91
Elapsed ASTM days: 18
Date of Last EDR Contact: 01/20/98

FID: Facility Inventory Database
Source: California Environmental Protection Agency
Telephone: 916-445-6532
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/94
Date Made Active at EDR: 09/29/95
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 09/05/95
Elapsed ASTM days: 24
Date of Last EDR Contact: 12/23/97

WMUDS/SWAT: Waste Management Unit Database
Source: State Water Resources Control Board
Telephone: 916-227-4448
WMUDS/SWAT: Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 09/20/97
Date Made Active at EDR: 11/18/97
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 10/20/97
Elapsed ASTM days: 29
Date of Last EDR Contact: 12/08/97

STATE OF CALIFORNIA NON-ASTM RECORDS:

AST: Aboveground Petroleum Storage Tank Facilities
Source: State Water Resources Control Board
Telephone: 916-227-4382
AST: Registered Aboveground Storage Tanks.

Date of Government Version: 08/01/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/10/97
Date of Next Scheduled EDR Contact: 02/09/98

HAZMAT: Hazmat Facilities
Source: City of San Jose Fire Department
Telephone: 408-277-4659

Date of Government Version: 02/11/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/24/97
Date of Next Scheduled EDR Contact: 02/23/98

HAZNET: Hazardous Waste Information System
Source: California Environmental Protection Agency
Telephone: 916-324-1781
HAZNET: Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data from non-California manifests and continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/95
Database Release Frequency: Annually

Date of Last EDR Contact: 12/11/97
Date of Next Scheduled EDR Contact: 04/20/98

SOUTH BAY: South Bay Site Management System
Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
SOUTH BAY: Groundwater pollution cases in the Santa Clara Valley where the regulatory lead is the San Francisco Bay Regional Water Quality Control Board.

Date of Government Version: 09/01/96
Database Release Frequency: Annually

Date of Last EDR Contact: 12/18/97
Date of Next Scheduled EDR Contact: 03/16/98

WDS: Waste Discharge System
Source: State Water Resources Control Board
Telephone: 916-657-1571
WDS: Sites which have been issued waste discharge requirements.

Date of Government Version: 09/01/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/24/97
Date of Next Scheduled EDR Contact: 02/23/98

CALIFORNIA COUNTY RECORDS

ALAMEDA COUNTY:

Underground Tanks
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 10/01/97
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 09/15/97
Date of Next Scheduled EDR Contact: 02/02/98

Local Oversight Program Listing of UGT Cleanup Sites
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 10/01/97
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 09/15/97
Date of Next Scheduled EDR Contact: 02/02/98

CONTRA COSTA COUNTY:

SL: Site List
Source: Contra Costa Health Services Department
Telephone: 510-646-2286
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 05/02/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/10/97
Date of Next Scheduled EDR Contact: 02/09/98

KERN COUNTY:

UST: Sites & Tanks Listing
Source: Kern County Environment Health Services Department
Telephone: 805-862-8700
Kern County Sites & Tanks Listing.

Date of Government Version: 06/10/94
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 01/13/98
Date of Next Scheduled EDR Contact: 04/13/98

LOS ANGELES COUNTY:

HMS: Street Number List
Source: Department of Public Works
Telephone: 818-458-3517
HMS: Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 09/30/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/12/98
Date of Next Scheduled EDR Contact: 04/13/98

SWF/LF: List of Solid Waste Facilities
Source: La County Department of Public Works
Telephone: 818-458-5185

Date of Government Version: 01/31/96
Database Release Frequency: Annually

Date of Last EDR Contact: 11/24/97
Date of Next Scheduled EDR Contact: 02/23/98

SITE MITI: Site Mitigation Complaint Control Log
Source: Community Health Services
Telephone: 213-890-7806
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 08/21/96
Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/24/97
Date of Next Scheduled EDR Contact: 02/23/98

MARIN COUNTY:

UST - Currently Permitted
Source: Public Works Department Waste Management
Telephone: 415-499-6647
Currently permitted USTs in Marin County.

Date of Government Version: 05/12/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 11/10/97
Date of Next Scheduled EDR Contact: 02/09/98

NAPA COUNTY:

LUST: Sites With Reported Contamination
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 10/27/97
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 12/22/97
Date of Next Scheduled EDR Contact: 03/23/98

UST: Closed and Operating Underground Storage Tank Sites
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 10/09/96
Database Release Frequency: Annually

Date of Last EDR Contact: 12/08/97
Date of Next Scheduled EDR Contact: 03/23/98

ORANGE COUNTY:

List of Industrial Site Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Petroleum and non-petroleum spills.

Date of Government Version: 07/17/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/15/97
Date of Next Scheduled EDR Contact: 03/16/98

LUST: List of Underground Storage Tank Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 09/02/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/15/97
Date of Next Scheduled EDR Contact: 03/16/98

UST: List of Underground Storage Tank Facilities
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 08/29/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/15/97
Date of Next Scheduled EDR Contact: 03/16/98

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PLACER COUNTY:

MS: Master List of Facilities
Source: Placer County Health & Human Services
Telephone: 916-889-7335
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 01/14/97
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/02/98
Date of Next Scheduled EDR Contact: 03/30/98

RIVERSIDE COUNTY:

LUST: Listing of Underground Tank Cleanup Sites
Source: Department of Public Health
Telephone: 909-358-5055
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/06/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/26/98
Date of Next Scheduled EDR Contact: 04/27/98

UST: Tank List
Source: Health Services Agency
Telephone: 909-358-5055

Date of Government Version: 10/06/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/26/98
Date of Next Scheduled EDR Contact: 04/27/98

SACRAMENTO COUNTY:

LUST: Toxisite Cleanup Program - Site Specific Report
Source: Sacramento County Environmental Management
Telephone: 916-386-6706

Date of Government Version: 09/17/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/06/98
Date of Next Scheduled EDR Contact: 03/23/98

ML: Regulatory Compliance Master List
Source: Sacramento County Environmental Management
Telephone: 916-386-6706
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 09/12/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/15/97
Date of Next Scheduled EDR Contact: 03/16/98

SAN BERNARDINO COUNTY:

DEHS Permit System Print-Out By Location
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 10/01/97
Database Release Frequency: Monthly

Date of Last EDR Contact: 12/15/97
Date of Next Scheduled EDR Contact: 03/16/98

SAN DIEGO COUNTY:

SWF/LF: Solid Waste Facilities
Source: Department of Health Services
Telephone: 619-338-2209
San Diego County Solid Waste Facilities.

Date of Government Version: 11/08/95
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 12/01/98
Date of Next Scheduled EDR Contact: 03/02/98

HMMD: Hazardous Materials Management Division Database
Source: Hazardous Materials Management Division
Telephone: 619-338-2268
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment "H" permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 11/15/96
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/14/98
Date of Next Scheduled EDR Contact: 04/13/98

SAN FRANCISCO COUNTY:

LUST: Local Oversite Facilities
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920

Date of Government Version: 09/01/97
Database Release Frequency: Quarterly
Date of Last EDR Contact: 11/17/97
Date of Next Scheduled EDR Contact: 02/16/98

UST: Active Underground Report City and County of San Francisco
Source: Department of Public Health
Telephone: 415-252-3920

Date of Government Version: 09/01/97
Database Release Frequency: Quarterly
Date of Last EDR Contact: 11/17/97
Date of Next Scheduled EDR Contact: 02/16/98

SAN MATEO COUNTY:

Business Inventory
Source: San Mateo County Environmental Health Services Division
Telephone: 415-363-1921
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 01/01/97
Database Release Frequency: Annually
Date of Last EDR Contact: 11/17/97
Date of Next Scheduled EDR Contact: 02/16/98

LUST: Fuel Leak List
Source: San Mateo County Environmental Health Services Division
Telephone: 415-363-1921

Date of Government Version: 10/20/97
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 11/17/97
Date of Next Scheduled EDR Contact: 02/16/98

SANTA CLARA COUNTY:

LUST: Fuel Leak Site Activity Report
Source: Santa Clara Valley Water District
Telephone: 408-927-0710

Date of Government Version: 10/01/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/05/98
Date of Next Scheduled EDR Contact: 04/06/98

SOLANO COUNTY:

LUST: Leaking Undergroung Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 05/20/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/15/97
Date of Next Scheduled EDR Contact: 03/16/98

UST: Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 03/13/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/15/97
Date of Next Scheduled EDR Contact: 03/16/98

SONOMA COUNTY:

LUST Sites
Source: Department of Health Services
Telephone: 707-525-6565

Date of Government Version: 09/22/97
Database Release Frequency: Monthly

Date of Last EDR Contact: 01/02/98
Date of Next Scheduled EDR Contact: 03/23/98

SUTTER COUNTY:

UST: Underground Storage Tanks
Source: Sutter County Department of Agriculture
Telephone: 916-741-7504

Date of Government Version: 09/18/97
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 01/12/98
Date of Next Scheduled EDR Contact: 04/13/98

VENTURA COUNTY:

BWT: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
BWT: The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 09/25/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/02/98
Date of Next Scheduled EDR Contact: 03/23/98

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST: Listing of Underground Tank Cleanup Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 08/28/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/02/98
Date of Next Scheduled EDR Contact: 03/23/98

UST: Underground Tank Closed Sites List
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 09/26/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 01/02/98
Date of Next Scheduled EDR Contact: 03/23/98

SWF/LF: Inventory of Illegal Abandoned and Inactive Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 06/01/97
Database Release Frequency: Annually

Date of Last EDR Contact: 12/01/97
Date of Next Scheduled EDR Contact: 03/02/98

California Regional Water Quality Control Board (RWQCB) LUST Records

LUST REG 1: Active Toxic Site Investigation
Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-576-2220

Date of Government Version: 03/18/97
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 12/01/97
Date of Next Scheduled EDR Contact: 03/02/98

LUST REG 2: Fuel Leak List
Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457

Date of Government Version: 07/31/97
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/05/98
Date of Next Scheduled EDR Contact: 04/20/98

LUST REG 3: LUSTIS Database
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147

Date of Government Version: 08/20/97
Database Release Frequency: Quarterly
Date of Last EDR Contact: 11/25/97
Date of Next Scheduled EDR Contact: 02/23/98

LUST REG 4: Underground Storage Tank Leak List
Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-266-7544

Date of Government Version: 10/15/97
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/05/98
Date of Next Scheduled EDR Contact: 04/06/98

LUST REG 5: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-255-3125

Date of Government Version: 10/01/97
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/12/98
Date of Next Scheduled EDR Contact: 04/13/98

LUST REG 6L: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 916-542-5424

Date of Government Version: 06/27/97
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/14/98
Date of Next Scheduled EDR Contact: 04/13/98

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-346-7491

Date of Government Version: 09/08/97
Database Release Frequency: Quarterly
Date of Last EDR Contact: 11/03/97
Date of Next Scheduled EDR Contact: 02/02/98

LUST REG 7: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-346-7491

Date of Government Version: 04/03/97
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 12/01/97
Date of Next Scheduled EDR Contact: 03/02/98

LUST REG 8: (LUSTIS) Leaking Underground Storage Tanks
Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4498

Date of Government Version: 09/30/97
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 01/12/98
Date of Next Scheduled EDR Contact: 04/13/98

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 9: Leaking Underground Storage Tank Report
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 619-467-2952

Date of Government Version: 01/08/97
Database Release Frequency: Quarterly

Date of Last EDR Contact: 12/12/97
Date of Next Scheduled EDR Contact: 03/09/98

California Regional Water Quality Control Board (RWQCB) SLIC Records

SLIC REG 1: Active Toxic Site Investigations
Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220

Date of Government Version: 03/18/97
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 12/01/97
Date of Next Scheduled EDR Contact: 03/02/98

SLIC REG 2: North and South Bay Slic Report
Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 07/31/97
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/05/98
Date of Next Scheduled EDR Contact: 04/20/98

SLIC REG 3: Active Slic Cases
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 08/20/97
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 11/24/97
Date of Next Scheduled EDR Contact: 02/23/98

SLIC REG 4: SLIC Sites
Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-266-7544
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 10/01/97
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/09/98
Date of Next Scheduled EDR Contact: 03/02/98

SLIC REG 5: SLIC List
Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-855-3075
Unregulated sites that impact groundwater or have the potential to impact groundwater.

Date of Government Version: 10/01/97
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 11/03/98
Date of Next Scheduled EDR Contact: 02/23/98

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583

Date of Government Version: 09/23/97
Database Release Frequency: N/A
Date of Last EDR Contact: 01/13/98
Date of Next Scheduled EDR Contact: 04/13/98

SLIC REG 8: SLIC List
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-3298

Date of Government Version: 12/20/96
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 01/13/98
Date of Next Scheduled EDR Contact: 04/13/98

SLIC REG 9: Nurds/Nugtank
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 619-467-2980

Date of Government Version: 11/21/96
Database Release Frequency: Annually
Date of Last EDR Contact: 12/10/97
Date of Next Scheduled EDR Contact: 03/09/98

Historical and Other Database(s)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

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The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

DELISTED NPL: Delisted NPL Sites
Source: EPA
Telephone: 703-603-8769
DELISTED NPL: The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

NFRAP: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA/NTIS
Telephone: 703-413-0223
NFRAP: As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 06/01/97
Date Made Active at EDR: 08/09/97
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 07/14/97
Elapsed ASTM days: 26
Date of Last EDR Contact: 01/05/98

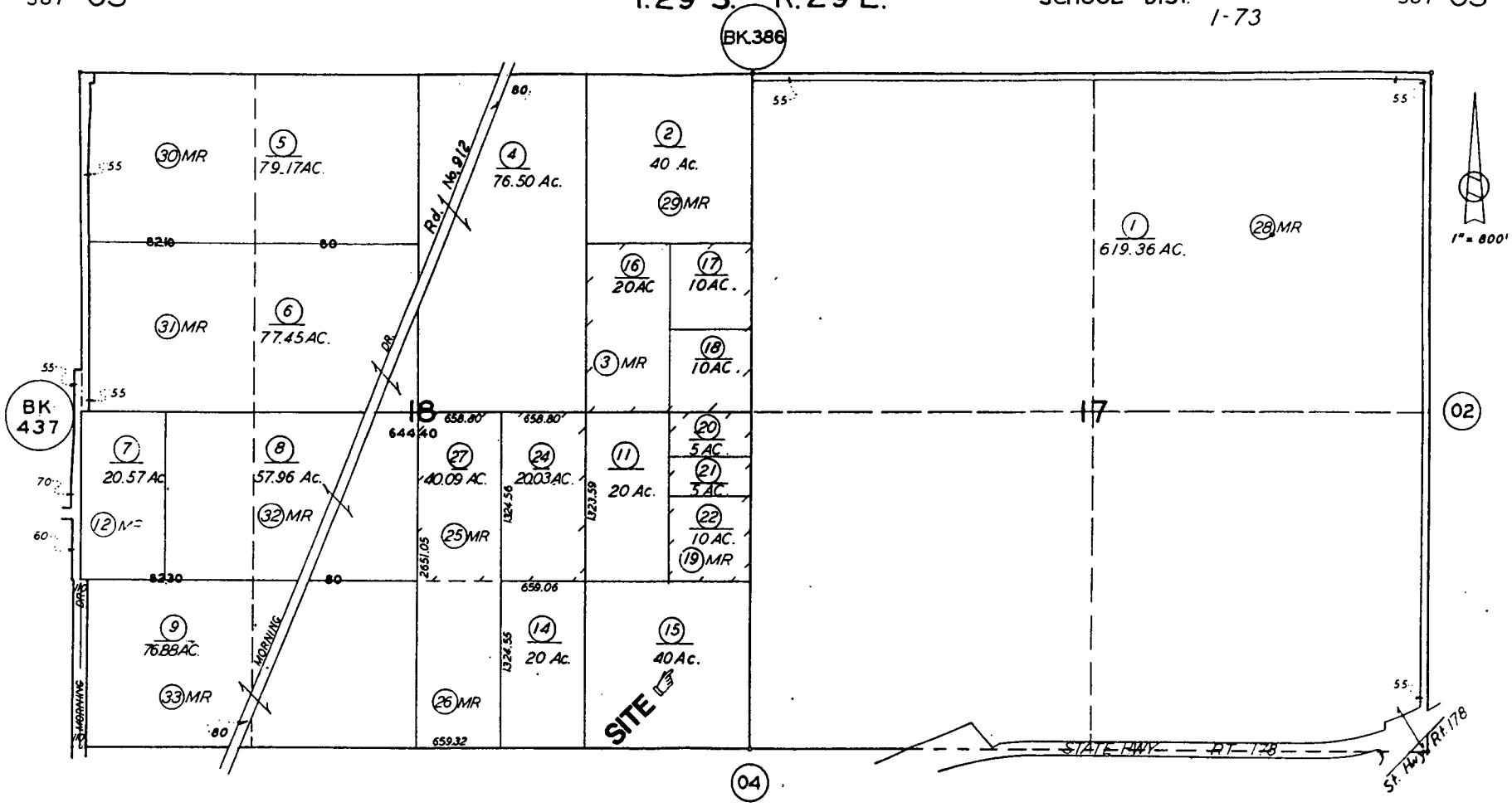
PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-260-2805
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-260-2805
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SWDIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

Appendix B

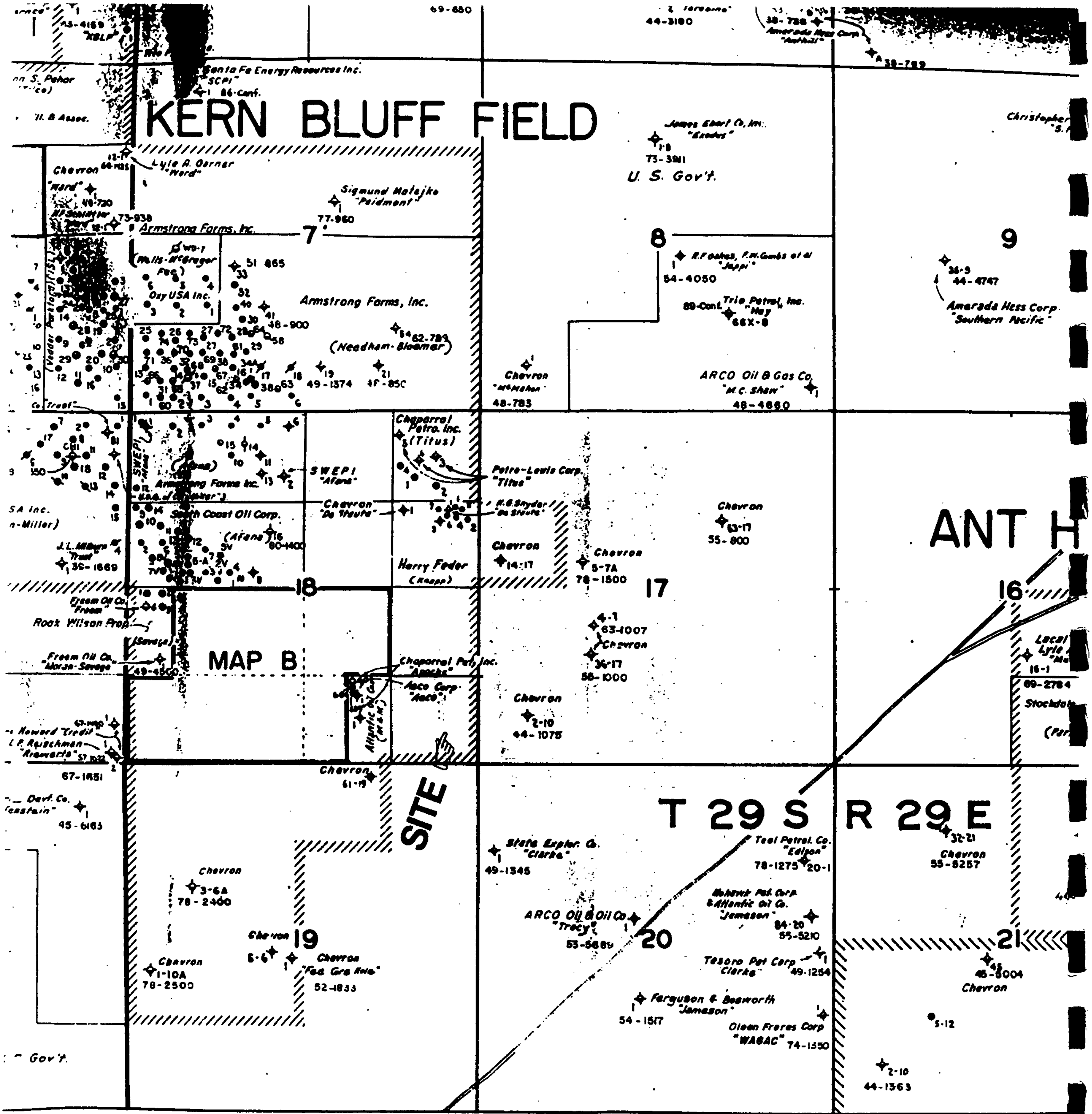
Assessor's Map

387-03 T.29 S. R.29 E. SCHOOL DIST. 1-71 1-73 387-03



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.

ASSESSORS MAP NO. 387-03
COUNTY OF KERN

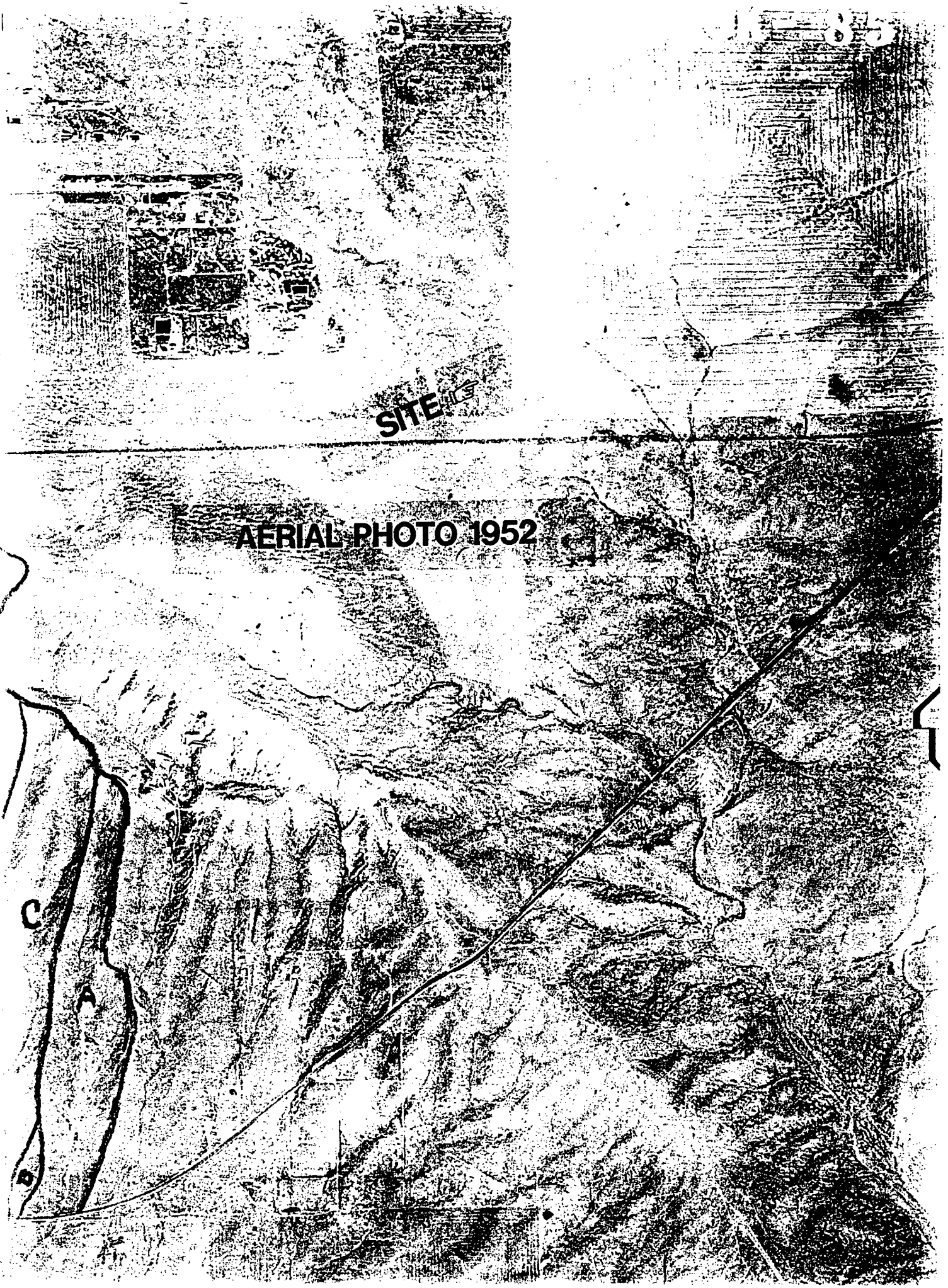


For Adjoining Oilfields see Map No. 434, Mountain View, Edison

Appendix C

Aerial Photo's

SITE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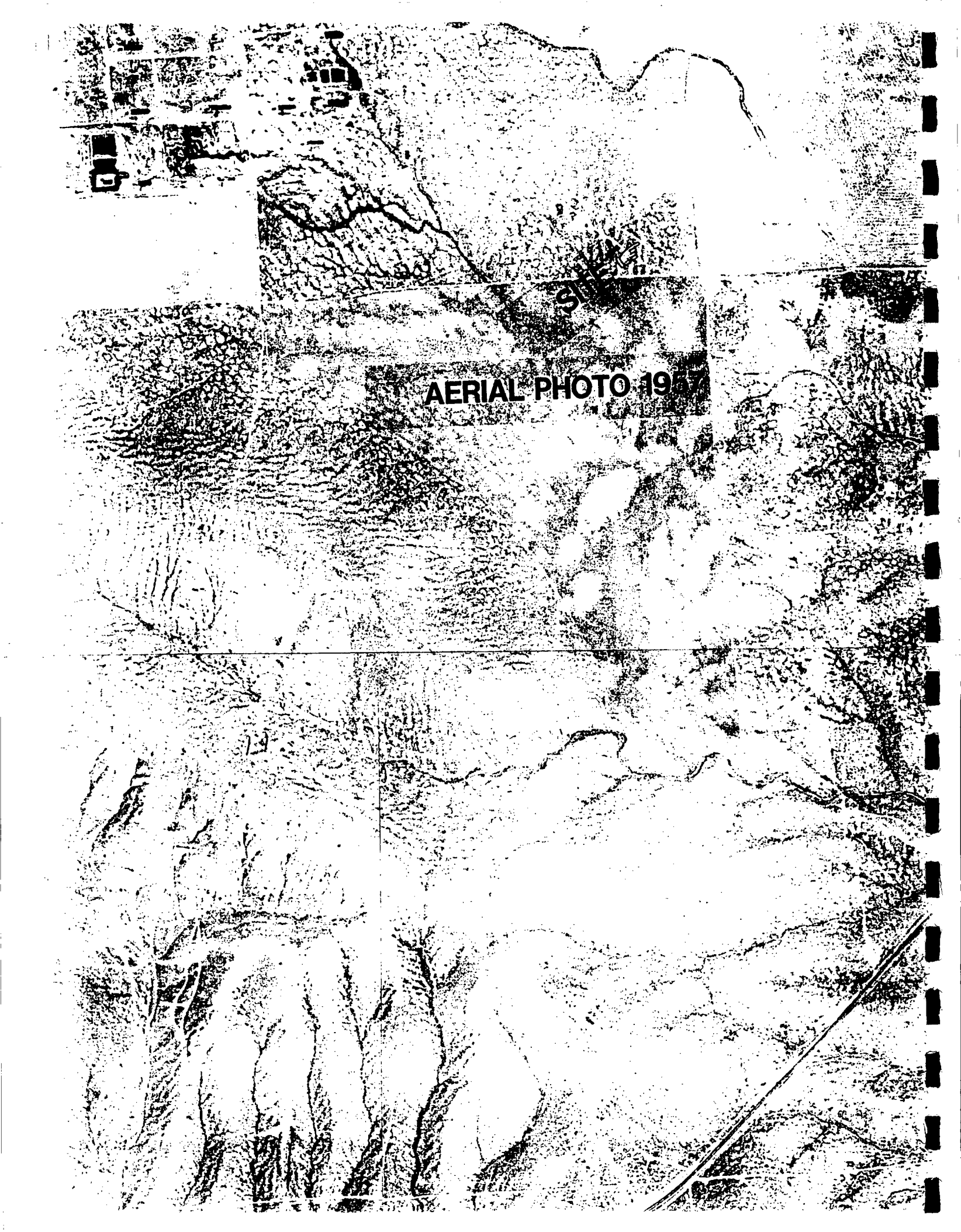
AERIAL PHOTO 1952


SITE
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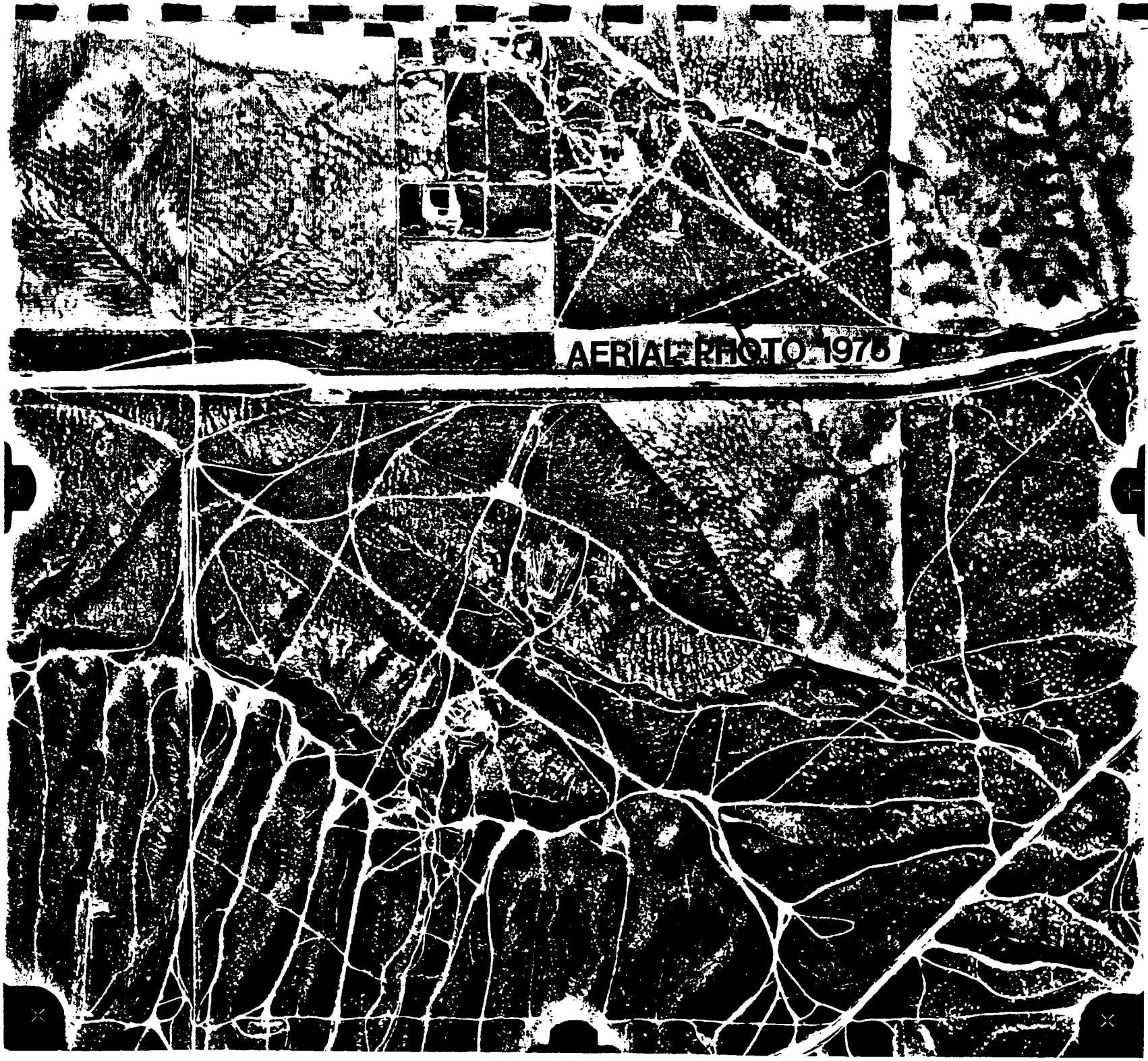

AERIAL PHOTO 1975

Appendix D

QA/QC Sheets

SE 1/4 of SE 1/4 of Sec. 18, T29S, R29E
Bakersfield, California

File No. 98-8477
February, 1998

QA/QC - FORM C-1
Specific Issues

Y/N	Issue	Y/N	Issue
N	Above Ground Storage Tank(s)	N	Underground Storage Tank(s)
N	Clarifiers	Y	Fill (Earth Berms)
N	Vent Pipes (irrigation lines)	N	Fuel Islands
N	Drums	N	Other Containers (Oil Tanks, Gas Scrubbers, Fertilizer Dispensers)
N	Surface Staining	N	Solid Waste Disposal
N	Sump	N	Pits
N	Ponds	N	Lagoons
N	Stockpiled Soils	N	Distressed Vegetation
N	Oil or Gas Wells	N	Monitoring Wells
N	Domestic Water Well	N	Dry Wells
N	Possible Underground irrigation lines	N	Chemical Process
N	Waste Treatment	N	Hazardous Waste Discharge
N	Septic Systems	N	Waste Water Discharge
N	Dry Cleaners	N	Repair or Servicing Facilities
N	Photo Processing	N	Manufacturing
N	Distribution Warehouse	N	Asbestos Containing Materials
N	High Radon Levels (See Geocheck Verson 2.1	N	Suspect Lead Containing Paint
N	Lead in Water	N	Others (Stand-pipe) See Footnote
N	Is/was heating fuel provided by on-site storage fuel oil?		
N	On-site use, disposal, treatment, storage, or emission, of significant quantities of hazardous materials or wastes.		
N	Evidence of any on-site release of hazardous materials which could impact the subject site?		
N	Evidence of any off-site release of hazardous materials which could impact the subject site?		

SE 1/4 of SE 1/4 of Sec. 18, T29S, R29E
Bakersfield, California

File No. 98-8477
February, 1998

QA/QC - FORM C-2
Historical Research

Source/Year	1997	1990	1985	1981	1975	1957	1952	1937	1920	1912	1905	1890	MORE
Title Search	X												
Aerial Photos		X			X	X	X	X					
Building Department Permits	X	X	X	X	X	X	X						
Building Department Plans													
Planning Department Records													
Fire Insurance Maps	N												
Oil and Gas Maps	X	X	X										
Fire Department Records	X	X	X										
UST Permits and Registrations	X	X	X	X									
Street Directories													
Observation (1998)	X												
Personal knowledge (1998)	X												
Others: Building Department Soil Test Records	X												
Personnel Interviews	X												

SE 1/4 of SE 1/4 of Sec. 18, T29S, R29E
Bakersfield, California

File No. 98-8477
February, 1998

QA/QC FORM C-3
AERIAL PHOTOGRAPH REVIEW

Concern	On-Site	Off-Site
Improvements	Vacant Land	Vacant Land, Oil Field Activities, Sumps
USE - Note evidence of:		
Above Ground Storage Tanks	N	Y
Fuel Islands	N	N
Drums	N	N
Other Containers	N	N
Surface Staining	N	N
Solid Waste Disposal/Land Fill	N	N
Pits, Ponds, Lagoons	N	Y
Stockpiled Soils	N	N
Distressed Vegetation	N	N
Wells	N	Y
Repair or Servicing Facilities	N	N
Industrial/Manufacturing	N	N
Warehouse	N	N
Gas Station	N	N
Others: Agricultural	Pos	Pos

Note: Not found where left blank

SE 1/4 of SE 1/4 of Sec. 18, T29S, R29E
Bakersfield, California

File No. 98-8477
February, 1998

QA/QC - FORM C-4
Exception Items

Areas Not Accessibility to	Available and Environmental. Data	Status of Documents and Agency Reviews	
Areas	**Restrictions**	**List of Documents Requested**	**Status of Availability**
Single Family Residence	Occupied	None	
Sewage Disposal Systems	In-Use Not available for Testing		

No Restrictions

RADIAN
CORPORATION

T
R

BAK NE 3

16845 Von Karman Ave.
Suite 100
Irvine, CA 92714
(714)261-8611

290-034-17-06
8 November 1993

Mr. Dan Kauffman
Chevron Real Estate Management Company
225 Bush Street
San Francisco, California 94104

Subject: Section 17 and Section 20 Closure Letter Report

Dear Dan:

This closure letter report documents the reabandonment activities and the excavation of hydrocarbon stained soils and a white chalky substance on Section 17, Township 29 South (T29S), Range 29 East (R29E) in Bakersfield, California completed by Chevron U.S.A. Inc. (Chevron) from 15 August to 15 September 1993. The well abandonment and excavation activities were completed by Chevron and subcontractors to Chevron. No remediation activities were required on the portion of Section 20 because the Phase I Environmental Site Assessment indicated no environmental concerns (oil wells, sumps, tank settings, etc.) on this section of property.

Well Reabandonment

Based on the review of California Division of Oil and Gas (CDOG) records and the Radian Corporation draft Phase IIA Sampling Investigation Report (September 1993), Chevron determined former oil wells 2-10, 4-7, and 14-17 on Section 17 would require reabandonment.

Well 2-10 was originally drilled to a total depth of 1,075 feet below ground surface (BGS) in 1944. The well was determined to be a dry hole and plugged with mud from its total depth to five feet BGS and capped with a cement plug. Reabandonment of well 2-10 began on 16 August 1993 and was completed on 3 September 1993. Muds were encountered from the top of casing to 493 feet BGS. Fill was encountered from 493 to 1,078 feet BGS. The wells was cleaned out, filled with cement, and the casing was cut off five feet BGS. Well 2-10 received CDOG approval on 15 September 1993.

Wells 4-7 and 14-17 were abandoned and received prior CDOG approval; however, casing stubs for these wells were not at least five foot BGS. A total of five feet of casing was cut off of well 4-7 and capped with cement and an identification plate. A total of two feet of casing was cut off of well 14-17 and capped with cement and an identification plate. Wells 4-7 and 14-17 received CDOG approval on 15 September 1993.

Chevron correspondence and documentation is provided in Attachment A and photographs of the well abandonment activities are provided in Attachment B. CDOG

approval forms are not available at this time and will be sent to your office as an addendum to this report when they become available. Chevron indicated that the forms would be available by December 1993.

Soil and White Chalky Substance Excavation

Hydrocarbon stained soil was observed adjacent to well 2-10 during prior excavation activities to locate the well casing. A white chalky substance and minor hydrocarbon stained soil was observed adjacent to well 14-17 during the Phase IIA Sampling Investigation.

On 1 and 2 September 1993, Chevron excavated and transported an estimated 120 cubic yards of hydrocarbon stained soil to Chevron's Road Mix Facility located on Section 15, T28S, R27E in Bakersfield, California. The hydrocarbon stained soil was recycled into road mix for use on Chevron roads.

On 2 through 9 September 1993, Chevron excavated and transported an estimated 160 cubic yards of the white chalky substance, cement, hydrocarbon stained soil, and pipe off site. The hydrocarbon stained soil and white chalky substance was transported to the Road Mix Facility and the cement and pipe was transported to Chevron's MCI junk pile located on Section 5, T29S, R28E in Bakersfield, California.

Chevron correspondence and documentation is provided in Attachment A and photographs of the excavation activities are provided in Attachment B.

If you have any questions, please don't hesitate to call.

Sincerely,

Jeffrey Hensel
Project Director

JH:pr

cc: Cathy Copeland (Chevron-Bakersfield)
Eric Solum (Chevron-Bakersfield)
Steven Merritt (Chevron-Bakersfield)
Eva A. Hett-Zachariou (Radian-Irvine)
File

RADIAN
CORPORATION

ATTACHMENT A

CHEVRON CORRESPONDENCE AND DOCUMENTATION

Chevron U.S.A. Inc.
3300 Monte Cristo Road, Bakersfield, CA 93308

October 4, 1993

SEC. 17, T29S/R29E
NON HAZARDOUS WASTE REMOVAL

Jeffrey Hensel
Radian Corporation
16845 Von Karman Ave, Suite 100
Irvine, Ca 92714

Dear Jeff:

Section 17, well #2-10: From 9/1/93 through 9/2/93, an estimated 120 cu yards of oily soil was hauled off to the Chevron's Road Mix Facility located in Bakersfield at Section 15, T28S/R27E. The material will be recycled into road mix for use on Chevron roads.

Section 17, well #14-17: From 9/2/93 through 9/9/93, and estimated 160 cu yards of cement, oily soil, drilling mud and junk pipe was hauled off. The oily soil and drilling mud was taken to Chevron's Road Mix Facility. The cement and junk pipe was taken to Chevron's MC I junk pile located at Section 5, T29S/R28E. The cut off 2' of casing pipe was hauled to junk pile. The well was replated and identified. The D.O.G. approved on 9/15/93.

Section 17, well #4-7: Five feet of casing was cut off, capped with cement, casing plated and identified. The D.O.G. approved on 9/15/93.

If you need more information, feel free to call me at (805) 392-3364.

Sincerely,

C.D. Copeland
C.D. COPELAND

Chevron U.S.A. Inc.
3300 Monte Cristo Road, Bakersfield, CA 93308

Bakersfield, California
September 2, 1993

Division of Oil and Gas
Mr. Dave Clark
4800 Stockdale Hwy, Suite 417
Bakersfield, CA 93309

Removal of Casing Stubs: Sec. 17, T29S/R29E and Sec. 19, T27S/R29E

Per our conversation of August 31, 1993, we intend to remove casing stubs as required to facilitate surface restoration on the following wells:

#14-17	Section 17
#4-7	Section 17
#61-19	Section 19
#3-6A	Section 19
#1-10A	Section 19
#5-6	Section 19

All wells were abandoned and received D.O.G. approval, however they do not meet our needs for having the stub 5' below ground level. With our needs met, they will still meet current D.O.G. abandonment requirements.

Each stub will be capped listing Chevron as the operator and the well number, in accordance with your requirements.

Michael Mollere

M. C. Mollere
Field Support Superintendent
Kern River Profit Center
392-3027

MCM/ksr

ZALCO LABORATORIES, INC.

Analytical & Consulting Services

Chevron U.S.A., Inc.
Kern River Production Department
3300 Monte Cristo Road
Bakersfield, CA 93308

Laboratory No: 37297
Date Received: 9-20-93
Date Reported: 9-24-93
P O #: M6 8029 WKOU
Ven #: 000253383-001

Attention: Cathy Copeland

Sample: Solid

Sample Description: Section 17, Well #14-17
Sampled by Cathy Copeland on 9-17-93

Constituents	mg/kg	MRL	Method
Petroleum Hydrocarbons	< 50	50	Sonicator/418.1

Qualitative Analysis of White Portion:

Sulfide Spot Test	Negative
Carbonate Spot Test	Positive
Sulfate Spot Test	Negative

Note: The white portion of the sample appears to be Calcium Carbonate, $CaCO_3$ solids. The pH of the solids when mixed with DI water is 7.0.

MRL = Minimum Reporting Level

Jim Etherton
Lab Operations Manager

JE/ccw

4309 Armour Avenue Bakersfield, California 93308
(805) 395-0539 FAX (805) 395-3069

ZALCO LABORATORIES, INC.

4309 Armour Avenue • Bakersfield, CA 93308
(805) 395-0539 Office

WORK ORDER

Zalco Lab # 024290 - 37297
P.O. # MG-8029-WKAL
Page 1 of 1 WS
Invoice # Doc # CHV

Company Chevron
Address 3300 Monte Cristo Rd
City Bkfld
State CA Zip 93308
Attention: Cathy Copeland
CC:

Bill To:

Telephone: 393-3364
FAX:

Collector's Name Dane
Date Collected 9-17-93
Time Collected

SPECIAL INSTRUCTIONS
Results by 9-24-93

Sample Description	Analysis Requested	Container * Size	Container * Type	Sample ** Type
Section 17, Well #14-17	Determine what white portion is: -scale -cement -gypsum TPH (on total)	Box		Soli

SAMPLES RECEIVED AT ZALCO:
Relinquished by: Cathy Copeland Received by: Debbie Title: Spv
Receipt Condition: OK Date: 9-20-93 Time: 0910 C.O.C.: Yes
AWR: NO Date: Terms: OA T&M: NO Quote:
Storage: Method of Disposal: Date: Initials:

CONTAINER KEY: * G - Glass P - Plastic M - Metal V - VOA O - Other
SAMPLE KEY: ** W - Water S - Soil G - Gas P - Petroleum O - Other
OFFICE - White LAB - Canary STORAGE - Blue CUSTOMER - Goldenrod WIP FILE - Pink

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

History of Oil or Gas Well

Operator Chevron USA, Inc. Field _____ County Kern

Well 2–10 Sec. 17 T 29S R 29E MD B & M

A.P.I. No. 04–029–32109 Name G. Matiuk Title Buisness Unit Manager

Date September 9 , 1993

Signature Michael Mollere for G. Matiuk

3300 Monte Cristo Road, Bakersfield, CA 93308 (805) 392–3027

History must be complete in all detail. Use this form to report all operations during drilling and testing of well or during redrilling or altering the casing, plugging or abandonment with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests and initial production date.

Date	
08/16/93	MIRU KPS #16. N/U BOPE. DRILL OUT F/SURFACE TO 4'. LOST RETURNS FIRST 3'.
08/17/93	CIRC MUD IN HOLE. HAD CMT & COARSE FIBER RETURN. DRILL OUT F/5'–300'. CIRC DOWN TO 430', LOST RETURNS. MIXED 7.5#/BBL LCM PILL W/ SAWDUST. RIH TO 430' & CIRC 60 BBL LCM IN HOLE BEFORE GETTING RETURNS. CIRC DOWN TO 493'. CIRC HOLE W/COMPLETE RETURNS.
08/18/93	RIH W/TBG, TAGGED FILL @ 493'. CLEAN OUT FILL TO 1078' ~~580'~~ WITH FULL RETURNS.
08/19/93	RIH W/TBG TO 1078'. JOE PERRICK WITH D.O.G. WAIVED WITNESSING OF PLUGS. WITNESSED CLEAN-OUT DEPTH + RIH W/O.E. TBG TO 1077', PUMPED 143 CF CLASS 'G' CMT, 8% GEL @ 13.5 PPG. DISPLACED CMT W/3 BBL WATER. TAG CMT @ 713'. RIH W/O.E. TBG TO 712', PUMPED 143 CF CLASS 'G' CMT + 8% GEL. DISPLACED WITH 1 BBL WATER. COMPLETE RETURNS THROUGHOUT JOB.
08/20/93	RIH W/O.E. TBG TO CMT @ 305'. CIRC HOLE CLEAN. LOST CIRC. STARTED GETTING RETURNS @ SURFACE 5' FROM WELL. PUMPED 143 CF CLASS 'G' CMT + 8% GEL, 1% CACL2 @ 13.5 PPG. DISPLACED WITH 1 BBL WATER. HAD RETURNS. RIH W/ TBG TO CMT @ 75', PUMPED 63 CF CLASS 'G' NEAT CMT @ 15.8 PPG. PUMP 25 CF CLASS 'G' NEAT CMT. DISPLACED WITH 1/2 BBL WATER. HAD FULL RETURNS TO SURFACE. N/D BOPE. RDMO.
09/03/93	CUT OFF CASING 5' BELOW G.L.

For additional information, contact M. C. Mollere @ 392–3027

OG–103

Chevron

Chevron U.S.A. Inc.

Proposal for Well Operations PRO-316

AFE NO. WKA3X508

Information Release: ☑ Routine ☐ Confidential ☐ Classified	API No. 04-029-32109		
Well Number 2-10	Property SECTION 17	Budget Category: ABANDONMENT	
Field KERN BLUFF AREA	Supt. Area A. H. VANCE	Well Classification ABANDONMENT	
Division WPC	County KERN / State CA	Operator CUSA	ORG Code
Est. Drlg. Days —	Est. Compl. Rig Days / Total Days 5	Prod. Unique PWKRKR	J.V.? ☐ Yes ☑ No
Type of Approvals Required: ☑ Yes ☐ Div. ☑ DOG ☐ COGS ☐ MMS ☐ BLM ☐ State Lands ☐ Other	Est. Depth 0	UCA LV2 LV3 LV4 LV5 LV6 / Code PWKRKR0100	J.V. Code / OP Comp. ☐ Dev ☑ Other
Title Clearance			Ref. No.

Proposal/Justification REABANDON WELL #2-10 ON SECTION 17

ACCOUNTING NOTE: THERE IS NO FIELD/LEASE CODE FOR THIS PROPERTY. PLEASE CLOSE TO PWKRKR (KERN RIVER AREA GENERAL). THIS PROPERTY IS NON-PRODUCING (SINCE 1940?) AND IS IN THE PROCESS OF BEING SOLD. THE WORK BEING PREFORMED IS REQUIRED TO PREPARE PROPERTY FOR SALE. ANY QUESTIONS SHOULD BE DIRECTED TO: KAREN HALLMARK CTN 392-3046

Orsted in budget 5/93

C-946-2 LINE

Item	Line			
Contract Drilling (Day Rate)	1	$ 5000		5000
Contract Drilling (Footage Rate)	2	$		
Supervision	4	$ 2500		2500
Company Drilling Equipment Use	5	$		
Fuel and Utilities	6	$		
Rigging Up and Down	8	$		
Drilling Fluids	9	$		
Well Supplies	10	$		
Transportation	11	$ 2500		2500
Directional Tools, Surveys and Services	12	$		
Drill String, Rentals and Bits	13	$ 1000		1000
Rentals and Services (STIM, CP INSPECTIONS, CATERING, ETC.)	14	$ 2000		2000
Other Subsurface Costs (PERF, SUCK..., POLLUTION CNTRL, ETC.)	15	$		
Coring	20	$		
Testing	21	$		
Logging—Wire Line	22	$		
Logging—Mud	23	$		
Casing, Tubing and Rods	30	$		
Subsurface Producing Equipment	31	$		
Cementing and Cement	32	$ 2000		2000
Fishing	40	$		
Drill Site Cost—Land	51	$ 6000		6000
Drill Site Cost—Water	52	$		
Surface Artificial Lift Equipment	53	$		
Surface Producing Costs (Tanks, treaters and lines)	54	$		
Total Field Estimate (Gross $)	56	$ 21,000		21,000
G&A (____% X $________)	62	$		
Total Estimated Cost of Project (line 56 + 62)	64	$		
Other Participants' Share (Line 56 x Participants' Working Int)		$		
Chevron Authorized Amount (Line 64 Less Other Participants' Share)		$ 21,000		21,000

MEMO: Total Tangible (Lines 30, 31, 53 & 54)	GROSS $	$		
Total Intangible (Line 64 Less Tangible)	GROSS $	$ 21,000		21,000

AFE SUMMARY	Total (GROSS $)	Partner's ____% Share	Chevron's 100 % Share	Budget Code	Capital Budget Amt. (NET $)
Original Authorization	$	$	$		
Previous Supplements	$	$	$		
This Supplement—No.:	$	$	$		
Totals	$ 21,000	$	$ 21,000	3XXOA	

Economic Data	P.I.	Production Data		Partner's Approval
First Yr. Oil Price $ ______ / Bbl.		Initial	B.D or MCF/D Req'd for	By:
First Yr. Gas Price $ ______ / MCF		BCPD	Yr. P.O.	
P.O. ______ Yrs. R.O.R. ______ %		MCF/D	R.O.R.	
O.P.I. @ ___% ______ Life ______ Yrs.		°API	O.P.I. @ ___%	Title
Net Disc'd Profit $		Decline Rates		Company
Reserves (Bbl. or MCF)				Date

Prepared by:	Date	DPC Endorsement	Date	DPC Endorsement	Date	Approved
CL MORRISON		KJ Hallmark	7/22/93			C L Morrison
Monitored by: MCM	7/20/93					Date

Printed in U.S.A.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS &
GEOTHERMAL RESOURCES

No. P493-2999

PERMIT TO CONDUCT WELL OPERATIONS

00 FIELD CODE
00 AREA CODE
--- NEW POOL
--- OLD POOL

Bakersfield, California
August 9, 1993

Gregory Matiuk
CHEVRON U.S.A. INC.
P. O. Box 1392
Bakersfield, CA 93302

Your proposal to re-abandon well 2-10, A.P.I. No. 029-32109, Section 17, T. 29S, R. 29E, MD B. & M., field, — area, — pool, Kern County, dated 8/2/93, received 8/2/93 has been examined in conjunction with records filed in this office.

DECISION: THE PROPOSAL IS APPROVED PROVIDED THAT:

1. Hole fluid of a quality and in sufficient quantity to control all subsurface conditions in order to prevent blowouts shall be used.

2. The well shall be equipped with a minimum 6" diverter system on the 13 3/8" casing.

3. All required downhole plugs shall have a minimum compressive strength of 1000 psi and a maximum liquid permeability of 0.1 md as outlined in the Supervisor's Notice to Operators dated January 8, 1990.

4. THIS DIVISION SHALL BE NOTIFIED:
   a. TO WITNESS the clean-out depth at 1075'.
   b. TO WITNESS the placing of the cement plug from 1075' to sfc.
   c. TO INSPECT the completed surface plug, including all annular spaces.

5. No change in the proposed program shall be made without prior approval of this Division.

NOTES:

1. All casings must be removed from at least 5 feet below ground level.
2. THIS DIVISION SHALL BE NOTIFIED TO INSPECT the cleaned up well site before final approval of abandonment will be issued.

Blanket Bond

William F. Guerard, Jr.
Acting State Oil & Gas Supervisor

Engineer Dave Clark
Phone (805) 322-4031

Hal Bopp, Deputy Supervisor

DC/rf

A copy of this permit and the proposal must be posted at the well site prior to commencing operations.
Records for work done under this permit are due within 60 days after the work has been completed or the operations have been suspended.

cc:
OG111

DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Notice of Intention to Abandon Well

FOR DIVISION USE ONLY			
CARDS	BOND	FORMS	
		OGD114	OGD121

SION OF OIL AND GAS

compliance with Section 3229, Division 3, Public Resources Code, notice is hereby given that it is our intention
bandon well #2-10, SECTION 17, API No. 04-029-32109,
17, T. 29S, R. 28E, M.D. B.&M., KERN BLUFF AREA Field, KERN County.
mencing work on the 3RD quarter, 1993.

resent condition of the well is: ABANDONED

tal Depth 1075'. TVD/MD; ED: 0'

Complete casing record, including plugs and perforations
sent Hole)

See attached program.

st produced ABANDONED IN 4/44
(Date) (Oil,B/D) (Gas, Mcf/D) (Water,B/D)

Or

st injected _____
(Date) (Oil,B/D) (Gas, Mcf/D) (Surface pressure)

Additional data for dry hole (Show depths):

5. Oil or gas shows

6. Stratigraphic markers:

7. Formation and age at total depth.

8. Base of fresh water sands _____

this a critical well according to the definition set forth. [ ] Yes [ ] No.

proposed work is as follows:

Please see attached well program.

*It is understood that if changes in in this plan become necessary, we are to notify you immediately.

ddress 3300 Monte Cristo
(Street)
akersfield Calif. 93308
(City) (State) (Zip)
elephone Number (805) 392-3027
(Area Code) (Number)

Chevron U.S.A.
(Name of Operator)
By G. MATIUK
(Print Name)
FOR G. MATIUK
(Signature) (Date)

MAILED TO D.O.G.

PLEASE CONTACT CHERYL MORRISON @ 392-3007. ADDITIONAL INFORMATION IS REQUIRED.

JUN 0 1993

REABANDONMENT PROGRAM

KERN RIVER PROFIT CENTER
FIELD SUPPORT GROUP

WELL NAME:	SECTION 17 #2-10
LOCATION:	S17 - T29S - R29E
API NO:	04-029-32109
CHARGE CODE:	~~TO BE ASSIGNED~~ PWKRKR
ELEVATION:	706' GL; 712' DF
BOPE:	CLASS II RR
TOTAL DEPTH:	1075' TVD/MD
PBTD:	NA
CASING:	13 3/8" @ 26'
PERFS/SLOTS:	NA
BASE OF FRESH WATER:	NA
TUBULARS:	NA
CASING CONDITION:	GOOD
WELL STATUS:	ABANDONED APRIL 20, 1944
LOGS:	IES 4/20/44
ESTIMATED COST:	$20,000

JUSTIFICATION

THE SUBJECT WELL WAS ORIGINALLY DRILLED TO A TD OF 1075' IN 1944. AFTER EXTENSIVE CORING AND LOGGING THE WELL WAS DETERMINED TO BE A DRY HOLE. CONSEQUENTLY IT WAS PLUGGED AND ABANDONED WITH 9.8#/G MUD FROM TD TO 5' WITH A CEMENT PLUG SET AT SURFACE. BECAUSE OF THE PROCEDURE USED TO P&A THIS WELL, IT IS PROPOSED THAT WE REENTER THIS WELL AND CLEAN OUT TO TD OR AS DEEP AS POSSIBLE (MINIMUM OF 350'). THEN, WE CAN P&A THE WELL PROPERLY BY SETTING CEMENT PLUGS TO SURFACE AND WELDING A 1/2" STEEL PLATE 5' BELOW GROUND LEVEL.

PROGRAM

1. CHECK CALIFORNIA D.O.G. PERMIT TO CONDUCT WELL OPERATIONS (OG 111). NOTE CONDITIONS SET FORTH AND DISCUSS ANY DISCREPANCIES BETWEEN PROGRAM AND APPROVAL NOTICE WITH OFFICE PRIOR TO BEGINNING OPERATIONS.

2. MIRU RIG. NU BOPS AND TEST PER CUSA SPECS. MI MP LINED BIN. HAVE 10 SX OF BENTONITE ON LOCATION TO USE TO CLEAN THE HOLE WHILE DRILLING IF NECESSARY.

3. PU 4 3/4" BIT, 4-3 1/8" DCS AND 2 7/8" WORKSTRING AND DRILL OUT THE CEMENT PLUG. CLEAN OUT THE WELL TO 1075' (MINIMUM OF 350'). IF UNABLE TO REACH PBTD, ADVISE THE D.O.G. OF CURRENT CONDITIONS AND

REQUEST APPROVAL TO ABANDON THE WELL FROM THE DEEPEST PRACTICAL DEPTH. DOCUMENT D.O.G. AMENDMENTS TO WELL PROGRAM ON REPORT.

4. EQUALIZE A CEMENT PLUG OF CL G + 8% GEL IN STAGES FROM CLEANOUT DEPTH TO A MINIMUM OF 100' (FINAL TOC). EQUALIZE A CEMENT PLUG OF CL G NEAT FROM 100' TO 5' BELOW SURFACE.

5. RDMO. ISSUE PRO 639 (ATTENTION FACILITIES REPRESENTATIVE) TO CUT OFF CASING STRINGS 5' BELOW GROUND LEVEL FOR D.O.G. TO INSPECT. FACILITIES WILL HANDLE SURFACE ABANDONMENT.

C.L. MORRISON

MCM
7/28/93

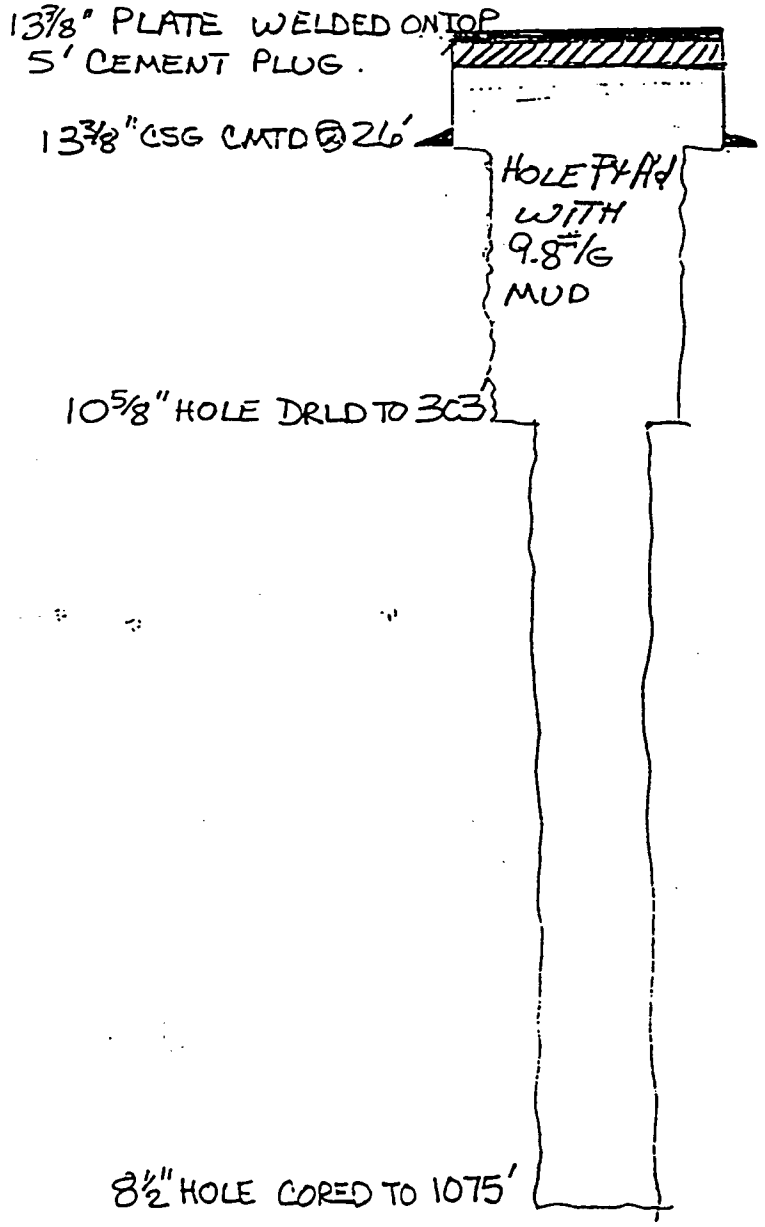
KERN BLUFF AREA

SECTION 17 #2-10

S17-T29S-R29E

GL ELEV: 705.76'

DF ELEV: 711.76'



SPUD 4/12/44

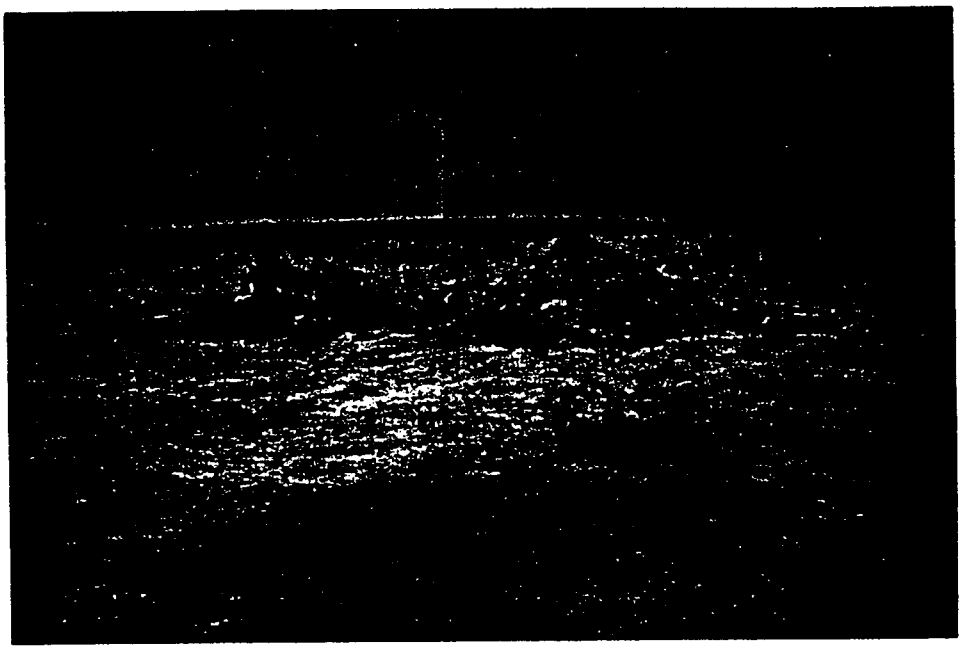
P&A'd 4/20/44

CLM 7/27/93

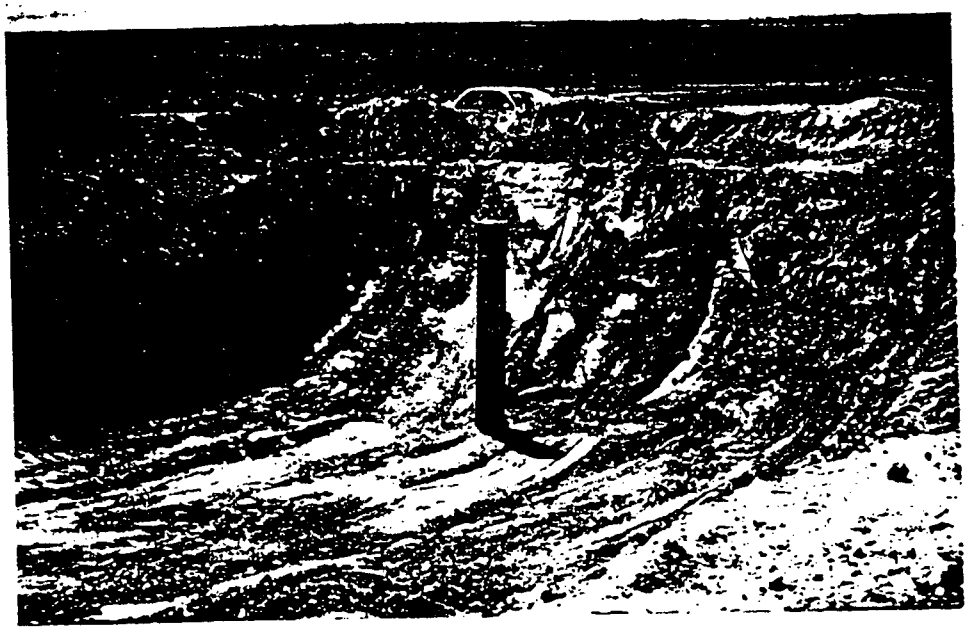
RADIAN
CORPORATION

ATTACHMENT B

PHOTOGRAPHS

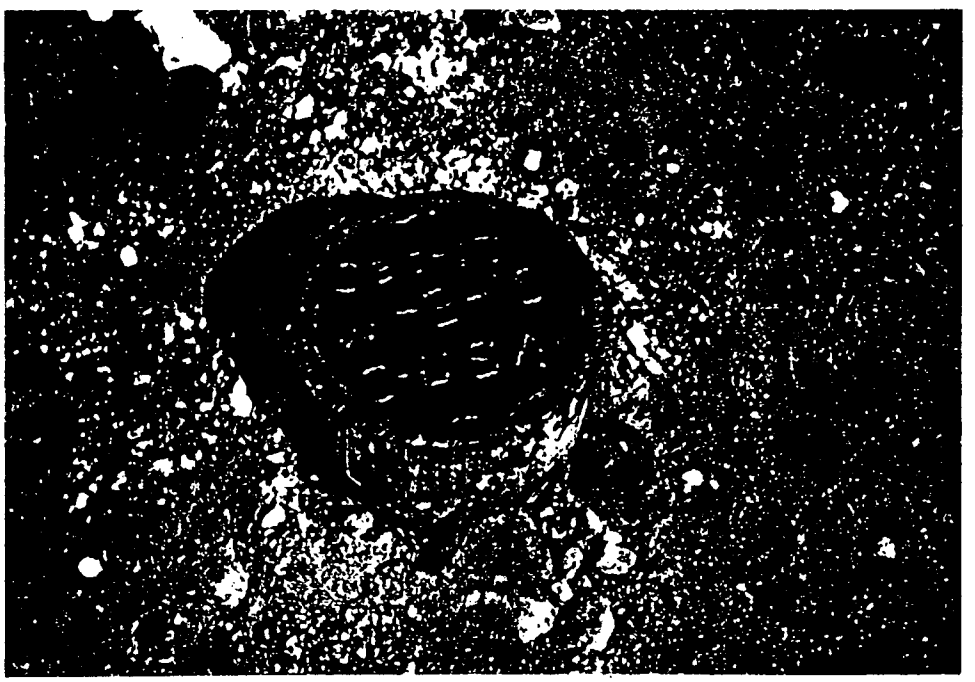


Casing and cement from abandonment activities at Well #2-10 location.

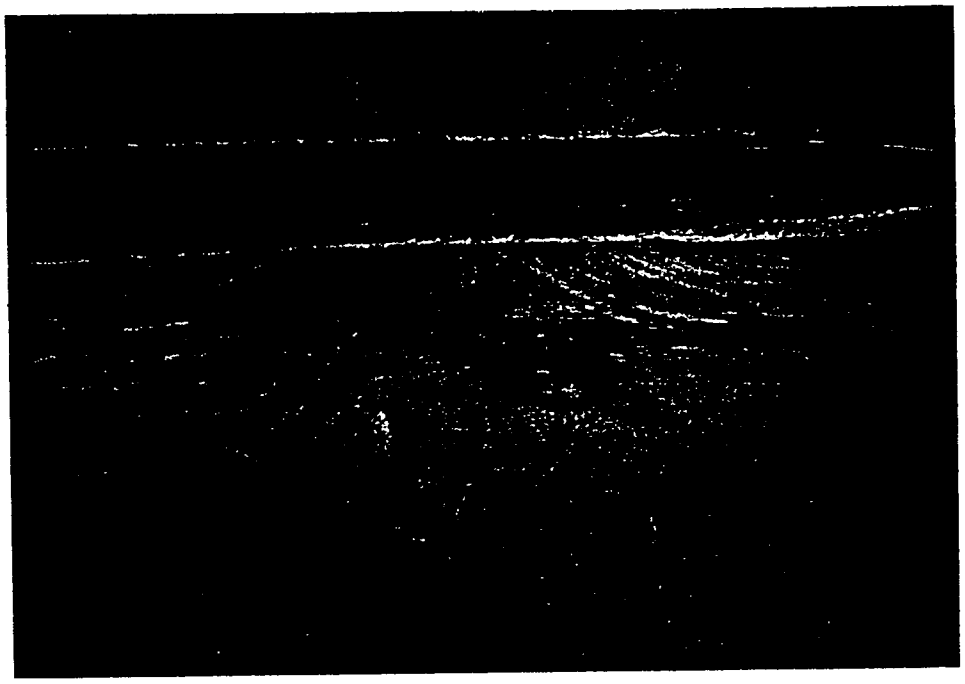


Well #2-10 after reabandonment.

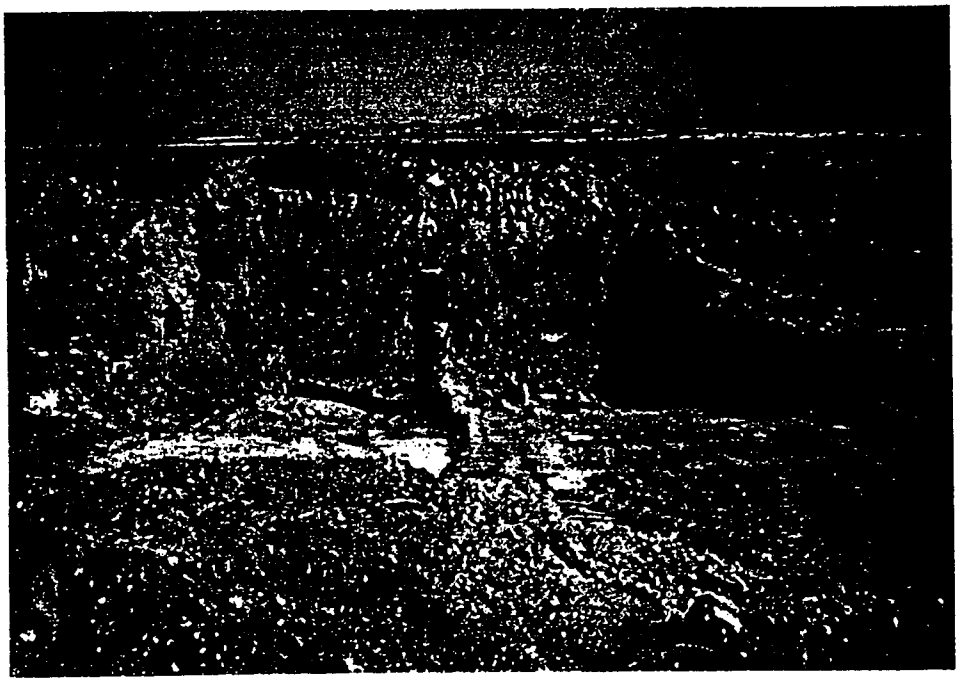
Well #2-10 casing cut approximately six feet BGS.



New identification plate for Well #2-10.



Final surface conditions at Well #2-10 location. Clean backfill was obtained from Chevron's Section 15 borrow pit.

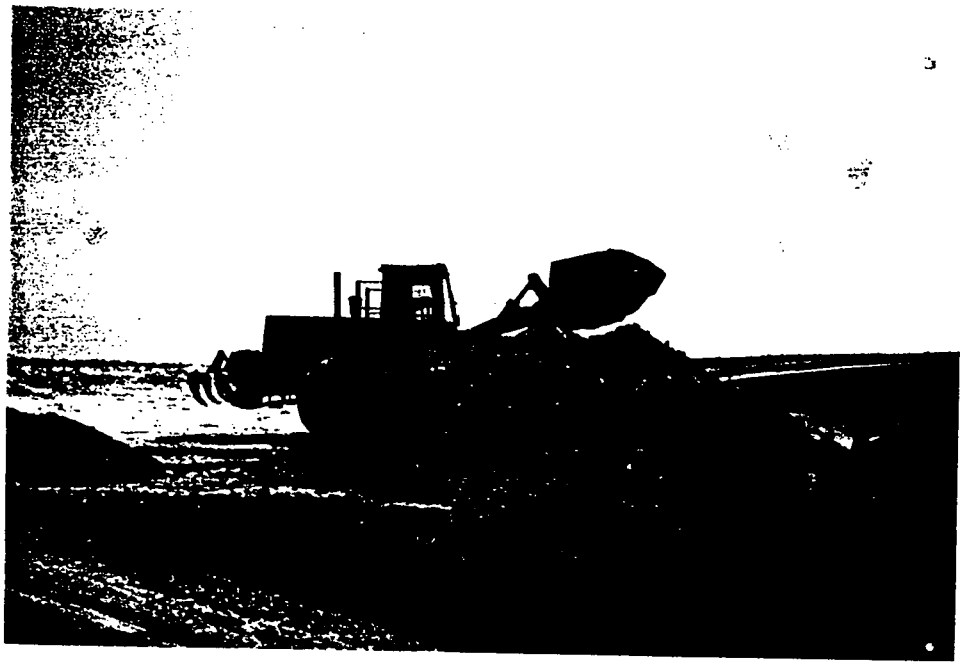


Well #4-7 casing prior to cutting of casing.

Well #4-7 casing cut approximately five feet BGS.

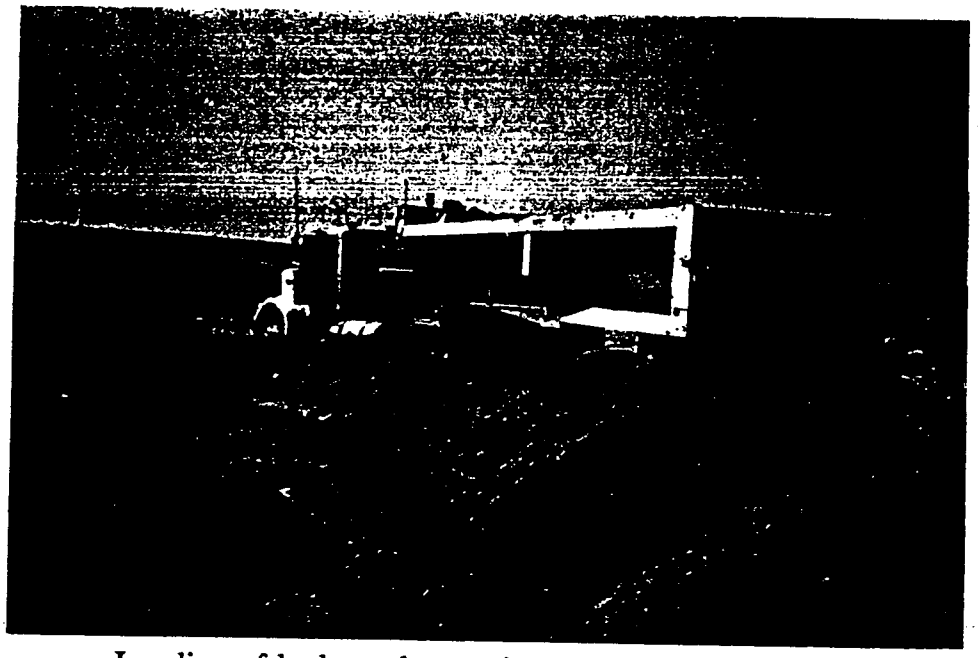
Well #14-17 casing prior to cutting of casing.

RADIAN
CORPORATION

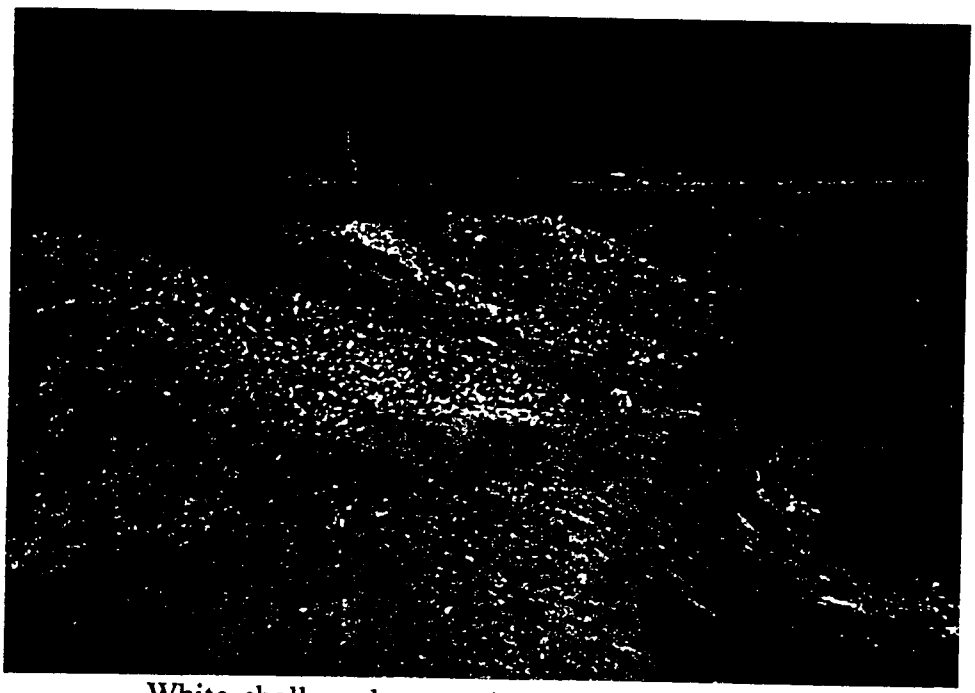


Excavation of hydrocarbon stained soil at Well #2-10.

Excavation of hydrocarbon stained soil at Well #2-10.

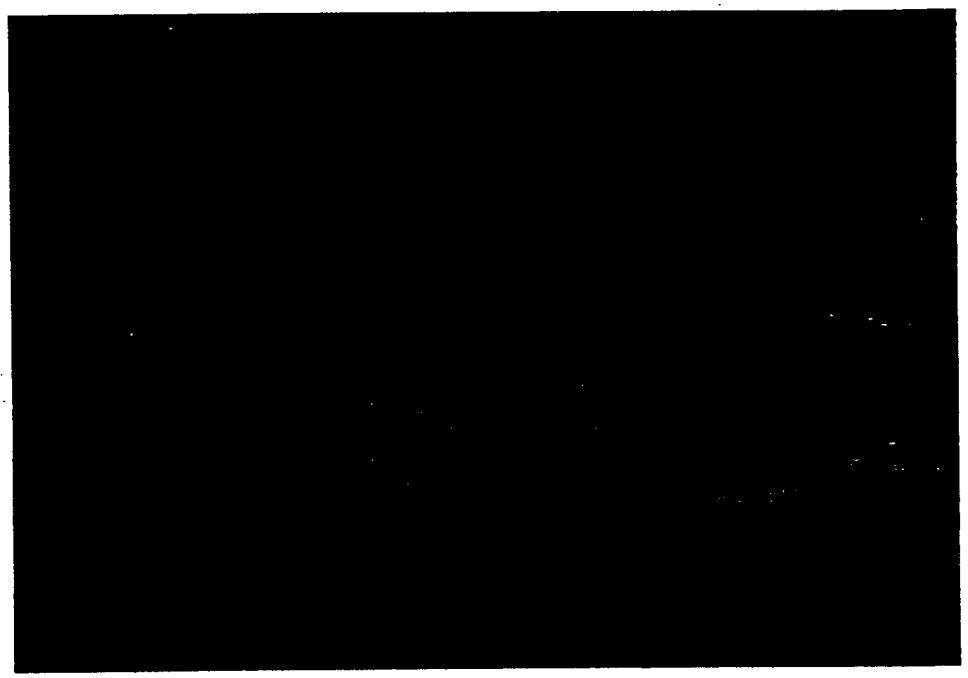


Loading of hydrocarbon stained soil at Well #2-10.



White chalky substance (arrows) at Well #14-17

RADIAN
CORPORATION



Excavation of hydrocarbon stained soil at Well #14-17.

SITE ASSESSMENT REPORT
CUSTOM

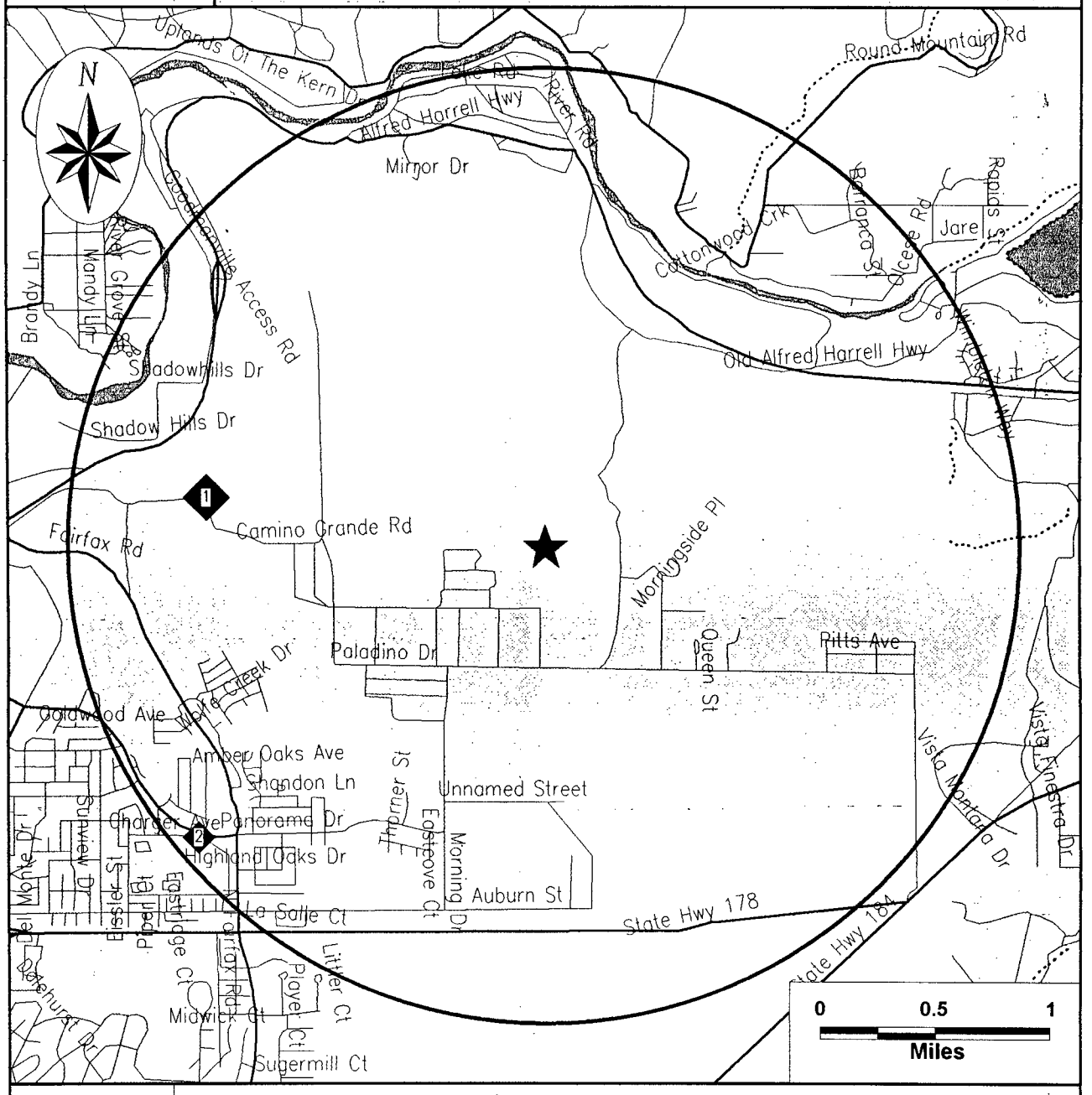
PROPERTY INFORMATION	CLIENT INFORMATION
Project Name/Ref #: Not Provided NE BAKERSFIELD WATER SERVICE AREA SEE MAP BAKERSFIELD, CA 93306 Latitude/Longitude: (35.420283, 118.906161)	JASON BRANDMAN MICHAEL BRANDMAN ASSOC-TUSTI 15901 REDHILL AVENUE TUSTIN, CA 92780

Site Distribution Summary

Agency / Database - Type of Records			within 2 miles
A) Databases searched to 2 miles:			
US EPA	NPL	National Priority List	0
US EPA	CORRACTS	RCRA Corrective Actions	0
US EPA	RCRA-TSD	RCRA permitted treatment, storage, disposal facilities	0
STATE	SPL	State equivalent priority list	0
STATE	SCL	State equivalent CERCLIS list	1
US EPA	CERCLIS/ NFRAP	Sites under review by US EPA	0
STATE/ REG/CO	LUST	Leaking Underground Storage Tanks	2
STATE/ REG/CO	SWLF	Solid waste landfills, incinerators, or transfer stations	0
STATE	NON ASTM	Additional federal, state and regional lists	3
US EPA	TRIS	Toxic Release Inventory database	0
STATE/ CO	UST	Registered underground storage tanks	1
STATE	AST	Registered aboveground storage tanks	0
US EPA	GNRTR	RCRA registered small or large generators of hazardous waste	0
US EPA	RCRA Viol	RCRA violations/enforcement actions	0
US EPA/ STATE	SPILLS	ERNS and state spills lists	0

SITE ASSESSMENT REPORT
CUSTOM

Map of Sites within 2 miles



Subject Site

Category: A

Single Sites

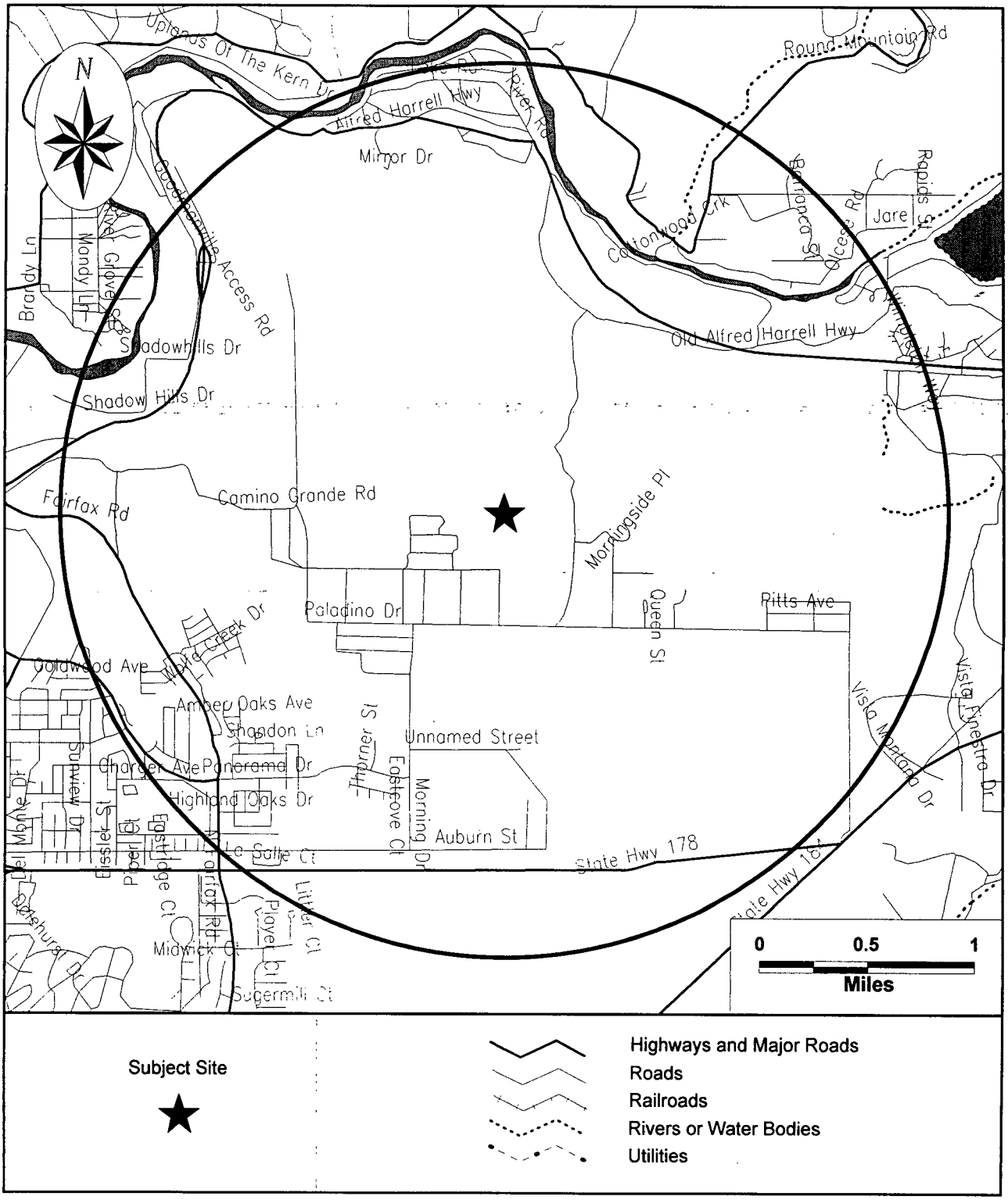
Multiple Sites

Highways and Major Roads
Roads
Railroads
Rivers or Water Bodies
Utilities

Categories correspond to database searches described in the Site Distribution Summary, beginning on Page #1.

SITE ASSESSMENT REPORT
CUSTOM

Street Map



SITE ASSESSMENT REPORT
CUSTOM

SITE INVENTORY

MAP ID	PROPERTY AND THE ADJACENT AREA (within 2 miles)	VISTA ID DISTANCE DIRECTION	A															
			NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	NON ASTM	TRIS	UST	AST	GNRTR	VIOL	SPILLS
1	OILDALE READY MIX ROCK PLT ALFRED HARRELL HWY BAKERSFIELD, CA 93308	3775416 1.42 MI W									X						
1	KERN CO LDFL ALFRED HARRELL HWY MCMINNIS EX BAKERSFIELD, CA 93308	3775415 1.42 MI W									X						
1	KERN COUNTY LANDFILL ALFRED HARELL HIGHWAY, MCMINNIS EXIT BAKERSFIELD, CA 93306	1158188 1.42 MI W					X										
1	WEBSTER SAND INC ALFRED HARRELL CHINA GRADE BAKERSFIELD, CA 93308	462860 1.42 MI W									X						
1	HART PARK ALFRED HARRELL BAKERSFIELD, CA 93301	3191729 1.42 MI W											X				
1	LAKE MING MARINA ? ALFRED HARRELL BAKERSFIELD, CA 93306	931113 1.42 MI W							X								
2	HIGHLAND HIGH SCHOOL 2900 ROYAL SCOTS WAY BAKERSFIELD, CA 93306	1222405 1.90 MI SW							X								

UNMAPPED SITES	VISTA ID	A															
		NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	NON ASTM	TRIS	UST	AST	GNRTR	VIOL	SPILLS
KERN FRONT SEC 35 PARTNERS KERN FRONT FIELD BAKERSFIELD, CA 93308	5713461									X						
KERN FRONT PRODUCTION FACILITY OILFIELDS BAKERSFIELD, CA 93308	3200392											X				
MIDWAY COGENERATION/ARCO S27 T31S R22E BAKERSFIELD, CA 93308	2242327									X						
VALLEY TREE AND CONSTRUCTION 7TH STANDARD AND QUINN RDS BAKERSFIELD, CA 93308	450626								X	X						
SAMMONS TRUCK STOP 7TH STANDARD RED HWY BAKERSFIELD, CA 93308	1254510											X				
WAIT STATION ? NORRIS RD EXT BAKERSFIELD, CA 93308	2746311							X								
TEXACO KERN FRONT SERVICE YARD 5605 CHESTER EXIT N BAKERSFIELD, CA 93308	2746333							X								
KCSO SHERIFF'S FACILITY ? INDUSTR. FARM LERDO HWY BAKERSFIELD, CA 93308	2746361							X								
JAMES ROAD PLT JAMES RD OILFIELD RD BAKERSFIELD, CA 93308	214724									X						
PACIFIC BELL SEC. 9 MC KITTRICK BAKERSFIELD, CA 93308	315594									X				X		
KERN RIVER LEASE WOODY/GLENVILLE BAKERSFIELD, CA 93308	1228989											X				
S S PUMP TOOL END OF EAGLE LN BAKERSFIELD, CA 93308	395599									X				X		
UNOCAL SVC STA #7225 7900 WEEDPATCH HWY RT 5 BAKERSFIELD, CA 93306	440629									X						
PUREGRO CO UNIT 147 9355 COPUS RD I 5 BAKERSFIELD, CA 93308	342394									X				X		
CHEVRON MOTOR TRANSPORT ? BAKERSFIELD TERMINAL BAKERSFIELD, CA 93308	1604407							X								

UNMAPPED SITES	VISTA ID	A														
		NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	NON ASTM	TRIS	UST	AST	GNRTR	VIOL	SPILLS
ARCO OIL OJAI PLT 18 SEC12 T4N R22W BAKERSFIELD, CA 93302	1600538									X				X		
W.B. CAMP SON - RANCH 12 HIGHWAY 99 BAKERSFIELD, CA 93308	1254338											X				
OPERATIONS MAINTENANCE CONTR COR OF MERCED AVE BAKERSFIELD, CA 93308	1225160											X				
KERN COUNTY AGRICULTURAL COMMISSIONER MINTER FIELD WAREHOUSE BAKERSFIELD, CA 93308	227220									X				X		
KERN FRONT OIL FIELD E OF HWY 65 N OF BAKERSFIELD BAKERSFIELD, CA 93308	227243					X				X						
RANCH 43, DR. R. BUTLER LERDO HWYU BAKERSFIELD, CA 93308	1254334											X				
STAR ROBINSON LEASE T28S, R27ESEC 22 BAKERSFIELD, CA 93308	931186							X								
TEXACO KERN FRONT SERVICE YARD T28S, R27ESEC 25 BAKERSFIELD, CA 93308	931187							X								
KERN RIVER GARAGE YARD T29S, R28ESEC 5 BAKERSFIELD, CA 93308	931188							X								
SHAFTER AIRPORT WATERPLANT ON F BAKERSFIELD, CA 93308	1233127											X				
RANCH 45 W.C. NOVEL LERDO BAKERSFIELD, CA 93308	1254333											X				
GRANITE CONSTRUCTION HWY 166 BAKERSFIELD, CA 93308	177959									X						
JUNIPER PETROLEUM CO JASMIN OI 20 MI N OF BAKERSFIELD, CA 93308	222897									X						
STEELE PETROLEUM MT POSO FLD SEC29 T26S R28E 12 MI NE OF BAKERSFIELD, CA 93308	398846									X						
GFS CO. SHOP MERCED BAKERSFIELD, CA 93308	1254336											X				

UNMAPPED SITES	VISTA ID	A														
		NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	NON ASTM	TRIS	UST	AST	GNRTR	VIOL	SPILLS
PACIFIC BELL 3 MI E/O OILDALE-GLENVILLE HW BAKERSFIELD, CA 93308	315718									X				X		
ROSEDALE RANCH 007TH STANDARD BAKERSFIELD, CA 93308	1218456											X				
GETTY OIL CO KERN RIVER FIELD T28S R28E T29S R28E N OF BAKERSFIELD, CA 93308	170540									X						
GETTY OIL CO KERN FRONT FIELD T28S R27E NW OF BAKERSFIELD, CA 93308	170539									X						
K C AIRPORTS DEPT 1401 SKYWAY DR 200 BAKERSFIELD, CA 93308	1295165											X				
ROBERT P. METTLER FARM TOWERLINE RD MULLE BAKERSFIELD, CA 93306	1222435											X				
GENERATEOR REHAB SITE 7TH STD RD AT SR 99 BAKERSFIELD, CA 93308	167730									X				X		
SUN EXPLORATION AND PRODUCTION KERN RIVER UNIT KERN COUNTY BAKERSFIELD, CA 93308	405353									X				X		
OILDALE READY MIX BATCH PLT GORDONS FERRY LOOP RD BAKERSFIELD, CA 93308	307538									X						
EDISON FIELD HADDAD #1 PANAMA LANE EDISON RD BAKERSFIELD, CA 93306	134884									X						
BFL-ATZT BAKERSFIELD AIRPORT BAKERSFIELD, CA 93308	1251631											X				
BALD MOUNTAIN RMLR BALD MOUNTAIN BAKERSFIELD, CA 93308	1251636											X				
SAN EMIDO NOSE OIL FLD SEC 8 T11N R21W SBBM BAKERSFIELD, CA 93300	367273						X			X						
7 ELEVEN STORE #26819 3124 N CHESTER AVE BAKERSFIELD, CA 93308	1262236											X				
OTT,JIM SON TRUCKING ROUTE 5 BOX 208 BAKERSFIELD, CA 93306	313100									X						

UNMAPPED SITES	VISTA ID	A														
		NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	NON ASTM	TRIS	UST	AST	GNRTR	VIOL	SPILLS
COMMUNITY NATIONAL BANK 1400 AIRPORT DR BAKERSFIELD, CA 93306	89367									X						
ALMOND HULLER 1-3/4 MI NO OF FAMOS BAKERSFIELD, CA 93308	4026926											X				
TENNECO A TANK FARM T295,R27E SEC 29 BAKERSFIELD, CA 93308	4044180											X				
MECCA TANK ? CHINA GRADE MANOR BAKERSFIELD, CA 93308	6603671							X								
BAKER TANKS T 27S R 21E SEC 4 BAKERSFIELD, CA 93308	4044182											X				
BIDART BROTHERS FEED LOT HWY 99 METTLER BAKERSFIELD, CA 93381	5715206									X						
JACO OIL CO. 3101 STATE BAKERSFIELD, CA 93308	3203448											X				
RUSSELL RANCH RUSSELL RANCH LEASE BAKERSFIELD, CA 93308	5717101									X						
PRIDE PETROLEUM SERVICE INC 18850 ORANGEBELT HWY BAKERSFIELD, CA 93308	3200546									X			X	X		
ARTHUR MCADAMS 24001 ROUND MOUNTAIN RD BAKERSFIELD, CA 93308	5714833									X						
UNION CEMETERY ASSOCIATION KING POTOMAC STS BAKERSFIELD, CA 93385	4038954											X				
UNOCAL SEC 14 T32S R23E BAKERSFIELD, CA 93308	5717431									X						
MT ADELAIDE T29S, R30ESEC 3 BAKERSFIELD, CA 93306	6605392							X								
TEXACO KERN FRONT SERVICE YARD 5605 CHESTER EXIT N. BAKERSFIELD, CA 93308	5352971									X						
ANCORA VERDE CORP FRUITVALE MT VIEW OILFIELDS BAKERSFIELD, CA 93308	5715169									X						

UNMAPPED SITES	VISTA ID	A															
		NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	NON ASTM	TRIS	UST	AST	GNRTR	VIOL	SPILLS
GRANITE CONST HWY 23 3 MI E OF ARVIN BAKERSFIELD, CA 93308	5708184									X						
LOST HILLS AIRPORT 1-2 MI N HO HWY 46 E BAKERSFIELD, CA 93308	4028839											X				
M.H. WHITTIER - HEAVY OIL WESTERN S15 T31S R22E BAKERSFIELD, CA 93302	5718491									X						
PALOMA FARMS-SUBLEASED EMPIRE 1-2 MI E OF HL RD ON BAKERSFIELD, CA 93308	4029104											X				
CHALK CLIFF LTD S31 T32S R24E BAKERSFIELD, CA 93308	5718493									X						
UNION CARBIDE CHEMICALS PLASTICS 1431 UNION AVE BAKERSFIELD, CA 93302	5719121									X						
KC SHERRIFS LERDO FACILITY INDUSTRIAL FARM BAKERSFIELD, CA 93308	4030387											X				
TEXACO T29S, R28ESEC 4 BAKERSFIELD, CA 93308	6352739							X								
JOHN F. ETCHEVERRY RR 11 BOX BAKERSFIELD, CA 93308	4021157											X				
ELGIN AKINS RR 1 BOX BAKERSFIELD, CA 93308	4021153											X				
CALCRETE CO 4701 WIBBLE RD BAKERSFIELD, CA 93302	65831									X						
BEAR MOUNTAIN LIMITED SUPPLIMENTAL APN 436-060-11 SEC 12, T29S, R28E MD BAKERSFIELD, CA	6830906								X							
DOUBLE 'C' LTD 10245 OILFIELD RD S11 T28S R27E BAKERSFIELD, CA 93308	5715628									X						
KERN RIVER REFUSE DISPOSAL SIT 1 ML. N/E OF CHINA GRADE LOOP BAKERSFIELD, CA 93308	4825270								X							
KCSO SHERIFF'S FACILITY INDUSTR. FARM LERDO HWY BAKERSFIELD, CA 93308	5355657									X						

UNMAPPED SITES	VISTA ID	A															
		NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	NON ASTM	TRIS	UST	AST	GNRTR	VIOL	SPILLS
ADMINISTRATION BUILDING P O BOX BAKERSFIELD, CA 93302	4037453											X				
ARCO AM/PM MINI MART 33500 7TH STANDARD RD BAKERSFIELD, CA 93308	4017478											X				
JOHNNY QUIK MARKET 6445 7TH STANDARD BAKERSFIELD, CA 93308	4017477											X				
LOST HILLS FLYING SERVICE LOST HILLS AIRPORT BAKERSFIELD, CA 93308	4032465											X				
SOUND MOUNTAIN DISPOSAL ROUND MOUNTAIN RD NEAR CY BAKERSFIELD, CA 93308	3767584									X						
AL'S MINI MART 465 011TH BAKERSFIELD, CA 93308	4015632											X				
KERN FRONT DISPOSAL SITE T28S, R27E, SECTION 27 BAKERSFIELD, CA	6832435								X							
TEXACO REFINING AND MARKETING S27 T29S R27E BAKERSFIELD, CA 93302	3768572									X						
DEXZEL INC 400 S HOPE BAKERSFIELD, CA 93308	5712742									X						
UNOCAL S18 T30S R22E MCKITTRICK PUMP STATION BAKERSFIELD, CA 93308	5714349									X						
UNOCCUPIED BLDG 1300 AIRPORT DR BAKERSFIELD, CA 93308	5351547									X						
AM PM MINI MART #5657 35300 7TH STANDARD RD BAKERSFIELD, CA 93308	6960088											X				
K C AIR 1550 SKYLINE BAKERSFIELD, CA 93308	4041684											X				
TEXACO T29S, R28ESEC 4 BAKERSFIELD, CA 93308	3983151							X								
BAKERSFIELD ENERGY RESOURCES LIGHT OIL WESTERN STA.SOURCE BAKERSFIELD, CA 93308	6921692									X						

UNMAPPED SITES	VISTA ID	A														
		NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	NON ASTM	TRIS	UST	AST	GNRTR	VIOL	SPILLS
WILD WEST ENERGY ROUND MOUNTAIN OILFIELD BAKERSFIELD, CA 93308	6921694									X						
MT ADELAIDE T29S, R30ESEC 3 BAKERSFIELD, CA 93306	3983099							X								
JOHNNY QUICK #145 35301 7TH STANDARD RD BAKERSFIELD, CA 93308	7250148											X				
LERDO QUALITY RANCH #4 ? LERDO HWY S QUANTITY RD BAKERSFIELD, CA 93308	3982453							X								
CHEVRON USA GAS PLNT MT VIEW BAKERSFIELD, CA 93308	6922500									X						
TEXACO T292 R283 SEC 4 BAKERSFIELD, CA 93308	5359192									X						
CCM TRK SERVICE INC 18803 ORANGE BELT HWY BAKERSFIELD, CA 93308	6922533									X						
HAPPY GAS TAFT HIGHWAY WIBLE BAKERSFIELD, CA 93308	3204667											X				
EMJAYCO CENTRAL OILFIELDS BAKERSFIELD, CA 93306	5710080									X						
STA. 188-01 BETWEEN KREBS RD M BAKERSFIELD, CA 93308	3199462											X				
GARY DRILLING MCKITTRICK FIELD S18 T30S R22E BAKERSFIELD, CA 93308	5714350									X						
AGRI FORMULATIONS CORP 7TH STANDARD RD HWY 99 BAKERSFIELD, CA 93308	8258									X				X		
CHEVRON USA INC KERN STA PEGASUS RD BAKERSFIELD, CA 93308	82062									X				X		
TRI-COUNTY SERVICES 2525 MONTE CRISTO BAKERSFIELD, CA 93308	6961129											X				
TEXACO E AND P INC KERN FRONT N CHESTER EXT 6605 BAKERSFIELD, CA 93308	4061570									X				X		

UNMAPPED SITES	VISTA ID	A															
		NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	NON ASTM	TRIS	UST	AST	GNRTR	VIOL	SPILLS
CITY OF BAKERSFIELD MATERIALS PROCES 2700 S. MT. VERNON AVENUE BAKERSFIELD, CA 93306	7240580								X							
EXXON CO USA EDISON FIELD RT 5 TEJON HWY AND HERMOSA RD E OF BAKER BAKERSFIELD, CA 93308	3197115									X						
BAKERSFIELD DISTRICT PRODUCTIO CHINA GRADE LOOP BAKERSFIELD, CA 93388	3193364											X				
UNION OIL STATION LERDO HWY BAKERSFIELD, CA	5355656									X						
MCFARLAND-DELANO TRANSFER STATION 11249 STADLEY AVE. BAKERSFIELD, CA	7240758								X							
SHAFTER - H2O BOOSTER PUMP 5810 EARHART BAKERSFIELD, CA	7250630											X				
TEXACO KERN FRONT SERVICE YARD 5605 CHESTER EXIT N BAKERSFIELD, CA 93308	4050981							X								
LAKEVIEW SUBSTATION CORPUS RD. VAL PRADO RD. BAKERSFIELD, CA	3996882												X			
CHEVRON USA INC KERN RIVER OIL FIELD RTE 1 KERN RIVER OIL FLD BAKERSFIELD, CA 93308	82061									X				X		
P G E ROSEDALE HWY COFFEE RD BAKERSFIELD, CA 93308	5709360									X						
MALIBU VINYARD IMPERIAL SACO RD BAKERSFIELD, CA 93308	5357563									X						
BURREL BAKERSFIELD, CA 93306	7004737								X							
SAMMONS TRUCK STOP HWY 99 7TH STANDARD BAKERSFIELD, CA	6960085											X				
PIUTE FIRE STATION 16001 WALKER BASIN BAKERSFIELD, CA 93308	4046705											X				
ARCO OIL TIMBER CANYON COMPRESSOR PLT SEC 14 T4N R23E BAKERSFIELD, CA 93302	3978902									X				X		

UNMAPPED SITES	VISTA ID	A														
		NPL	CORRACTS	TSD	SPL	SCL	CERCLIS/NFRAP	LUST	SWLF	NON ASTM	TRIS	UST	AST	GNRTR	VIOL	SPILLS
CHAPARAL OIL CO 1021 CHESTER BAKERSFIELD, CA 93302	77338									X						
SEPTAGE II-2 SWDS WEEDPATCH AREA BAKERSFIELD, CA	4826809								X							
ARCO OIL CLA WATER INJECTION PLT #2 SEC 34 T30S R25E BAKERSFIELD, CA 93302	3978893									X				X	X	
GRANITE CONSTRUCTION CO. YARD ? JAMES RD BAKERSFIELD, CA 93308	1585650							X								
BAKERSFIELD VORTEC EHF ? MINTER FIELD BAKERSFIELD, CA 93308	1606854							X								
UNION OIL STATION ? LERDO HWY BAKERSFIELD, CA 93308	931149							X								

SITE ASSESSMENT REPORT
CUSTOM

DETAILS

PROPERTY AND THE ADJACENT AREA (within 2 miles)

VISTA Address*:	OILDALE READY MIX ROCK PLT ALFRED HARRELL HWY BAKERSFIELD, CA 93308	VISTA ID#:	3775416	Map ID 1
		Distance/Direction:	1.42 MI / W	
		Plotted as:	Point	
FINDS - Facility Index System / SRC# 4168		EPA ID:	CAD980357016	

Agency Address:	*OILDALE READY MIX ROCK PLT ALFRED HARRELL HWY BAKERSFIELD, CA 93307*		
Indian Land:	*UNKNOWN*	**Federal Facility:**	*UNKNOWN*
Duns #:	*604149161*		
SIC Code:	*NOT REPORTED NOT REPORTED*		
Program Name:	*FACILITY ACTIVE INDEX RECORD*		
Program Name:	*FACILITY SUBSYSTEM/AEROMETRIC INFO. (AIRS)*		
Agency ID:	*0602900512*		
Program Name:	*FACILITY ACTIVE DB RECORD*		
Agency ID:	*604149161*		

VISTA Address*:	KERN CO LDFL ALFRED HARRELL HWY MCMINNIS EX BAKERSFIELD, CA 93308	VISTA ID#:	3775415	Map ID 1
		Distance/Direction:	1.42 MI / W	
		Plotted as:	Point	
FINDS - Facility Index System / SRC# 4168		EPA ID:	CAD980636849	

Agency Address:	*KERN CO LDFL ALFRED HARRELL HWY MCMINNIS EX BAKERSFIELD, CA 93306*		
Indian Land:	*UNKNOWN*	**Federal Facility:**	*UNKNOWN*
Duns #:	*NOT REPORTED*		
SIC Code:	*NOT REPORTED NOT REPORTED*		
Program Name:	*FACILTIY INACTIVE INDEX RECORD*		

VISTA Address*:	KERN COUNTY LANDFILL ALFRED HARELL HIGHWAY, MCMINNIS EXIT BAKERSFIELD, CA 93306	VISTA ID#:	1158188	Map ID 1
		Distance/Direction:	1.42 MI / W	
		Plotted as:	Point	
SCL - State Equivalent CERCLIS List / SRC# 4543		Agency ID:	15490013	

Agency Address:	*SAME AS ABOVE*
Status:	*UNKNOWN*
Facility Type:	*NOT AVAILABLE*
Lead Agency:	*UNKNOWN*
State Status:	*REFERRED TO ANOTHER AGENCY*
Pollutant 1:	*UNKNOWN*
Pollutant 2:	*UNKNOWN*
Pollutant 3:	*UNKNOWN*

VISTA Address*:	WEBSTER SAND INC ALFRED HARRELL CHINA GRADE BAKERSFIELD, CA 93308	VISTA ID#:	462860	Map ID 1
		Distance/Direction:	1.42 MI / W	
		Plotted as:	Point	
FINDS - Facility Index System / SRC# 4168		EPA ID:	CAD982037608	

Agency Address:	*SAME AS ABOVE*		
Indian Land:	*UNKNOWN*	**Federal Facility:**	*NO*
Duns #:	*002772416*		
SIC Code:	*1442 MINE-CONSTRUCTION SAND GRAVEL*		
Program Name:	*FACILITY ACTIVE INDEX RECORD*		
Program Name:	*HAZARDOUS WASTE (RCRIS)*		
Agency ID:	*CAD982037608*		
Program Name:	*FACILITY ACTIVE DB RECORD*		
Agency ID:	*002772416*		

VISTA Address*:	HART PARK ALFRED HARRELL BAKERSFIELD, CA 93301	VISTA ID#:	3191729	Map ID 1
		Distance/Direction:	1.42 MI / W	
		Plotted as:	Point	
STATE UST - State Underground Storage Tank / SRC# 1612		EPA/Agency ID:	N/A	

Agency Address:	*HART PARK ALFRED HARRELL BAKERSFIELD, CA 93308*		
Underground Tanks:	*2*		
Aboveground Tanks:	*NOT REPORTED*		
Tanks Removed:	*NOT REPORTED*		
Tank ID:	*1U*	**Tank Status:**	*CLOSED REMOVED*
Tank Contents:	*UNLEADED GAS*	**Leak Monitoring:**	*UNKNOWN*
Tank Age:	*NOT REPORTED*	**Tank Piping:**	*BARE STEEL*
Tank Size (Units):	*1000 (GALLONS)*	**Tank Material:**	*BARE STEEL*
Tank ID:	*2U*	**Tank Status:**	*CLOSED*
Tank Contents:	*DIESEL*	**Leak Monitoring:**	*UNKNOWN*
Tank Age:	*NOT REPORTED*	**Tank Piping:**	*UNKNOWN*
Tank Size (Units):	*750 (GALLONS)*	**Tank Material:**	*BARE STEEL*

VISTA Address*:	LAKE MING MARINA ? ALFRED HARRELL BAKERSFIELD, CA 93306	VISTA ID#:	931113	Map ID 1
		Distance/Direction:	1.42 MI / W	
		Plotted as:	Point	
STATE LUST - State Leaking Underground Storage Tank / SRC# 4548		EPA/Agency ID:	N/A	

Agency Address:	*SAME AS ABOVE*
Leak ID#:	*5T15000005*
Leak Report Date:	*19870819*
Substance:	*GASOLINE*
Remediation Status:	*CASE CLOSED*
Media Affected:	*SOIL ONLY*

STATE LUST - State Leaking Underground Storage Tank / SRC# 4704		EPA/Agency ID:	N/A
Agency Address:	*SAME AS ABOVE*		
Facility ID:	*5T15000005*		
Substance:	*GASOLINE*		
Remediation Status:	*CASE CLOSED BY COUNTY/LIA OR LOP.*		
Media Affected:	*SOIL CONTAMINATION.*		

PROPERTY AND THE ADJACENT AREA (within 2 miles) CONT.

Lead Agency Contact:	*YP*
Agency Contact:	*YP*
Responsible Party:	*K.C. PARKS*
Description / Comment:	*NO, THERE IS NOT A LOCAL OVERSIGHT PILOT PROGRAM.*

VISTA Address*:	**HIGHLAND HIGH SCHOOL** **2900 ROYAL SCOTS WAY** **BAKERSFIELD, CA 93306**	VISTA ID#:	1222405
		Distance/Direction:	1.90 MI / SW
		Plotted as:	Point

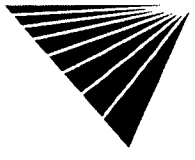
Map ID **2**

STATE LUST - State Leaking Underground Storage Tank / SRC# 4548	EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Leak ID#:	*5T15000315*
Leak Report Date:	*19900517*
Substance:	*GASOLINE*
Remediation Event:	*OT*
Remediation Status:	*CASE CLOSED*
Media Affected:	*SOIL ONLY*

STATE LUST - State Leaking Underground Storage Tank / SRC# 4704	EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Facility ID:	*5T15000315*
Substance:	*GASOLINE*
Remediation Status:	*CASE CLOSED BY COUNTY/LIA OR LOP.*
Media Affected:	*SOIL CONTAMINATION.*
Lead Agency Contact:	*YP*
Agency Contact:	*YP*
Responsible Party:	*KERN HIGH*
Description / Comment:	*NO, THERE IS NOT A LOCAL OVERSIGHT PILOT PROGRAM.*



UNMAPPED SITES

VISTA Address*:	VALLEY TREE AND CONSTRUCTION 7TH STANDARD AND QUINN RDS BAKERSFIELD, CA 93308	VISTA ID#:	450626
STATE SWLF - Solid Waste Landfill / SRC# 4705		Agency ID:	15-AA-0153
Agency Address:	*VALLEY TREE CONSTRUCTION DISPOSL S 4233 QUIN ROAD BAKERSFIELD, CA*		
Facility Type:	*TRANSFER STATION*		
Facility Status:	*ACTIVE*		
Permit Status:	*PERMITTED/LICENSED*		

VISTA Address*:	WAIT STATION ? NORRIS RD EXT BAKERSFIELD, CA 93308	VISTA ID#:	2746311
STATE LUST - State Leaking Underground Storage Tank / SRC# 4548		EPA/Agency ID:	N/A
Agency Address:	*SAME AS ABOVE*		
Leak ID#:	*5T15000412*		
Leak Report Date:	*19910319*		
Substance:	*WASTE OIL*		
Remediation Status:	*CASE CLOSED*		
Media Affected:	*SOIL ONLY*		
STATE LUST - State Leaking Underground Storage Tank / SRC# 4704		EPA/Agency ID:	N/A
Agency Address:	*SAME AS ABOVE*		
Facility ID:	*5T15000412*		
Substance:	*WASTE OIL*		
Remediation Status:	*CASE CLOSED BY COUNTY/LIA OR LOP.*		
Media Affected:	*SOIL CONTAMINATION.*		
Lead Agency Contact:	*YP*		
Agency Contact:	*YP*		
Responsible Party:	*CHEVRON PI*		
Description / Comment:	*NO, THERE IS NOT A LOCAL OVERSIGHT PILOT PROGRAM.*		

VISTA Address*:	TEXACO KERN FRONT SERVICE YARD 5605 CHESTER EXIT N BAKERSFIELD, CA 93308	VISTA ID#:	2746333
STATE LUST - State Leaking Underground Storage Tank / SRC# 4704		EPA/Agency ID:	N/A
Agency Address:	*SAME AS ABOVE*		
Facility ID:	*5T15000443*		
Substance:	*GASOLINE*		
Remediation Status:	*NO ACTION TAKEN.*		
Media Affected:	*UNDEFINED.*		
Lead Agency Contact:	*YP*		
Agency Contact:	*YP*		
Responsible Party:	*TEXACO*		
Description / Comment:	*NO, THERE IS NOT A LOCAL OVERSIGHT PILOT PROGRAM.*		

UNMAPPED SITES CONT.

VISTA Address*:	KCSO SHERIFF'S FACILITY ? INDUSTR. FARM LERDO HWY BAKERSFIELD, CA 93308	VISTA ID#:	2746361
STATE LUST - State Leaking Underground Storage Tank / SRC# 4704		EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Facility ID:	*5T15000310*
Substance:	*GASOLINE*
Remediation Status:	*SITE ASSESSMENT UNDERWAY.*
Media Affected:	*UNDEFINED.*
Lead Agency Contact:	*YP*
Agency Contact:	*YP*
Responsible Party:	*COUNTY OF*
Description / Comment:	*NO, THERE IS NOT A LOCAL OVERSIGHT PILOT PROGRAM.*

VISTA Address*:	CHEVRON MOTOR TRANSPORT ? BAKERSFIELD TERMINAL BAKERSFIELD, CA 93308	VISTA ID#:	1604407
STATE LUST - State Leaking Underground Storage Tank / SRC# 4548		EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Leak ID#:	*5T15000364*
Leak Report Date:	*19851109*
Substance:	*GASOLINE*
Remediation Status:	*CASE CLOSED*
Media Affected:	*SOIL ONLY*

STATE LUST - State Leaking Underground Storage Tank / SRC# 4704		EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Facility ID:	*5T15000364*
Substance:	*GASOLINE*
Remediation Status:	*CASE CLOSED BY COUNTY/LIA OR LOP.*
Media Affected:	*SOIL CONTAMINATION.*
Lead Agency Contact:	*YP*
Agency Contact:	*YP*
Responsible Party:	*CHEVRON US*
Description / Comment:	*NO, THERE IS NOT A LOCAL OVERSIGHT PILOT PROGRAM.*

VISTA Address*:	KERN FRONT OIL FIELD E OF HWY 65 N OF BAKERSFIELD BAKERSFIELD, CA 93308	VISTA ID#:	227243
SCL - State Equivalent CERCLIS List / SRC# 4543		Agency ID:	15130015

Agency Address:	*KERN FRONT OILFIELD* *E OF HIGHWAY 65 N OF BAKERSFIELD* *OILDALE, CA 93308*
Status:	*UNKNOWN*
Facility Type:	*NOT AVAILABLE*
Lead Agency:	*UNKNOWN*
State Status:	*FORMER ANNUAL WORKPLAN SITE, REFERRED TO RWQCB*
Pollutant 1:	*UNKNOWN*
Pollutant 2:	*UNKNOWN*
Pollutant 3:	*UNKNOWN*

VISTA Address*:	STAR ROBINSON LEASE T28S, R27ESEC 22 BAKERSFIELD, CA 93308	VISTA ID#:	931186
STATE LUST - State Leaking Underground Storage Tank / SRC# 4548		EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Leak ID#:	*5T15000171*
Leak Report Date:	*19860819*
Substance:	*GASOLINE*
Remediation Status:	*CASE CLOSED*
Media Affected:	*SOIL ONLY*

STATE LUST - State Leaking Underground Storage Tank / SRC# 4704	EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Facility ID:	*5T15000171*
Substance:	*GASOLINE*
Remediation Status:	*CASE CLOSED BY COUNTY/LIA OR LOP.*
Media Affected:	*SOIL CONTAMINATION.*
Lead Agency Contact:	*YP*
Agency Contact:	*YP*
Responsible Party:	*TEXACO PRO*
Description / Comment:	*NO, THERE IS NOT A LOCAL OVERSIGHT PILOT PROGRAM.*

VISTA Address*:	TEXACO KERN FRONT SERVICE YARD T28S, R27ESEC 25 BAKERSFIELD, CA 93308	VISTA ID#:	931187
STATE LUST - State Leaking Underground Storage Tank / SRC# 4548		EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Leak ID#:	*5T15000177*
Leak Report Date:	*19870819*
Substance:	*NAPTHA DISTILLATE*
Remediation Event:	*ED*
Remediation Status:	*CASE CLOSED*
Media Affected:	*SOIL ONLY*

STATE LUST - State Leaking Underground Storage Tank / SRC# 4704	EPA/Agency ID:	N/A
Agency Address:	*SAME AS ABOVE*	
Facility ID:	*5T15000177*	
Substance:	*NAPTHA DISTILTE*	
Remediation Status:	*CASE CLOSED BY COUNTY/LIA OR LOP.*	
Media Affected:	*SOIL CONTAMINATION.*	
Lead Agency Contact:	*YP*	
Agency Contact:	*YP*	
Responsible Party:	*TEXACO PRO*	
Description / Comment:	*NO, THERE IS NOT A LOCAL OVERSIGHT PILOT PROGRAM.*	

VISTA Address*:	**KERN RIVER GARAGE YARD** **T29S, R28ESEC 5** **BAKERSFIELD, CA 93308**	VISTA ID#:	931188

STATE LUST - State Leaking Underground Storage Tank / SRC# 4548	EPA/Agency ID:	N/A
Agency Address:	*SAME AS ABOVE*	
Leak ID#:	*5T15000158*	
Leak Report Date:	*19860510*	
Substance:	*WASTE OIL*	
Remediation Status:	*CASE CLOSED*	
Media Affected:	*SOIL ONLY*	

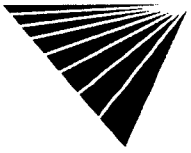
STATE LUST - State Leaking Underground Storage Tank / SRC# 4704	EPA/Agency ID:	N/A
Agency Address:	*SAME AS ABOVE*	
Facility ID:	*5T15000158*	
Substance:	*WASTE OIL*	
Remediation Status:	*CASE CLOSED BY COUNTY/LIA OR LOP.*	
Media Affected:	*SOIL CONTAMINATION.*	
Lead Agency Contact:	*YP*	
Agency Contact:	*YP*	
Responsible Party:	*TEXACO PRO*	
Description / Comment:	*NO, THERE IS NOT A LOCAL OVERSIGHT PILOT PROGRAM.*	

VISTA Address*:	**SAN EMIDO NOSE OIL FLD** **SEC 8 T11N R21W SBBM** **BAKERSFIELD, CA 93300**	VISTA ID#:	367273

Regional CERCLIS / SRC# 2462	EPA ID:	CAD980735963
Agency Address:	*SAME AS ABOVE*	
Regional Utility Description:		
ACIDS		

Regional CERCLIS / SRC# 2462	EPA ID:	CAD980735963
Agency Address:	*SAME AS ABOVE*	
Regional Utility Description:		
OILY WASTES		

Regional CERCLIS / SRC# 2462	EPA ID:	CAD980735963
Agency Address:	*SAME AS ABOVE*	
Regional Utility Description:		
SOLVENTS		



UNMAPPED SITES CONT.

Regional CERCLIS / SRC# 2462		EPA ID:	CAD980735963
Agency Address:	*SAME AS ABOVE*		
Regional Utility Description:			
OTHER:PHENOLS			

Regional CERCLIS / SRC# 2462		EPA ID:	CAD980735963
Agency Address:	*SAME AS ABOVE*		
Regional Utility Description:			
IMPOUNDMENT			

Regional CERCLIS / SRC# 2462		EPA ID:	CAD980735963
Agency Address:	*SAME AS ABOVE*		
Regional Utility Description:			
HAZARD UNCERTAIN			

Regional CERCLIS / SRC# 2462		EPA ID:	CAD980735963
Agency Address:	*SAME AS ABOVE*		
Regional Utility Description:			
PRE 9/82 PA			

NFRAP / SRC# 4466		EPA ID:	CAD980735963
Agency Address:	*SAME AS ABOVE*		
EPA Region:	*9*		
Congressional District:	*18*		
Federal Facility:	*NOT A FEDERAL FACILITY*		
Facility Ownership:	*UNKNOWN*		
Site Incident Category:	*unknown*		
Federal Facility Docket:	*SITE IS NOT INCLUDED ON THE DOCKET*		
NPL Status:	*NOT ON NPL*		
Incident Type:	*Unknown*		
Proposed NPL Update #:	*0*		
Final NPL Update #:	*0*		
Financial Management System ID:	*09*		
Latitude:	*3503040*		
Longitude:	*11915030*		
Lat/Long Source:	*RESEARCHED BY THE REGION AND MANUALLY ENTERED*		
Lat/Long Accuracy:	*Unknown*		
Dioxin Tier:	*Unknown*		
USGS Hydro Unit:	*0*		
RCRA Indicator:	*Unknown*		
Unit Id:	*0*		
Unit Name:	*ENTIRE SITE*		
Type:	*DISCOVERY*	**Lead Agency:**	*EPA FUND-FINANCED*
Qualifier:	*UNKNOWN*	**Category:**	*Unknown*
Name:	*DISCOVERY*	**Actual Start Date:**	*NOT REPORTED*
Plan Status:	*Unknown*	**Actual Completion Date:**	*UNKNOWN*
Type:	*PRELIMINARY ASSESSMENT*	**Lead Agency:**	*EPA FUND-FINANCED*
Qualifier:	*LOWER PRIORITY*	**Category:**	*Unknown*
Name:	*PRELIMINARY ASSESSMENT*	**Actual Start Date:**	*NOT REPORTED*
Plan Status:	*Unknown*	**Actual Completion Date:**	*UNKNOWN*

UNMAPPED SITES CONT.

Type:	*PRELIMINARY ASSESSMENT*	**Lead Agency:**	*EPA FUND-FINANCED*
Qualifier:	*NO FURTHER REMEDIAL ACTION PLANNED*	**Category:**	*Unknown*
Name:	*PRELIMINARY ASSESSMENT*	**Actual Start Date:**	*NOT REPORTED*
Plan Status:	*Unknown*	**Actual Completion Date:**	*UNKNOWN*

VISTA Address*:	**MECCA TANK** **? CHINA GRADE MANOR** **BAKERSFIELD, CA 93308**	VISTA ID#:	6603671
STATE LUST - State Leaking Underground Storage Tank / SRC# 4548		EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Leak ID#:	*5T15000385*
Leak Report Date:	*19900827*
Substance:	*GASOLINE*
Remediation Status:	*CASE CLOSED*
Media Affected:	*SOIL ONLY*

VISTA Address*:	**MT ADELAIDE** **T29S, R30ESEC 3** **BAKERSFIELD, CA 93306**	VISTA ID#:	6605392
STATE LUST - State Leaking Underground Storage Tank / SRC# 4548		EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Leak ID#:	*5T15000146*
Leak Report Date:	*19881025*
Substance:	*DIESEL*
Remediation Status:	*CASE CLOSED*
Media Affected:	*SOIL ONLY*

VISTA Address*:	**TEXACO** **T29S, R28ESEC 4** **BAKERSFIELD, CA 93308**	VISTA ID#:	6352739
STATE LUST - State Leaking Underground Storage Tank / SRC# 4548		EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Leak ID#:	*5T15000196*
Leak Report Date:	*19881212*
Remediation Status:	*FURTHER SITE ASSESSMENT UNDERWAY*
Media Affected:	*UNDEFINED*

VISTA Address*:	**BEAR MOUNTAIN LIMITED SUPPLIMENTAL** **APN 436-060-11 SEC 12, T29S, R28E MD** **BAKERSFIELD, CA**	VISTA ID#:	6830906
STATE SWLF - Solid Waste Landfill / SRC# 4705		Agency ID:	15-AA-0321

Agency Address:	*SAME AS ABOVE*
Facility Type:	*OTHER*
Facility Status:	*PROPOSED*
Permit Status:	*PROPOSED/PLANNED*

VISTA Address*:	KERN RIVER REFUSE DISPOSAL SIT 1 ML. N/E OF CHINA GRADE LOOP BAKERSFIELD, CA 93308	VISTA ID#:	4825270
WMUDS / SRC# 3938		Agency ID:	5 150034NUR

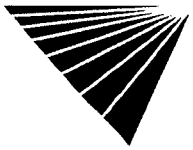
Agency Address:	*KERN RIVER REFUSE DISPOSAL SIT 1 ML. N/E OF CHINA GRADE LOOP OILDAIL, CA 93308*
Solid Waste Inventory System ID:	*15-AA-0005*
Facility Type:	*Not reported*
Facility In State Board Waste Discharger System:	*NO*
Chapter 15 Facility:	*NO*
Solid Waste Assessment Test Facility:	*YES*
Toxic Pits Cleanup Act Facility:	*NO*
RCRA Facility:	*NO*
Department of Defense Facility:	*NO*
Open To Public:	*NO*
Number Of Waste Management Units:	*1*
Rank:	*7*
Enforcements At Facility:	*NO*
Violations At Facility:	*NO*

VISTA Address*:	KERN FRONT DISPOSAL SITE T28S, R27E, SECTION 27 BAKERSFIELD, CA	VISTA ID#:	6832435
STATE SWLF - Solid Waste Landfill / SRC# 4705		Agency ID:	15-CR-0086

Agency Address:	*SAME AS ABOVE*
Facility Type:	*SOLID WASTE DISPOSAL FACILITY*
Facility Status:	*CLOSED*
Permit Status:	*UNPERMITTED/UNLICENSED*

VISTA Address*:	TEXACO T29S, R28ESEC 4 BAKERSFIELD, CA 93308	VISTA ID#:	3983151
STATE LUST - State Leaking Underground Storage Tank / SRC# 4704		EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Facility ID:	*5T15000196*
Substance:	*UNKNOWN*
Remediation Status:	*PROBLEM ASSESSMENT REPORT (PAR) COMPLETE*
Media Affected:	*UNDEFINED.*
Lead Agency Contact:	*YP*
Agency Contact:	*YP*
Responsible Party:	*TEXACO*
Description / Comment:	*NO, THERE IS NOT A LOCAL OVERSIGHT PILOT PROGRAM.*



VISTA Address*:	MT ADELAIDE T29S, R30ESEC 3 BAKERSFIELD, CA 93306	VISTA ID#:	3983099
STATE LUST - State Leaking Underground Storage Tank / SRC# 4704		EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Facility ID:	*5T15000146*
Substance:	*DIESEL*
Remediation Status:	*CASE CLOSED BY COUNTY/LIA OR LOP.*
Media Affected:	*SOIL CONTAMINATION.*
Lead Agency Contact:	*YP*
Agency Contact:	*YP_*
Responsible Party:	*ATT*
Description / Comment:	*NO, THERE IS NOT A LOCAL OVERSIGHT PILOT PROGRAM.*

VISTA Address*:	LERDO QUALITY RANCH #4 ? LERDO HWY S QUANTITY RD BAKERSFIELD, CA 93308	VISTA ID#:	3982453
STATE LUST - State Leaking Underground Storage Tank / SRC# 4548		EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Leak ID#:	*5T15000266*
Leak Report Date:	*19900119*
Substance:	*DIESEL*
Remediation Event:	*UK*
Remediation Status:	*CASE CLOSED*
Media Affected:	*SOIL ONLY*

STATE LUST - State Leaking Underground Storage Tank / SRC# 4704	EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Facility ID:	*5T15000266*
Substance:	*DIESEL*
Remediation Status:	*CASE CLOSED BY COUNTY/LIA OR LOP.*
Media Affected:	*SOIL CONTAMINATION.*
Lead Agency Contact:	*YP*
Agency Contact:	*YP*
Responsible Party:	*GRAFIN VON*
Description / Comment:	*NO, THERE IS NOT A LOCAL OVERSIGHT PILOT PROGRAM.*

VISTA Address*:	CITY OF BAKERSFIELD MATERIALS PROCES 2700 S. MT. VERNON AVENUE BAKERSFIELD, CA 93306	VISTA ID#:	7240580
STATE SWLF - Solid Waste Landfill / SRC# 4705		Agency ID:	15-AA-0311

Agency Address:	*CITY OF BAKERSFIELD MATERIALS PROCES* *2700 S. MT. VERNON AVENUE* *BAKERSFIELD, CA*
Facility Type:	*COMPOSTING FACILITY*
Facility Status:	*ACTIVE*
Permit Status:	*PERMITTED/LICENSED*

VISTA Address*:	MCFARLAND-DELANO TRANSFER STATION 11249 STADLEY AVE. BAKERSFIELD, CA	VISTA ID#:	7240758
STATE SWLF - Solid Waste Landfill / SRC# 4705		Agency ID:	15-AA-0305
Agency Address:	*SAME AS ABOVE*		
Facility Type:	*TRANSFER STATION*		
Facility Status:	*ACTIVE*		
Permit Status:	*PERMITTED/LICENSED*		

VISTA Address*:	TEXACO KERN FRONT SERVICE YARD 5605 CHESTER EXIT N BAKERSFIELD, CA 93308	VISTA ID#:	4050981
STATE LUST - State Leaking Underground Storage Tank / SRC# 4548		EPA/Agency ID:	N/A
Agency Address:	*SAME AS ABOVE*		
Leak ID#:	*5T15000443*		
Leak Report Date:	*19910807*		
Substance:	*GASOLINE*		
Remediation Status:	*NO ACTION*		
Media Affected:	*UNDEFINED*		

VISTA Address*:	BURREL BAKERSFIELD, CA 93306	VISTA ID#:	7004737
WMUDS / SRC# 3938		Agency ID:	5D102085001
Agency Address:	*SAME AS ABOVE*		
Solid Waste Inventory System ID:	*NOT REPORTED*		
Facility Type:	*INDUSTRIAL - Facilities that treat and/or dispose of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatevernature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, waterwell pumping.*		
Facility In State Board Waste Discharger System:	*YES*		
Chapter 15 Facility:	*YES*		
Solid Waste Assessment Test Facility:	*NO*		
Toxic Pits Cleanup Act Facility:	*NO*		
RCRA Facility:	*NO*		
Department of Defense Facility:	*NO*		
Open To Public:	*NO*		
Number Of Waste Management Units:	*1*		
Rank:	*NOT REPORTED*		
Enforcements At Facility:	*NO*		
Violations At Facility:	*NO*		

VISTA Address*:	SEPTAGE II-2 SWDS WEEDPATCH AREA BAKERSFIELD, CA	VISTA ID#:	4826809
WMUDS / SRC# 3938		Agency ID:	5D150319001

Agency Address:	*SAME AS ABOVE*
Solid Waste Inventory System ID:	*NOT REPORTED*
Facility Type:	*SOLID WASTE SITES-CLASS III - Landfills for nonhazardous solid wastes.*
Facility In State Board Waste Discharger System:	*YES*
Chapter 15 Facility:	*YES*
Solid Waste Assessment Test Facility:	*NO*
Toxic Pits Cleanup Act Facility:	*NO*
RCRA Facility:	*NO*
Department of Defense Facility:	*NO*
Open To Public:	*NO*
Number Of Waste Management Units:	*1*
Rank:	*NOT REPORTED*
Enforcements At Facility:	*NO*
Violations At Facility:	*NO*

VISTA Address*:	GRANITE CONSTRUCTION CO. YARD ? JAMES RD BAKERSFIELD, CA 93308	VISTA ID#:	1585650
STATE LUST - State Leaking Underground Storage Tank / SRC# 4548		EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Leak ID#:	*5T15000184*
Leak Report Date:	*19890217*
Substance:	*GASOLINE*
Remediation Status:	*CASE CLOSED*
Media Affected:	*SOIL ONLY*

STATE LUST - State Leaking Underground Storage Tank / SRC# 4704	EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Facility ID:	*5T15000184*
Substance:	*GASOLINE*
Remediation Status:	*CASE CLOSED BY COUNTY/LIA OR LOP.*
Media Affected:	*SOIL CONTAMINATION.*
Lead Agency Contact:	*YP*
Agency Contact:	*YP*
Responsible Party:	*GRANITE CO*
Description / Comment:	*NO, THERE IS NOT A LOCAL OVERSIGHT PILOT PROGRAM.*

VISTA Address*:	BAKERSFIELD VORTEC EHF ? MINTER FIELD BAKERSFIELD, CA 93308	VISTA ID#:	1606854
STATE LUST - State Leaking Underground Storage Tank / SRC# 4548		EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Leak ID#:	*5T15000362*

UNMAPPED SITES CONT.

Leak Report Date:	*19880429*
Substance:	*UNLEADED GASOLINE*
Remediation Status:	*CASE CLOSED*
Media Affected:	*SOIL ONLY*

STATE LUST - State Leaking Underground Storage Tank / SRC# 4704	EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Facility ID:	*5T15000362*
Substance:	*UNLEAD GASOLINE*
Remediation Status:	*CASE CLOSED BY COUNTY/LIA OR LOP.*
Media Affected:	*SOIL CONTAMINATION.*
Lead Agency Contact:	*YP*
Agency Contact:	*YP*
Responsible Party:	*FEDERAL AV*
Description / Comment:	*YES, THERE IS A LOCAL OVERSIGHT PILOT PROGRAM.*

VISTA Address*:	**UNION OIL STATION ? LERDO HWY BAKERSFIELD, CA 93308**	VISTA ID#:	931149
STATE LUST - State Leaking Underground Storage Tank / SRC# 4548		EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Leak ID#:	*5T15000008*
Leak Report Date:	*19850830*
Substance:	*GASOLINE*
Remediation Status:	*FURTHER SITE ASSESSMENT UNDERWAY*
Media Affected:	*UNDEFINED*

STATE LUST - State Leaking Underground Storage Tank / SRC# 4704	EPA/Agency ID:	N/A

Agency Address:	*SAME AS ABOVE*
Facility ID:	*5T15000008*
Substance:	*GASOLINE*
Remediation Status:	*PROBLEM ASSESSMENT REPORT (PAR) COMPLETE*
Media Affected:	*UNDEFINED.*
Lead Agency Contact:	*YP*
Agency Contact:	*YP*
Responsible Party:	*UNION OIL*
Description / Comment:	*NO, THERE IS NOT A LOCAL OVERSIGHT PILOT PROGRAM.*

SITE ASSESSMENT REPORT
CUSTOM

DESCRIPTION OF DATABASES SEARCHED

A) DATABASES SEARCHED TO 2 MILES

NPL
SRC#: 4584

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for NPL was April, 1998.

The National Priorities List (NPL) is the EPA's database of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Superfund program. A site must meet or surpass a predetermined hazard ranking system score, be chosen as a state's top priority site, or meet three specific criteria set jointly by the US Dept of Health and Human Services and the US EPA in order to become an NPL site.

SPL
SRC#: 4544

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Calsites Database: Annual Workplan Sites was January, 1998.

This database is provided by the Cal. Environmental Protection Agency, Dept. of Toxic Substances Control. The agency may be contacted at: 916-323-3400.

CERCLIS
SRC#: 4465

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for CERCLIS was February, 1998.

The CERCLIS List contains sites which are either proposed to or on the National Priorities List(NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL. The information on each site includes a history of all pre-remedial, remedial, removal and community relations activiies or events at the site, financial funding information for the events, and unrestricted enforcement activities.

Cal Cerclis
SRC#: 2462

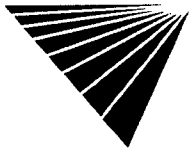
VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Ca Cerclis w/Regional Utility Description was June, 1995.

This database is provided by the U.S. Environmental Protection Agency, Region 9. The agency may be contacted at: . These are regional utility descriptions for California CERCLIS sites.

NFRAP
SRC#: 4466

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for CERCLIS-NFRAP was February, 1998.

NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly, or the contamination was not serious enough to require Federal Superfund action or NPL consideration.



SCL
SRC#: 4543

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Calsites Database: All Sites except Annual Workplan Sites (incl. ASPIS) was January, 1998.

This database is provided by the Department of Toxic Substances Control. The agency may be contacted at: .

The CalSites database includes both known and potential sites. Two- thirds of these sites have been classified, based on available information, as needing "No Further Action" (NFA) by the Department of Toxic Substances Control. The remaining sites are in various stages of review and remediation to determine if a problem exists at the site. Several hundred sites have been remediated and are considered certified. Some of these sites may be in long term operation and maintenance.

CORRACTS
SRC#: 4467

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for HWDMS/RCRIS was February, 1998.

The EPA maintains this database of RCRA facilities which are undergoing "corrective action". A "corrective action order" is issued pursuant to RCRA Section 3008 (h) when there has been a release of hazardous waste or constituents into the environment from a RCRA facility. Corrective actions may be required beyond the facility's boundary and can be required regardless of when the release occurred, even if it predates RCRA.

ERNS
SRC#: 4583

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for was January, 1998.

The Emergency Response Notification System (ERNS) is a national database used to collect information on reported releases of oil and hazardous substances. The database contains information from spill reports made to federal authorities including the EPA, the US Coast Guard, the National Response Center and the Department of transportation. A search of the database records for the period October 1986 through January 1998 revealed information regarding reported spills of oil or hazardous substances in the stated area.

RCRA-TSD
SRC#: 4467

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for HWDMS/RCRIS was February, 1998.

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA TSDs are facilities which treat, store and/or dispose of hazardous waste.

RCRA-LgGen
SRC#: 4467

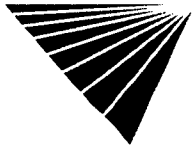
VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for HWDMS/RCRIS was February, 1998.

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA Large Generators are facilities which generate at least 1000 kg./month of non-acutely hazardous waste (or 1 kg./month of acutely hazardous waste).

RCRA-SmGen
SRC#: 4467

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for HWDMS/RCRIS was February, 1998.

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA Small and Very Small generators are facilities which generate less than 1000 kg./month of non-acutely hazardous waste.



RCRA-Viols/Enf VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for HWDMS/RCRIS was February, 1998.

The EPA's Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilities database is a compilation by the EPA of facilities which report generation, storage, transportation, treatment or disposal of hazardous waste. RCRA Violators are facilities which have been cited for RCRA Violations at least once since 1980. RCRA Enforcements are enforcement actions taken against RCRA violators.

SWLF
SRC#: 4705
VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Ca Solid Waste Information System (SWIS) was April, 1998.

This database is provided by the Integrated Waste Management Board. The agency may be contacted at: 916-255-4021.

The California Solid Waste Information System (SWIS) database consists of both open as well as closed and inactive solid waste disposal facilities and transfer stations pursuant to the Solid Waste Management and Resource Recovery Act of 1972, Government Code Section 2.66790(b). Generally, the California Integrated Waste Management Board learns of locations of disposal facilities through permit applications and from local enforcement agencies.

WMUDS
SRC#: 3938
VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Waste Management Unit Database System (WMUDS) was May, 1997.

This database is provided by the State Water Resources Control Board. The agency may be contacted at: 916-892-0323. This is used for program tracking and inventory of waste management units. This system contains information from the following eight main databases: Facility, Waste Management Unit, SWAT Program Information, SWAT Report Summary Information, Chapter 15 (formerly Subchapter 15), TPCA Program Information, RCRA Program Information, Closure Information; also some information from the WDS (Waste Discharge System). This database con

The WMUDS system also accesses information from the following databases from the Waste Discharger System (WDS): Inspections, Violations, and Enforcements. The sites contained in these databases are subject to the California Code of Regulations - Title 23. Waters.

SPILL
SRC#: 161
VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for California Hazardous Materials Incident Report was December, 1990.

This database is provided by the Office of Emergency Services. The agency may be contacted at: .

SPILL
SRC#: 4642
VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Region #1-Active Toxic Site Investigations-Spills was March, 1998.

This database is provided by the Regional Water Quality Control Board, Region #1 (North Coast Region). The agency may be contacted at: 707-576-2220.

LUST
SRC#: 4428
VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Region #5-Central Valley SLIC\DOD\DOE List was January, 1998.

This database is provided by the Regional Water Quality Control Board, Region #5. The agency may be contacted at: 916-255-3075.

LUST
SRC#: 4548

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Lust Information System (LUSTIS) was February, 1998.

This database is provided by the California Environmental Protection Agency. The agency may be contacted at: 916-445-6532.

LUST RG6
SRC#: 4577

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Region #6-Leaking Underground Storage Tank Listing was February, 1998.

This database is provided by the Regional Water Quality Control Board, Region #6. The agency may be contacted at: 760-241-7365.

LUST RG5
SRC#: 4704

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Region #5-Central Valley Undergound Tank Tracking System was April, 1998.

This database is provided by the Regional Water Quality Control Board, Region #5. The agency may be contacted at: 916-255-3000.

UST's
SRC#: 1612

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Underground Storage Tank Registrations Database was January, 1994.

This database is provided by the State Water Resources Control Board, Office of Underground Storage Tanks. The agency may be contacted at: 916-227-4337; Caution-Many states do not require registration of heating oil tanks, especially those used for residential purposes.

UST's
SRC#: 4706

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Kern County Sites and Tanks Listing was April, 1998.

This database is provided by the Kern County Environmental Health Department. The agency may be contacted at: 805-862-8700; Caution-Many states do not require registration of heating oil tanks, especially those used for residential purposes.

AST's
SRC#: 4320

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Aboveground Storage Tank Database was December, 1997.

This database is provided by the State Water Resources Control Board. The agency may be contacted at: 916-227-4364.

TRIS
SRC#: 3716

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for TRIS was December, 1996.

Section 313 of the Emergency Planning and Community Right-to-Know Act (also known as SARA Title III) of 1986 requires the EPA to establish an inventory of Toxic Chemicals emissions from certain facilities(Toxic Release Inventory System). Facilities subject to this reporting are required to complete a Toxic Chemical Release Form(Form R) for specified chemicals.

CORTESE
SRC#: 2298

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Cortese List-Hazardous Waste Substance Site List was February, 1995.

This database is provided by the Office of Environmental Protection, Office of Hazardous Materials. The agency may be contacted at: 916-445-6532.

The California Governor's Office of Planning and Research annually publishes a listing of potential and confirmed hazardous waste sites throughout the State of California under Government Code Section 65962.5. This database (CORTESE) is based on input from the following: (1)CALSITES-Department of Toxic Substances Control, Abandoned Sites Program Information Systems; (2)SARA Title III Section III Toxic Chemicals Release Inventory for 1987, 1988, 1989, and 1990; (3)FINDS; (4)HWIS-Department of Toxic Substances Control, Hazardous Waste Information System. Vista has not included one time generator facilities from Cortese in our database.; (5)SWRCB-State Water Resources Control Board; (6)SWIS-Integrated Waste Management Control Board (solid waste facilities); (7)AGT25-Air Resources Board, dischargers of greater than 25 tons of criteria pollutants to the air; (8)A1025-Air Resources Board, dischargers of greater than 10 and less than 25 tons of criteria pollutants to the air; (9)LTANK-SWRCB Leaking Underground Storage Tanks; (10)UTANK-SWRCB Underground tanks reported to the SWEEPS systems; (11)IUR-Inventory Update Rule (Chemical Manufacturers); (12)WB-LF- Waste Board - Leaking Facility, site has known migration; (13)WDSE-Waste Discharge System - Enforcement Action; (14)DTSCD-Department of Toxic Substance Control Docket.

Deed Restrictions
SRC#: 1703

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Deed Restriction Properties Report was April, 1994.

This database is provided by the Department of Health Services-Land Use and Air Assessment. The agency may be contacted at: 916-323-3376. These are voluntary deed restriction agreements with owners of property who propose building residences, schools, hospitals, or day care centers on property that is "on or within 2,000 feet of a significant disposal of hazardous waste".

California has a statutory and administrative procedure under which the California Department of Health Services (DHS) may designate real property as either a "Hazardous Waste Property" or a "Border Zone Property" pursuant to California Health Safety Code Sections 25220-25241. Hazardous Waste Property is land at which hazardous waste has been deposited, creating a significant existing or potential hazard to public health and safety. A Border Zone Property is one within 2,000 feet of a hazardous waste deposit. Property within either category is restricted in use, unless a written variance is obtained from DHS. A Hazardous Waste Property designation results in a prohibition of new uses, other than a modification or expansion of an industrial or manufacturing facility on land previously owned by the facility prior to January 1, 1981. A Border Zone Property designation results in prohibition of a variety of uses involving human habitation, hospitals, schools and day care center.

Toxic Pits
SRC#: 2229

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for Summary of Toxic Pits Cleanup Facilities was February, 1995.

This database is provided by the Water Quality Control Board, Division of Loans Grants. The agency may be contacted at: 916-227-4396.

Finds
SRC#: 4168

VISTA conducts a database search to identify all sites within 2. mile of your property.
The agency release date for FINDS was September, 1997.

The Facility Index System (FINDS) is a compilation of any property or site which the EPA has investigated, reviewed or been made aware of in connection with its various regulatory programs. Each record indicates the EPA Program Office that may have files on the site or facility.

End of Report

Appendix F: Noise Study

ENVIRONMENTAL NOISE ASSESSMENT

NEW SCHOOL NO. 4
BAKERSFIELD, CALIFORNIA

WJVA Report No. 19-023

PREPARED FOR

PROVOST & PRITCHARD
1800 30th STREET, SUITE 280
BAKERSFIELD, CALIFORNIA 93301

PREPARED BY

WJV ACOUSTICS, INC.
VISALIA, CALIFORNIA

wjv acoustics

JULY 17, 2019

1. INTRODUCTION

Project Description

The Bakersfield City School District (BCSD) is proposing to construct a new school, currently identified as New School No. 4. The school site will encompass approximately 24 acres, to be constructed in two phases. School capacity is planned for approximately 785 students. School buildings will total approximately 95,400 square feet. The project site is located in northeast Bakersfield, and is bound by Paladino Drive to the north, Masterson Street to the east and Panorama Drive to the south. The preliminary project site plan is provided as Figure 1.

Environmental Noise Assessment

This environmental noise assessment (ENA) has been prepared to determine if significant noise impacts will be produced by the project and to describe mitigation measures for noise if significant impacts are determined. The ENA, prepared by WJV Acoustics, Inc. (WJVA), is based upon the project preliminary Site Plan (Figure 1) a Draft Traffic Impact Study Report[1] prepared by Ruettgers & Schuler and a project site visit on July 8, 2019. Revisions to the site plan, traffic study or other project-related information available to WJVA at the time the analysis was prepared may require a reevaluation of the findings and/or recommendations of the report.

Appendix A provides definitions of the acoustical terminology used in this report. Unless otherwise stated, all sound levels reported in this analysis are A-weighted sound pressure levels in decibels (dB). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighted sound levels, as they correlate well with public reaction to noise. Appendix B provides typical A-weighted sound levels for common noise sources.

2. THRESHOLDS OF SIGNIFICANCE

The CEQA Guidelines indicate that significant noise impacts occur when the project exposes people to noise levels in excess of standards established in local noise ordinances or general plan noise elements, or causes a substantial permanent or temporary increase in noise levels above levels existing without the project.

a. Noise Level Standards

City of Bakersfield

The project site lies within the City of Bakersfield. The applicable standards for noise levels that apply to this project are contained within Chapter VII of the Metropolitan Bakersfield General Plan[2], adopted in 2002.

For transportation noise sources (e.g., traffic and railway noise), the noise element sets a standard of 65 dB CNEL at the exterior of noise-sensitive uses. Noise-sensitive uses include residences, schools, hospitals, transient lodging and recreational areas.

For non-transportation noise sources, the noise element applies hourly noise level performance standards at residential and other noise-sensitive uses. Table I summarizes the applicable hourly noise level standards.

TABLE I

HOURLY NOISE LEVEL PERFORMANCE STANDARDS
STATIONARY NOISE SOURCES
METROPOLITAN BAKERSFIELD GENERAL PLAN

Maximum Acceptable Noise Level, dB		
Min./Hr. (L_n)	Day (7a-10p)	Night (10p-7a)
30 (L_{50})	55	50
15 (L_{25})	60	55
5 ($L_{8.3}$)	65	60
1 ($L_{1.7}$)	70	65
0 (L_{max})	75	70

Note: L_n means the percentage of time the noise level is exceeded during an hour. L_{50} means the level exceed 50% of the hour, L_{25} is the level exceed 25% of the hour, etc.

Source: Metropolitan Bakersfield General Plan

Additionally, The City of Bakersfield General Plan Noise Element sets standards for cumulative noise impacts from mobile (transportation-related) noise sources affecting existing noise-sensitive land uses. The City utilizes the standards listed below in impact determination in regards to increases in ambient noise levels at existing noise-sensitive land uses resulting from project-related transportation noise sources.

Standards For Cumulative Noise Impacts From Mobile Sources

The project's contribution to noise increases would normally be considered cumulatively considerable and significant when ambient noise levels affect noise sensitive land uses (receptors) and when the following occurs.

- *A project increases the ambient (cumulative without project) noise level by 1 dB or more;*

and

- *The cumulative with project noise level cause the following:*
    - *An increase of the existing ambient noise level by 5 dB or more, where the existing ambient level is less than 60 dB CNEL;*
    - *An increase of the existing ambient noise level by 3 dB or more, where the existing ambient level is 60 to 65 dB CNEL;*
    - *An increase on the existing ambient noise level by 1.5 dB or more, where the existing ambient level is greater than 65 dB CNEL.*

State of California

There are no state noise standards that are applicable to the project.

Federal Noise Standards

There are no federal noise standards that are applicable to the project.

Substantial Noise Increases

CEQA does not define what constitutes a substantial increase in noise levels. Some guidance is provided by the 1992 findings of the Federal Interagency Committee on Noise (FICON)[3], which assessed changes in ambient noise levels resulting from aircraft operations. The FICON recommendations are based upon studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. The rationale for the FICON recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of the L_{dn} (or CNEL). Annoyance is a summary measure of the general adverse reaction of people to noise that results in speech interference, sleep disturbance, or interference with other daily activities.

Although the FICON recommendations were specifically developed to address aircraft noise impacts, they are used in this analysis for all transportation noise sources that are described in terms of cumulative noise exposure metrics such as the L_{dn} or CNEL. Table II summarizes the FICON recommendations. The FICON recommendations are consistent with the above-described City of Bakersfield criteria for cumulative noise impacts from mobile sources.

TABLE II MEASURES OF SUBSTANTIAL NOISE INCREASE FOR TRANSPORTATION SOURCES	
Ambient Noise Level Without Project (L_{dn}/CNEL)	**Significant Impact Assumed to Occur if the Project Increases Ambient Noise Levels By:**
<60 dB	+ 5 dB or more
60-65 dB	+3 dB or more
>65 dB	+1.5 dB or more
Source: FICON, 1992, as applied by WJV Acoustics, Inc.	

For noise sources that are not transportation related, which usually includes commercial or industrial activities and other stationary noise sources, it is common to assume that a 3-5 dB increase in noise levels represents a substantial increase in ambient noise levels. This is based on laboratory tests that indicate that a 3 dB increase is the minimum change perceptible to most people, and a 5 dB increase is perceived as a "definitely noticeable change."

b. Construction Noise and Vibration

Section 9.22.050 of the Bakersfield Municipal Code[4] limits construction to the hours of 6:00 a.m. to 9:00 p.m. on weekdays, and between 8:00 a.m. and 9:00 p.m. on weekends, when construction is within 1,000 feet of a residence. Certain exceptions to these hours are specified in the code.

The City of Bakersfield does not have regulations that define acceptable levels of vibration. One of the most recent references suggesting vibration guidelines is the California Department of Transportation (Caltrans) Transportation and Construction Vibration Guidance Manual[5]. The Manual provides guidance for determining annoyance potential criteria and damage potential threshold criteria. These criteria are provided below in Table III and Table IV, and are presented in terms of peak particle velocity (PPV) in inches per second (in/sec).

TABLE III GUIDELINE VIBRATION ANNOYANCE POTENTIAL CRITERIA		
Human Response	**Maximum PPV (in/sec)**	
	Transient Sources	**Continuous/Frequent Intermittent Sources**
Barely Perceptible	0.04	0.01
Distinctly Perceptible	0.25	0.04
Strongly Perceptible	0.9	0.1
Severe	2.0	0.4
Source: Caltrans		

TABLE IV

GUIDELINE VIBRATION DAMAGE POTENTIAL THRESHOLD CRITERIA

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile, historic buildings, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans

3. SETTING

The Bakersfield City School District (BCSD) is proposing to construct a new school, currently identified as New School No. 4. The school site will encompass approximately 24 acres, to be constructed in two phases. School capacity is planned for approximately 785 students. School buildings will total approximately 95,400 square feet. The project site currently consists of undeveloped land with numerous soil and debris mounts throughout the site. The project vicinity is shown in Figure 2.

a. Background Noise Level Measurements

Existing ambient noise levels within the project site and in the project vicinity are dominated by traffic noise along Paladino Drive, Masterson Street and Panorama Drive. Additional sources of noise observed during site inspection included noise associated with nearby construction activity, birds, high-altitude aircraft overflights, HVAC systems, and barking dogs.

Measurements of existing ambient noise levels in the project vicinity were conducted on July 8, 2019. Long-term (24-hour) ambient noise level measurements were conducted at two (2) locations (sites LT1 and LT2). Site LT1 was located south of the project site along Panorama Drive in the vicinity of existing residential land uses, and was exposed to noise associated with vehicle traffic and human activities. Site LT2 was located north of the project site along Paladino Drive, in the vicinity of existing rural residential land uses and was also exposed to noise associated with vehicle traffic and human activities.

Additionally, short-term (15-minute) ambient noise measurements were conducted at six (6) locations (Sites ST1 through ST6) on July 8, 2019. Table V summarizes the short-term ambient noise measurement results. The locations of the ambient noise monitoring sites are shown on Figure 2.

Noise monitoring equipment consisted of Larson-Davis Laboratories Model LDL-820 sound level analyzers equipped with B&K Type 4176 1/2" microphones. The equipment complies with the specifications of the American National Standards Institute (ANSI) for Type I (Precision) sound level meters. The meters were calibrated with a B&K Type 4230 acoustic calibrator to ensure the accuracy of the measurements.

Measured hourly energy average noise levels (L_{eq}) at site LT1 ranged from a low of 37.7 dB between midnight and 1:00 a.m. to a high of 56.5 dBA between 7:00 a.m. and 8:00 a.m. Hourly maximum (L_{max}) noise levels at site LT1 ranged from 52.7 to 83.5 dBA. Residual noise levels at the monitoring site, as defined by the L_{90}, ranged from 33.1 to 42.8 dBA. The L_{90} is a statistical descriptor that defines the noise level exceeded 90% of the time during each hour of the sample period. The L_{90} is generally considered to represent the residual (or background) noise level in the absence of identifiable single noise events from traffic, aircraft and other local noise sources. The measured CNEL value at site LT1 was 56.7 dB CNEL. Figure 3 graphically depicts hourly variations in ambient noise levels at site LT1.

Measured hourly L_{eq} noise levels at site LT2 ranged from a low of 47.6 dB between 11:00 p.m. and

midnight to a high of 60.7 dBA between 10:00 a.m. and 11:00 a.m. Hourly L_{max} noise levels at site LT2 ranged from 71.5 to 85.5 dBA. Residual noise levels at the monitoring site, as defined by the L_{90}, ranged from 35.1 to 42.6 dBA. The measured CNEL value at site LT2 was 61.5 dB CNEL. Figure 4 graphically depicts hourly variations in ambient noise levels at site LT2.

Table V summarizes short-term noise measurement results. The noise measurement data included energy average (L_{eq}) maximum (L_{max}) as well as five individual statistical parameters. Observations were made of the dominant noise sources affecting the measurements. The statistical parameters describe the percent of time a noise level was exceeded during the measurement period. For instance, the L_{90} describes the noise level exceeded 90 percent of the time during the measurement period, and is generally considered to represent the residual (or background) noise level in the absence of identifiable single noise events from traffic, aircraft and other local noise sources.

TABLE V

SUMMARY OF SHORT-TERM NOISE MEASUREMENT DATA
BCSD NEW SCHOOL NO. 4, BAKERSFIELD
JULY 8, 2019

Site	Time	A-Weighted Decibels, dBA							Sources
		L_{eq}	L_{max}	L_2	L_8	L_{25}	L_{50}	L_{90}	
ST1	9:45 a.m.	46.4	66.6	56.8	52.3	39.3	34.0	30.6	TR, D, B
ST2	10:10 a.m.	55.2	69.3	66.2	57.6	52.2	44.5	38.4	TR, B
ST3	10:35 a.m.	50.0	68.9	58.0	51.4	45.1	40.3	38.0	TR,CO
ST4	10:55 a.m.	56.9	65.0	63.1	61.1	54.0	45.9	39.1	TR, AC
ST5	11:20 a.m.	53.7	67.3	56.6	55.8	40.5	37.3	31.7	TR, D, B
ST6	11:45 a.m.	54.2	66.1	59.4	56.1	45.0	33.2	32.2	TR, HVAC

TR: Traffic AC: Aircraft V: Voices D: Dogs Barking B: Birds HVAC: Air Conditioner CO: Construction Activities
Source: WJV Acoustics, Inc.

4. PROJECT IMPACTS AND MITIGATION MEASURES

a. Project Traffic Noise Impacts on Existing Noise-Sensitive Land Uses Outside Project Site (Less Than Significant)

Traffic noise exposure for 2021 and 2035 traffic conditions (both with and without the project) was calculated based upon the FHWA Model and the above-described traffic study. The FHWA Model is a standard analytical method used for roadway traffic noise calculations. The model is based upon reference energy emission levels for automobiles, medium trucks (2 axles) and heavy trucks (3 or more axles), with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA Model was developed to predict hourly L_{eq} values for free-flowing traffic conditions, and is generally considered to be accurate within ±1.5 dB. To predict CNEL values, it is necessary to determine the hourly distribution of traffic for a typical day and adjust the traffic volume input data to yield an equivalent hourly traffic volume. The FHWA Model assumes a clear view of traffic with no shielding at the receiver location.

Additional noise level monitoring and concurrent traffic counts were conducted by WJVA at two (2) locations in the project vicinity on July 8, 2019. The purpose of the noise monitoring was to evaluate the accuracy of the FHWA Model in describing noise exposure from traffic on local roadways in the project vicinity. One measurement was conducted along Panorama Drive between Masterson Street and Calle Way, at a distance of 50 feet from the centerline of Panorama Drive. A second measurement was conducted along Paladino Drive between Lookout Hill Drive and Masterson Street, at a distance of 50 feet from the centerline of the Paladino Drive.

Noise measurements were conducted in terms of the equivalent energy sound level (L_{eq}). Measured L_{eq} values were compared to L_{eq} values calculated (predicted) by the FHWA Model using as inputs the traffic volumes, truck mix and vehicle speed observed during the noise measurements. The results of that comparison are shown in Table VI.

TABLE VI

COMPARISON OF MEASURED AND PREDICTED (FHWA MODEL) NOISE LEVELS
NEW SCHOOL NO. 4, BAKERSFIELD
JULY 28, 2019

	Paladino Drive	Panorama Drive
Measurement Date	7/28/19	
Measurement Start Time	12:15 p.m.	12:40 p.m.
Observed # Autos/Hr.	92	100
Observed # Medium Trucks/Hr.	0	4
Observed # Heavy Trucks/Hr.	4	0
Posted Speed (MPH)	50	50
Distance, ft. (from center of roadway)	50	50
L_{eq}, dBA (Measured)	60.0	58.9
L_{eq}, dBA (Predicted)	59.4	58.5
Difference between Measured and Predicted L_{eq}, dBA	**+0.6**	**+0.4**

Source: WJV Acoustics, Inc.

From Table VI it may be determined that the predicted traffic noise level were 0.6 dB and 0.4 dB lower than the measured noise level along Paladino Drive and Panorama Drive, respectively, for the traffic conditions observed at the time of the noise measurements. This is considered a reasonable prediction by the model and no adjustments to the model are necessary.

Using the FHWA model, traffic noise exposure was calculated for 2021 and 2035 (Cumulative) conditions. Annual Average Daily Traffic (AADT) volumes were obtained from the above-referenced traffic study. The day/evening/night distribution of traffic and the percentages of trucks on the roadways used for modeling were obtained from similar studies WJVA has conducted in the area. Appendix C summarizes the noise modeling data used to calculate traffic noise exposure for existing conditions in the project area. The traffic noise modeling data summarized by Appendix C represent the best information known to WJVA at the time this analysis was prepared.

Table VII summarizes calculated traffic noise exposure for 2021 traffic conditions, with and without the project, along roadways in the project area. Shown are the calculated CNEL values at a typical residential setback along the roadways (75 feet from the center of the roadways).

From Table VII it can be determined that traffic noise exposure for 2021 conditions at most existing residential land uses in the project vicinity would be expected to increase between approximately 0.9 dB to 2.4 dB as a result of the project. Such an increase is not considered to be a significant impact, and does not result in a project-related exceedance of the applicable exterior noise level standard.

TABLE VII

2021 TRAFFIC NOISE LEVELS
NEW SCHOOL NO. 4, BAKERSFIELD

Roadway Name (Description)	CNEL, dB[1]		Change	Significant Impact?
	No Project	With Project		
Paladino Drive (Vineland Rd to Masterson St)	57.1	59.5	2.4	No
Paladino Drive (Masterson St to Alfred Harrell Hwy)[2]	---	---	---	No
Panorama Drive (Vineland Rd to Calley Wy)	58.2	59.1	0.9	No
Panorama Drive (Calle Wy to Masterson St)	55.4	57.4	2.0	No
Masterson Street (Panorama Dr to Paladino Dr)	58.7	59.6	0.9	No
Masterson Street (SR 178 to Panorama Dr)	57.9	59.2	1.3	No

[1]At a typical residential setback (assumed to be 75 feet from the center of the roadway).
[2]Future Roadway

Source: WJV Acoustics, Inc.
Ruettgers & Schuler

Table VIII summarizes calculated traffic noise exposure for 2035 Cumulative traffic conditions, with and without the project, along roadways in the project area. Shown are the calculated CNEL values at a typical residential setback along the roadways (75 feet from the center of the roadways).

TABLE VIII

2035 CUMULATIVE TRAFFIC NOISE LEVELS
NEW SCHOOL NO. 4, BAKERSFIELD

Roadway Name (Description)	CNEL, dB[1]		Change	Significant Impact?
	No Project	With Project		
Paladino Drive (Vineland Rd to Masterson St)	58.8	60.6	1.8	No
Paladino Drive (Masterson St to Alfred Harrell Hwy)[2]	59.3	59.6	0.3	No
Panorama Drive (Vineland Rd to Calley Wy)	60.5	61.1	0.6	No
Panorama Drive (Calle Wy to Masterson St)	57.7	59.0	1.3	No
Masterson Street (Panorama Dr to Paladino Dr)	61.0	61.6	0.6	No
Masterson Street (SR 178 to Panorama Dr)	60.1	60.9	0.8	No

[1]At a typical residential setback (assumed to be 75 feet from the center of the roadway).
[2]Future Roadway

Source: WJV Acoustics, Inc.
Ruettgers & Schuler

From Table VIII it can be determined that traffic noise exposure for 2035 Cumulative conditions at most existing residential land uses in the project vicinity would be expected to increase by approximately 0.3 dB to 1.8 dB as a result of the project. Such an increase is not considered to be a

significant impact, and does not result in a project-related exceedance of the applicable exterior noise level standard.

Noise levels described in Table VII and Table VIII do not take into consideration any site-specific shielding that may occur, and are considered to be a generalized worst-case assessment of traffic noise levels in the project area. It should be noted that the majority of residential land uses in the project vicinity have existing sound walls that would reduce traffic noise levels to below those described in Table VII and Table VIII. The exception would be the existing homes located along the north side of Paladino Drive, between Masterson Street and Lookout Hill Drive. The homes along this section of roadway do not have backyards that back up to the roadway and have significantly greater setbacks, and therefore would also have traffic noise levels within the backyards lower than those described above. The project does not result in any substantial increases in traffic noise exposure nor does it result in traffic noise exposure levels exceeding the City's applicable noise level standards and is therefore not considered to be a significant impact.

b. Noise Impacts from On-Site Noise Sources (Less Than Significant)

Sources of ongoing operational noise from the proposed project could potentially include mechanical equipment (trash compactors, HVAC, etc.), vehicle and bus movements and noise associated with general school activities (children at play).

Mechanical Equipment

Detailed information about air conditioners and trash compactors was not available at the time this report was prepared. Based upon noise studies conducted by WJVA for other projects, the maximum noise level produced by a typical un-enclosed trash compactor (Hydra-Fab Model 1200) is approximately 74 dBA at a distance of 10 feet from the equipment, or approximately 45 dBA at a distance of 300 feet. Since trash compactors operate intermittently, they would not produce noise levels in excess of the City's performance standards at the closest homes.

It can be assumed that the project would include roof-mounted HVAC units on school buildings. Based upon data from large stores and buildings, it is estimated that noise levels from roof-mounted HVAC units at the closest homes to the project site would be in the range of 35-40 dBA. This does include consideration of acoustic shielding provided if the building included parapets around roof-mounted HVAC units. These levels would not be audible above existing ambient noise levels at the nearby homes and they do not exceed the City's performance standards. Additional mitigation is not required.

Bus and Vehicle Movements

Noise due to traffic in parking lots is typically limited by low speeds and is not usually considered to be significant. Human activity in parking lots that can produce noise includes voices, stereo systems and the opening and closing of car doors and trunk lids. Such activities can occur at any time. The noise levels associated with these activities cannot be precisely defined due to variables such as the number of parking movements, type of vehicles, and other factors. It is typical for a passing car in a

parking lot to produce a maximum noise level of 60 to 65 dBA at a distance of 50 feet, which is comparable to the level of a raised voice.

File data for slowly moving heavy trucks and buses indicate that the maximum noise level (L_{max}) is approximately 70-75 dB at 50 feet. Bus movements that do not occur on a public roadway are considered to be a stationary noise source. Noise levels associated with on-site bus movements would be expected to be below 65 dB (L_{max})at the closest off-site noise-sensitive receivers to the proposed bus loop. Such levels do not exceed the City's applicable 75 dB L_{max} standard nor do they result in a substantial increase over existing ambient noise levels, as defined by the CNEL. Additional mitigation is not required.

School Activities

Noise levels from school activities on the project site were quantified based upon noise measurements conducted by WJVA at a similar existing elementary school in Fresno County. For that study, noise measurements were conducted within a residential area across the street from the bus loading, student drop-off and a common play area at the school. Noise measurements were conducted at approximately 8:00 a.m. when students were arriving at school by bus or car and were gathering in common play areas before the start of school.

Measured noise levels at approximately 50 feet from buses were in the range of 65-73 dB as the buses pulled up to the loading/unloading area, idled their engines and released air brakes. Measured noise levels from students gathering or playing at distances of approximately 50-225 feet from the microphone were in the range of 53-63 dB.

Noise levels from school activities would be intermittent and mostly occur during periods when students are arriving at school in the morning or leaving school in the afternoon, and during periods of recess or physical education classes on the play fields. The noise levels generated by such activities would occasionally be audible in the residential areas to the north and the south of the new school, but would not exceed the City's 65 dB CNEL standard. School bells or alarms would also be audible in nearby residential areas but would not generate noise levels in excess of applicable noise standards or result in a substantial increase over existing ambient noise levels, as defined by the CNEL. Additional mitigation is not required.

c. Noise from Construction (Less Than Significant)

Construction noise could occur at various locations within and near the project site through the build-out period. The distance from the closest residences to the project site is approximately 150-300 feet. Table IX provides typical construction-related noise levels at distances of 50 feet, 100 feet, and 300 feet. Construction activities would be temporary in nature and would most likely occur only during the daytime hours. Construction noise impacts could result in annoyance or sleep disruption for nearby residents if nighttime operations were to occur or if equipment is not properly muffled or maintained.

Construction noise activities should be limited to the hours permitted by the City of Bakersfield Municipal Code (described above in Section 2b). During the construction of the project, noise from construction activities would potentially affect noise-sensitive land uses in the immediate area. However, construction noise is unlikely to result in a significant increase over existing ambient noise levels, as defined by Table II. Additional mitigation is not required.

TABLE IX

TYPICAL CONSTRUCTION EQUIPMENT MAXIMUM NOISE LEVELS, dBA

Type of Equipment	50 Ft.	100 Ft.	300 Ft.
Backhoe	78	72	62
Concrete Saw	90	84	74
Crane	81	75	65
Excavator	81	75	65
Front End Loader	79	73	63
Jackhammer	89	83	73
Paver	77	71	61
Pneumatic Tools	85	79	69
Dozer	82	76	66
Rollers	80	74	64
Trucks	86	80	70
Pumps	80	74	64
Scrapers	87	81	71
Portable Generators	80	74	64
Front Loader	86	80	70
Backhoe	86	80	70
Excavator	86	80	70
Grader	86	80	70

Source: FHWA
Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek & Newman, 1987

d. Vibration Impacts (Less Than Significant)

The dominant sources of man-made vibration are sonic booms, blasting, pile driving, pavement breaking, demolition, diesel locomotives, and rail-car coupling. None of these sources are anticipated from the project site. Vibration from construction activities could be detected at the closest sensitive land uses, especially during movements by heavy equipment or loaded trucks and during some paving activities (if they were to occur). Typical vibration levels at distances of 25 feet and 100 feet are summarized by Table X.

TABLE X

TYPICAL VIBRATION LEVELS DURING CONSTRUCTION

	PPV (in/sec)	
Equipment	**@ 25´**	**@ 100´**
Bulldozer (Large)	0.09	0.011
Bulldozer (Small)	0.003	0.0004
Loaded Truck	0.08	0.01
Jackhammer	0.04	0.005
Vibratory Roller	0.2	.03
Loaded Trucks	0.08	.01

Source: *Caltrans*

After full project build out, it is not expected that ongoing school operational activities will result in any vibration impacts at nearby sensitive uses. Activities involved in trash bin collection could result in minor on-site vibrations as the bin is placed back onto the ground. Such vibrations would not be expected to be felt at the closest off-site sensitive uses. Additional mitigation is not required.

5. SOURCES CONSULTED

1. Ruettgers & Schuler, *Draft Traffic Impact Study Report*, September 7, 2016.

2. *City of Bakersfield, Metropolitan Bakersfield General Plan, December 2002.*

3. *Federal Agency Review of Selected Airport Noise Analysis Issues*, Federal Interagency Committee on Noise, August, 1992.

4. City of Bakersfield, Municipal Code Section 9.22.050, *Noise During Construction*, 1999.

5. California Department of Transportation, *Transportation and Construction Vibration Guidance Manual,* September 2013.

FIGURE 1: PROJECT SITE PLAN

FIGURE 2: PROJECT VICINITY AND AMBIENT NOISE MONITORING SITES

FIGURE 3: HOURLY NOISE LEVELS AT SITE LT1

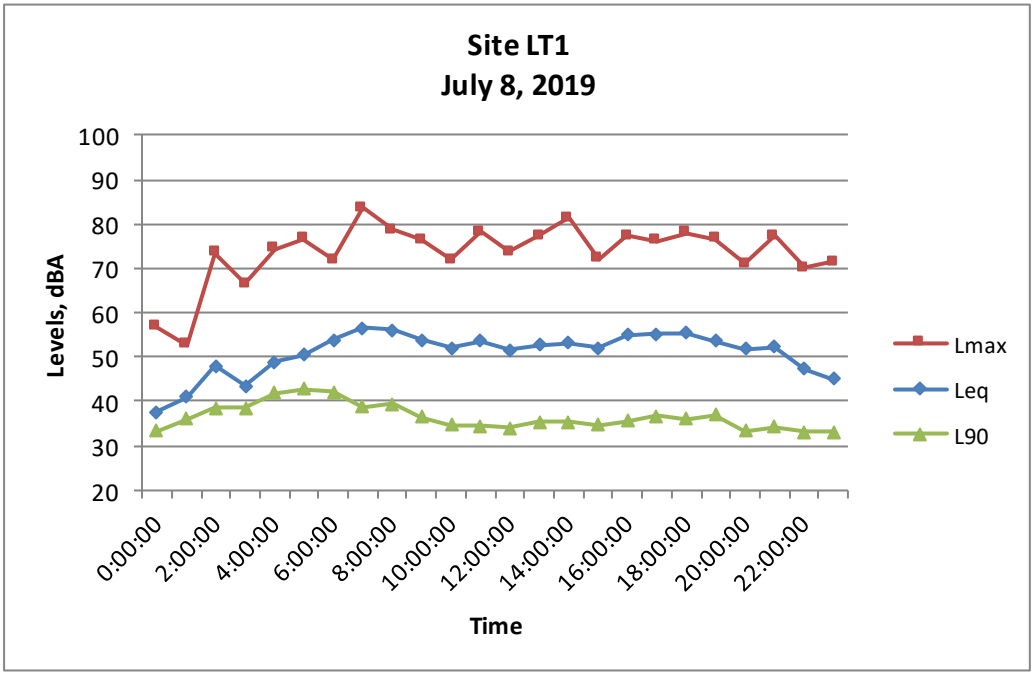
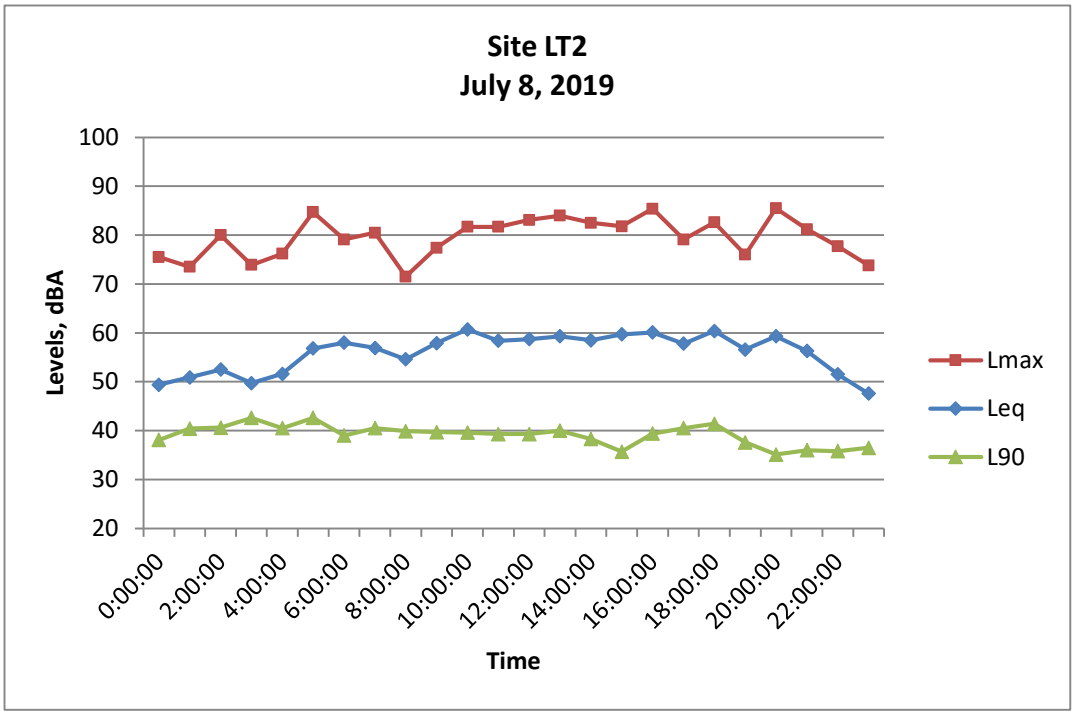


FIGURE 4: HOURLY NOISE LEVELS AT SITE LT2



APPENDIX A-1

ACOUSTICAL TERMINOLOGY

AMBIENT NOISE LEVEL: The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

CNEL: Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.

DECIBEL, dB: A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

DNL/L_{dn}: Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.

L_{eq}: Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.

NOTE: The CNEL and L_{dn} represent daily levels of noise exposure averaged on an annual basis, while L_{eq} represents the average noise exposure for a shorter time period, typically one hour.

L_{max}: The maximum noise level recorded during a noise event.

L_n: The sound level exceeded "n" percent of the time during a sample interval (L_{90}, L_{50}, L_{10}, etc.). For example, L_{10} equals the level exceeded 10 percent of the time.

A-2

ACOUSTICAL TERMINOLOGY

NOISE EXPOSURE CONTOURS: Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.

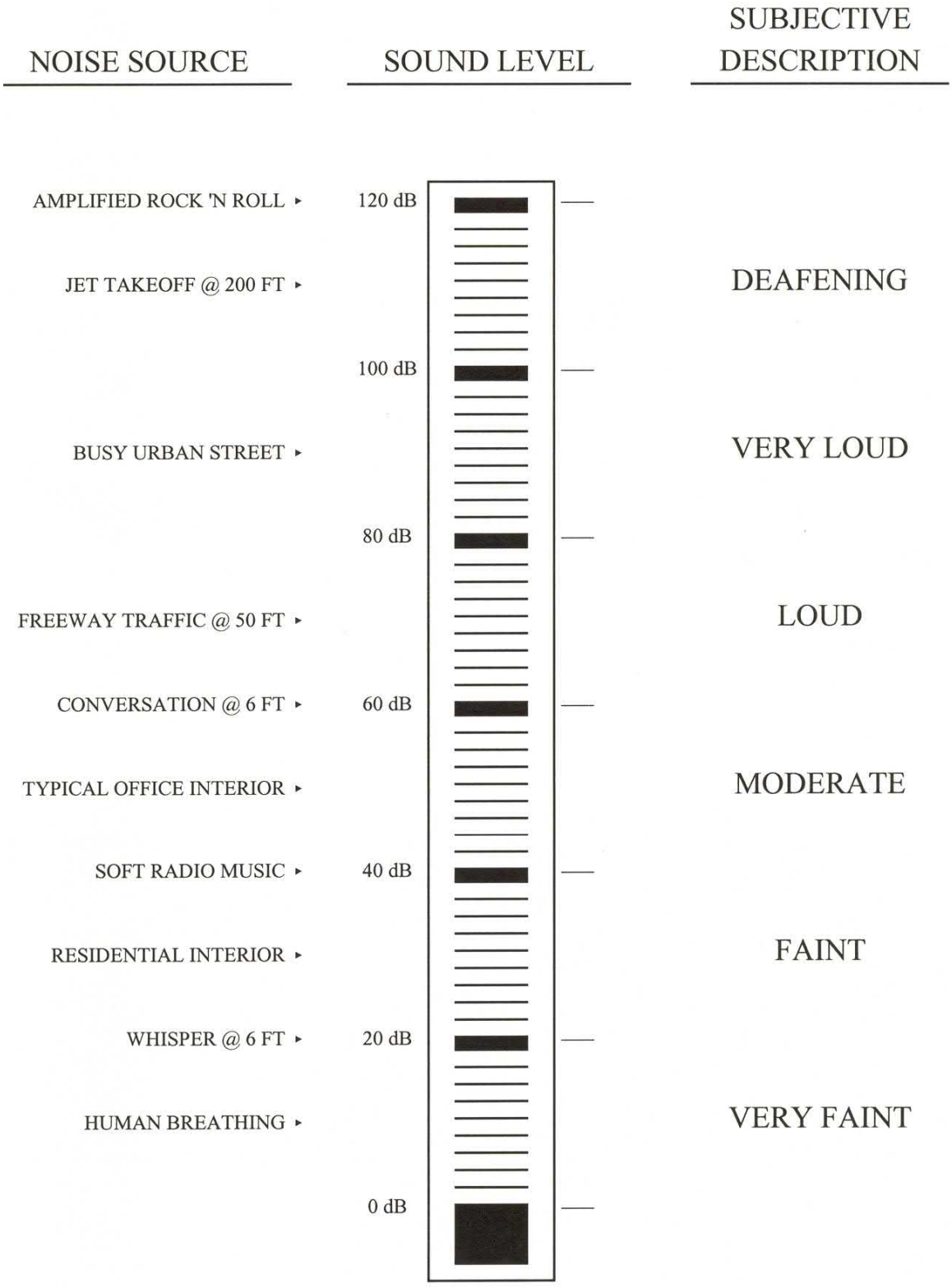
NOISE LEVEL REDUCTION (NLR): The noise reduction between indoor and outdoor environments or between two rooms that is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of Anoise level reduction" combines the effect of the transmission loss performance of the structure plus the effect of acoustic absorption present in the receiving room.

SEL or SENEL: Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

SOUND LEVEL: The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

SOUND TRANSMISSION CLASS (STC): The single-number rating of sound transmission loss for a construction element (window, door, etc.) over a frequency range where speech intelligibility largely occurs.

APPENDIX B
EXAMPLES OF SOUND LEVELS



APPENDIX C

TRAFFIC NOISE MODELING CALCULATIONS

WJV Acoustics, Inc
FHWA-RD-77-108
Calculation Sheets
July 17, 2019

Project #:	19-023
Description:	2021
Ldn/Cnel:	CNEL
Site Type:	Soft

Contour Levels (dB)	60	65	70	75					

Segment	Roadway Name	Segment Description	ADT	%Day	%Evening	%Night	%Med	%Heavy	Speed	Distance	Offset
1	Paladino Drive	Vineland Rd. to Masterson St	2384	2	14	9	2	1	50	75	
2	Paladino Drive	Masterson St to Alfred Harrel Hwy	---	2	14	9	2	1	50	75	
3	Panorama Drive	Vineland Rd. to Calle Wy	3085	2	14	9	2	1	50	75	
4	Panorama Drive	Calle Wy to Masterson St.	1634	2	14	9	2	1	50	75	
5	Masterson Street	Panorama Dr to Paladino Dr	3491	2	14	9	2	1	50	75	
6	Masterson Street	SR 178 to Panorama Dr	2878	2	14	9	2	1	50	75	

WJV Acoustics, Inc
FHWA-RD-77-108
Calculation Sheets
July 17, 2019

Project #:	19-023
Description:	2021 + project
Ldn/Cnel:	CNEL
Site Type:	Soft

Contour Levels (dB)	60	65	70	75					

Segment	Roadway Name	Segment Description	ADT	%Day	%Evening	%Night	%Med	%Heavy	Speed	Distance	Offset
1	Paladino Drive	Vineland Rd. to Masterson St	4204	2	14	9	2	1	50	75	
2	Paladino Drive	Masterson St to Alfred Harrel Hwy	---	2	14	9	2	1	50	75	
3	Panorama Drive	Vineland Rd. to Calle Wy	3835	2	14	9	2	1	50	75	
4	Panorama Drive	Calle Wy to Masterson St.	2555	2	14	9	2	1	50	75	
5	Masterson Street	Panorama Dr to Paladino Dr	4287	2	14	9	2	1	50	75	
6	Masterson Street	SR 178 to Panorama Dr	3880	2	14	9	2	1	50	75	

WJV Acoustics, Inc
FHWA-RD-77-108
Calculation Sheets
July 17, 2019

Project #:	19-023
Description:	2035
Ldn/Cnel:	CNEL
Site Type:	Soft

Contour Levels (dB)	60	65	70	75					

Segment	Roadway Name	Segment Description	ADT	%Day	%Evening	%Night	%Med	%Heavy	Speed	Distance	Offset
1	Paladino Drive	Vineland Rd. to Masterson St	3542	2	14	9	2	1	50	75	
2	Paladino Drive	Masterson St to Alfred Harrel Hwy	3952	2	14	9	2	1	50	75	
3	Panorama Drive	Vineland Rd. to Calle Wy	5269	2	14	9	2	1	50	75	
4	Panorama Drive	Calle Wy to Masterson St.	2774	2	14	9	2	1	50	75	
5	Masterson Street	Panorama Dr to Paladino Dr	5953	2	14	9	2	1	50	75	
6	Masterson Street	SR 178 to Panorama Dr	4780	2	14	9	2	1	50	75	

WJV Acoustics, Inc
FHWA-RD-77-108
Calculation Sheets
July 17, 2019

Project #:	19-023
Description:	2035 + project
Ldn/Cnel:	CNEL
Site Type:	Soft

Contour Levels (dB) 60 65 70 75

Segment	Roadway Name	Segment Description	ADT	%Day	%Evening	%Night	%Med	%Heavy	Speed	Distance	Offset
1	Paladino Drive	Vineland Rd. to Masterson St	5362	2	14	9	2	1	50	75	
2	Paladino Drive	Masterson St to Alfred Harrel Hwy	4267	2	14	9	2	1	50	75	
3	Panorama Drive	Vineland Rd. to Calle Wy	6019	2	14	9	2	1	50	75	
4	Panorama Drive	Calle Wy to Masterson St.	3695	2	14	9	2	1	50	75	
5	Masterson Street	Panorama Dr to Paladino Dr	6749	2	14	9	2	1	50	75	
6	Masterson Street	SR 178 to Panorama Dr	5782	2	14	9	2	1	50	75	

Appendix G: Traffic Impact Study

TRAFFIC STUDY

Elementary School Site
SW Corner of Paladino Dr & Masterson St
Bakersfield, CA

Prepared for:

Provost & Pritchard Consulting Group

July 2019

Prepared by:

RUETTGERS & SCHULER
CIVIL ENGINEERS

1800 30th STREET, SUITE 260
BAKERSFIELD, CA 93301

Ian J. Parks, RCE 58155

TABLE OF CONTENTS

INTRODUCTION

The purpose of this study is to evaluate the potential traffic impacts of a proposed elementary school site located on the southwest corner of Paladino Drive and Masterson Street in the City of Bakersfield.

A. Land Use, Site Boundaries and Study Scope

The City of Bakersfield land use designation for the site is LR (Low Density Residential), with a zone designation of P.U.D. (Planned Unit Development).

The site is bounded by Paladino Drive on the north, Masterson Street on the east, Panorama Drive on the south, and residential developments to the west.

A total of one signalized and seven unsignalized intersections are included in the study, as well as one future intersection.

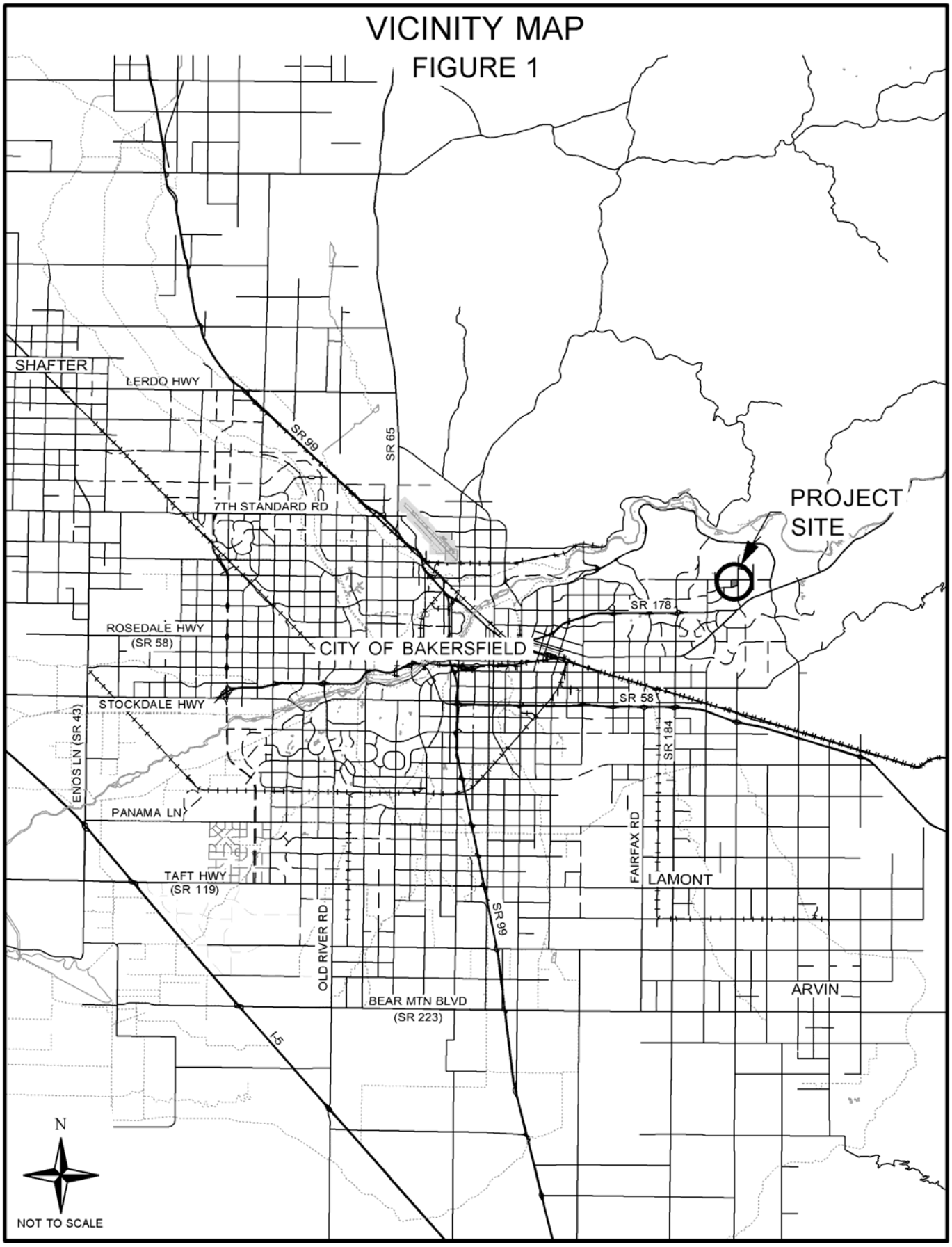
A vicinity map is presented in Figure 1 and a location map is presented in Figure 2. A preliminary site plan of the proposed elementary school is presented in Figure 3.

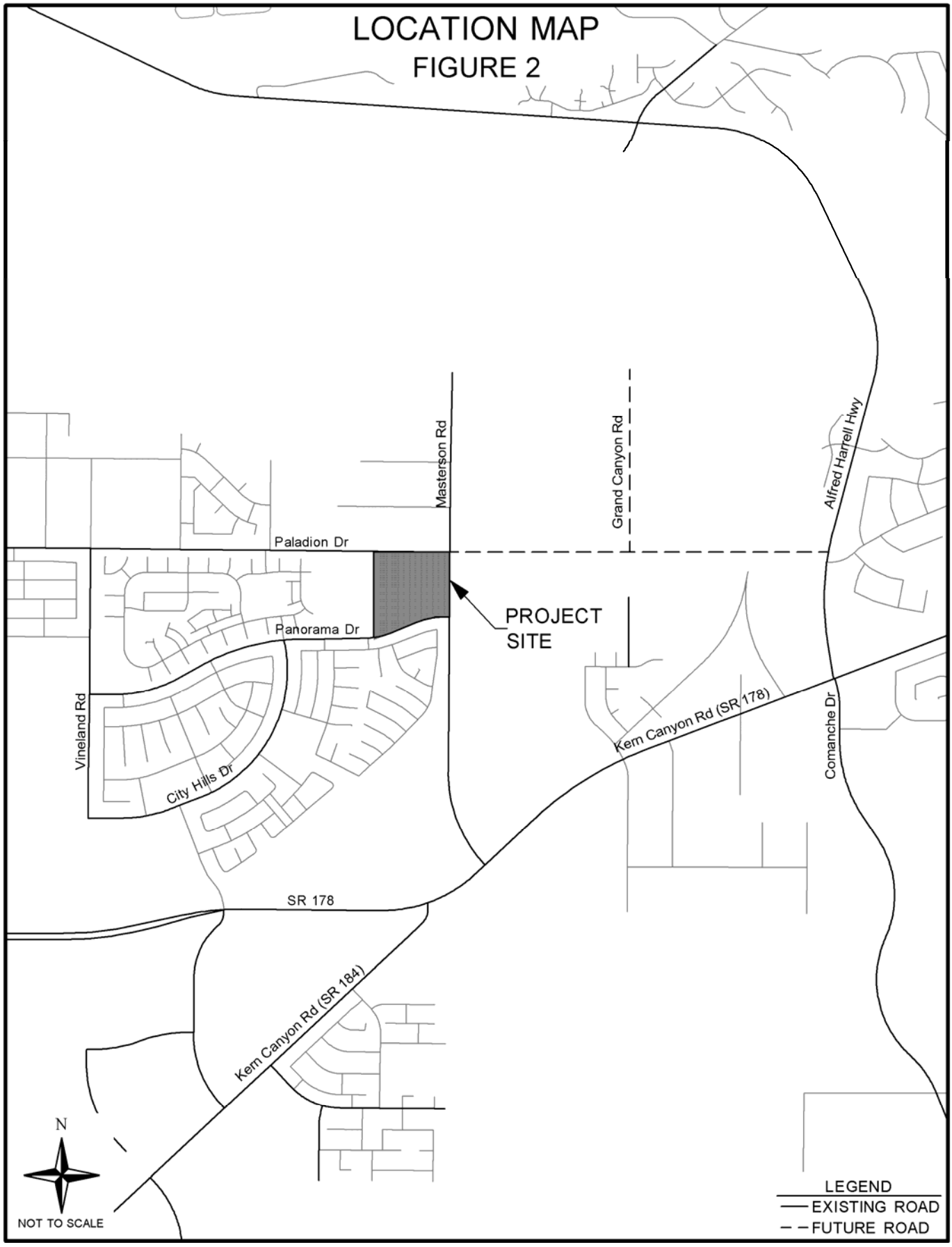
B. Existing Site Uses and Site Access

The project site is currently vacant land. Access to the site is planned along Paladino Drive and Panorama Drive from a local street that will be constructed along the west side of the school.

C. Existing Uses in Vicinity of the Site

Existing developments in the vicinity of the proposed school include single family residential developments to the west, open land to the east, a developing single-family residential site to the south, and low density residential to the north.


VICINITY MAP
FIGURE 1
SHAFTER
LERDO HWY
SR 99
SR 65
7TH STANDARD RD
PROJECT SITE
SR 178
ROSEDALE HWY (SR 58)
CITY OF BAKERSFIELD
STOCKDALE HWY
SR 58
SR 184
ENOS LN (SR 43)
PANAMA LN
FAIRFAX RD
LAMONT
TAFT HWY (SR 119)
OLD RIVER RD
SR 99
BEAR MTN BLVD (SR 223)
ARVIN
I-5
N
NOT TO SCALE


LOCATION MAP
FIGURE 2
Masterson Rd
Grand Canyon Rd
Alfred Harrell Hwy
Paladion Dr
PROJECT SITE
Panorama Dr
Vineland Rd
City Hills Dr
Kern Canyon Rd (SR 178)
Comanche Dr
SR 178
Kern Canyon Rd (SR 184)
N
NOT TO SCALE
LEGEND
EXISTING ROAD
FUTURE ROAD

D. Roadway Descriptions

Alfred Harrell Highway is a two-lane freeway extending north from Mt. Vernon Avenue to Hart Park and terminates at State Route 178 (to the south of State Route 178 it becomes Comanche Drive). Alfred Harrel Highway provides access to residential and recreational land uses to the northeast of Bakersfield.

City Hill Drive is a two-lane divided collector with curb, gutter, sidewalk, and bike lanes from Vineland Road to Panorama Drive. It provides access to residential land uses as well as City in the Hills Park in northeast Bakersfield.

Masterson Street is a two-lane arterial that extends north from State Route 178 to Pitts Avenue just beyond Paladino Drive. Between State Route 178 and Paladino Drive, Masterson Street is improved adjacent to development. North of Paladino Drive, Masterson Street is not improved where it is adjacent to developments. It provides access to residential land uses as well as State Route 178.

Paladino Drive is a two-lane arterial at various stages of widening and improvement adjacent to development. It currently extends east from Morning Drive to Masterson Street. A future extension of Paladino Drive, as a collector is, is planned to continue from Masterson Street to Alfred Harrell Highway. Paladino Drive provides access to residential land uses, as well as to the proposed elementary school site.

Panorama Drive is a two-lane divided collector that is fully improved between Vineland Drive and City Hills Drive, and is improved adjacent to development between City Hills Drive and Masterson Street. It provides access to residential land uses as well as to the proposed elementary school site.

State Route 178 is an east-west highway providing access from Bakersfield to Lake Isabella and Ridgecrest. As called out in the General Plan, construction has recently been completed on an upgrade to State Route 178 to make it a multilane freeway east of Fairfax Road as well as the addition of a new interchange at Morning Drive.

Valley Lane is a two-lane collector that extends approximately a half mile north from Paladino Drive. Valley Lane is improved adjacent to development and provides access to residential land uses as well as to the California Water Services treatment plan for northeast Bakersfield.

Vineland Road is a two-lane arterial that extends south from Paladino Drive to City Hills Drive. Another segment of Vineland Road lies along the west side of Paul L Gato Middle School just north of State

Route 184. Vineland Road is fully improved in areas adjacent to development and provides access to residential and school land uses.

PROJECT TRIP GENERATION AND DESIGN HOUR VOLUMES

The trip generation and design hour volumes shown in Table 1 were calculated using the Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition, as well as data provided in the project proposal. The AM/PM rate equations and directional splits for ITE Land Use Code 520 (Elementary School) were used to estimate the trip generation for the proposed project, for peak hour of adjacent street traffic.

Table 1
Project Trip Generation

General Information			Daily Trips		AM Peak Hour Trips			PM Peak Hour Trips		
ITE Code	Development Type	Variable	ADT RATE	ADT	Rate	In % Split/ Trips	Out % Split/ Trips	Rate	In % Split/ Trips	Out % Split/ Trips
520	Elementary School	784 Students	eq	1486	0.67	54% 284	46% 242	0.34	45% 120	55% 147

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The project trip distribution and assignment assumptions in Table 2 represent the most logically traveled routes for traffic accessing the project. Project traffic distribution was estimated based on a review of the potential draw from population centers within the region, types of land uses involved, other schools located in the area, and the school district boundaries. The district boundaries where the proposed elementary school is located, is generally bounded by Alfred Harrell Highway to the north and east, State Route 178 to the south, and Morning Drive to the west. These assumptions were used to distribute project traffic as shown in Figure 3.

Table 2
Project Trip Distribution and Assignment

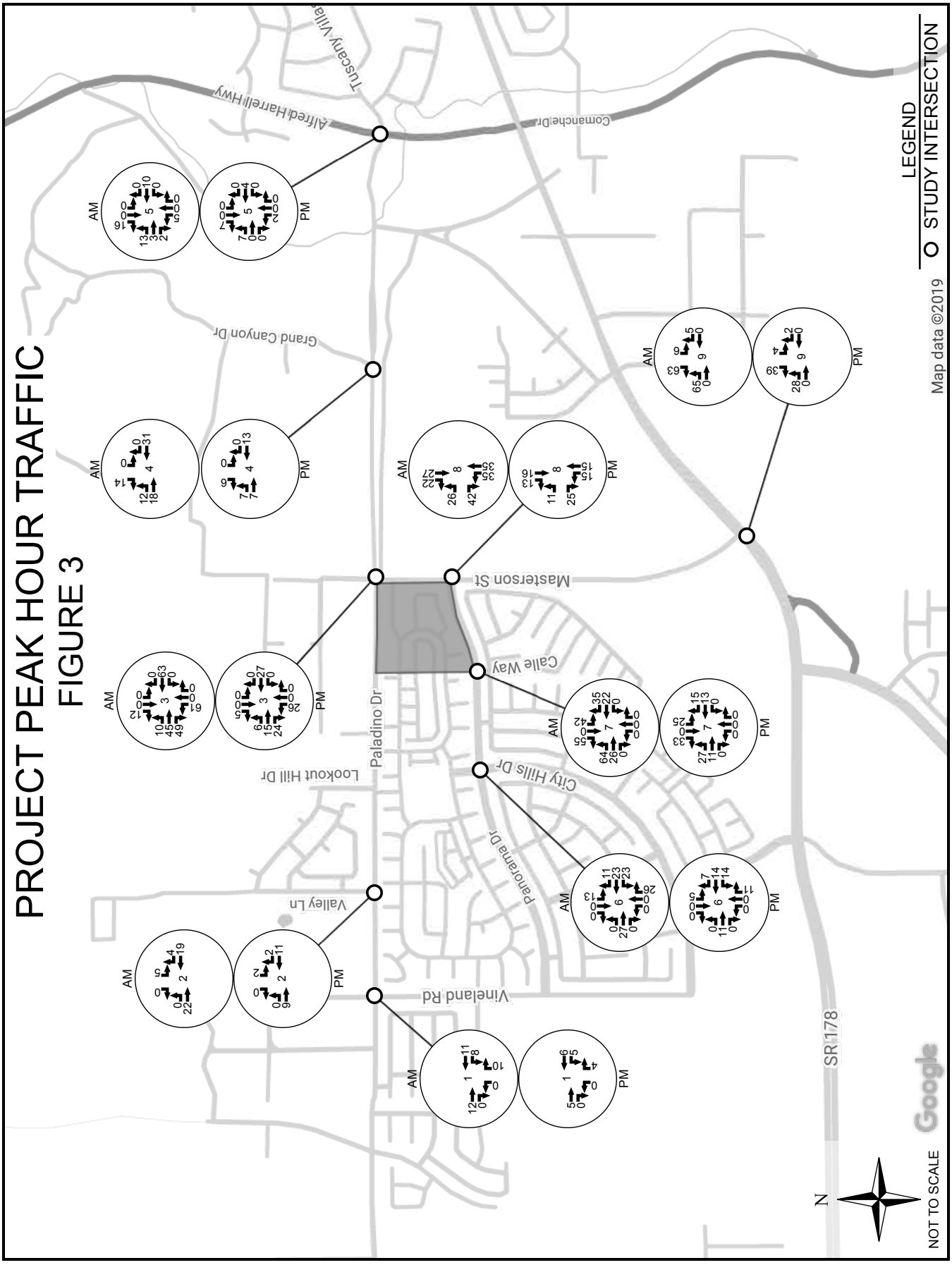
Direction	Percent
North	20%
East	25%
South	10%
West	45%

EXISTING AND FUTURE TRAFFIC

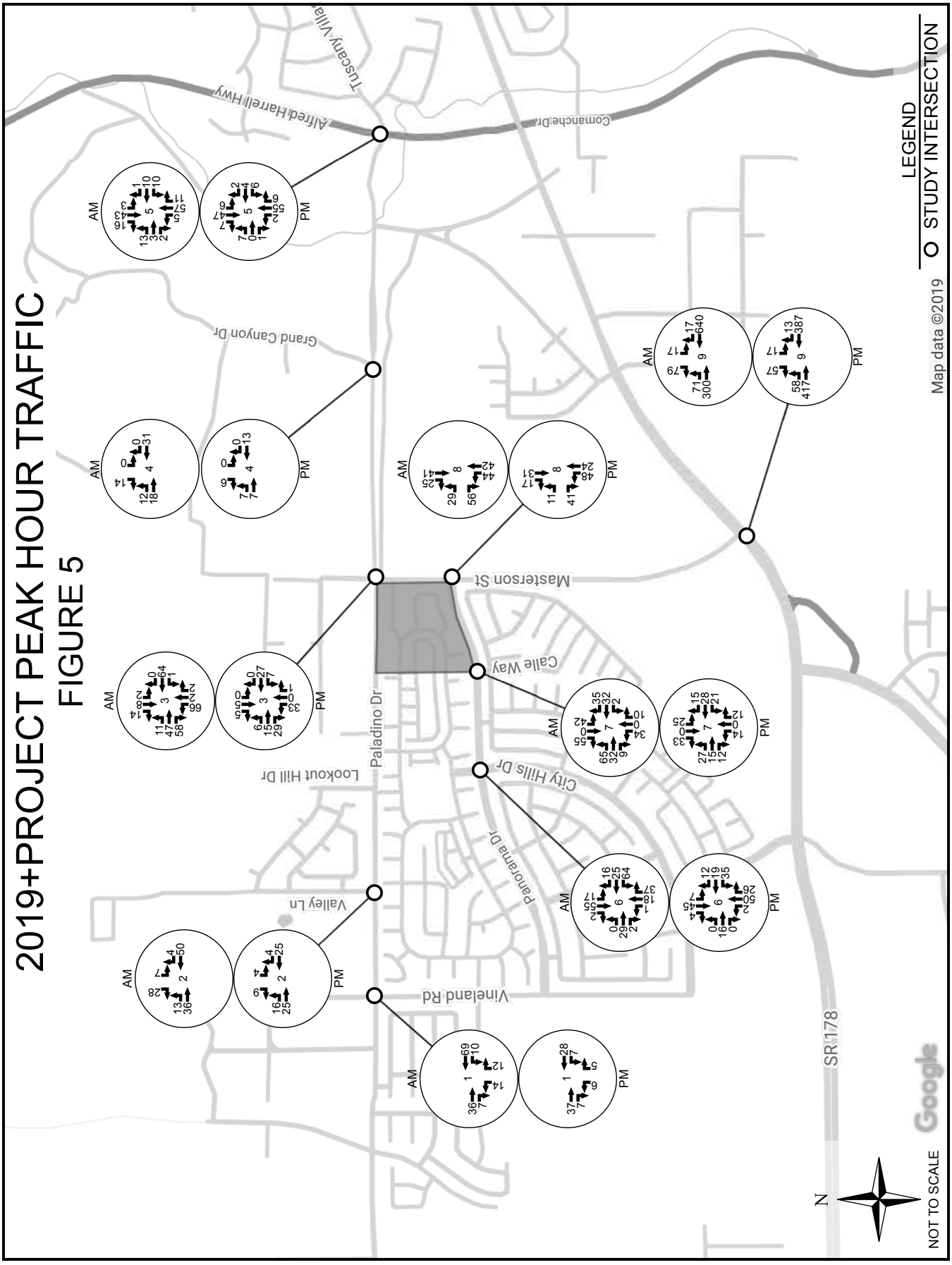
Existing weekday peak hour turning movement volumes were field measured in July 2019. Peak Hour traffic counts were taken from 7:30 AM to 8:30 AM and 2:00 PM to 3:00 PM in order to coincide with school operation hours for similar elementary schools within the region. The existing peak hour and existing peak hour plus project volumes are shown in Figures 4 and 5.

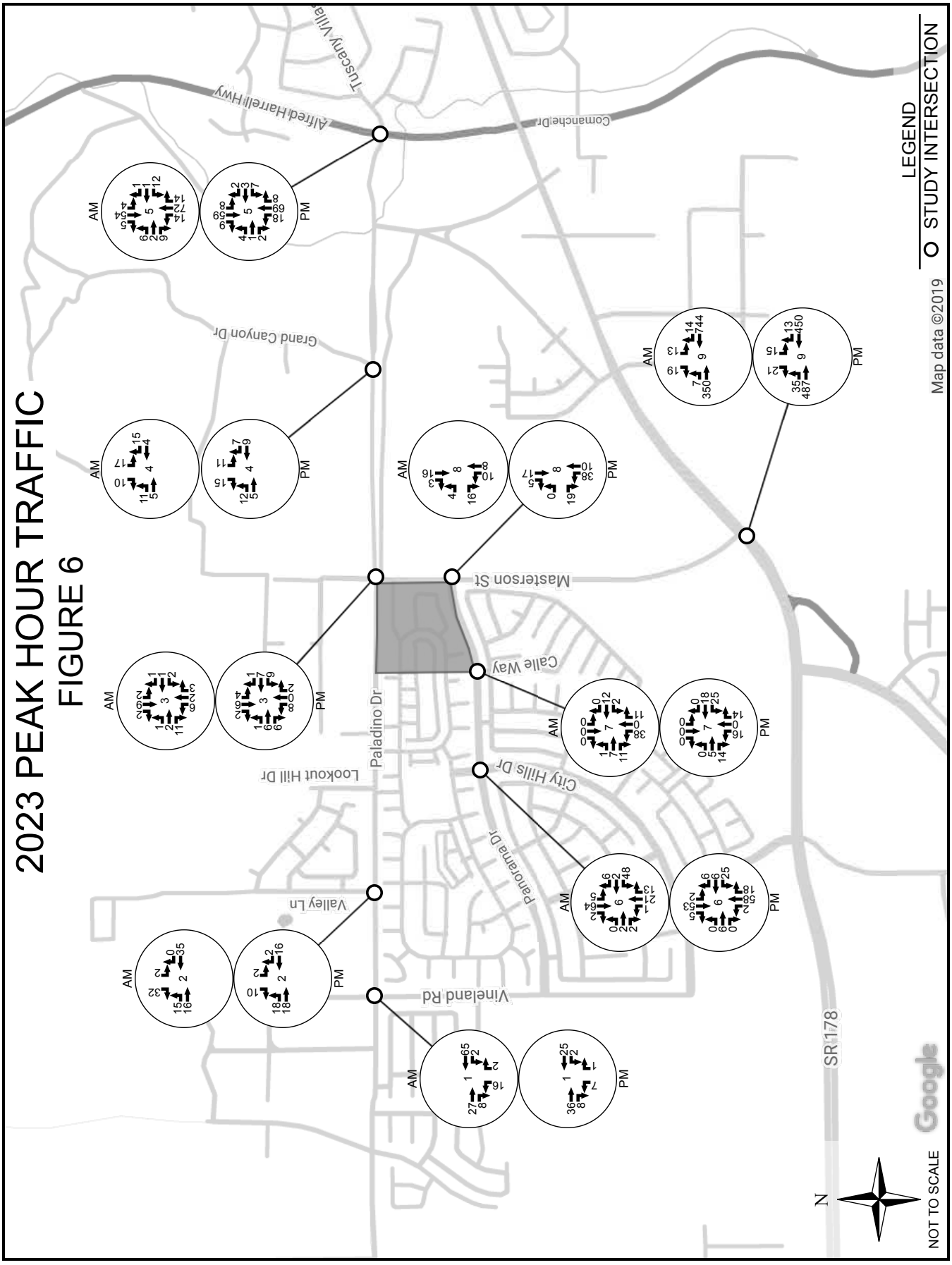
Annual growth rates from approximately 3% to 6% were applied to existing traffic volumes to estimate future traffic volumes for the 2023 opening year and the 2035 scenarios. These growth rates were estimated based on KernCOG 2040 traffic model data.

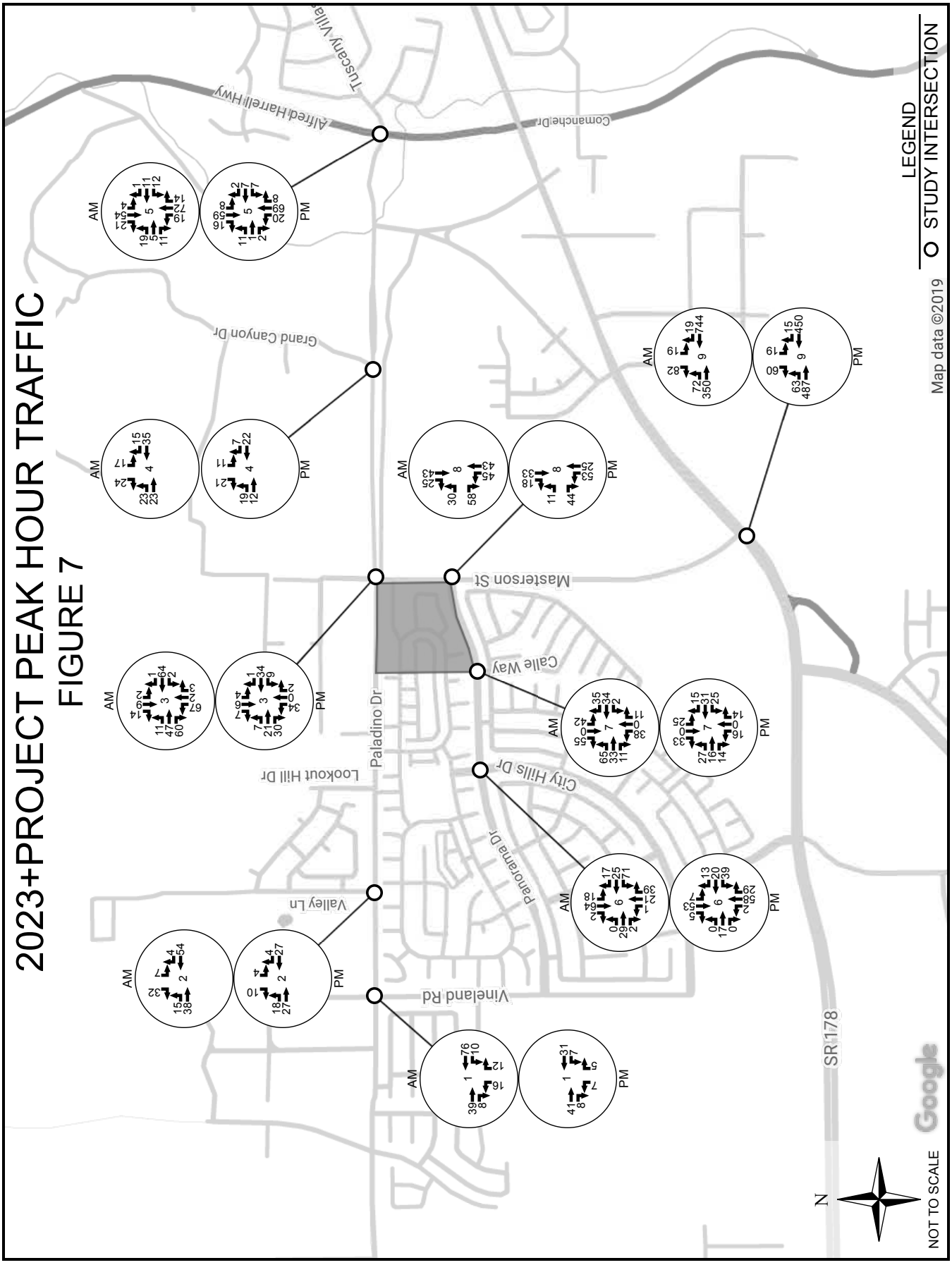
An investigation was also conducted for general plan amendments and zone changes for projects that would not yet be accounted for in the KernCOG traffic model. The only project that was found to interact with the roadway system in the study area is a commercial development along Comanche Drive south of State Route 178. The 41,860 square foot shopping center included fast-food, retail and fueling station land uses. Cumulative trip generation and distribution for this commercial development was added to the future traffic volume estimates at the appropriate study intersections. Future peak hour and peak hour plus project volumes, which include cumulative traffic volumes, are shown in Figures 6 through 9.

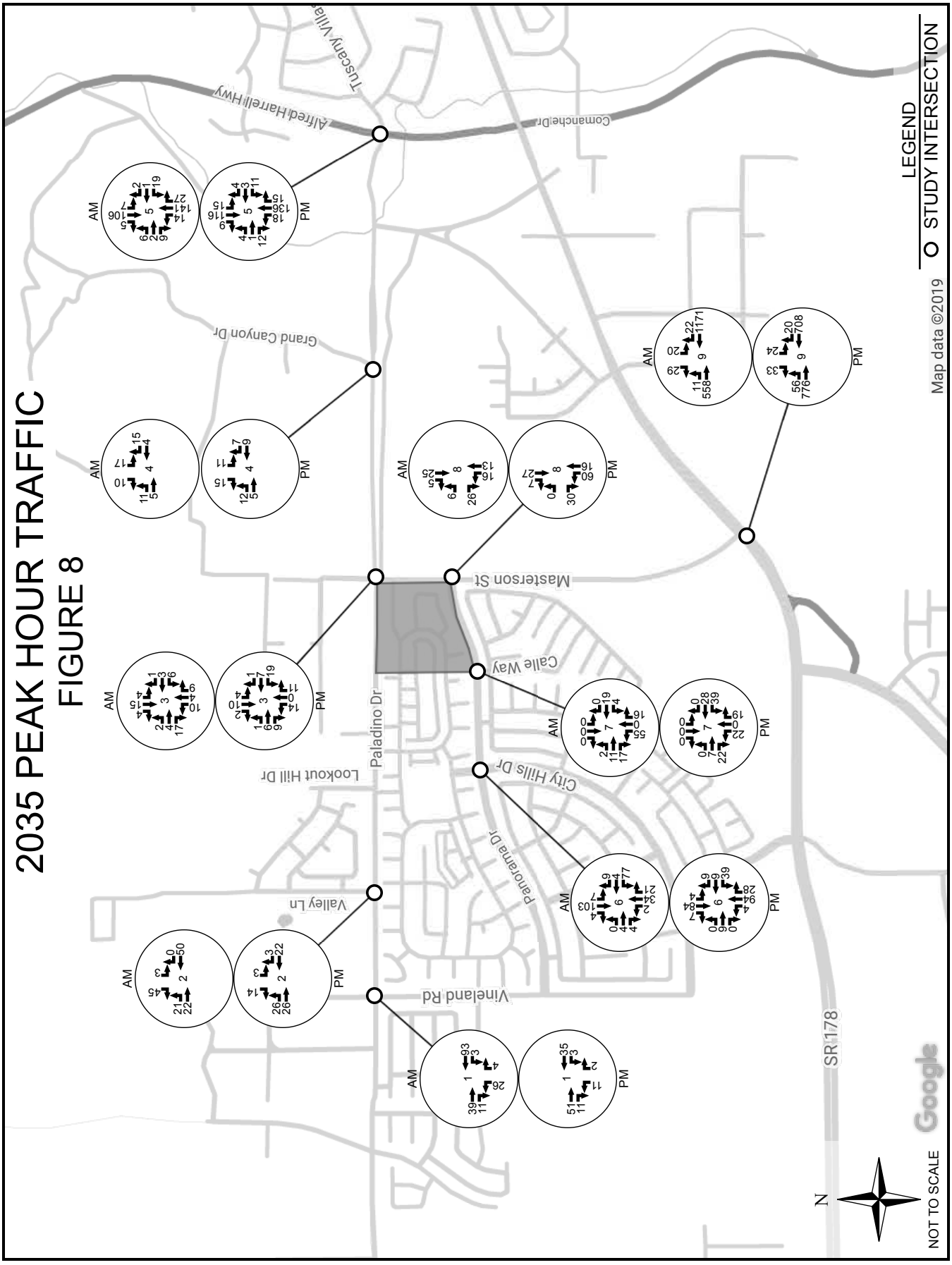

PROJECT PEAK HOUR TRAFFIC
FIGURE 3
LEGEND
STUDY INTERSECTION
NOT TO SCALE
N
Map data ©2019
Google
Alfred Harrell Hwy
Comanche Dr
Tuscany Villa
Grand Canyon Dr
Masterson St
Calle Way
City Hills Dr
Panorama Dr
Paladino Dr
Lookout Hill Dr
Valley Ln
Vineland Rd
SR 178
AM
PM

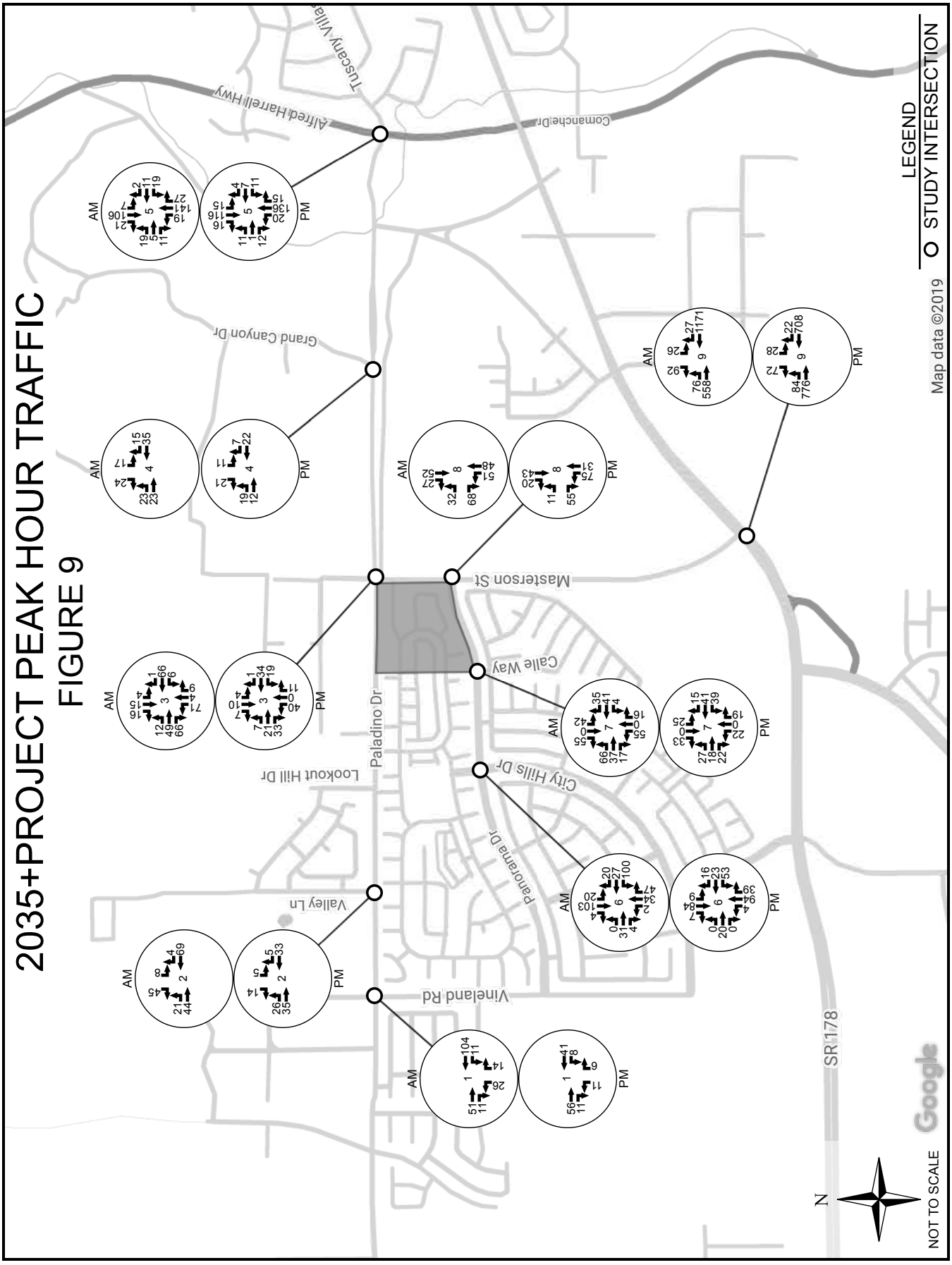
2019 PEAK HOUR TRAFFIC
FIGURE 4
LEGEND
STUDY INTERSECTION
Map data ©2019
NOT TO SCALE
N
Google
SR 178
Alfred Harrell Hwy
Comanche Dr
Tuscany Villa
Grand Canyon Dr
Masterson St
Calle Way
City Hills Dr
Panorama Dr
Valley Ln
Vineland Rd
Lookout Hill Dr
Paladino Dr
AM
PM


2019+PROJECT PEAK HOUR TRAFFIC
FIGURE 5
LEGEND
STUDY INTERSECTION
Map data ©2019
NOT TO SCALE
N
SR 178
Alfred Harrell Hwy
Comanche Dr
Tuscany Villa
Grand Canyon Dr
Masterson St
Calle Way
City Hills Dr
Panorama Dr
Paladino Dr
Lookout Hill Dr
Valley Ln
Vineland Rd
AM
PM


2023 PEAK HOUR TRAFFIC
FIGURE 6
LEGEND
STUDY INTERSECTION
Map data ©2019
NOT TO SCALE
N
Google
Alfred Harrell Hwy
Comanche Dr
Tuscany Villa
Grand Canyon Dr
Masterson St
Calle Way
City Hills Dr
Panorama Dr
Valley Ln
Vineland Rd
Paladino Dr
Lookout Hill Dr
SR 178
AM
PM


2023+PROJECT PEAK HOUR TRAFFIC
FIGURE 7
LEGEND
STUDY INTERSECTION
NOT TO SCALE
N
Map data ©2019
Google
SR 178
Alfred Harrell Hwy
Comanche Dr
Tuscany Villa
Grand Canyon Dr
Masterson St
Calle Way
City Hills Dr
Panorama Dr
Valley Ln
Vineland Rd
Paladino Dr
Lookout Hill Dr
AM
PM


2035 PEAK HOUR TRAFFIC
FIGURE 8
LEGEND
STUDY INTERSECTION
Map data ©2019
NOT TO SCALE
N
Google
Alfred Harrell Hwy
Comanche Dr
Tuscany Villa
Grand Canyon Dr
Masterson St
Calle Way
City Hills Dr
Panorama Dr
Paladino Dr
Lookout Hill Dr
Valley Ln
Vineland Rd
SR 178
AM
PM


2035+PROJECT PEAK HOUR TRAFFIC
FIGURE 9
LEGEND
STUDY INTERSECTION
Map data ©2019
NOT TO SCALE
N
Google
Alfred Harrell Hwy
Comanche Dr
Tuscany Villa
Grand Canyon Dr
Masterson St
Calle Way
Paladino Dr
Lookout Hill Dr
City Hills Dr
Panorama Dr
Valley Ln
Vineland Rd
SR 178
AM
PM

INTERSECTION ANALYSIS

A capacity analysis of the study intersections was conducted using Synchro 9 software from Trafficware. This software utilizes the capacity analysis methodology in the Transportation Research Board's 2010 Highway Capacity Manual. The analysis was performed for the following AM and PM traffic scenarios:

- Existing (2019)
- Existing+Project (2019)
- Opening Year (2023) Base Traffic
- Opening Year (2023)+Project Traffic
- Future (2035) Cumulative
- Future (2035) Cumulative+Project

The City of Bakersfield generally utilize three performance criteria for determining whether a traffic forecast to be generated by a project would cause a significant impact and therefore require mitigation. First, a significant impact is found where the addition of project traffic causes the level of service of an intersection or roadway segment to drop below LOS C. Second, a significant impact is found if an intersection or roadway segment operates below LOS C in the base year prior to the addition of project traffic, and the added project traffic lowers the level of service below its pre-project status. Third, mitigation is required if the addition of the project traffic creates an additional control or average delay per vehicle of more than 5 seconds to the existing or projected congestion at an intersection already or projected to operate at LOS D, E, or F.

These performance criteria have been adopted by the City of Bakersfield, and are also contained within various planning documents such as the Circulation Element of the Metropolitan Bakersfield General Plan and the County's congestion management plan. These performance criteria are the basis on which the City determines if a "substantial" or "significant" impact, or increase to the existing traffic load and the capacity of the street system, exists as a result of project traffic. Criteria for intersection level of service (LOS) are shown in the following tables.

LEVEL OF SERVICE CRITERIA
UNSIGNALIZED INTERSECTION

Average Control Delay (sec/veh)	Level of Service	Expected Delay to Minor Street Traffic
≤ 10	A	Little or no delay
> 10 and ≤ 15	B	Short traffic delays
> 15 and ≤ 25	C	Average traffic delays
> 25 and ≤ 35	D	Long traffic delays
> 35 and ≤ 50	E	Very long traffic delays
> 50	F	Extreme delays

LEVEL OF SERVICE CRITERIA
SIGNALIZED INTERSECTIONS

Volume/Capacity	Control Delay (sec/veh)	Level of Service
< 0.60	≤ 10	A
0.61 - 0.70	> 10 and ≤ 20	B
0.71 - 0.80	> 20 and ≤ 35	C
0.81 - 0.90	> 35 and ≤ 55	D
0.91 - 1.00	> 55 and ≤ 80	E
> 1.0	> 80	F

The peak hour of trip generation for this study was determined to be from 7:30 AM to 8:30 AM and 2:00 PM to 3:00 PM to coincide with the bell schedules of schools in the area. Level of service for the unsignalized and signalized study intersections is presented in Tables 3 and 4. The City of Bakersfield designate LOS "C" as the minimum acceptable intersection peak hour level of service standard.

Table 3
AM Unsignalized Intersection Level of Service

#	Intersection	Control Type	2019	2019+ Project	2023	2023+ Project	2035	2035+ Project
1	Vineland & Paladino Dr	NB	A	A	A	A	A	A
2	Valley Ln & Paladino Dr	SB	A	A	A	A	A	A
3	Masterson St & Paladino Dr	AWSC	A	A	A	A	A	A
4	Grand Canyon Dr & Paladino Dr	SB	A	A	A	A	A	A
5	Allfred Harrell Hwy & Paladino Dr	EB WB	A A	A A	A A	A B	A B	B B
6	City Hills Dr & Panorama Dr	AWSC	A	A	A	A	A	A
7	Project Entrance/Calle Way & Panorama Dr	NB SB	A A	B B	A A	B B	A A	B B
8	Masterson St & Panorama Dr	EB	A	A	A	A	A	A
9	Masterson St & Kern Canyon Rd (SR 178)	Signal	A	A	A	A	A	A

Table 4
PM Unsignalized Intersection Level of Service

#	Intersection	Control Type	2019	2019+ Project	2023	2023+ Project	2035	2035+ Project
1	Vineland & Paladino Dr	NB	A	A	A	A	A	A
2	Valley Ln & Paladino Dr	SB	A	A	A	A	A	A
3	Masterson St & Paladino Dr	AWSC	A	A	A	A	A	A
4	Grand Canyon Dr & Paladino Dr	SB	A	A	A	A	A	A
5	Allfred Harrell Hwy & Paladino Dr	EB WB	A A	A A	A A	A B	A B	B B
6	City Hills Dr & Panorama Dr	AWSC	A	A	A	A	A	A
7	Project Entrance/Calle Way & Panorama Dr	NB SB	A A	A A	A A	A A	A A	A A
8	Masterson St & Panorama Dr	EB	A	A	A	A	A	A
9	Masterson St & Kern Canyon Rd (SR 178)	Signal	A	A	A	A	A	A

TRAFFIC SIGNAL WARRANT ANALYSIS

Peak hour signal warrants were evaluated for each of the unsignalized intersections within the study based on the California Manual on Uniform Traffic Control Devices (MUTCD). Peak hour signal warrants assess delay to traffic on the minor street approaches when entering or crossing a major street. Signal warrant analysis results for AM and PM peak hours are shown in Tables 5a through 6b.

It is important to note that a signal warrant defines the minimum condition under which signalization of an intersection might be warranted. Though an intersection meets signal warrant threshold conditions, this does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified.

Additionally, signal warrants do not necessarily correlate with level of service. An intersection may satisfy a signal warrant condition and operate at or above LOS C, or operate below LOS C and not meet signal warrant criteria.

Table 5a
AM Traffic Signal Warrants - Existing

#	Intersection	2019			2019+Project		
		Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met
1	Vineland at Paladino Dr	91	16	NO	122	26	NO
2	Valley Ln at Paladino Dr	58	30	NO	103	35	NO
3	Masterson St at Paladino Dr	21	12	NO	181	70	NO
4	Grand Canyon Dr at Paladino Dr	0	0	NO	61	14	NO
5	Allfred Harrell Hwy at Paladino Dr	114	11	NO	135	21	NO
6	City Hills Dr at Panorama Dr	91	48	NO	136	74	NO
7	Project Entrance at Panorama Dr	44	16	NO	175	97	NO
8	Masterson St at Panorama Dr	33	17	NO	152	85	NO

Table 5b
AM Traffic Signal Warrants - Future

#	Intersection	2023 Cumulative			2023 Cumulative+Project			2035 Cumulative			2035 Cumulative+Project		
		Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met
1	Vineland at Paladino Dr	102	18	NO	133	28	NO	146	30	NO	177	40	NO
2	Valley Ln at Paladino Dr	66	34	NO	111	39	NO	93	48	NO	138	53	NO
3	Masterson St at Paladino Dr	24	14	NO	185	72	NO	46	23	NO	200	84	NO
4	Grand Canyon Dr at Paladino Dr	16	8	NO	76	30	NO	35	27	NO	96	41	NO
5	Allfred Harrell Hwy at Paladino Dr	163	17	NO	184	35	NO	300	22	NO	321	35	NO
6	City Hills Dr at Panorama Dr	106	56	NO	145	113	NO	171	90	NO	210	147	NO
7	Project Entrance at Panorama Dr	49	19	NO	180	97	NO	71	30	NO	200	97	NO
8	Masterson St at Panorama Dr	37	20	NO	156	88	NO	59	32	NO	178	100	NO

Table 6a

PM Traffic Signal Warrants – Existing

#	Intersection	2019			2019+Project		
		Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met
1	Vineland at Paladino Dr	63	7	NO	79	11	NO
2	Valley Ln at Paladino Dr	48	11	NO	70	13	NO
3	Masterson St at Paladino Dr	13	7	NO	84	34	NO
4	Grand Canyon Dr at Paladino Dr	0	0	NO	27	6	NO
5	Allfred Harrell Hwy at Paladino Dr	114	8	NO	123	12	NO
6	City Hills Dr at Panorama Dr	118	31	NO	134	66	NO
7	Project Entrance at Panorama Dr	52	26	NO	118	58	NO
8	Masterson St at Panorama Dr	61	16	NO	120	52	NO

Table 6b
PM Traffic Signal Warrants - Future

#	Intersection	2023 Cumulative			2023 Cumulative+Project			2035 Cumulative			2035 Cumulative+Project		
		Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met
1	Vineland at Paladino Dr	71	8	NO	87	12	NO	100	13	NO	116	17	NO
2	Valley Ln at Paladino Dr	54	12	NO	76	14	NO	77	17	NO	99	19	NO
3	Masterson St at Paladino Dr	30	12	NO	102	36	NO	43	25	NO	115	51	NO
4	Grand Canyon Dr at Paladino Dr	16	13	NO	43	19	NO	33	26	NO	60	32	NO
5	Allfred Harrell Hwy at Paladino Dr	171	12	NO	180	16	NO	309	18	NO	318	24	NO
6	City Hills Dr at Panorama Dr	138	37	NO	154	72	NO	221	57	NO	237	92	NO
7	Project Entrance at Panorama Dr	62	30	NO	128	58	NO	96	41	NO	162	58	NO
8	Masterson St at Panorama Dr	70	19	NO	129	55	NO	110	30	NO	169	66	NO

ROADWAY ANALYSIS

The volume-to-capacity ratios shown in Table 8 were calculated for roadways with published ADT information and future projected traffic volumes as shown in Table 7.

A volume-to-capacity ratio (v/c) of greater than 0.80 corresponds to a LOS of less than C, based upon capacity tables derived from the Highway Capacity Manual. The City of Bakersfield's operational goal for roadway capacity is LOS C or better. Mitigation is required where project traffic reduces the LOS to below LOS C, or where the pre-existing condition of the roadway is below LOS C, and the LOS degrades below the pre-existing level of service with the addition of the project.

Table 7
Roadway ADT & Capacity

Street	2019[1]	CUM[2] ADT	Project ADT	2019+Proj ADT	2023 ADT	2023+Proj CUM[2] ADT	2035 CUM[2] ADT	2035+Proj CUM[2] ADT	Existing Capacity
Paladino Dr: Vineland Rd to Masterson St	2121	133	1820	3704	2521	4341	3542	5362	15000
Paladino Dr: Masterson St to Alfred Harrell Hwy	-[3]	67	315	-[3]	-[3]	-[3]	3952	4267	15000
Panorama Dr: Vineland Rd to Calle Way	2759	101	750	3509	3329	4079	5269	6019	15000
Panorama Dr: Calle Way to Masterson St	1441	75	921	2362	1761	2682	2774	3695	15000
Masterson St: Panorama Dr to Paladino Dr	2908	333	796	3704	3762	4558	5953	6749	15000
Masterson St: SR 178 to Panorama Dr	2577	101	1002	3579	3092	4094	4780	5782	15000

[1]KernCog Model Run Data

[2]Cum = Other Project traffic added to future background volumes.

[3]Future Roadway

Table 8
Roadway Level Of Service

Street	v/c 2019	v/c 2019+Proj	v/c (CUM[1]) 2023	(CUM[1]) 2023+Proj	v/c (CUM[1]) 2035	v/c (CUM[1]) 2035+Proj
Paladino Dr: Vineland Rd to Masterson St	0.14	0.25	0.17	0.29	0.24	0.36
Paladino Dr: Masterson St to Alfred Harrell Hwy	0.00	0.00	0.00	0.00	0.26	0.28
Panorama Dr: Vineland Rd to Calle Way	0.18	0.23	0.22	0.27	0.35	0.40
Panorama Dr: Calle Way to Masterson St	0.10	0.16	0.12	0.18	0.18	0.25
Masterson St: Panorama Dr to Paladino Dr	0.19	0.25	0.25	0.30	0.40	0.45
Masterson St: SR 178 to Panorama Dr	0.17	0.24	0.21	0.27	0.32	0.39

[1]Cum = Other Project traffic added to future background volumes.

SUMMARY AND CONCLUSIONS

This study evaluated the potential traffic impacts of a proposed elementary school site located on the southwest corner of Paladino Drive and Masterson Street in the City of Bakersfield.

All intersections and roadways currently operate at or above LOS "C" and are anticipated to do so with the addition of project traffic through the future year 2035.

REFERENCES

1. 2015 Annual Traffic Census, KernCOG
2. Highway Capacity Manual, Transportation Research Board
3. Metropolitan Bakersfield General Plan, December 2002
4. Manual on Uniform Traffic Control Devices for Streets and Highways as Amended for California, 2014 Edition, Federal Highway Administration (FHA)
5. Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE)

APPENDIX

LEVEL OF SERVICE

Intersection 1
Vineland & Paladino Dr

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	24	7	2	58	14	2
Future Vol, veh/h	24	7	2	58	14	2
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	0	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	8	2	63	15	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	26	0	93	26
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	67	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1588	-	907	1050
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	956	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1588	-	906	1050
Mov Cap-2 Maneuver	-	-	-	-	906	-
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	955	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	906	1050	-	-	1588	-
HCM Lane V/C Ratio	0.017	0.002	-	-	0.001	-
HCM Control Delay (s)	9	8.4	-	-	7.3	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	36	7	10	69	14	12
Future Vol, veh/h	36	7	10	69	14	12
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	0	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	8	11	75	15	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	39	0	136	39
Stage 1	-	-	-	-	39	-
Stage 2	-	-	-	-	97	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1571	-	857	1033
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	927	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1571	-	851	1033
Mov Cap-2 Maneuver	-	-	-	-	851	-
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	921	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	851	1033	-	-	1571	-
HCM Lane V/C Ratio	0.018	0.013	-	-	0.007	-
HCM Control Delay (s)	9.3	8.5	-	-	7.3	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	27	8	2	65	16	2
Future Vol, veh/h	27	8	2	65	16	2
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	0	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	9	2	71	17	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	29	0	104	29
Stage 1	-	-	-	-	29	-
Stage 2	-	-	-	-	75	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1584	-	894	1046
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	948	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1584	-	893	1046
Mov Cap-2 Maneuver	-	-	-	-	893	-
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	947	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	893	1046	-	-	1584	-
HCM Lane V/C Ratio	0.019	0.002	-	-	0.001	-
HCM Control Delay (s)	9.1	8.4	-	-	7.3	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	39	8	10	76	16	12
Future Vol, veh/h	39	8	10	76	16	12
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	0	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	9	11	83	17	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	42	0	146	42
Stage 1	-	-	-	-	42	-
Stage 2	-	-	-	-	104	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1567	-	846	1029
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	920	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1567	-	840	1029
Mov Cap-2 Maneuver	-	-	-	-	840	-
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	914	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	840	1029	-	-	1567	-
HCM Lane V/C Ratio	0.021	0.013	-	-	0.007	-
HCM Control Delay (s)	9.4	8.5	-	-	7.3	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	39	11	3	93	26	4
Future Vol, veh/h	39	11	3	93	26	4
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	0	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	12	3	101	28	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	42	0	150	42
Stage 1	-	-	-	-	42	-
Stage 2	-	-	-	-	108	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1567	-	842	1029
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1567	-	840	1029
Mov Cap-2 Maneuver	-	-	-	-	840	-
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	914	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	840	1029	-	-	1567	-
HCM Lane V/C Ratio	0.034	0.004	-	-	0.002	-
HCM Control Delay (s)	9.4	8.5	-	-	7.3	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	51	11	11	104	26	14
Future Vol, veh/h	51	11	11	104	26	14
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	0	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	12	12	113	28	15

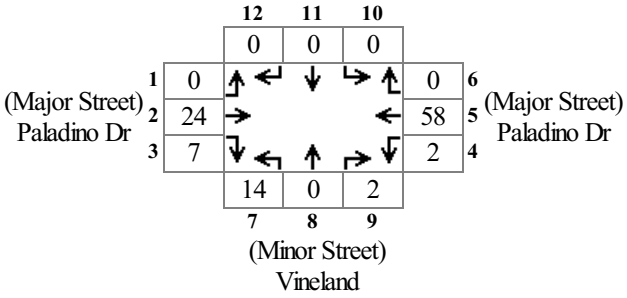
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	55	0	192	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	137	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1550	-	797	1012
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1550	-	791	1012
Mov Cap-2 Maneuver	-	-	-	-	791	-
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	883	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	9.3
HCM LOS			A

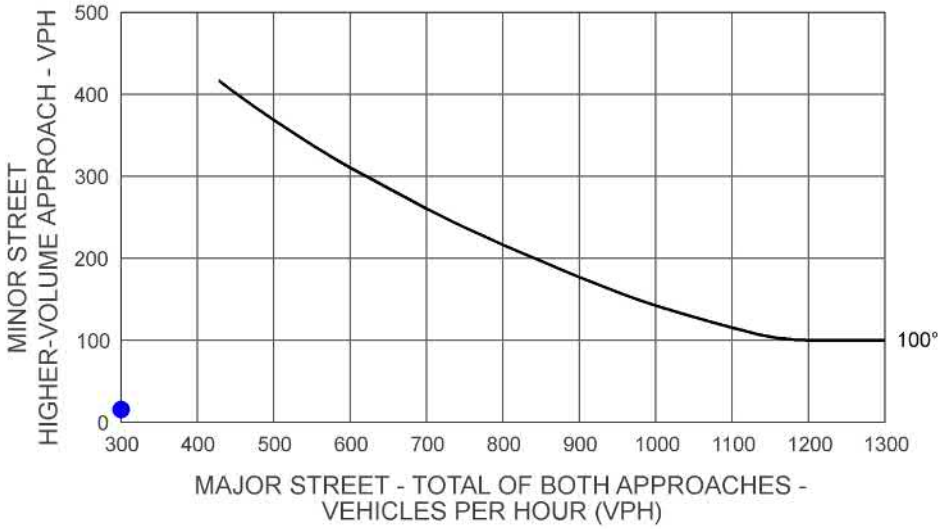
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	791	1012	-	-	1550	-
HCM Lane V/C Ratio	0.036	0.015	-	-	0.008	-
HCM Control Delay (s)	9.7	8.6	-	-	7.3	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing
Intersection #: 1

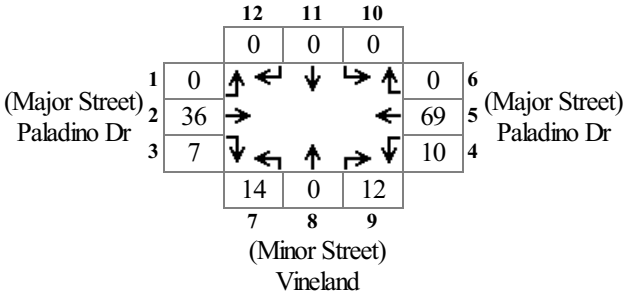


Major Total: 91
Minor High Volume: 16

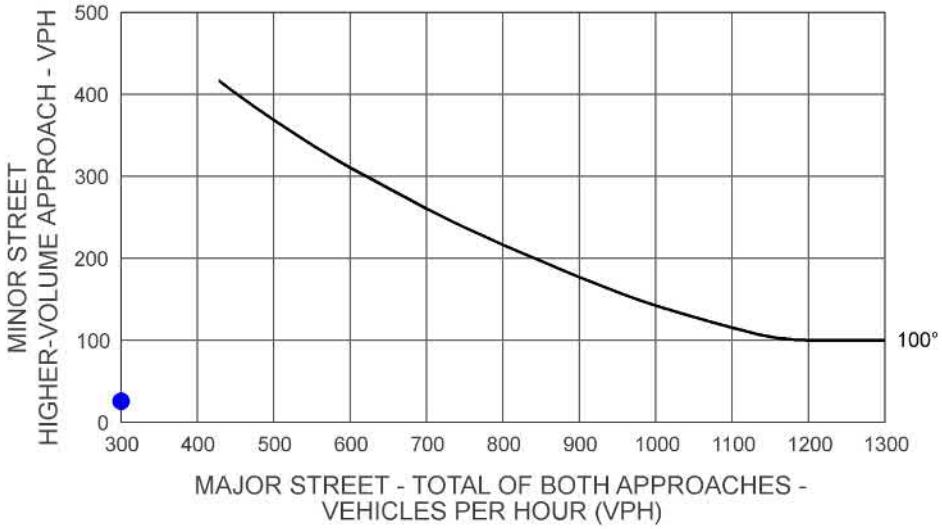


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing+Project
Intersection #: 1

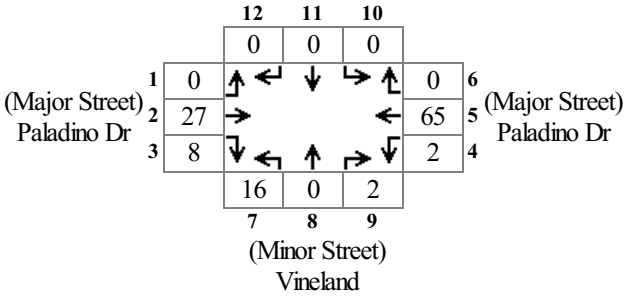


Major Total: 122
Minor High Volume: 26

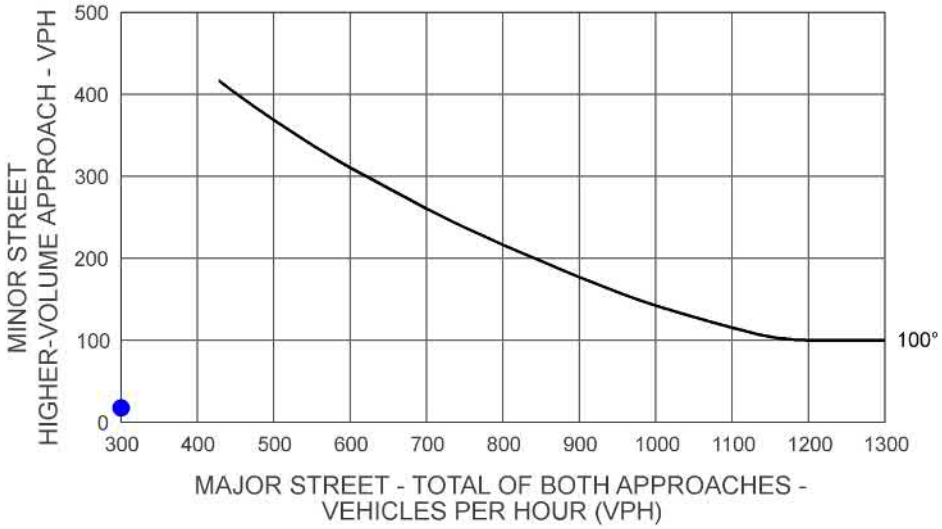


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 1

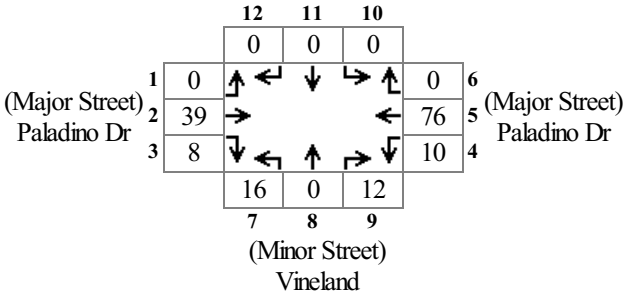


Major Total: 102
Minor High Volume: 18

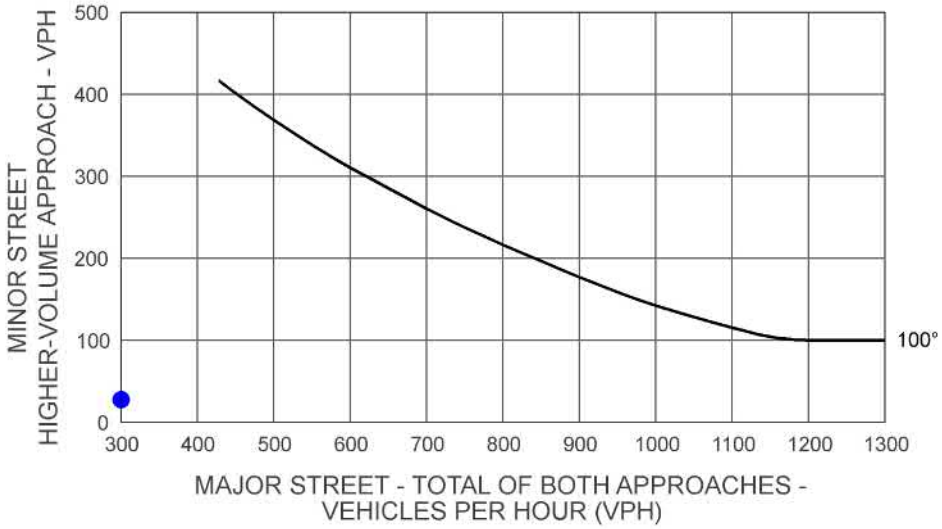


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 1

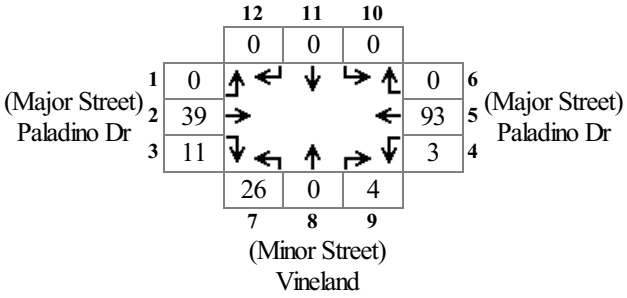


Major Total: 133
Minor High Volume: 28

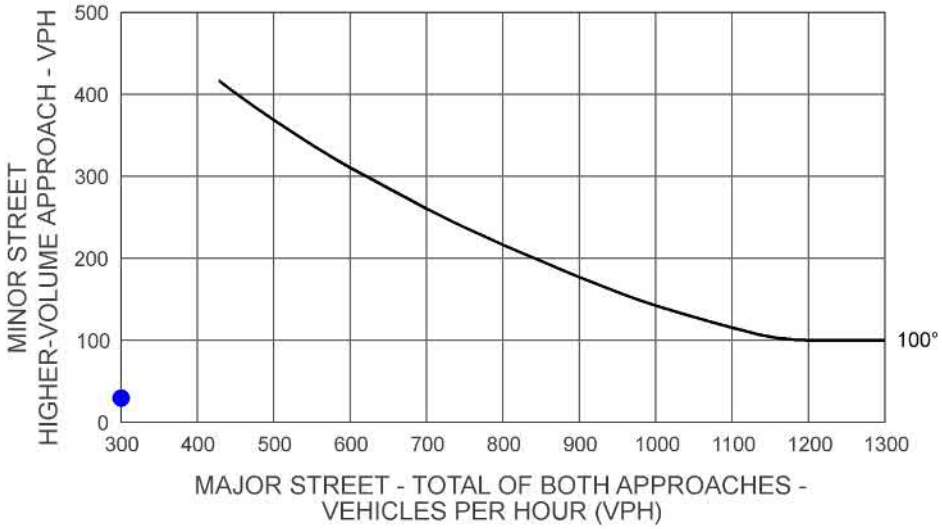


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 1

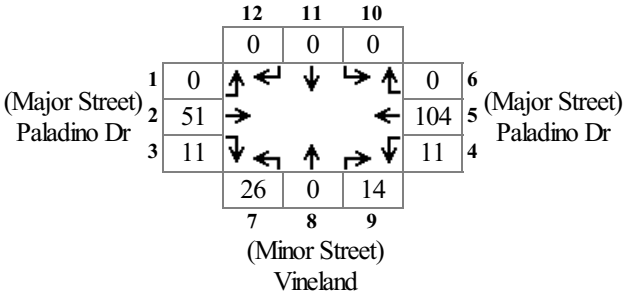


Major Total: 146
Minor High Volume: 30

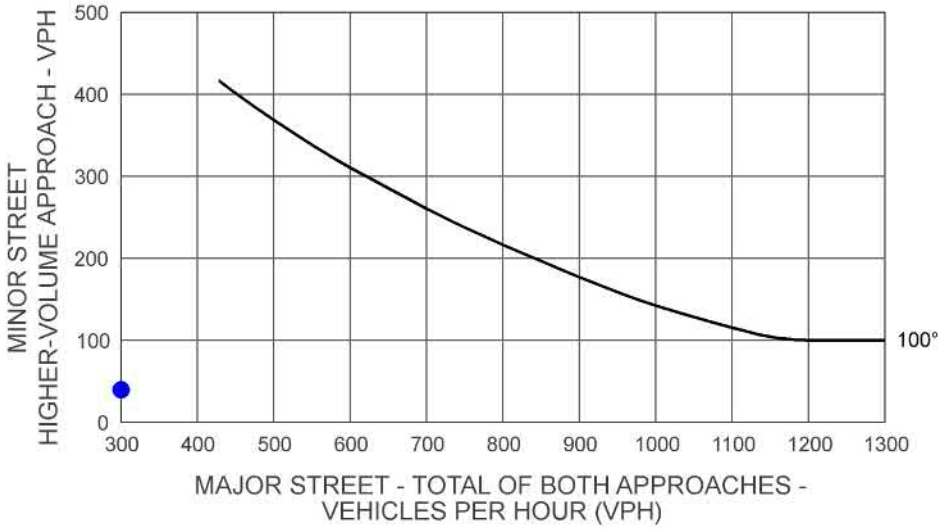


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 1



Major Total: 177
Minor High Volume: 40



Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	32	7	2	22	6	1
Future Vol, veh/h	32	7	2	22	6	1
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	0	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	8	2	24	7	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	35	0	63	35
Stage 1	-	-	-	-	35	-
Stage 2	-	-	-	-	28	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1576	-	943	1038
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	995	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1576	-	942	1038
Mov Cap-2 Maneuver	-	-	-	-	942	-
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	994	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	942	1038	-	-	1576	-
HCM Lane V/C Ratio	0.007	0.001	-	-	0.001	-
HCM Control Delay (s)	8.8	8.5	-	-	7.3	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	37	7	7	28	6	5
Future Vol, veh/h	37	7	7	28	6	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	8	8	30	7	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	40	0	86	40
Stage 1	-	-	-	-	40	-
Stage 2	-	-	-	-	46	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1570	-	915	1031
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	976	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1570	-	910	1031
Mov Cap-2 Maneuver	-	-	-	-	910	-
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	971	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	910	1031	-	-	1570	-
HCM Lane V/C Ratio	0.007	0.005	-	-	0.005	-
HCM Control Delay (s)	9	8.5	-	-	7.3	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	36	8	2	25	7	1
Future Vol, veh/h	36	8	2	25	7	1
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	0	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	9	2	27	8	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	39	0	71	39
Stage 1	-	-	-	-	39	-
Stage 2	-	-	-	-	32	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1571	-	933	1033
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	991	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1571	-	932	1033
Mov Cap-2 Maneuver	-	-	-	-	932	-
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	990	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	932	1033	-	-	1571	-
HCM Lane V/C Ratio	0.008	0.001	-	-	0.001	-
HCM Control Delay (s)	8.9	8.5	-	-	7.3	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	41	8	7	31	7	5
Future Vol, veh/h	41	8	7	31	7	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	9	8	34	8	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	45	0	94	45
Stage 1	-	-	-	-	45	-
Stage 2	-	-	-	-	49	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1563	-	906	1025
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	973	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1563	-	901	1025
Mov Cap-2 Maneuver	-	-	-	-	901	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	968	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	901	1025	-	-	1563	-
HCM Lane V/C Ratio	0.008	0.005	-	-	0.005	-
HCM Control Delay (s)	9	8.5	-	-	7.3	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	51	11	3	35	11	2
Future Vol, veh/h	51	11	3	35	11	2
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	0	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	12	3	38	12	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	55	0	100	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	45	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1550	-	899	1012
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	977	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1550	-	897	1012
Mov Cap-2 Maneuver	-	-	-	-	897	-
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	975	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	897	1012	-	-	1550	-
HCM Lane V/C Ratio	0.013	0.002	-	-	0.002	-
HCM Control Delay (s)	9.1	8.6	-	-	7.3	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	56	11	8	41	11	6
Future Vol, veh/h	56	11	8	41	11	6
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	0	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	12	9	45	12	7

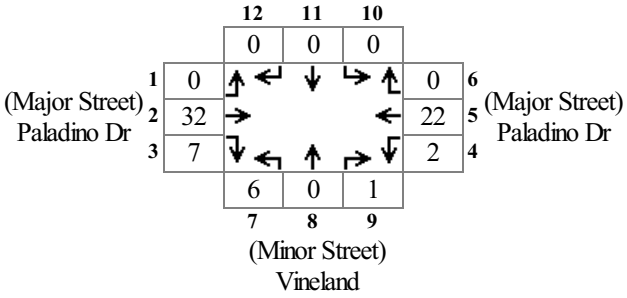
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	61	0	123	61
Stage 1	-	-	-	-	61	-
Stage 2	-	-	-	-	62	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1542	-	872	1004
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	961	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1542	-	867	1004
Mov Cap-2 Maneuver	-	-	-	-	867	-
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	955	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	9
HCM LOS			A

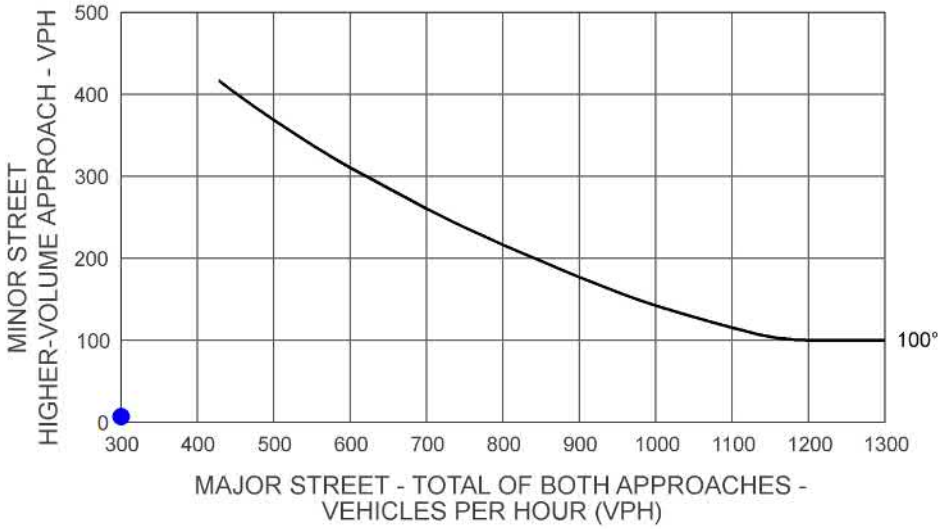
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	867	1004	-	-	1542	-
HCM Lane V/C Ratio	0.014	0.006	-	-	0.006	-
HCM Control Delay (s)	9.2	8.6	-	-	7.3	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing
Intersection #: 1

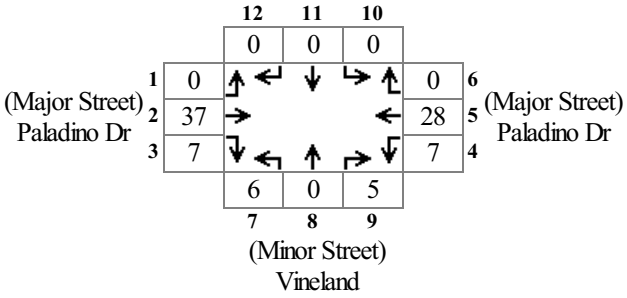


Major Total: 63
Minor High Volume: 7

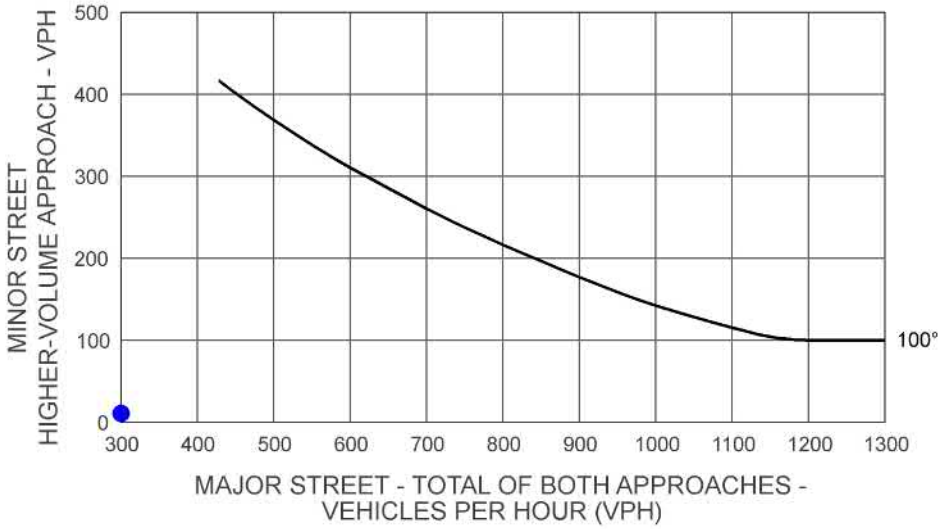


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing+Project
Intersection #: 1

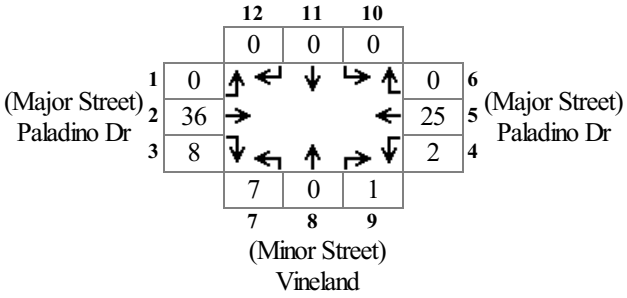


Major Total: 79
Minor High Volume: 11

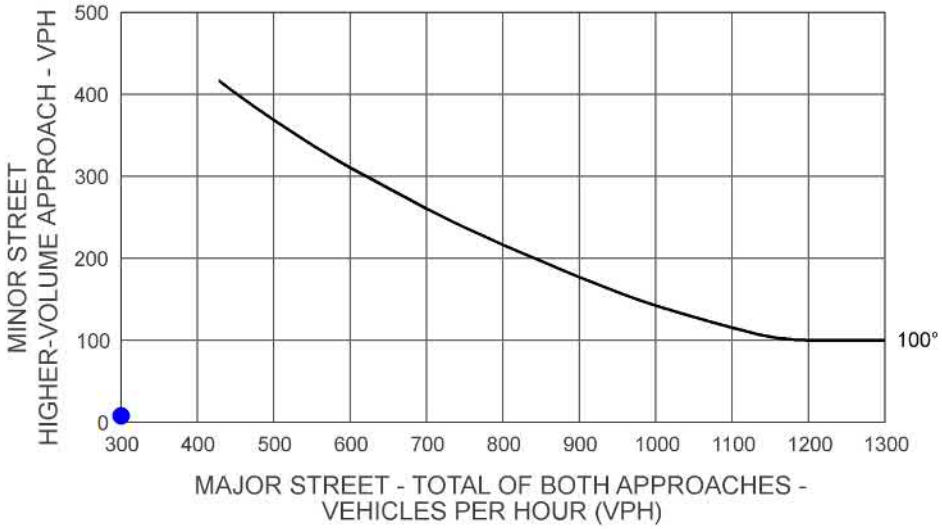


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 1

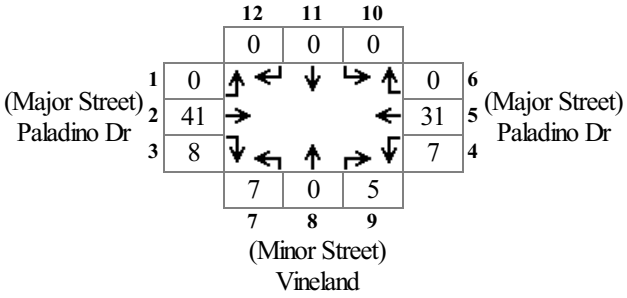


Major Total: 71
Minor High Volume: 8

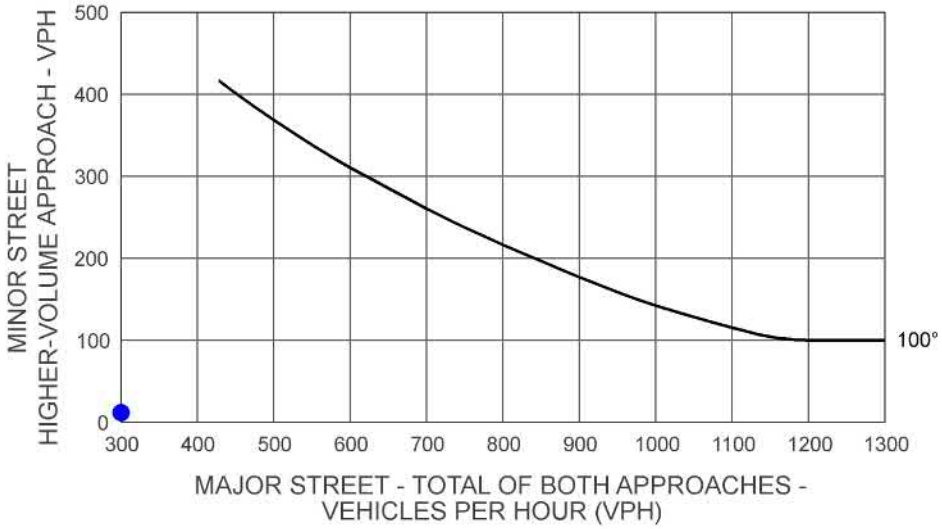


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 1

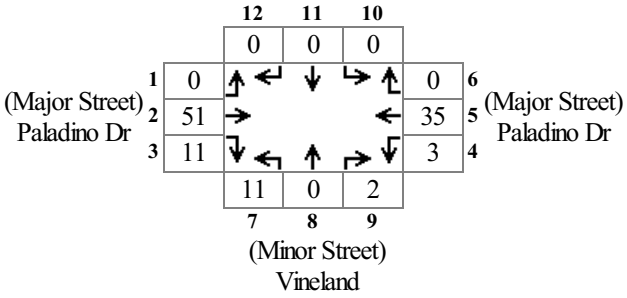


Major Total: 87
Minor High Volume: 12

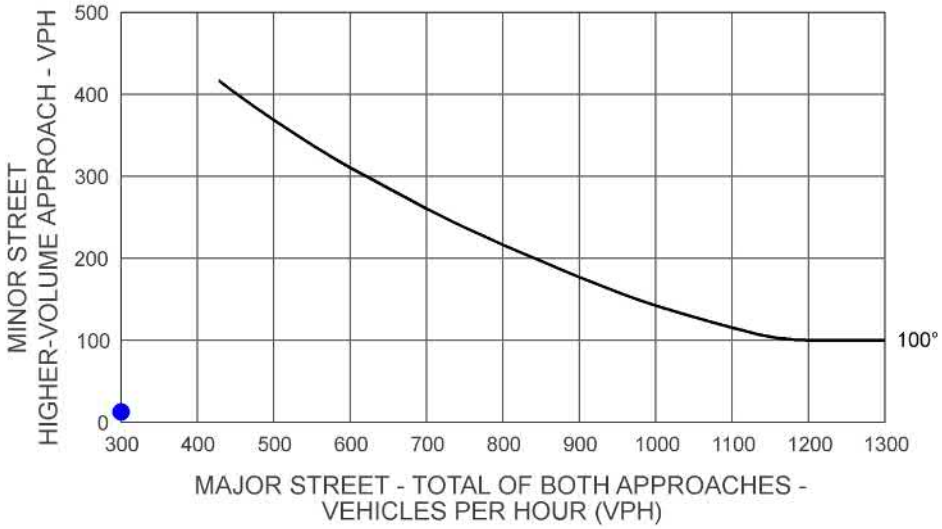


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 1

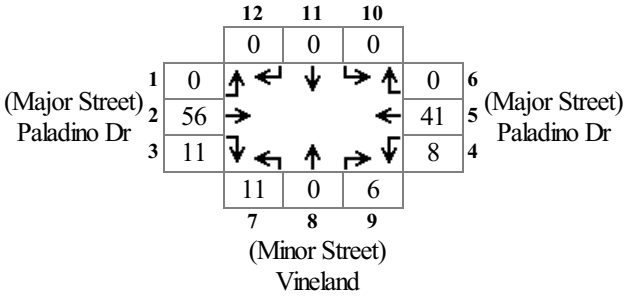


Major Total: 100
Minor High Volume: 13

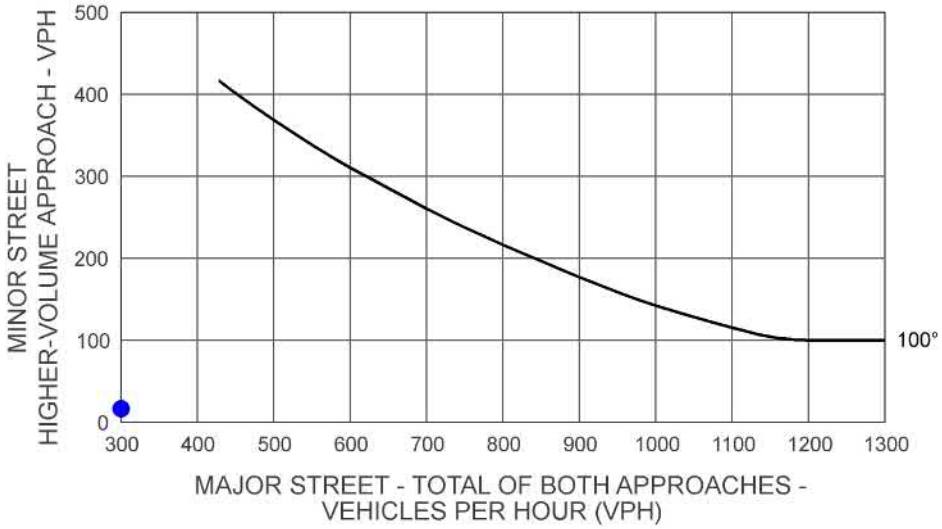


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 1



Major Total: 116
Minor High Volume: 17



Intersection 2
Valley Ln & Paladino Dr

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	13	14	31	0	2	28
Future Vol, veh/h	13	14	31	0	2	28
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	220	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	15	34	0	2	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	39	0	-	0	82	44
Stage 1	-	-	-	-	39	-
Stage 2	-	-	-	-	43	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1571	-	-	-	920	1026
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	979	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1564	-	-	-	904	1017
Mov Cap-2 Maneuver	-	-	-	-	904	-
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	966	-

Approach	EB	WB	SB
HCM Control Delay, s	3.5	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1564	-	-	-	1009
HCM Lane V/C Ratio	0.009	-	-	-	0.032
HCM Control Delay (s)	7.3	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	13	36	50	4	7	28
Future Vol, veh/h	13	36	50	4	7	28
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	220	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	39	54	4	8	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	59	0	-	0	126	64
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	67	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1545	-	-	-	869	1000
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	956	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1539	-	-	-	854	992
Mov Cap-2 Maneuver	-	-	-	-	854	-
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	943	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1539	-	-	-	961
HCM Lane V/C Ratio	0.009	-	-	-	0.04
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	15	16	35	0	2	32
Future Vol, veh/h	15	16	35	0	2	32
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	220	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	17	38	0	2	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	43	0	-	0	93	48
Stage 1	-	-	-	-	43	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1566	-	-	-	907	1021
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1559	-	-	-	890	1013
Mov Cap-2 Maneuver	-	-	-	-	890	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	958	-

Approach	EB	WB	SB
HCM Control Delay, s	3.5	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1559	-	-	-	1005
HCM Lane V/C Ratio	0.01	-	-	-	0.037
HCM Control Delay (s)	7.3	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	15	38	54	4	7	32
Future Vol, veh/h	15	38	54	4	7	32
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	220	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	41	59	4	8	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	64	0	-	0	138	69
Stage 1	-	-	-	-	64	-
Stage 2	-	-	-	-	74	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1538	-	-	-	855	994
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	949	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1532	-	-	-	839	986
Mov Cap-2 Maneuver	-	-	-	-	839	-
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	935	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1532	-	-	-	956
HCM Lane V/C Ratio	0.011	-	-	-	0.044
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	21	22	50	0	3	45
Future Vol, veh/h	21	22	50	0	3	45
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	220	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	24	54	0	3	49

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	59	0	-	0	129	64
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	70	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1545	-	-	-	865	1000
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	953	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1539	-	-	-	845	992
Mov Cap-2 Maneuver	-	-	-	-	845	-
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	935	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1539	-	-	-	981
HCM Lane V/C Ratio	0.015	-	-	-	0.053
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	21	44	69	4	8	45
Future Vol, veh/h	21	44	69	4	8	45
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	220	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	48	75	4	9	49

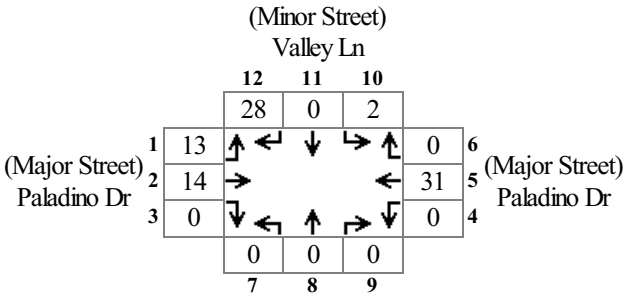
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	80	0	-	0	173	85
Stage 1	-	-	-	-	80	-
Stage 2	-	-	-	-	93	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1518	-	-	-	817	974
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	931	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1512	-	-	-	797	966
Mov Cap-2 Maneuver	-	-	-	-	797	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	912	-

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	9.1
HCM LOS			A

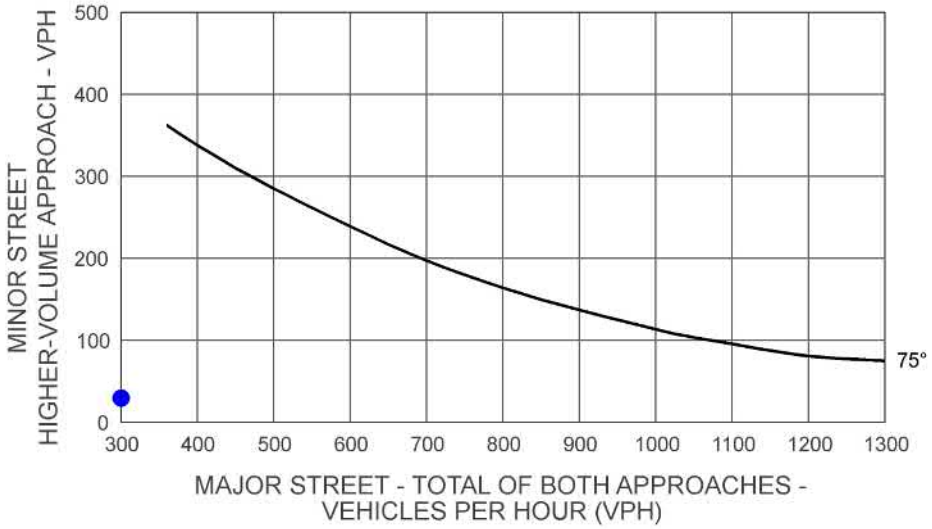
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1512	-	-	-	936
HCM Lane V/C Ratio	0.015	-	-	-	0.062
HCM Control Delay (s)	7.4	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing
Intersection #: 2

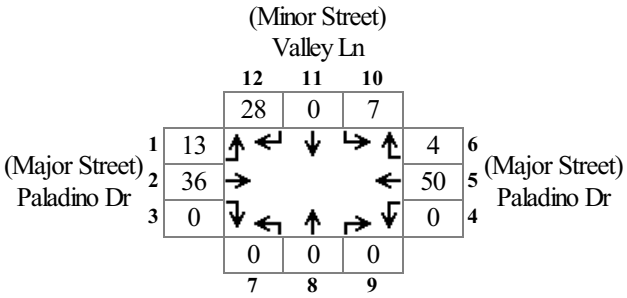


Major Total: 58
Minor High Volume: 30

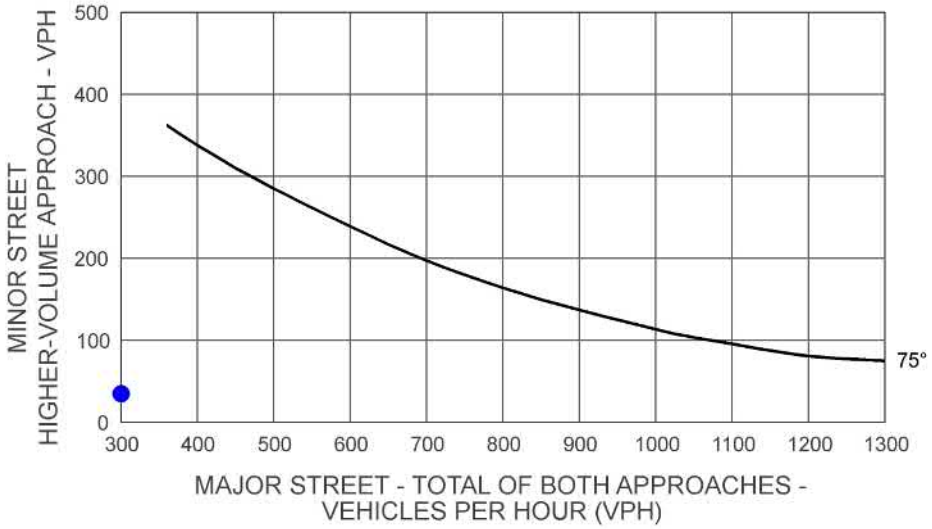


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing+Project
Intersection #: 2

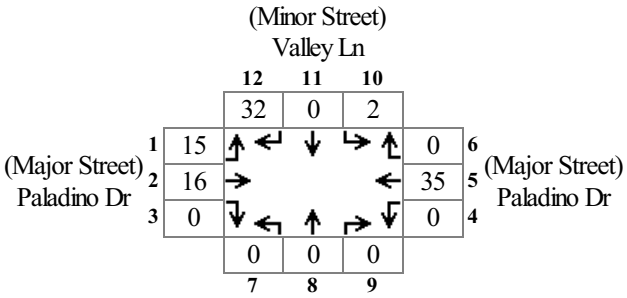


Major Total: 103
Minor High Volume: 35

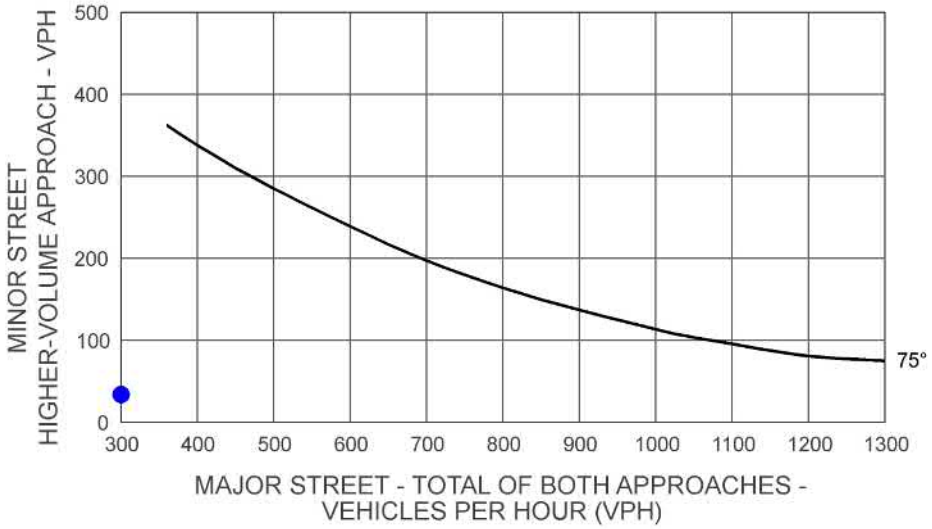


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 2

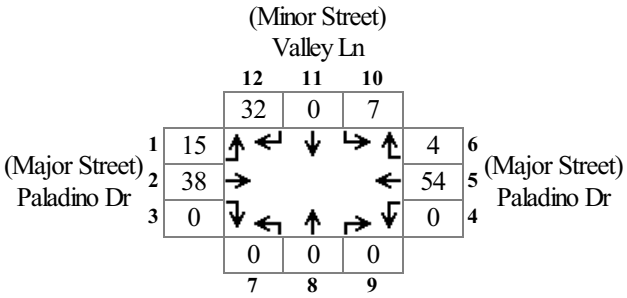


Major Total: 66
Minor High Volume: 34

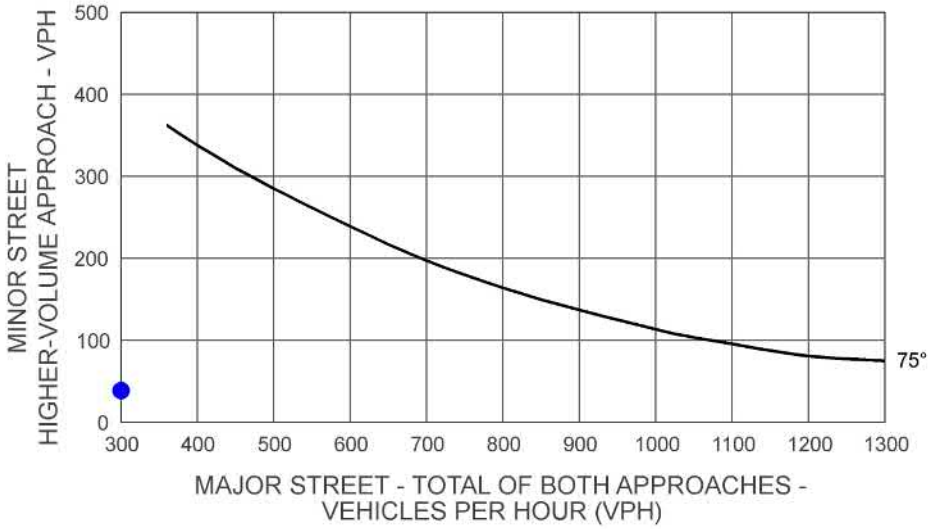


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 2

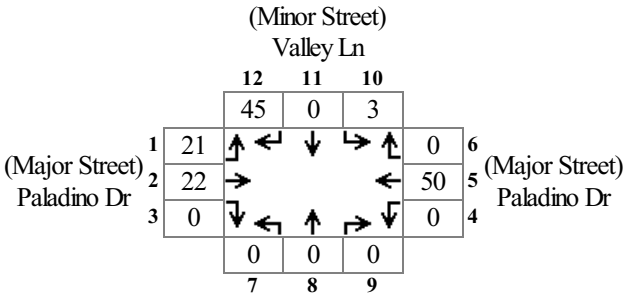


Major Total: 111
Minor High Volume: 39

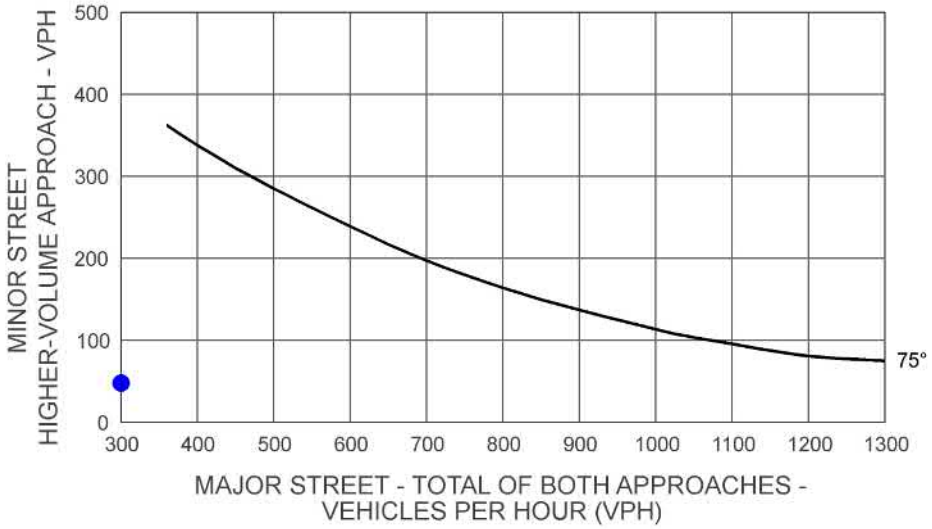


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 2

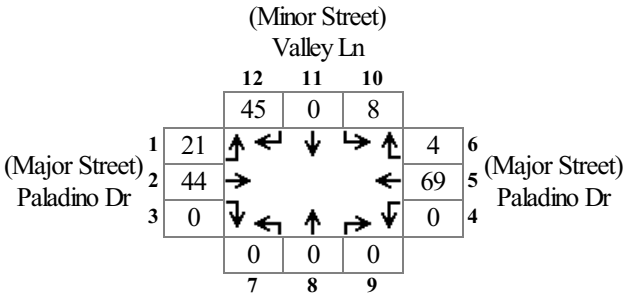


Major Total: 93
Minor High Volume: 48

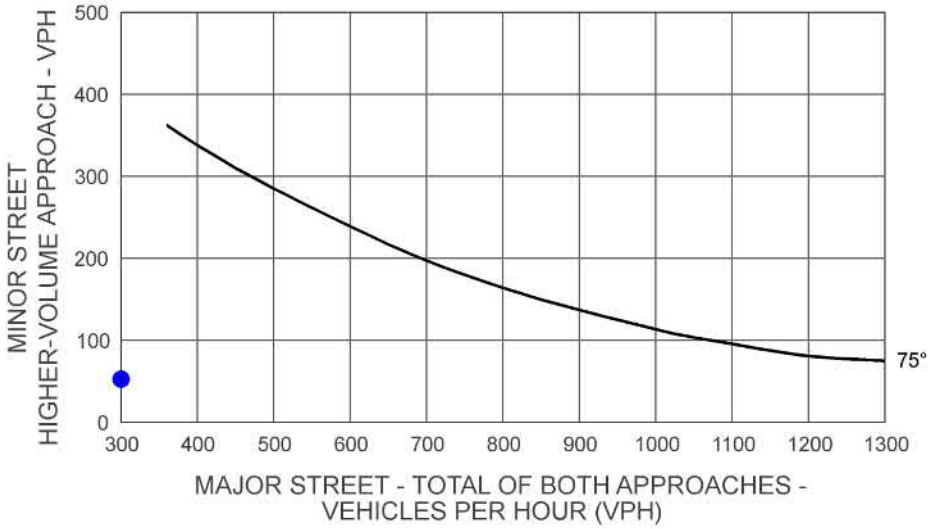


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 2



Major Total: 138
Minor High Volume: 53



Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	16	16	14	2	2	9
Future Vol, veh/h	16	16	14	2	2	9
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	220	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	17	15	2	2	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	20	0	-	0	72	25
Stage 1	-	-	-	-	20	-
Stage 2	-	-	-	-	52	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1596	-	-	-	932	1051
Stage 1	-	-	-	-	1003	-
Stage 2	-	-	-	-	970	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1589	-	-	-	914	1042
Mov Cap-2 Maneuver	-	-	-	-	914	-
Stage 1	-	-	-	-	999	-
Stage 2	-	-	-	-	955	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1589	-	-	-	1016
HCM Lane V/C Ratio	0.011	-	-	-	0.012
HCM Control Delay (s)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	16	25	25	4	4	9
Future Vol, veh/h	16	25	25	4	4	9
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	220	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	27	27	4	4	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	32	0	-	0	94	37
Stage 1	-	-	-	-	32	-
Stage 2	-	-	-	-	62	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1580	-	-	-	906	1035
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	961	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1573	-	-	-	889	1026
Mov Cap-2 Maneuver	-	-	-	-	889	-
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	946	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1573	-	-	-	980
HCM Lane V/C Ratio	0.011	-	-	-	0.014
HCM Control Delay (s)	7.3	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	18	18	16	2	2	10
Future Vol, veh/h	18	18	16	2	2	10
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	220	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	20	17	2	2	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	22	0	-	0	81	27
Stage 1	-	-	-	-	22	-
Stage 2	-	-	-	-	59	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1593	-	-	-	921	1048
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	964	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1586	-	-	-	901	1039
Mov Cap-2 Maneuver	-	-	-	-	901	-
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	948	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1586	-	-	-	1013
HCM Lane V/C Ratio	0.012	-	-	-	0.013
HCM Control Delay (s)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	18	27	27	4	4	10
Future Vol, veh/h	18	27	27	4	4	10
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	220	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	29	29	4	4	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	34	0	-	0	102	39
Stage 1	-	-	-	-	34	-
Stage 2	-	-	-	-	68	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1578	-	-	-	896	1033
Stage 1	-	-	-	-	988	-
Stage 2	-	-	-	-	955	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1571	-	-	-	877	1024
Mov Cap-2 Maneuver	-	-	-	-	877	-
Stage 1	-	-	-	-	984	-
Stage 2	-	-	-	-	939	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1571	-	-	-	977
HCM Lane V/C Ratio	0.012	-	-	-	0.016
HCM Control Delay (s)	7.3	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	26	26	22	3	3	14
Future Vol, veh/h	26	26	22	3	3	14
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	220	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	28	24	3	3	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	29	0	-	0	114	34
Stage 1	-	-	-	-	29	-
Stage 2	-	-	-	-	85	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1584	-	-	-	882	1039
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	938	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1577	-	-	-	859	1030
Mov Cap-2 Maneuver	-	-	-	-	859	-
Stage 1	-	-	-	-	990	-
Stage 2	-	-	-	-	917	-

Approach	EB	WB	SB
HCM Control Delay, s	3.7	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1577	-	-	-	995
HCM Lane V/C Ratio	0.018	-	-	-	0.019
HCM Control Delay (s)	7.3	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	26	35	33	5	5	14
Future Vol, veh/h	26	35	33	5	5	14
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	220	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	38	36	5	5	15

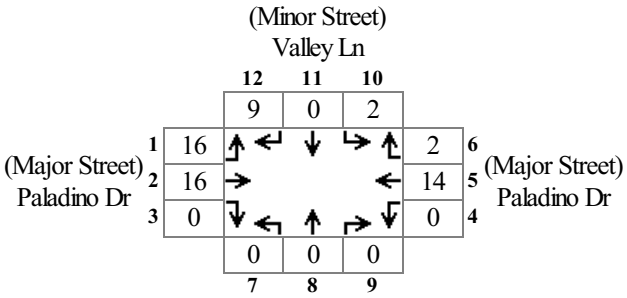
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	41	0	-	0	136	46
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	95	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1568	-	-	-	857	1023
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	929	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1561	-	-	-	835	1014
Mov Cap-2 Maneuver	-	-	-	-	835	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	908	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	8.8
HCM LOS			A

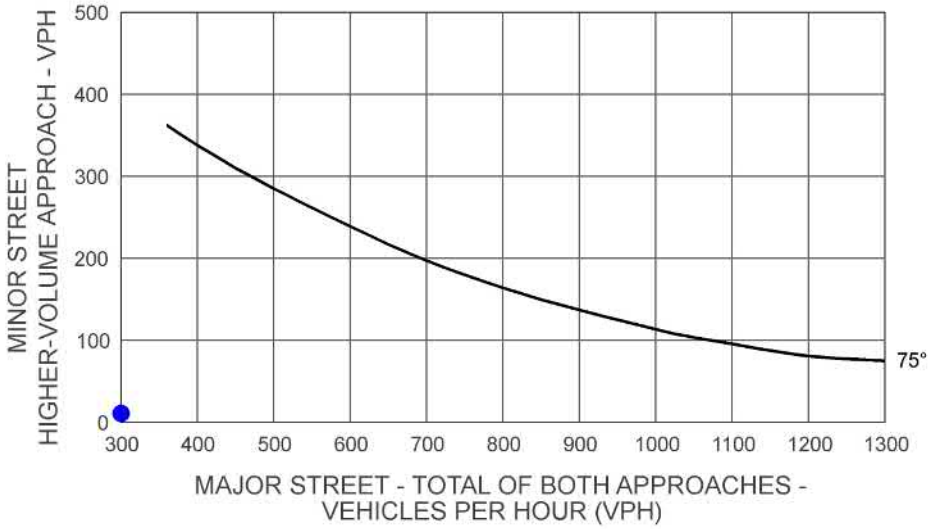
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1561	-	-	-	960
HCM Lane V/C Ratio	0.018	-	-	-	0.022
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing
Intersection #: 2

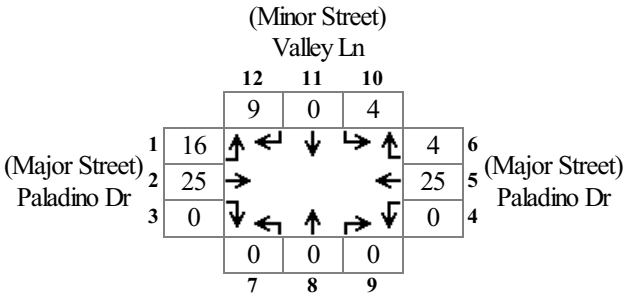


Major Total: 48
Minor High Volume: 11

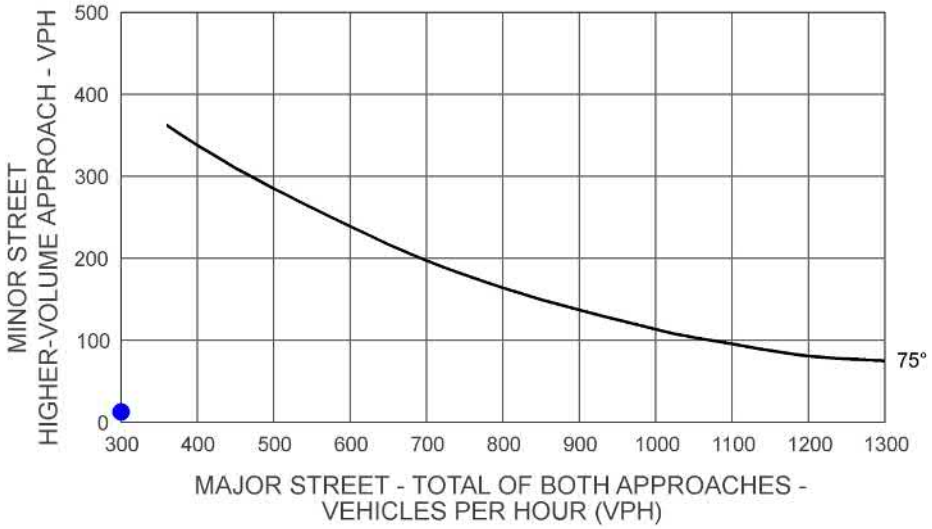


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing+Project
Intersection #: 2

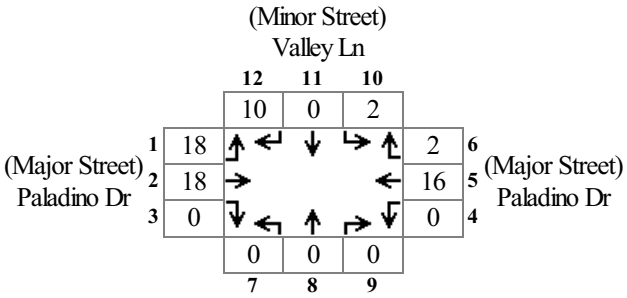


Major Total: 70
Minor High Volume: 13

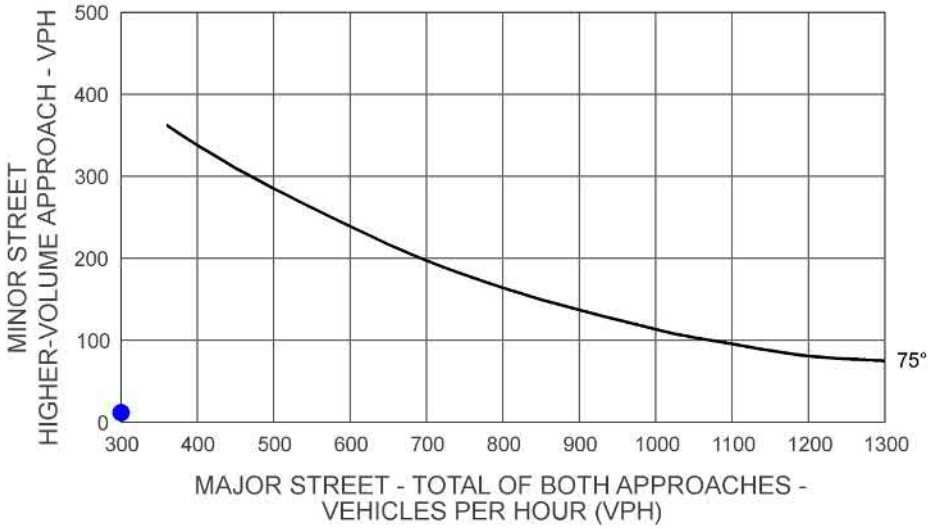


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 2

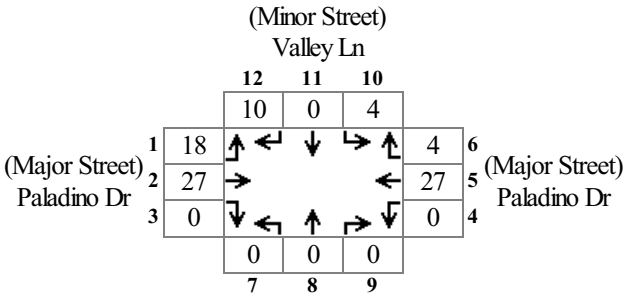


Major Total: 54
Minor High Volume: 12

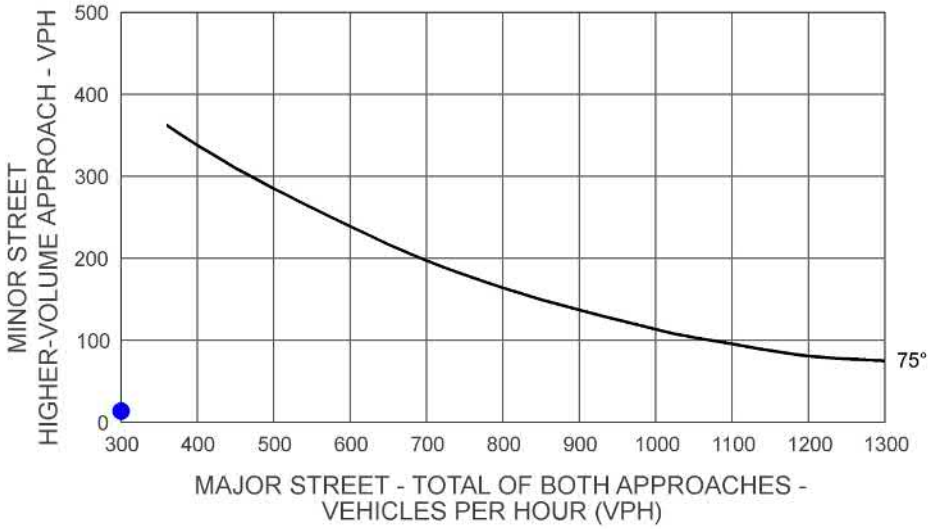


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 2

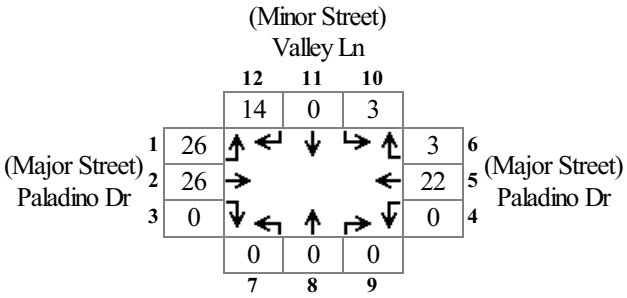


Major Total: 76
Minor High Volume: 14

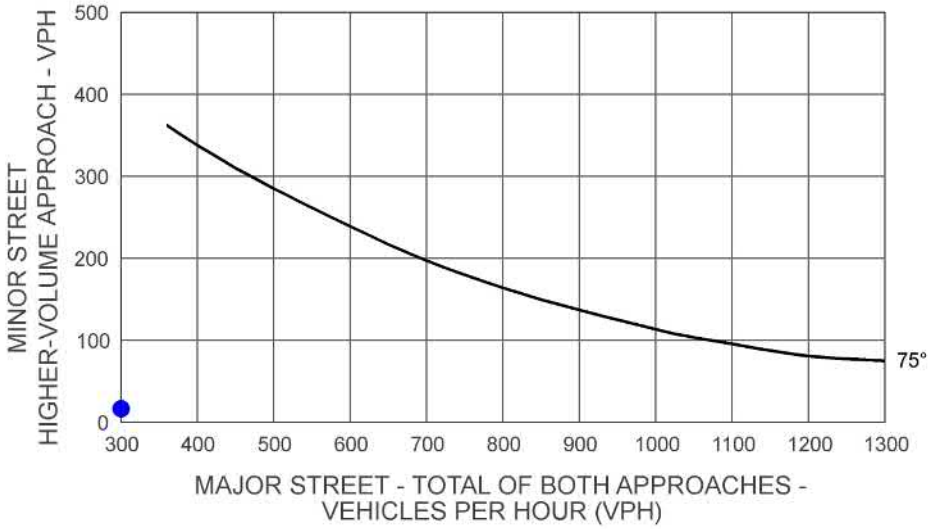


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 2

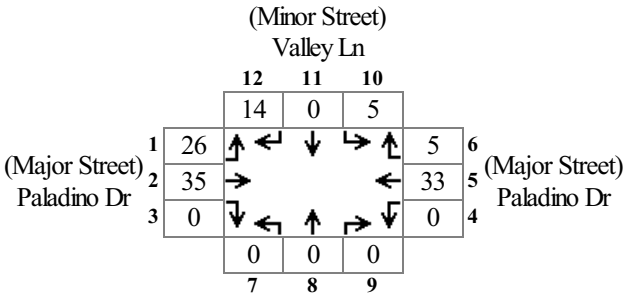


Major Total: 77
Minor High Volume: 17

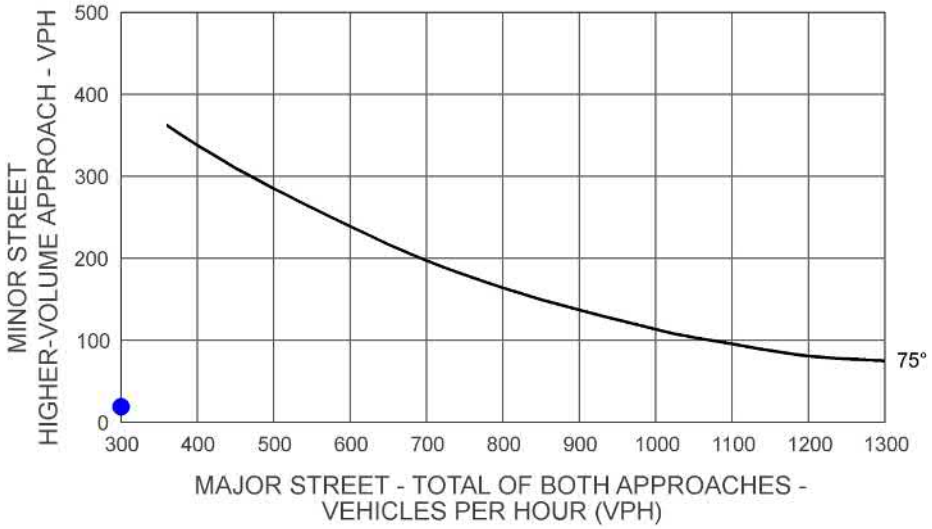


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 2



Major Total: 99
Minor High Volume: 19



Intersection 3
Masterson St & Paladino Dr

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	1	2	9	0	1	1	0	0	5	2	2
Future Vol, veh/h	0	1	2	9	0	1	1	0	0	5	2	2
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	2	10	0	1	1	0	0	5	2	2
Number of Lanes	0	1	1	1	0	1	1	1	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	3
HCM Control Delay	6.8	7.6	7.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	100%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	2	2	1	2	9	1	1	0	2	8
LT Vol	5	0	0	1	0	0	1	0	0	2	0
Through Vol	0	2	0	0	2	0	0	1	0	0	8
RT Vol	0	0	2	0	0	9	0	0	0	0	0
Lane Flow Rate	5	2	2	1	2	10	1	1	0	2	9
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.008	0.003	0.002	0.002	0.003	0.011	0.002	0.001	0	0.003	0.011
Departure Headway (Hd)	5.081	4.581	3.881	5.079	4.579	3.879	5.094	4.594	4.594	5.077	4.577
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	706	783	924	706	783	924	704	780	0	707	784
Service Time	2.798	2.298	1.597	2.796	2.296	1.597	2.817	2.317	2.317	2.793	2.293
HCM Lane V/C Ratio	0.007	0.003	0.002	0.001	0.003	0.011	0.001	0.001	0	0.003	0.011
HCM Control Delay	7.8	7.3	6.6	7.8	7.3	6.6	7.8	7.3	7.3	7.8	7.3
HCM Lane LOS	A	A	A	A	A	A	A	A	N	A	A
HCM 95th-tile Q	0	0	0	0	0	0	0	0	0	0	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	8	2
Future Vol, veh/h	0	2	8	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	2	9	2
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	7.3
HCM LOS	A

Lane	SBLn3

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	11	47	58	0	1	64	0	0	66	2	2
Future Vol, veh/h	0	11	47	58	0	1	64	0	0	66	2	2
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	51	63	0	1	70	0	0	72	2	2
Number of Lanes	0	1	1	1	0	1	1	1	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	3
HCM Control Delay	7.7	8.3	8.9
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	100%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	2	2	11	47	58	1	64	0	2	8
LT Vol	66	0	0	11	0	0	1	0	0	2	0
Through Vol	0	2	0	0	47	0	0	64	0	0	8
RT Vol	0	0	2	0	0	58	0	0	0	0	0
Lane Flow Rate	72	2	2	12	51	63	1	70	0	2	9
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.112	0.003	0.003	0.018	0.071	0.075	0.002	0.098	0	0.003	0.013
Departure Headway (Hd)	5.599	5.098	4.396	5.471	4.971	4.271	5.556	5.056	5.056	5.719	5.218
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	641	703	815	656	722	840	646	710	0	627	687
Service Time	3.321	2.82	2.119	3.189	2.689	1.989	3.276	2.776	2.776	3.445	2.943
HCM Lane V/C Ratio	0.112	0.003	0.002	0.018	0.071	0.075	0.002	0.099	0	0.003	0.013
HCM Control Delay	9	7.8	7.1	8.3	8.1	7.3	8.3	8.3	7.8	8.5	8
HCM Lane LOS	A	A	A	A	A	A	A	A	N	A	A
HCM 95th-tile Q	0.4	0	0	0.1	0.2	0.2	0	0.3	0	0	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	8	14
Future Vol, veh/h	0	2	8	14
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	2	9	15
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	7.6
HCM LOS	A

Lane	SBLn3

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	1	2	11	0	2	1	1	0	6	2	3
Future Vol, veh/h	0	1	2	11	0	2	1	1	0	6	2	3
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	2	12	0	2	1	1	0	7	2	3
Number of Lanes	0	1	1	1	0	1	1	1	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	3
HCM Control Delay	6.9	7.4	7.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	6	2	3	1	2	11	2	1	1	2	9
LT Vol	6	0	0	1	0	0	2	0	0	2	0
Through Vol	0	2	0	0	2	0	0	1	0	0	9
RT Vol	0	0	3	0	0	11	0	0	1	0	0
Lane Flow Rate	7	2	3	1	2	12	2	1	1	2	10
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.009	0.003	0.004	0.002	0.003	0.013	0.003	0.001	0.001	0.003	0.012
Departure Headway (Hd)	5.09	4.59	3.89	5.089	4.589	3.889	5.103	4.603	3.903	5.087	4.587
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	705	782	922	705	781	921	702	778	917	705	782
Service Time	2.806	2.306	1.606	2.808	2.308	1.608	2.828	2.328	1.628	2.804	2.304
HCM Lane V/C Ratio	0.01	0.003	0.003	0.001	0.003	0.013	0.003	0.001	0.001	0.003	0.013
HCM Control Delay	7.9	7.3	6.6	7.8	7.3	6.7	7.8	7.3	6.6	7.8	7.4
HCM Lane LOS	A	A	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0	0	0	0	0	0	0	0	0	0	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	9	2
Future Vol, veh/h	0	2	9	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	2	10	2
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	7.3
HCM LOS	A

Lane	SBLn3

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	11	47	60	0	2	64	1	0	67	2	3
Future Vol, veh/h	0	11	47	60	0	2	64	1	0	67	2	3
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	51	65	0	2	70	1	0	73	2	3
Number of Lanes	0	1	1	1	0	1	1	1	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	3
HCM Control Delay	7.8	8.3	8.9
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	67	2	3	11	47	60	2	64	1	2	9
LT Vol	67	0	0	11	0	0	2	0	0	2	0
Through Vol	0	2	0	0	47	0	0	64	0	0	9
RT Vol	0	0	3	0	0	60	0	0	1	0	0
Lane Flow Rate	73	2	3	12	51	65	2	70	1	2	10
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.113	0.003	0.004	0.018	0.071	0.078	0.003	0.098	0.001	0.003	0.014
Departure Headway (Hd)	5.594	5.094	4.394	5.484	4.984	4.284	5.57	5.07	4.37	5.712	5.212
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	642	704	816	655	721	839	644	709	821	628	688
Service Time	3.312	2.812	2.112	3.197	2.697	1.997	3.286	2.786	2.086	3.434	2.934
HCM Lane V/C Ratio	0.114	0.003	0.004	0.018	0.071	0.077	0.003	0.099	0.001	0.003	0.015
HCM Control Delay	9	7.8	7.1	8.3	8.1	7.4	8.3	8.3	7.1	8.5	8
HCM Lane LOS	A	A	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.4	0	0	0.1	0.2	0.3	0	0.3	0	0	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	9	14
Future Vol, veh/h	0	2	9	14
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	2	10	15
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	7.6
HCM LOS	A

Lane	SBLn3

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	2	4	17	0	6	3	1	0	10	4	9
Future Vol, veh/h	0	2	4	17	0	6	3	1	0	10	4	9
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	4	18	0	7	3	1	0	11	4	10
Number of Lanes	0	1	1	1	0	1	1	1	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	3
HCM Control Delay	7	7.7	7.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	4	9	2	4	17	6	3	1	4	15
LT Vol	10	0	0	2	0	0	6	0	0	4	0
Through Vol	0	4	0	0	4	0	0	3	0	0	15
RT Vol	0	0	9	0	0	17	0	0	1	0	0
Lane Flow Rate	11	4	10	2	4	18	7	3	1	4	16
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.015	0.006	0.011	0.003	0.006	0.02	0.009	0.004	0.001	0.006	0.021
Departure Headway (Hd)	5.131	4.631	3.931	5.14	4.64	3.94	5.158	4.658	3.958	5.133	4.633
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	697	771	907	694	769	904	692	765	899	697	772
Service Time	2.868	2.368	1.668	2.884	2.384	1.684	2.906	2.406	1.706	2.868	2.368
HCM Lane V/C Ratio	0.016	0.005	0.011	0.003	0.005	0.02	0.01	0.004	0.001	0.006	0.021
HCM Control Delay	7.9	7.4	6.7	7.9	7.4	6.8	8	7.4	6.7	7.9	7.5
HCM Lane LOS	A	A	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0	0	0	0	0	0.1	0	0	0	0	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	4	15	4
Future Vol, veh/h	0	4	15	4
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	16	4
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	7.4
HCM LOS	A

Lane	SBLn3

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	12	49	66	0	6	66	1	0	71	4	9
Future Vol, veh/h	0	12	49	66	0	6	66	1	0	71	4	9
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	13	53	72	0	7	72	1	0	77	4	10
Number of Lanes	0	1	1	1	0	1	1	1	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	3
HCM Control Delay	7.9	8.5	8.9
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	71	4	9	12	49	66	6	66	1	4	15
LT Vol	71	0	0	12	0	0	6	0	0	4	0
Through Vol	0	4	0	0	49	0	0	66	0	0	15
RT Vol	0	0	9	0	0	66	0	0	1	0	0
Lane Flow Rate	77	4	10	13	53	72	7	72	1	4	16
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.121	0.006	0.012	0.02	0.075	0.087	0.01	0.103	0.001	0.007	0.024
Departure Headway (Hd)	5.659	5.159	4.459	5.563	5.063	4.363	5.652	5.152	4.452	5.78	5.28
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	634	694	803	645	709	823	634	697	804	620	678
Service Time	3.386	2.886	2.186	3.282	2.782	2.082	3.375	2.875	2.175	3.509	3.009
HCM Lane V/C Ratio	0.121	0.006	0.012	0.02	0.075	0.087	0.011	0.103	0.001	0.006	0.024
HCM Control Delay	9.2	7.9	7.2	8.4	8.2	7.5	8.4	8.5	7.2	8.5	8.1
HCM Lane LOS	A	A	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.4	0	0	0.1	0.2	0.3	0	0.3	0	0	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

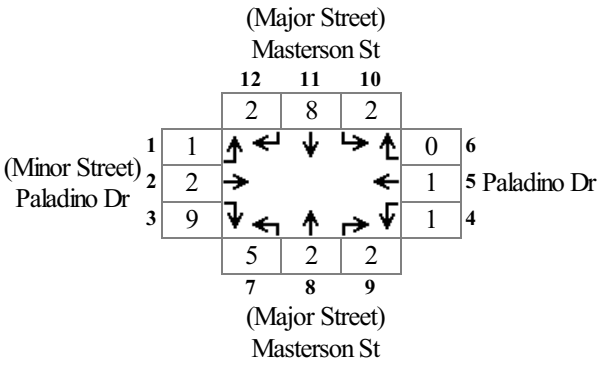
Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	4	15	16
Future Vol, veh/h	0	4	15	16
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	16	17
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	7.8
HCM LOS	A

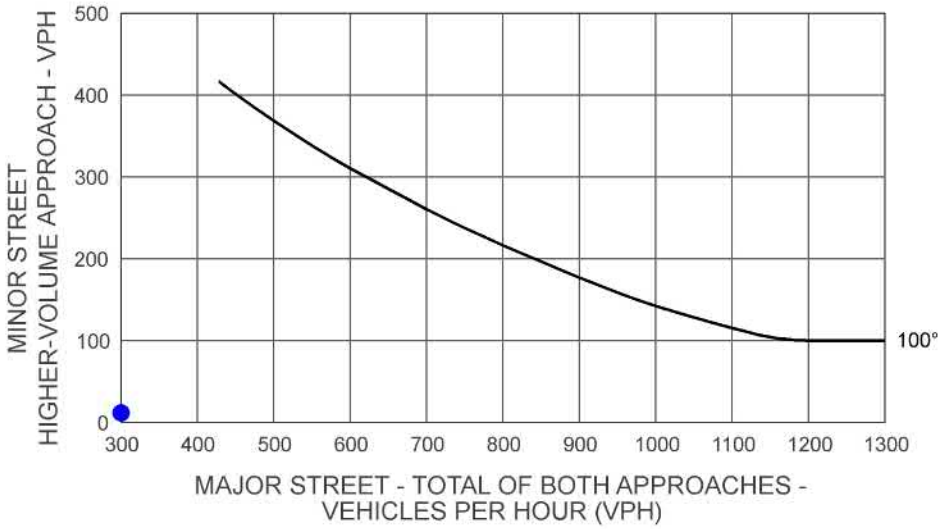
Lane	SBLn3

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing
Intersection #: 3

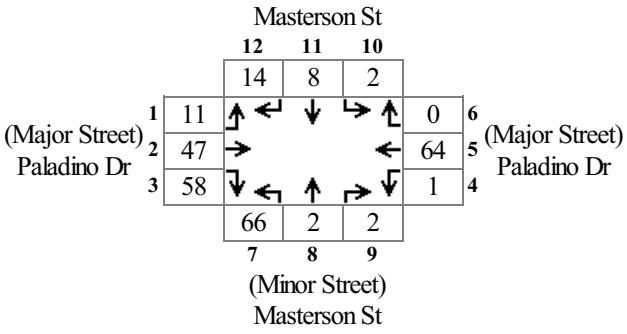


Major Total: 21
Minor High Volume: 12

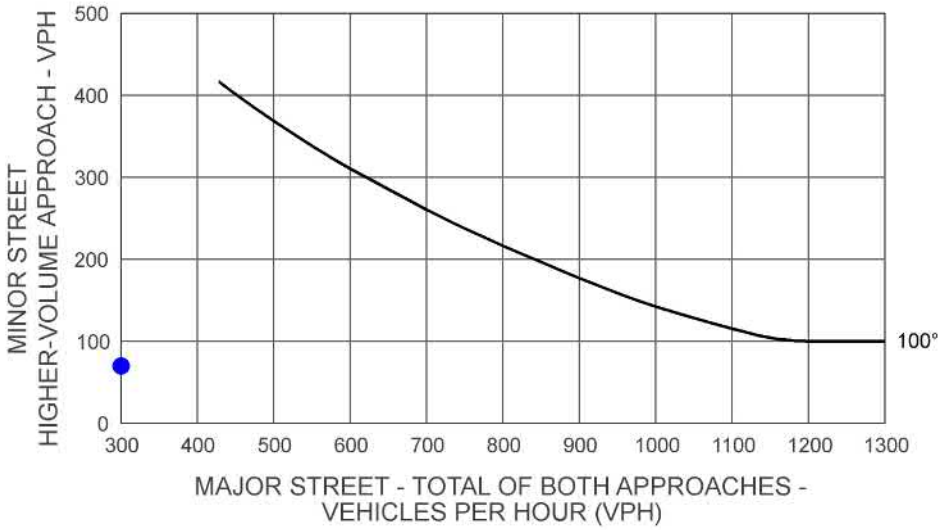


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing+Project
Intersection #: 3

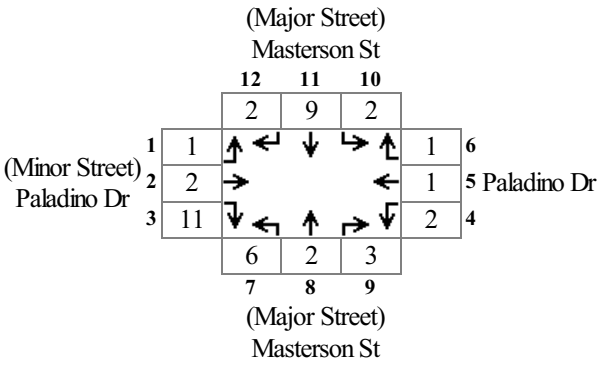


Major Total: 181
Minor High Volume: 70

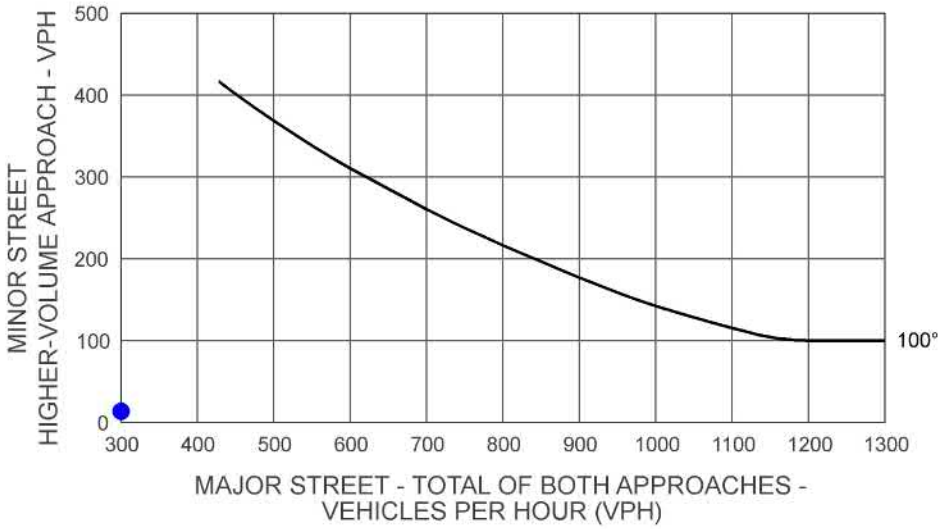


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 3

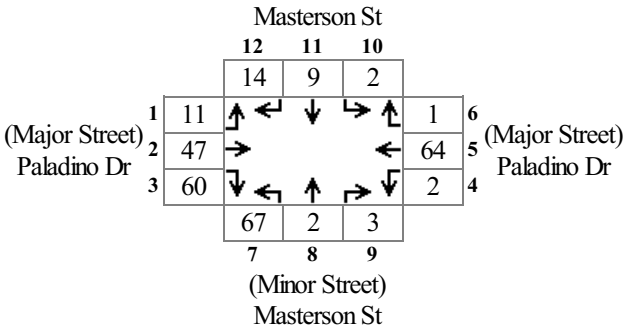


Major Total: 24
Minor High Volume: 14

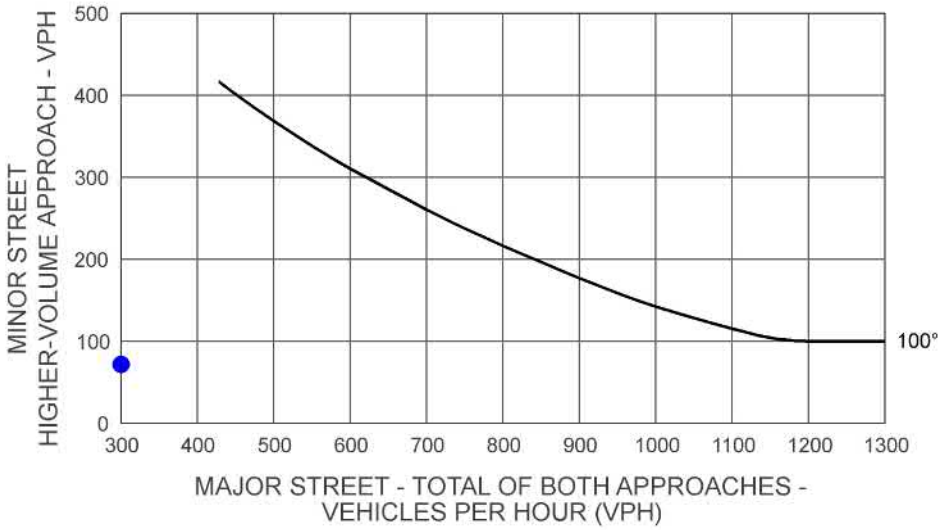


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 3

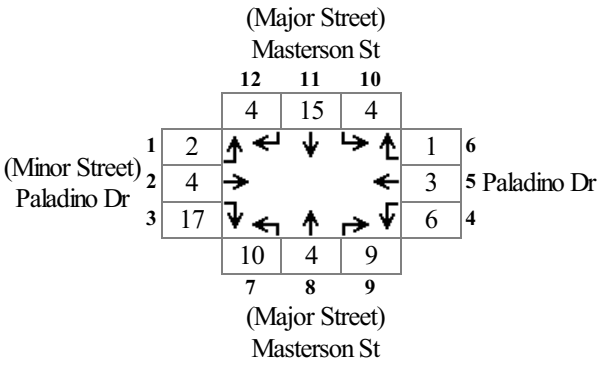


Major Total: 185
Minor High Volume: 72

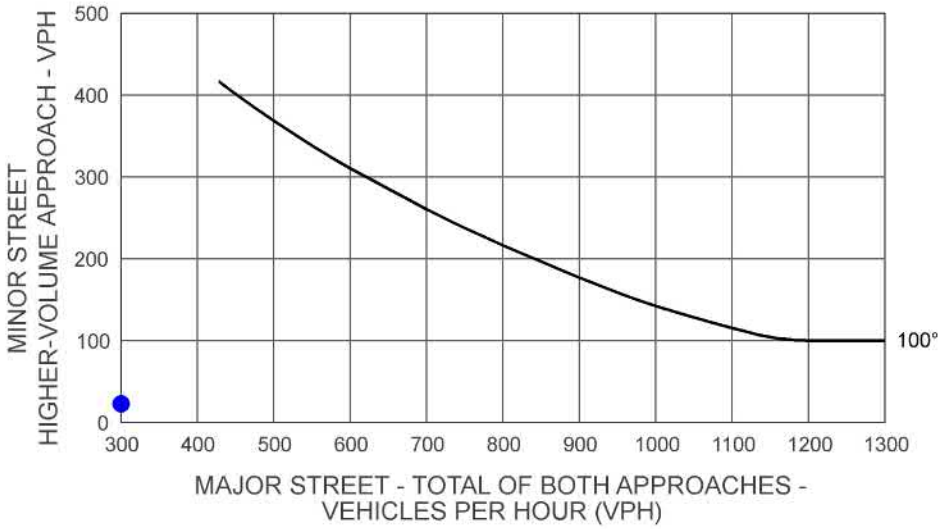


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 3

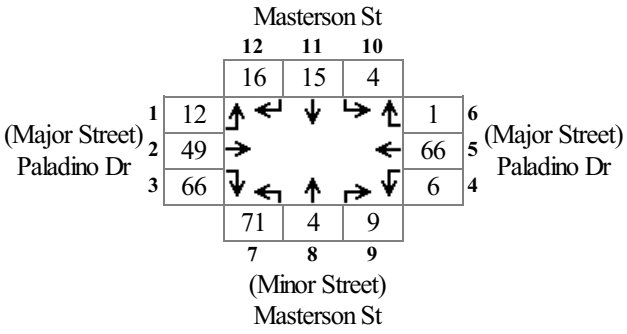


Major Total: 46
Minor High Volume: 23

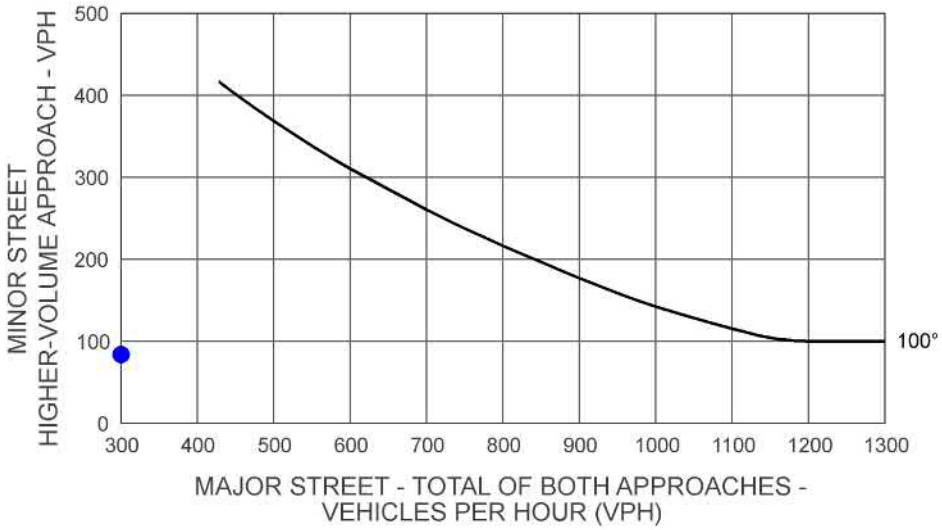


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 3



Major Total: 200
Minor High Volume: 84



Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	0	0	5	0	7	0	0	0	7	0	1
Future Vol, veh/h	0	0	0	5	0	7	0	0	0	7	0	1
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	5	0	8	0	0	0	8	0	1
Number of Lanes	0	1	1	1	0	1	1	1	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	3
HCM Control Delay	6.6	7.8	7.7
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%	100%	0%	0%	100%	100%	100%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	7	0	1	0	0	5	7	0	0	0	5
LT Vol	7	0	0	0	0	0	7	0	0	0	0
Through Vol	0	0	0	0	0	0	0	0	0	0	5
RT Vol	0	0	1	0	0	5	0	0	0	0	0
Lane Flow Rate	8	0	1	0	0	5	8	0	0	0	5
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.011	0	0.001	0	0	0.006	0.011	0	0	0	0.007
Departure Headway (Hd)	5.068	4.568	3.868	4.573	4.573	3.872	5.07	4.569	4.569	4.572	4.572
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	709	0	928	0	0	925	708	0	0	0	785
Service Time	2.782	2.282	1.581	2.292	2.292	1.591	2.784	2.284	2.284	2.289	2.289
HCM Lane V/C Ratio	0.011	0	0.001	0	0	0.005	0.011	0	0	0	0.006
HCM Control Delay	7.8	7.3	6.6	7.3	7.3	6.6	7.8	7.3	7.3	7.3	7.3
HCM Lane LOS	A	N	A	N	N	A	A	N	N	N	A
HCM 95th-tile Q	0	0	0	0	0	0	0	0	0	0	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	5	0
Future Vol, veh/h	0	0	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	0	5	0
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	7.3
HCM LOS	A

Lane	SBLn3

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	6	15	29	0	7	27	0	0	33	0	1
Future Vol, veh/h	0	6	15	29	0	7	27	0	0	33	0	1
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	7	16	32	0	8	29	0	0	36	0	1
Number of Lanes	0	1	1	1	0	1	1	1	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	3
HCM Control Delay	7.2	7.8	8.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	100%	100%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	33	0	1	6	15	29	7	27	0	0	5
LT Vol	33	0	0	6	0	0	7	0	0	0	0
Through Vol	0	0	0	0	15	0	0	27	0	0	5
RT Vol	0	0	1	0	0	29	0	0	0	0	0
Lane Flow Rate	36	0	1	7	16	32	8	29	0	0	5
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.052	0	0.001	0.009	0.021	0.035	0.011	0.038	0	0	0.007
Departure Headway (Hd)	5.215	4.715	4.015	5.176	4.675	3.975	5.198	4.698	4.698	4.75	4.75
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	682	0	881	686	758	890	683	755	0	0	743
Service Time	2.986	2.486	1.785	2.949	2.448	1.748	2.973	2.472	2.472	2.547	2.547
HCM Lane V/C Ratio	0.053	0	0.001	0.01	0.021	0.036	0.012	0.038	0	0	0.007
HCM Control Delay	8.3	7.5	6.8	8	7.5	6.9	8	7.7	7.5	7.5	7.6
HCM Lane LOS	A	N	A	A	A	A	A	A	N	N	A
HCM 95th-tile Q	0.2	0	0	0	0.1	0.1	0	0.1	0	0	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	5	5
Future Vol, veh/h	0	0	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	0	5	5
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	7.3
HCM LOS	A

Lane	SBLn3

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	1	6	6	0	9	7	1	0	8	0	2
Future Vol, veh/h	0	1	6	6	0	9	7	1	0	8	0	2
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	7	7	0	10	8	1	0	9	0	2
Number of Lanes	0	1	1	1	0	1	1	1	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	3
HCM Control Delay	7.1	7.6	7.7
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	8	0	2	1	6	6	9	7	1	4	6
LT Vol	8	0	0	1	0	0	9	0	0	4	0
Through Vol	0	0	0	0	6	0	0	7	0	0	6
RT Vol	0	0	2	0	0	6	0	0	1	0	0
Lane Flow Rate	9	0	2	1	7	7	10	8	1	4	7
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.012	0	0.002	0.002	0.008	0.007	0.014	0.01	0.001	0.006	0.008
Departure Headway (Hd)	5.113	4.613	3.913	5.105	4.605	3.905	5.099	4.599	3.899	5.109	4.609
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	700	0	913	701	777	915	703	779	918	701	776
Service Time	2.843	2.343	1.643	2.834	2.334	1.634	2.822	2.322	1.622	2.839	2.339
HCM Lane V/C Ratio	0.013	0	0.002	0.001	0.009	0.008	0.014	0.01	0.001	0.006	0.009
HCM Control Delay	7.9	7.3	6.7	7.8	7.4	6.7	7.9	7.4	6.6	7.9	7.4
HCM Lane LOS	A	N	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0	0	0	0	0	0	0	0	0	0	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	4	6	2
Future Vol, veh/h	0	4	6	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	7	2
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	7.4
HCM LOS	A

Lane	SBLn3

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	7	21	30	0	9	34	1	0	34	0	2
Future Vol, veh/h	0	7	21	30	0	9	34	1	0	34	0	2
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	23	33	0	10	37	1	0	37	0	2
Number of Lanes	0	1	1	1	0	1	1	1	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	3
HCM Control Delay	7.3	7.8	8.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	34	0	2	7	21	30	9	34	1	4	6
LT Vol	34	0	0	7	0	0	9	0	0	4	0
Through Vol	0	0	0	0	21	0	0	34	0	0	6
RT Vol	0	0	2	0	0	30	0	0	1	0	0
Lane Flow Rate	37	0	2	8	23	33	10	37	1	4	7
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.054	0	0.002	0.011	0.03	0.036	0.014	0.049	0.001	0.007	0.009
Departure Headway (Hd)	5.258	4.758	4.058	5.207	4.706	4.006	5.225	4.725	4.025	5.396	4.896
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	673	0	867	680	751	879	677	748	875	667	735
Service Time	3.052	2.552	1.852	2.998	2.497	1.797	3.016	2.516	1.815	3.096	2.596
HCM Lane V/C Ratio	0.055	0	0.002	0.012	0.031	0.038	0.015	0.049	0.001	0.006	0.01
HCM Control Delay	8.4	7.6	6.9	8.1	7.6	6.9	8.1	7.8	6.8	8.1	7.6
HCM Lane LOS	A	N	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0	0	0	0.1	0.1	0	0.2	0	0	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	4	6	7
Future Vol, veh/h	0	4	6	7
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	7	8
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	7.4
HCM LOS	A

Lane	SBLn3

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	1	6	9	0	19	7	1	0	14	0	11
Future Vol, veh/h	0	1	6	9	0	19	7	1	0	14	0	11
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	7	10	0	21	8	1	0	15	0	12
Number of Lanes	0	1	1	1	0	1	1	1	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	3
HCM Control Delay	7.1	7.8	7.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	14	0	11	1	6	9	19	7	1	4	10
LT Vol	14	0	0	1	0	0	19	0	0	4	0
Through Vol	0	0	0	0	6	0	0	7	0	0	10
RT Vol	0	0	11	0	0	9	0	0	1	0	0
Lane Flow Rate	15	0	12	1	7	10	21	8	1	4	11
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.022	0	0.013	0.002	0.008	0.011	0.03	0.01	0.001	0.006	0.014
Departure Headway (Hd)	5.143	4.643	3.943	5.158	4.658	3.958	5.144	4.643	3.943	5.156	4.656
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	694	0	902	690	764	897	695	769	904	691	764
Service Time	2.892	2.392	1.692	2.914	2.413	1.713	2.884	2.384	1.684	2.91	2.41
HCM Lane V/C Ratio	0.022	0	0.013	0.001	0.009	0.011	0.03	0.01	0.001	0.006	0.014
HCM Control Delay	8	7.4	6.7	7.9	7.5	6.8	8	7.4	6.7	7.9	7.5
HCM Lane LOS	A	N	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0	0	0	0	0	0.1	0	0	0	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	4	10	2
Future Vol, veh/h	0	4	10	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	11	2
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	7.5
HCM LOS	A

Lane	SBLn3

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	7	21	33	0	19	34	1	0	40	0	11
Future Vol, veh/h	0	7	21	33	0	19	34	1	0	40	0	11
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	23	36	0	21	37	1	0	43	0	12
Number of Lanes	0	1	1	1	0	1	1	1	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	3
HCM Control Delay	7.4	8	8.2
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	0	11	7	21	33	19	34	1	4	10
LT Vol	40	0	0	7	0	0	19	0	0	4	0
Through Vol	0	0	0	0	21	0	0	34	0	0	10
RT Vol	0	0	11	0	0	33	0	0	1	0	0
Lane Flow Rate	43	0	12	8	23	36	21	37	1	4	11
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.065	0	0.014	0.011	0.031	0.042	0.031	0.05	0.001	0.007	0.015
Departure Headway (Hd)	5.397	4.897	4.197	5.376	4.876	4.175	5.377	4.877	4.176	5.467	4.967
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	667	0	856	669	738	861	669	738	860	657	723
Service Time	3.108	2.608	1.908	3.083	2.583	1.882	3.086	2.585	1.884	3.178	2.678
HCM Lane V/C Ratio	0.064	0	0.014	0.012	0.031	0.042	0.031	0.05	0.001	0.006	0.015
HCM Control Delay	8.5	7.6	7	8.1	7.7	7.1	8.3	7.8	6.9	8.2	7.8
HCM Lane LOS	A	N	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0	0	0	0.1	0.1	0.1	0.2	0	0	0

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

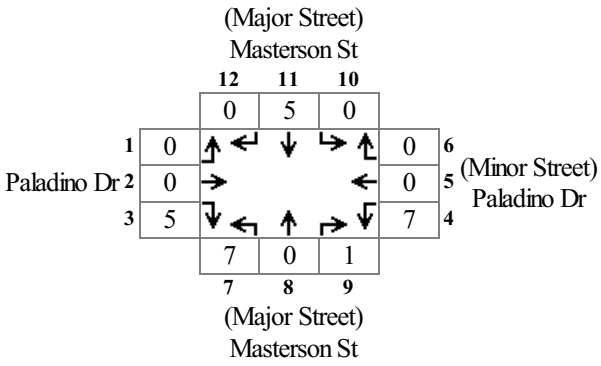
Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	4	10	7
Future Vol, veh/h	0	4	10	7
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	4	11	8
Number of Lanes	0	1	1	1

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	7.6
HCM LOS	A

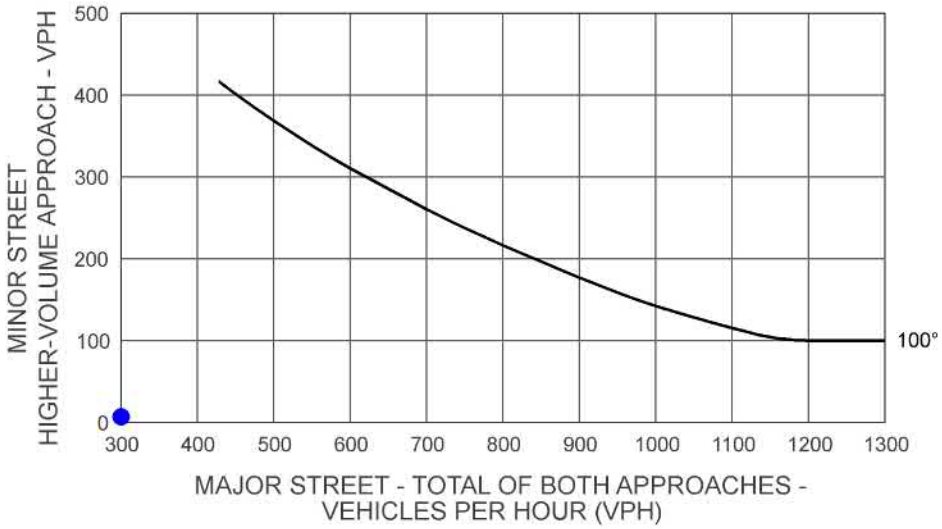
Lane	SBLn3

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing
Intersection #: 3

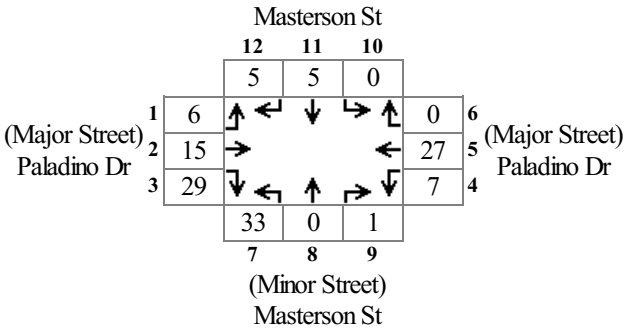


Major Total: 13
Minor High Volume: 7

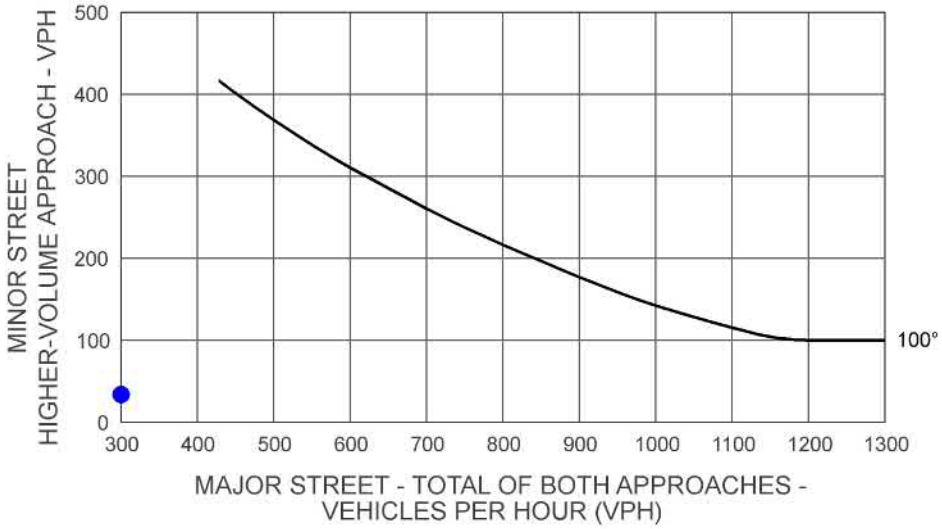


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing+Project
Intersection #: 3

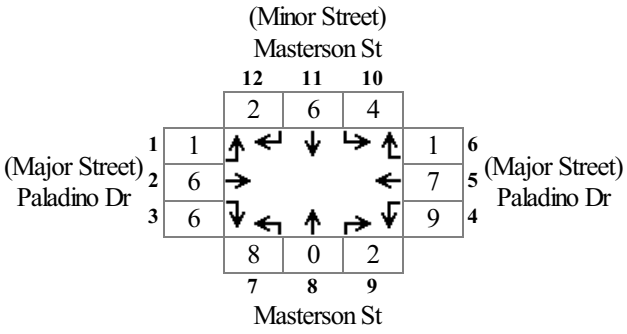


Major Total: 84
Minor High Volume: 34

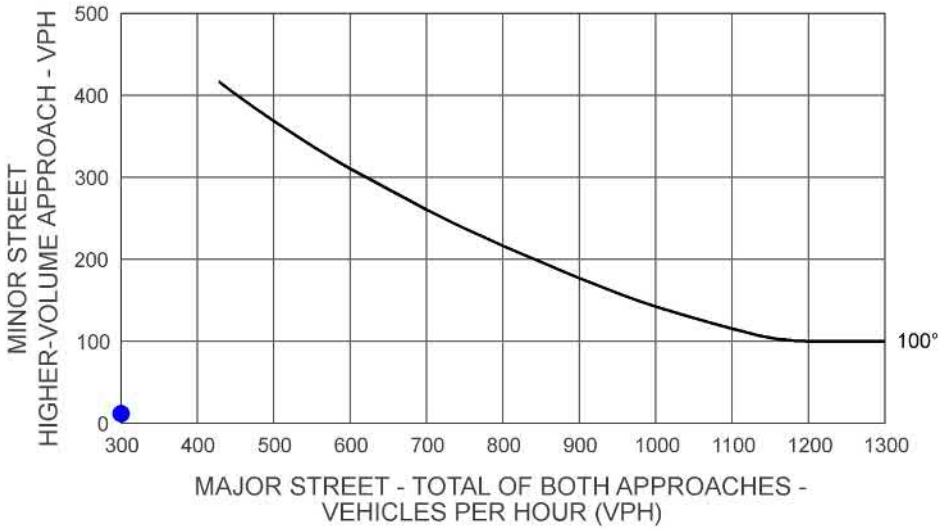


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 3

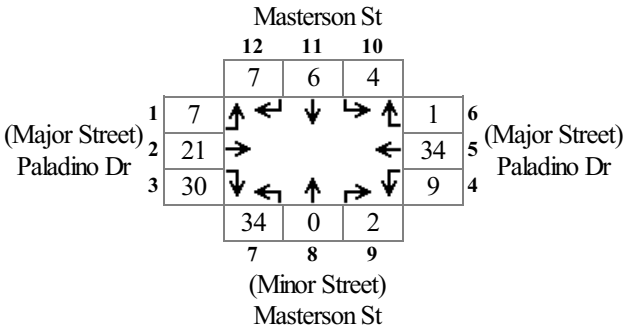


Major Total: 30
Minor High Volume: 12

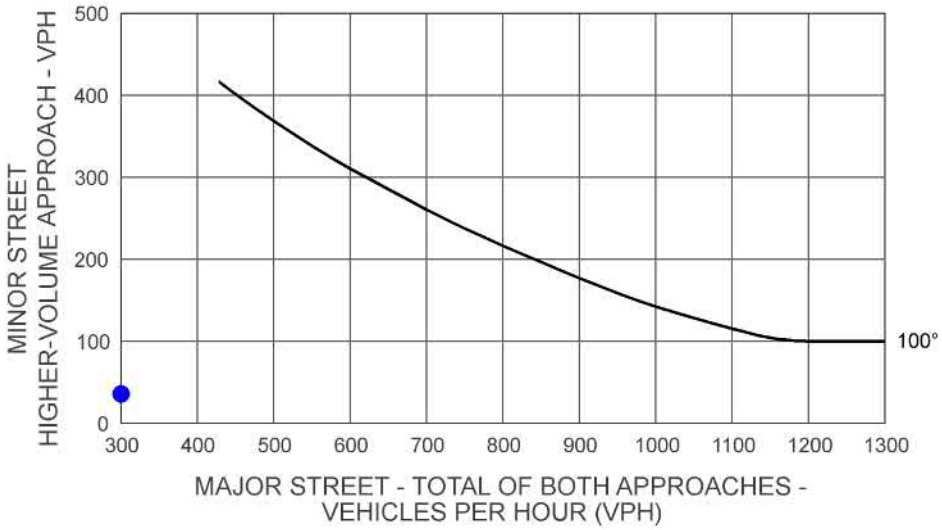


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 3

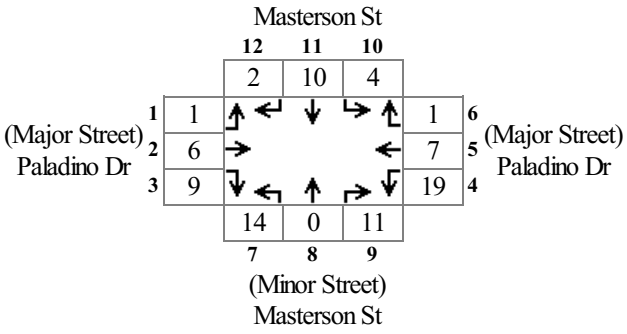


Major Total: 102
Minor High Volume: 36

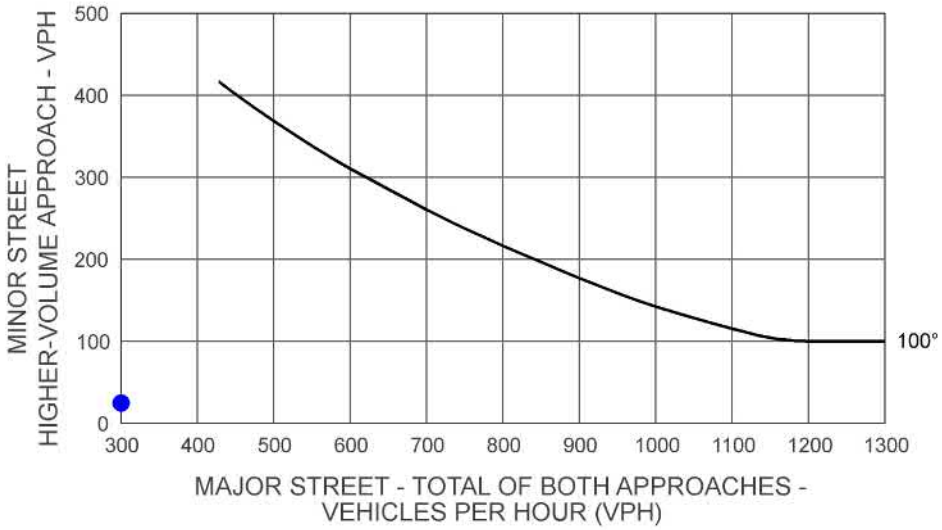


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 3

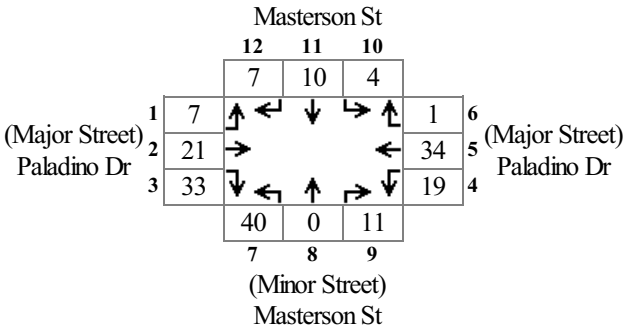


Major Total: 43
Minor High Volume: 25

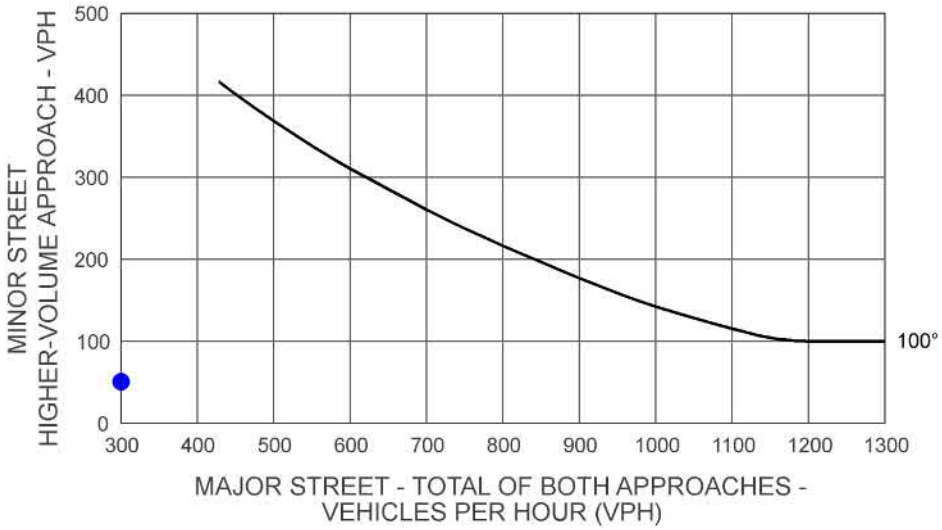


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 3



Major Total: 115
Minor High Volume: 51



Intersection 4
Grand Canyon Dr & Paladino Dr

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	12	18	31	0	0	14
Future Vol, veh/h	12	18	31	0	0	14
Conflicting Peds, #/hr	5	0	0	5	5	5
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	20	34	0	0	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	39	0	-	0	85	44
Stage 1	-	-	-	-	39	-
Stage 2	-	-	-	-	46	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1571	-	-	-	916	1026
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	976	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1564	-	-	-	901	1017
Mov Cap-2 Maneuver	-	-	-	-	901	-
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	964	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1564	-	-	-	1017
HCM Lane V/C Ratio	0.008	-	-	-	0.015
HCM Control Delay (s)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	6	2	1	6	9	7
Future Vol, veh/h	6	2	1	6	9	7
Conflicting Peds, #/hr	5	0	0	5	5	5
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	2	1	7	10	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	13	0	-	0	24	14
Stage 1	-	-	-	-	9	-
Stage 2	-	-	-	-	15	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1606	-	-	-	992	1066
Stage 1	-	-	-	-	1014	-
Stage 2	-	-	-	-	1008	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1599	-	-	-	980	1057
Mov Cap-2 Maneuver	-	-	-	-	980	-
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	1000	-

Approach	EB	WB	SB
HCM Control Delay, s	5.4	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1599	-	-	-	1012
HCM Lane V/C Ratio	0.004	-	-	-	0.017
HCM Control Delay (s)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	18	20	32	6	9	21
Future Vol, veh/h	18	20	32	6	9	21
Conflicting Peds, #/hr	5	0	0	5	5	5
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	22	35	7	10	23

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	46	0	-	0	104	48
Stage 1	-	-	-	-	43	-
Stage 2	-	-	-	-	61	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1562	-	-	-	894	1021
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	962	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1555	-	-	-	875	1013
Mov Cap-2 Maneuver	-	-	-	-	875	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	946	-

Approach	EB	WB	SB
HCM Control Delay, s	3.5	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1555	-	-	-	967
HCM Lane V/C Ratio	0.013	-	-	-	0.034
HCM Control Delay (s)	7.3	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	11	5	4	15	17	10
Future Vol, veh/h	11	5	4	15	17	10
Conflicting Peds, #/hr	5	0	0	5	5	5
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	5	4	16	18	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	26	0	-	0	47	23
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	29	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1588	-	-	-	963	1054
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	994	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1581	-	-	-	947	1045
Mov Cap-2 Maneuver	-	-	-	-	947	-
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	982	-

Approach	EB	WB	SB
HCM Control Delay, s	5	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1581	-	-	-	981
HCM Lane V/C Ratio	0.008	-	-	-	0.03
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	23	23	35	15	17	24
Future Vol, veh/h	23	23	35	15	17	24
Conflicting Peds, #/hr	5	0	0	5	5	5
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	25	38	16	18	26

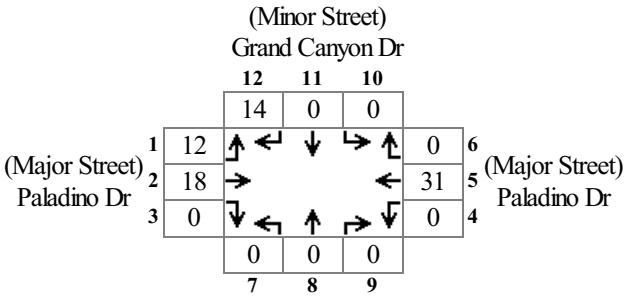
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	59	0	-	0	126	56
Stage 1	-	-	-	-	51	-
Stage 2	-	-	-	-	75	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1545	-	-	-	869	1011
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	948	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1539	-	-	-	848	1003
Mov Cap-2 Maneuver	-	-	-	-	848	-
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	929	-

Approach	EB	WB	SB
HCM Control Delay, s	3.7	0	9.1
HCM LOS			A

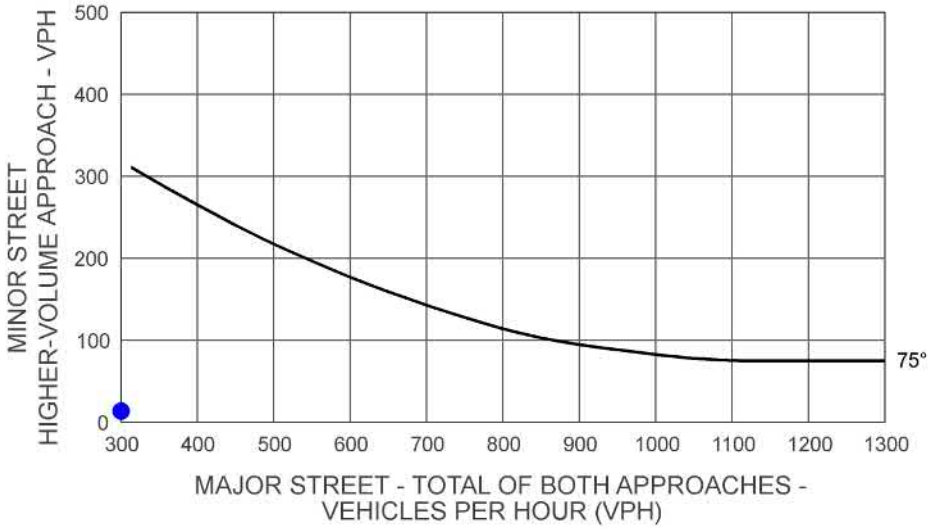
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1539	-	-	-	932
HCM Lane V/C Ratio	0.016	-	-	-	0.048
HCM Control Delay (s)	7.4	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing+Project
Intersection #: 4

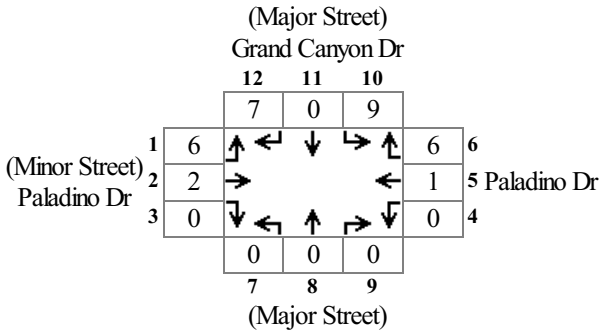


Major Total: 61
Minor High Volume: 14

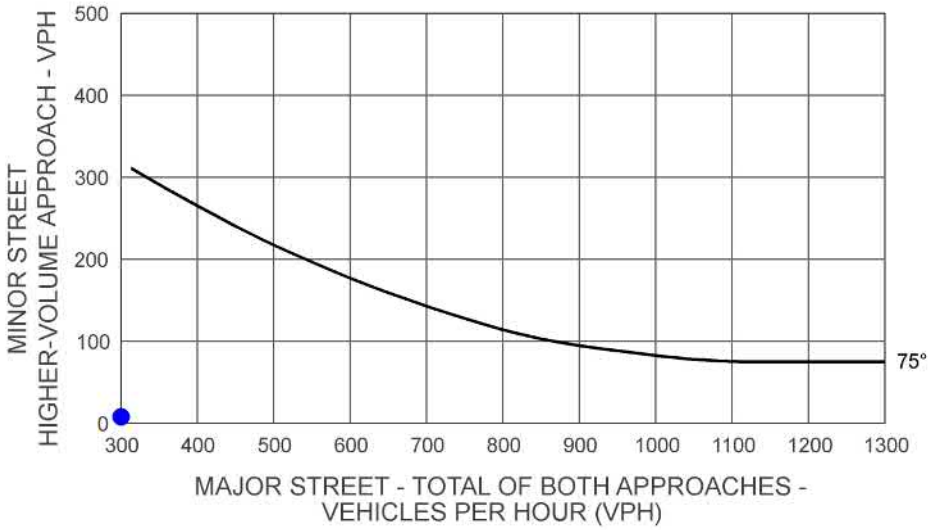


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 4

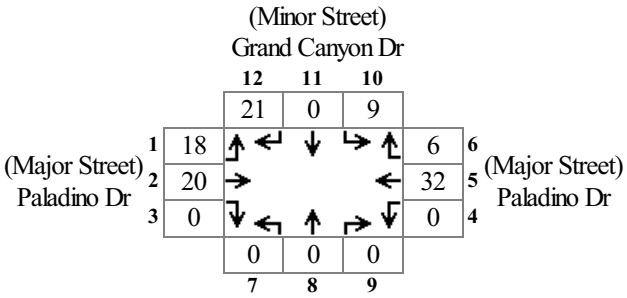


Major Total: 16
Minor High Volume: 8

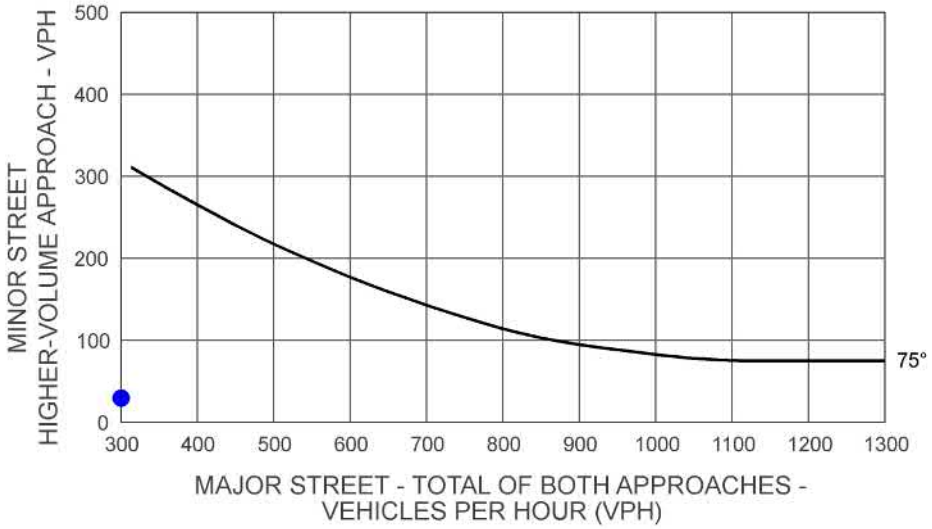


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 4

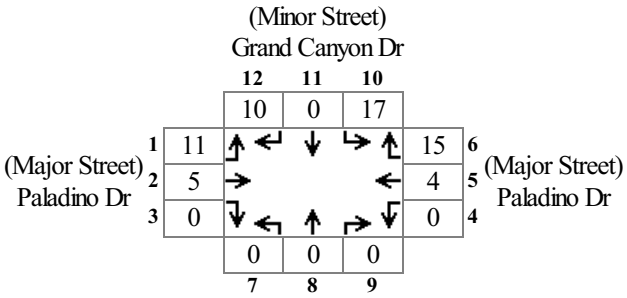


Major Total: 76
Minor High Volume: 30

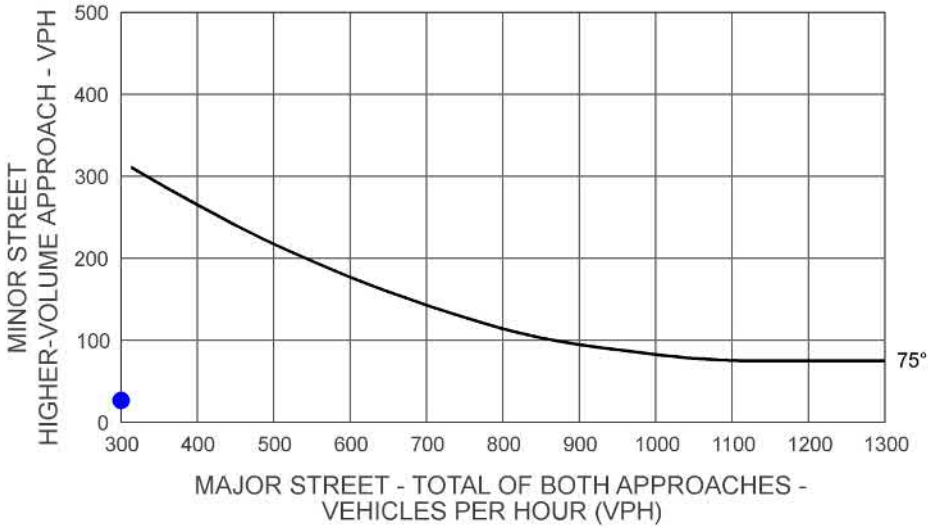


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 4

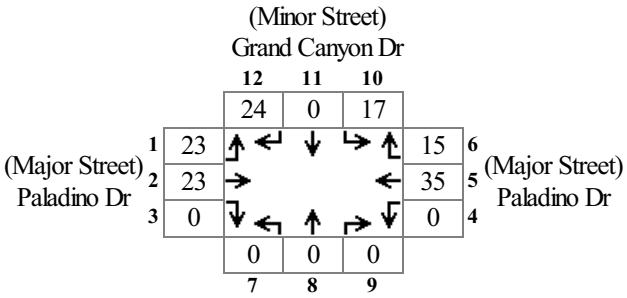


Major Total: 35
Minor High Volume: 27

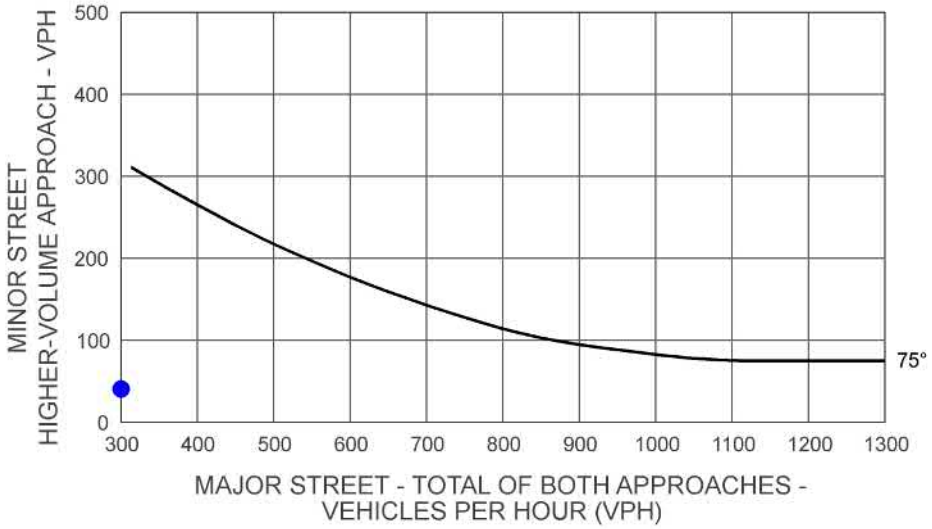


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 4



Major Total: 96
Minor High Volume: 41



Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	7	7	13	0	0	6
Future Vol, veh/h	7	7	13	0	0	6
Conflicting Peds, #/hr	5	0	0	5	5	5
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	8	14	0	0	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	19	0	-	0	42	24
Stage 1	-	-	-	-	19	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1597	-	-	-	969	1052
Stage 1	-	-	-	-	1004	-
Stage 2	-	-	-	-	1000	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1590	-	-	-	956	1043
Mov Cap-2 Maneuver	-	-	-	-	956	-
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	991	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1590	-	-	-	1043
HCM Lane V/C Ratio	0.005	-	-	-	0.006
HCM Control Delay (s)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	6	2	5	3	6	7
Future Vol, veh/h	6	2	5	3	6	7
Conflicting Peds, #/hr	5	0	0	5	5	5
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	2	5	3	7	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	14	0	-	0	27	17
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	15	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1604	-	-	-	988	1062
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1008	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1597	-	-	-	976	1053
Mov Cap-2 Maneuver	-	-	-	-	976	-
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	1000	-

Approach	EB	WB	SB
HCM Control Delay, s	5.4	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1597	-	-	-	1016
HCM Lane V/C Ratio	0.004	-	-	-	0.014
HCM Control Delay (s)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	13	9	18	3	6	13
Future Vol, veh/h	13	9	18	3	6	13
Conflicting Peds, #/hr	5	0	0	5	5	5
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	10	20	3	7	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	28	0	-	0	64	31
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	38	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1585	-	-	-	942	1043
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	984	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1578	-	-	-	926	1034
Mov Cap-2 Maneuver	-	-	-	-	926	-
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	971	-

Approach	EB	WB	SB
HCM Control Delay, s	4.3	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1578	-	-	-	997
HCM Lane V/C Ratio	0.009	-	-	-	0.021
HCM Control Delay (s)	7.3	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	12	5	9	7	11	15
Future Vol, veh/h	12	5	9	7	11	15
Conflicting Peds, #/hr	5	0	0	5	5	5
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	5	10	8	12	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	22	0	-	0	51	24
Stage 1	-	-	-	-	19	-
Stage 2	-	-	-	-	32	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1593	-	-	-	958	1052
Stage 1	-	-	-	-	1004	-
Stage 2	-	-	-	-	991	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1586	-	-	-	942	1043
Mov Cap-2 Maneuver	-	-	-	-	942	-
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	979	-

Approach	EB	WB	SB
HCM Control Delay, s	5.1	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1586	-	-	-	998
HCM Lane V/C Ratio	0.008	-	-	-	0.028
HCM Control Delay (s)	7.3	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	19	12	22	7	11	21
Future Vol, veh/h	19	12	22	7	11	21
Conflicting Peds, #/hr	5	0	0	5	5	5
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	13	24	8	12	23

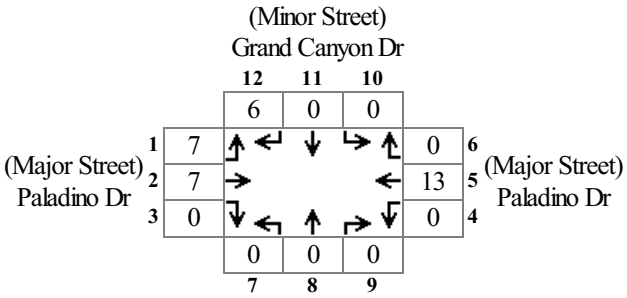
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	37	0	-	0	87	38
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	54	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1574	-	-	-	914	1034
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	969	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1567	-	-	-	895	1025
Mov Cap-2 Maneuver	-	-	-	-	895	-
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	952	-

Approach	EB	WB	SB
HCM Control Delay, s	4.5	0	8.8
HCM LOS			A

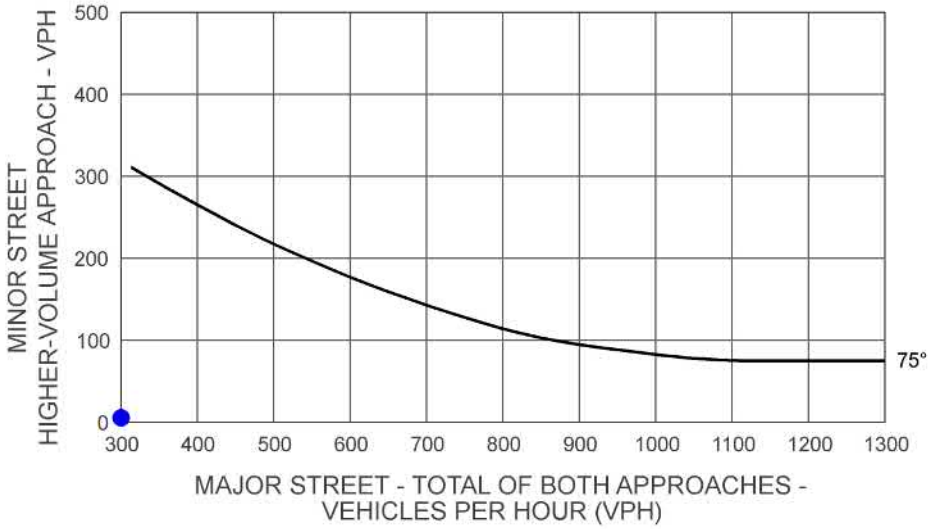
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1567	-	-	-	976
HCM Lane V/C Ratio	0.013	-	-	-	0.036
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing+Project
Intersection #: 4

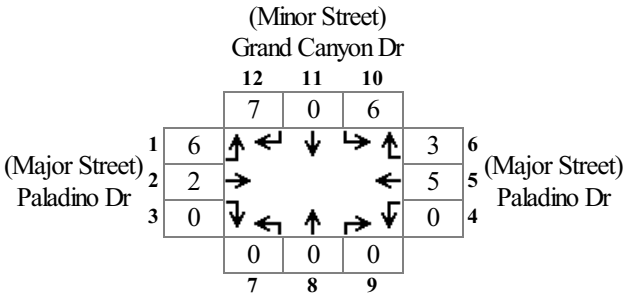


Major Total: 27
Minor High Volume: 6

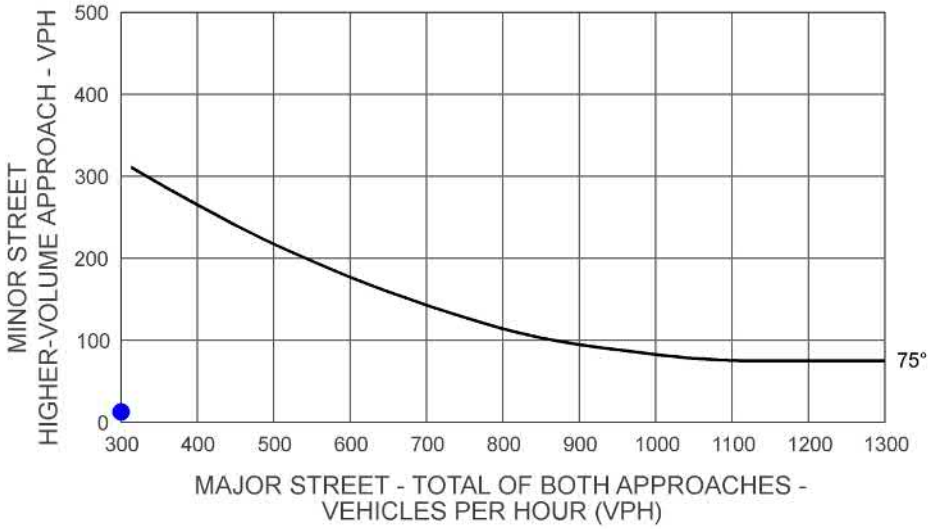


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 4

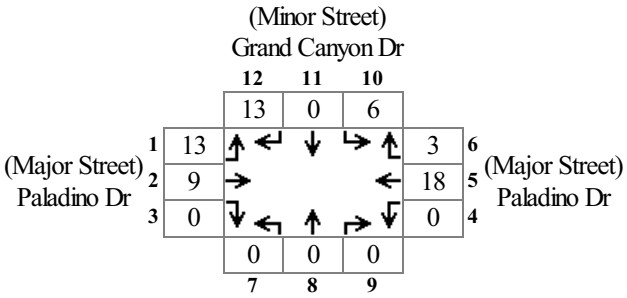


Major Total: 16
Minor High Volume: 13

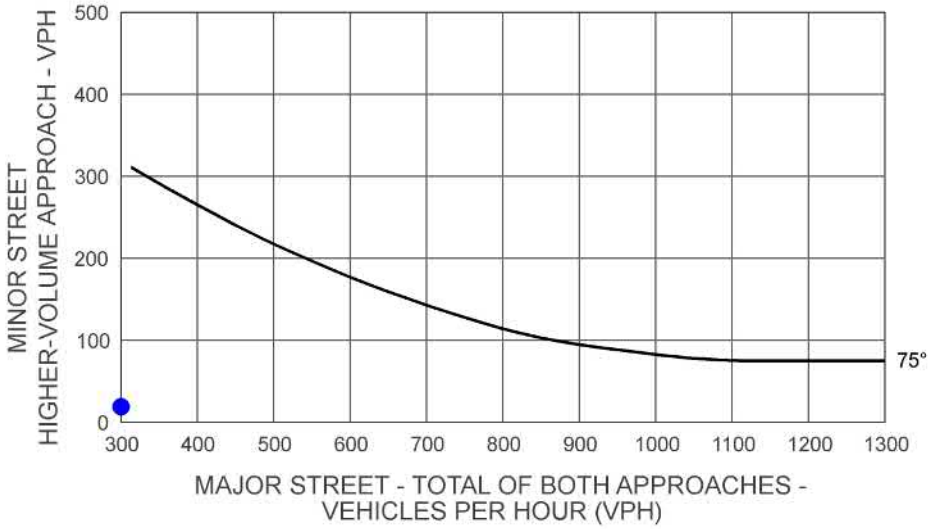


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 4

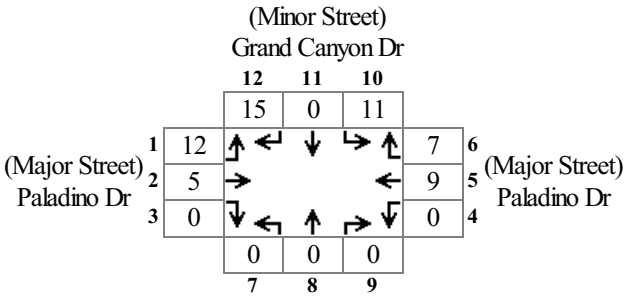


Major Total: 43
Minor High Volume: 19

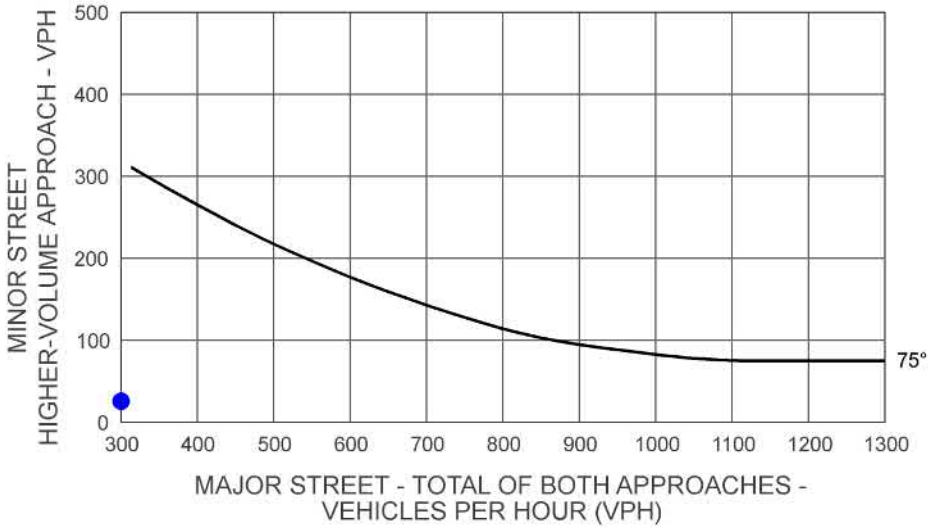


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 4

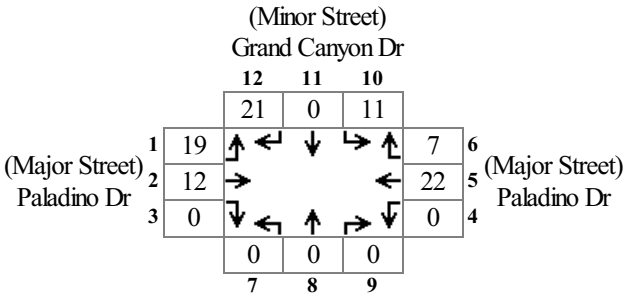


Major Total: 33
Minor High Volume: 26

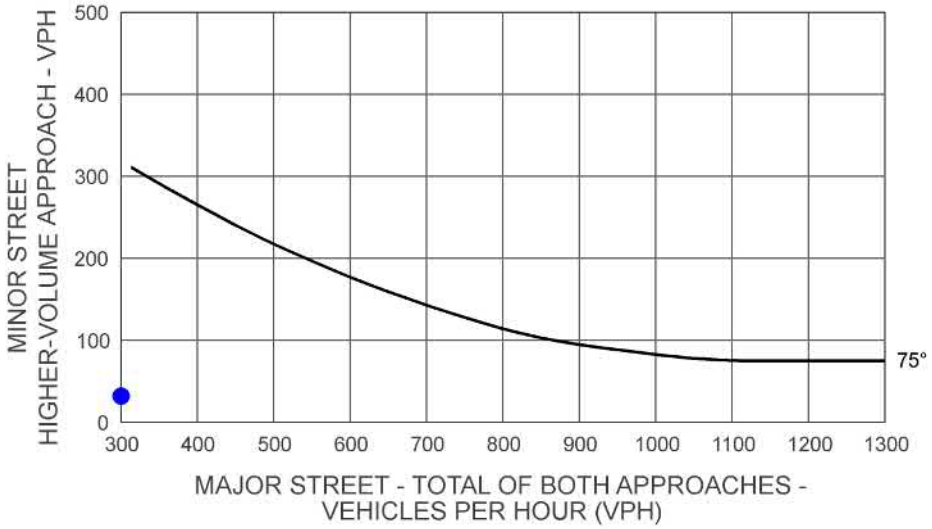


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 4



Major Total: 60
Minor High Volume: 32



Intersection 5
Allfred Harrell Hwy & Paladino Dr

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	10	0	1	0	57	11	3	43	0
Future Vol, veh/h	0	0	0	10	0	1	0	57	11	3	43	0
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	150	-	-	-	200	-	150	150	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	11	0	1	0	62	12	3	47	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	126	125	57	125	125	72	52	0	0	67	0	0
Stage 1	58	58	-	67	67	-	-	-	-	-	-	-
Stage 2	68	67	-	58	58	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	848	765	1009	849	765	990	1554	-	-	1535	-	-
Stage 1	954	847	-	943	839	-	-	-	-	-	-	-
Stage 2	942	839	-	954	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	839	757	1001	841	757	982	1548	-	-	1529	-	-
Mov Cap-2 Maneuver	839	757	-	841	757	-	-	-	-	-	-	-
Stage 1	950	842	-	939	836	-	-	-	-	-	-	-
Stage 2	937	836	-	948	842	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	9.3	0	0.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1548	-	-	-	-	-	852	1529	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	0.014	0.002	-	-
HCM Control Delay (s)	0	-	-	0	0	0	9.3	7.4	-	-
HCM Lane LOS	A	-	-	A	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	0	0	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	13	3	2	10	10	1	5	57	11	3	43	16
Future Vol, veh/h	13	3	2	10	10	1	5	57	11	3	43	16
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	150	-	-	-	200	-	150	150	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	3	2	11	11	1	5	62	12	3	47	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	142	136	57	138	136	72	52	0	0	67	0	0
Stage 1	58	58	-	78	78	-	-	-	-	-	-	-
Stage 2	84	78	-	60	58	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	828	755	1009	833	755	990	1554	-	-	1535	-	-
Stage 1	954	847	-	931	830	-	-	-	-	-	-	-
Stage 2	924	830	-	951	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	808	745	1001	818	745	982	1548	-	-	1529	-	-
Mov Cap-2 Maneuver	808	745	-	818	745	-	-	-	-	-	-	-
Stage 1	947	842	-	924	824	-	-	-	-	-	-	-
Stage 2	904	824	-	939	842	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	9.7	0.5	0.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1548	-	-	808	745	1001	788	1529	-	-
HCM Lane V/C Ratio	0.004	-	-	0.017	0.004	0.002	0.029	0.002	-	-
HCM Control Delay (s)	7.3	-	-	9.5	9.9	8.6	9.7	7.4	-	-
HCM Lane LOS	A	-	-	A	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	6	2	9	12	1	1	14	72	14	4	54	5
Future Vol, veh/h	6	2	9	12	1	1	14	72	14	4	54	5
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	150	-	-	-	200	-	150	150	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	2	10	13	1	1	15	78	15	4	59	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	187	186	69	187	186	88	64	0	0	83	0	0
Stage 1	72	72	-	114	114	-	-	-	-	-	-	-
Stage 2	115	114	-	73	72	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	774	708	994	774	708	970	1538	-	-	1514	-	-
Stage 1	938	835	-	891	801	-	-	-	-	-	-	-
Stage 2	890	801	-	937	835	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	759	693	986	751	693	962	1532	-	-	1508	-	-
Mov Cap-2 Maneuver	759	693	-	751	693	-	-	-	-	-	-	-
Stage 1	925	829	-	879	790	-	-	-	-	-	-	-
Stage 2	875	790	-	919	829	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	9.8	1	0.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1532	-	-	759	693	986	758	1508	-	-
HCM Lane V/C Ratio	0.01	-	-	0.009	0.003	0.01	0.02	0.003	-	-
HCM Control Delay (s)	7.4	-	-	9.8	10.2	8.7	9.8	7.4	-	-
HCM Lane LOS	A	-	-	A	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	19	5	11	12	11	1	19	72	14	4	54	21
Future Vol, veh/h	19	5	11	12	11	1	19	72	14	4	54	21
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	150	-	-	-	200	-	150	150	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	5	12	13	12	1	21	78	15	4	59	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	203	197	69	200	197	88	64	0	0	83	0	0
Stage 1	72	72	-	125	125	-	-	-	-	-	-	-
Stage 2	131	125	-	75	72	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	755	699	994	759	699	970	1538	-	-	1514	-	-
Stage 1	938	835	-	879	792	-	-	-	-	-	-	-
Stage 2	873	792	-	934	835	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	729	682	986	730	682	962	1532	-	-	1508	-	-
Mov Cap-2 Maneuver	729	682	-	730	682	-	-	-	-	-	-	-
Stage 1	921	829	-	863	778	-	-	-	-	-	-	-
Stage 2	843	778	-	910	829	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	10.2	1.3	0.4
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1532	-	-	729	682	986	714	1508	-	-
HCM Lane V/C Ratio	0.013	-	-	0.028	0.008	0.012	0.037	0.003	-	-
HCM Control Delay (s)	7.4	-	-	10.1	10.3	8.7	10.2	7.4	-	-
HCM Lane LOS	A	-	-	B	B	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	6	2	9	19	1	2	14	141	27	7	106	5
Future Vol, veh/h	6	2	9	19	1	2	14	141	27	7	106	5
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	150	-	-	-	200	-	150	150	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	2	10	21	1	2	15	153	29	8	115	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	325	324	125	326	324	163	120	0	0	158	0	0
Stage 1	135	135	-	189	189	-	-	-	-	-	-	-
Stage 2	190	189	-	137	135	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	628	594	926	627	594	882	1468	-	-	1422	-	-
Stage 1	868	785	-	813	744	-	-	-	-	-	-	-
Stage 2	812	744	-	866	785	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	613	580	918	606	580	875	1462	-	-	1416	-	-
Mov Cap-2 Maneuver	613	580	-	606	580	-	-	-	-	-	-	-
Stage 1	856	777	-	801	733	-	-	-	-	-	-	-
Stage 2	797	733	-	846	777	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	11	0.6	0.4
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1462	-	-	613	580	918	622	1416	-	-
HCM Lane V/C Ratio	0.01	-	-	0.011	0.004	0.011	0.038	0.005	-	-
HCM Control Delay (s)	7.5	-	-	10.9	11.2	9	11	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	19	5	11	19	11	2	19	141	27	7	106	21
Future Vol, veh/h	19	5	11	19	11	2	19	141	27	7	106	21
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	150	-	-	-	200	-	150	150	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	5	12	21	12	2	21	153	29	8	115	23

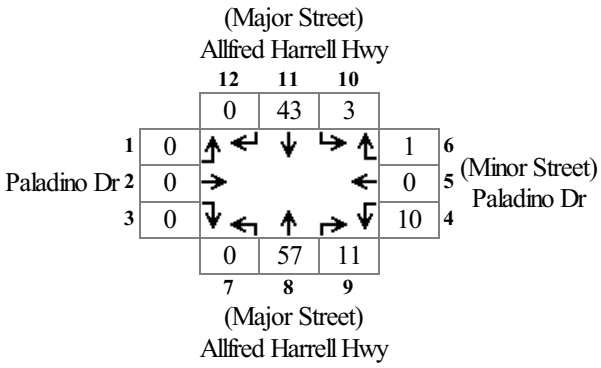
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	342	335	125	338	335	163	120	0	0	158	0	0
Stage 1	135	135	-	200	200	-	-	-	-	-	-	-
Stage 2	207	200	-	138	135	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	612	585	926	616	585	882	1468	-	-	1422	-	-
Stage 1	868	785	-	802	736	-	-	-	-	-	-	-
Stage 2	795	736	-	865	785	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	587	569	918	589	569	875	1462	-	-	1416	-	-
Mov Cap-2 Maneuver	587	569	-	589	569	-	-	-	-	-	-	-
Stage 1	852	777	-	787	722	-	-	-	-	-	-	-
Stage 2	765	722	-	839	777	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	11.4	0.8	0.4
HCM LOS	B	B		

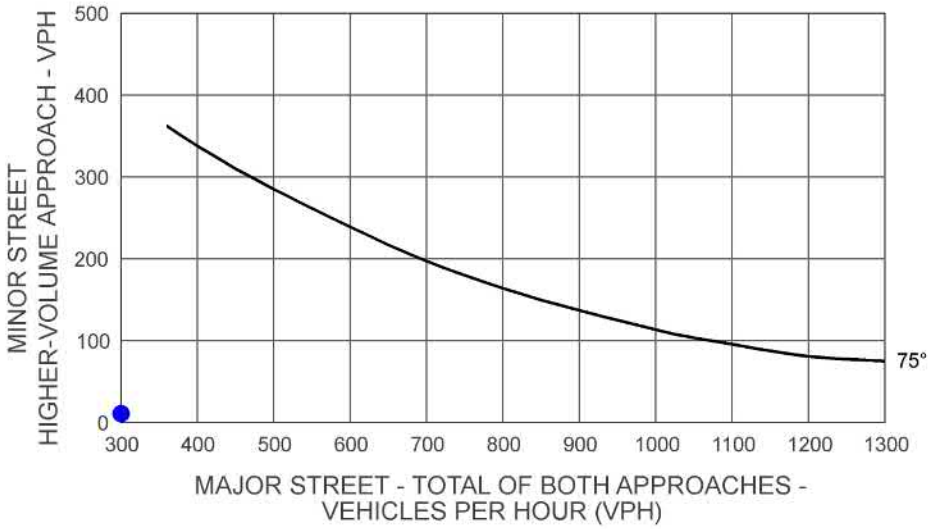
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1462	-	-	587	569	918	594	1416	-	-
HCM Lane V/C Ratio	0.014	-	-	0.035	0.01	0.013	0.059	0.005	-	-
HCM Control Delay (s)	7.5	-	-	11.4	11.4	9	11.4	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	0.2	0	-	-

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing
Intersection #: 5

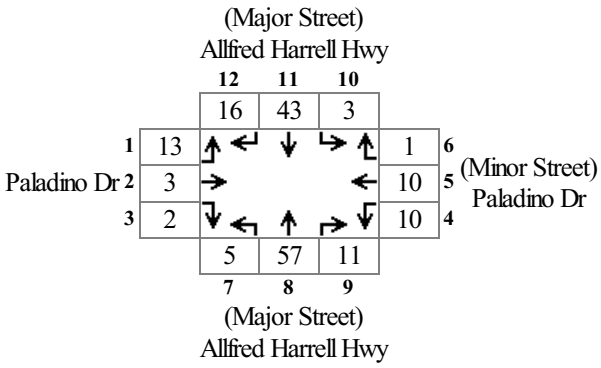


Major Total: 114
Minor High Volume: 11

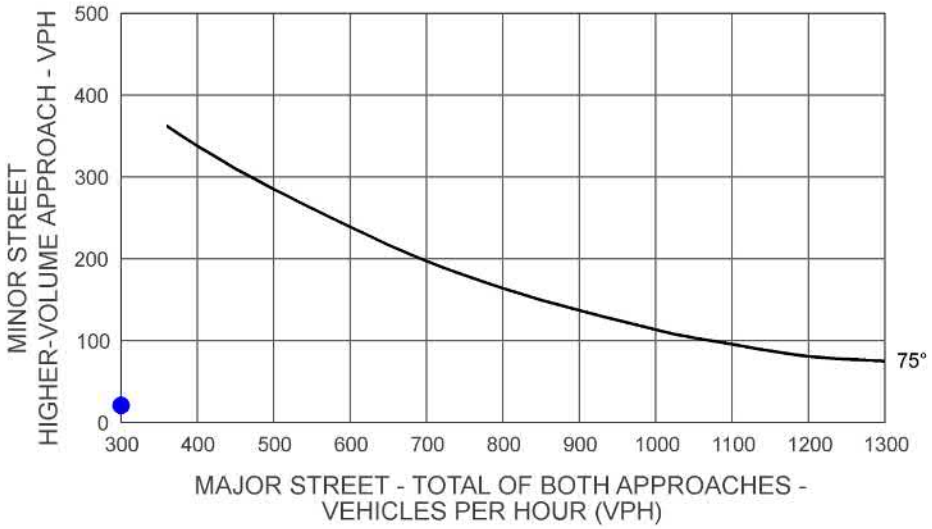


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing+Project
Intersection #: 5

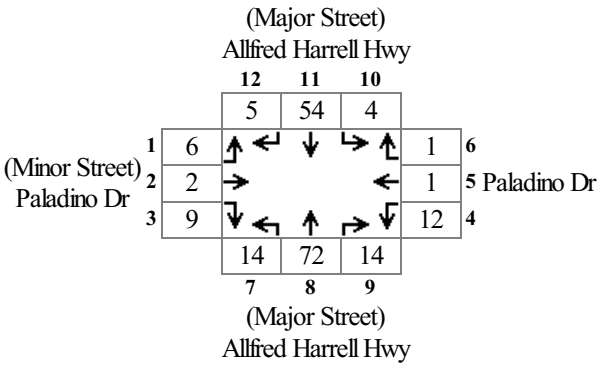


Major Total: 135
Minor High Volume: 21

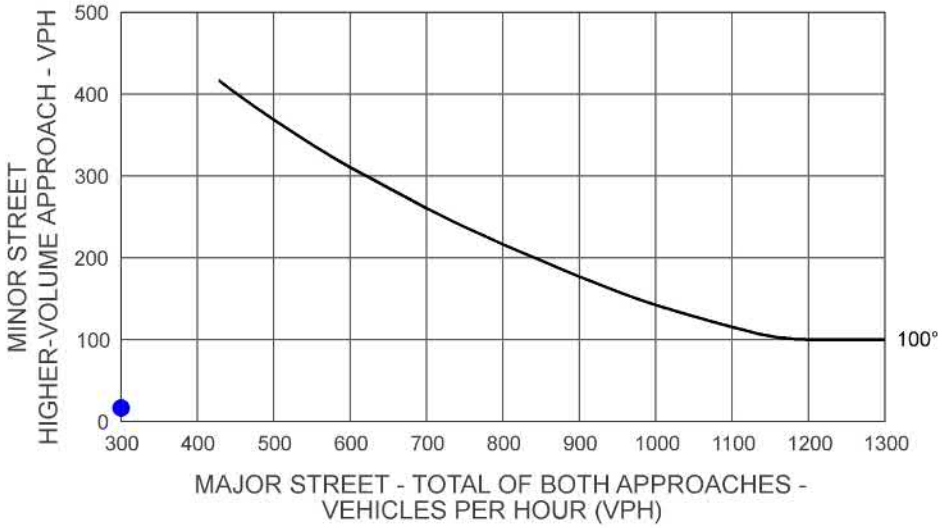


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 5

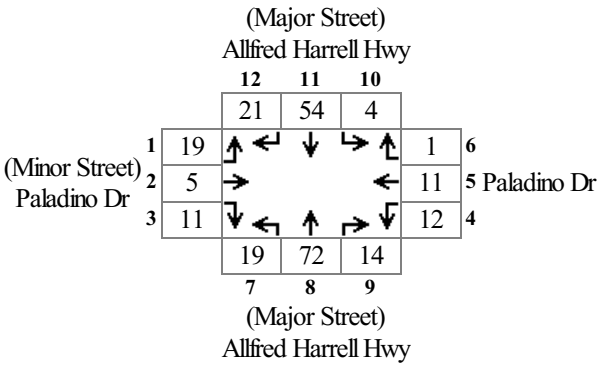


Major Total: 163
Minor High Volume: 17

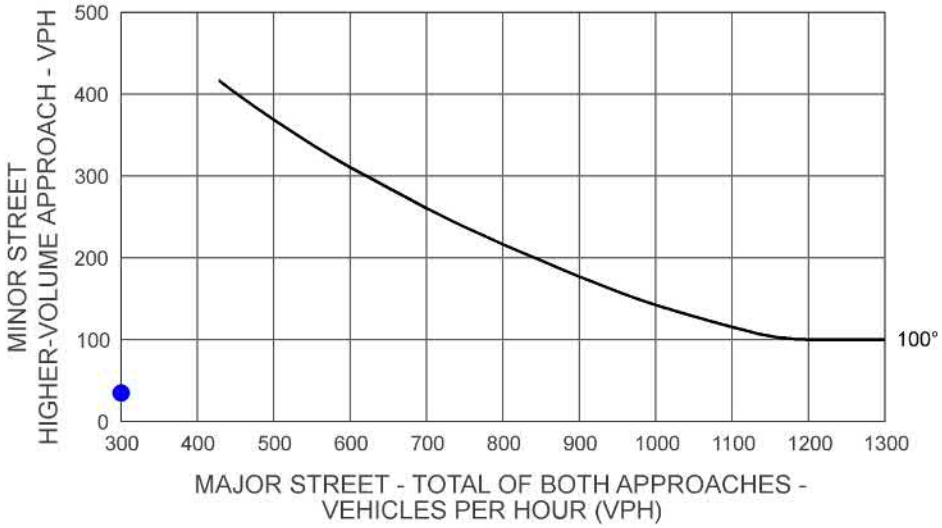


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 5

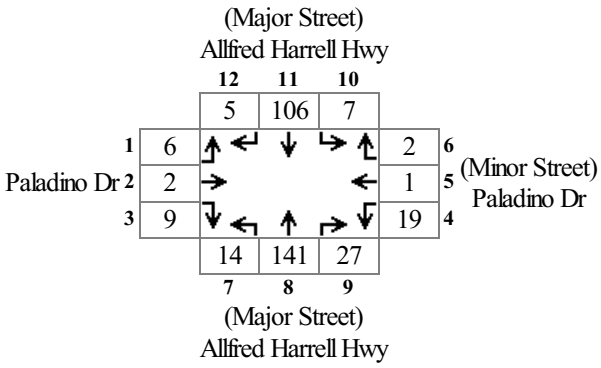


Major Total: 184
Minor High Volume: 35

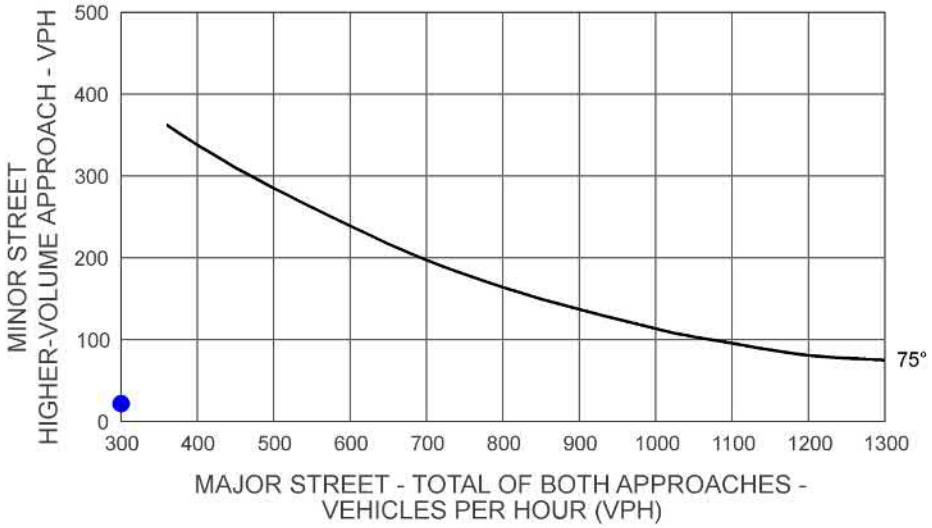


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 5

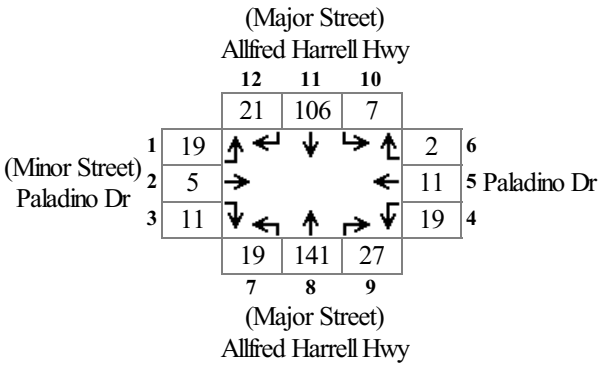


Major Total: 300
Minor High Volume: 22

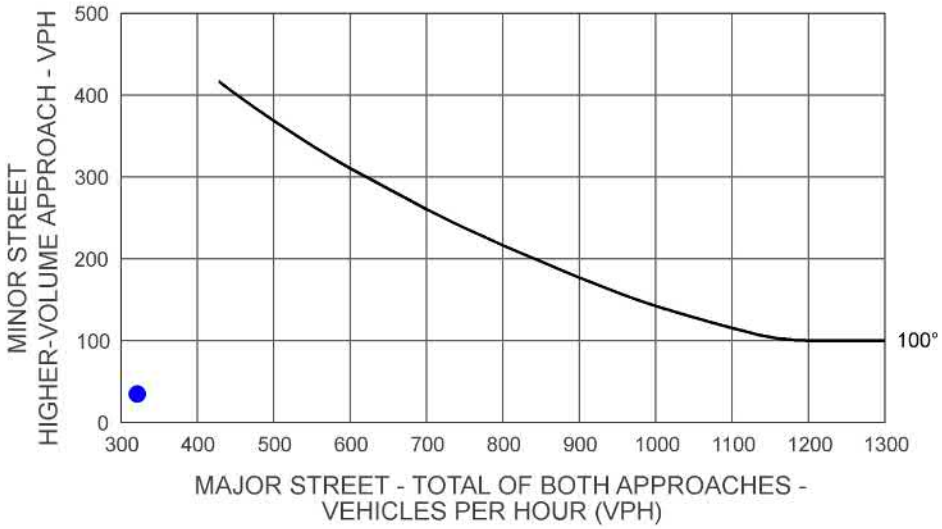


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 5



Major Total: 321
Minor High Volume: 35



Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	1	6	0	2	0	55	6	6	47	0
Future Vol, veh/h	0	0	1	6	0	2	0	55	6	6	47	0
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	150	-	-	-	200	-	150	150	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	7	0	2	0	60	7	7	51	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	135	134	61	134	134	70	56	0	0	65	0	0
Stage 1	69	69	-	65	65	-	-	-	-	-	-	-
Stage 2	66	65	-	69	69	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	836	757	1004	838	757	993	1549	-	-	1537	-	-
Stage 1	941	837	-	946	841	-	-	-	-	-	-	-
Stage 2	945	841	-	941	837	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	824	747	996	827	747	985	1543	-	-	1531	-	-
Mov Cap-2 Maneuver	824	747	-	827	747	-	-	-	-	-	-	-
Stage 1	937	830	-	942	837	-	-	-	-	-	-	-
Stage 2	939	837	-	932	830	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.6	9.2	0	0.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1543	-	-	-	-	996	862	1531	-	-
HCM Lane V/C Ratio	-	-	-	-	-	0.001	0.01	0.004	-	-
HCM Control Delay (s)	0	-	-	0	0	8.6	9.2	7.4	-	-
HCM Lane LOS	A	-	-	A	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	7	0	1	6	4	2	2	55	6	6	47	7
Future Vol, veh/h	7	0	1	6	4	2	2	55	6	6	47	7
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	150	-	-	-	200	-	150	150	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	1	7	4	2	2	60	7	7	51	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	141	138	61	138	138	70	56	0	0	65	0	0
Stage 1	69	69	-	69	69	-	-	-	-	-	-	-
Stage 2	72	69	-	69	69	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	829	753	1004	833	753	993	1549	-	-	1537	-	-
Stage 1	941	837	-	941	837	-	-	-	-	-	-	-
Stage 2	938	837	-	941	837	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	813	742	996	821	742	985	1543	-	-	1531	-	-
Mov Cap-2 Maneuver	813	742	-	821	742	-	-	-	-	-	-	-
Stage 1	936	830	-	936	832	-	-	-	-	-	-	-
Stage 2	926	832	-	932	830	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	9.5	0.2	0.7
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1543	-	-	813	-	996	815	1531	-	-
HCM Lane V/C Ratio	0.001	-	-	0.009	-	0.001	0.016	0.004	-	-
HCM Control Delay (s)	7.3	-	-	9.5	0	8.6	9.5	7.4	-	-
HCM Lane LOS	A	-	-	A	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	4	1	2	7	3	2	18	69	8	8	59	9
Future Vol, veh/h	4	1	2	7	3	2	18	69	8	8	59	9
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	150	-	-	-	200	-	150	150	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	1	2	8	3	2	20	75	9	9	64	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	209	206	74	206	206	85	69	0	0	80	0	0
Stage 1	87	87	-	119	119	-	-	-	-	-	-	-
Stage 2	122	119	-	87	87	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	748	691	988	752	691	974	1532	-	-	1518	-	-
Stage 1	921	823	-	885	797	-	-	-	-	-	-	-
Stage 2	882	797	-	921	823	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	727	672	980	732	672	966	1526	-	-	1512	-	-
Mov Cap-2 Maneuver	727	672	-	732	672	-	-	-	-	-	-	-
Stage 1	905	815	-	870	783	-	-	-	-	-	-	-
Stage 2	861	783	-	908	815	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	9.9	1.4	0.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1526	-	-	727	672	980	745	1512	-	-
HCM Lane V/C Ratio	0.013	-	-	0.006	0.002	0.002	0.018	0.006	-	-
HCM Control Delay (s)	7.4	-	-	10	10.4	8.7	9.9	7.4	-	-
HCM Lane LOS	A	-	-	B	B	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	11	1	2	7	7	2	20	69	8	8	59	16
Future Vol, veh/h	11	1	2	7	7	2	20	69	8	8	59	16
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	150	-	-	-	200	-	150	150	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	1	2	8	8	2	22	75	9	9	64	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	215	210	74	210	210	85	69	0	0	80	0	0
Stage 1	87	87	-	123	123	-	-	-	-	-	-	-
Stage 2	128	123	-	87	87	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	742	687	988	747	687	974	1532	-	-	1518	-	-
Stage 1	921	823	-	881	794	-	-	-	-	-	-	-
Stage 2	876	794	-	921	823	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	717	667	980	727	667	966	1526	-	-	1512	-	-
Mov Cap-2 Maneuver	717	667	-	727	667	-	-	-	-	-	-	-
Stage 1	904	815	-	865	779	-	-	-	-	-	-	-
Stage 2	849	779	-	908	815	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	10.1	1.5	0.7
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1526	-	-	717	667	980	721	1512	-	-
HCM Lane V/C Ratio	0.014	-	-	0.017	0.002	0.002	0.024	0.006	-	-
HCM Control Delay (s)	7.4	-	-	10.1	10.4	8.7	10.1	7.4	-	-
HCM Lane LOS	A	-	-	B	B	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	4	1	12	11	3	4	18	136	15	15	116	9
Future Vol, veh/h	4	1	12	11	3	4	18	136	15	15	116	9
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	150	-	-	-	200	-	150	150	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	1	13	12	3	4	20	148	16	16	126	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	360	356	136	356	356	158	131	0	0	153	0	0
Stage 1	164	164	-	192	192	-	-	-	-	-	-	-
Stage 2	196	192	-	164	164	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	596	570	913	599	570	887	1454	-	-	1428	-	-
Stage 1	838	762	-	810	742	-	-	-	-	-	-	-
Stage 2	806	742	-	838	762	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	574	551	905	573	551	880	1448	-	-	1422	-	-
Mov Cap-2 Maneuver	574	551	-	573	551	-	-	-	-	-	-	-
Stage 1	823	750	-	795	729	-	-	-	-	-	-	-
Stage 2	784	729	-	812	750	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	11	0.8	0.8
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1448	-	-	574	551	905	617	1422	-	-
HCM Lane V/C Ratio	0.014	-	-	0.008	0.002	0.014	0.032	0.011	-	-
HCM Control Delay (s)	7.5	-	-	11.3	11.5	9	11	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	11	1	12	11	7	4	20	136	15	15	116	16
Future Vol, veh/h	11	1	12	11	7	4	20	136	15	15	116	16
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	150	-	-	-	200	-	150	150	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	1	13	12	8	4	22	148	16	16	126	17

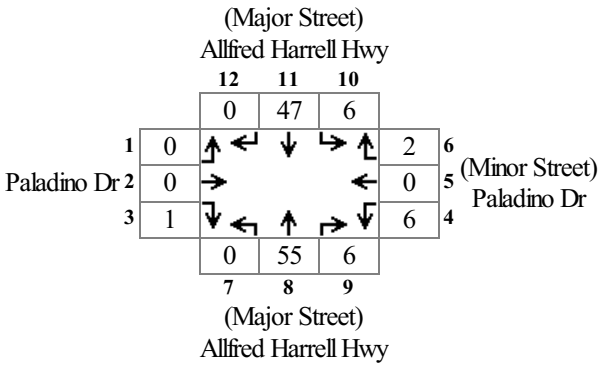
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	366	360	136	360	360	158	131	0	0	153	0	0
Stage 1	164	164	-	196	196	-	-	-	-	-	-	-
Stage 2	202	196	-	164	164	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	590	567	913	596	567	887	1454	-	-	1428	-	-
Stage 1	838	762	-	806	739	-	-	-	-	-	-	-
Stage 2	800	739	-	838	762	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	565	548	905	570	548	880	1448	-	-	1422	-	-
Mov Cap-2 Maneuver	565	548	-	570	548	-	-	-	-	-	-	-
Stage 1	822	750	-	790	725	-	-	-	-	-	-	-
Stage 2	772	725	-	812	750	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	11.2	0.9	0.8
HCM LOS	B	B		

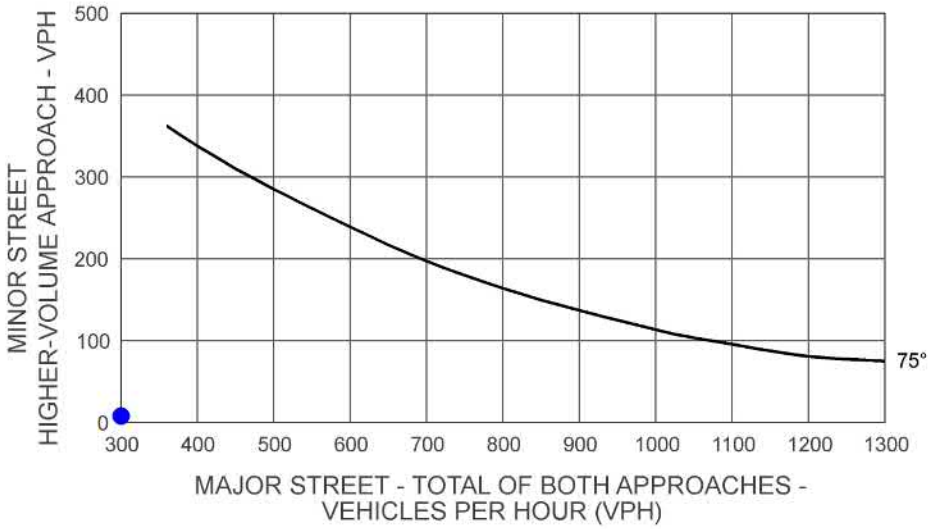
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1448	-	-	565	548	905	601	1422	-	-
HCM Lane V/C Ratio	0.015	-	-	0.021	0.002	0.014	0.04	0.011	-	-
HCM Control Delay (s)	7.5	-	-	11.5	11.6	9	11.2	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	0.1	0	-	-

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing
Intersection #: 5

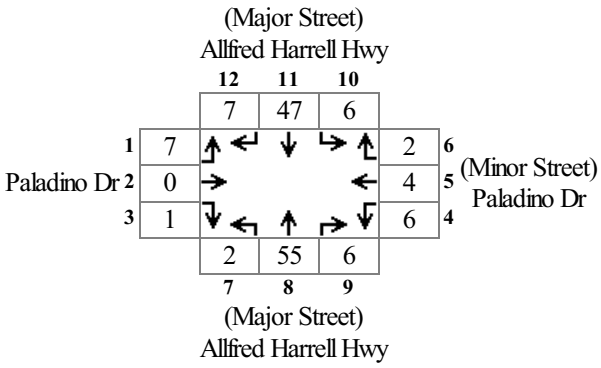


Major Total: 114
Minor High Volume: 8

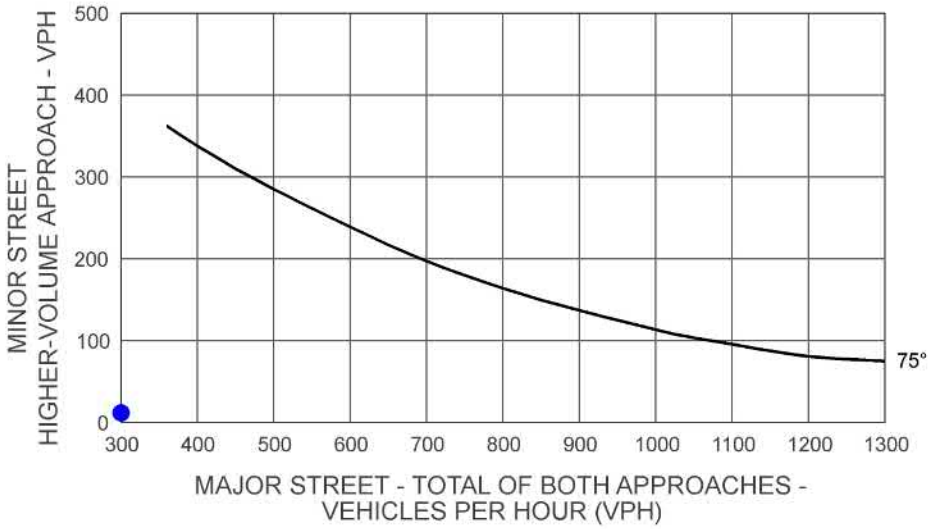


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing+Project
Intersection #: 5

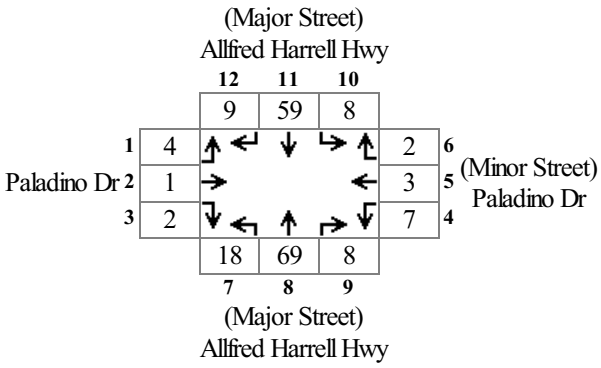


Major Total: 123
Minor High Volume: 12

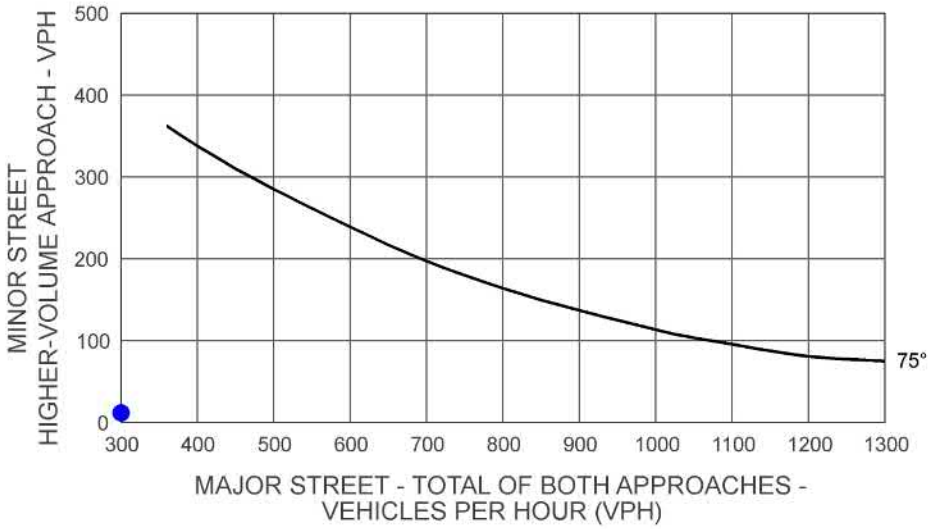


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 5

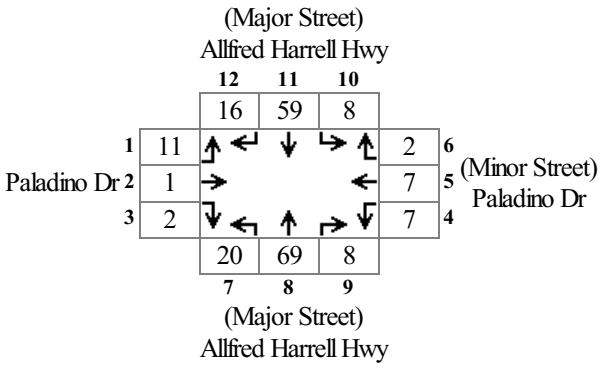


Major Total: 171
Minor High Volume: 12

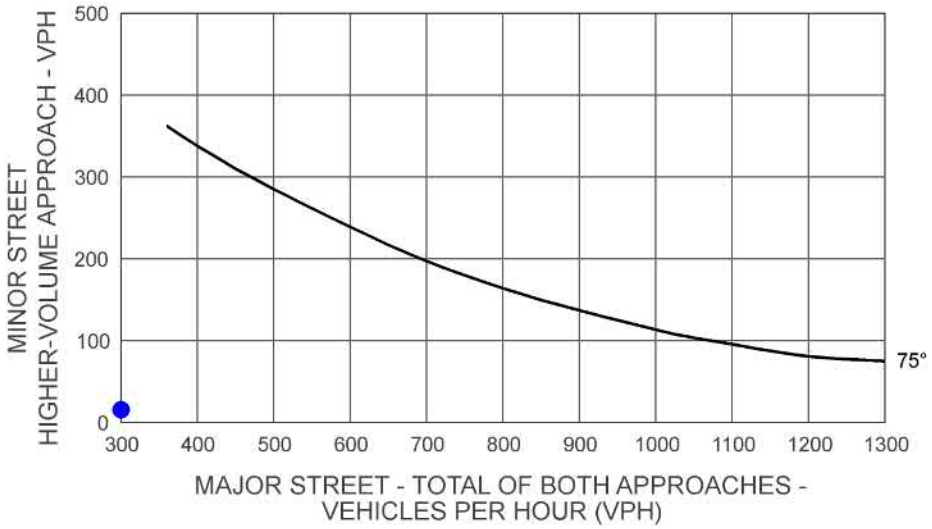


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 5

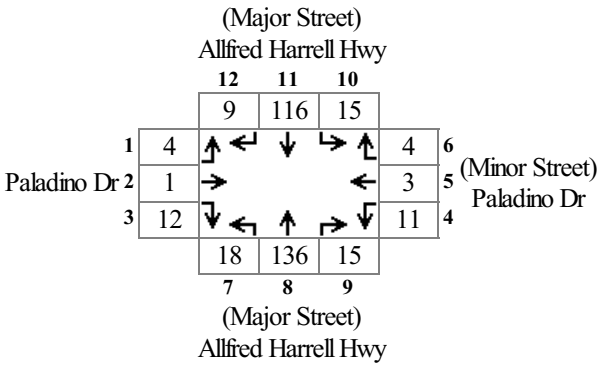


Major Total: 180
Minor High Volume: 16

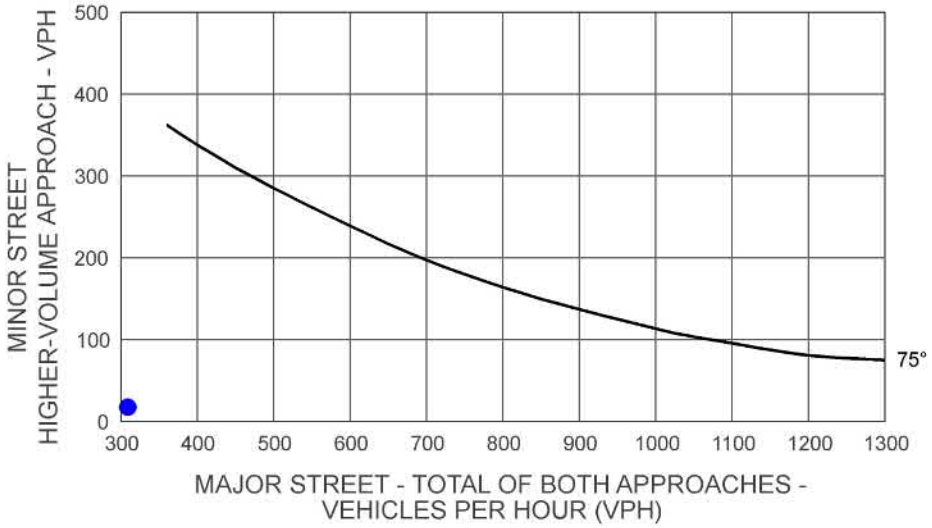


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 5

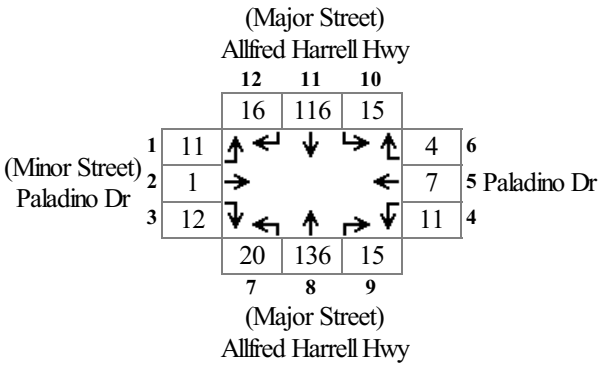


Major Total: 309
Minor High Volume: 18

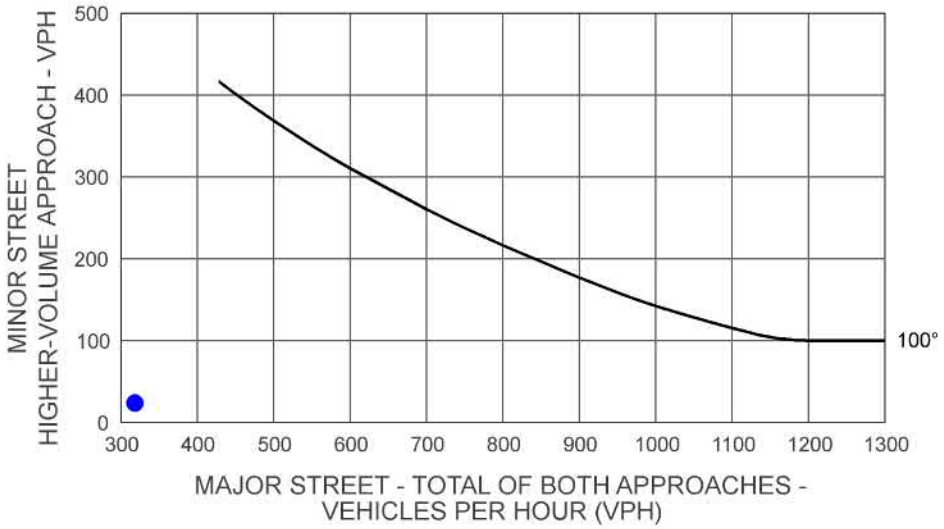


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 5



Major Total: 318
Minor High Volume: 24



Intersection 6
City Hills Dr & Panorama Dr

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	2	2	0	41	2	5	0	1	18	11	0	4	55	2
Future Vol, veh/h	0	0	2	2	0	41	2	5	0	1	18	11	0	4	55	2
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	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	2	0	45	2	5	0	1	20	12	0	4	60	2
Number of Lanes	0	0	1	1	0	1	1	0	0	1	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	7.3	8.2	7.3	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	0%	100%	0%	7%
Vol Thru, %	0%	100%	0%	100%	0%	0%	29%	90%
Vol Right, %	0%	0%	100%	0%	100%	0%	71%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	18	11	2	2	41	7	61
LT Vol	1	0	0	0	0	41	0	4
Through Vol	0	18	0	2	0	0	2	55
RT Vol	0	0	11	0	2	0	5	2
Lane Flow Rate	1	20	12	2	2	45	8	66
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.002	0.025	0.013	0.003	0.003	0.065	0.009	0.087
Departure Headway (Hd)	5.166	4.665	3.964	4.911	4.21	5.224	4.223	4.697
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	687	760	892	733	855	679	836	755
Service Time	2.939	2.438	1.737	2.611	1.91	3.008	2.007	2.475
HCM Lane V/C Ratio	0.001	0.026	0.013	0.003	0.002	0.066	0.01	0.087
HCM Control Delay	7.9	7.6	6.8	7.6	6.9	8.4	7	7.9
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0	0.1	0	0	0	0.2	0	0.3

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	29	2	0	64	25	16	0	1	18	37	0	17	55	2
Future Vol, veh/h	0	0	29	2	0	64	25	16	0	1	18	37	0	17	55	2
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	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	32	2	0	70	27	17	0	1	20	40	0	18	60	2
Number of Lanes	0	0	1	1	0	1	1	0	0	1	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	8	8.4	7.4	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	0%	100%	0%	23%
Vol Thru, %	0%	100%	0%	100%	0%	0%	61%	74%
Vol Right, %	0%	0%	100%	0%	100%	0%	39%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	18	37	29	2	64	41	74
LT Vol	1	0	0	0	0	64	0	17
Through Vol	0	18	0	29	0	0	25	55
RT Vol	0	0	37	0	2	0	16	2
Lane Flow Rate	1	20	40	32	2	70	45	80
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.002	0.027	0.048	0.045	0.003	0.106	0.058	0.116
Departure Headway (Hd)	5.496	4.994	4.292	5.16	4.458	5.49	4.715	5.173
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	653	719	837	695	804	655	761	695
Service Time	3.21	2.708	2.006	2.881	2.178	3.207	2.433	2.89
HCM Lane V/C Ratio	0.002	0.028	0.048	0.046	0.002	0.107	0.059	0.115
HCM Control Delay	8.2	7.8	7.2	8.1	7.2	8.9	7.7	8.6
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0	0.1	0.2	0.1	0	0.4	0.2	0.4

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	2	2	0	48	2	6	0	1	21	13	0	5	64	2
Future Vol, veh/h	0	0	2	2	0	48	2	6	0	1	21	13	0	5	64	2
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	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	2	0	52	2	7	0	1	23	14	0	5	70	2
Number of Lanes	0	0	1	1	0	1	1	0	0	1	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	7.4	8.3	7.3	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	0%	100%	0%	7%
Vol Thru, %	0%	100%	0%	100%	0%	0%	25%	90%
Vol Right, %	0%	0%	100%	0%	100%	0%	75%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	21	13	2	2	48	8	71
LT Vol	1	0	0	0	0	48	0	5
Through Vol	0	21	0	2	0	0	2	64
RT Vol	0	0	13	0	2	0	6	2
Lane Flow Rate	1	23	14	2	2	52	9	77
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.002	0.03	0.016	0.003	0.003	0.076	0.01	0.101
Departure Headway (Hd)	5.185	4.685	3.984	4.975	4.274	5.255	4.229	4.725
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	683	755	885	724	842	673	832	749
Service Time	2.971	2.47	1.769	2.675	1.974	3.053	2.027	2.518
HCM Lane V/C Ratio	0.001	0.03	0.016	0.003	0.002	0.077	0.011	0.103
HCM Control Delay	8	7.6	6.8	7.7	7	8.5	7.1	8.1
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0	0.1	0	0	0	0.2	0	0.3

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	29	2	0	71	25	17	0	1	21	39	0	18	64	2
Future Vol, veh/h	0	0	29	2	0	71	25	17	0	1	21	39	0	18	64	2
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	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	32	2	0	77	27	18	0	1	23	42	0	20	70	2
Number of Lanes	0	0	1	1	0	1	1	0	0	1	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	8.1	8.6	7.5	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	0%	100%	0%	21%
Vol Thru, %	0%	100%	0%	100%	0%	0%	60%	76%
Vol Right, %	0%	0%	100%	0%	100%	0%	40%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	21	39	29	2	71	42	84
LT Vol	1	0	0	0	0	71	0	18
Through Vol	0	21	0	29	0	0	25	64
RT Vol	0	0	39	0	2	0	17	2
Lane Flow Rate	1	23	42	32	2	77	46	91
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.002	0.032	0.051	0.046	0.003	0.119	0.06	0.132
Departure Headway (Hd)	5.533	5.031	4.329	5.227	4.525	5.539	4.754	5.208
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	648	713	829	686	791	649	755	690
Service Time	3.252	2.75	2.047	2.952	2.25	3.258	2.473	2.929
HCM Lane V/C Ratio	0.002	0.032	0.051	0.047	0.003	0.119	0.061	0.132
HCM Control Delay	8.3	7.9	7.3	8.2	7.3	9	7.8	8.7
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0	0.1	0.2	0.1	0	0.4	0.2	0.5

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	4	4	0	77	4	9	0	2	34	21	0	7	103	4
Future Vol, veh/h	0	0	4	4	0	77	4	9	0	2	34	21	0	7	103	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	4	4	0	84	4	10	0	2	37	23	0	8	112	4
Number of Lanes	0	0	1	1	0	1	1	0	0	1	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	7.7	8.9	7.6	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	0%	100%	0%	6%
Vol Thru, %	0%	100%	0%	100%	0%	0%	31%	90%
Vol Right, %	0%	0%	100%	0%	100%	0%	69%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	34	21	4	4	77	13	114
LT Vol	2	0	0	0	0	77	0	7
Through Vol	0	34	0	4	0	0	4	103
RT Vol	0	0	21	0	4	0	9	4
Lane Flow Rate	2	37	23	4	4	84	14	124
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.003	0.051	0.027	0.006	0.005	0.129	0.018	0.172
Departure Headway (Hd)	5.433	4.932	4.23	5.256	4.553	5.556	4.569	4.983
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	661	728	849	682	786	647	785	722
Service Time	3.147	2.646	1.944	2.982	2.279	3.274	2.287	2.698
HCM Lane V/C Ratio	0.003	0.051	0.027	0.006	0.005	0.13	0.018	0.172
HCM Control Delay	8.2	7.9	7.1	8	7.3	9.1	7.4	8.7
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0	0.2	0.1	0	0	0.4	0.1	0.6

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

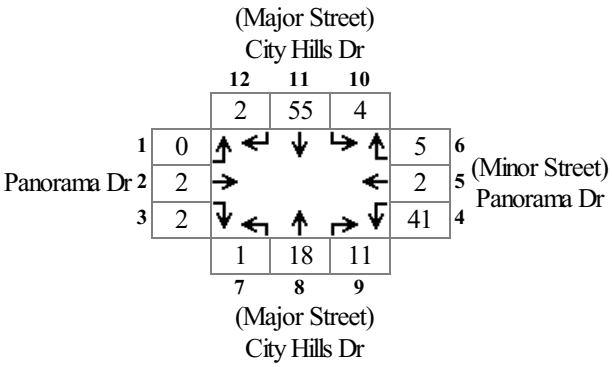
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	31	4	0	100	27	20	0	2	34	47	0	20	103	4
Future Vol, veh/h	0	0	31	4	0	100	27	20	0	2	34	47	0	20	103	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	34	4	0	109	29	22	0	2	37	51	0	22	112	4
Number of Lanes	0	0	1	1	0	1	1	0	0	1	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	8.5	9.2	7.9	9.5
HCM LOS	A	A	A	A

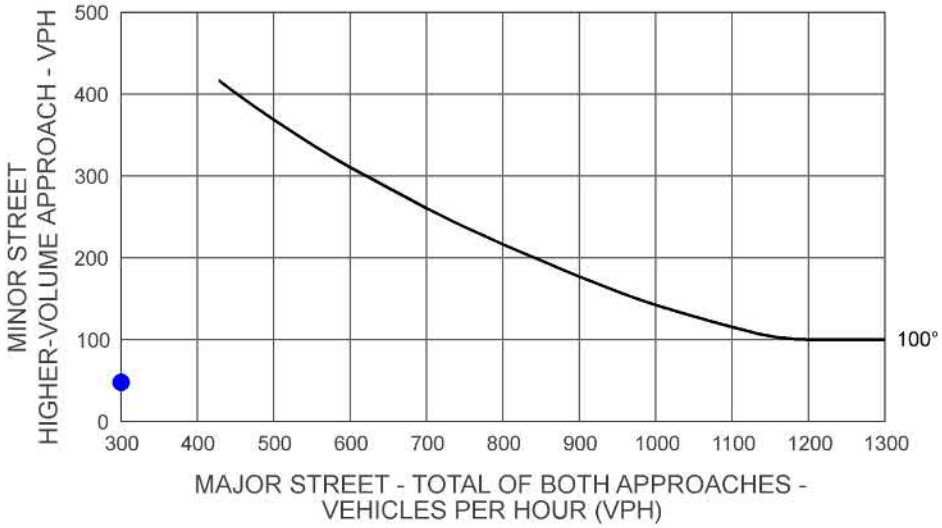
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	0%	100%	0%	16%
Vol Thru, %	0%	100%	0%	100%	0%	0%	57%	81%
Vol Right, %	0%	0%	100%	0%	100%	0%	43%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	34	47	31	4	100	47	127
LT Vol	2	0	0	0	0	100	0	20
Through Vol	0	34	0	31	0	0	27	103
RT Vol	0	0	47	0	4	0	20	4
Lane Flow Rate	2	37	51	34	4	109	51	138
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.003	0.053	0.064	0.052	0.006	0.174	0.07	0.205
Departure Headway (Hd)	5.709	5.207	4.503	5.521	4.817	5.751	4.95	5.356
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	626	687	793	647	740	623	722	670
Service Time	3.447	2.945	2.241	3.27	2.566	3.491	2.69	3.097
HCM Lane V/C Ratio	0.003	0.054	0.064	0.053	0.005	0.175	0.071	0.206
HCM Control Delay	8.5	8.2	7.6	8.6	7.6	9.7	8.1	9.5
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0	0.2	0.2	0.2	0	0.6	0.2	0.8

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing
Intersection #: 6

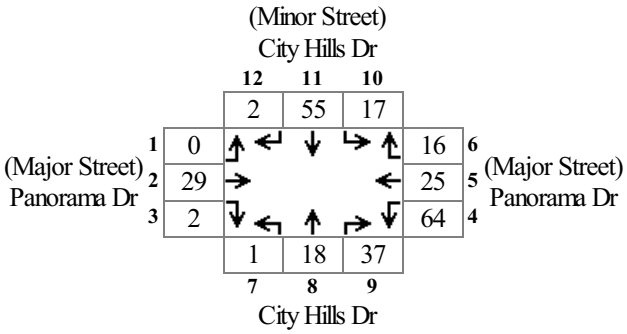


Major Total: 91
Minor High Volume: 48

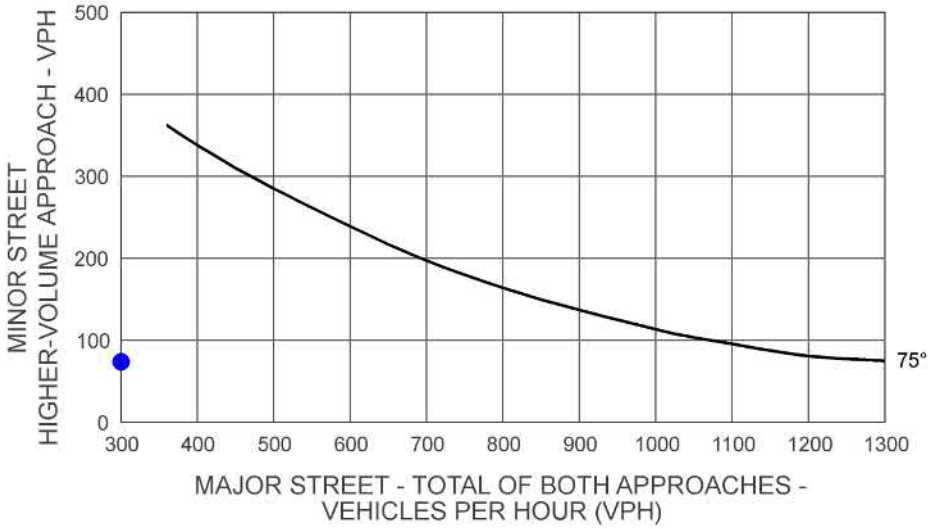


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing+Project
Intersection #: 6

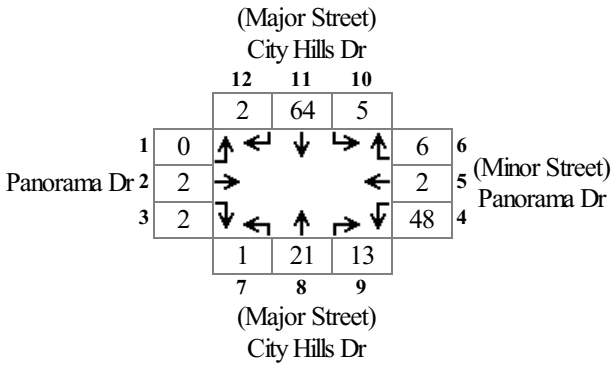


Major Total: 136
Minor High Volume: 74

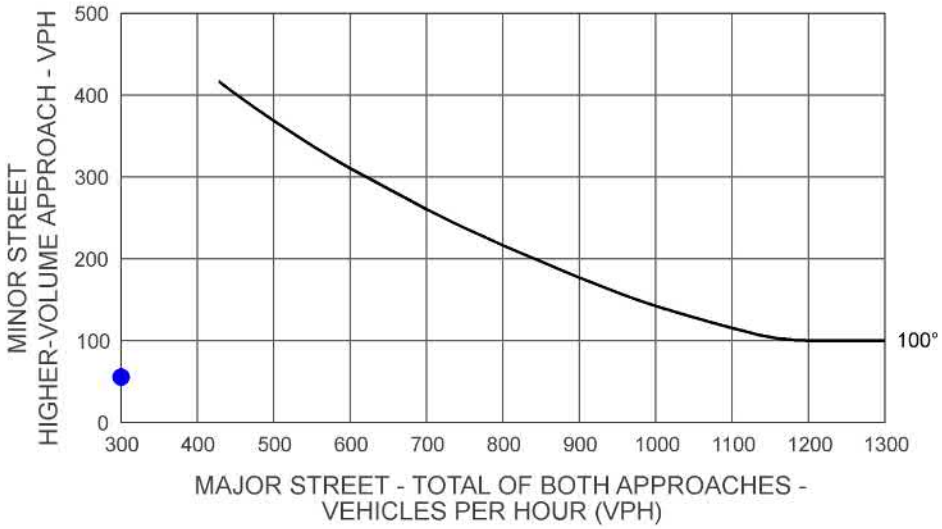


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 6

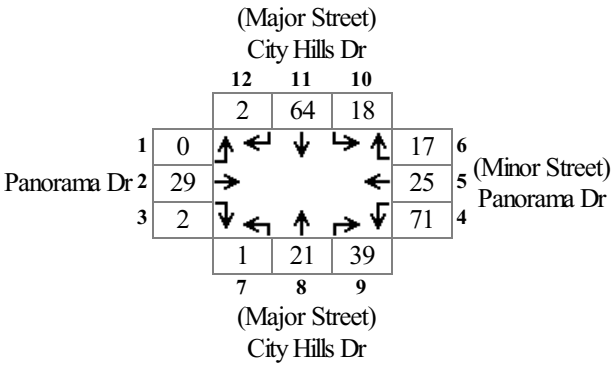


Major Total: 106
Minor High Volume: 56

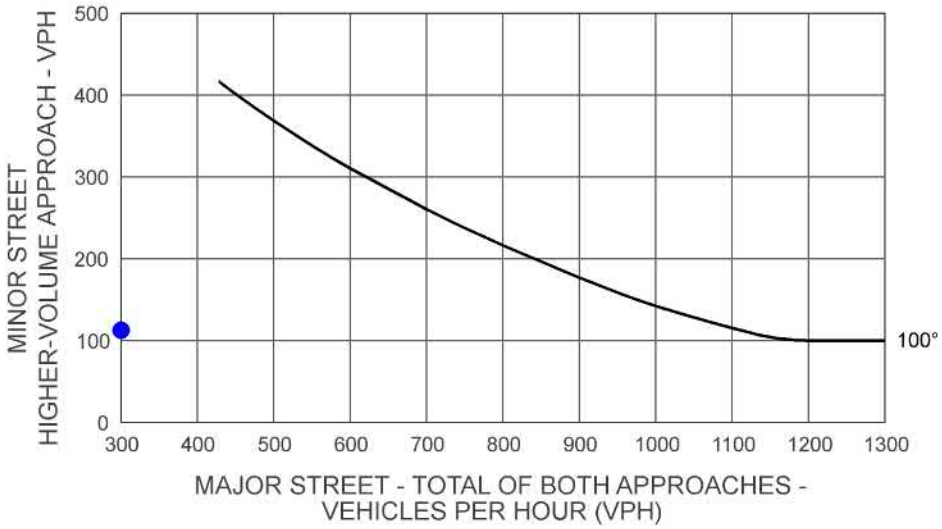


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 6

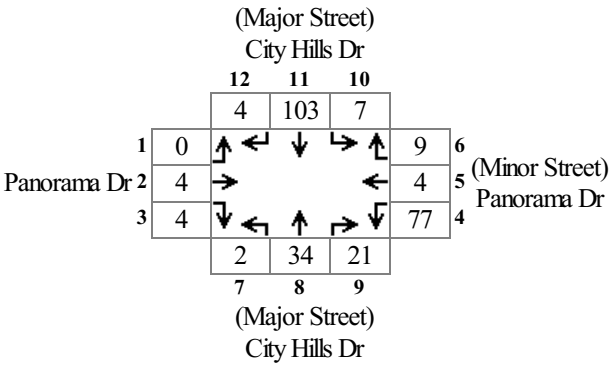


Major Total: 145
Minor High Volume: 113

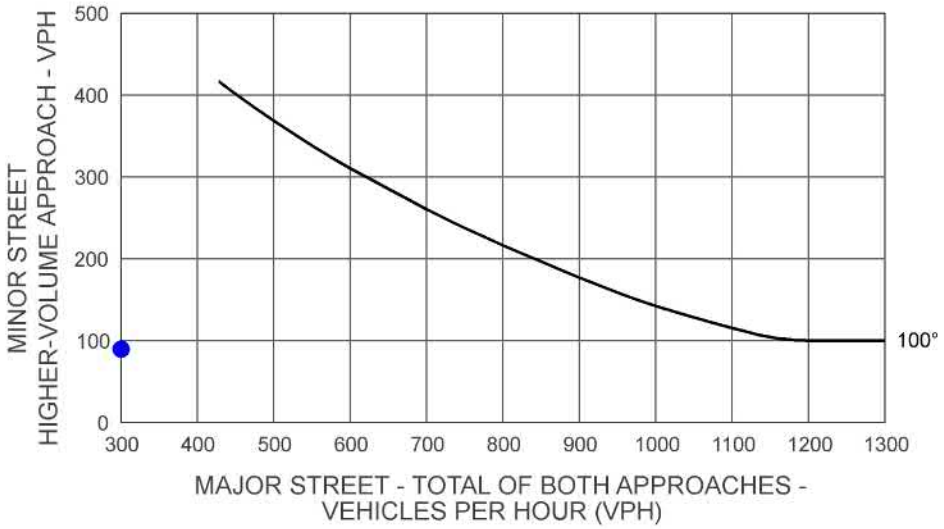


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 6

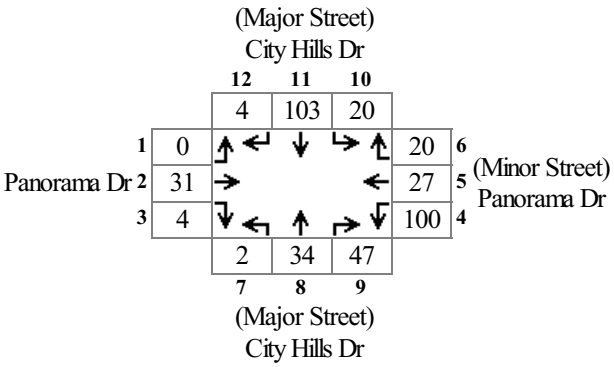


Major Total: 171
Minor High Volume: 90

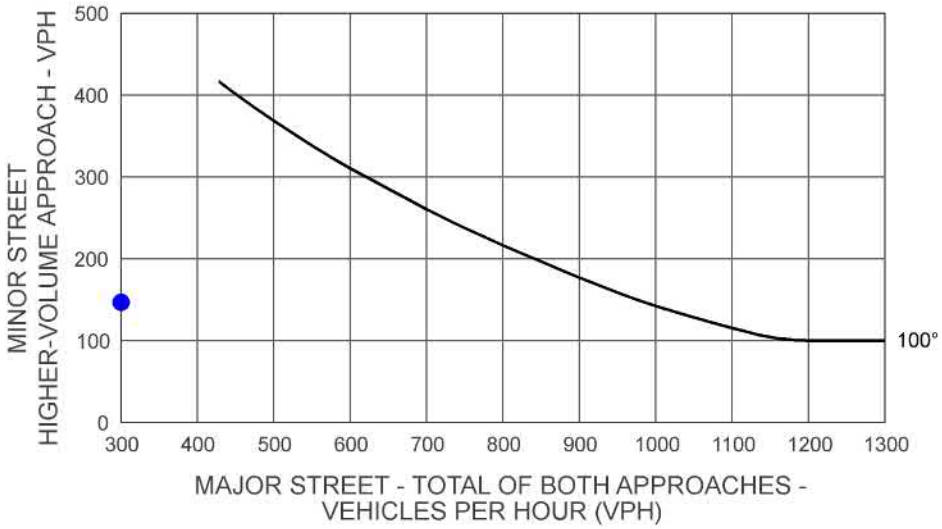


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 6



Major Total: 210
Minor High Volume: 147



Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	5	0	0	21	5	5	0	2	50	15	0	2	45	4
Future Vol, veh/h	0	0	5	0	0	21	5	5	0	2	50	15	0	2	45	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	0	0	23	5	5	0	2	54	16	0	2	49	4
Number of Lanes	0	0	1	1	0	1	1	0	0	1	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	7.7	8	7.5	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	0%	100%	0%	4%
Vol Thru, %	0%	100%	0%	100%	100%	0%	50%	88%
Vol Right, %	0%	0%	100%	0%	0%	0%	50%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	50	15	5	0	21	10	51
LT Vol	2	0	0	0	0	21	0	2
Through Vol	0	50	0	5	0	0	5	45
RT Vol	0	0	15	0	0	0	5	4
Lane Flow Rate	2	54	16	5	0	23	11	55
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.003	0.07	0.018	0.007	0	0.034	0.014	0.072
Departure Headway (Hd)	5.13	4.629	3.929	4.941	4.941	5.379	4.529	4.67
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	695	770	905	728	0	670	795	758
Service Time	2.882	2.382	1.681	2.644	2.644	3.079	2.229	2.453
HCM Lane V/C Ratio	0.003	0.07	0.018	0.007	0	0.034	0.014	0.073
HCM Control Delay	7.9	7.7	6.8	7.7	7.6	8.3	7.3	7.8
HCM Lane LOS	A	A	A	A	N	A	A	A
HCM 95th-tile Q	0	0.2	0.1	0	0	0.1	0	0.2

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	16	0	0	35	19	12	0	2	50	26	0	7	45	4
Future Vol, veh/h	0	0	16	0	0	35	19	12	0	2	50	26	0	7	45	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	17	0	0	38	21	13	0	2	54	28	0	8	49	4
Number of Lanes	0	0	1	1	0	1	1	0	0	1	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	7.9	8.1	7.6	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	0%	100%	0%	12%
Vol Thru, %	0%	100%	0%	100%	100%	0%	61%	80%
Vol Right, %	0%	0%	100%	0%	0%	0%	39%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	50	26	16	0	35	31	56
LT Vol	2	0	0	0	0	35	0	7
Through Vol	0	50	0	16	0	0	19	45
RT Vol	0	0	26	0	0	0	12	4
Lane Flow Rate	2	54	28	17	0	38	34	61
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.003	0.073	0.032	0.024	0	0.058	0.044	0.084
Departure Headway (Hd)	5.321	4.82	4.118	5.071	5.071	5.456	4.684	4.968
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	676	747	873	708	0	659	768	724
Service Time	3.028	2.527	1.825	2.784	2.784	3.164	2.392	2.677
HCM Lane V/C Ratio	0.003	0.072	0.032	0.024	0	0.058	0.044	0.084
HCM Control Delay	8	7.9	7	7.9	7.8	8.5	7.6	8.1
HCM Lane LOS	A	A	A	A	N	A	A	A
HCM 95th-tile Q	0	0.2	0.1	0.1	0	0.2	0.1	0.3

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	6	0	0	25	6	6	0	2	58	18	0	2	53	5
Future Vol, veh/h	0	0	6	0	0	25	6	6	0	2	58	18	0	2	53	5
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	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	7	0	0	27	7	7	0	2	63	20	0	2	58	5
Number of Lanes	0	0	1	1	0	1	1	0	0	1	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	7.8	8.1	7.6	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	0%	100%	0%	3%
Vol Thru, %	0%	100%	0%	100%	100%	0%	50%	88%
Vol Right, %	0%	0%	100%	0%	0%	0%	50%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	58	18	6	0	25	12	60
LT Vol	2	0	0	0	0	25	0	2
Through Vol	0	58	0	6	0	0	6	53
RT Vol	0	0	18	0	0	0	6	5
Lane Flow Rate	2	63	20	7	0	27	13	65
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.003	0.081	0.021	0.009	0	0.041	0.017	0.085
Departure Headway (Hd)	5.149	4.648	3.947	5.011	5.011	5.437	4.586	4.695
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	690	765	898	718	0	663	785	752
Service Time	2.914	2.413	1.712	2.714	2.714	3.137	2.286	2.493
HCM Lane V/C Ratio	0.003	0.082	0.022	0.01	0	0.041	0.017	0.086
HCM Control Delay	7.9	7.8	6.8	7.8	7.7	8.4	7.4	7.9
HCM Lane LOS	A	A	A	A	N	A	A	A
HCM 95th-tile Q	0	0.3	0.1	0	0	0.1	0.1	0.3

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	17	0	0	39	20	13	0	2	58	29	0	7	53	5
Future Vol, veh/h	0	0	17	0	0	39	20	13	0	2	58	29	0	7	53	5
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	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	0	0	42	22	14	0	2	63	32	0	8	58	5
Number of Lanes	0	0	1	1	0	1	1	0	0	1	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	8	8.2	7.7	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	0%	100%	0%	11%
Vol Thru, %	0%	100%	0%	100%	100%	0%	61%	82%
Vol Right, %	0%	0%	100%	0%	0%	0%	39%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	58	29	17	0	39	33	65
LT Vol	2	0	0	0	0	39	0	7
Through Vol	0	58	0	17	0	0	20	53
RT Vol	0	0	29	0	0	0	13	5
Lane Flow Rate	2	63	32	18	0	42	36	71
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.003	0.085	0.036	0.026	0	0.065	0.047	0.098
Departure Headway (Hd)	5.351	4.85	4.148	5.143	5.143	5.514	4.737	5.001
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	672	742	867	698	0	652	758	719
Service Time	3.061	2.559	1.857	2.86	2.86	3.227	2.45	2.714
HCM Lane V/C Ratio	0.003	0.085	0.037	0.026	0	0.064	0.047	0.099
HCM Control Delay	8.1	8	7	8	7.9	8.6	7.7	8.3
HCM Lane LOS	A	A	A	A	N	A	A	A
HCM 95th-tile Q	0	0.3	0.1	0.1	0	0.2	0.1	0.3

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	9	0	0	39	9	9	0	4	94	28	0	4	84	7
Future Vol, veh/h	0	0	9	0	0	39	9	9	0	4	94	28	0	4	84	7
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	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	10	0	0	42	10	10	0	4	102	30	0	4	91	8
Number of Lanes	0	0	1	1	0	1	1	0	0	1	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	8.1	8.5	8	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	0%	100%	0%	4%
Vol Thru, %	0%	100%	0%	100%	100%	0%	50%	88%
Vol Right, %	0%	0%	100%	0%	0%	0%	50%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	94	28	9	0	39	18	95
LT Vol	4	0	0	0	0	39	0	4
Through Vol	0	94	0	9	0	0	9	84
RT Vol	0	0	28	0	0	0	9	7
Lane Flow Rate	4	102	30	10	0	42	20	103
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.006	0.137	0.035	0.014	0	0.067	0.026	0.143
Departure Headway (Hd)	5.32	4.818	4.116	5.308	5.308	5.688	4.837	4.984
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	676	747	873	675	0	632	742	722
Service Time	3.029	2.527	1.825	3.031	3.031	3.406	2.554	2.696
HCM Lane V/C Ratio	0.006	0.137	0.034	0.015	0	0.066	0.027	0.143
HCM Control Delay	8.1	8.3	7	8.1	8	8.8	7.7	8.5
HCM Lane LOS	A	A	A	A	N	A	A	A
HCM 95th-tile Q	0	0.5	0.1	0	0	0.2	0.1	0.5

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

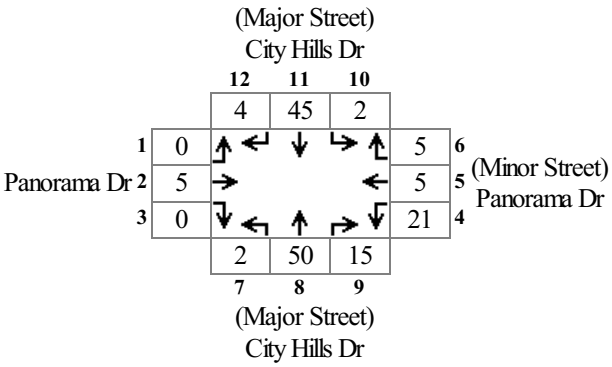
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	20	0	0	53	23	16	0	4	94	39	0	9	84	7
Future Vol, veh/h	0	0	20	0	0	53	23	16	0	4	94	39	0	9	84	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	22	0	0	58	25	17	0	4	102	42	0	10	91	8
Number of Lanes	0	0	1	1	0	1	1	0	0	1	1	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	1	2	2
HCM Control Delay	8.4	8.6	8.1	8.9
HCM LOS	A	A	A	A

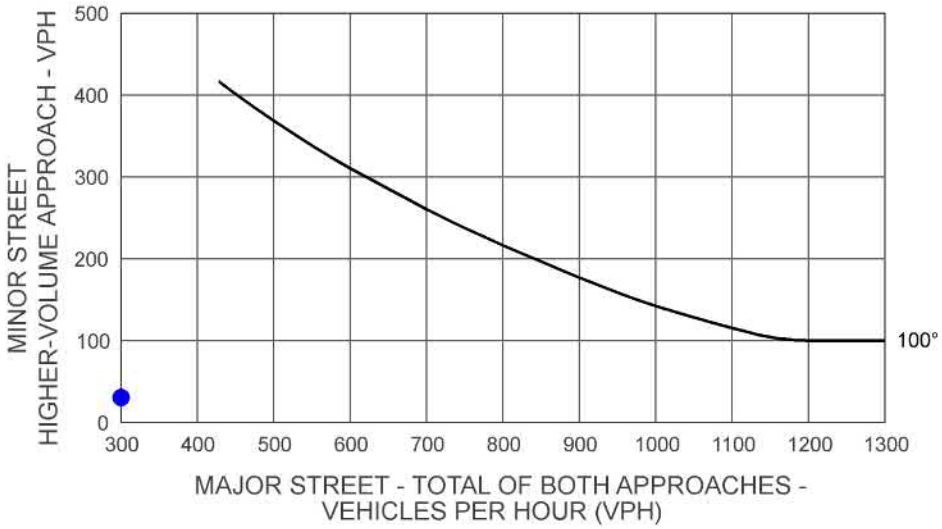
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	0%	0%	0%	0%	100%	0%	9%
Vol Thru, %	0%	100%	0%	100%	100%	0%	59%	84%
Vol Right, %	0%	0%	100%	0%	0%	0%	41%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	94	39	20	0	53	39	100
LT Vol	4	0	0	0	0	53	0	9
Through Vol	0	94	0	20	0	0	23	84
RT Vol	0	0	39	0	0	0	16	7
Lane Flow Rate	4	102	42	22	0	58	42	109
Geometry Grp	7	7	7	8	8	8	8	8
Degree of Util (X)	0.007	0.141	0.05	0.033	0	0.092	0.059	0.157
Departure Headway (Hd)	5.469	4.967	4.264	5.446	5.446	5.769	4.98	5.186
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	656	723	841	657	0	622	719	692
Service Time	3.189	2.687	1.985	3.184	3.184	3.502	2.712	2.914
HCM Lane V/C Ratio	0.006	0.141	0.05	0.033	0	0.093	0.058	0.158
HCM Control Delay	8.2	8.5	7.2	8.4	8.2	9.1	8	8.9
HCM Lane LOS	A	A	A	A	N	A	A	A
HCM 95th-tile Q	0	0.5	0.2	0.1	0	0.3	0.2	0.6

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing
Intersection #: 6

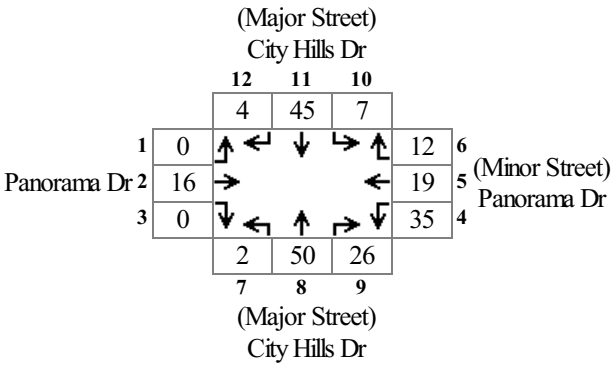


Major Total: 118
Minor High Volume: 31

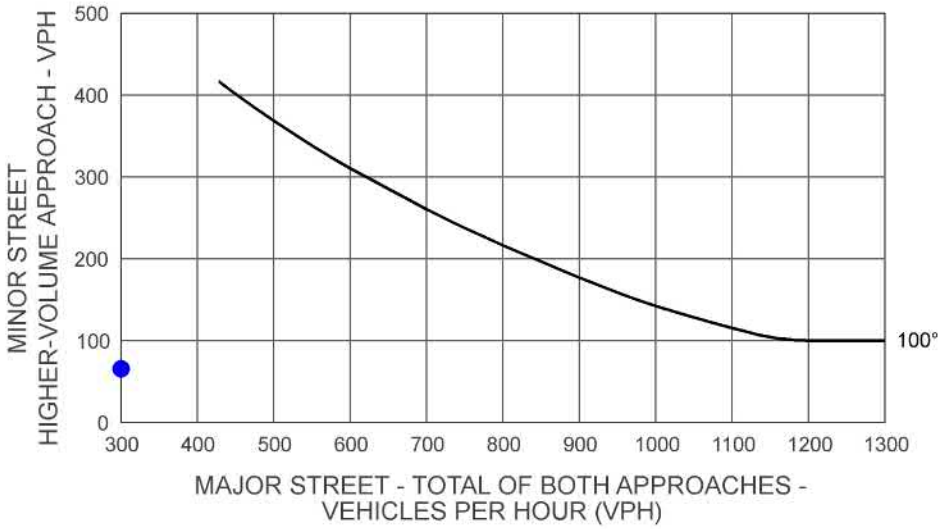


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing+Project
Intersection #: 6

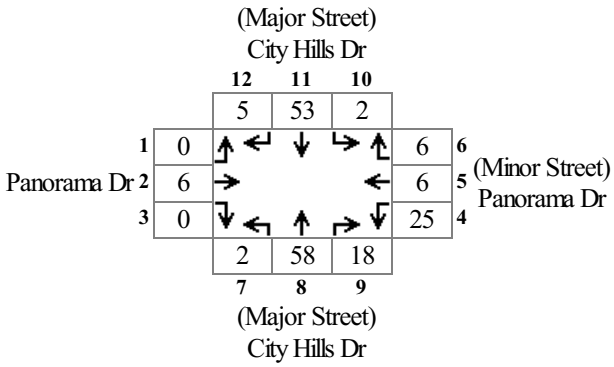


Major Total: 134
Minor High Volume: 66

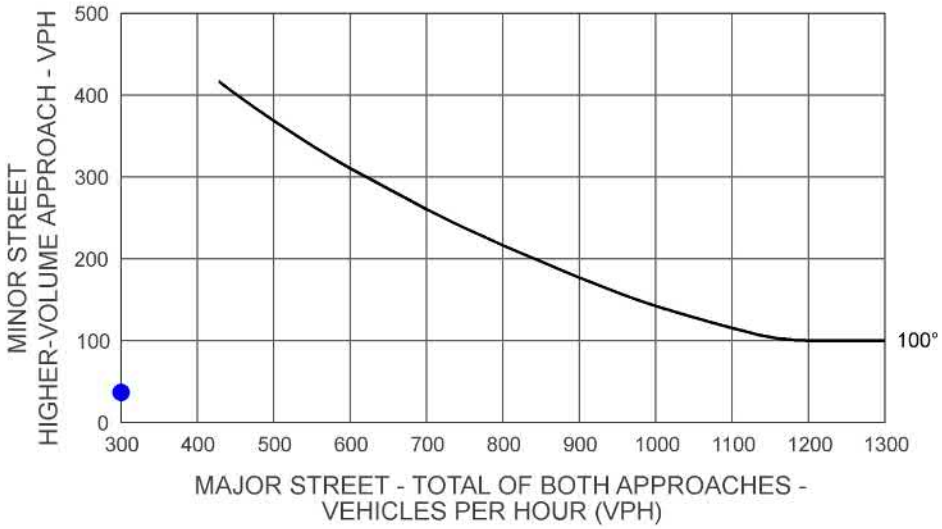


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 6

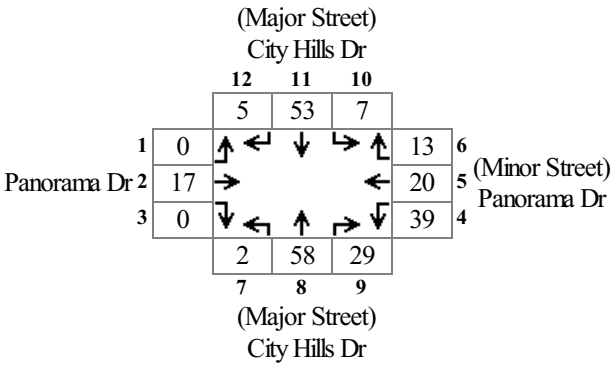


Major Total: 138
Minor High Volume: 37

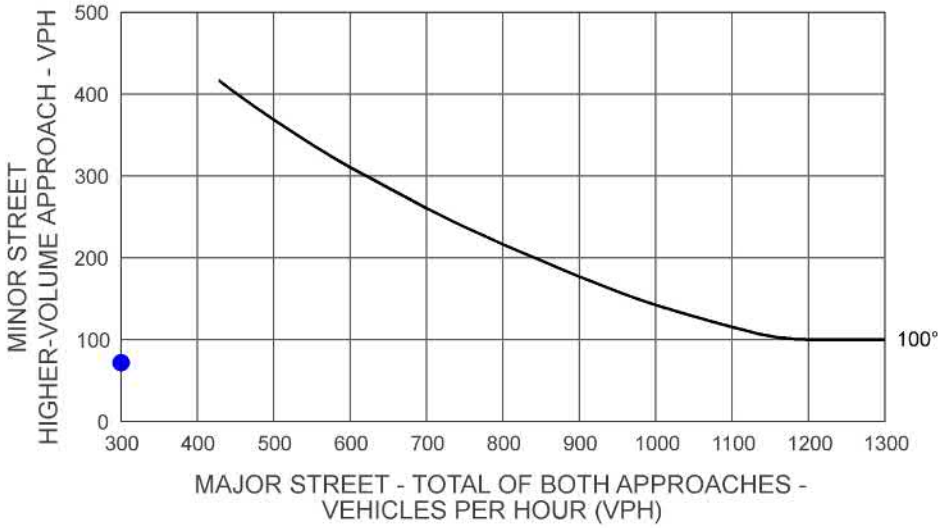


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 6

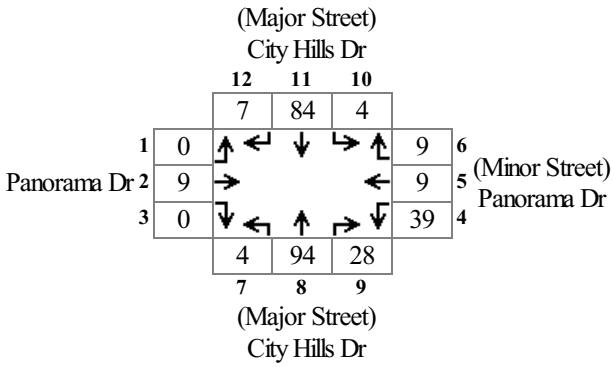


Major Total: 154
Minor High Volume: 72

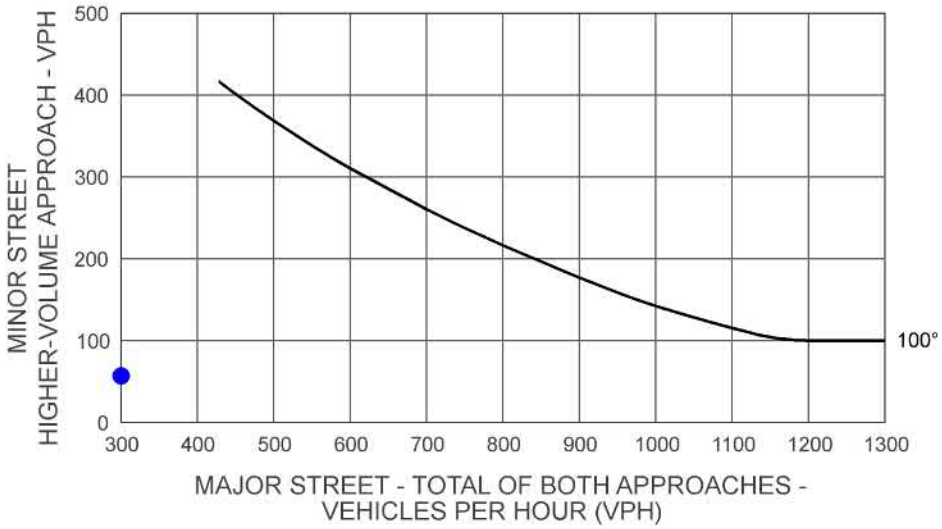


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 6

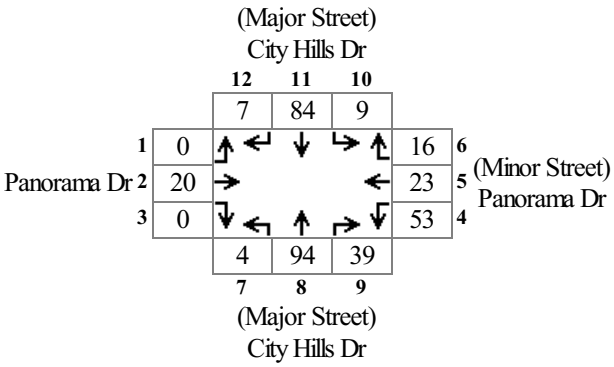


Major Total: 221
Minor High Volume: 57

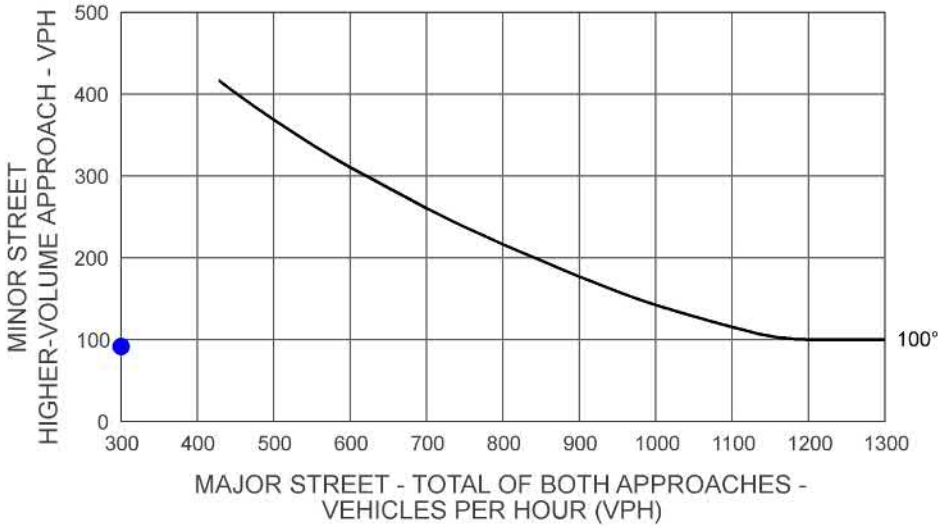


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 6



Major Total: 237
Minor High Volume: 92



Intersection 7
Project Entrance/Calle Way & Panorama Dr

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	1	6	9	2	10	0	34	0	10	0	0	0
Future Vol, veh/h	1	6	9	2	10	0	34	0	10	0	0	0
Conflicting Peds, #/hr	5	0	5	5	0	5	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	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	7	10	2	11	0	37	0	11	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	11	0	0	16	0	0	29	29	16	34	33	16
Stage 1	-	-	-	-	-	-	14	14	-	15	15	-
Stage 2	-	-	-	-	-	-	15	15	-	19	18	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1608	-	-	1602	-	-	980	864	1063	973	860	1063
Stage 1	-	-	-	-	-	-	1006	884	-	1005	883	-
Stage 2	-	-	-	-	-	-	1005	883	-	1000	880	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1601	-	-	1595	-	-	974	862	1059	957	858	1059
Mov Cap-2 Maneuver	-	-	-	-	-	-	974	862	-	957	858	-
Stage 1	-	-	-	-	-	-	1005	883	-	1004	882	-
Stage 2	-	-	-	-	-	-	1000	882	-	985	879	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.2	8.8	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	992	1601	-	-	1595	-	-	-
HCM Lane V/C Ratio	0.048	0.001	-	-	0.001	-	-	-
HCM Control Delay (s)	8.8	7.2	0	-	7.3	-	-	0
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	65	32	9	2	32	35	34	0	10	42	0	55
Future Vol, veh/h	65	32	9	2	32	35	34	0	10	42	0	55
Conflicting Peds, #/hr	5	0	5	5	0	5	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	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	35	10	2	35	38	37	0	11	46	0	60

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	73	0	0	45	0	0	269	258	45	244	244	59
Stage 1	-	-	-	-	-	-	181	181	-	58	58	-
Stage 2	-	-	-	-	-	-	88	77	-	186	186	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1527	-	-	1563	-	-	684	646	1025	710	658	1007
Stage 1	-	-	-	-	-	-	821	750	-	954	847	-
Stage 2	-	-	-	-	-	-	920	831	-	816	746	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1521	-	-	1556	-	-	616	614	1021	673	626	1003
Mov Cap-2 Maneuver	-	-	-	-	-	-	616	614	-	673	626	-
Stage 1	-	-	-	-	-	-	782	714	-	908	846	-
Stage 2	-	-	-	-	-	-	860	830	-	765	710	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.6	0.2	10.7	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	677	1521	-	-	1556	-	-	827
HCM Lane V/C Ratio	0.071	0.046	-	-	0.001	-	-	0.127
HCM Control Delay (s)	10.7	7.5	0	-	7.3	-	-	10
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	1	7	11	2	12	0	38	0	11	0	0	0
Future Vol, veh/h	1	7	11	2	12	0	38	0	11	0	0	0
Conflicting Peds, #/hr	5	0	5	5	0	5	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	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	8	12	2	13	0	41	0	12	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	13	0	0	20	0	0	33	33	19	39	39	18
Stage 1	-	-	-	-	-	-	16	16	-	17	17	-
Stage 2	-	-	-	-	-	-	17	17	-	22	22	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1606	-	-	1596	-	-	974	860	1059	966	853	1061
Stage 1	-	-	-	-	-	-	1004	882	-	1002	881	-
Stage 2	-	-	-	-	-	-	1002	881	-	996	877	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1599	-	-	1589	-	-	968	858	1055	949	851	1057
Mov Cap-2 Maneuver	-	-	-	-	-	-	968	858	-	949	851	-
Stage 1	-	-	-	-	-	-	1003	881	-	1001	880	-
Stage 2	-	-	-	-	-	-	997	880	-	980	876	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1	8.9	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	986	1599	-	-	1589	-	-	-
HCM Lane V/C Ratio	0.054	0.001	-	-	0.001	-	-	-
HCM Control Delay (s)	8.9	7.3	0	-	7.3	-	-	0
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	65	33	11	2	34	35	38	0	11	42	0	55
Future Vol, veh/h	65	33	11	2	34	35	38	0	11	42	0	55
Conflicting Peds, #/hr	5	0	5	5	0	5	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	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	36	12	2	37	38	41	0	12	46	0	60

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	75	0	0	48	0	0	273	262	47	249	249	61
Stage 1	-	-	-	-	-	-	183	183	-	60	60	-
Stage 2	-	-	-	-	-	-	90	79	-	189	189	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1524	-	-	1559	-	-	679	643	1022	705	654	1004
Stage 1	-	-	-	-	-	-	819	748	-	951	845	-
Stage 2	-	-	-	-	-	-	917	829	-	813	744	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1518	-	-	1553	-	-	612	611	1018	668	622	1000
Mov Cap-2 Maneuver	-	-	-	-	-	-	612	611	-	668	622	-
Stage 1	-	-	-	-	-	-	780	712	-	905	844	-
Stage 2	-	-	-	-	-	-	857	828	-	762	708	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.5	0.2	10.8	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	672	1518	-	-	1553	-	-	823
HCM Lane V/C Ratio	0.079	0.047	-	-	0.001	-	-	0.128
HCM Control Delay (s)	10.8	7.5	0	-	7.3	-	-	10
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	2	11	17	4	19	0	55	0	16	0	0	0
Future Vol, veh/h	2	11	17	4	19	0	55	0	16	0	0	0
Conflicting Peds, #/hr	5	0	5	5	0	5	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	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	12	18	4	21	0	60	0	17	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	21	0	0	30	0	0	55	55	26	63	64	26
Stage 1	-	-	-	-	-	-	26	26	-	29	29	-
Stage 2	-	-	-	-	-	-	29	29	-	34	35	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1595	-	-	1583	-	-	943	836	1050	932	827	1050
Stage 1	-	-	-	-	-	-	992	874	-	988	871	-
Stage 2	-	-	-	-	-	-	988	871	-	982	866	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1588	-	-	1576	-	-	937	833	1046	910	824	1046
Mov Cap-2 Maneuver	-	-	-	-	-	-	937	833	-	910	824	-
Stage 1	-	-	-	-	-	-	991	873	-	987	869	-
Stage 2	-	-	-	-	-	-	981	869	-	961	865	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.3	9.1	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	960	1588	-	-	1576	-	-	-
HCM Lane V/C Ratio	0.08	0.001	-	-	0.003	-	-	-
HCM Control Delay (s)	9.1	7.3	0	-	7.3	-	-	0
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	66	37	17	4	41	35	55	0	16	42	0	55
Future Vol, veh/h	66	37	17	4	41	35	55	0	16	42	0	55
Conflicting Peds, #/hr	5	0	5	5	0	5	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	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	40	18	4	45	38	60	0	17	46	0	60

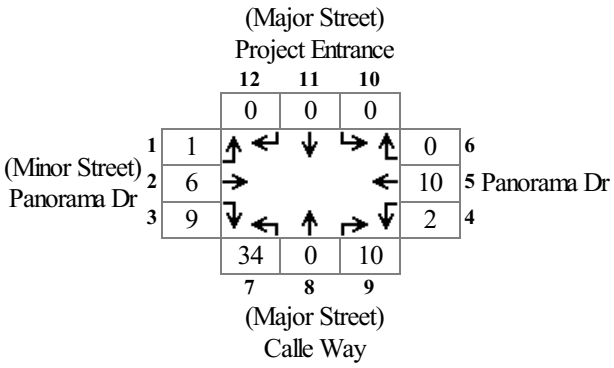
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	83	0	0	59	0	0	295	284	54	274	274	69
Stage 1	-	-	-	-	-	-	193	193	-	72	72	-
Stage 2	-	-	-	-	-	-	102	91	-	202	202	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1514	-	-	1545	-	-	657	625	1013	678	633	994
Stage 1	-	-	-	-	-	-	809	741	-	938	835	-
Stage 2	-	-	-	-	-	-	904	820	-	800	734	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1508	-	-	1539	-	-	591	593	1009	637	600	990
Mov Cap-2 Maneuver	-	-	-	-	-	-	591	593	-	637	600	-
Stage 1	-	-	-	-	-	-	769	705	-	892	833	-
Stage 2	-	-	-	-	-	-	844	818	-	745	698	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.1	0.4	11.3	10.2
HCM LOS			B	B

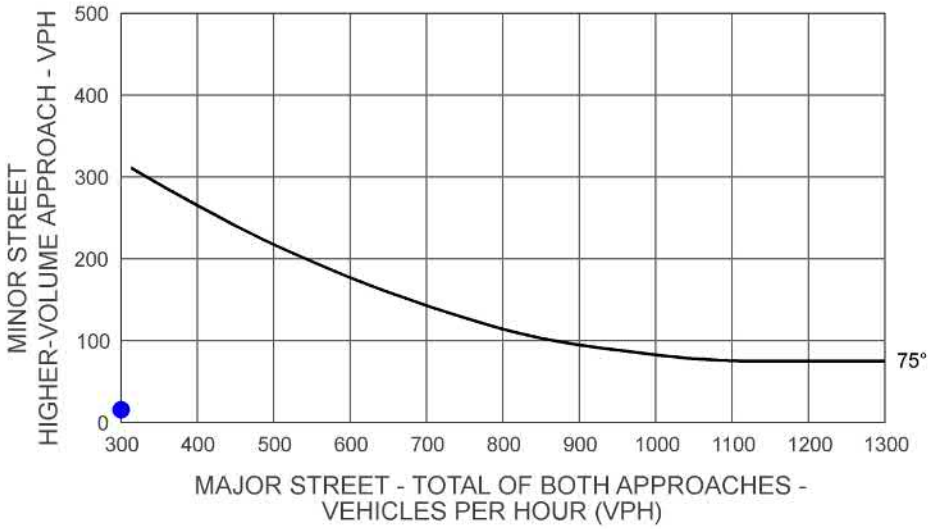
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	652	1508	-	-	1539	-	-	798
HCM Lane V/C Ratio	0.118	0.048	-	-	0.003	-	-	0.132
HCM Control Delay (s)	11.3	7.5	0	-	7.3	-	-	10.2
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	0.5

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing
Intersection #: 7

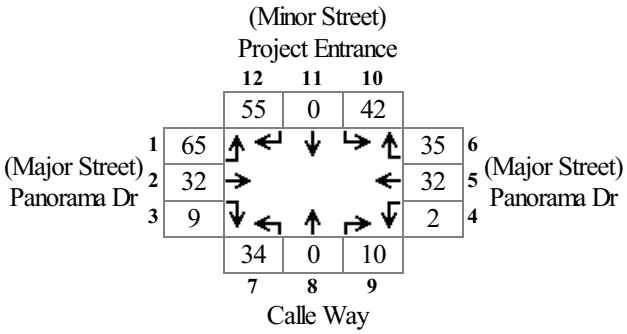


Major Total: 44
Minor High Volume: 16

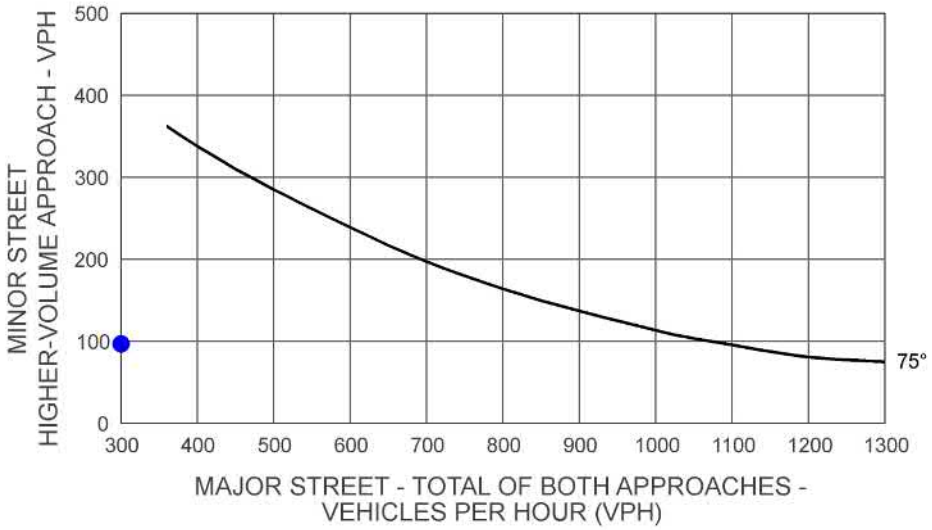


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing+Project
Intersection #: 7

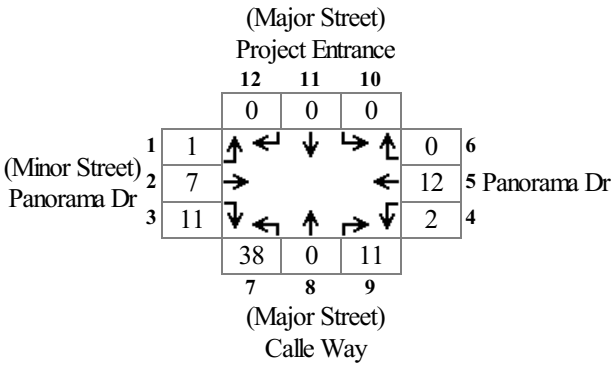


Major Total: 175
Minor High Volume: 97

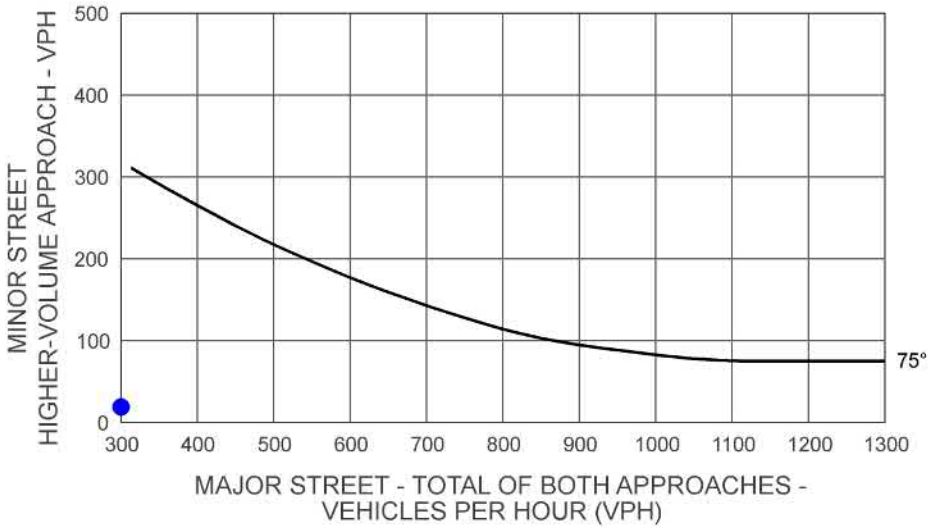


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 7

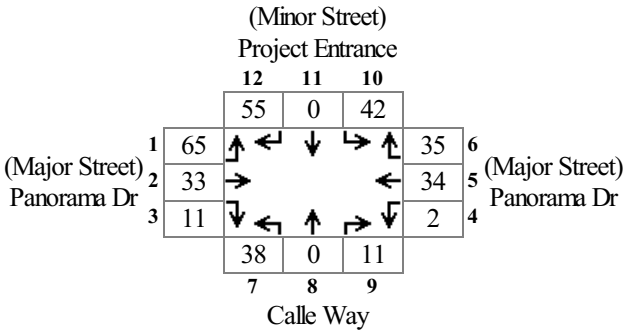


Major Total: 49
Minor High Volume: 19

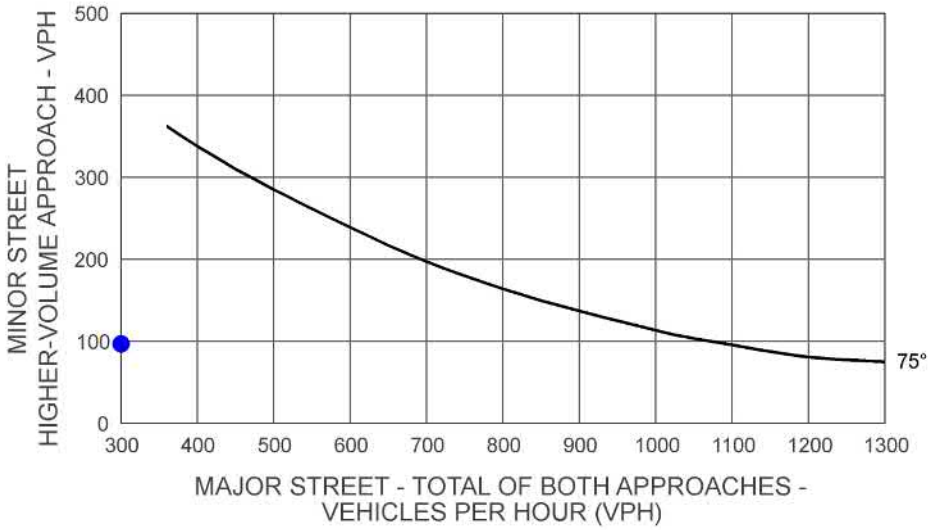


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 7

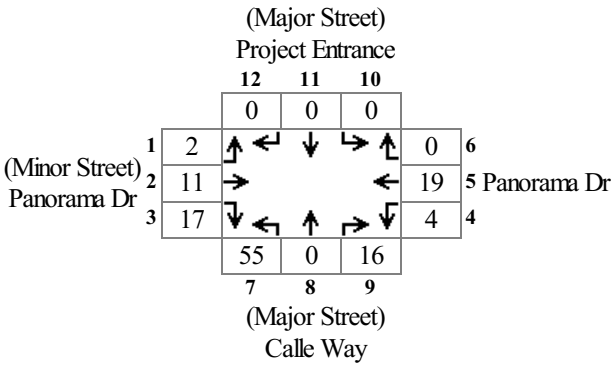


Major Total: 180
Minor High Volume: 97

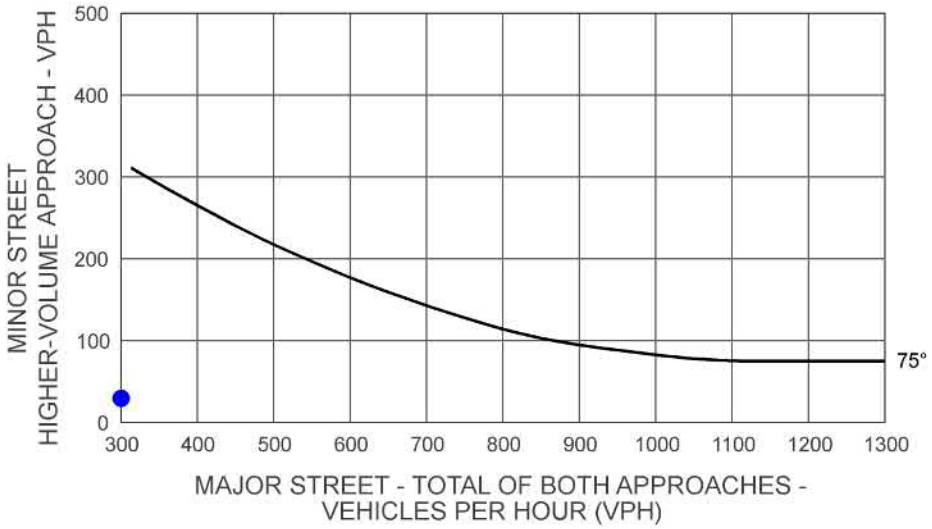


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 7

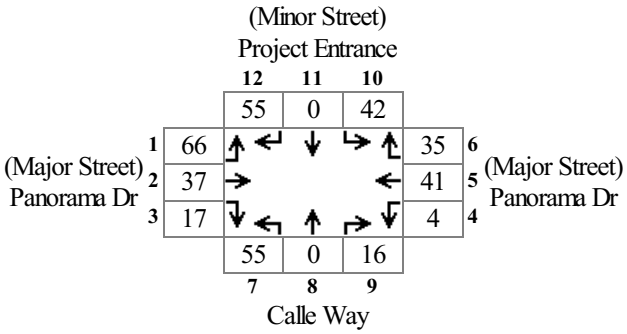


Major Total: 71
Minor High Volume: 30

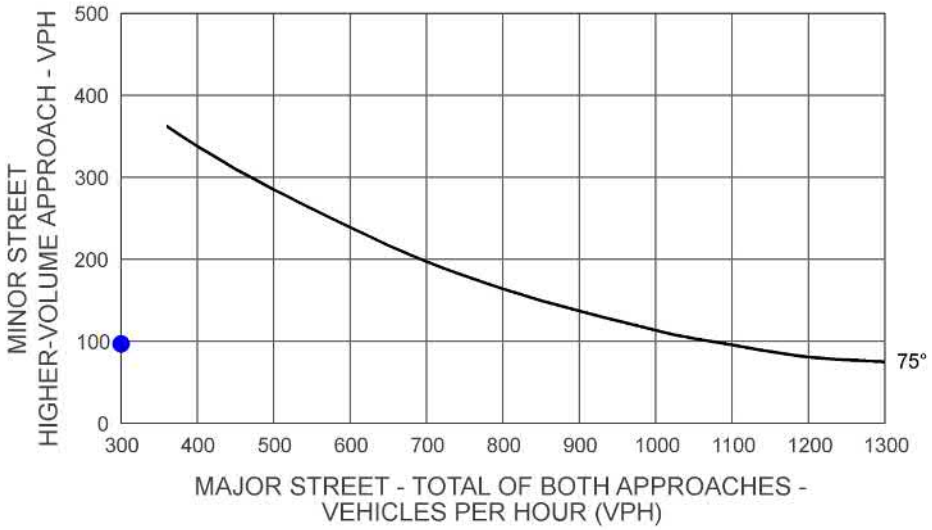


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 7



Major Total: 200
Minor High Volume: 97



Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	4	12	21	15	0	14	0	12	0	0	0
Future Vol, veh/h	0	4	12	21	15	0	14	0	12	0	0	0
Conflicting Peds, #/hr	5	0	5	5	0	5	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	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	13	23	16	0	15	0	13	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	16	0	0	17	0	0	73	73	16	79	79	21
Stage 1	-	-	-	-	-	-	11	11	-	62	62	-
Stage 2	-	-	-	-	-	-	62	62	-	17	17	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1602	-	-	1600	-	-	918	817	1063	910	811	1056
Stage 1	-	-	-	-	-	-	1010	886	-	949	843	-
Stage 2	-	-	-	-	-	-	949	843	-	1002	881	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1595	-	-	1593	-	-	904	805	1059	885	799	1052
Mov Cap-2 Maneuver	-	-	-	-	-	-	904	805	-	885	799	-
Stage 1	-	-	-	-	-	-	1010	886	-	949	831	-
Stage 2	-	-	-	-	-	-	931	831	-	986	881	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	4.3	8.8	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	969	1595	-	-	1593	-	-	-
HCM Lane V/C Ratio	0.029	-	-	-	0.014	-	-	-
HCM Control Delay (s)	8.8	0	-	-	7.3	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	27	15	12	21	28	15	14	0	12	25	0	33
Future Vol, veh/h	27	15	12	21	28	15	14	0	12	25	0	33
Conflicting Peds, #/hr	5	0	5	5	0	5	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	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	16	13	23	30	16	15	0	13	27	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	47	0	0	29	0	0	184	174	28	172	172	44
Stage 1	-	-	-	-	-	-	82	82	-	84	84	-
Stage 2	-	-	-	-	-	-	102	92	-	88	88	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1560	-	-	1584	-	-	777	719	1047	791	721	1026
Stage 1	-	-	-	-	-	-	926	827	-	924	825	-
Stage 2	-	-	-	-	-	-	904	819	-	920	822	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1554	-	-	1577	-	-	728	695	1043	758	697	1022
Mov Cap-2 Maneuver	-	-	-	-	-	-	728	695	-	758	697	-
Stage 1	-	-	-	-	-	-	908	811	-	906	813	-
Stage 2	-	-	-	-	-	-	856	807	-	888	806	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.7	2.4	9.4	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	846	1554	-	-	1577	-	-	889
HCM Lane V/C Ratio	0.033	0.019	-	-	0.014	-	-	0.071
HCM Control Delay (s)	9.4	7.4	0	-	7.3	-	-	9.4
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	5	14	25	18	0	16	0	14	0	0	0
Future Vol, veh/h	0	5	14	25	18	0	16	0	14	0	0	0
Conflicting Peds, #/hr	5	0	5	5	0	5	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	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	15	27	20	0	17	0	15	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	20	0	0	21	0	0	87	87	18	95	95	25
Stage 1	-	-	-	-	-	-	13	13	-	74	74	-
Stage 2	-	-	-	-	-	-	74	74	-	21	21	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1596	-	-	1595	-	-	899	803	1061	888	795	1051
Stage 1	-	-	-	-	-	-	1007	885	-	935	833	-
Stage 2	-	-	-	-	-	-	935	833	-	998	878	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1589	-	-	1588	-	-	884	789	1057	860	781	1047
Mov Cap-2 Maneuver	-	-	-	-	-	-	884	789	-	860	781	-
Stage 1	-	-	-	-	-	-	1007	885	-	935	819	-
Stage 2	-	-	-	-	-	-	915	819	-	980	878	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	4.2	8.9	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	957	1589	-	-	1588	-	-	-
HCM Lane V/C Ratio	0.034	-	-	-	0.017	-	-	-
HCM Control Delay (s)	8.9	0	-	-	7.3	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	27	16	14	25	31	15	16	0	14	25	0	33
Future Vol, veh/h	27	16	14	25	31	15	16	0	14	25	0	33
Conflicting Peds, #/hr	5	0	5	5	0	5	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	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	17	15	27	34	16	17	0	15	27	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	50	0	0	33	0	0	198	188	30	187	187	47
Stage 1	-	-	-	-	-	-	84	84	-	96	96	-
Stage 2	-	-	-	-	-	-	114	104	-	91	91	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1557	-	-	1579	-	-	761	707	1044	774	708	1022
Stage 1	-	-	-	-	-	-	924	825	-	911	815	-
Stage 2	-	-	-	-	-	-	891	809	-	916	820	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1551	-	-	1572	-	-	711	682	1040	739	683	1018
Mov Cap-2 Maneuver	-	-	-	-	-	-	711	682	-	739	683	-
Stage 1	-	-	-	-	-	-	906	809	-	894	801	-
Stage 2	-	-	-	-	-	-	841	795	-	882	804	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.5	2.6	9.5	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	834	1551	-	-	1572	-	-	876
HCM Lane V/C Ratio	0.039	0.019	-	-	0.017	-	-	0.072
HCM Control Delay (s)	9.5	7.4	0	-	7.3	-	-	9.4
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	7	22	39	28	0	22	0	19	0	0	0
Future Vol, veh/h	0	7	22	39	28	0	22	0	19	0	0	0
Conflicting Peds, #/hr	5	0	5	5	0	5	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	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	24	42	30	0	24	0	21	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	30	0	0	32	0	0	135	135	25	145	147	35
Stage 1	-	-	-	-	-	-	20	20	-	115	115	-
Stage 2	-	-	-	-	-	-	115	115	-	30	32	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1583	-	-	1580	-	-	836	756	1051	824	744	1038
Stage 1	-	-	-	-	-	-	999	879	-	890	800	-
Stage 2	-	-	-	-	-	-	890	800	-	987	868	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1576	-	-	1573	-	-	816	736	1047	788	724	1034
Mov Cap-2 Maneuver	-	-	-	-	-	-	816	736	-	788	724	-
Stage 1	-	-	-	-	-	-	999	879	-	890	779	-
Stage 2	-	-	-	-	-	-	863	779	-	963	868	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	4.3	9.2	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	909	1576	-	-	1573	-	-	-
HCM Lane V/C Ratio	0.049	-	-	-	0.027	-	-	-
HCM Control Delay (s)	9.2	0	-	-	7.4	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	27	18	22	39	41	15	22	0	19	25	0	33
Future Vol, veh/h	27	18	22	39	41	15	22	0	19	25	0	33
Conflicting Peds, #/hr	5	0	5	5	0	5	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	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	20	24	42	45	16	24	0	21	27	0	36

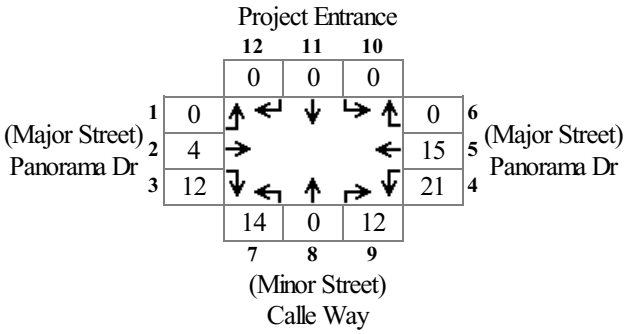
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	61	0	0	43	0	0	245	236	37	238	239	58
Stage 1	-	-	-	-	-	-	90	90	-	137	137	-
Stage 2	-	-	-	-	-	-	155	146	-	101	102	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1542	-	-	1566	-	-	709	665	1035	716	662	1008
Stage 1	-	-	-	-	-	-	917	820	-	866	783	-
Stage 2	-	-	-	-	-	-	847	776	-	905	811	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1536	-	-	1559	-	-	657	635	1031	674	632	1004
Mov Cap-2 Maneuver	-	-	-	-	-	-	657	635	-	674	632	-
Stage 1	-	-	-	-	-	-	900	804	-	850	762	-
Stage 2	-	-	-	-	-	-	791	755	-	866	796	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3	3	9.8	9.7
HCM LOS			A	A

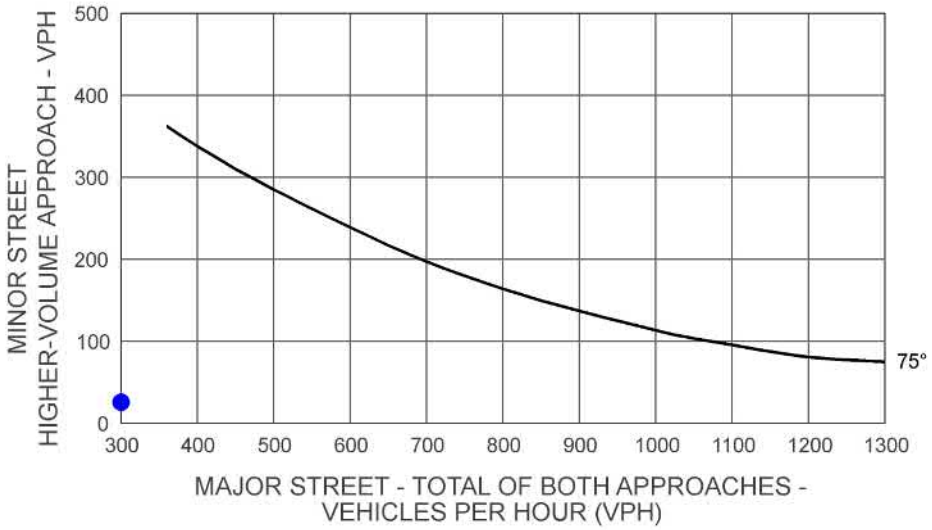
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	790	1536	-	-	1559	-	-	829
HCM Lane V/C Ratio	0.056	0.019	-	-	0.027	-	-	0.076
HCM Control Delay (s)	9.8	7.4	0	-	7.4	-	-	9.7
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0.1	-	-	0.2

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing
Intersection #: 7

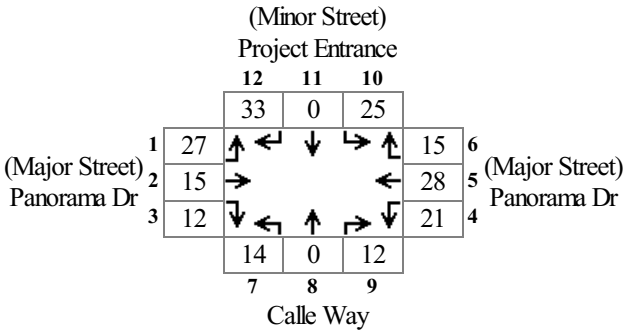


Major Total: 52
Minor High Volume: 26

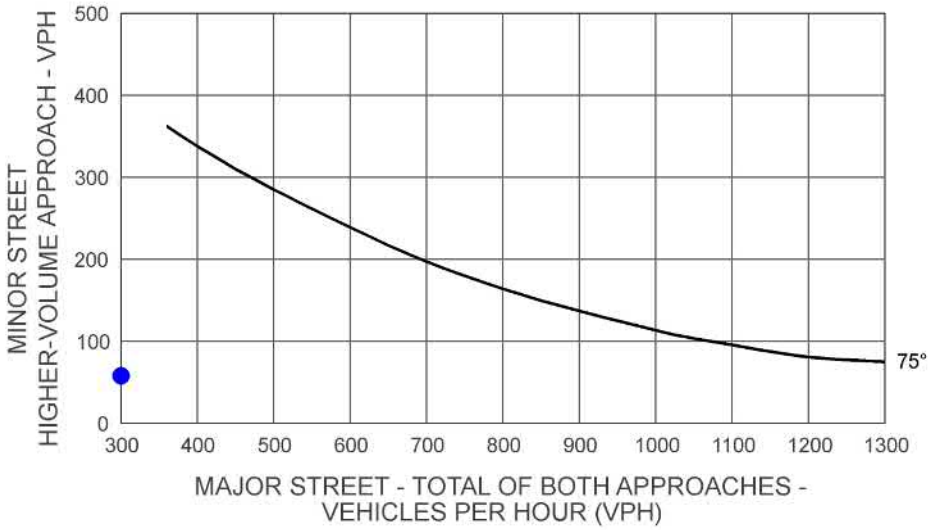


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing+Project
Intersection #: 7

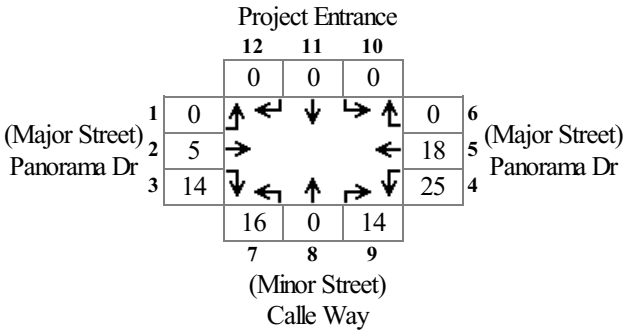


Major Total: 118
Minor High Volume: 58

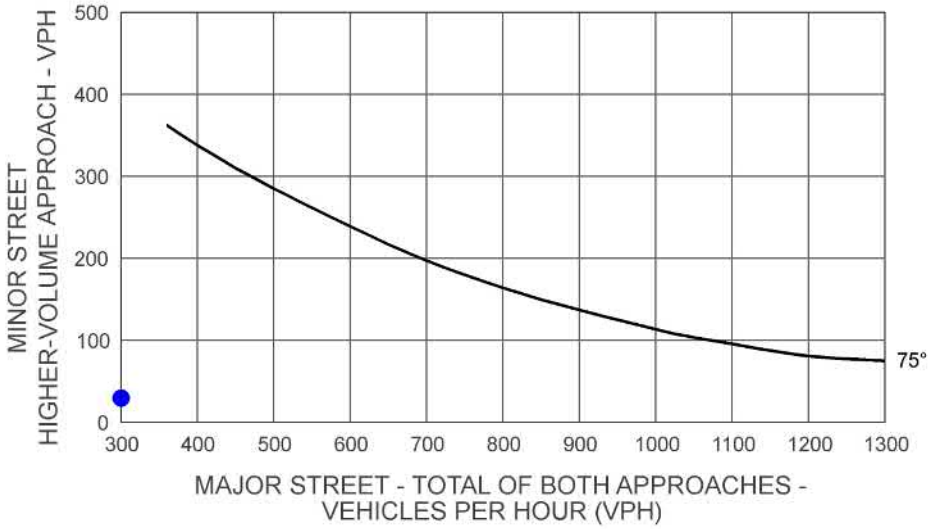


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 7

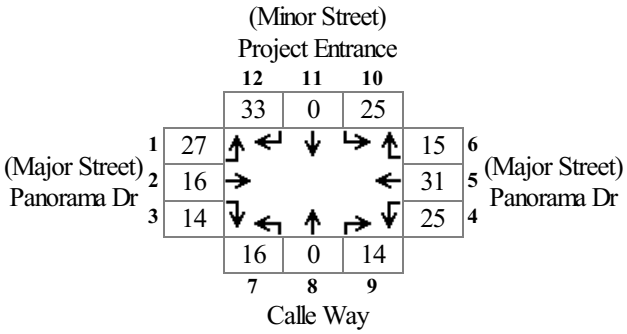


Major Total: 62
Minor High Volume: 30

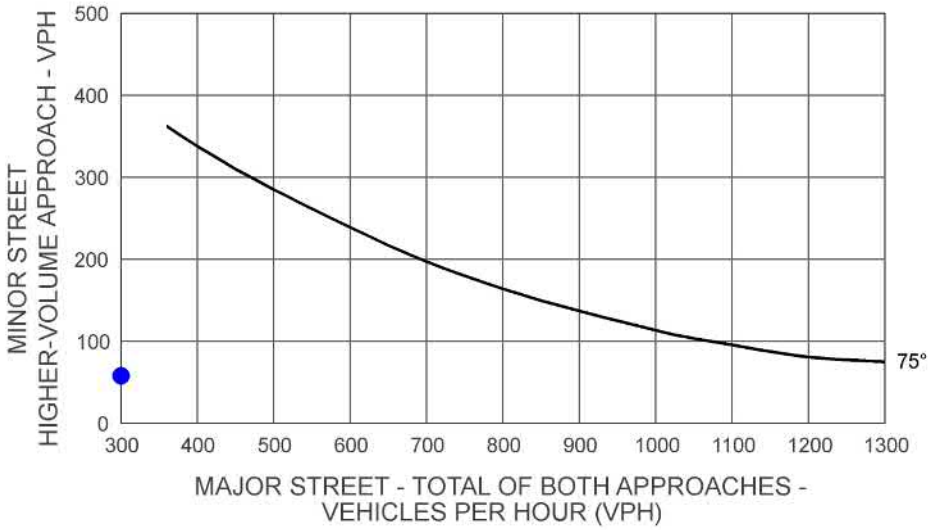


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 7

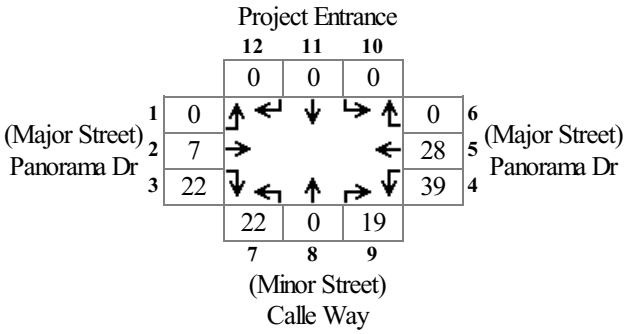


Major Total: 128
Minor High Volume: 58

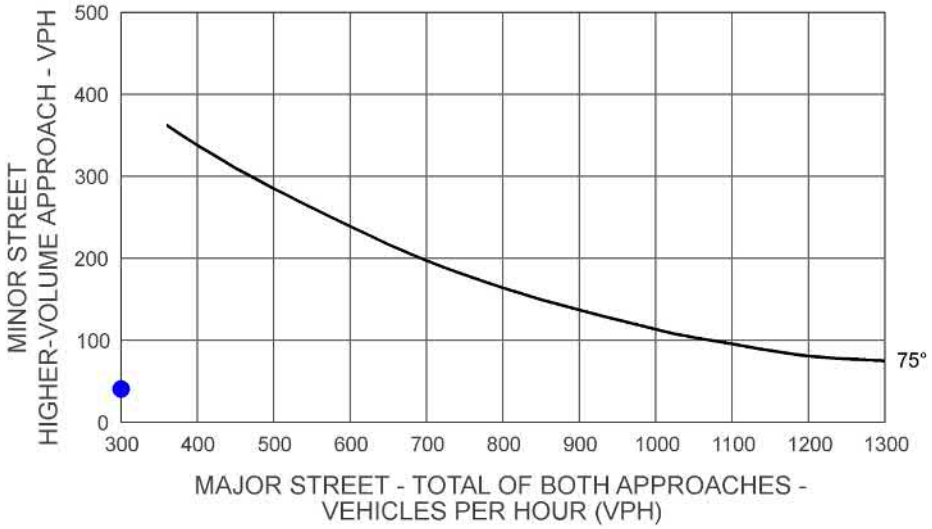


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 7

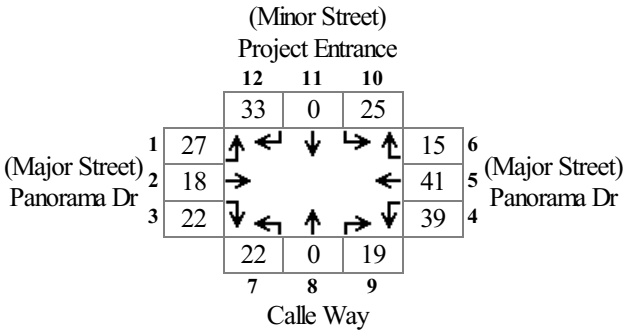


Major Total: 96
Minor High Volume: 41

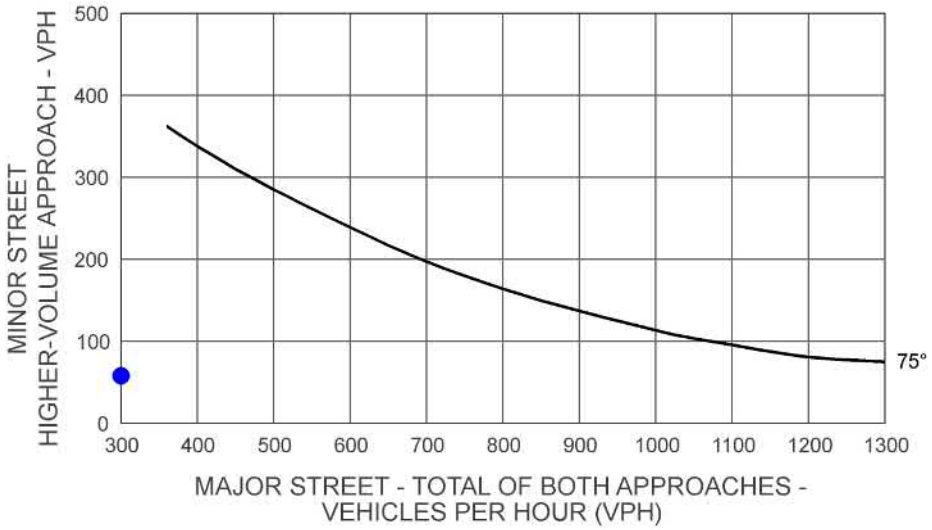


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 7



Major Total: 162
Minor High Volume: 58



Intersection 8
Masterson St & Panorama Dr

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	3	14	9	7	14	3
Future Vol, veh/h	3	14	9	7	14	3
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	0	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	15	10	8	15	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	42	15	15	0	-	0
Stage 1	15	-	-	-	-	-
Stage 2	27	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	969	1065	1603	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	996	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	963	1065	1603	-	-	-
Mov Cap-2 Maneuver	963	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	990	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	4.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1603	-	963	1065	-	-
HCM Lane V/C Ratio	0.006	-	0.003	0.014	-	-
HCM Control Delay (s)	7.3	-	8.8	8.4	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	29	56	44	42	41	25
Future Vol, veh/h	29	56	44	42	41	25
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	0	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	61	48	46	45	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	186	45	45	0	-	0
Stage 1	45	-	-	-	-	-
Stage 2	141	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	803	1025	1563	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	886	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	778	1025	1563	-	-	-
Mov Cap-2 Maneuver	778	-	-	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	859	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	3.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1563	-	778	1025	-	-
HCM Lane V/C Ratio	0.031	-	0.041	0.059	-	-
HCM Control Delay (s)	7.4	-	9.8	8.7	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	4	16	10	8	16	3
Future Vol, veh/h	4	16	10	8	16	3
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	0	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	17	11	9	17	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	47	17	17	0	-	0
Stage 1	17	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	963	1062	1600	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	956	1062	1600	-	-	-
Mov Cap-2 Maneuver	956	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	986	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1600	-	956	1062	-	-
HCM Lane V/C Ratio	0.007	-	0.005	0.016	-	-
HCM Control Delay (s)	7.3	-	8.8	8.4	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0.1	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	30	58	45	43	43	25
Future Vol, veh/h	30	58	45	43	43	25
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	0	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	63	49	47	47	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	192	47	47	0	-	0
Stage 1	47	-	-	-	-	-
Stage 2	145	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	797	1022	1560	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	882	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	772	1022	1560	-	-	-
Mov Cap-2 Maneuver	772	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	854	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	3.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1560	-	772	1022	-	-
HCM Lane V/C Ratio	0.031	-	0.042	0.062	-	-
HCM Control Delay (s)	7.4	-	9.9	8.8	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	6	26	16	13	25	5
Future Vol, veh/h	6	26	16	13	25	5
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	0	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	28	17	14	27	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	76	27	27	0	-	0
Stage 1	27	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	927	1048	1587	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	973	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	917	1048	1587	-	-	-
Mov Cap-2 Maneuver	917	-	-	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	963	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1587	-	917	1048	-	-
HCM Lane V/C Ratio	0.011	-	0.007	0.027	-	-
HCM Control Delay (s)	7.3	-	9	8.5	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	0.1	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	32	68	51	48	52	27
Future Vol, veh/h	32	68	51	48	52	27
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	0	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	74	55	52	57	29

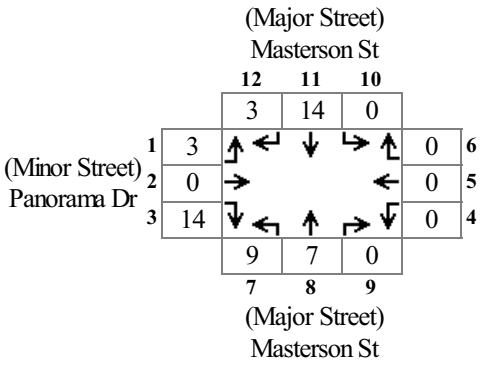
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	220	57	57	0	-	0
Stage 1	57	-	-	-	-	-
Stage 2	163	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	768	1009	1547	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	741	1009	1547	-	-	-
Mov Cap-2 Maneuver	741	-	-	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	3.8	0
HCM LOS	A		

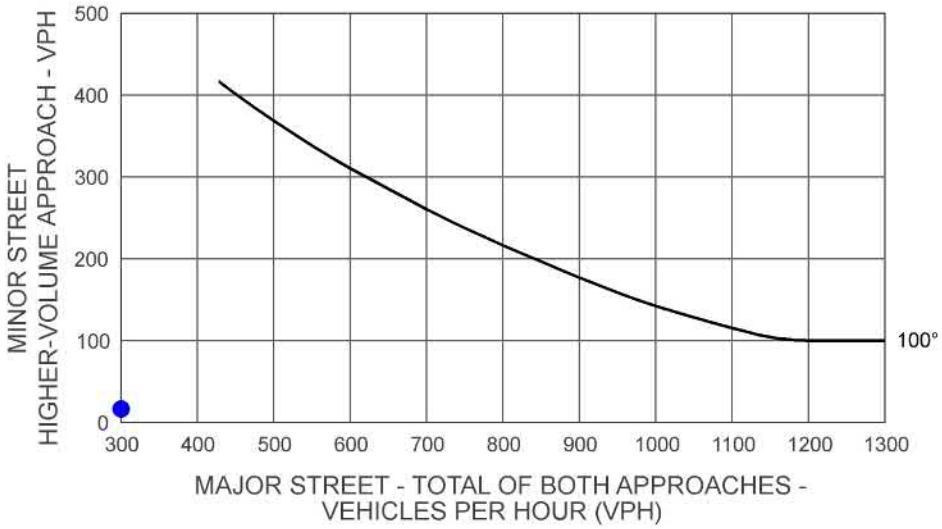
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1547	-	741	1009	-	-
HCM Lane V/C Ratio	0.036	-	0.047	0.073	-	-
HCM Control Delay (s)	7.4	-	10.1	8.9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing
Intersection #: 8

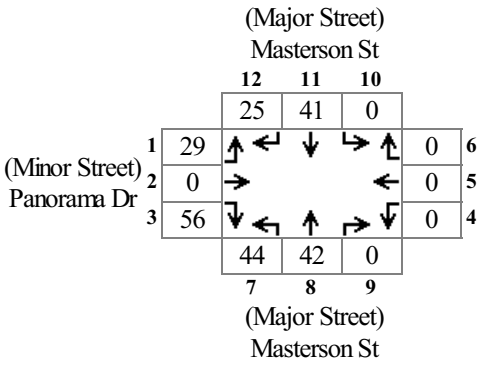


Major Total: 33
Minor High Volume: 17

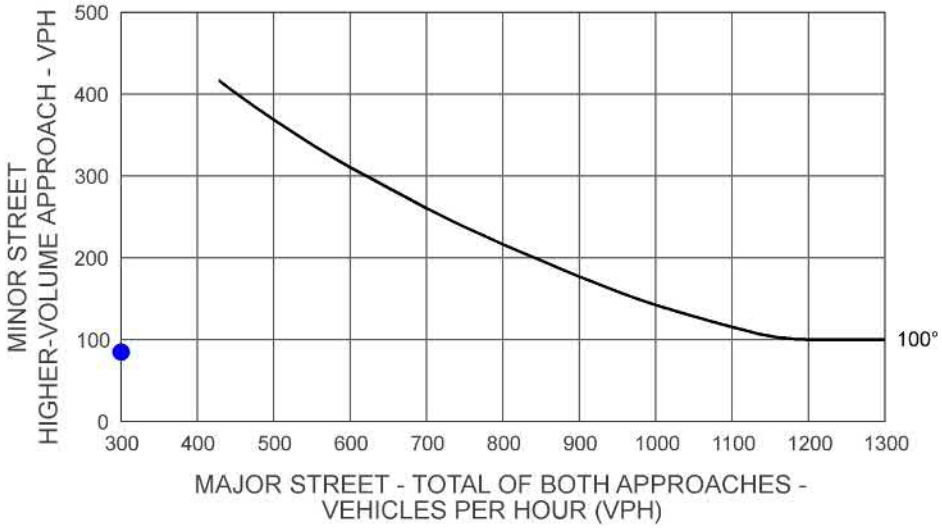


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Existing+Project
Intersection #: 8

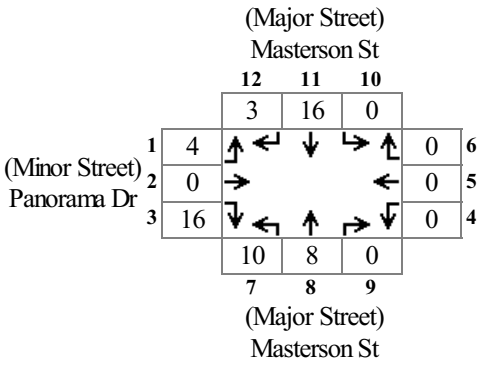


Major Total: 152
Minor High Volume: 85

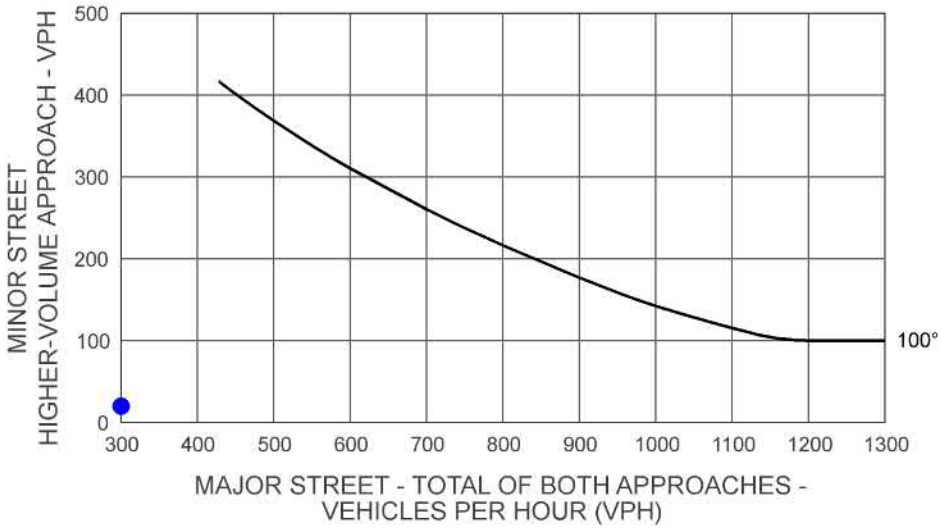


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 8

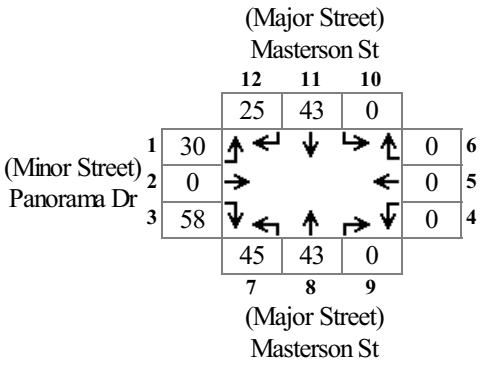


Major Total: 37
Minor High Volume: 20

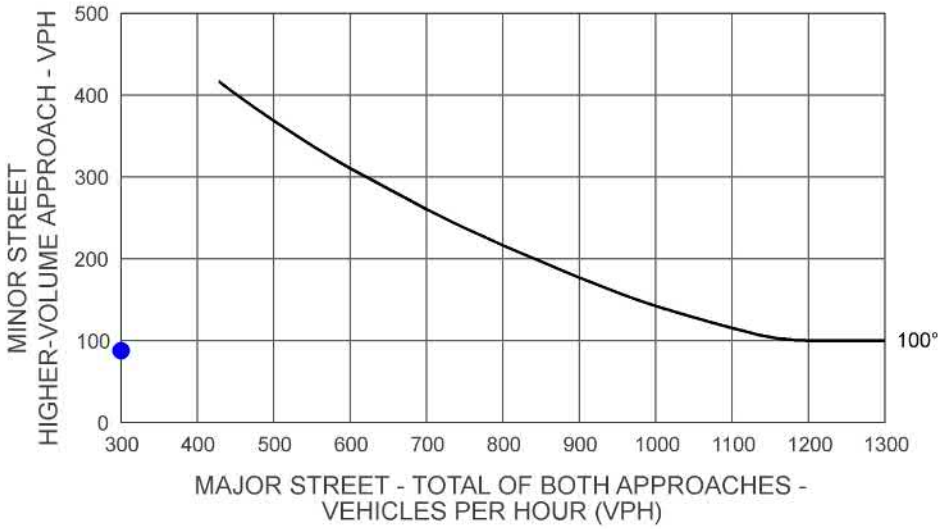


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 8

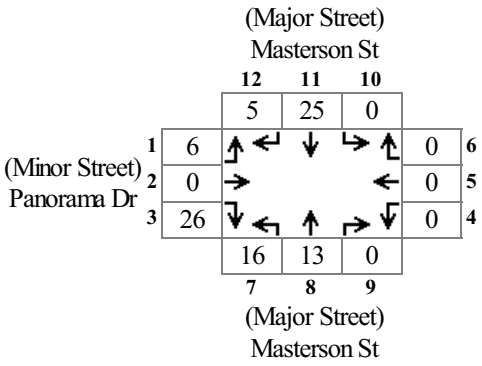


Major Total: 156
Minor High Volume: 88

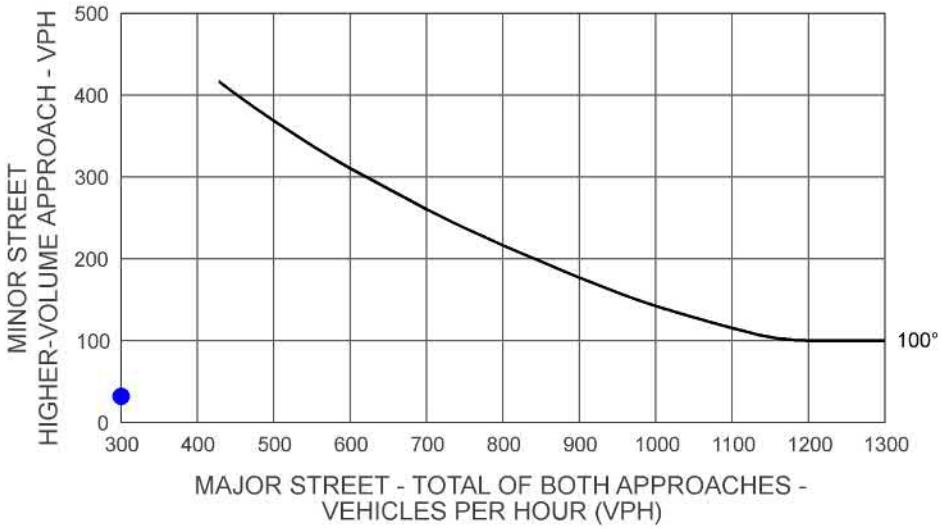


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future
Intersection #: 8

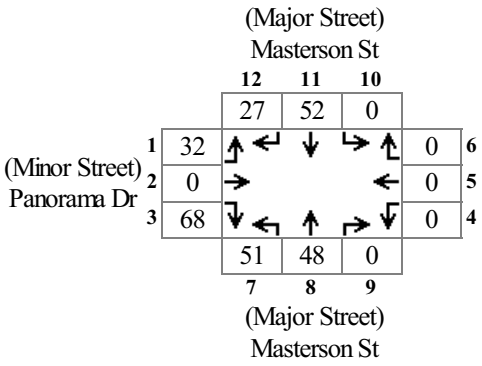


Major Total: 59
Minor High Volume: 32

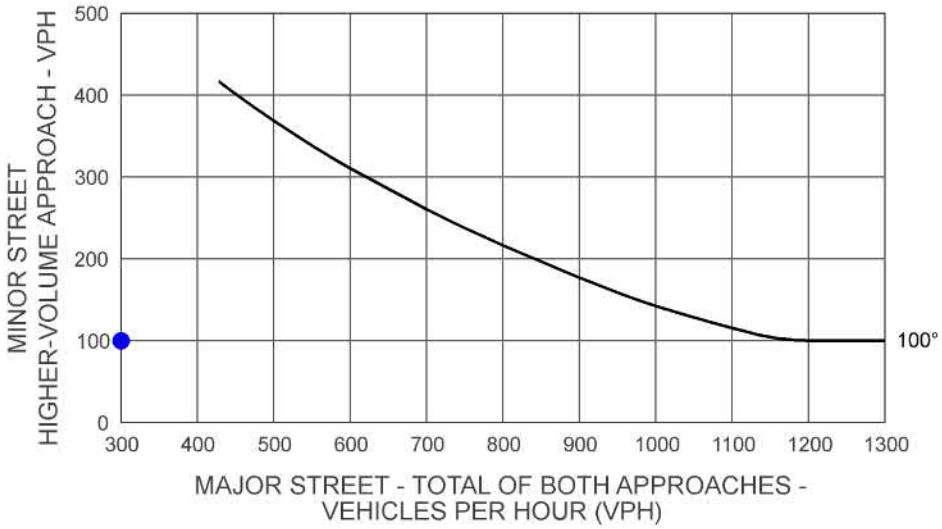


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: AM Future+Project
Intersection #: 8



Major Total: 178
Minor High Volume: 100



Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	0	16	33	9	15	4
Future Vol, veh/h	0	16	33	9	15	4
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	0	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	17	36	10	16	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	98	16	16	0	-	0
Stage 1	16	-	-	-	-	-
Stage 2	82	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	901	1063	1602	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	881	1063	1602	-	-	-
Mov Cap-2 Maneuver	881	-	-	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	920	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	5.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1602	-	-	1063	-	-
HCM Lane V/C Ratio	0.022	-	-	0.016	-	-
HCM Control Delay (s)	7.3	-	0	8.4	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	11	41	48	24	31	17
Future Vol, veh/h	11	41	48	24	31	17
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	0	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	45	52	26	34	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	164	34	34	0	-	0
Stage 1	34	-	-	-	-	-
Stage 2	130	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	827	1039	1578	-	-	-
Stage 1	988	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	800	1039	1578	-	-	-
Mov Cap-2 Maneuver	800	-	-	-	-	-
Stage 1	988	-	-	-	-	-
Stage 2	866	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	4.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1578	-	800	1039	-	-
HCM Lane V/C Ratio	0.033	-	0.015	0.043	-	-
HCM Control Delay (s)	7.4	-	9.6	8.6	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	0.1	-	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	0	19	38	10	17	5
Future Vol, veh/h	0	19	38	10	17	5
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	0	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	41	11	18	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	111	18	18	0	-	0
Stage 1	18	-	-	-	-	-
Stage 2	93	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	886	1061	1599	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	863	1061	1599	-	-	-
Mov Cap-2 Maneuver	863	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	907	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	5.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1599	-	-	1061	-	-
HCM Lane V/C Ratio	0.026	-	-	0.019	-	-
HCM Control Delay (s)	7.3	-	0	8.5	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	11	44	53	25	33	18
Future Vol, veh/h	11	44	53	25	33	18
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	0	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	48	58	27	36	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	178	36	36	0	-	0
Stage 1	36	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	812	1037	1575	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	782	1037	1575	-	-	-
Mov Cap-2 Maneuver	782	-	-	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	852	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1575	-	782	1037	-	-
HCM Lane V/C Ratio	0.037	-	0.015	0.046	-	-
HCM Control Delay (s)	7.4	-	9.7	8.6	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	0.1	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	0	30	60	16	27	7
Future Vol, veh/h	0	30	60	16	27	7
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	0	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	33	65	17	29	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	177	29	29	0	-	0
Stage 1	29	-	-	-	-	-
Stage 2	148	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	813	1046	1584	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	780	1046	1584	-	-	-
Mov Cap-2 Maneuver	780	-	-	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	844	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	5.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1584	-	-	1046	-	-
HCM Lane V/C Ratio	0.041	-	-	0.031	-	-
HCM Control Delay (s)	7.4	-	0	8.6	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	11	55	75	31	43	20
Future Vol, veh/h	11	55	75	31	43	20
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	0	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	60	82	34	47	22

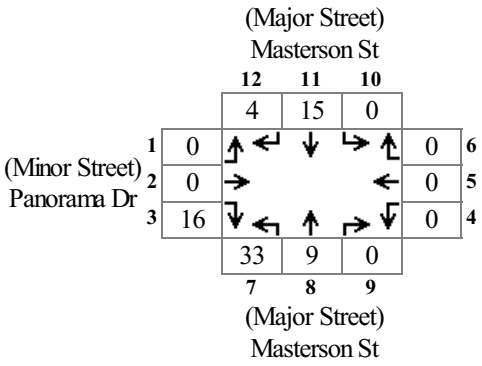
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	244	47	47	0	-	0
Stage 1	47	-	-	-	-	-
Stage 2	197	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	744	1022	1560	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	705	1022	1560	-	-	-
Mov Cap-2 Maneuver	705	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	792	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	5.3	0
HCM LOS	A		

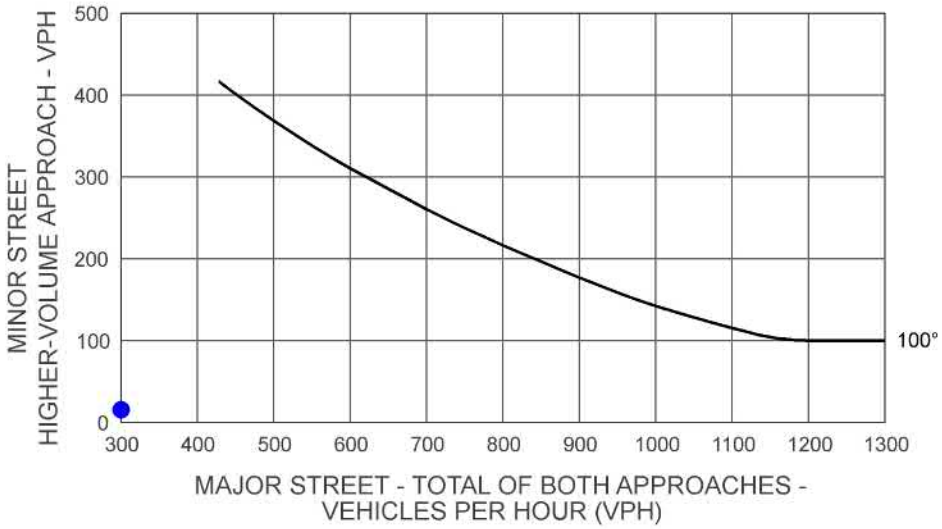
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1560	-	705	1022	-	-
HCM Lane V/C Ratio	0.052	-	0.017	0.058	-	-
HCM Control Delay (s)	7.4	-	10.2	8.7	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	0.2	-	-

Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing
Intersection #: 8

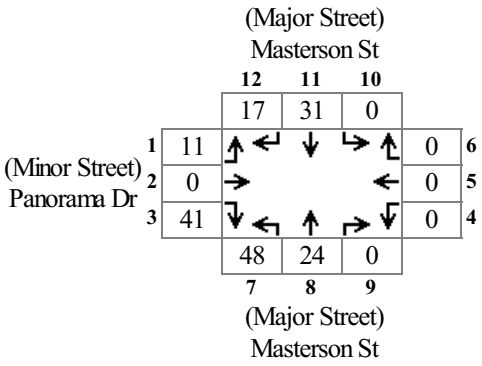


Major Total: 61
Minor High Volume: 16

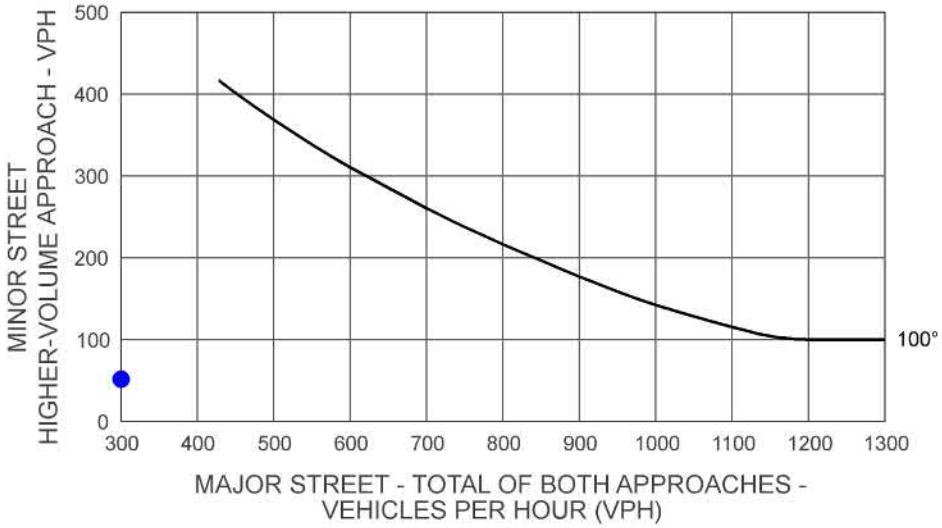


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Existing+Project
Intersection #: 8

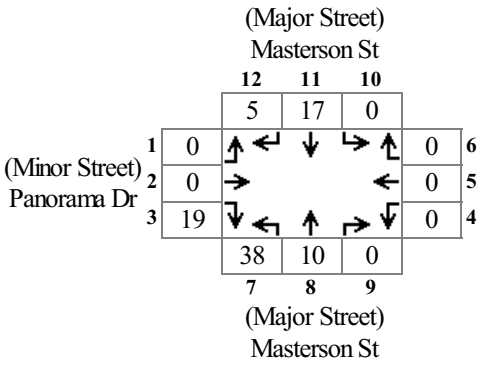


Major Total: 120
Minor High Volume: 52

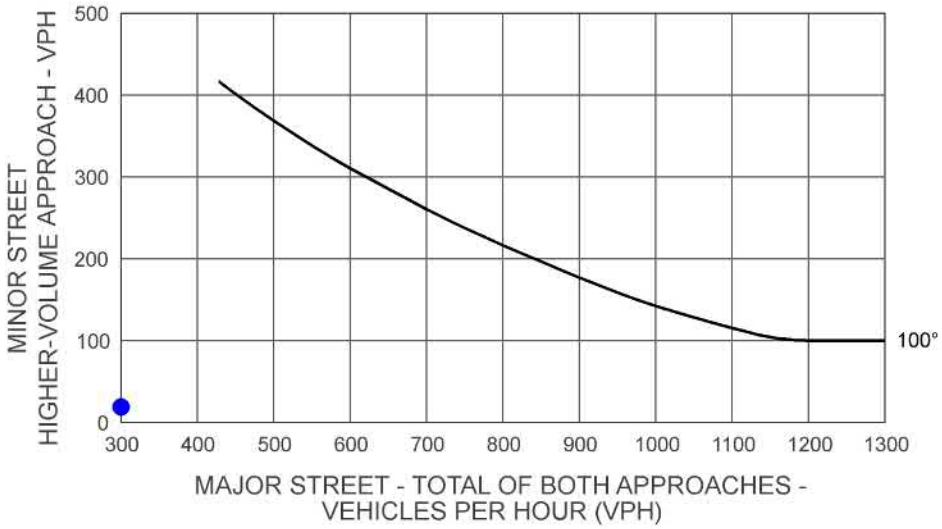


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 8

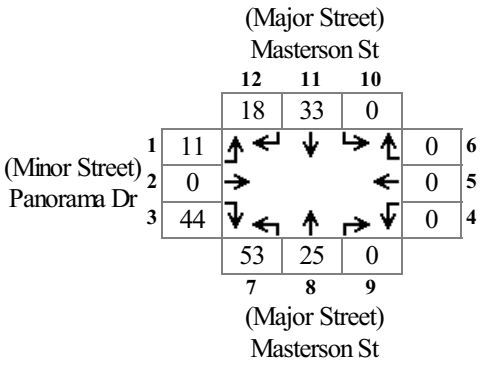


Major Total: 70
Minor High Volume: 19

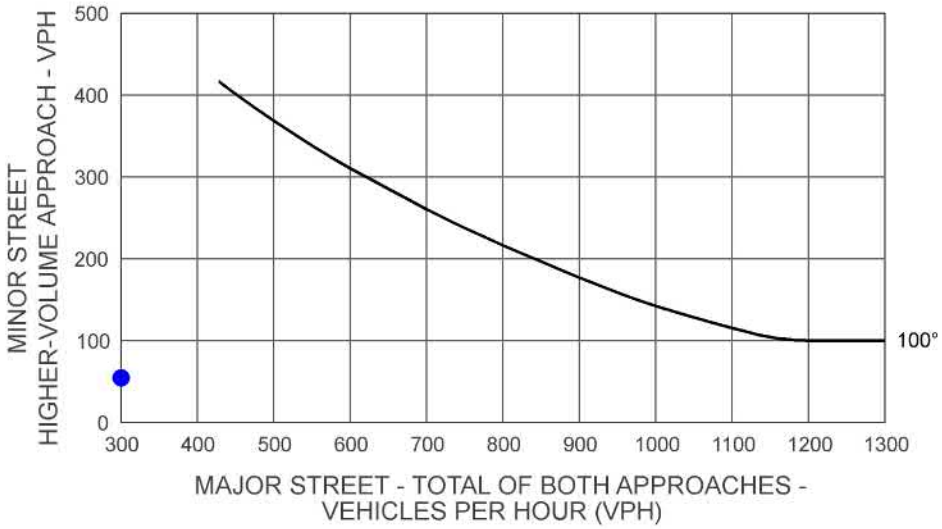


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future+Project
Intersection #: 8

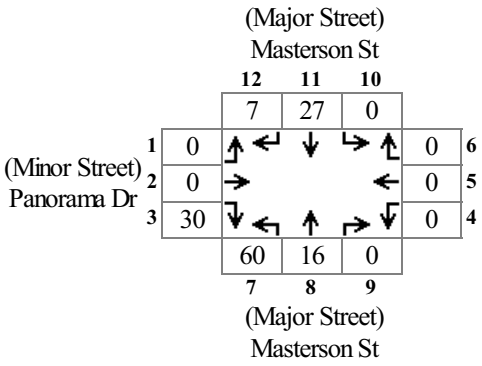


Major Total: 129
Minor High Volume: 55

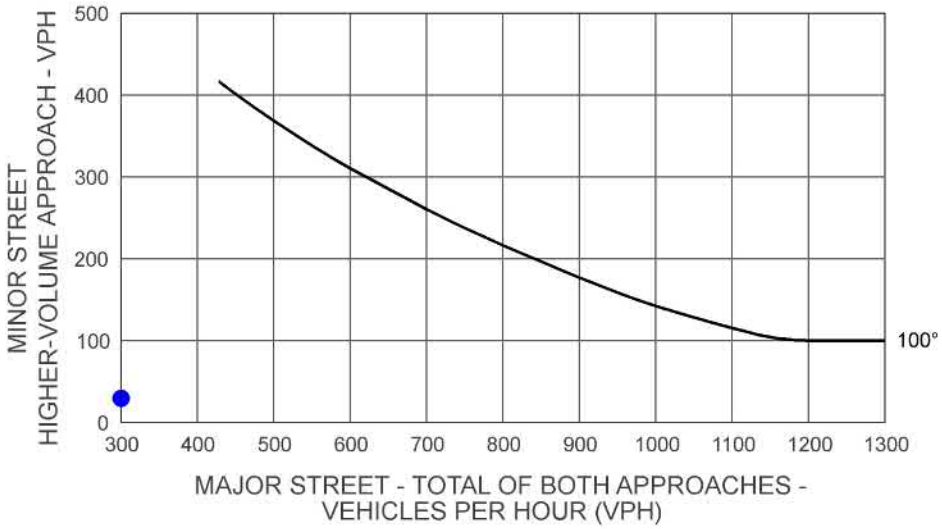


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

Scenario: PM Future
Intersection #: 8

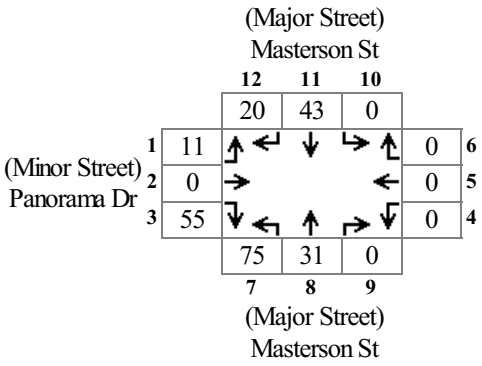


Major Total: 110
Minor High Volume: 30

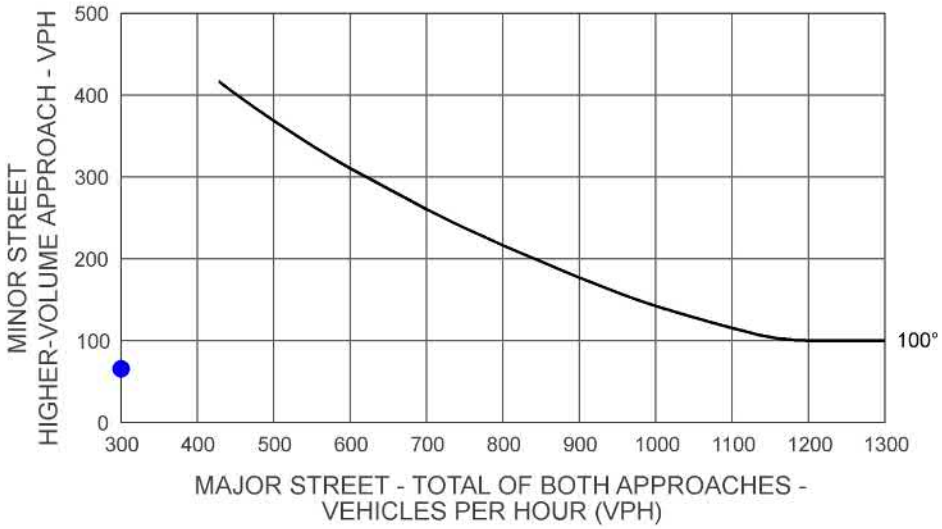


Rural Peak Hour Signal Warrant
Intersection Does Not Meet Signal Warrant

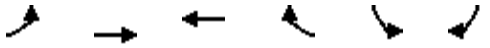
Scenario: PM Future+Project
Intersection #: 8



Major Total: 169
Minor High Volume: 66



Intersection 9
Masterson St & Kern Canyon Rd (SR 178)



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	300	640	12	11	16
Future Volume (veh/h)	6	300	640	12	11	16
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1716	1863	1863	1716	1716	1750
Adj Flow Rate, veh/h	7	326	696	13	12	17
Adj No. of Lanes	1	3	3	1	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	93	2875	1916	537	104	147
Arrive On Green	0.06	0.57	0.38	0.38	0.17	0.13
Sat Flow, veh/h	1634	5253	5253	1426	607	860
Grp Volume(v), veh/h	7	326	696	13	30	0
Grp Sat Flow(s),veh/h/ln	1634	1695	1695	1426	1518	0
Q Serve(g_s), s	0.1	0.9	3.0	0.2	0.5	0.0
Cycle Q Clear(g_c), s	0.1	0.9	3.0	0.2	0.5	0.0
Prop In Lane	1.00			1.00	0.40	0.57
Lane Grp Cap(c), veh/h	93	2875	1916	537	260	0
V/C Ratio(X)	0.08	0.11	0.36	0.02	0.12	0.00
Avail Cap(c_a), veh/h	646	10047	7368	2067	1100	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.6	3.1	6.8	6.0	10.9	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.4	1.4	0.1	0.2	0.0
LnGrp Delay(d),s/veh	13.9	3.1	7.0	6.0	11.1	0.0
LnGrp LOS	B	A	A	A	B	
Approach Vol, veh/h		333	709		30	
Approach Delay, s/veh		3.3	6.9		11.1	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				21.2		9.2	5.7	15.4
Change Period (Y+Rc), s				5.5		5.2	5.5	5.5
Max Green Setting (Gmax), s				58.5		20.8	10.5	42.5
Max Q Clear Time (g_c+I1), s				2.9		2.5	2.1	5.0
Green Ext Time (p_c), s				5.0		0.0	0.0	4.9

Intersection Summary	
HCM 2010 Ctrl Delay	5.9
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

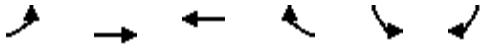
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	71	300	640	17	17	79
Future Volume (veh/h)	71	300	640	17	17	79
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1716	1863	1863	1716	1716	1750
Adj Flow Rate, veh/h	77	326	696	18	18	86
Adj No. of Lanes	1	3	3	1	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	198	2894	1630	457	44	212
Arrive On Green	0.12	0.57	0.32	0.32	0.18	0.14
Sat Flow, veh/h	1634	5253	5253	1426	252	1203
Grp Volume(v), veh/h	77	326	696	18	105	0
Grp Sat Flow(s),veh/h/ln	1634	1695	1695	1426	1469	0
Q Serve(g_s), s	1.4	0.9	3.4	0.3	2.0	0.0
Cycle Q Clear(g_c), s	1.4	0.9	3.4	0.3	2.0	0.0
Prop In Lane	1.00			1.00	0.17	0.82
Lane Grp Cap(c), veh/h	198	2894	1630	457	259	0
V/C Ratio(X)	0.39	0.11	0.43	0.04	0.41	0.00
Avail Cap(c_a), veh/h	988	9385	5664	1588	1122	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.7	3.1	8.4	7.3	11.9	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.2	0.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.4	1.6	0.1	0.9	0.0
LnGrp Delay(d),s/veh	14.0	3.1	8.6	7.4	13.0	0.0
LnGrp LOS	B	A	A	A	B	
Approach Vol, veh/h		403	714		105	
Approach Delay, s/veh		5.2	8.6		13.0	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				21.9		9.5	7.8	14.1
Change Period (Y+Rc), s				5.5		5.2	5.5	5.5
Max Green Setting (Gmax), s				56.5		22.8	17.5	33.5
Max Q Clear Time (g_c+I1), s				2.9		4.0	3.4	5.4
Green Ext Time (p_c), s				1.7		0.3	1.4	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	7.8
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.



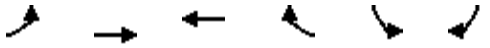
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	350	744	14	13	19
Future Volume (veh/h)	7	350	744	14	13	19
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1716	1863	1863	1716	1716	1750
Adj Flow Rate, veh/h	8	380	809	15	14	21
Adj No. of Lanes	1	3	3	1	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	90	2991	2074	582	96	143
Arrive On Green	0.06	0.59	0.41	0.41	0.16	0.12
Sat Flow, veh/h	1634	5253	5253	1427	589	883
Grp Volume(v), veh/h	8	380	809	15	36	0
Grp Sat Flow(s),veh/h/ln	1634	1695	1695	1427	1514	0
Q Serve(g_s), s	0.1	1.1	3.6	0.2	0.7	0.0
Cycle Q Clear(g_c), s	0.1	1.1	3.6	0.2	0.7	0.0
Prop In Lane	1.00			1.00	0.39	0.58
Lane Grp Cap(c), veh/h	90	2991	2074	582	246	0
V/C Ratio(X)	0.09	0.13	0.39	0.03	0.15	0.00
Avail Cap(c_a), veh/h	612	9679	7141	2003	992	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.4	2.9	6.7	5.7	11.8	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.1	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.5	1.7	0.1	0.3	0.0
LnGrp Delay(d),s/veh	14.8	3.0	6.8	5.7	12.1	0.0
LnGrp LOS	B	A	A	A	B	
Approach Vol, veh/h		388	824		36	
Approach Delay, s/veh		3.2	6.8		12.1	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				22.8		9.2	5.8	17.1
Change Period (Y+Rc), s				5.5		5.2	5.5	5.5
Max Green Setting (Gmax), s				59.5		19.8	10.5	43.5
Max Q Clear Time (g_c+I1), s				3.1		2.7	2.1	5.6
Green Ext Time (p_c), s				6.1		0.1	0.0	6.0

Intersection Summary	
HCM 2010 Ctrl Delay	5.8
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.



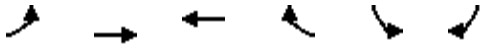
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	72	350	744	19	19	82
Future Volume (veh/h)	72	350	744	19	19	82
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1716	1863	1863	1716	1716	1750
Adj Flow Rate, veh/h	78	380	809	21	21	89
Adj No. of Lanes	1	3	3	1	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	201	2980	1745	489	48	205
Arrive On Green	0.12	0.59	0.34	0.34	0.17	0.14
Sat Flow, veh/h	1634	5253	5253	1426	278	1180
Grp Volume(v), veh/h	78	380	809	21	111	0
Grp Sat Flow(s),veh/h/ln	1634	1695	1695	1426	1472	0
Q Serve(g_s), s	1.5	1.1	4.1	0.3	2.3	0.0
Cycle Q Clear(g_c), s	1.5	1.1	4.1	0.3	2.3	0.0
Prop In Lane	1.00			1.00	0.19	0.80
Lane Grp Cap(c), veh/h	201	2980	1745	489	256	0
V/C Ratio(X)	0.39	0.13	0.46	0.04	0.43	0.00
Avail Cap(c_a), veh/h	931	8999	5491	1540	1015	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.5	3.1	8.6	7.3	12.7	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.2	0.0	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.5	1.9	0.1	1.0	0.0
LnGrp Delay(d),s/veh	14.7	3.1	8.7	7.3	13.9	0.0
LnGrp LOS	B	A	A	A	B	
Approach Vol, veh/h		458	830		111	
Approach Delay, s/veh		5.1	8.7		13.9	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				23.5		9.8	8.1	15.4
Change Period (Y+Rc), s				5.5		5.2	5.5	5.5
Max Green Setting (Gmax), s				57.5		21.8	17.5	34.5
Max Q Clear Time (g_c+I1), s				3.1		4.3	3.5	6.1
Green Ext Time (p_c), s				1.9		0.3	1.6	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	7.9
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	558	1171	22	20	29
Future Volume (veh/h)	11	558	1171	22	20	29
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1716	1863	1863	1716	1716	1750
Adj Flow Rate, veh/h	12	607	1273	24	22	32
Adj No. of Lanes	1	3	3	1	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	89	3222	2382	668	87	127
Arrive On Green	0.05	0.63	0.47	0.47	0.14	0.11
Sat Flow, veh/h	1634	5253	5253	1427	605	880
Grp Volume(v), veh/h	12	607	1273	24	55	0
Grp Sat Flow(s),veh/h/ln	1634	1695	1695	1427	1513	0
Q Serve(g_s), s	0.3	1.8	6.4	0.3	1.2	0.0
Cycle Q Clear(g_c), s	0.3	1.8	6.4	0.3	1.2	0.0
Prop In Lane	1.00			1.00	0.40	0.58
Lane Grp Cap(c), veh/h	89	3222	2382	668	218	0
V/C Ratio(X)	0.14	0.19	0.53	0.04	0.25	0.00
Avail Cap(c_a), veh/h	408	8891	7057	1980	798	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.2	2.7	6.8	5.2	14.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.2	0.0	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.8	3.0	0.1	0.5	0.0
LnGrp Delay(d),s/veh	16.9	2.8	7.0	5.2	14.6	0.0
LnGrp LOS	B	A	A	A	B	
Approach Vol, veh/h		619	1297		55	
Approach Delay, s/veh		3.0	6.9		14.6	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				26.8		9.2	6.0	20.9
Change Period (Y+Rc), s				5.5		5.2	5.5	5.5
Max Green Setting (Gmax), s				61.5		17.8	7.5	48.5
Max Q Clear Time (g_c+I1), s				3.8		3.2	2.3	8.4
Green Ext Time (p_c), s				2.8		0.1	1.3	7.0

Intersection Summary	
HCM 2010 Ctrl Delay	5.9
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	76	558	1171	27	26	92
Future Volume (veh/h)	76	558	1171	27	26	92
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1716	1863	1863	1716	1716	1750
Adj Flow Rate, veh/h	83	607	1273	29	28	100
Adj No. of Lanes	1	3	3	1	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	154	3396	2474	694	51	181
Arrive On Green	0.09	0.67	0.49	0.49	0.16	0.13
Sat Flow, veh/h	1634	5253	5253	1427	321	1145
Grp Volume(v), veh/h	83	607	1273	29	129	0
Grp Sat Flow(s),veh/h/ln	1634	1695	1695	1427	1477	0
Q Serve(g_s), s	2.2	2.1	7.9	0.5	3.7	0.0
Cycle Q Clear(g_c), s	2.2	2.1	7.9	0.5	3.7	0.0
Prop In Lane	1.00			1.00	0.22	0.78
Lane Grp Cap(c), veh/h	154	3396	2474	694	234	0
V/C Ratio(X)	0.54	0.18	0.51	0.04	0.55	0.00
Avail Cap(c_a), veh/h	533	6858	4756	1335	642	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.9	2.9	8.1	6.2	18.3	0.0
Incr Delay (d2), s/veh	2.9	0.0	0.2	0.0	2.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.0	3.7	0.2	1.7	0.0
LnGrp Delay(d),s/veh	22.8	2.9	8.3	6.2	20.3	0.0
LnGrp LOS	C	A	A	A	C	
Approach Vol, veh/h		690	1302		129	
Approach Delay, s/veh		5.3	8.2		20.3	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				34.7		11.3	8.3	26.4
Change Period (Y+Rc), s				5.5		5.2	5.5	5.5
Max Green Setting (Gmax), s				60.5		18.8	13.5	41.5
Max Q Clear Time (g_c+I1), s				4.1		5.7	4.2	9.9
Green Ext Time (p_c), s				12.2		0.3	0.1	11.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	417	387	11	13	18
Future Volume (veh/h)	30	417	387	11	13	18
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1716	1863	1863	1716	1716	1750
Adj Flow Rate, veh/h	33	453	421	12	14	20
Adj No. of Lanes	1	3	3	1	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	137	2764	1633	458	109	156
Arrive On Green	0.08	0.54	0.32	0.32	0.18	0.14
Sat Flow, veh/h	1634	5253	5253	1426	607	867
Grp Volume(v), veh/h	33	453	421	12	35	0
Grp Sat Flow(s),veh/h/ln	1634	1695	1695	1426	1517	0
Q Serve(g_s), s	0.5	1.3	1.8	0.2	0.6	0.0
Cycle Q Clear(g_c), s	0.5	1.3	1.8	0.2	0.6	0.0
Prop In Lane	1.00			1.00	0.40	0.57
Lane Grp Cap(c), veh/h	137	2764	1633	458	273	0
V/C Ratio(X)	0.24	0.16	0.26	0.03	0.13	0.00
Avail Cap(c_a), veh/h	1074	10377	6332	1775	1206	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.4	3.3	7.3	6.7	10.2	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.1	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.6	0.8	0.1	0.3	0.0
LnGrp Delay(d),s/veh	13.3	3.3	7.3	6.7	10.5	0.0
LnGrp LOS	B	A	A	A	B	
Approach Vol, veh/h		486	433		35	
Approach Delay, s/veh		4.0	7.3		10.5	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				19.7		9.2	6.4	13.3
Change Period (Y+Rc), s				5.5		5.2	5.5	5.5
Max Green Setting (Gmax), s				57.5		21.8	17.5	34.5
Max Q Clear Time (g_c+I1), s				3.3		2.6	2.5	3.8
Green Ext Time (p_c), s				4.1		0.1	0.0	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	5.8
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

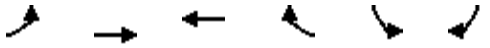
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	417	387	13	17	57
Future Volume (veh/h)	58	417	387	13	17	57
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1716	1863	1863	1716	1716	1750
Adj Flow Rate, veh/h	63	453	421	14	18	62
Adj No. of Lanes	1	3	3	1	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	172	2818	1595	447	58	199
Arrive On Green	0.11	0.55	0.31	0.31	0.18	0.14
Sat Flow, veh/h	1634	5253	5253	1426	329	1132
Grp Volume(v), veh/h	63	453	421	14	81	0
Grp Sat Flow(s),veh/h/ln	1634	1695	1695	1426	1479	0
Q Serve(g_s), s	1.1	1.3	1.8	0.2	1.5	0.0
Cycle Q Clear(g_c), s	1.1	1.3	1.8	0.2	1.5	0.0
Prop In Lane	1.00			1.00	0.22	0.77
Lane Grp Cap(c), veh/h	172	2818	1595	447	260	0
V/C Ratio(X)	0.37	0.16	0.26	0.03	0.31	0.00
Avail Cap(c_a), veh/h	1159	9791	5497	1541	1249	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.3	3.2	7.6	7.0	11.1	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.1	0.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.6	0.9	0.1	0.6	0.0
LnGrp Delay(d),s/veh	13.6	3.3	7.7	7.1	11.7	0.0
LnGrp LOS	B	A	A	A	B	
Approach Vol, veh/h		516	435		81	
Approach Delay, s/veh		4.5	7.7		11.7	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				20.4		9.2	7.1	13.3
Change Period (Y+Rc), s				5.5		5.2	5.5	5.5
Max Green Setting (Gmax), s				55.5		23.8	19.5	30.5
Max Q Clear Time (g_c+I1), s				3.3		3.5	3.1	3.8
Green Ext Time (p_c), s				4.1		0.2	0.1	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	6.4
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	487	450	13	15	21
Future Volume (veh/h)	35	487	450	13	15	21
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1716	1863	1863	1716	1716	1750
Adj Flow Rate, veh/h	38	529	489	14	16	23
Adj No. of Lanes	1	3	3	1	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	140	2862	1752	491	104	150
Arrive On Green	0.09	0.56	0.34	0.34	0.17	0.13
Sat Flow, veh/h	1634	5253	5253	1426	606	871
Grp Volume(v), veh/h	38	529	489	14	40	0
Grp Sat Flow(s),veh/h/ln	1634	1695	1695	1426	1516	0
Q Serve(g_s), s	0.7	1.5	2.1	0.2	0.7	0.0
Cycle Q Clear(g_c), s	0.7	1.5	2.1	0.2	0.7	0.0
Prop In Lane	1.00			1.00	0.40	0.57
Lane Grp Cap(c), veh/h	140	2862	1752	491	261	0
V/C Ratio(X)	0.27	0.18	0.28	0.03	0.15	0.00
Avail Cap(c_a), veh/h	1028	9935	6062	1700	1154	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.9	3.2	7.2	6.6	10.9	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.1	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.7	1.0	0.1	0.3	0.0
LnGrp Delay(d),s/veh	13.9	3.3	7.3	6.6	11.2	0.0
LnGrp LOS	B	A	A	A	B	
Approach Vol, veh/h		567	503		40	
Approach Delay, s/veh		4.0	7.2		11.2	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				21.0		9.2	6.6	14.4
Change Period (Y+Rc), s				5.5		5.2	5.5	5.5
Max Green Setting (Gmax), s				57.5		21.8	17.5	34.5
Max Q Clear Time (g_c+I1), s				3.5		2.7	2.7	4.1
Green Ext Time (p_c), s				5.0		0.1	0.1	4.8

Intersection Summary	
HCM 2010 Ctrl Delay	5.7
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	63	487	450	15	19	60
Future Volume (veh/h)	63	487	450	15	19	60
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1716	1863	1863	1716	1716	1750
Adj Flow Rate, veh/h	68	529	489	16	21	65
Adj No. of Lanes	1	3	3	1	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	173	2910	1713	480	60	187
Arrive On Green	0.11	0.57	0.34	0.34	0.17	0.13
Sat Flow, veh/h	1634	5253	5253	1426	358	1107
Grp Volume(v), veh/h	68	529	489	16	87	0
Grp Sat Flow(s),veh/h/ln	1634	1695	1695	1426	1482	0
Q Serve(g_s), s	1.2	1.5	2.2	0.2	1.6	0.0
Cycle Q Clear(g_c), s	1.2	1.5	2.2	0.2	1.6	0.0
Prop In Lane	1.00			1.00	0.24	0.75
Lane Grp Cap(c), veh/h	173	2910	1713	480	250	0
V/C Ratio(X)	0.39	0.18	0.29	0.03	0.35	0.00
Avail Cap(c_a), veh/h	1112	9393	5273	1479	1201	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.9	3.2	7.5	6.9	11.7	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.1	0.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.7	1.0	0.1	0.7	0.0
LnGrp Delay(d),s/veh	14.3	3.2	7.6	6.9	12.6	0.0
LnGrp LOS	B	A	A	A	B	
Approach Vol, veh/h		597	505		87	
Approach Delay, s/veh		4.4	7.6		12.6	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				21.7		9.2	7.3	14.4
Change Period (Y+Rc), s				5.5		5.2	5.5	5.5
Max Green Setting (Gmax), s				55.5		23.8	19.5	30.5
Max Q Clear Time (g_c+I1), s				3.5		3.6	3.2	4.2
Green Ext Time (p_c), s				5.0		0.2	0.1	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	6.4
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	56	776	708	20	24	33
Future Volume (veh/h)	56	776	708	20	24	33
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1716	1863	1863	1716	1716	1750
Adj Flow Rate, veh/h	61	843	770	22	26	36
Adj No. of Lanes	1	3	3	1	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	150	3240	2214	621	89	124
Arrive On Green	0.09	0.64	0.44	0.44	0.14	0.11
Sat Flow, veh/h	1634	5253	5253	1427	625	866
Grp Volume(v), veh/h	61	843	770	22	63	0
Grp Sat Flow(s),veh/h/ln	1634	1695	1695	1427	1515	0
Q Serve(g_s), s	1.3	2.6	3.7	0.3	1.4	0.0
Cycle Q Clear(g_c), s	1.3	2.6	3.7	0.3	1.4	0.0
Prop In Lane	1.00			1.00	0.41	0.57
Lane Grp Cap(c), veh/h	150	3240	2214	621	217	0
V/C Ratio(X)	0.41	0.26	0.35	0.04	0.29	0.00
Avail Cap(c_a), veh/h	853	8526	5311	1490	874	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.6	2.9	6.8	5.9	14.3	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.1	0.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.2	1.7	0.1	0.6	0.0
LnGrp Delay(d),s/veh	17.4	2.9	6.9	5.9	15.0	0.0
LnGrp LOS	B	A	A	A	B	
Approach Vol, veh/h		904	792		63	
Approach Delay, s/veh		3.9	6.9		15.0	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				27.2		9.2	7.3	19.8
Change Period (Y+Rc), s				5.5		5.2	5.5	5.5
Max Green Setting (Gmax), s				59.5		19.8	17.5	36.5
Max Q Clear Time (g_c+I1), s				4.6		3.4	3.3	5.7
Green Ext Time (p_c), s				9.3		0.1	0.1	8.7

Intersection Summary	
HCM 2010 Ctrl Delay	5.6
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	84	776	708	22	28	72
Future Volume (veh/h)	84	776	708	22	28	72
Number	7	4	8	18	1	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1716	1863	1863	1716	1716	1750
Adj Flow Rate, veh/h	91	843	770	24	30	78
Adj No. of Lanes	1	3	3	1	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	176	3206	2125	596	65	170
Arrive On Green	0.11	0.63	0.42	0.42	0.16	0.13
Sat Flow, veh/h	1634	5253	5253	1427	409	1065
Grp Volume(v), veh/h	91	843	770	24	109	0
Grp Sat Flow(s),veh/h/ln	1634	1695	1695	1427	1488	0
Q Serve(g_s), s	2.0	2.8	4.0	0.4	2.6	0.0
Cycle Q Clear(g_c), s	2.0	2.8	4.0	0.4	2.6	0.0
Prop In Lane	1.00			1.00	0.28	0.72
Lane Grp Cap(c), veh/h	176	3206	2125	596	237	0
V/C Ratio(X)	0.52	0.26	0.36	0.04	0.46	0.00
Avail Cap(c_a), veh/h	859	7883	4676	1312	899	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.1	3.1	7.6	6.6	14.9	0.0
Incr Delay (d2), s/veh	2.4	0.0	0.1	0.0	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.3	1.8	0.2	1.1	0.0
LnGrp Delay(d),s/veh	18.4	3.2	7.7	6.6	16.3	0.0
LnGrp LOS	B	A	A	A	B	
Approach Vol, veh/h		934	794		109	
Approach Delay, s/veh		4.6	7.7		16.3	
Approach LOS		A	A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				28.0		10.1	8.1	19.9
Change Period (Y+Rc), s				5.5		5.2	5.5	5.5
Max Green Setting (Gmax), s				57.5		21.8	18.5	33.5
Max Q Clear Time (g_c+I1), s				4.8		4.6	4.0	6.0
Green Ext Time (p_c), s				9.3		0.3	0.2	8.5

Intersection Summary	
HCM 2010 Ctrl Delay	6.6
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

VEHICLE TURNING MOVEMENT COUNTS

Location ID: 1
North/South: Vineland Road
East/West: Paladino Drive

Date: 7/16/2019
City: Bakersfield, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	2	3	4	5	6	7	8	9	10	11	12	Totals:
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
7:30	0	0	0	0	19	1	1	0	5	2	5	0	33
7:45	0	0	0	0	12	1	0	0	1	2	11	0	27
8:00	0	0	0	0	12	0	0	0	3	1	4	0	20
8:15	0	0	0	0	15	0	1	0	5	2	4	0	27
Total Volume:	0	0	0	0	58	2	2	0	14	7	24	0	107
Approach %	0%	0%	0%	0%	97%	3%	13%	0%	88%	23%	77%	0%	

Peak Hr Begin:	7:30												
PHV	0	0	0	0	58	2	2	0	14	7	24	0	107
PHF	0.000			0.750			0.667			0.596			0.811

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	2	3	4	5	6	7	8	9	10	11	12	Totals:
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
14:00	0	0	0	0	8	0	0	0	0	1	6	0	15
14:15	0	0	0	0	4	0	0	0	2	1	10	0	17
14:30	0	0	0	0	4	2	0	0	2	3	8	0	19
14:45	0	0	0	0	6	0	1	0	2	2	8	0	19
Total Volume:	0	0	0	0	22	2	1	0	6	7	32	0	70
Approach %	0%	0%	0%	0%	92%	8%	14%	0%	86%	18%	82%	0%	

Peak Hr Begin:	14:00												
PHV	0	0	0	0	22	2	1	0	6	7	32	0	70
PHF	0.000			0.750			0.583			0.886			0.921

Location ID: 2
North/South: Valley Lane
East/West: Paladino Drive

Date: 7/16/2019
City: Bakersfield, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	2	3	4	5	6	7	8	9	10	11	12	Totals:
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
7:30	12	0	0	0	9	0	0	0	0	0	2	4	27
7:45	4	0	1	0	7	0	0	0	0	0	7	6	25
8:00	6	0	0	0	7	0	0	0	0	0	3	1	17
8:15	6	0	1	0	8	0	0	0	0	0	2	2	19
Total Volume:	28	0	2	0	31	0	0	0	0	0	14	13	88
Approach %	93%	0%	7%	0%	100%	0%	0%	0%	0%	0%	52%	48%	

Peak Hr Begin:	7:30												
PHV	28	0	2	0	31	0	0	0	0	0	14	13	88
PHF	0.625			0.861			0.000			0.519			0.815

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	2	3	4	5	6	7	8	9	10	11	12	Totals:
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
14:00	2	0	0	1	6	0	0	0	0	0	1	4	14
14:15	2	0	2	1	2	0	0	0	0	0	8	2	17
14:30	1	0	0	0	5	0	0	0	0	0	3	5	14
14:45	4	0	0	0	1	0	0	0	0	0	4	5	14
Total Volume:	9	0	2	2	14	0	0	0	0	0	16	16	59
Approach %	82%	0%	18%	13%	88%	0%	0%	0%	0%	0%	50%	50%	

Peak Hr Begin:	14:00												
PHV	9	0	2	2	14	0	0	0	0	0	16	16	59
PHF	0.688			0.571			0.000			0.800			0.868

Location ID: 3
North/South: Masterson Street
East/West: Paladino Drive

Date: 7/16/2019
City: Bakersfield, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
7:30	1	1	0	0	0	0	0	1	2	0	0	0	5
7:45	0	4	0	0	0	1	0	0	0	5	1	1	12
8:00	0	1	2	0	0	0	2	0	1	0	1	0	7
8:15	1	2	0	0	1	0	0	1	2	4	0	0	11
Total Volume:	2	8	2	0	1	1	2	2	5	9	2	1	35
Approach %	17%	67%	17%	0%	50%	50%	22%	22%	56%	75%	17%	8%	

Peak Hr Begin:	7:30												
PHV	2	8	2	0	1	1	2	2	5	9	2	1	35
PHF	0.750			0.500			0.750			0.429			0.729

	Southbound			*Westbound*			*Northbound*			*Eastbound*			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
14:00	0	2	0	0	0	4	1	0	2	0	0	0	9
14:15	0	2	0	0	0	2	0	0	0	4	0	0	8
14:30	0	1	0	0	0	0	0	0	3	0	0	0	4
14:45	0	0	0	0	0	1	0	0	2	1	0	0	4
Total Volume:	0	5	0	0	0	7	1	0	7	5	0	0	25
Approach %	0%	100%	0%	0%	0%	100%	13%	0%	88%	100%	0%	0%	

Peak Hr Begin:	14:00												
PHV	0	5	0	0	0	7	1	0	7	5	0	0	25
PHF	0.625			0.438			0.667			0.313			0.694

Location ID: 4
North/South: Comanche Drive/Alfred Harrell Hwy
East/West: Paladino Drive

Date: 7/16/2019
City: Bakersfield, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
7:30	0	8	1	0	0	3	2	13	0	0	0	0	27
7:45	0	15	0	1	0	1	5	15	0	0	0	0	37
8:00	0	12	2	0	0	4	0	20	0	0	0	0	38
8:15	0	8	0	0	0	2	4	9	0	0	0	0	23
Total Volume:	0	43	3	1	0	10	11	57	0	0	0	0	125
Approach %	0%	93%	7%	9%	0%	91%	16%	84%	0%	0%	0%	0%	

Peak Hr Begin:	7:30												
PHV	0	43	3	1	0	10	11	57	0	0	0	0	125
PHF	0.767			0.688			0.850			0.000			0.822

	Southbound			*Westbound*			*Northbound*			*Eastbound*			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
14:00	0	12	1	1	0	2	1	11	0	0	0	0	28
14:15	0	11	1	0	0	2	0	16	0	1	0	0	31
14:30	0	15	1	0	0	1	2	14	0	0	0	0	33
14:45	0	9	3	1	0	1	3	14	0	0	0	0	31
Total Volume:	0	47	6	2	0	6	6	55	0	1	0	0	123
Approach %	0%	89%	11%	25%	0%	75%	10%	90%	0%	100%	0%	0%	

Peak Hr Begin:	14:00												
PHV	0	47	6	2	0	6	6	55	0	1	0	0	123
PHF	0.828			0.667			0.897			0.250			0.932

Location ID: 5
North/South: City Hills Drive
East/West: Panorama Drive

Date: 7/16/2019
City: Bakersfield, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
7:30	0	15	1	0	0	17	1	7	0	0	1	0	42
7:45	2	8	1	3	0	6	3	3	0	1	1	0	28
8:00	0	12	2	0	0	9	5	4	0	0	0	0	32
8:15	0	20	0	2	2	9	2	4	1	1	0	0	41
Total Volume:	2	55	4	5	2	41	11	18	1	2	2	0	143
Approach %	3%	90%	7%	10%	4%	85%	37%	60%	3%	50%	50%	0%	
Peak Hr Begin:	7:30												
PHV	2	55	4	5	2	41	11	18	1	2	2	0	143
PHF	0.763			0.706			0.833			0.500			0.851

	Southbound			*Westbound*			*Northbound*			*Eastbound*			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
14:00	0	10	0	1	0	4	1	11	0	0	2	0	29
14:15	0	13	1	2	1	8	5	14	1	0	1	0	46
14:30	2	13	0	1	3	8	4	13	1	0	1	0	46
14:45	2	9	1	1	1	1	5	12	0	0	1	0	33
Total Volume:	4	45	2	5	5	21	15	50	2	0	5	0	154
Approach %	8%	88%	4%	16%	16%	68%	22%	75%	3%	0%	100%	0%	
Peak Hr Begin:	14:00												
PHV	4	45	2	5	5	21	15	50	2	0	5	0	154
PHF	0.850			0.646			0.838			0.625			0.837

Location ID: 6
North/South: Calle Way
East/West: Panorama Drive

Date: 7/16/2019
City: Bakersfield, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
7:30	0	0	0	0	0	0	3	0	15	2	1	1	22
7:45	0	0	0	0	4	1	3	0	2	2	3	0	15
8:00	0	0	0	0	3	1	3	0	9	3	1	0	20
8:15	0	0	0	0	3	0	1	0	8	2	1	0	15
Total Volume:	0	0	0	0	10	2	10	0	34	9	6	1	72
Approach %	0%	0%	0%	0%	83%	17%	23%	0%	77%	56%	38%	6%	

Peak Hr Begin:	7:30												
PHV	0	0	0	0	10	2	10	0	34	9	6	1	72
PHF	0.000			0.600			0.611			0.800			0.818

	Southbound			*Westbound*			*Northbound*			*Eastbound*			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
14:00	0	0	0	0	1	3	2	0	3	3	1	0	13
14:15	0	0	0	0	10	5	2	0	6	4	1	0	28
14:30	0	0	0	0	2	4	3	0	4	2	1	0	16
14:45	0	0	0	0	2	9	5	0	1	3	1	0	21
Total Volume:	0	0	0	0	15	21	12	0	14	12	4	0	78
Approach %	0%	0%	0%	0%	42%	58%	46%	0%	54%	75%	25%	0%	

Peak Hr Begin:	14:00												
PHV	0	0	0	0	15	21	12	0	14	12	4	0	78
PHF	0.000			0.600			0.813			0.800			0.696

Location ID: 7
North/South: Masterson Street
East/West: Panorama Drive

Date: 7/16/2019
City: Bakersfield, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	2	3	4	5	6	7	8	9	10	11	12	Totals:
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
7:30	0	1	0	0	0	0	0	2	0	3	0	2	8
7:45	2	7	0	0	0	0	0	0	3	4	0	1	17
8:00	0	2	0	0	0	0	0	3	3	4	0	0	12
8:15	1	4	0	0	0	0	0	2	3	3	0	0	13
Total Volume:	3	14	0	0	0	0	0	7	9	14	0	3	50
Approach %	18%	82%	0%	0%	0%	0%	0%	44%	56%	82%	0%	18%	
Peak Hr Begin:	7:30												
PHV	3	14	0	0	0	0	0	7	9	14	0	3	50
PHF	0.472			0.000			0.667			0.850			0.735

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	2	3	4	5	6	7	8	9	10	11	12	Totals:
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
14:00	0	7	0	0	0	0	0	4	4	2	0	0	17
14:15	2	5	0	0	0	0	0	0	13	3	0	0	23
14:30	1	1	0	0	0	0	0	3	5	4	0	0	14
14:45	1	2	0	0	0	0	0	2	11	7	0	0	23
Total Volume:	4	15	0	0	0	0	0	9	33	16	0	0	77
Approach %	21%	79%	0%	0%	0%	0%	0%	21%	79%	100%	0%	0%	
Peak Hr Begin:	14:00												
PHV	4	15	0	0	0	0	0	9	33	16	0	0	77
PHF	0.679			0.000			0.808			0.571			0.837

Location ID: 8
North/South: Masterson Street
East/West: State Route 178

Date: 7/16/2019
City: Bakersfield, CA

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
7:30	3	0	0	2	185	0	0	0	0	0	74	1	265
7:45	4	0	7	3	179	0	0	0	0	0	76	1	270
8:00	5	0	3	3	144	0	0	0	0	0	73	3	231
8:15	4	0	1	4	132	0	0	0	0	0	77	1	219
Total Volume:	16	0	11	12	640	0	0	0	0	0	300	6	985
Approach %	59%	0%	41%	2%	98%	0%	0%	0%	0%	0%	98%	2%	

Peak Hr Begin:	7:30												
PHV	16	0	11	12	640	0	0	0	0	0	300	6	985
PHF	0.614			0.872			0.000			0.981			0.912

	Southbound			Westbound			Northbound			Eastbound			Totals:
	1	2	3	4	5	6	7	8	9	10	11	12	
Lanes:	R	T	L	R	T	L	R	T	L	R	T	L	
14:00	7	0	2	2	79	0	0	0	0	0	94	6	190
14:15	4	0	4	4	87	0	0	0	0	0	102	8	209
14:30	3	0	1	3	119	0	0	0	0	0	100	5	231
14:45	4	0	6	2	102	0	0	0	0	0	121	11	246
Total Volume:	18	0	13	11	387	0	0	0	0	0	417	30	876
Approach %	58%	0%	42%	3%	97%	0%	0%	0%	0%	0%	93%	7%	

Peak Hr Begin:	14:00												
PHV	18	0	13	11	387	0	0	0	0	0	417	30	876
PHF	0.775			0.816			0.000			0.847			0.890