APPENDIX G

TRIP GENERATION LETTER/ TRAFFIC IMPACT ANALYSIS

TRIP GENERATION LETTER

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Traffic and Transportation

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August 3, 2016

Ms. Melanie Halajian
Ericsson-Grant, Inc.
418 Parkwood Lane, Suite 200
Encinitas, CA 92024

Subject: Draft Trip Generation Analysis for the proposed Campo Verde Solar Facility Battery Energy Storage System in the County of Imperial

Dear Ms. Halajian:

LOS Engineering, Inc. is pleased to present this trip generation analysis to determine if a Traffic Impact Study (TIS) is required for the proposed Campo Verde Solar Facility Battery Energy Storage System in the County of Imperial.

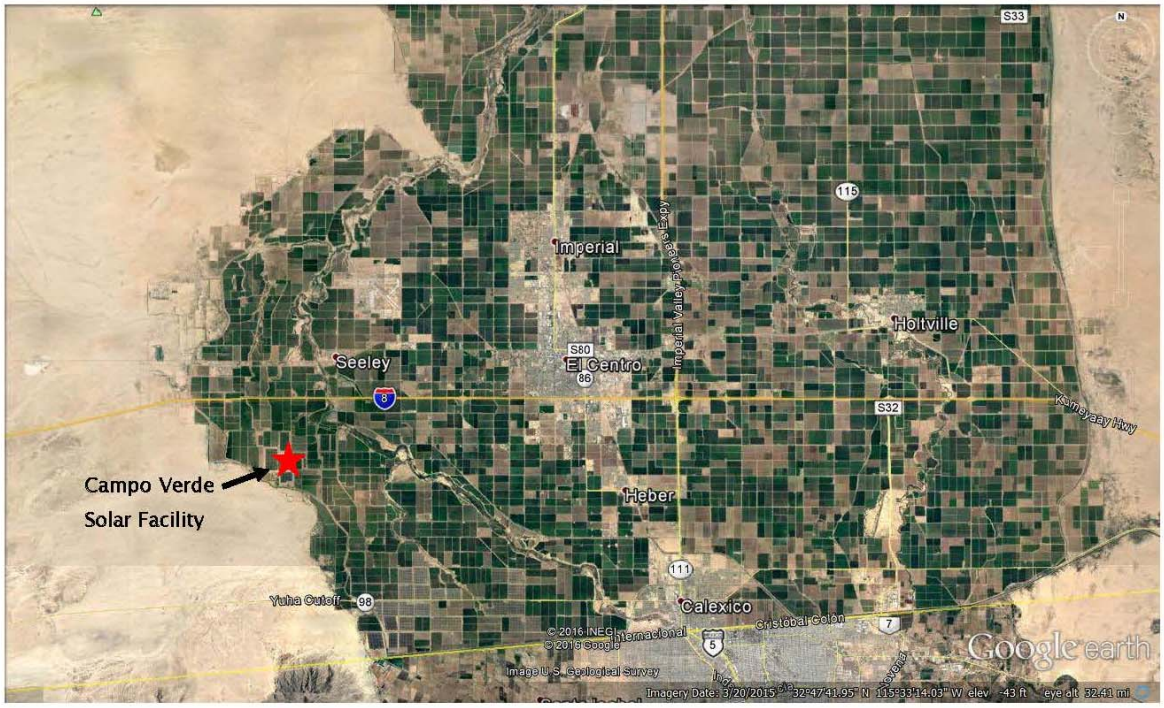
This letter documents the project's trip generation and thresholds for requiring a traffic study based on the County of Imperial Department of Public Works *Traffic Study and Report Policy* dated March 12, 2007 and revised June 29, 2007.

PROJECT LOCATION AND DESCRIPTION

The Campo Verde Solar Facility Battery Energy Storage System is to be located within the existing Campo Verde Solar Facility located approximately 7 miles southwest of the community of El Centro, California as shown in **Figure 1**. The proposed Battery Energy Storage System is to be constructed next to the Campo Verde Substation located west of Liebert Road, south of Wixom Road and north of Mandrapa Road as shown in **Figure 2**. The project location west of the existing substation is shown in **Figure 3**.

The proposed Battery Energy Storage System will incorporate traditional lithium-ion batteries. The Project is proposed to be constructed in two phases, with Phase 1 designed to store up to 5 megawatt-hours of energy and Phase 2 up to 100 megawatt-hours of energy. The project site plan is shown in **Figure 4**.

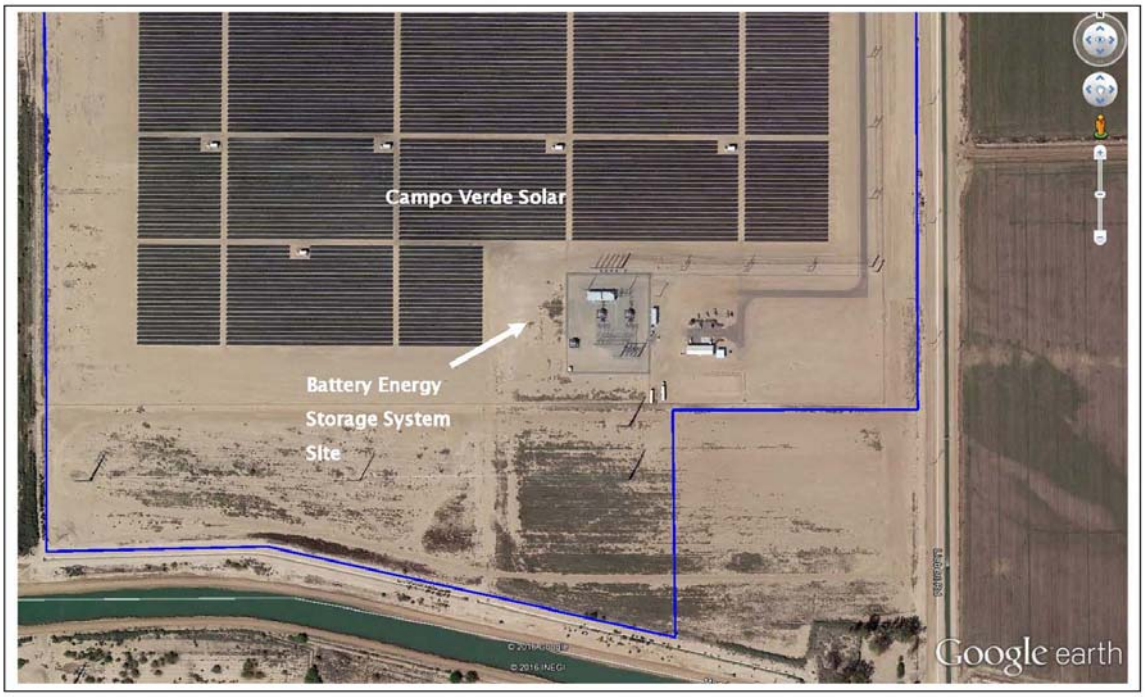
Figure 1: Project Regional Location



Source: Google Earth, EGI

REGIONAL LOCATION MAP

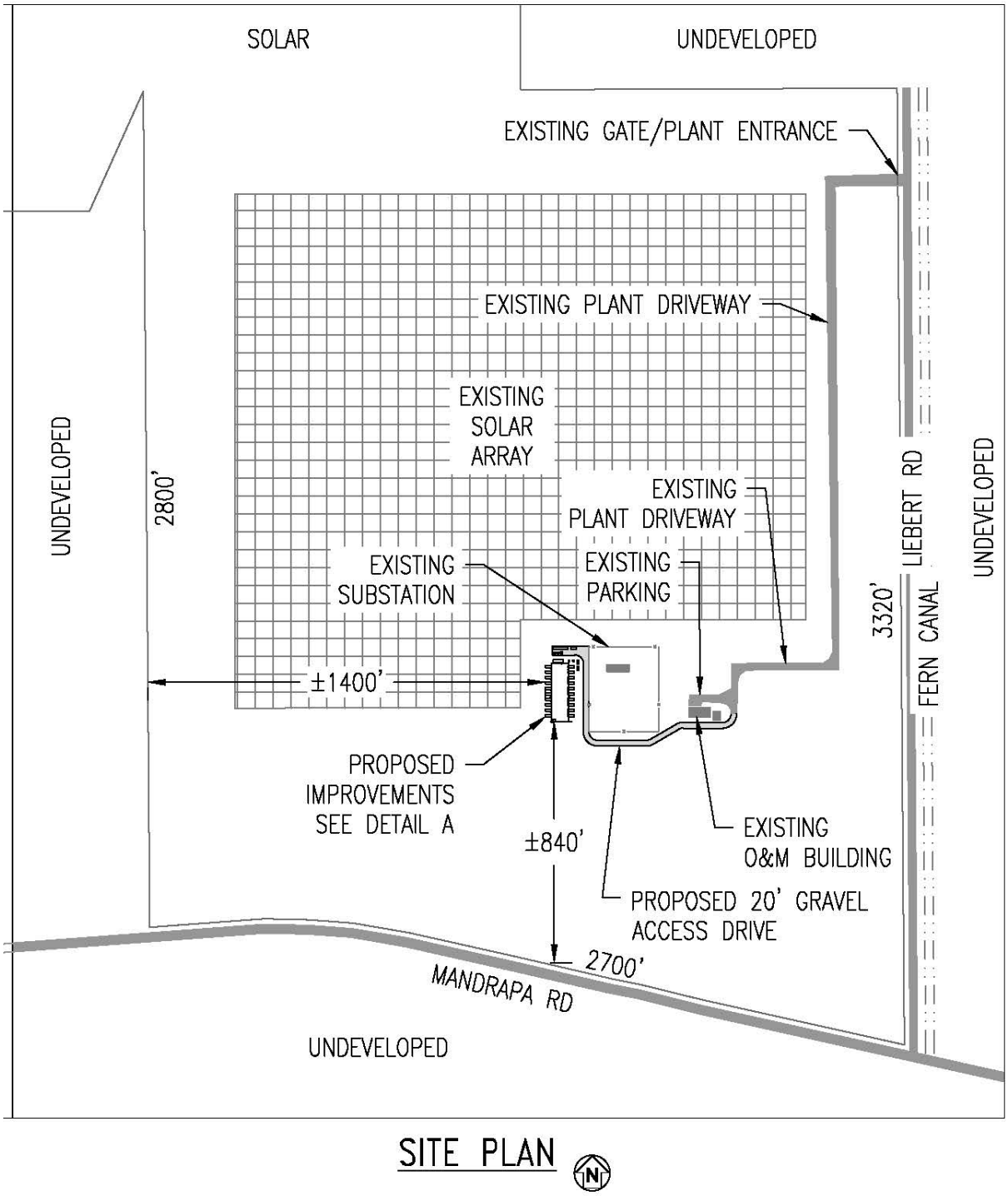
Figure 2: Project Location within Campo Verde Solar Facility



Source: Google Earth, EGI 2016.

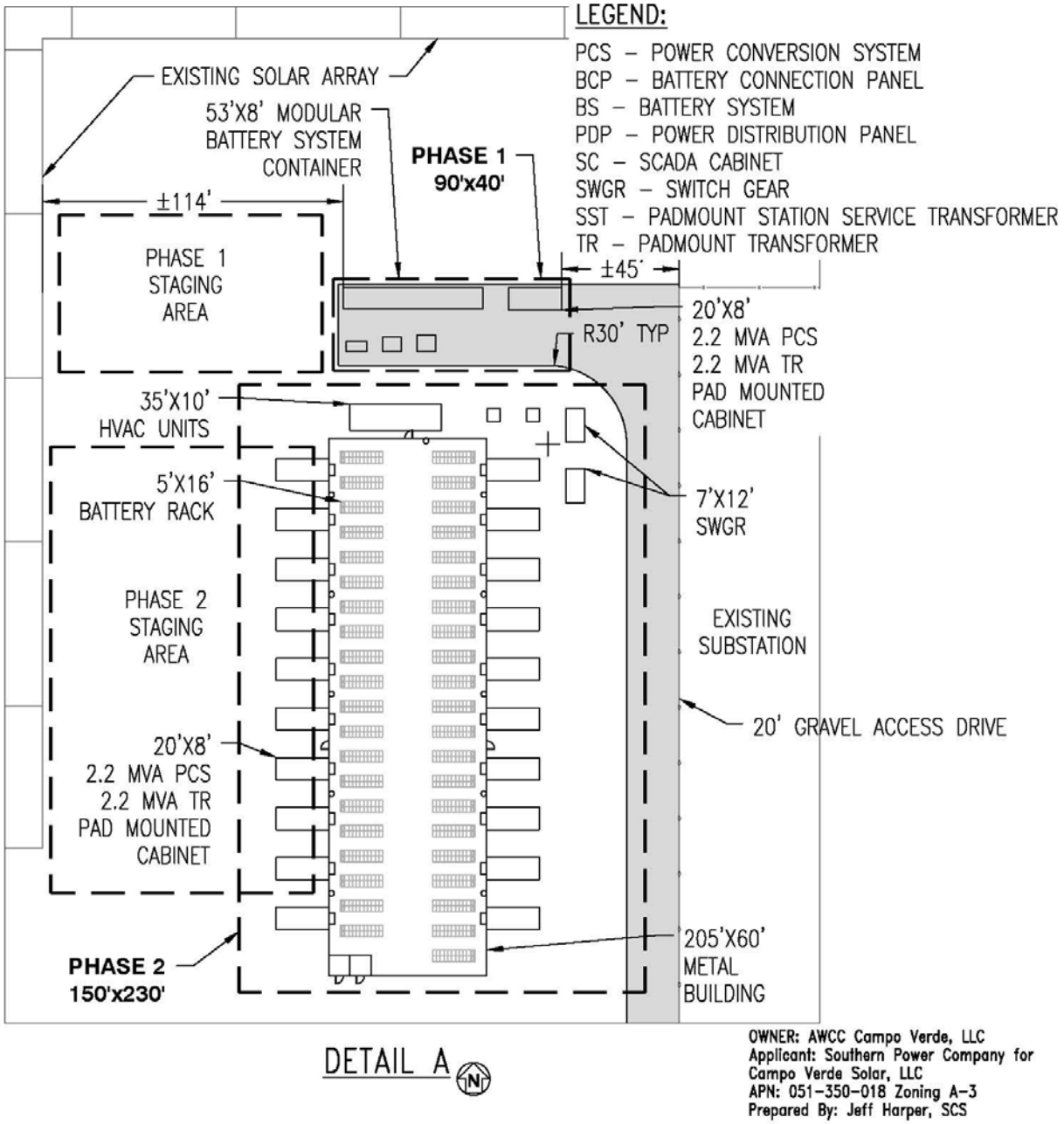
CAMPO VERDE SOLAR BATTERY ENERGY SYSTEM SITE

Figure 3: Project Location West of Existing Substation



Source: Southern Company Generation Engineering and Construction Services

Figure 4: Project Site Plan



Source: Southern Company Generation Engineering and Construction Services

PROJECT TRIP GENERATION

Phase 1 construction will occur over a period of approximately 66 days to install the foundations and connect the components to the existing controls system and project substation. Approximately 12 workers will be on site for 6 to 8 weeks generally from sunrise to 2:30 PM. In addition to the construction workers, three technicians will work an additional 3 to 6 weeks to commission and debug the system integration. Work hours for three technicians will be approximately from 8 PM to 5 AM to avoid interference with the facility when solar power is being generated. Phase 1 deliveries will occur throughout the construction period; however, peak deliveries are anticipated to occur in Week 3 with approximately 4 truck deliveries in the morning and 1 truck delivery in the afternoon. A water truck is anticipated to deliver water with an average of less than one truck per day; however, to be conservative one daily water truck is included in the trip generation. For trip generation purposes, truck trips are converted to a Passenger Car Equivalent (PCE) by multiplying each truck by a factor of 3 due to size and speed constraints. For Phase 1 the peak construction traffic is calculated at 66 ADT with 39 morning peak hour trips (27 inbound and 12 outbound) and 21 afternoon peak hour trips (3 inbound and 18 outbound) as shown in **Table 1**.

Table 1: Phase 1 Project Trip Generation (Passenger Car Equivalent)

Phase 1 Construction Related Traffic	Daily Vehicles	ADT with PCE[2]	Morning Peak		Afternoon Peak	
			IN	OUT	IN	OUT
Daytime Construction Workers (12 with no PCE)[1]	12	24	12	0	0	12
Nighttime Technicians 8 pm to 5 am (3 with no PCE)[1]	3	6	0	0	0	0
Equipment Deliveries and Construction Trucks (with PCE of 3)[2]	5	30	12	12	3	3
Water Truck (with PCE of 3)[2]	1	6	3	0	0	3
Phase 1 Total Traffic During Peak Construction Period	21	**66**	**27**	**12**	**3**	**18**

ADT: Average Daily Trips. PCE: Passenger Car Equivalent factor of 3 applied to delivery and water trucks to provide an equivalent number of passenger cars. 1) Number of construction workers and construction trucks provided by applicant. 2) Passenger Car Equivalent (PCE) factor of 3 applied to each truck.

Phase 2 construction will occur over a period of approximately 160 days and will include site preparation; civil and foundation work (conduit, equipment pads, concrete foundations); building works (form and pour slab) framing, sheathing, roofing, mechanical, lighting and electrical, fire suppression); data support installation; batteries (install battery racks, install batteries in racks); electrical works (pull and test cable, set and test equipment, point of interconnection work); certificate of occupancy; and commissioning. Approximately 30 workers will be on site generally from sunrise to 2:30 PM. In addition to the construction workers, three technicians will work an additional 3 to 6 weeks to commission and debug the system integration. Work hours for three technicians will be approximately from 8 PM to 5 AM to avoid interference with the facility when solar power is being generated. Phase 2 deliveries will occur throughout the construction period; however, peak deliveries are anticipated to occur in Month 3 with approximately 5 truck deliveries in the morning and 4 truck deliveries in the afternoon. A water truck is anticipated to deliver water with an average of less than one truck per day; therefore, to be conservative one daily water truck is included in the trip generation. For trip generation purposes, truck trips are converted to a Passenger Car Equivalent (PCE) by multiplying each truck by a factor of 3 due to size and speed constraints. For Phase 2 the peak construction traffic is calculated at 126 ADT with 63 morning peak hour trips (48 inbound and

15 outbound) and 57 afternoon peak hour trips (12 inbound and 45 outbound) as shown in **Table 2**.

Table 2: Phase 2 Trip Generation (Passenger Car Equivalent)

Phase 2 Construction Related Traffic	Daily Vehicles	ADT with PCE[2]	Morning Peak		Afternoon Peak	
			IN	OUT	IN	OUT
Daytime Construction Workers (12 with no PCE)[1]	30	60	30	0	0	30
Nighttime Technicians 8 pm to 5 am (3 with no PCE)[1]	3	6	0	0	0	0
Equipment Deliveries and Construction Trucks (with PCE of 3)[2]	9	54	15	15	12	12
Water Truck (with PCE of 3)[2]	1	6	3	0	0	3
Phase 2 Total Traffic During Peak Construction Period	43	**126**	**48**	**15**	**12**	**45**

ADT: Average Daily Trips. PCE: Passenger Car Equivalent factor of 3 applied to delivery and water trucks to provide an equivalent number of passenger cars. 1) Number of construction workers and construction trucks provided by applicant. 2) Passenger Car Equivalent (PCE) factor of 3 applied to each truck.

The construction is anticipated to occur Monday through Friday; however, if extra work days are required, they would occur on Saturdays.

The post construction operations and maintenance of the Battery Energy Storage Facility will be monitored by the existing six operators currently on-site as part of the existing Campo Verde Solar Facility operations. No additional full time staff is anticipated as part of the Battery Energy Storage Facility; however, technicians will be brought in if necessary.

PROJECT ACCESS

Project access is from Liebert Road at the existing Campo Verde Solar Facility entry northeast of the existing Operations and Maintenance (O&M) building as shown previously in Figure 3. Within the facility fence, construction traffic will use the existing north-south paved internal roadway parallel to Liebert Road. A proposed approximately 1,000-foot long, 20-foot wide gravel road 6-inches in depth will be constructed as an extension of the existing paved access road. The gravel road will align east-west just south of the O&M building and Substation then align north-south along the west side of the Substation before extending to the west to terminate at the Phase 1 site and just north of Phase 2 site of the proposed Battery Energy Storage System site location. Material providers and workers will likely use the route shown on **Figure 5** to travel to the site of the battery storage system.

Figure 5: Project Access Route

Source: AWCC Campo Verde LLC

CAMPO VERDE SOLAR BATTERY ENERGY STORAGE SYSTEM
MATERIALS AND EMPLOYEE HAUL ROUTE

COUNTY OF IMPERIAL TRAFFIC IMPACT STUDY CRITERIA

The criteria for the need to prepare a Traffic Impact Study are documented in the County of Imperial Department of Public Works *Traffic Study and Report Policy* dated March 12, 2007 and revised June 29, 2007. A copy of the policy is included in **Attachment A**. A list of the policy criteria for requiring a traffic study along with the resulting project traffic in underline format are shown below:

1) Any project that adds more than 8% of the total existing vehicle trips on the adjacent road system at full build-out of the project. At full build-out, the project would utilize existing Campo Verde Solar Facility staff; therefore, the project would not add any new traffic on the adjacent road system under build-out conditions.

2) Any project that generates more than 400 daily residential trip ends, 800 commercial or industrial trip ends or 200 peak hour trip ends, as determined by the average trip rates contained in the ITE Trip Generation Informational Report or the Imperial County local exceptions in Section 2. Phase 1 construction would add 66 daily trip ends with 39 morning peak hour trips and 21 afternoon peak hour trips while Phase 2 construction would add 126 daily trip ends with 63 morning peak hour trips and 57 afternoon peak hour trips. Both construction phases are below the 800 industrial daily trip ends and below the 200 peak hour trip ends.

3) Any project that has the potential to degrade an existing road section, an existing signalized intersection, or an existing unsignalized intersection to below the existing level of service or to cause it to be lower than a Level of Service (LOS) "C" during any peak hour, using the HCM methods of analysis on any individual, existing traffic movement. The Campo Verde Solar Project Traffic Study completed in 2012 (excerpts included in **Attachment B**) documented acceptable operations (LOS A & B) at the intersection of Drew Road at Diehl Road and along Drew Road (LOS A & B) with the addition of the Campo Verde Solar Project construction traffic of 349 morning and 349 afternoon peak hour construction trips. When compared to Phase 2 Campo Verde Solar Battery Energy System construction trips of 63 morning and 57 afternoon peak hour trips, through deduction, the Battery System construction traffic would not degrade the LOS because the Campo Verde Solar Project construction with higher construction traffic did not degrade the LOS below "C".

4) Any project, within Section C.1.b above, which generates more than 10% of its total traffic in the form of truck traffic. During the temporary construction period, the truck traffic exceeds 10% of the total; however, after the construction, the project will not add any new traffic on the adjacent road system (please see #1 above).

5) Any project that intensifies the usage of the site above the level currently allowed by zoning codes and requires a GPA; and/or CUP, zone change, variance or other discretionary permit. This project is proposing an amendment to CUP 11-0007. Additionally, after the temporary construction, the project will not add any new traffic on the adjacent road system (please see #1 above).

6) Any project that may cause an existing or proposed intersection to meet traffic signal warrants or cause a proposed intersection to be lower than LOS "C". Please see response to #3 above.

For the responses noted above, it is not recommended that a traffic study be prepared for the temporary and limited amount of construction traffic.

CONCLUSION

The Campo Verde Solar Facility Battery Energy Storage System is to be located within the existing Campo Verde Solar Facility located approximately 7 miles southwest of the community of El Centro, California. The proposed Battery Energy Storage System is to be constructed next to the Campo Verde Substation located west of Liebert Road, south of Wixom Road and north of Mandrapa Road. Project access is from Liebert Road at the existing Campo Verde Solar Facility entry northeast of the existing O&M building.

The proposed Battery Energy Storage System will incorporate traditional lithium-ion batteries. The Project is proposed to be constructed in two phases, with Phase 1 designed to store up to 5 megawatt-hours of energy and Phase 2 up to 100 megawatt-hours of energy.

Phase 1 construction will occur over a period of approximately 66 days. Approximately 12 construction workers will be on site for 6 to 8 weeks generally from sunrise to 2:30 PM. Phase 1 construction would add 66 daily trip ends with 39 morning peak hour trips and 21 afternoon peak hour trips.

Phase 2 construction will occur over a period of approximately 160 day. Approximately 30 workers will be on site generally from sunrise to 2:30 PM. Phase 2 construction would add 126 daily trip ends with 63 morning peak hour trips and 57 afternoon peak hour trips.

At full build-out, the project would utilize existing Campo Verde Solar Facility staff; therefore, the project would not add any new traffic on the adjacent road system under build-out conditions.

The criteria for the need to prepare a Traffic Impact Study are documented in the County of Imperial Department of Public Works *Traffic Study and Report Policy*. The temporary construction traffic does not exceed the thresholds identified in the policy and at build-out, the project would utilize existing Campo Verde Solar Facility staff; therefore, would not generate any new daily traffic. Therefore, it is not recommended that a traffic study be prepared for the temporary and limited amount of initial construction traffic.

Sincerely,
LOS Engineering, Inc.

Justin Rasas

Justin Rasas, P.E.(RCE 60690), PTOE
Principal and Officer of LOS Engineering, Inc.

Attachments

ATTACHMENT A

COUNTY OF IMPERIAL DEPARTMENT OF PUBLIC WORKS *TRAFFIC STUDY AND REPORT POLICY*

BOS Approved 08-07-07
M.O. #37

COUNTY OF IMPERIAL

DEPARTMENT OF PUBLIC WORKS

TRAFFIC STUDY AND REPORT POLICY

Date: March, 12, 2007

Revised June 29, 2007

APPROVALS:

WILLIAM S. BRUNET, P. E.
DIRECTOR OF PUBLIC WORKS
ROAD COMMISSIONER

JURG HEUBERGER
PLANNING DIRECTOR

TRAFFIC STUDY ADMINISTRATIVE PROCEDURES FOR NEW DEVELOPMENT PROJECTS OR IMPROVEMENTS TO AN EXISTING CONDITION

For New Development Projects:

With a completed application to the County, the Public Works (PW) Staff and Planning Development Services (ICPDS) Staff will review the Preliminary Environmental Review to assess initial potential traffic impacts.

For A Proposed Improvement To An Existing Condition:

When traffic impacts are expected, the level of traffic study will be determined by ICPDS and PW Engineering in accordance with the Traffic Study and Report Policy.

For Either Situation:

The staff will determine the significance of the needed study in order to fully comply with the California Environmental Quality Act (CEQA). When the study is determined to be highly significant, the County can take responsibility for the traffic study, using the following:

1. The procedures that will be followed provide for the County staff that implement the traffic study and report policy to develop a consistent scope of work for each traffic study and still allow for project specific variations.

2. The developer (applicant) or his/her representative will be provided a scope of work by the County or will provide a scope of work to the County and there will be a staff level opportunity for a review of the scope of work.

3. The County staff may select the consultant for significant projects and will approve the scope of work for the professional services; County staff will determine the cost of the proposed work for County contracts, in accordance with State law and County guidelines.

4. The developer (applicant) or his/her representative will either conduct the approved study scope of work at their cost or deposit the estimated study cost amount with the County. There are also review and administrative fees which will be charged to the applicant and deposited with the County. The PW review only fee will be $1,500 for up to three review checks of the report. Beyond three checks, the fee will be at time and materials rates for a County consultant. The administrative fee will be a minimum of 15 percent of the estimated study cost for

County administered studies, unless a different fee is adopted by the County. The review and administrative fees are non-refundable.

5. The County will coordinate the study, and the developer (applicant) or his/her representative will have no unapproved contact with the consultant.

6. When the study report is in the draft stage, the developer (applicant) or his/her representative will provide three copies of the report for review by the County and will attend a review session at the County with the County staff and the consultant to discuss any comments or concerns generated by the review.

7. The results of the review checks will be: 1) preparation of a formal comments letter for items to be addressed while preparing the final report; 2) additional work required and to be paid for by the developer (applicant) and included in the final report; and/or 3) acceptance of the draft report and preparation of the final report to be submitted for the applicant's project.

8. The final report, when approved by the Department of Public Works and the ICPDS becomes the traffic impact study, applicable to the project, along with any supporting data or studies available from the County staff.

DISCLAIMER: The County is not responsible for, nor liable to the developer (applicant) for any costs associated with additional engineering fees, construction costs, project delay costs, loss of anticipated profits, etc. as a result of complying with this policy and procedures.

COUNTY OF IMPERIAL

DEPARTMENT OF PUBLIC WORKS

TRAFFIC STUDY AND REPORT POLICY

Date: 3/12/2007

AUTHORITY

The County of Imperial regulates land use development through the Planning and Development Services Department (ICPDS) in accordance with State Law, the Land Use Ordinance Title 9 and County Policies (see also P.3.).

A. INTRODUCTION

This policy and procedures paper is prepared to serve as a guide for the preparation of traffic reports and to assist the developer and the engineer in preparing information and plans that meet the criteria of the County of Imperial. In accordance with the County Board Action, this document can be amended by the joint action of the above Department. The user should thoroughly review this document and determine that the latest dated policy is being used prior to beginning the work. Questions relating to procedures, intent or specific details that may arise before or during the study should be addressed to the Director of Public Works or County Traffic Engineer in writing for clarification and resolution

This report does not replace any County Engineering Standards and is not intended to be all inclusive. It provides the expected minimum level of work for a project. All studies must be based on sound transportation principles, techniques and engineering judgment, be in accordance with current standards of practice in the engineering profession, and must also

be acceptable to the Planning and Development Services Department, the Department of Public Works, including the County Traffic Engineer and other County staff, as identified in the Imperial County Codes or required by State Law.

As County growth continues, the El Centro Urbanized area will cause the County to fall within the Congestion Management Program law. The enactment of the Congestion Management Plan (CMP) law (Government Code Sections 65088 and 65089) also requires the preparation of a CMP Traffic Impact Analysis Report for all projects which will meet the local criteria for preparing a traffic impact study in the counties with an urbanized area over 50,000 population. Based on AB 2419, implementation of the CMP Program is a local option but eligibility for State or Federal CMP funds may require such a program. When an urbanized area of over 50,000 population is recognized, guidelines for a CMP Traffic Impact Analysis Report would be required to be developed and implemented.

The County of Imperial has an adopted General Plan with a Circulation Element, which serves as the basis for Traffic and Circulation determinations. The County has its own Standard Drawings for Public Works Improvements and the County uses as standard reference the Manual on Uniform Traffic Control Devices for Streets and Highways, California Edition, the current Institute of Transportation Engineers (ITE) Trip Generation Informational Report, the Institute of Transportation Engineers Parking Generation Report, the Caltrans Design Manual (non-metric), the 2000 Highway Capacity Manual (HCM) with revisions, the AASHTO Manuals, the "Standard Specifications for Public Works Construction" (Green Book) (non-metric) and Caltrans Standard Specifications. ***The exceptions to the ITE Informational Report for Trip Generation are specified in Section 2. Report Contents.***

B. MINIMUM REQUIREMENT POLICY

This policy is established as the minimum requirement of the County of Imperial with all material subject to the review and approval of the Director of Public Works and the Public Works Engineering Division (as required by State Law) for conformance to acceptable principles, practices and sound engineering judgment. All reports must receive the approval of the Department of Public Works and the Planning and Development Services Department prior to approval of the project. In accordance with current State Law, traffic study reports which identify or recommend any Public Works improvements (traffic signals, geometric design changes, road widening with land dimensioning, driveway relocation, etc.) will be required to be stamped and signed by the California Registered Civil Engineer responsible for the report. A Registered Traffic Engineer will be allowed to sign and stamp the report if it contains only general recommendations for the mitigation of traffic impacts or general recommendations for engineering improvements.

C. TRAFFIC REPORTS

As a part of the project review process the County will identify if there is a need for a traffic study and report to be prepared for the proposed development unless the Title 9 Land Use Ordinance criteria already requires such a study. The Director of Public Works, or his designee, and his advisory staff, and/or the Planning Director, will make the final decision on the need for a traffic study as a condition of the development. These reports may be made necessary by the size, configuration or potential impact of the proposed development. In some cases, it may be

necessary to develop a traffic report that determines whether the traffic study general criteria have been met.

In the case of significant development, it may be necessary to hold one or more scope of work meetings which would be attended by a ICPDS staff, the County Traffic Engineer or other County Advisory Staff, the individual who will be responsible for preparing the traffic study report and the Traffic and/or Civil Engineer responsible for the report and its recommendations. The individual preparing the traffic study should be familiar with the project site and the local conditions which may affect any final conclusions and recommendations.

Listed below are the basic criteria that will be used to make the determination for providing a complete traffic study as a part of the project review process. The criteria are not a complete or exhaustive list, but they are intended to define when such a report is to be prepared and to indicate the necessary components of the study report to be submitted.

1. General Criteria

a. Any project that adds more than 8% of the total existing vehicle trips on the adjacent road system at full build-out of the project.

b. Any project that generates more than 400 daily residential trip ends, 800 commercial or industrial trip ends or 200 peak hour trip ends, as determined by the average trip rates contained in the ITE Trip Generation Informational Report or the **Imperial County local exceptions in Section 2.**

c. Any project that has the potential to degrade an existing road section, an existing signalized intersection, or an existing unsignalized intersection to below the existing level of service or to cause it to be lower than a level of service (LOS)

"C" during any peak hour, using the HCM Methods of analysis on any individual, existing traffic movement.

d. Any project, within Section C. 1. b. above, which generates more than 10% of its total traffic in the form of truck traffic.

e. Any project that intensifies the usage of the site above the level currently allowed by zoning codes and requires a GPA; and/or CUP, zone change, variance or other discretionary permit.

f. Any project that may cause an existing or proposed intersection to meet traffic signal warrants or cause a proposed intersection to be lower than LOS "C."

2. Report Contents

Traffic Reports submitted for review and approval must contain the following items as a minimum:

a. Total number of trips anticipated from the project based on the average trip generation rates as specified in this section for single family residential use or those contained in the ITE Trip Generation Informational Report for other residential, commercial and industrial uses for total build out of the project (minimum of 5 years), or by using fully documented (and previously approved by the County Engineer) data for a similar or like facility. Passer-by trips for commercial/retail projects will not be more than 35 percent of the total generated site traffic without Public Works/Engineering and Planning staff approval (see

Section B. above). Passer-by trips, over 35 percent and internal trips, over 5 percent, must be justified, if used. Reference to another report or another source of data will not be adequate justification.

For traffic studies carried out for presentation to the County of Imperial, single family residential trip generation of less than 10.0 trip ends per D.U. per weekday must be justified by documentation, including the age or maturity of the development producing the trip ends. Normally, new development, that is not fully an infill project, will have a trip generation rate of at least 10 trip ends per D.U. per weekday. Studies carried out by local agencies in other areas have shown the trip generation rate to be at least 15 trip ends per dwelling unit for a development at full occupancy (at project build out), at 10 years of age and at least 15 trip ends per D. U. at 20 years after build out. The local sample studies showed that a residential development trip generation rate may be as high as 20 trip ends per D.U. per weekday. The estimated build-out, 5-year or 20-year peak hour trip ends generation rate will be 1.55 for the a.m. peak hour, and the p.m. peak hour trip ends generation rate will be 1.68 trip ends per dwelling unit for the same single family residential use at 15.0 trip ends per dwelling unit per weekday. The County of Imperial requires the use of the local exceptions, unless the report preparer provides previously approved data to support using other rates. The I.T.E. Trip Generation Report will not be accepted for single family residential daily and peak hour trip ends per dwelling

unit, unless it is for urban infill development, within one half mile of major retail and commercial developmentt.

b. Existing traffic on the adjacent road system and projected traffic on the adjacent road system, projected for a minimum of five (5) years, to project build-out, or both, depending on the project and the area; larger projects or high traffic generation may require future year build-out, currently Year 2030. Future CMP TIA reports would require additional traffic projection information.

c. Traffic projections on the adjacent road system for both the project and "normal background growth" (demonstrated growth, as detailed in the general plan, or as agreed upon with County staff). Normally, traffic will be projected to Year 2030 or later for an updated future year condition.

d. Traffic projections shall include the additional impact of undeveloped land or new development within an area surrounding the proposed development site (project) as agreed to by the County Director of Public Works, the County Planning Director and advisory staff.

e. Projected impacts on intersections adjacent to or within the defined impact area of the project, using intersection capacity analysis - Highway Capacity Manual Operations Delay Method. Right turn-on-red volumes and changes in signal timing can be incorporated in a signalized intersection analysis, but any signal timing changes must be specifically identified in the study recommendations with additional cautions or impact conclusions identified if the timing changes are not

made. Signal timing/phasing changes on a signal coordinated road (or a road planned for signal coordination) will require significant report information.

f. Trip distribution and assignment with description of how the percentages for directional travel analysis and/or turning movements were determined. The report shall present figures showing project site trip distribution.

g. Analysis of pedestrian movements and/or generation and the need for additional crossings, crossing protection or other facilities, if required.

h. Parking analysis is required for any multi-family dwelling projects. All non-residential projects should show parking demand, show how County Regulations will be met, and document how demand will be met.

i. Existing and proposed signal phases, progression and/or coordination, if applicable.

j. Traffic counts. Automatic or electronically recorded (machine) traffic counts should be current, within one year, subject to confirmation by the County Engineering staff. Automatic traffic recorder (machine) counts must be suitable in duration for the size of the project and be recorded at least hourly. Traffic signal warrant counts should be recorded at 15-minute intervals. Traffic counts for the project area may be available from other County reports and, if available, can be provided at no charge with a minimum seven (7) day advance written request.

Manual intersection turning movement counts must be current, within one year, covering all appropriate peak hours. These counts must show right turn-on-red movements for signalized intersections as well as truck and bus movements. If current traffic queues do not clear the intersection, queue counts by lane will be required for an accurate analysis and for accurate level of service determination. Fifteen minute counts are appropriate for intersections that clear the traffic queues, indicating the peak hour factor or providing each fifteen minute volume for the peak hour(s). Queue counts, required for already congested intersections, would be recorded by lane for each phase of the signal cycle.

k. Recommendations and conclusions of the report with the proposed mitigation measures listed in priority order. The estimated total cost of each measure must be provided, with full data documenting development of the estimate. Mitigation measures reflecting impacts on a State Highway or adjacent community will require evidence of coordination with Caltrans and all other appropriate agencies.

l. Traffic signal warrants shall be established using both existing traffic at the intersection and then adding the project traffic. The current Caltrans warrant procedures in effect at the time of the study will be used, including a minimum of 10 hours of actual counts that include the 8 highest hours at the intersection. Intersections with arterials carrying significant peak hour volumes will require the necessary analysis for the Interruption of Traffic warrant as well as the Volume Warrants. The counts shall be made simultaneously on all approaches.

m. Traffic counts, calculations, other basic information, and supporting data shall be included in an Appendix to the report or provided as a separate Technical Appendix. All actual traffic count data will be provided to the County in a useful summary form, digital and paper format, as specified by the County.

3. Analysis Methodology

The build-up method of traffic analysis will be followed, showing:

a. Existing traffic;

b. Existing traffic and normal background growth (rate and time to be agreed to by County staff);

c. Existing traffic and normal background growth (see C. 3. b. above) and project build-out traffic;

d. Existing traffic and normal background growth (see C. 3. b. above) and new development traffic (see C. 3. b. above);

e. Existing traffic and 5 year normal background growth (see b. above) and new development (see b. above) and project build out, if longer than 5 years to build out of project.

If the study period to build-out is longer than 5 years, the future projection time period appropriate for a new development will be determined by the County staff. Significant projects may require a future projection time period of 20 years or General Plan build out. The future year is currently year 2030 as of the date of adopting this Policy. State Highway traffic projections will usually be carried to the year 2030 or to Caltrans current policy and procedures.

4. Format of Reports

In general, the following should be clearly presented in the report, along with other report materials:

a. Identification of the project name, location and reference to County identification or tracking numbers.

b. Identification of the Company and the registered "Traffic Engineer" and/or registered "Civil Engineer" taking responsibility for the report.

c. Identification of existing traffic conditions, the existing transportation system, and the existing level of traffic service.

d. Volumes of traffic to be generated by development, by type: ADT, a.m. peak hour, p.m. peak hour, pedestrian, vehicular, percent and type of trucks.

e. Traffic distribution by generator type.

f. Projected background growth traffic and combined total of growth plus development traffic with level of service list for roads and intersections. (See Analysis Methodology).

g. Identified impacts on the transportation system from any source. Identify system segments and/or intersections which degrade to a level of service below level of service "B". This is for identification of changing conditions and not for mitigation.

h. Mitigation measures recommended to address impacts of the developments and development plus growth traffic. Larger projects may have to examine the time period to General Plan build-out or later for CMP reports.

i. Transportation Demand Management measures to be carried out in compliance with Air Quality requirements or with any County ordinance adopted for these purposes.

D. REEVALUATION OF SIGNIFICANT PROJECTS

If, in the opinion of the Public Works Staff and/or the Planning Staff, the potential impacts or the proposed mitigation measures are not adequately addressed, additional study and analysis shall be required before the project will be approved. The contact person for these additional requirements will be the Director of Public Works or his/her designee.

Examples of inadequately addressed impacts or mitigation measures would be:

a. Inadequately identified feasibility of proposed mitigation measures. The adequate identification of mitigation measures will be required for measures that entail the acquisition of additional right-of-way or relocation of existing structures, or are contingent upon actions to be taken by an entity other than the project applicant, e.g. the County, another project, Caltrans, etc.

b. On a project with a high employment base, a Transportation Management Plan (TMP) will be required to comply with the current Air Quality Management regulations.

c. Traffic reports supporting an EIS or an EIR will be required to 1) recommend feasible monitoring mechanisms and frequencies for the mitigation measures once the construction and operating phases of the project are started and 2) identify the means of financing the monitoring mechanisms, e.g. ongoing County program, developer funded program, etc.

d. On larger, significant development projects, additional analysis for pedestrian and bicycle circulation and for transit service will be required. In the instance of a high employment base, an overall Transportation System Management (TSM) Plan may be required if mitigation measures do not achieve level of traffic service "C" (LOS "C").

e. Intersection improvements (additional lanes or revised geometrics, etc.) or road widening (right turn lanes, acceleration-deceleration lanes, etc.) will be required to be identified on figures showing the following:

1) Existing and committed travel lanes (with dimensions);

2) Intersection approach geometrics, including existing and committed improvements and dimensions for all intersection approaches:

3) Locations of through streets (roads) and recommended stop signs in accordance with the California Vehicle Code and County Policies and Ordinances.

f. The study area for the project will be expected to encompass an adequate surrounding area to ensure that all impacts are identified to a sufficient extent that any mitigation measures, regardless of importance are shown, e.g. stop signs, yield signs, etc.

APPENDIX A

SAMPLE DEVELOPMENT PROJECT TRAFFIC IMPACT REPORT OUTLINE

A. INTRODUCTION
1. Project location, with vicinity and location maps.
2. Project Description.

B. EXISTING CONDITIONS
1. Identify existing road network, with a map.
2. Identify existing traffic volumes, with diagrams.
3. Identify existing traffic controls and intersections with signals warranted.
4. Describe current general plan of roads.

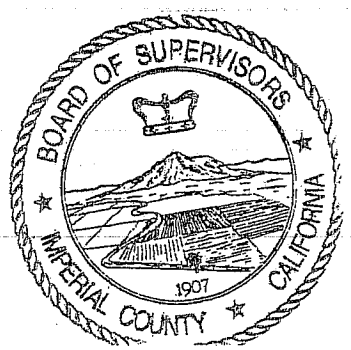
C. TRAFFIC FORECAST
1. Identify related projects.
2. Estimated traffic growth rates.
3. Estimated project trip generation.
4. Estimated project trip distribution.
5. Assign project traffic to roadway networks.

D. TRAFFIC IMPACTS
1. Identify major intersections.
2. Identify roadway capacities.
3. Identify impacts of off-site improvements.
4. Calculate HCM service levels and signal warrants using existing plus project by phases, existing plus project plus growth factors for a 20 year build-out, including AM and PM peak hours.

E. MITIGATION MEASURES
1. Recommended roadway improvements.
2. Suggested general plan improvements.
3. Signal locations and signing and striping proposals and locations.

F. CONCLUSION

Note: The above outline is not all inclusive. It is an outline for a sample report of normal complexity, without a TDM element.



Approved and/or authorized by the Board of Supervisors
of the County of Imperial
Date 08-07-07 Minute Order No. 37
SYLVIA BERMUDEZ
Clerk of the Board of Supervisors
By: [signature] 08-13-07
Deputy

ATTACHMENT B

Campo Verde Solar Project 2012 Traffic Study Excerpts

Campo Verde Solar

County of Imperial (South of I-8 and East of Drew Road)

February 6, 2012

Draft Traffic Impact Analysis

Prepared for:

ENValue LLC
3225 Country Club Pkwy
Castle Rock, CO 80108

Prepared by Justin Rasas (RCE 60690), a principal with:

LOS Engineering, Inc.
11622 El Camino Real, Suite 100, San Diego, CA 92130
Phone 619-890-1253, Fax 619-374-7247

Job #1111

4.0 Project Description

The project is a solar photovoltaic facility on approximately 1,990 acres of private lands that have been used for agriculture. The construction schedule is estimated between 12 and 24 months. The applicant anticipates construction to start in the second quarter of 2012 following a Conditional Use Permit (CUP) approval. A detailed project construction schedule is included in **Appendix J**.

4.1 Project Trip Generation

The project trip generation consists of a construction phase and operations phase. The construction phase will have the highest traffic intensity followed by an operations phase with significantly fewer vehicle trips. This section describes the construction and operations trip generation.

4.1.1 Construction Trip Generation

Construction of the project includes site preparation, foundation construction, erection of major equipment and structures, installation of electrical systems, control systems, and start-up/testing. These construction activities are expected to require approximately 12 to 24 months. According to the applicant, the construction workforce is expected to reach a peak during month number seven (7) anticipated to occur during the 1st quarter of 2013 with a peak of up to 325 daily vehicles for construction workers and 50 daily truck deliveries (details in Appendix J). The number of workers before and after the peak month will be less. Work is anticipated to start at 6am and conclude at 6 pm Monday through Friday. The peak construction traffic (during month number 7) is calculated at 950 ADT with 349 AM peak hour trips (337 inbound and 12 outbound) and 349 PM peak hour trips (12 inbound and 337 outbound) as shown in **Table 8**.

TABLE 8: PROJECT TRIP GENERATION SUMMARY

Proposed Construction Related Traffic	Daily Vehicles	ADT with PCE[2]	AM (6AM)		PM (6PM)	
			IN	OUT	IN	OUT
Peak Construction Workers[1]	325	650	325	0	0	325
Equipment Deliveries and Construction Trucks (with PCE)[2]	50	300	12	12	12	12
Total Traffic During Peak Construction Period	**375**	**950**	**337**	**12**	**12**	**337**

ADT: Average Daily Trips. 1) Number of construction workers and construction trucks provided by applicant. 2) Passenger Car Equivalent (PCE) factor of 3 applied to each truck, thus 50 daily trucks equals 300 ADT in one 1 day while peak hour has about 4 trucks x 3 PCE to equal 12 PCE peak hour trips.

4.1.2 Project Operations and Maintenance Trip Generation

During operations and maintenance, the project will primarily operate during daylight hours and will require (on average) less than 10 fulltime personnel for operations and maintenance. Operations personnel include employees running the facility, security, and any other work associated with the operations. Maintenance personnel include employees addressing maintenance on a daily basis. On average, the operations and maintenance trip generation is

7.0 Year 2013 + Project Conditions

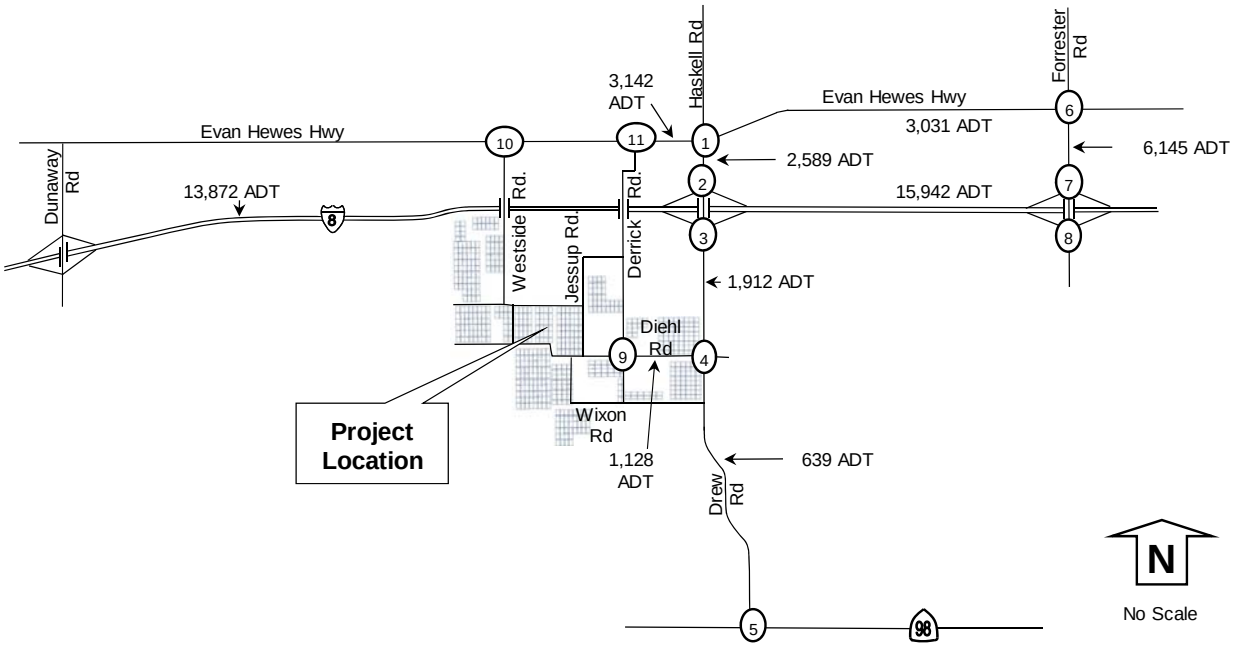
This section documents the addition of construction traffic onto year 2013 conditions for the anticipated construction peak (month 7). Year 2013 plus project traffic volumes are shown in **Figure 14**. Intersection, segment, and freeway LOS are shown in **Tables 17, 18 and 19**. Intersection LOS calculations are included in **Appendix N**.

TABLE 17: YEAR 2013 WITHOUT AND WITH PROJECT INTERSECTION LOS

Intersection &	Movement	Peak	Year 2013		Year 2013 + Project			
(Control)[1]		Hour	Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delta[4]	Sig[5]
1) Drew Road at	All	AM	7.6	A	7.7	A	0.1	No
Evan Hewes Hwy (U)	All	PM	7.6	A	7.6	A	0.0	No
2) Drew Road at	WB LT	AM	8.7	A	10.1	B	1.4	No
I-8 WB Ramp (U)	WB LT	PM	8.7	A	9.6	A	0.9	No
3) Drew Road at	EB LT	AM	10.1	B	10.1	B	0.0	No
I-8 EB Ramp (U)	EB LT	PM	9.3	A	10.0	A	0.7	No
4) Drew Road at	EB LTR	AM	8.6	A	10.5	B	1.9	No
Diehl Road (U)	EB LTR	PM	8.6	A	10.8	B	2.2	No
5) Drew Road at	SB LR	AM	8.6	A	8.7	A	0.1	No
SR-98 (U)	SB LR	PM	9.3	A	9.7	A	0.4	No
6) Forrester Road at	All	AM	17.7	B	17.9	B	0.2	No
Evan Hewes Hwy (S)	All	PM	23.8	C	23.9	C	0.1	No
7) Forrester Road at	WB LT	AM	9.9	A	9.9	A	0.0	No
I-8 WB Ramp (U)	WB LT	PM	9.9	A	10.4	B	0.5	No
8) Forrester Road at	EB LT	AM	11.0	B	11.1	B	0.1	No
I-8 EB Ramp (U)	EB LT	PM	18.0	C	21.8	C	3.8	No
9) Derrick Road at	SB LTR	AM	8.7	A	11.0	B	2.3	No
Diehl Road (U)	SB LTR	PM	8.7	A	10.9	B	2.2	No
10) Westside Road at	NB LR	AM	9.1	A	9.2	A	0.1	No
Evan Hewes Hwy (U)	NB LR	PM	9.2	A	9.5	A	0.3	No
11) Derrick Road at	NB LR	AM	8.8	A	8.8	A	0.0	No
Evan Hewes Hwy (U)	NB LR	PM	9.4	A	9.5	A	0.1	No

Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.
3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) Significant Impact? (yes or no).

Figure 14: Year 2013 + Project Volumes



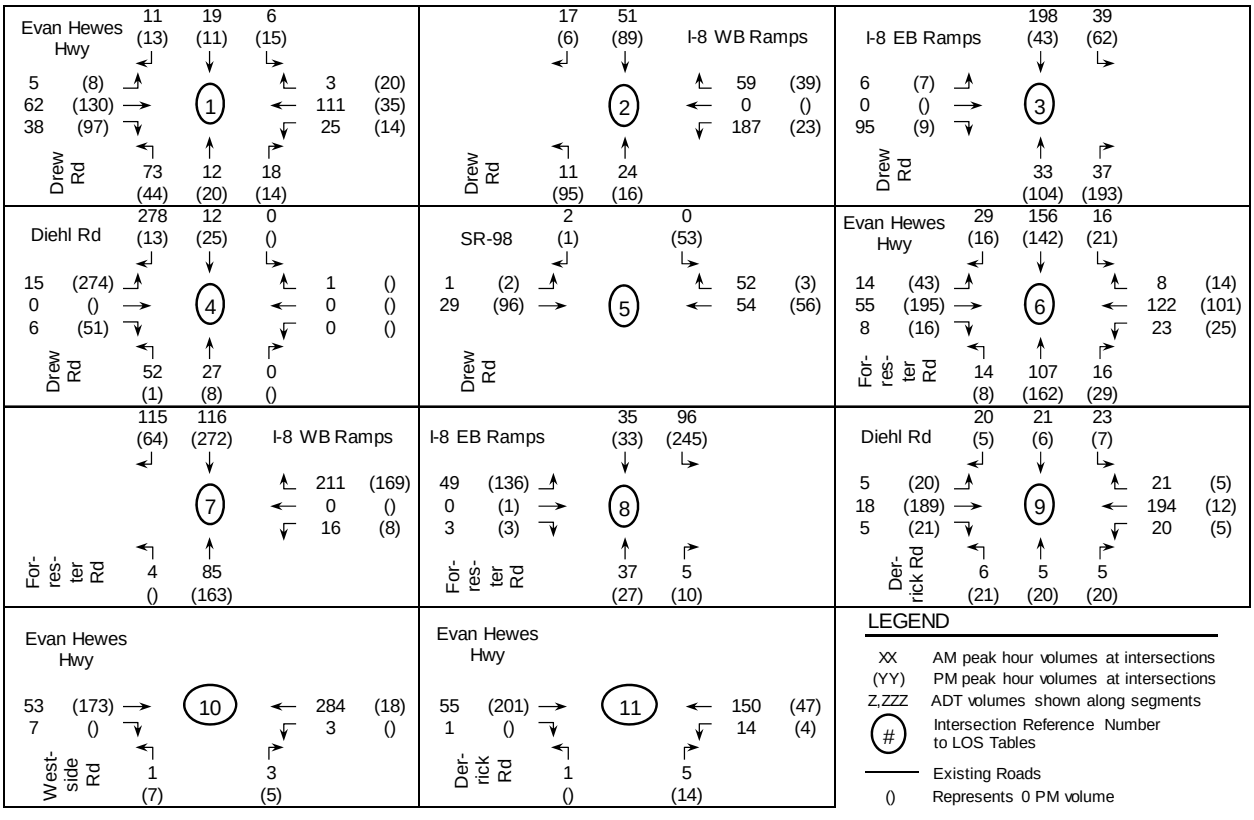


TABLE 18: YEAR 2013 WITHOUT AND WITH PROJECT SEGMENT LOS

Segment	Classification (as built)	Year 2013				Project	Year 2013 + Project					
		Daily Volume	LOS C Capacity	V/C	LOS	Daily Volume	Daily Volume	LOS C Capacity	V/C	LOS	Change in V/C	Direct Impact?
Diehl Road												
Derrick Road to Drew Road	Minor Collector (2U)	210	7,100	0.030	A	918	1,128	7,100	0.159	A	0.129	No
Drew Road												
Evan Hewes Highway to I-8	Prime Arterial (2U)	2,582	7,100	0.364	B	7	2,589	7,100	0.365	B	0.001	No
I-8 to Diehl Road	Prime Arterial (2U)	1,092	7,100	0.154	A	820	1,912	7,100	0.269	B	0.115	No
Diehl Road to SR-98	Prime Arterial (2U)	541	7,100	0.076	A	98	639	7,100	0.090	A	0.014	No
Evan Hewes Highway												
Derrick Road to Drew Road	Prime Arterial (2U)	3,122	7,100	0.440	B	20	3,142	7,100	0.443	B	0.003	No
Drew Road to Forrester Road	Prime Arterial (2U)	3,005	7,100	0.423	B	26	3,031	7,100	0.427	B	0.004	No
Forrester Road												
Evan Hewes Highway to I-8	Prime Arterial (2U)	5,867	7,100	0.826	C	278	6,145	7,100	0.866	C	0.039	No

Notes: Classification based on 1/29/08 CIrculation and Scenic Highways Element. 2U= 2 lane undivided roadway.Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio. Direct Impact? = identifies if a project impact is calculated (yes or no).

TABLE 19: YEAR 2013 WITHOUT AND WITH PROJECT FREEWAY LOS

Freeway	**I-8**				**I-8**			
Segment	Dunaway Rd to Drew Rd				Drew Rd to Forrester Rd			
Year 2013 (Forecasted from 2010)								
ADT	13,600				15,400			
Peak Hour	A M		P M		A M		P M	
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity (1)	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor (2)	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor (3)	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor (4)	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	457	1,155	658	1,375	518	1,307	745	1,557
Volume to Capacity	0.097	0.246	0.140	0.292	0.110	0.278	0.159	0.331
LOS	A	A	A	A	A	A	A	B
Project Pk Hr Vol	95	4	4	95	8	174	174	8
Year 2013 + Project								
Peak Hour Volume	552	1,159	662	1,470	526	1,481	919	1,565
Volume to Capacity	0.117	0.247	0.141	0.313	0.112	0.315	0.196	0.333
LOS	A	A	A	B	A	B	A	B
Increase in V/C	0.020	0.001	0.001	0.020	0.002	0.037	0.037	0.002
Impact?	None	None	None	None	None	None	None	None

Notes: (1) Capacity of 2,350 passenger cars per hour per lane (pcphpl) from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002. (2) Latest K factor (percentage of the AADT in both directions during the peak hour) from Caltrans (based on 2007 report). (3) Latest D factor (percentage of traffic in the peak direction during the peak hour) from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2007 report).

Under year 2013 + project conditions, the study intersections and roadways were calculated to operate at LOS C or better. No impacts were calculated.

TRAFFIC IMPACT ANALYSIS

Campo Verde Solar Facility Battery Storage System
County of Imperial (South of I-8 and West of Drew Road)
September 13, 2016

Draft Traffic Impact Analysis

Prepared for:

Ericsson-Grant, Inc.
418 Parkwood Lane, Suite 200
Encinitas, CA 92024

Prepared by Justin Rasas (RCE 60690), a principal with:

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Job #1618

Table of Contents

List of Figures

List of Tables

Appendices

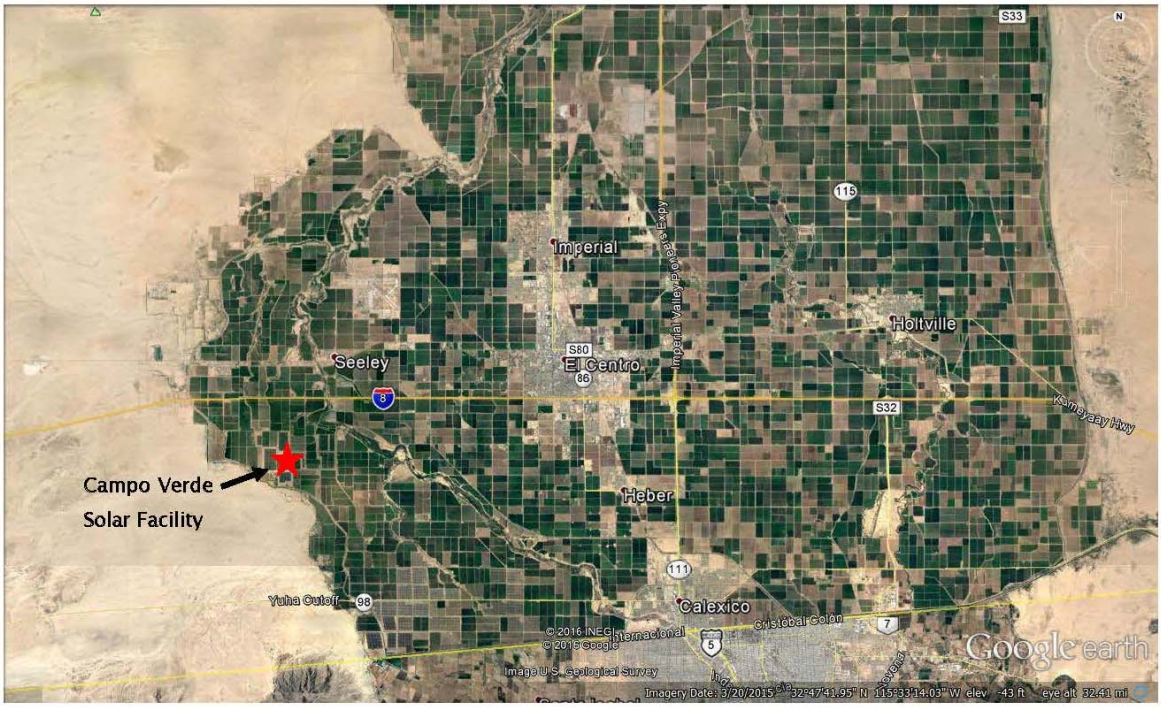
1.0 Introduction

The purpose of this study is to determine and analyze potential traffic impacts for the proposed Campo Verde Solar Facility Battery Energy Storage System is to be located within the existing Campo Verde Solar Facility located approximately 7 miles southwest of the community of El Centro, California as shown in **Figure 1**. The proposed Battery Energy Storage System will be constructed next to the Campo Verde Substation located west of Liebert Road, south of Wixom Road and north of Mandrapa Road as shown in **Figure 2**. The project location west of the existing substation is shown in **Figure 3**. The proposed Battery Energy Storage System will incorporate traditional lithium-ion batteries. The Project is proposed to be constructed in two phases, with Phase 1 proposed to begin construction in late 2016 is designed to store up to 5 megawatt-hours of energy and Phase 2 expected to begin construction in 2018 will include up to 100 megawatt-hours of energy. The project site plan is shown in **Figure 4**.

This report describes the existing roadway network in the vicinity of the project site. It includes a review of the existing and proposed traffic activities for weekday peak AM and PM periods and daily traffic conditions. The format of this study includes the following chapters:

1.0 Introduction
2.0 Study Methodology
3.0 Existing Year 2016 Conditions
4.0 Project Description
5.0 Existing Year 2016 + Project (Phase 1) Conditions
6.0 Cumulative Projects (New Development)
7.0 Existing Year 2016 + Project (Phase 1) + Cumulative Conditions
8.0 Near-Term Year 2018 Conditions
9.0 Near-Term Year 2018 + Project (Phase 2) Conditions
10.0 Near-Term Year 2018 + Project (Phase 2) + Cumulative Conditions
11.0 Decommissioning
12.0 Conclusions
13.0 References

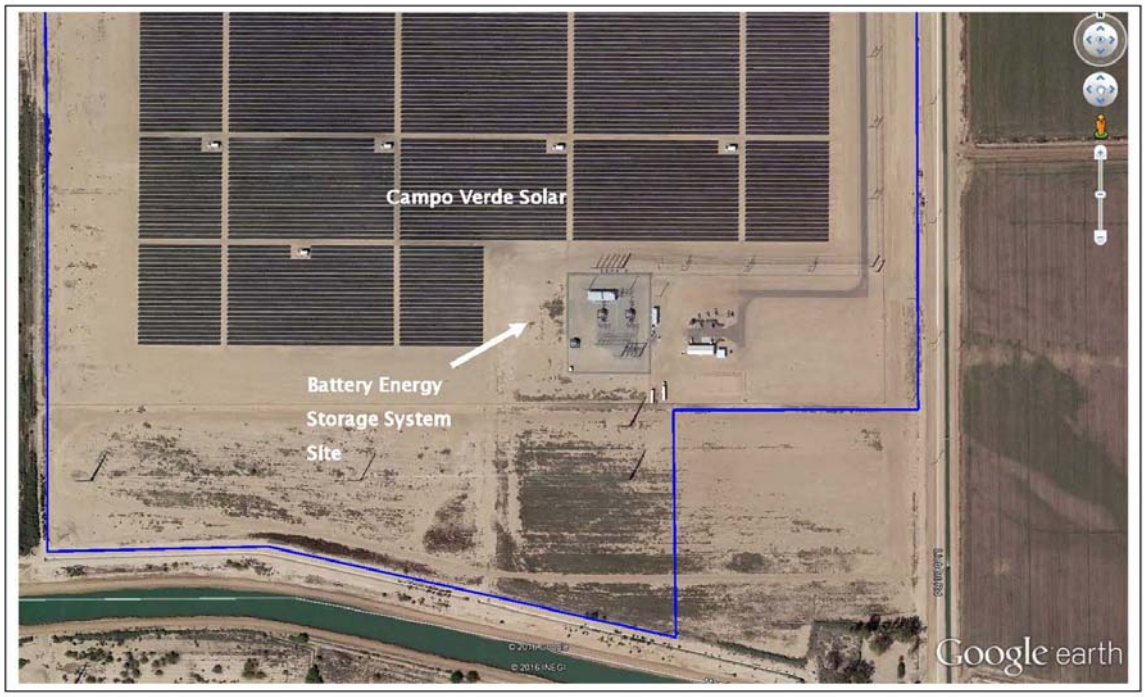
Figure 1: Project Regional Location



Source: Google Earth, EGI

REGIONAL LOCATION MAP

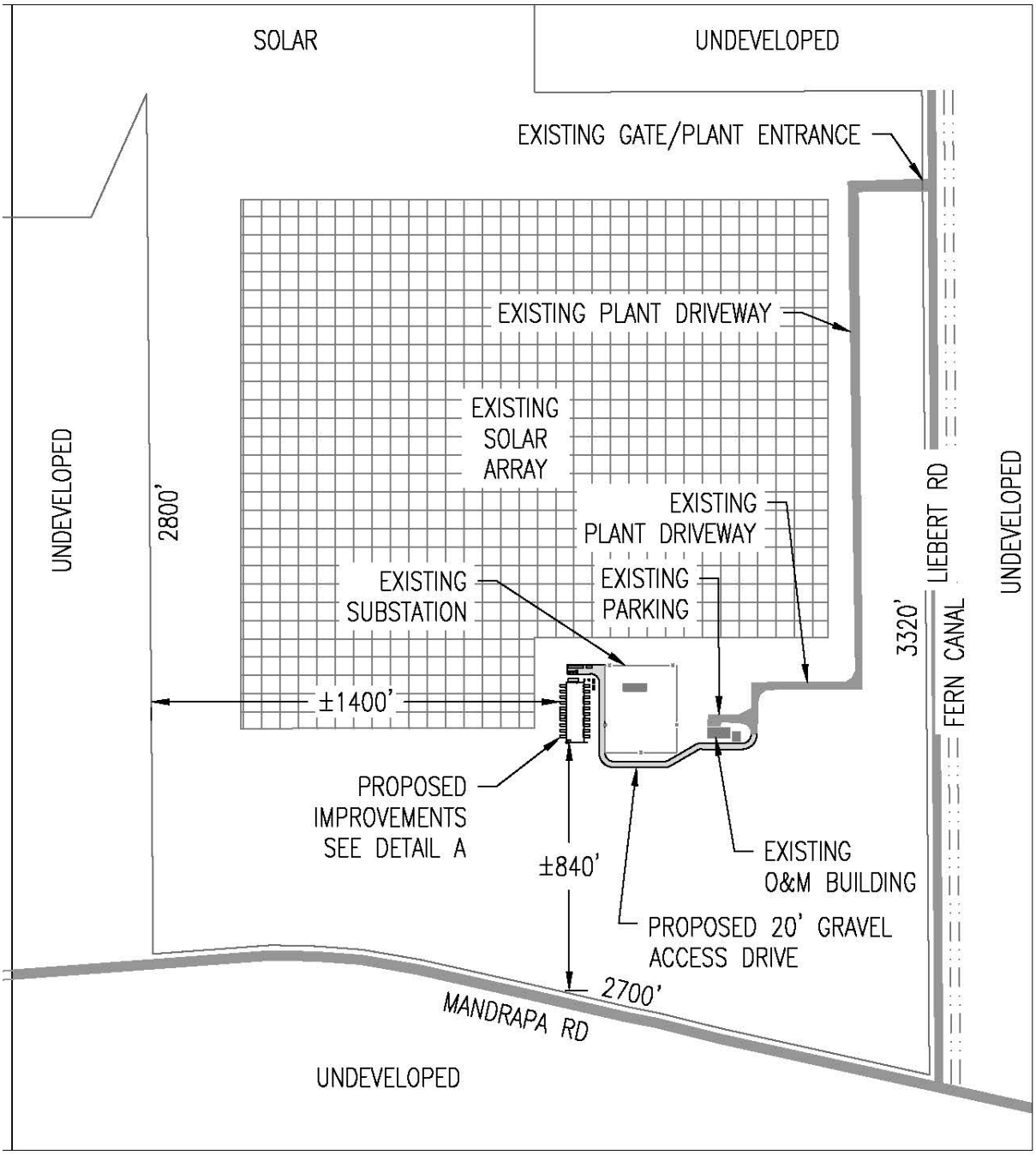
Figure 2: Project Location within Campo Verde Solar Facility



Source: Google Earth, EGI 2016.

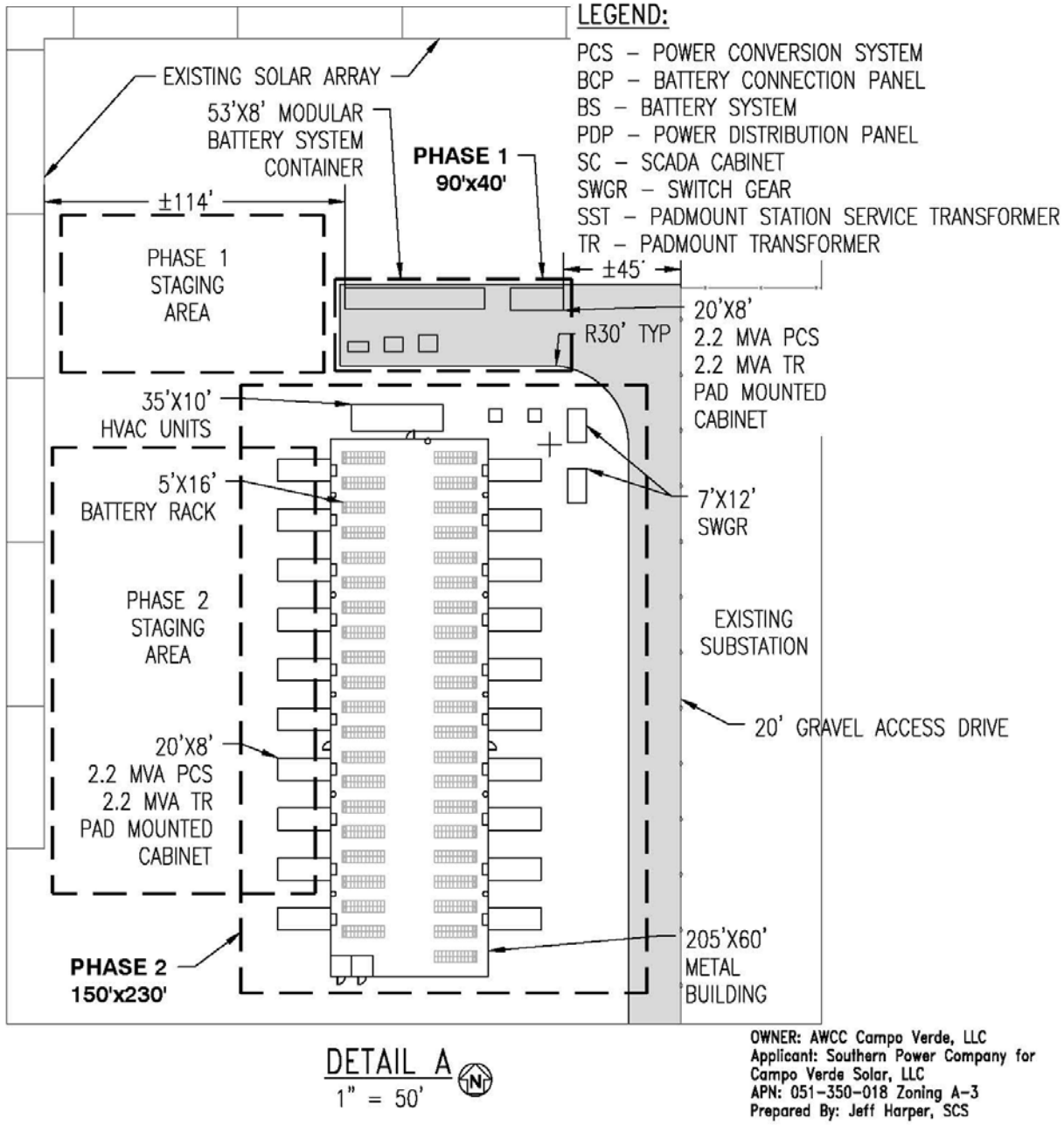
CAMPO VERDE SOLAR BATTERY ENERGY SYSTEM SITE

Figure 3: Project Location West of Existing Substation



Source: Southern Company Generation Engineering and Construction Services

Figure 4: Project Site Plan



Source: Southern Company Generation Engineering and Construction Services

2.0 Traffic Analysis Methodology and Significance Criteria

The parameters by which this traffic study was prepared included the determination of what intersections and roadways are to be analyzed, the scenarios to be analyzed and the methods required for analysis. The criteria for each of these parameters are included herein.

2.1 Study Area Criteria

The County of Imperial Department of Public Works *Traffic Study and Report Policy* dated March 12, 2007, revised June 29, 2007 and approved by the Board of Supervisors of the County of Imperial on August 7, 2007 states on page 14 "The study area for the project will be expected to encompass an adequate surrounding area to ensure that all impacts are identified to a sufficient extent that any mitigation measures, regardless of importance are shown, e.g. stop signs, yield signs, etc." The project study area was based on the anticipated construction route where the project traffic would concentrate as it approached Drew Rd at Wixom Road. Therefore, the study area included the intersection of Drew Road/Wixom Road (un-signalized) along with the following three segments:

1) Drew Road from Diehl Rd to Wixon Rd
2) Drew Road from Wixom Road to Lyons Rd
3) Wixom Road from Liebert Rd to Drew Road

2.2 Scenario Criteria

The number of scenarios to be analyzed is based on the methodology outlined in the County of Imperial Department of Public Works *Traffic Study and Report Policy* dated March 12, 2007, revised June 29, 2007 and approved by the Board of Supervisors of the County of Imperial on August 7, 2007. Excerpts from the *Traffic Study and Report Policy* showing the scenario criteria are included in **Appendix A**. Based on the aforementioned methodology source, the following scenarios were analyzed:

1) Existing 2016 Conditions
2) Existing 2016 + Project (Phase 1) Conditions
3) Existing 2016 + Project (Phase 1) + Cumulative Conditions
4) Near-Term 2018
5) Near-Term 2018 + Project (Phase 2) Conditions
6) Near-Term 2018 + Project (Phase 2) + Cumulative Conditions
7) Decommissioning Year 2038 + Project Conditions

2.3 Traffic Analysis Criteria

In the traffic analyses prepared for this study, the *2000 Highway Capacity Manual* (HCM) operations analysis using Level of Service (LOS) evaluation criteria were employed. The operating conditions of the study intersections are measured using the HCM LOS designations ranging from

A through F. LOS A represents the best operating condition and LOS F denotes the worst operating condition. The individual LOS criteria for each roadway component are described below.

2.3.1 Intersections

The study intersections were analyzed using the **operational analysis** method outlined in the 2000 HCM. This process defines LOS in terms of **average control delay** (measured in seconds) per vehicle. Intersection LOS was calculated using the Synchro 8.0 (Trafficware Ltd.) computer software program. The HCM LOS for the range of delay by seconds for un-signalized intersections is described in **Table 1**.

TABLE 1: UN-SIGNALIZED INTERSECTION LEVEL OF SERVICE (HCM 2000)

Level of Service	Un-Signalized Average Control Delay (seconds/vehicle)
A	0-10
B	> 10-15
C	> 15-25
D	> 25-35
E	> 35-50
F	> 50

Source: Highway Capacity Manual 2000.

2.3.2 Roadway Segments

The roadway segments were analyzed based on the functional classification of the roadway using the Imperial County Standard Street Classification capacity lookup table (copy included in **Appendix B**). The roadway segment capacity and LOS standards used to analyze roadway segments are summarized in **Table 2**.

TABLE 2: ROADWAY SEGMENT DAILY CAPACITY AND LOS (IMPERIAL COUNTY)

Circulation Element Road Classification	CROSS SECTION	LOS A	LOS B	LOS C	LOS D	LOS E
Expressway	154/210	<30,000	<42,000	<60,000	<70,000	<80,000
Prime Arterial	106/136	<22,200	<37,000	<44,600	<50,000	<57,000
Minor Arterial	82/102	<14,800	<24,700	<29,600	<33,400	<37,000
Major Collector (Collector)	64/84	<13,700	<22,800	<27,400	<30,800	<34,200
Minor Collector (Local Collector)	40/70	<1,900	<4,100	<7,100	<10,900	<16,200
Local County (Residential)	40/60	*	*	<1,500	*	*
Local County (Residential Cul-de-Sac or Loop Street)	40/60	*	*	<200	*	*
Major Industrial Collector – (Industrial)	76/96	<5,000	<10,000	<14,000	<17,000	<20,000
Industrial Local	44/64	<2,500	<5,000	<7,000	<8,500	<10,000

Source: Imperial County Department of Planning & Development Services *Circulation and Scenic Highways Element* January 29, 2008. Notes: *Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

2.4 Significance Criteria

The significance criteria for traffic impacts are based on the Imperial County Planning & Development Services Department level of service standard as outlined on page 55 of the *Circulation and Scenic Highways Element* dated January 29, 2008, which states "The County's goal for an acceptable traffic service standard on an ADT basis and during AM and PM peak periods for all County-Maintained Roads shall be LOS C for all street segment links and intersections." An excerpt from the *Circulation and Scenic Highways Element* is included in Appendix B. The current practice of determining direct or cumulative impacts is defined by the significance criteria outlined in **Table 3**, which was obtained from several EIRs for projects located in Imperial County. Copies of traffic significance criteria from other EIRs are included in **Appendix C**.

TABLE 3: SIGNIFICANCE CRITERIA

Existing	Existing + Project	Existing + Project + Cumulative Projects	Impact Type
	Intersections		
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS D or worse	NA	Direct
LOS D	LOS D and adds 2.0 seconds or more of delay	LOS D or worse	Cumulative
LOS D	LOS E or F	NA	Direct
LOS E	LOS F	NA	Direct
LOS F	LOS F and delay increases by ≥ 10.0 seconds	LOS F	Direct
Any LOS	Project does not degrade LOS and adds < 2.0 seconds of delay	Any LOS	None
Any LOS	Project does not degrade LOS but adds 2.0 to 9.9 seconds of delay	LOS E or worse	Cumulative
	Segments		
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS C or better and v/c > 0.02	LOS D or worse	Cumulative
LOS C or better	LOS D or worse	NA	Direct (1)
LOS D	LOS D and v/c > 0.02	LOS D or worse	Cumulative
LOS D	LOS E or F	NA	Direct
LOS E	LOS F	NA	Direct
LOS F	LOS F and v/c increases by >0.09	LOS F	Direct
Any LOS	LOS E or worse & v/c 0.02 to 0.09	LOS E or worse	Cumulative
Any LOS	LOS E or worse and v/c < 0.02	Any LOS	None

Notes: LOS: Level of Service. (1) Exception: post-project segment operation is LOS D and intersections along segment are LOS D or better resulting in no significant impact. NA: Not Applicable.

2.5 Study Limitations

The findings and recommendations of this report were prepared in accordance with generally accepted professional traffic and transportation engineering principles and practice. No other warranty, express or implied is made.

3.0 Existing 2016 Conditions

This section describes the study area street system, peak hour intersection volumes, daily roadway volumes, and existing LOS under year 2016 conditions.

3.1 Existing Street System

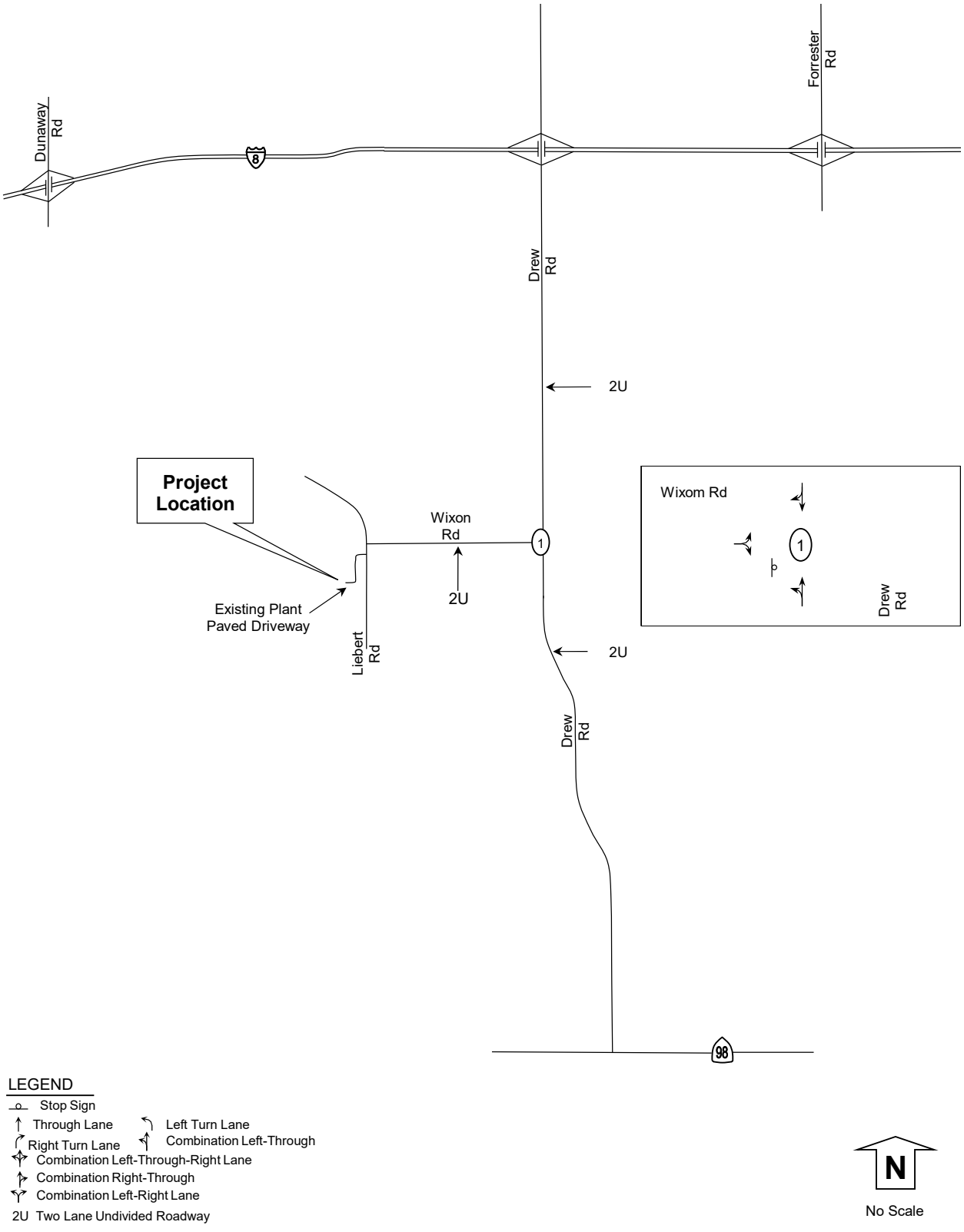
The existing roadway system and classifications are described below. These are based on the Imperial County Planning & Development Services Department *Circulation and Scenic Highways Element,* January 29, 2008 – excerpts included in Appendix C.

Drew Road (S29) between I-8 and SR-98 has a year 2003 classification of PRIME ARTERIAL in the Imperial County *Circulation and Scenic Highways Element*. This paved roadway is currently constructed as a paved 2 lane un-divided roadway.

Wixom Road between Liebert Road and Drew Road has a year 2003 classification of MINOR COLLECTOR in the Imperial County *Circulation and Scenic Highways Element*. This roadway is currently constructed as a paved 2 lane un-divided roadway.

The existing roadway conditions are shown in **Figure 5**.

Figure 5: Existing 2016 Roadway Conditions



3.2 Existing Traffic Volumes and LOS Analyses

Existing AM and PM peak hour intersection volumes (with count dates) were collected for this study:

1) Drew Road/Wixom Road (Wednesday 8/31/2016)

Daily traffic volumes (with count dates) were obtained or collected for the following segments:

1) Drew Road from Diehl Rd to Wixom Rd (Wednesday 8/31/2016)
2) Drew Road from Wixom Road to Lyons Rd (Wednesday 8/31/2016)
3) Wixom Road from Liebert Rd to Drew Road (Wednesday 8/31/2016)

Existing AM, PM, and daily volumes are shown on **Figures 6** with count data included in **Appendix D**. The weekday intersection and segment LOS are shown in **Tables 4 and 5**. Intersections LOS calculations are included in **Appendix E**.

TABLE 4: EXISTING 2016 INTERSECTION LOS

Intersection & (Control)[1]	Movement	Peak Hour	Existing 2016 Delay[2]	Existing 2016 LOS[3]
1) Drew Road at	EB LR	AM	8.7	A
Wixom Rd (U)	EB LR	PM	8.6	A

Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.
3) LOS: Level of Service

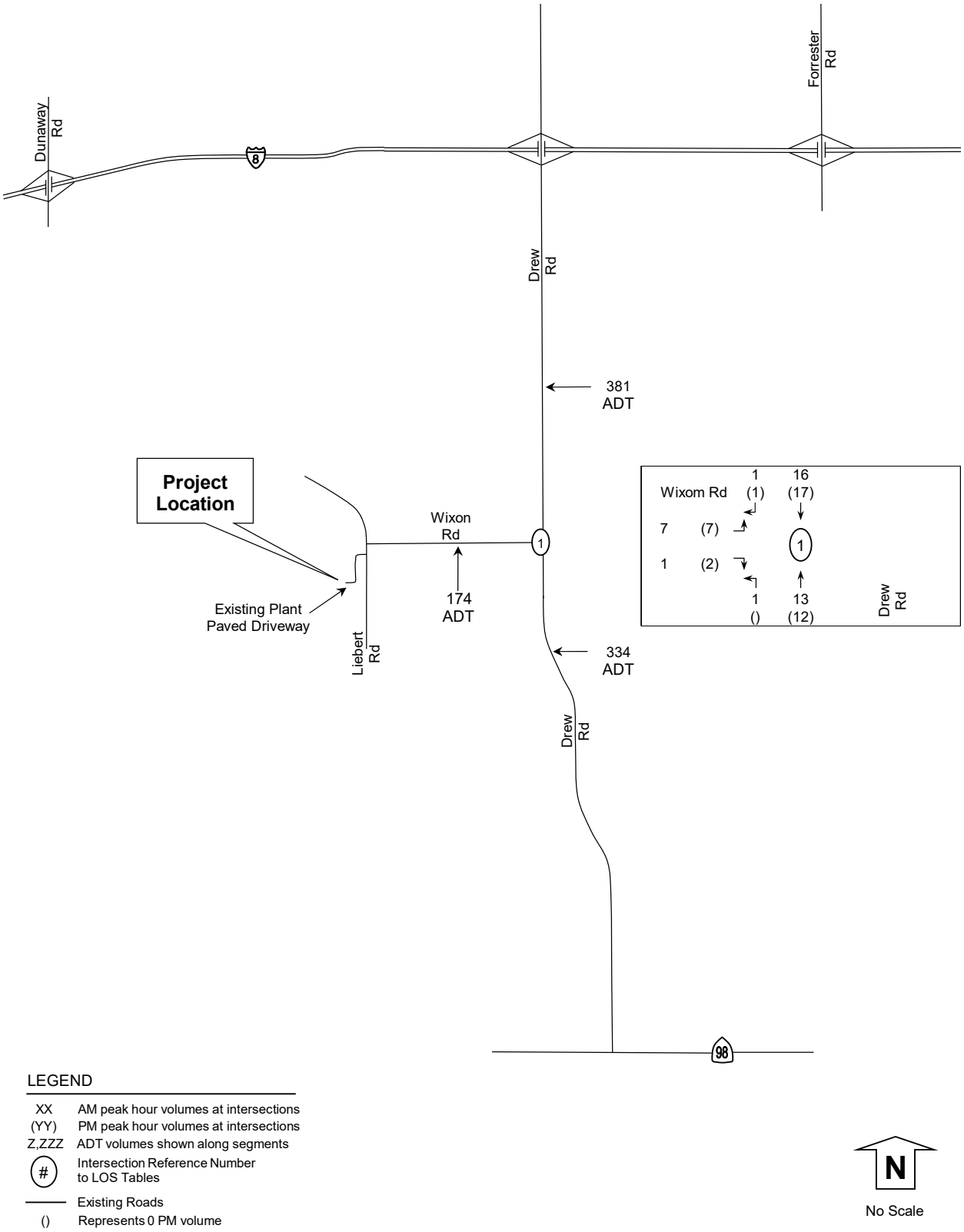
TABLE 5: EXISTING 2016 SEGMENT LOS

Segment	Classification (as built)	Existing 2016 Daily Volume	# of lanes	LOS C Capacity	V/C	LOS
Drew Road						
North of Wixom Road	Prime Arterial (2U)	381	2	7,100	0.05	A
South of Wixom Road	Prime Arterial (2U)	334	2	7,100	0.05	A
Wixom Road						
From Liebert Rd to Drew Rd	Minor Collector (2U)	174	2	7,100	0.02	A

Notes: Classification based on 1/29/08 CIrculation and Scenic Highways Element. 2U= 2 lane undivided roadway. Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio.

Under existing 2016 conditions, the study intersection and roadways were calculated to operate at LOS A.

Figure 6: Existing 2016 Volumes



4.0 Project Description

The proposed Battery Energy Storage System will incorporate traditional lithium-ion batteries. The Project is proposed to be constructed in two phases, with Phase 1 designed to store up to 5 megawatt-hours of energy and Phase 2 up to 100 megawatt-hours of energy. Construction for Phase 1 is proposed to start in late 2016 and construction for Phase 2 is expected to begin in 2018.

4.1 Project Phase 1 Construction Trip Generation

Phase 1 construction (planned for late 2016) will occur over a period of approximately 66 days to install the foundations and connect the components to the existing controls system and project substation. Approximately 12 workers will be on site for 6 to 8 weeks generally from sunrise to 2:30 PM. In addition to the construction workers, three technicians will work an additional 3 to 6 weeks to commission and debug the system integration. Work hours for three technicians will be approximately from 8 PM to 5 AM to avoid interference with the facility when solar power is being generated. Phase 1 deliveries will occur throughout the construction period; however, peak deliveries are anticipated to occur in Week 3 with approximately 4 truck deliveries in the morning and 1 truck delivery in the afternoon. A water truck is anticipated to deliver water with an average of less than one truck per day; however, to be conservative one daily water truck is included in the trip generation. For trip generation purposes, truck trips are converted to a Passenger Car Equivalent (PCE) by multiplying each truck by a factor of 3 due to size and speed constraints. For Phase 1 the peak construction traffic is calculated at 66 ADT with 39 morning peak hour trips (27 inbound and 12 outbound) and 21 afternoon peak hour trips (3 inbound and 18 outbound) as shown in **Table 6**.

TABLE 6: PHASE 1 PROJECT TRIP GENERATION (PASSENGER CAR EQUIVALENT)

Phase 1 Construction Related Traffic	Daily Vehicles	ADT with PCE[2]	Morning Peak		Afternoon Peak	
			IN	OUT	IN	OUT
Daytime Construction Workers (12 with no PCE)[1]	12	24	12	0	0	12
Nighttime Technicians 8 pm to 5 am (3 with no PCE)[1]	3	6	0	0	0	0
Equipment Deliveries and Construction Trucks (with PCE of 3)[2]	5	30	12	12	3	3
Water Truck (with PCE of 3)[2]	1	6	3	0	0	3
Phase 1 Total Traffic During Peak Construction Period	21	**66**	**27**	**12**	**3**	**18**

ADT: Average Daily Trips. PCE: Passenger Car Equivalent factor of 3 applied to delivery and water trucks to provide an equivalent number of passenger cars. 1) Number of construction workers and construction trucks provided by applicant. 2) Passenger Car Equivalent (PCE) factor of 3 applied to each truck.

4.2 Project Phase 2 Construction Trip Generation

Phase 2 construction (expected in 2018) will occur over a period of approximately 160 days and will include site preparation; civil and foundation work (conduit, equipment pads, concrete foundations); building works (form and pour slab) framing, sheathing, roofing, mechanical, lighting and electrical, fire suppression); data support installation; batteries (install battery racks, install batteries in racks); electrical works (pull and test cable, set and test equipment, point of

interconnection work); certificate of occupancy; and commissioning. Approximately 30 workers will be on site generally from sunrise to 2:30 PM. In addition to the construction workers, three technicians will work an additional 3 to 6 weeks to commission and debug the system integration. Work hours for three technicians will be approximately from 8 PM to 5 AM to avoid interference with the facility when solar power is being generated. Phase 2 deliveries will occur throughout the construction period; however, peak deliveries are anticipated to occur in Month 3 with approximately 5 truck deliveries in the morning and 4 truck deliveries in the afternoon. A water truck is anticipated to deliver water with an average of less than one truck per day; therefore, to be conservative one daily water truck is included in the trip generation. For trip generation purposes, truck trips are converted to a Passenger Car Equivalent (PCE) by multiplying each truck by a factor of 3 due to size and speed constraints. For Phase 2 the peak construction traffic is calculated at 126 ADT with 63 morning peak hour trips (48 inbound and 15 outbound) and 57 afternoon peak hour trips (12 inbound and 45 outbound) as shown in **Table 7**.

TABLE 7: PHASE 2 PROJECT TRIP GENERATION (PASSENGER CAR EQUIVALENT)

Phase 2 Construction Related Traffic	Daily Vehicles	ADT with PCE[2]	Morning Peak		Afternoon Peak	
			IN	OUT	IN	OUT
Daytime Construction Workers (12 with no PCE)[1]	30	60	30	0	0	30
Nighttime Technicians 8 pm to 5 am (3 with no PCE)[1]	3	6	0	0	0	0
Equipment Deliveries and Construction Trucks (with PCE of 3)[2]	9	54	15	15	12	12
Water Truck (with PCE of 3)[2]	1	6	3	0	0	3
Phase 2 Total Traffic During Peak Construction Period	43	**126**	**48**	**15**	**12**	**45**

ADT: Average Daily Trips. PCE: Passenger Car Equivalent factor of 3 applied to delivery and water trucks to provide an equivalent number of passenger cars. 1) Number of construction workers and construction trucks provided by applicant. 2) Passenger Car Equivalent (PCE) factor of 3 applied to each truck.

The construction is anticipated to occur Monday through Friday; however, if extra work days are required, they would occur on Saturdays.

4.3 Project Operations and Maintenance Trip Generation

The post construction operations and maintenance of the Battery Energy Storage Facility will be monitored by existing six operators currently on-site as part of the existing Campo Verde Solar Facility operations. No additional full time staff is anticipated as part of the Battery Energy Storage Facility; however, technicians will be brought in if necessary, thus there is no anticipated new trip generation for the maintenance and project operations. Therefore, this traffic analysis is based on the higher and temporary construction traffic.

4.4 Construction Trip Distribution and Assignment

The trip distribution is based on the proximity to I-8 and SR-98, anticipated delivery of equipment, and construction workforce origination as shown in shown in **Figure 7.** The assignment of phase 1 construction traffic is shown in **Figure 8** while phase 2 construction traffic is shown in **Figure 9.**

Figure 7: Project Construction Trip Distribution

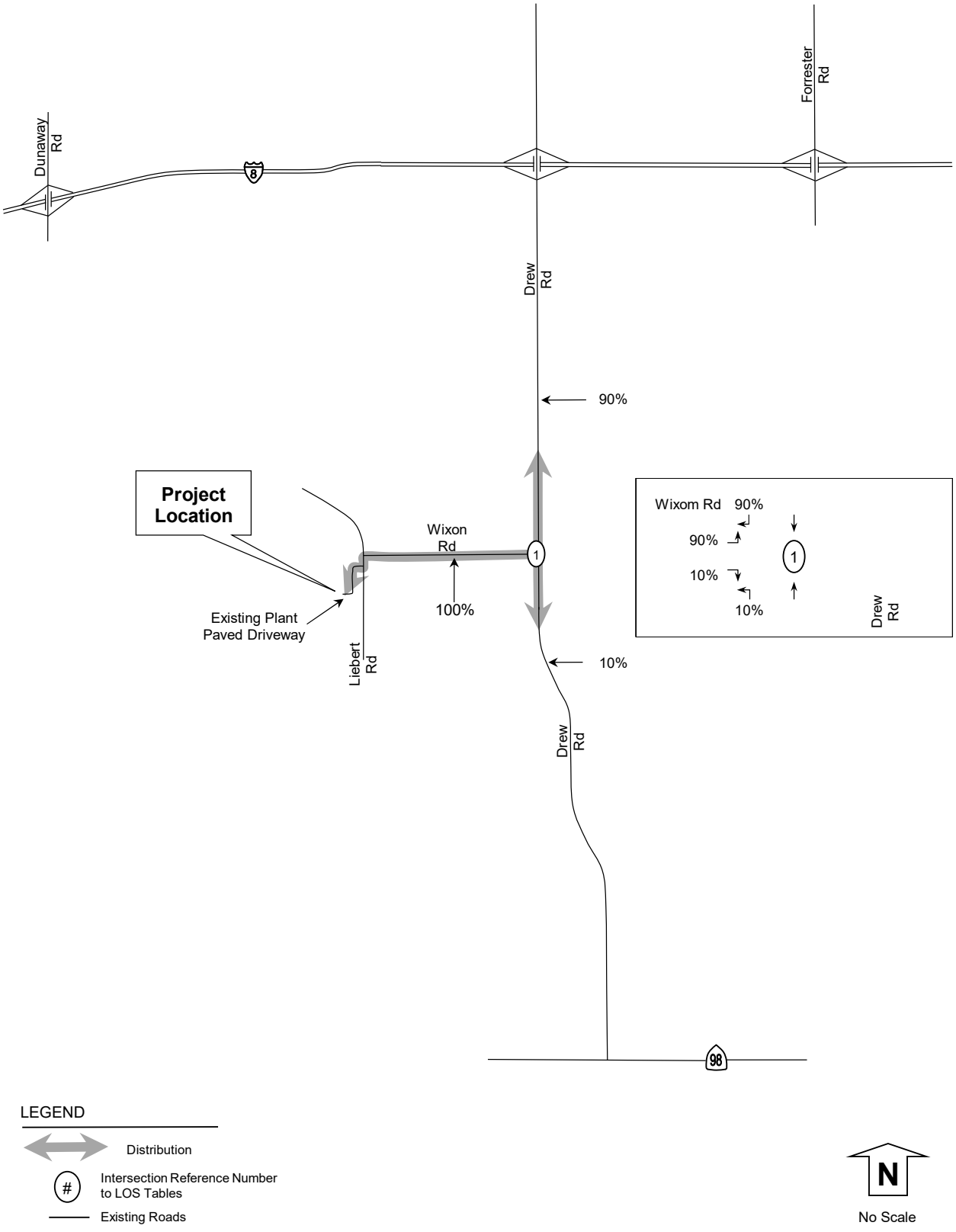


Figure 8: Project Trip Assignment (Phase 1)

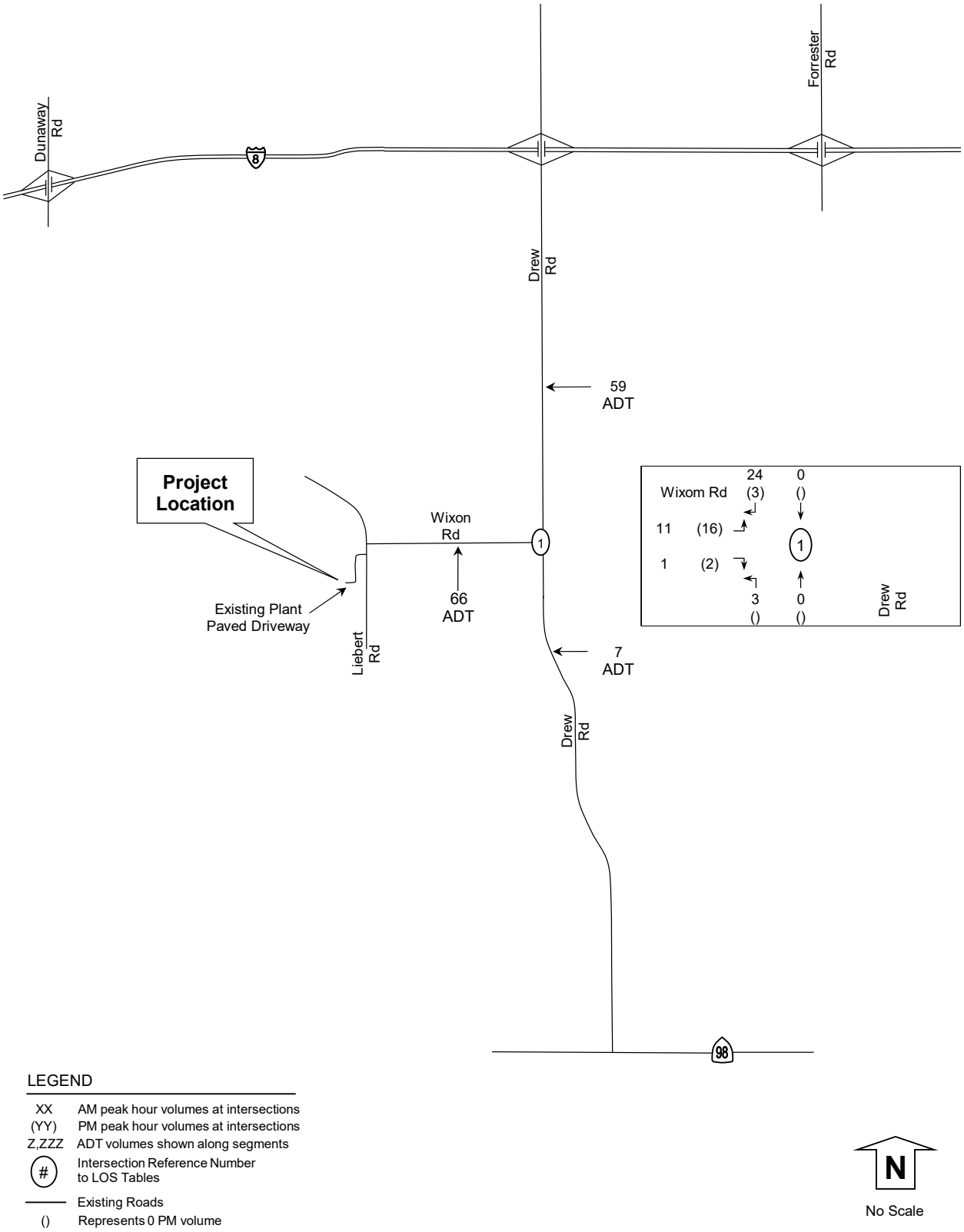
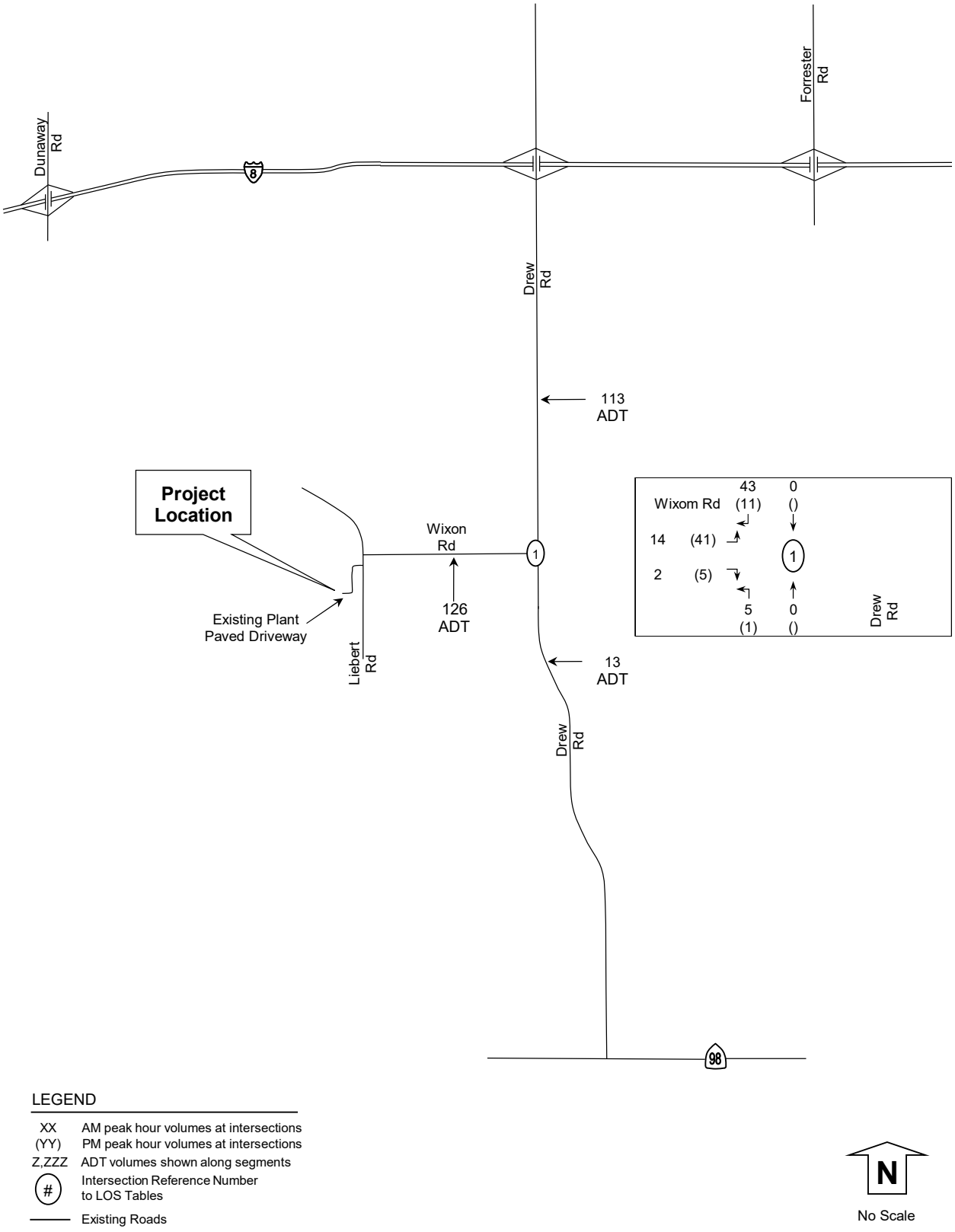


Figure 9: Project Trip Assignment (Phase 2)



5.0 Existing 2016 + Project (Phase 1) Conditions

This section documents the addition of project phase 1 traffic onto existing 2016 traffic. Existing plus project (phase 1) volumes are shown in **Figure 10**. Intersection and segment LOS are shown in **Tables 8 and 9**. Intersection LOS calculations are included in **Appendix F**.

TABLE 8: EXISTING 2016 + PROJECT (PHASE 1) INTERSECTION LOS

Intersection &	Movement	Peak	Existing 2016		Existing 2016 + Project (Phase 1)			
(Control)[1]		Hour	Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delta[4]	Sig[5]
1) Drew Road at	EB LR	AM	8.7	A	8.8	A	0.1	None
Wixom Rd (U)	EB LR	PM	8.6	A	8.7	A	0.1	None

Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.
3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) Impact type (none, direct, or cumulative).

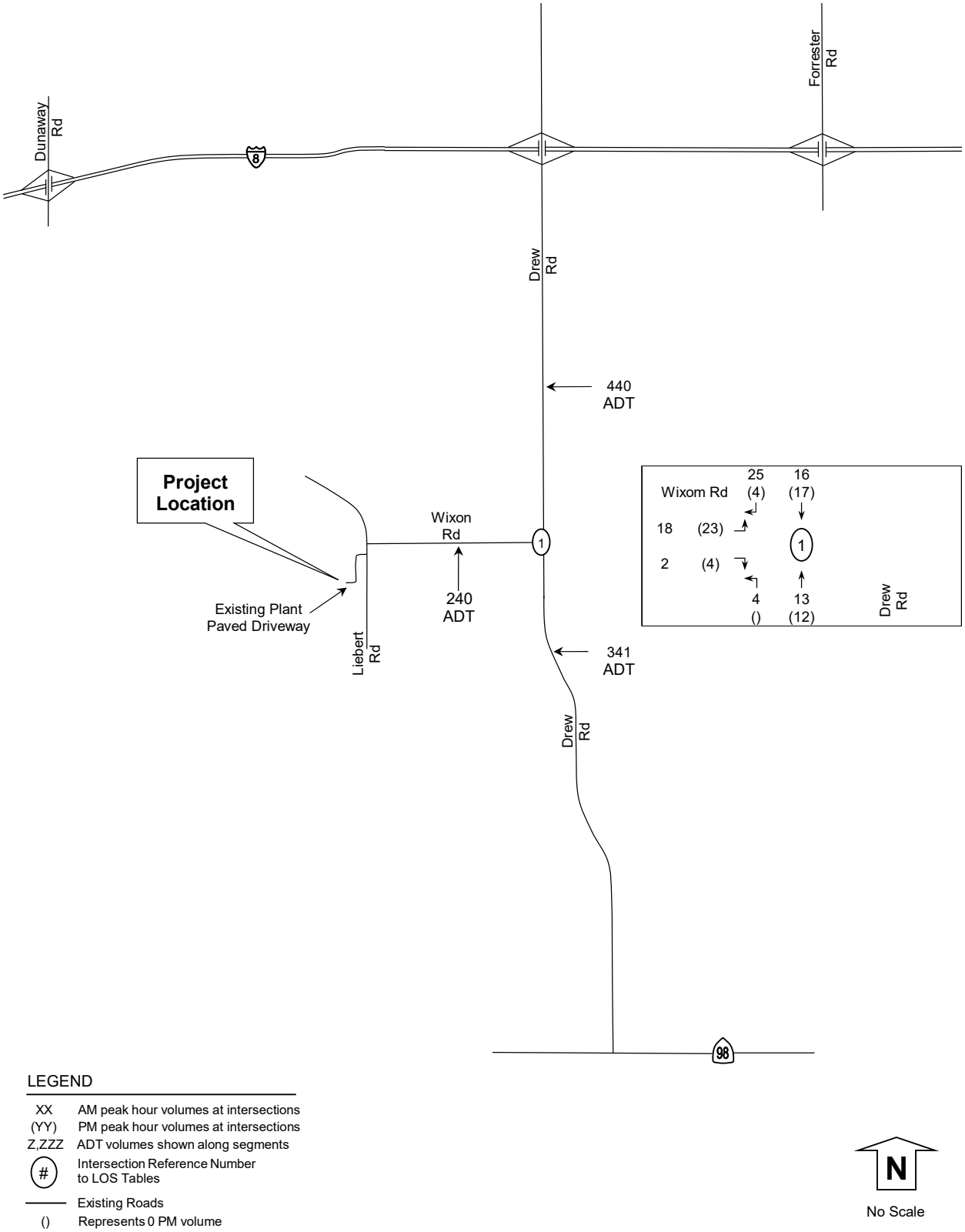
TABLE 9: EXISTING 2016 + PROJECT (PHASE 1) SEGMENT LOS

Segment	Classification (as built)	Existing 2016				Project	Existing 2016 + Project (Phase 1)					
		Daily Volume	LOS C Capacity	V/C	LOS	Daily Volume	Daily Volume	LOS C Capacity	V/C	LOS	Change in V/C	Direct Impact?
Drew Road												
North of Wixom Road	Prime Arterial (2U)	381	7,100	0.054	A	59	440	7,100	0.062	A	0.008	No
South of Wixom Road	Prime Arterial (2U)	334	7,100	0.047	A	7	341	7,100	0.048	A	0.001	No
Wixom Road												
From Liebert Rd to Drew Rd	Minor Collector (2U)	174	7,100	0.025	A	66	240	7,100	0.034	A	0.009	No

Notes: Classification based on 1/29/08 CIrculation and Scenic Highways Element. 2U= 2 lane undivided roadway.Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio. Direct Impact? = identifies if a project impact is calculated (yes or no).

Under existing 2016 + project (phase 1) conditions, the study intersections and roadways were calculated to operate at LOS A with no significant direct project impacts.

Figure 10: Existing 2016 + Project (Phase 1) Volumes



6.0 Cumulative Projects (New Development)

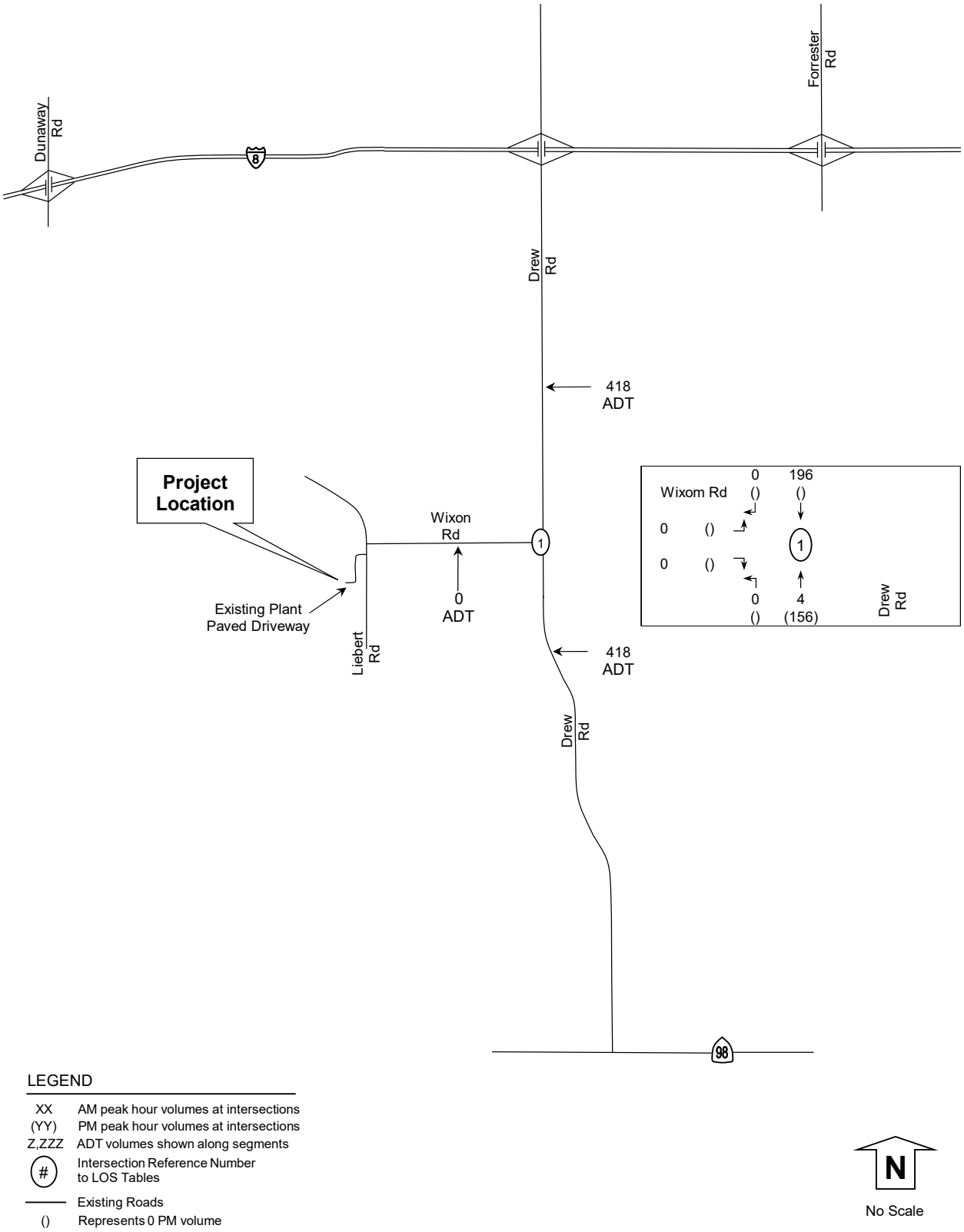
Information on cumulative projects (new development) was obtained from the County of Imperial and confirmed with County of Imperial planning staff to be current as of September 9, 2016. Individual cumulative project assignments are included in **Appendix G**. The cumulative projects (new development) that are anticipated to add traffic to the study area are included below:

1) *Acorn Greenworks* - a photovoltaic solar facility capable of producing approximately 125 megawatts of electricity on approximately 700 acres generally located 10 miles southwest of the City of El Centro. The construction phase is calculated to generate 425 daily trips with 166 AM peak hour trips and 169 PM peak hour trips.
2) *IRIS Solar Farm Cluster* – photovoltaic solar facilities capable of producing approximately 200 megawatts of electricity generally located north of SR-98 between Brockman Road and Weed Road. The traffic generation for this cumulative project is calculated at 556 ADT with 221 AM and 225 PM peak hour trips.
3) *Mount Signal Solar Farm (includes Calexico I-A at 700 acres; I-B at 600 acres; and II-A at 940 acres)* - photovoltaic solar facilities capable of producing approximately 200 megawatts of electricity generally located 6 miles west of the City of Calexico. The construction phase is calculated to generate 849 daily trips with 330 AM peak hour trips and 336 PM peak hour trips.
4) *Wistaria Ranch Solar Energy Center* – a solar photovoltaic energy-generating facility capable of producing approximately 250 megawatts of electricity on approximately 2,793 acres. The project is located approximately 8 miles west of the City of Calexico in the Mt. Signal area of Imperial Valley. The construction phase of the project is calculated to generate 664 ADT with 209 AM peak hour trips and 209 PM peak hour trips.

All of the cumulative projects listed above were assumed to be generating construction traffic during the construction phase of the Campo Verde Battery System project while in reality some of the cumulative projects will have a peak construction period that may or may not coincide with the Campo Verde Battery System peak construction period; however, again being conservative all of the peak cumulative construction volumes were used in the cumulative analysis even though there is a good chance that all construction peaks will not coincide. There may be other cumulative projects in Imperial Valley; however, they are not anticipated to add traffic to the study area.

The cumulative project (new development) volumes are shown in **Figure 11**.

Figure 11: Cumulative Project (New Development) Volumes



7.0 Existing 2016 + Project (Phase 1) + Cumulative Conditions

This scenario documents the anticipated project phase 1 traffic added onto existing 2016 traffic with cumulative traffic. Year 2018 plus project volumes plus cumulative traffic are shown in **Figure 12**. Intersection and segment LOS are shown in **Tables 10 and 11**. Intersection LOS calculations are included in **Appendix H**.

TABLE 10: EXISTING 2016 + PROJECT (PHASE 1) + CUMULATIVE INTERSECTION LOS

Intersection & (Control)[1]	Movement	Peak Hour	Year 2016 Delay[2]	Year 2016 LOS[3]	2016 + Proj (P1) Delay[2]	2016 + Proj (P1) LOS[3]	2016 + Proj (P1) Delta[4]	2016 + Proj (P1) + Cumulative Delay[2]	2016 + Proj (P1) + Cumulative LOS[3]	2016 + Proj (P1) + Cumulative Impact Type[5]
1) Drew Road at	EB LR	AM	8.7	A	8.8	A	0.1	10.1	B	None
Wixom Rd (U)	EB LR	PM	8.6	A	8.7	A	0.1	9.6	A	None

Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.
3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) Impact type (none, direct, or cumulative).

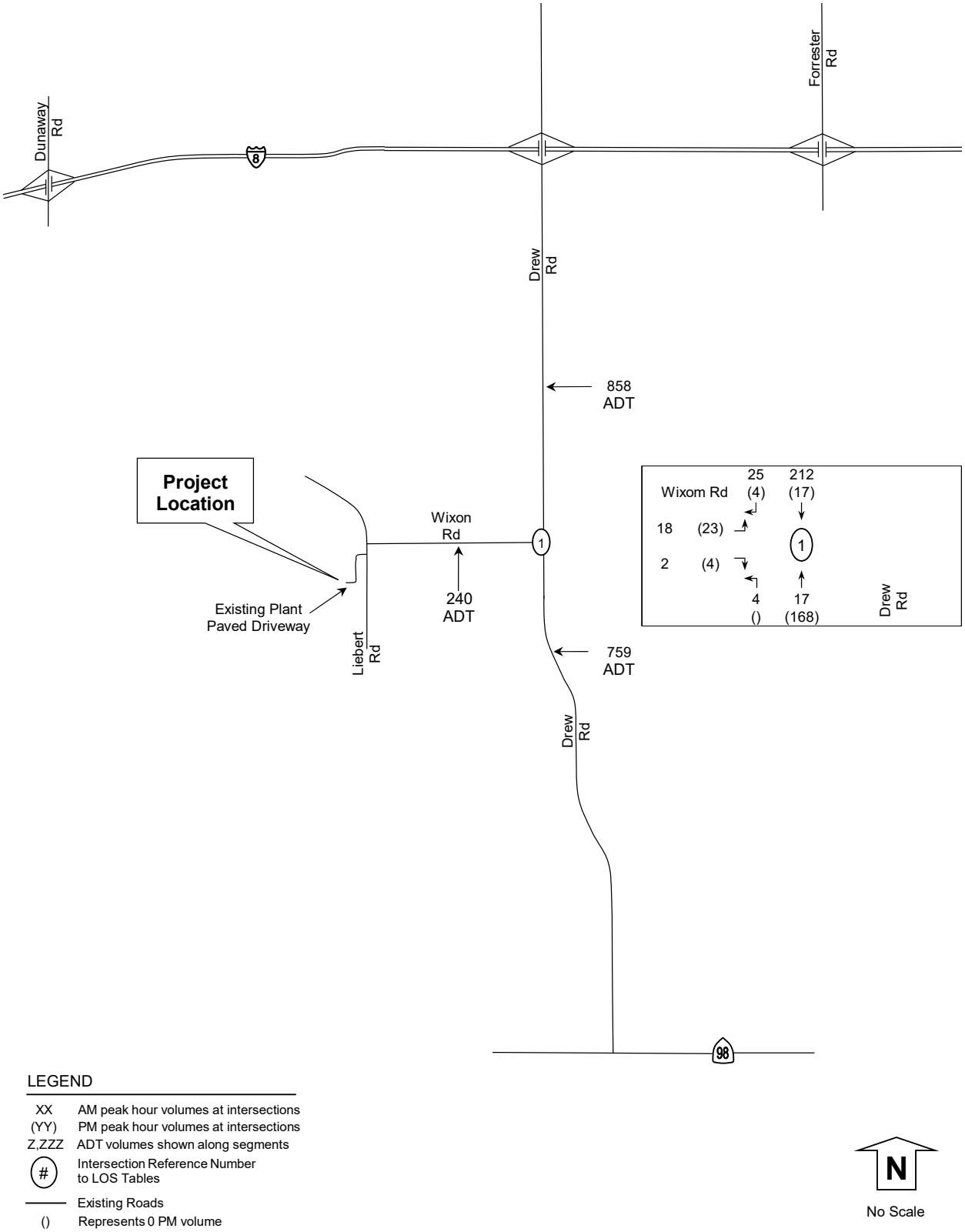
TABLE 11: EXISTING 2016 + PROJECT (PHASE 1) + CUMULATIVE SEGMENT LOS

Segment	Classification (as built)	LOS C Capacity	Year 2016 Daily Volume	Year 2016 V/C	Year 2016 LOS	2016 + Proj (P1) Daily Volume	2016 + Proj (P1) V/C	2016 + Proj (P1) LOS	Cumulative Daily Volumes	2016 + Proj (P1) + Cumulative Daily Volume	2016 + Proj (P1) + Cumulative V/C	2016 + Proj (P1) + Cumulative LOS	2016 + Proj (P1) + Cumulative Impact Type
Drew Road													
North of Wixom Road	Prime Arterial (2U)	7,100	381	0.054	A	440	0.062	A	418	858	0.121	A	None
South of Wixom Road	Prime Arterial (2U)	7,100	334	0.047	A	341	0.048	A	418	759	0.107	A	None
Wixom Road													
From Liebert Rd to Drew Rd	Minor Collector (2U)	7,100	174	0.025	A	240	0.034	A	0	240	0.034	A	None

Notes: Classification based on 1/29/08 CIrculation and Scenic Highways Element. 2U= 2 lane undivided roadway. Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio. Impact Type (none, cumulative, or direct).

Under existing 2016 + project (phase 1) + cumulative conditions, the study roadways were calculated to operate at LOS A or B with no cumulatively considerable impacts.

Figure 12: Existing 2016 + Project (Phase 1) + Cumulative Volumes



8.0 Near-Term 2018 Conditions

This section documents near-term 2018 conditions when the project is anticipated to have Phase 2 of construction activities. The year 2018 background volumes are based on increasing the existing year 2016 volumes by an annual growth rate. Determination of the annual growth rate was based on guidelines defined in the County of Imperial Department of Public Works *Traffic Study and Report Policy* dated March 12, 2007, revised June 29, 2007 and approved by the Board of Supervisors of the County of Imperial on August 7, 2007. This document indicates that traffic projections should be based on demonstrated growth as detailed in the general plan. The following growth rate options were reviewed:

1) The Land Use Element of the general plan indicates that the Population Research Unit of the California Department of Finance (DOF) estimates the annual change in population. Using the DOF revised July 1, 2006 population estimate of 168,979 and the projected population of Imperial County in 2030 of 283,693, for an annual growth rate of approximately 2.2 percent.
2) The Southern California Association of Governments (SCAG) Community Development Division's 2004 *Regional Transportation Plan Socio-Economic Forecast Report*, dated June 2004, states that the population of Imperial County is projected to grow at an annual rate of 2.8 percent. The SCAG April 2012 RTP describes a growth rate of about 1.0% forecasted between 2010 and 2035.
3) The U.S. Census Bureau population data from year 2000 to year 2010 for the local cities/residential communities within Imperial County. The U.S. Census Bureau reported a population growth of 27,162 people over a 10 year period (population of 109,588 per the 2000 census and population of 136,750 per the 2010 census). Over this 10 year period, the annual growth rate was about 2.0%.

For the purpose of this traffic study, an older (SCAG 2004 study) and more conservative growth rate of **2.8 percent** was selected for the annual population growth to account for possible near term growth rate accelerations. The growth factor support data are included in **Appendix I**.

Year 2018 volumes were factored up from year 2016 volumes through the application of a 5.6% growth rate and are shown in **Figure 13**. Intersection and segment LOS are shown in **Tables 12 and 13**. Intersection LOS calculations are included in **Appendix J**.

Figure 13: Near-Term 2018 Volumes

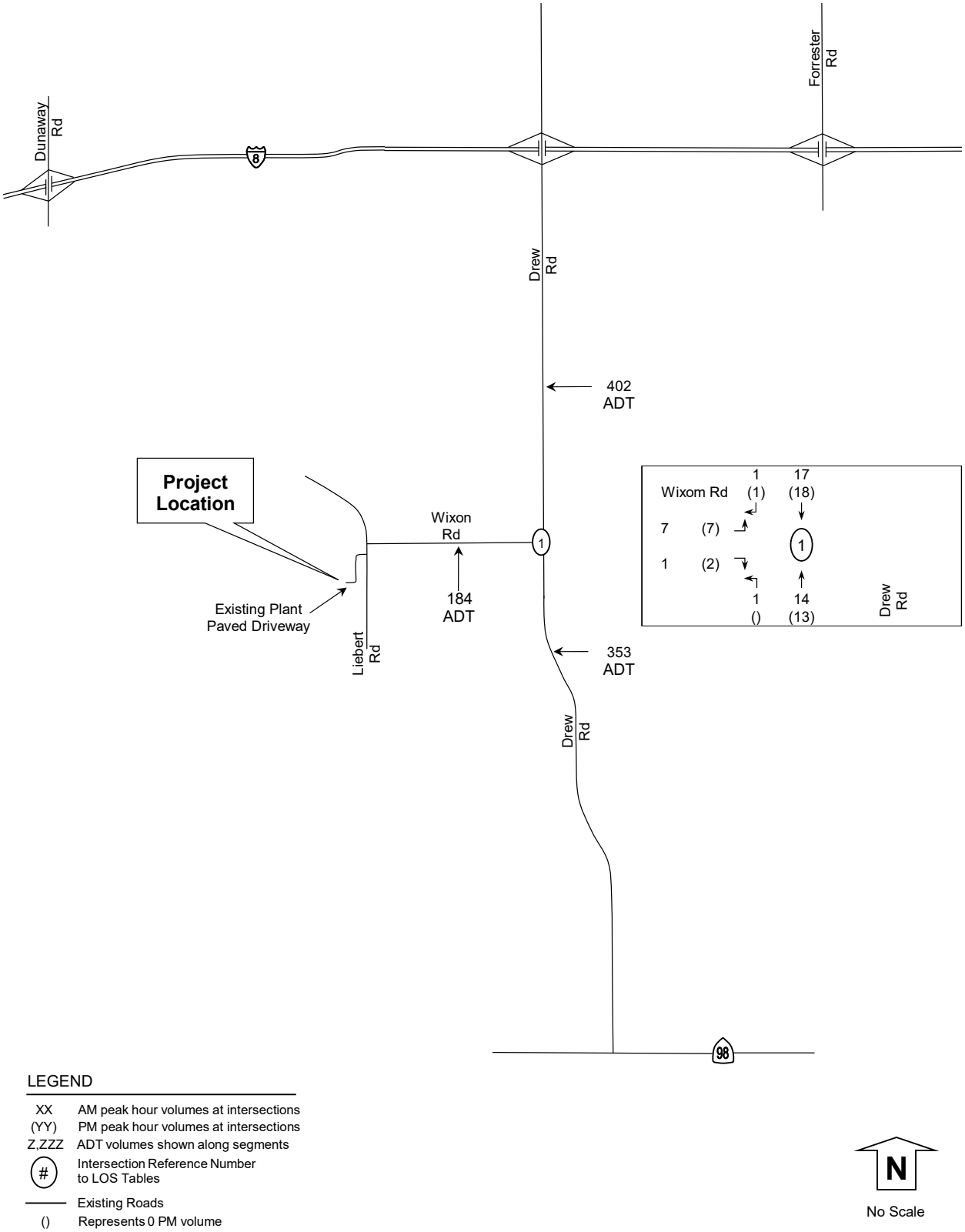


TABLE 12: NEAR-TERM 2018 INTERSECTION LOS

Intersection & (Control)[1]	Movement	Peak Hour	Year 2018 Delay[2]	Year 2018 LOS[3]
1) Drew Road at	EB LR	AM	8.7	A
Wixom Rd (U)	EB LR	PM	8.7	A

Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.
3) LOS: Level of Service

TABLE 13: NEAR-TERM 2018 SEGMENT LOS

Segment		Classification (as built)	Year 2018 Daily Volume	# of lanes	LOS C Capacity	V/C	LOS
Drew Road							
	North of Wixom Road	Prime Arterial (2U)	402	2	7,100	0.06	A
	South of Wixom Road	Prime Arterial (2U)	353	2	7,100	0.05	A
Wixom Road							
	From Liebert Rd to Drew Rd	Minor Collector (2U)	184	2	7,100	0.03	A

Notes: Classification based on 1/29/08 CIrculation and Scenic Highways Element. 2U= 2 lane undivided roadway. Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio.

Under Near-Term 2018 conditions, the study intersection and roadways were calculated to operate at LOS A.

9.0 Near-Term 2018 + Project (Phase 2) Conditions

This section documents the addition of construction traffic onto near-term 2018 traffic. Year 2018 plus project traffic volumes are shown in **Figure 14**. Intersection and segment LOS are shown in **Tables 14 and 15**. Intersection LOS calculations are included in **Appendix K**.

TABLE 14: NEAR-TERM 2018 WITHOUT AND WITH PROJECT (PHASE 2) INTERSECTION LOS

Intersection & (Control)[1]	Movement	Peak Hour	Year 2018		Year 2018 + Project (Phase 2)			
			Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delta[4]	Sig[5]
1) Drew Road at	EB LR	AM	8.7	A	8.9	A	0.2	None
Wixom Rd (U)	EB LR	PM	8.7	A	8.9	A	0.2	None

Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.
3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) Impact type (none, direct, or cumulative).

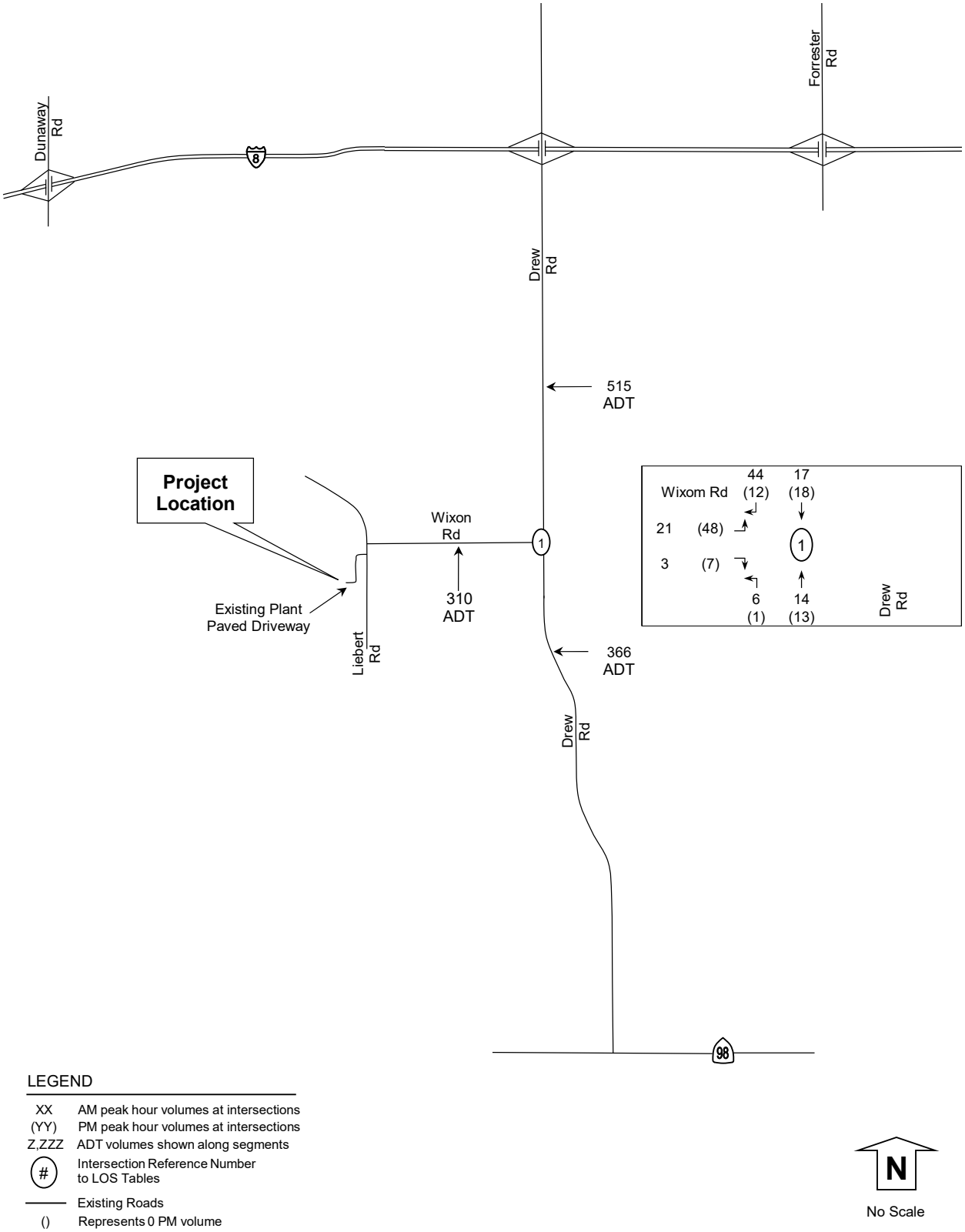
TABLE 15: NEAR-TERM 2018 WITHOUT AND WITH PROJECT (PHASE 2) SEGMENT LOS

Segment	Classification (as built)	Year 2018				Project	Year 2018 + Project (Phase 2)					
		Daily Volume	LOS C Capacity	V/C	LOS	Daily Volume	Daily Volume	LOS C Capacity	V/C	LOS	Change in V/C	Impact Type
Drew Road												
North of Wixom Road	Prime Arterial (2U)	402	7,100	0.057	A	113	515	7,100	0.073	A	0.016	None
South of Wixom Road	Prime Arterial (2U)	353	7,100	0.050	A	13	366	7,100	0.052	A	0.002	None
Wixom Road												
From Liebert Rd to Drew Rd	Minor Collector (2U)	184	7,100	0.026	A	126	310	7,100	0.044	A	0.018	None

Notes: Classification based on 1/29/08 CIrculation and Scenic Highways Element. 2U= 2 lane undivided roadway. Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio. Impact Type (none, cumulative, or direct).

Under near-term 2018 + project (phase 2) conditions, the study intersections and roadways were calculated to operate at LOS B or better with no significant direct project impacts.

Figure 14: Near-Term 2018 + Project (Phase 2) Volumes



10.0 Near-Term 2018 + Project (Phase 2) + Cumulative Conditions

This scenario documents the anticipated project (phase 2) construction traffic added onto near-term 2018 traffic with cumulative traffic. Year 2018 plus project volumes plus cumulative traffic are shown in **Figure 15**. Intersection and segment LOS are shown in **Tables 16 and 17**. Intersection LOS calculations are included in **Appendix L**.

TABLE 16: NEAR-TERM 2018 + PROJECT (PHASE 2) + CUMULATIVE INTERSECTION LOS

Intersection & (Control)[1]	Movement	Peak Hour	Year 2018 Delay[2]	Year 2018 LOS[3]	2018 + Proj (P2) Delay[2]	2018 + Proj (P2) LOS[3]	2018 + Proj (P2) Delta[4]	2018 + Proj (P2) + Cumulative Delay[2]	2018 + Proj (P2) + Cumulative LOS[3]	2018 + Proj (P2) + Cumulative Impact Type[5]
1) Drew Road at	EB LR	AM	8.7	A	8.9	A	0.2	10.3	B	None
Wixom Rd (U)	EB LR	PM	8.7	A	8.9	A	0.2	9.8	A	None

Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.
3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) Impact type (none, direct, or cumulative).

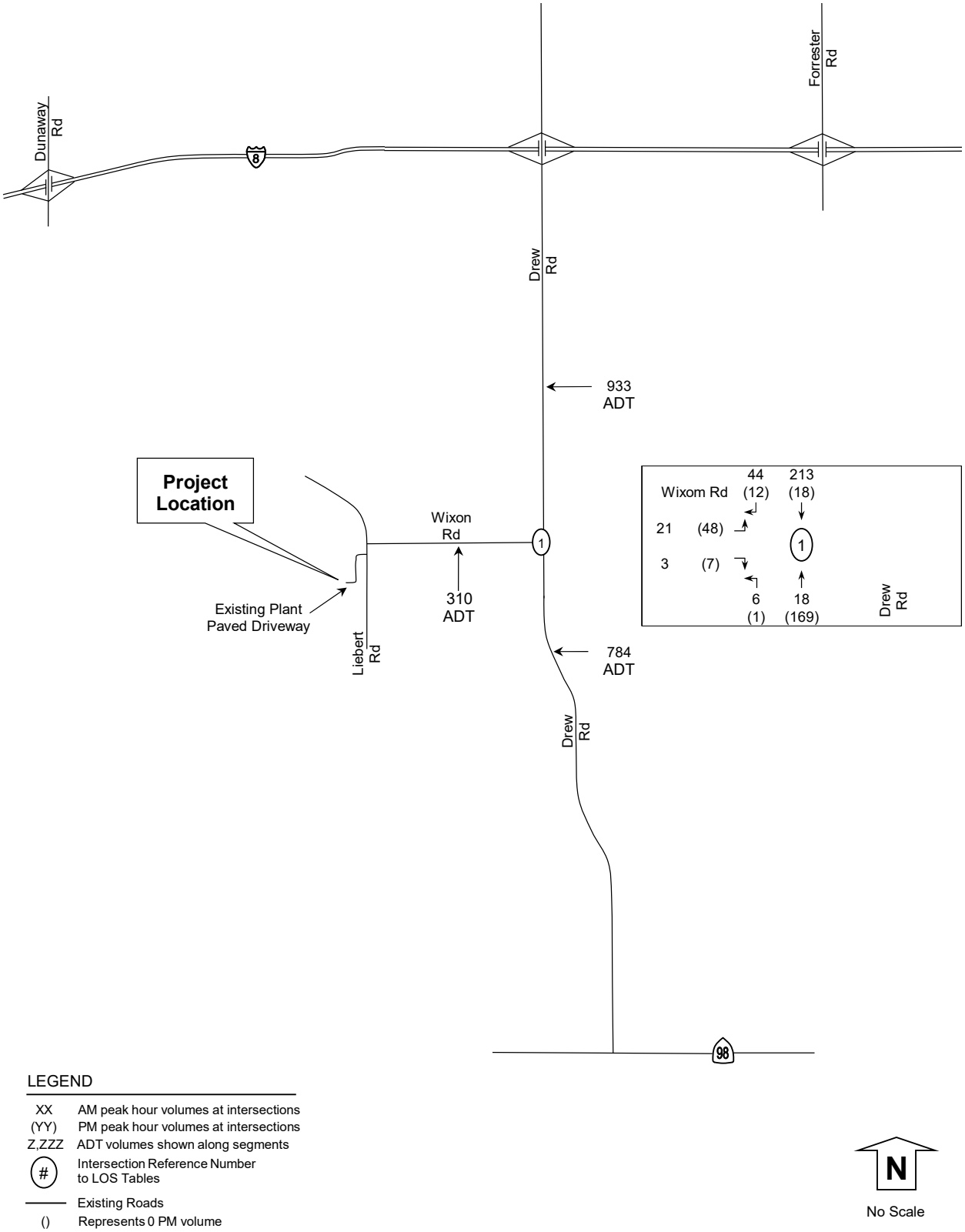
TABLE 17: NEAR-TERM 2018 + PROJECT (PHASE 2) + CUMULATIVE SEGMENT LOS

Segment	Classification (as built)	LOS C Capacity	Year 2018 Daily Volume	Year 2018 V/C	Year 2018 LOS	2018 + Proj (P2) Daily Volume	2018 + Proj (P2) V/C	2018 + Proj (P2) LOS	Cumulative Daily Volumes	2018 + Proj (P2) + Cumulative Daily Volume	2018 + Proj (P2) + Cumulative V/C	2018 + Proj (P2) + Cumulative LOS	2018 + Proj (P2) + Cumulative Impact Type
Drew Road													
North of Wixom Road	Prime Arterial (2U)	7,100	402	0.057	A	515	0.073	A	418	933	0.131	A	None
South of Wixom Road	Prime Arterial (2U)	7,100	353	0.050	A	366	0.052	A	418	784	0.110	A	None
Wixom Road													
From Liebert Rd to Drew Rd	Minor Collector (2U)	7,100	184	0.026	A	310	0.044	A	0	310	0.044	A	None

Notes: Classification based on 1/29/08 CIrculation and Scenic Highways Element. 2U= 2 lane undivided roadway. Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio. Impact Type (none, cumulative, or direct).

Under near-term 2018 + project (phase 2) + cumulative conditions, the study roadways were calculated to operate at LOS B or better with no cumulatively considerable impacts.

Figure 15: Near-Term 2018 + Project + Cumulative Volumes



11.0 Decommissioning

In the event of possible decommissioning, a time line 20 years after construction (year 2038) was analyzed with Phase 2 as the decommissioning construction traffic. This scenario documents the anticipated project (phase 2) construction traffic added onto year 2038 traffic. Year 2038 traffic was calculated by applying a 2.8% growth factor over 20 year (i.e. growth factor = 1.028 to the power of 20) for a growth factor of 1.737. Year 2038 volumes are shown in **Figure 16** with year 2038 plus project (phase 2) volumes shown in **Figure 17**. Intersection and segment LOS are shown in **Tables 18 and 19**. Intersection LOS calculations are included in **Appendix M**.

TABLE 18: YEAR 2038 + PROJECT (DECOMMISSIONING PHASE 2) INTERSECTION LOS

Intersection & (Control)[1]	Movement	Peak Hour	Year 2038 Delay[2]	Year 2038 LOS[3]	Year 2038 + Project (Phase 2) Delay[2]	Year 2038 + Project (Phase 2) LOS[3]	Delta[4]	Sig[5]
1) Drew Road at	EB LR	AM	8.8	A	9.1	A	0.3	None
Wixom Rd (U)	EB LR	PM	8.8	A	9.1	A	0.3	None

Notes: 1) Intersection Control - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds.
3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) Impact type (none, direct, or cumulative).

TABLE 19: YEAR 2038 + PROJECT (DECOMMISSIONING PHASE 2) SEGMENT LOS

Segment	Classification (as built)	Year 2038 Daily Volume	Year 2038 LOS C Capacity	Year 2038 V/C	Year 2038 LOS	Project Daily Volume	Year 2038 + Project (Phase 2) Daily Volume	Year 2038 + Project (Phase 2) LOS C Capacity	Year 2038 + Project (Phase 2) V/C	Year 2038 + Project (Phase 2) LOS	Change in V/C	Impact Type
Drew Road												
North of Wixom Road	Prime Arterial (2U)	662	7,100	0.093	A	113	775	7,100	0.109	A	0.016	None
South of Wixom Road	Prime Arterial (2U)	580	7,100	0.082	A	13	593	7,100	0.084	A	0.002	None
Wixom Road												
From Liebert Rd to Drew Rd	Minor Collector (2U)	302	7,100	0.043	A	126	428	7,100	0.060	A	0.018	None

Notes: Classification based on 1/29/08 CIrculation and Scenic Highways Element. 2U= 2 lane undivided roadway. Daily volume is a 24 hour volume. LOS: Level of Service. LOS based on actual number of lanes currently constructed. V/C: Volume to Capacity ratio. Impact Type (none, cumulative, or direct).

Under year 2038 + project (decommissioning phase 2) conditions, the study roadways were calculated to operate at LOS B or better with no cumulatively considerable impacts.

Figure 16: Year 2038 Volumes

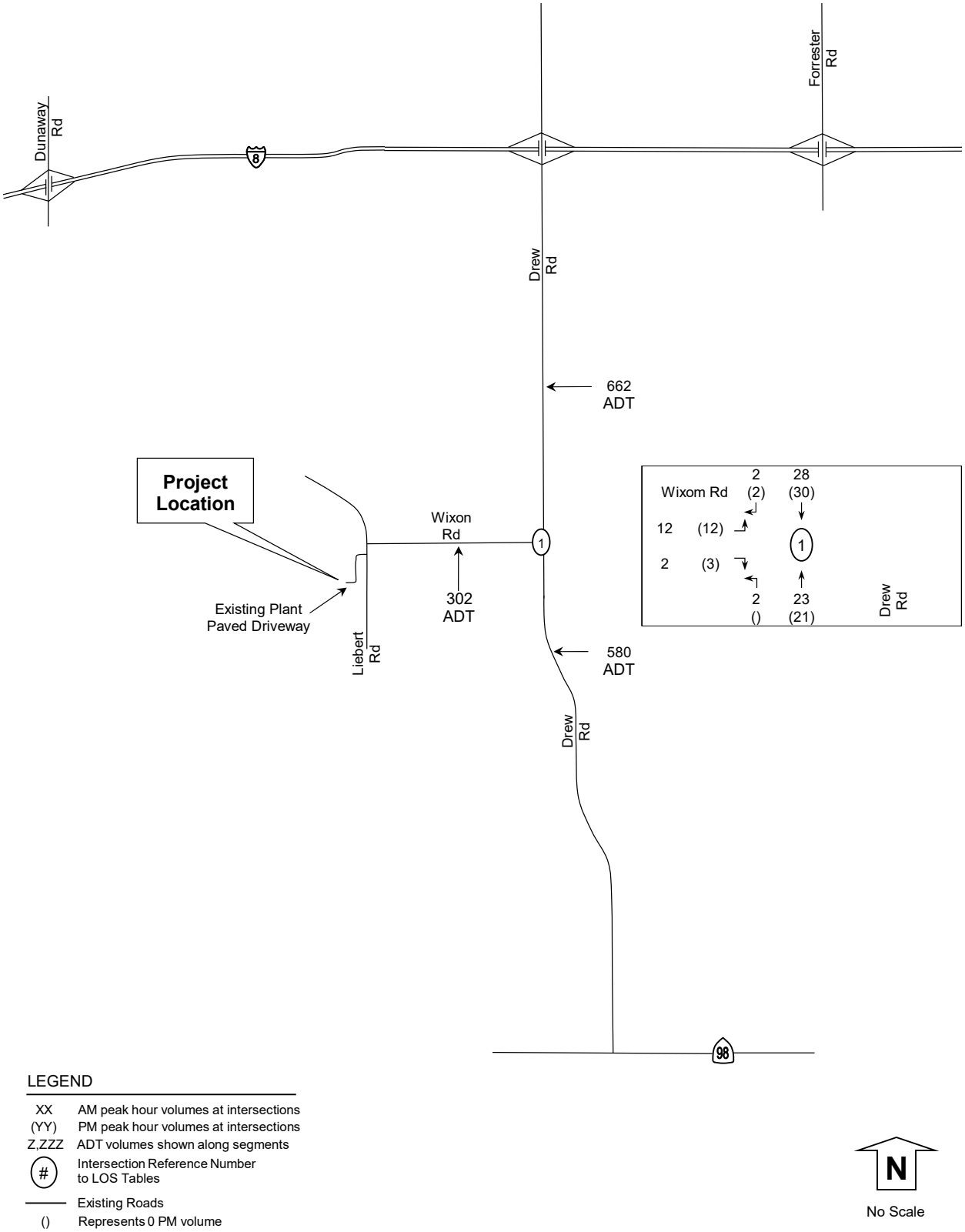
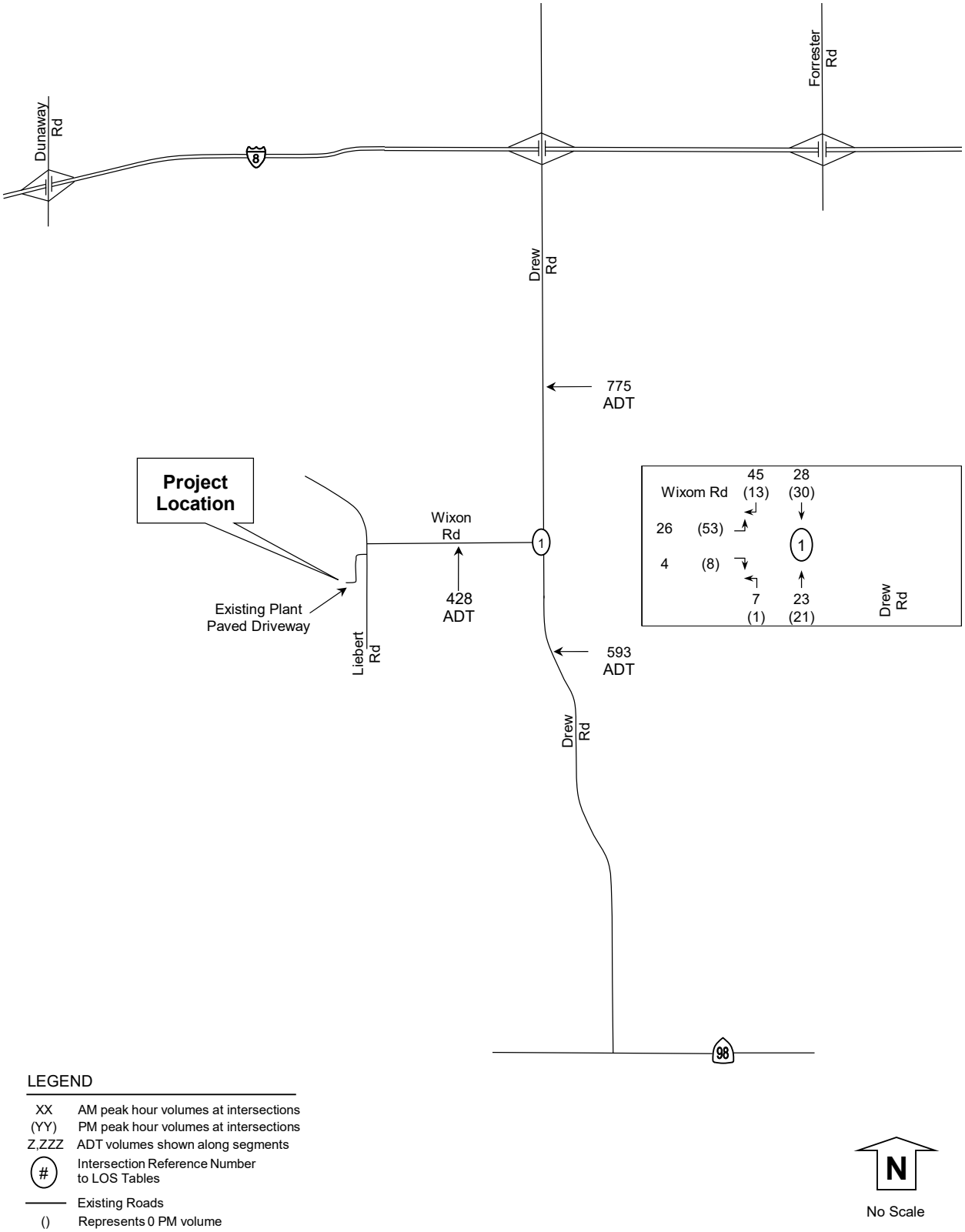


Figure 17: Year 2038 + Project Volumes



12.0 Conclusions

The purpose of this study is to determine and analyze potential traffic impacts for the proposed Campo Verde Solar Facility Battery Energy Storage System is to be located within the existing Campo Verde Solar Facility located approximately 7 miles southwest of the community of El Centro, California. The proposed Battery Energy Storage System will be constructed next to the Campo Verde Substation located west of Liebert Road, south of Wixom Road and north of Mandrapa Road. The proposed Battery Energy Storage System will incorporate traditional lithium-ion batteries.

The Project is proposed to be constructed in two phases, with Phase 1 designed to store up to 5 megawatt-hours of energy and Phase 2 up to 100 megawatt-hours of energy. Construction for Phase 1 is proposed to start in late 2016 and construction for Phase 2 is expected to begin in 2018. The construction is anticipated to occur Monday through Friday; however, if extra work days are required, they would occur on Saturdays. Phase 1 construction traffic is calculated at 66 ADT with 39 morning peak hour trips (27 inbound and 12 outbound) and 21 afternoon peak hour trips (3 inbound and 18 outbound). Phase 2 construction traffic is calculated at 126 ADT with 63 morning peak hour trips (48 inbound and 15 outbound) and 57 afternoon peak hour trips (12 inbound and 45 outbound).

Seven scenarios were analyzed, that accounted for existing, near term, and decommissioning conditions. Operational findings by scenario are summarized below:

1) Under existing 2016 conditions, the study intersections and roadways were calculated to operate at LOS A.
2) Under existing 2016 + project (phase 1) conditions, the study intersections and roadways were calculated to operate at LOS A with no significant direct project impacts.
3) Under existing 2016 + project (phase 1) + cumulative conditions, the study roadways were calculated to operate at LOS B or better with no cumulatively considerable impacts.
4) Under Near-Term 2018 conditions, the study intersection and roadways were calculated to operate at LOS A.
5) Under near-term 2018 + project (phase 2) conditions, the study intersections and roadways were calculated to operate at LOS B or better with no significant direct project impacts.
6) Under near-term 2018 + project (phase 2) + cumulative conditions, the study roadways were calculated to operate at LOS B or better with no cumulatively considerable impacts.
7) Under year 2038 + project (decommissioning phase 2) conditions, the study roadways were calculated to operate at LOS B or better with no cumulatively considerable impacts.

No traffic impacts were calculated; therefore, traffic mitigation is not required.

13.0 References

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Appendix A

Excerpts from Imperial County's Traffic Study and Report Policy

BOS Approved 08-07-07
M.O. #37

COUNTY OF IMPERIAL

DEPARTMENT OF PUBLIC WORKS

TRAFFIC STUDY AND REPORT POLICY

Date: March, 12, 2007

Revised June 29, 2007

APPROVALS:

WILLIAM S. BRUNET, P. E.
DIRECTOR OF PUBLIC WORKS
ROAD COMMISSIONER

JURG HEUBERGER
PLANNING DIRECTOR

necessary to develop a traffic report that determines whether the traffic study general criteria have been met.

In the case of significant development, it may be necessary to hold one or more scope of work meetings which would be attended by a ICPDS staff, the County Traffic Engineer or other County Advisory Staff, the individual who will be responsible for preparing the traffic study report and the Traffic and/or Civil Engineer responsible for the report and its recommendations. The individual preparing the traffic study should be familiar with the project site and the local conditions which may affect any final conclusions and recommendations.

Listed below are the basic criteria that will be used to make the determination for providing a complete traffic study as a part of the project review process. The criteria are not a complete or exhaustive list, but they are intended to define when such a report is to be prepared and to indicate the necessary components of the study report to be submitted.

1. General Criteria

a. Any project that adds more than 8% of the total existing vehicle trips on the adjacent road system at full build-out of the project.

b. Any project that generates more than 400 daily residential trip ends, 800 commercial or industrial trip ends or 200 peak hour trip ends, as determined by the average trip rates contained in the ITE Trip Generation Informational Report or the **Imperial County local exceptions in Section 2.**

c. Any project that has the potential to degrade an existing road section, an existing signalized intersection, or an existing unsignalized intersection to below the existing level of service or to cause it to be lower than a level of service (LOS)

unit, unless it is for urban infill development, within one half mile of major retail and commercial developmentt.

b. Existing traffic on the adjacent road system and projected traffic on the adjacent road system, projected for a minimum of five (5) years, to project build-out, or both, depending on the project and the area; larger projects or high traffic generation may require future year build-out, currently Year 2030. Future CMP TIA reports would require additional traffic projection information.

c. Traffic projections on the adjacent road system for both the project and "normal background growth" (demonstrated growth, as detailed in the general plan, or as agreed upon with County staff). Normally, traffic will be projected to Year 2030 or later for an updated future year condition.

d. Traffic projections shall include the additional impact of undeveloped land or new development within an area surrounding the proposed development site (project) as agreed to by the County Director of Public Works, the County Planning Director and advisory staff.

e. Projected impacts on intersections adjacent to or within the defined impact area of the project, using intersection capacity analysis - Highway Capacity Manual Operations Delay Method. Right turn-on-red volumes and changes in signal timing can be incorporated in a signalized intersection analysis, but any signal timing changes must be specifically identified in the study recommendations with additional cautions or impact conclusions identified if the timing changes are not

m. Traffic counts, calculations, other basic information, and supporting data shall be included in an Appendix to the report or provided as a separate Technical Appendix. All actual traffic count data will be provided to the County in a useful summary form, digital and paper format, as specified by the County.

3. Analysis Methodology

The build-up method of traffic analysis will be followed, showing:

a. Existing traffic;

b. Existing traffic and normal background growth (rate and time to be agreed to by County staff);

c. Existing traffic and normal background growth (see C. 3. b. above) and project build-out traffic;

d. Existing traffic and normal background growth (see C. 3. b. above) and new development traffic (see C. 3. b. above);

e. Existing traffic and 5 year normal background growth (see b. above) and new development (see b. above) and project build out, if longer than 5 years to build out of project.

If the study period to build-out is longer than 5 years, the future projection time period appropriate for a new development will be determined by the County staff. Significant projects may require a future projection time period of 20 years or General Plan build out. The future year is currently year 2030 as of the date of adopting this Policy. State Highway traffic projections will usually be carried to the year 2030 or to Caltrans current policy and procedures.

Appendix B

Excerpts from Imperial County's Circulation and Scenic Highways Element

CIRCULATION AND
SCENIC HIGHWAYS ELEMENT

Prepared by:
Imperial County Planning & Development Services Department
801 Main Street
El Centro, CA 92243

in collaboration with the

Imperial County Public Works Department
155 South 11th Street
El Centro, CA 92243

WILLIAM S. BRUNET, P.E.
Director of Public Works

JURG HEUBERGER, AICP
Planning & Development Services Director

Approved by:
Board of Supervisors
January 29, 2008

TABLE 5
IMPERIAL COUNTY STANDARD STREET CLASSIFICATION
AVERAGE DAILY VEHICLE TRIPS

Road		Level of Service (LOS)				
Class	**X-Section**	**A**	**B**	**C**	**D**	**E**
Expressway	154/210	30,000	42,000	60,000	70,000	80,000
Prime Arterial	106/136	22,200	37,000	44,600	50,000	57,000
Minor Arterial	82/102	14,800	24,700	29,600	33,400	37,000
Major Collector (Collector)	64/84	13,700	22,800	27,400	30,800	34,200
Minor Collector (Local Collector)	40/70	1,900	4,100	7,100	10,900	16,200
Local County (Residential)	40/60	*	*	<1,500	*	*
Local County (Residential Cul-de-Sac or Loop Street)	40/60	*	*	<200	*	*
Major Industrial Collector – (Industrial)	76/96	5,000	10,000	14,000	17,000	20,000
Industrial Local	44/64	2,500	5,000	7,000	8,500	10,000

* Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

Table 5 was originally developed for the County of San Diego by the San Diego County Department of Public Works in 1985 and compares ADT to levels of service (LOS) for various roadway classifications. Proposed functional classifications were then inserted into this table and right-of-way widths adjusted to match County of Imperial standards.

Transition Areas

The Circulation and Scenic Highways Element is the graphical reference guide which shows the present and planned street system, along with the classification of those streets. It is important to note that where there is a change from one classification to another along a certain street, the transition will occur in mid-block areas to preclude non-continuing lanes and intersections. The design criteria (design, speed, curve radii, etc.) for the higher classification shall generally take precedence through the transition area.

The County Director of Public Works shall review these transition areas and provide guidance in achieving this policy.

c. New or enlarged Roads:

Local Roads

The County shall require all new developments to provide for local roads to serve the direct access needs of abutting property. These streets should be designed with a discontinuous pattern to discourage through traffic. They generally should not intersect with arterial street classifications. Typical design features include two travel lanes with parking on both sides of the street. Local roads include loop streets and cul-de-sacs.

Regional Roads (Roads beyond the actual development project)

The County shall require that all new developments participate in the improvement of regional roads that may be impacted by the proposed development. The extent to which a project impacts regional roads is generally determined by a traffic study. In some cases however the County may have predetermined improvement requirements for certain road segments or road intersections. The new developments will be required to either make certain regional improvements or in the alternative contribute a "fair share" towards the cost of such improvements.

d. Level of Service Standards

As the County continues to grow, transportation demand management and systems management will be necessary to preserve and increase available roadway "capacity". Level of Service (LOS) standards are used to assess the performance of a street or highway system and the capacity of a roadway.

An important goal when planning the transportation system is to maintain acceptable levels of service along the federal and state highways and the local roadway network. To accomplish this, the California Department of Transportation (Caltrans), Imperial County and local agencies adopt minimum levels of service to determine future infrastructure needs.

Imperial County must provide and maintain a highway system with adequate capacity and acceptable levels of service to accommodate projected travel demands associated with the projected population growth within the Land Use Element. This can be accomplished by establishing minimum service levels for the designated street and conventional state highway system. Strategies that result in improvements to the transportation system, coupled with local job creation, will allow County residents to have access to a wide range of job opportunities within reasonable commute times.

The County's goal for an acceptable traffic service standard on an ADT basis and during AM and PM peak periods for all County-Maintained Roads shall be LOS C for all street segment links and intersections. These service values are defined by the 1985 or 2000 edition of the *Highway Capacity* Manual or any subsequent edition thereof. This policy shall acknowledge that the aforementioned level of service standards may not be obtainable on some existing facilities where abutting development precludes acquisition of additional right-of-way needed for changes in facility classification.

In order to achieve the level of service goals in the previous policy, the County shall develop and institute a long-range funding program in which new land development shall bear the major burden of the associated costs and improvement requirements.

e. Design Standards

The County shall adopt design standards for all streets in accordance with their functional classifications and recognized design guidelines. In developing these standards, the County shall consider the design standards of Caltrans and the American Association of State and Highway Transportation Officials (AASHTO). All streets within the County shall be designed in accordance with the adopted County of Imperial Design Standards. Typical cross sections and design criteria for the various street classifications are shown as an attachment to this document.

f. Private Streets

The County may permit construction of private streets within individual development projects (gated community). providing the following are addressed:

- They are designed geometrically and structurally to meet County standards.
- Only project occupants are served (gated community).
- Emergency vehicle access requirements are satisfied.
- The streets do not provide a direct through route between public streets.
- The Homeowners Associations and/or property owners provide an acceptable program for financing regular street maintenance.
- If the private street is permitted with a waiver of any of the above standards, any future requests to make the private street a public street shall require that all adjacent property owners provide and pay for all improvements and right of way required to bring the street to current public street or road standards. This includes road width, right of way widths and structural section. In no circumstance shall the County pay for any costs to upgrade a private street to public street standards if the above-mentioned requirements were waived at the request of the original developer or subdivider.

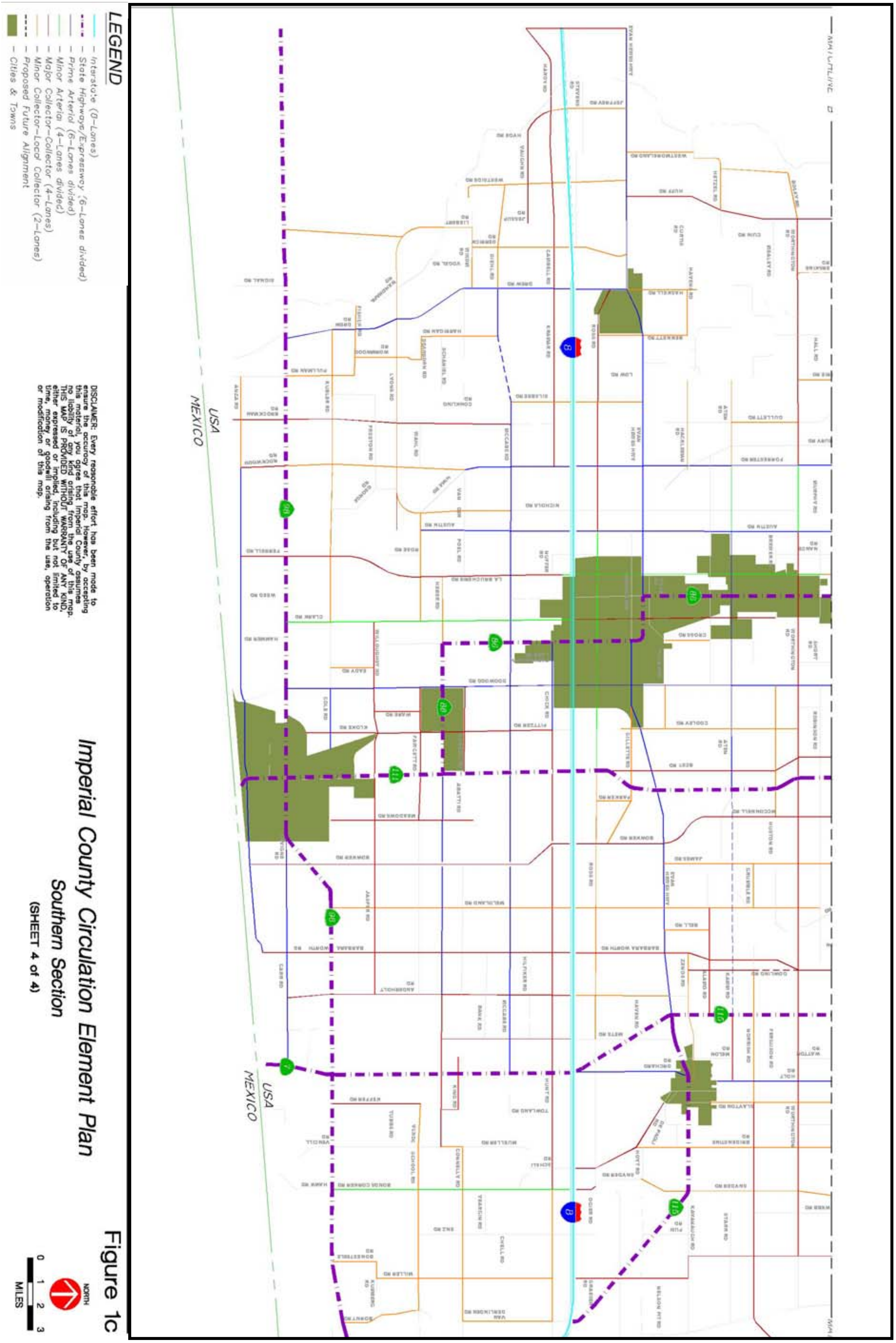

LEGEND
Interstate (8-Lanes)
State Highways/Expressway (6-Lanes divided)
Prime Arterial (6-Lanes divided)
Minor Arterial (4-Lanes divided)
Major Collector-Collector (4-Lanes)
Minor Collector-Local Collector (2-Lanes)
Proposed Future Alignment
Cities & Towns
DISCLAIMER: Every reasonable effort has been made to ensure the accuracy of this map. However, by accepting this material, you agree that Imperial County assumes no liability of any kind arising from the use of this map. THIS MAP IS PROVIDED WITHOUT WARRANTY OF ANY KIND, either expressed or implied, including but not limited to time, money or goodwill arising from the use, operation or modification of this map.
USA
MEXICO
Imperial County Circulation Element Plan
Southern Section
(SHEET 4 of 4)
Figure 1c
NORTH
0 1 2 3
MILES

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND VOLUMES

Segment Location	2003 Classification	Year 2002 ADT Volume[a]	Year 2005 ADT Volume[a]	Year 2025 ADT Volume[c]	25 Year Total Growth Factor[d]	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS[e]
Alamo Road								
Meloland/SR-115	Major Collector						Major Collector (4)	
Albright Road								
SR-111/SR-115	Minor Collector						Minor Collector (2)	
SR-115/Butters	Major Collector						Major Collector (4)	
Anderholt Road								
Evan Hewes (S-80)/Hunt	Minor Collector						Minor Collector (2)	
Hunt/Carr	Major Collector						Major Collector (4)	
Andre Road								
Forrester/End	Minor Collector						Minor Collector (2)	
Anza Road								
Pulliam/Rockwood	Local						Minor Collector (2)	
Rockwood/Calexico	Prime Arterial						Prime Arterial (6-divided)	
Calexico/Barbara Worth	Prime Arterial						Prime Arterial (6-divided)	
Aten Road								
End/Forrester	Minor Collector						Minor Collector (2)	
Forrester/Austin	Minor Arterial						Minor Arterial (6-divided)	
East Imperial City Limits/Dogwood	Prime Arterial	7,300	8,450	39,000	1.13	44,500	Prime Arterial (6-divided)	C
Dogwood/SR-111	Prime Arterial						Prime Arterial (6-divided)	
Proposed/SR-111/River	None						Prime Arterial (6-divided)	
Austin Road								
McCabe/Wahl	Local						Prime Arterial (6-divided)	
Proposed Wahl/SR-98	None						Prime Arterial (6-divided)	
Evan Hewes Hwy/McCabe	Major Collector						Prime Arterial (6-divided)	
Aten/Evan Hewes Hwy	Minor Arterial						Prime Arterial (6-divided)	
Keystone/Aten	Major Collector						Prime Arterial (6-divided)	
SR-86/Keystone	Minor Collector						Prime Arterial (6-divided)	
Bannister Road								
SR-86/Brandt	Major Collector						Major Collector (4)	
Barbara Worth Road								
Zenos/Evan Hewes (S-80)	Minor Collector						Major Collector (4)	
Evan Hewes Hwy/Anza	Major Collector						Major Collector (4)	
Baughman Road								
Garvey/Lack	Minor Collector						Minor Collector (2)	
Lack/SR-86	Major Collector						Major Collector (4)	
Bell Road								
Alamo/Evan Hewes Hwy	Minor Collector						Minor Collector (2)	
Bennett Road								
Havens/Ross	Minor Collector						Minor Collector (2)	
Best Road								
Rutherford/Brawley	Minor Arterial						Minor Arterial (4)	
Blair Road								
Pound/Sinclair	Minor Collector						Minor Collector (2)	
Peterson/Lindsey	Major Collector						Major Collector (4)	
Lindsey/SR-115	Major Collector						Major Collector (4)	
SR-115/Yocum	Local						Major Collector (4)	
Blais Road								
Wieman/Forrester	Minor Collector						Minor Collector	
Boarts Road (S26)								
Westmorland/Kalin	Major Collector						Major Collector (4)	
Boley Road								
Westmorland/Huff	Minor Collector						Minor Collector (2)	
Bonds Corner Road								
Holtville/I-8	Major Collector						Major Collector (4)	
I-8/SR-98	Minor Arterial						Minor Arterial (4)	
Bonesteele Road								
Kumberg/SR-98	Minor Collector						Minor Collector (2)	
Bornt Road								
Verde School/SR-98	Minor Collector						Minor Collector (2)	
Bowker Road								
Evan Hewes Hwy/I-8	Major Collector						Major Collector (4)	
I-8/SR-98	Minor Arterial						Expressway (6)	
SR-98/Anza	None						Minor Arterial (4)	

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume[a]	Year 2005 ADT Volume[a]	Year 2025 ADT Volume[c]	25 Year Total Growth Factor[d]	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS[e]
Bowles Road								
Riley/Lyerly	Minor Collector						Minor Collector (2)	
Boyd Road								
Wiest/SR-78	Local						Minor Collector (2)	
SR-115/Highline	Local						Minor Collector (2)	
Highline/End	Minor Collector						Minor Collector (2)	
Brandt Road								
Sinclair/Lindsey	Local						Minor Collector (2)	
Lindsey/Eddins	Minor Collector						Minor Collector (2)	
Eddins/Webster	Minor Collector						Minor Collector (2)	
Bridenstein Road								
Proposed SR-78/Hartshorn							Minor Collector (2)	
Hartshorn/Bonds Corner	Minor Collector						Minor Collector (2)	
Brockman Road (S30)								
McCabe/SR-98	Major Collector						Major Collector (4)	
Butters Road (S32)								
Gonder/SR-78	Prime Arterial						Prime Arterial (6)	A
Bowles/Albright	Local						Major Collector (4)	
Albright/SR-78	Major Collector						Major Collector (4)	
Cady Road								
Pellett/SR-86	Major Collector						Major Collector (4)	
Cambell Road								
Jessup/Derrick	Major Collector						Major Collector (4)	
Derrick/Drew	Major Collector						Major Collector (4)	
Carey Road								
SR-86/Dogwood	Minor Collector						Minor Collector (2)	
Carr Road								
Barbara Worth/SR-7	Major Collector						Minor Arterial (4)	
Carter Road								
Kalin/Forrester	Minor Collector						Major Collector (4)	
Casey Road								
Dickerman/SR-78	Minor Collector						Minor Collector (2)	
SR-78/Worthington	Minor Collector						Major Collector (4)	
Proposed Worthington/Norrish	None						Major Collector (4)	
Chick Road								
El Centro/Pitzer	Prime Arterial						Prime Arterial (6)	
Pitzer/Barbara Worth	Major Collector						Major Collector (4)	
Clark Road								
El Centro/SR-98	Minor Arterial						Minor Arterial (4)	
North El Centro City Limits/Worthington	Major Collector	2,100	2,430	12,550	1.64	21,000	Major Collector (4)	B
Worthington/Larsen	Minor Collector	800	930	6,220	1.64	10,500	Major Collector (4)	A
Cole Road								
Dogwood/Calexico	Prime Arterial						Prime Arterial (6-divided)	
East Calexico City Limits/SR-98	Minor Arterial	9,700	11,230	18,340	1.64	30,500	Prime Arterial (6-divided)	B
Connelly Road								
Vencill/Van Der Linden	Minor Collector						Minor Collector (2)	
Cooley Road								
Worthington/Gillett	Minor Collector						Minor Collector (2)	
Corn Road								
Bowles/Eddins	Minor Collector						Minor Collector (2)	
Correll Road								
Dogwood/SR 111	Minor Arterial						Minor Arterial (4)	
Cross Road								
Imperial (City)/Villa	Minor Collector						Minor Collector (2)	
Davis Road								
Gillespie/Schrimpf	Major Collector						Major Collector (4)	
Proposed Schrimpf/Sinclair	Major Collector						Major Collector (4)	
Dearborn Road								
Harrigan/Wormwood	Minor Collector						Minor Collector (2)	
Derrick Road								
Evan Hewes Hwy/Wixom	Minor Collector						Minor Collector (2)	
Dickerman Road								
SR-115/Butters	Minor Collector						Minor Collector (2)	

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume[a]	Year 2005 ADT Volume[a]	Year 2025 ADT Volume[c]	25 Year Total Growth Factor[d]	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS[e]
Diehl Road								
Westside/Drew	Minor Collector						Minor Collector (2)	
Drew/Harrigan	Major Collector						Prime Arterial (6)	
Proposed Harrigan/Silsbee	Major Collector						Prime Arterial (6)	
Dietrich Road								
Rutherford/Shank	Minor Collector						Major Collector (4)	
Proposed Shank/SR-78	None						Major Collector (4)	
Doetsch Road								
Elder/SR-86	Minor Collector						Minor Collector (2)	
Dogwood Road (S31)*								
Proposed Lindsey/Hovley	None						Prime Arterial (6-divided)	
Brawley/SR-98	Prime Arterial						Prime Arterial (6-divided)	
Dowden Road								
Proposed Forrester/Gentry	None						Local Collector (2)	
Gentry/Kershaw	None						Prime Arterial (6)	
Kershaw/Butters	Minor Collector						Prime Arterial (6)	
Drew Road (S29)								
Evan Hewes/SR-98	Prime Arterial						Prime Arterial (6-divided)	
Dunaway Road								
I-8/Evan Hewes Hwy	Major Collector	900	1,040	2,756	1.64	4,500	Major Collector (4)	A
Eady Road								
Willoughby/Cole	Minor Collector						Minor Collector (2)	
Eddins Road (S30)								
Gentry/SR-111(Calipatria City Limits)	Major Collector						Major Collector (4)	
Edgar Road								
Pierle/Forrester	Minor Collector						Minor Collector (2)	
Elder Road								
Doetsch/Cady	Minor Collector						Minor Collector (2)	
English Road								
Sinclair/Wilkins	Minor Collector						Minor Collector (2)	
Erskine Road								
Wheeler/Payne	Minor Collector						Minor Collector	
Evan Hewes Hwy (S80)								
Imperial Hwy/El Centro	Prime Arterial						Prime Arterial (6-divided)	
El Centro/SR-115	Prime Arterial						Prime Arterial (6-divided)	
SR-115/End	Prime Arterial						Prime Arterial (6-divided)	
Fawcett Road								
Dogwood/Meadows	Minor Collector						Major Collector (4)	
Ferrell Road								
Kubler/SR-98	Major Collector						Major Collector (4)	
SR-98/Anza	Minor Collector						Minor Collector (2)	
Fifield Road								
SR-78/Streiby	Minor Collector						Minor Collector (2)	
Fisher Road								
Drew/Pulliam	Minor Collector						Minor Collector (2)	
Flett Road								
Wilkinson/Wirt	Minor Collector						Minor Collector (2)	
Forrester Road (S30)								
Proposed Sinclair/Walker	None						Prime Arterial (6-divided)	
Walker/Westmorland	Major Collector						Prime Arterial (6-divided)	
Westmorland/McCabe	Prime Arterial						Prime Arterial (6-divided)	
McCabe/Hime	Minor Collector						Prime Arterial (6-divided)	
Proposed Hime/River	Minor Collector						Prime Arterial (6-divided)	
North Westmorland City Limits/Gentry	Major Collector	1,200	1,390	9,000	1.64	15,000	Prime Arterial (6-divided)	A
Foulds Road								
Pellett/Lack	Minor Collector						Minor Collector (2)	
Fredericks Road								
Loveland/SR-111	Minor Collector						Minor Collector (2)	
Frontage Road								
Ross/Brawley (City)	Major Collector						Major Collector (4)	
Garst Road								
Sinclair/McDonald	Minor Collector						Minor Collector (2)	
Garvey Road								
Baughman/Andre	Minor Collector						Minor Collector (2)	

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume[a]	Year 2005 ADT Volume[a]	Year 2025 ADT Volume[c]	25 Year Total Growth Factor[d]	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS[e]
Gentry Road								
Sinclair/Walker	Major Collector						Major Collector (4)	
Gillespie Road								
Davis/Wilkins	Minor Collector						Minor Collector (2)	
Gillett Road								
Cooley/Bowker	Minor Collector						Minor Collector (2)	
Gonder Road								
Proposed New River/SR-115	None						Major Collector (4)	
SR-115/Butters	Local						Minor Collector (2)	
Butters/Green	Minor Collector						Minor Collector (2)	
Green/Highline	Major Collector						Major Collector (4)	
Gowling Road								
Norrish/Zenos	Minor Collector						Major Collector (4)	
Green Road								
SR-78/Gonder	Major Collector						Major Collector (4)	
Griffin Road								
Wiest/SR-115	Minor Collector						Minor Collector (2)	
Grumbles Road								
James/Meloland	Minor Collector						Minor Collector (2)	
Gullett Road								
Worthington/Aten	Minor Collector						Minor Collector (2)	
Gutherie Road								
Wienert/Worthington	Minor Collector						Minor Collector (2)	
Proposed Worthington/Hackleman	Minor Collector						Minor Collector (2)	
Hackleman Road								
Low/Forrester	Minor Collector						Minor Collector (2)	
Hardy Road								
Dunaway/Jeffrey	Major Collector						Major Collector (4)	
Jeffrey/Hyde	Major Collector						Major Collector (4)	
Hyde/Jessup	Major Collector						Major Collector (4)	
Harrigan Road								
Diehl/Dearborn	Minor Collector						Minor Collector (2)	
Harris Road								
Austin/SR-86	Local						Major Collector (4)	
SR-86/McConnel	Major Collector						Major Collector (4)	
McConnell/Highline	Minor Collector						Major Collector (4)	
Hart Road								
Wiest/SR-115	Minor Collector						Minor Collector (2)	
Hartshorn Road								
Bridenstein/Proposed Bridenstein	Minor Collector						Minor Collector	
Haskell Road								
Evan Hewes Hwy/End	Minor Collector						Minor Collector (2)	
Hastain Road								
Taecker/SR-78	Minor Collector						Minor Collector (2)	
Young/Dickerman	Minor Collector						Minor Collector (2)	
Havens Road								
Haskell/Bennett	Minor Collector						Minor Collector (2)	
Hetzel Road								
Westmorland/Huff	Minor Collector						Minor Collector (2)	
Heber Road								
La Brucherie/SR-86	Local						Minor Collector (2)	
SR-111/Anderholt	Minor Arterial	N/A	2,040	16,700	1.64	27,500	Prime Arterial (6-divided)	B
Anderholt/Keffer	Major Collector						Major Collector (4)	
Keffer/Vencill	Minor Collector						Major Collector (4)	
Highline Road (S33)								
Proposed SR-78/Gonder	None						Major Collector (4)	
Gonder/Kavanuagh	Major Collector						Major Collector (4)	
Proposed Kavanaugh/I-8	None						Major Collector (4)	
Holt Road. (S32)								
Gonder/Holtville city limits	Prime Arterial						Prime Arterial (6-divided)	
Hoskins Road								
SR-86/Steiner	Minor Collector						Minor Collector	
Hovley Road								
Rutherford/Brawley	Major Collector						Major Collector (4)	

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume[a]	Year 2005 ADT Volume[a]	Year 2025 ADT Volume[c]	25 Year Total Growth Factor[d]	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS[e]
Huff Road								
Imler/Evan Hewes Hwy	Major Collector						Major Collector (4)	
Hunt Road								
Barbara Worth/Bonds Corner	Major Collector						Major Collector (4)	
Bonds Corner/Van Der Linden	Minor Collector						Minor Collector (2)	
Huston Road								
Dogwood/McConnell	Minor Collector						Minor Collector (2)	
Imler Road								
Huff/Forrester	Major Collector						Major Collector (4)	
International Road								
Noffsinger/Pound	Minor Collector						Minor Collector (2)	
Irvine Road								
Shank/End	Minor Collector						Minor Collector (2)	
James Road								
Ralph/Evan Hewes Hwy	Minor Collector						Minor Collector (2)	
Jasper Road								
Calexico/Anderholt	Major Collector						Expressway (6)	
Proposed Anderholt/ SR-7	None						Expressway (6)	
Jeffery Road								
Evan Hewes Hwy/Hardy	Minor Collector						Minor Collector (2)	
Kaiser Road								
Wirt/Albright	Minor Collector						Minor Collector (2)	
Kalin (S26)								
Sinclair/SR-78/86	Major Collector						Major Collector (4)	
SR-78/86/Webster	Minor Collector						Minor Collector (4)	
Kamm Road								
River/SR-115	Local						Prime Arterial (6)	
SR-115/Holt	Minor Collector						Major Collector (4)	
Keffer Road								
SR-98/King	Major Collector						Major Collector (4)	
Kershaw Road								
Yocum/Rutherford	Minor Collector						Minor Collector (2)	
Keystone Road (S27)								
Forrester/SR-111	Prime Arterial						Expressway (6)	
SR-111/Highline	Major Collector						Expressway (6)	
King Road								
Orchard/Keffer	Major Collector						Major Collector (4)	
Kloke Road								
Willoughby/Calexico	Major Collector						Major Collector (4)	
Kramar Road								
Drew/Forrester	Major Collector						Major Collector (4)	
Kubler Road								
Drew/Clark	Minor Collector						Minor Collector (2)	
Kumberg Road								
Bonesteele/Miller	Minor Collector						Minor Collector (2)	
La Brucherie Road								
El Centro city limits/Kubler	Major Collector						Major Collector (4)	
Larsen/Murphy	Minor Collector						Minor Collector (2)	
Murphy/Imperial city limits	Minor Collector						Minor Collector (2)	
Lack Road								
Lindsey/Blais	Minor Collector						Minor Collector (2)	
Larsen Road								
Forrester/SR-86	Major Collector						Major Collector (4)	
SR-86/Clark	Minor Collector						Minor Collector (2)	
Lavigne Road								
SR-98/Bowker	Prime Arterial						Prime Arterial (6)	
Proposed Bowker/Barbara Worth	Prime Arterial						Prime Arterial (6)	
Liebert Road								
Wixom/Rd 8018	Minor Collector						Minor Collector (2)	
Proposed Road 8018/SR-98	Minor Collector						Minor Collector (2)	
Lindsey Road								
Lack/Wiest	Minor Collector						Minor Collector (2)	
Loveland Road								
Fredericks/Monte	Minor Collector						Minor Collector (2)	
Low Road								
Hackleman/Evan Hewes Hwy	Minor Collector						Minor Collector (2)	

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume[a]	Year 2005 ADT Volume[a]	Year 2025 ADT Volume[c]	25 Year Total Growth Factor[d]	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS[e]
Lyerly Road								
Bowles/Eddins	Minor Collector						Minor Collector (2)	
Lyons Road								
Drew/Nichols	Minor Collector						Major Collector (4)	
Proposed Nichols/La Brucherie	None						Major Collector (4)	
Main ST (Niland)								
SR-111/Blair	Major Collector						Major Collector (4)	
Martin Road								
Baughman/7th	Minor Collector						Minor Collector (2)	
7th/Bannister	Local						Minor Collector (2)	
Mead Road								
Dogwood/McConnell	Minor Collector						Minor Collector (2)	
Meadows Road								
Heber/Calexico (City)	Major Collector						Major Collector (4)	
Meloland Road								
Worthington/Correll	Minor Collector						Minor Collector (2)	
Proposed Correll/SR-98	Minor Collector						Minor Collector (2)	
McCabe Road								
Silsbee/La Brucherie	Major Collector						Prime Arterial (6-divided)	
La Brucherie/SR-111	Minor Arterial	N/A	200	17,270	1.64	28,500	Prime Arterial (6-divided)	B
SR-111/SR-7	Major Collector						Prime Arterial (6-divided)	
McConnell Road								
SR-78/Evan Hewes Hwy	Major Collector						Major Collector (4)	
McDonald Road								
Garst/SR-111	Minor Collector						Minor Collector (2)	
SR-111 TO Rd 8041	Minor Collector						Minor Collector (2)	
McKim Road								
Harris/Ralph	Minor Collector						Minor Collector (2)	
Miller Road (S33)								
I-8/Kumberg	Minor Collector						Minor Collector (2)	
I-8/SR-115	Major Collector	200	230	5,250	1.64	9,000	Major Collector (4)	A
SR-115/Kavanaugh	Major Collector	100	120	5,300	1.64	9,000	Major Collector (4)	A
Monte Road								
Pellett/Loveland	Minor Collector						Minor Collector (2)	
Neckel Road								
Austin/Clark	Minor Collector						Minor Collector (2)	
Nichols Road								
McCabe/Lyons	Minor Collector						Minor Collector (2)	
Noffsinger Road								
SR-111/McDonald	Minor Collector						Minor Collector (2)	
Norrish Road								
Gowling/Holt	Minor Collector						Minor Collector (2)	
Holt/Highline	Local						Major Collector (4)	
Highline/End	Major Collector						Major Collector (4)	
Orchard Road (S32)/ SR 7								
King/McCabe	Major Collector	700	810	50,740	1.13	57,500	Expressway (6)	C
McCabe/I-8	Major Collector	900	1,040	49,000	1.13	56,000	Expressway (6)	C
Holtville/I-8	Minor Arterial						Prime Arterial (6-divided)	
I-8/Connelly	Major Collector						Major Collector (4)	
Orr Road								
Baughman/SR-86	Minor Collector						Minor Collector (2)	
Park Road								
Proposed Dowden/Williams	None						Major Collector (4)	
Williams/Rutherford	Minor Collector						Major Collector (4)	
Proposed Rutherford/Dietrich	None						Major Collector (4)	
Parker Road								
Ross/Gilllett	Minor Collector						Minor Collector (2)	
Payne Road								
Huff/Erskine	Minor Collector						Minor Collector (2)	
Pellett Road								
Foulds/Monte	Minor Collector						Minor Collector (2)	
Proposed Monte/Imler	Minor Collector						Minor Collector (2)	
Pickett Road								
Hastain/Butters	Minor Collector						Minor Collector (2)	

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume[a]	Year 2005 ADT Volume[a]	Year 2025 ADT Volume[c]	25 Year Total Growth Factor[d]	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS[e]
Pierle Road								
Edgar/Wheeler	Minor Collector						Minor Collector(2)	
Pitzer Road								
Proposed Jasper/Willoughby	None						Major Collector (4)	
Chick/SR-86	Major Collector						Major Collector (4)	
SR-86/Jasper	Minor Collector						Major Collector (4)	
Pound Road								
Davis/International	Major Collector						Major Collector (4)	
International/Noffsinger	Minor Collector						Minor Collector (2)	
Pulliam Road								
Fisher/ SR-98	Minor Collector						Minor Collector (2)	
Ralph Road								
Imperial (City)/Dogwood	Major Collector						Major Collector (4)	
Dogwood/Mckim	Minor Collector						Minor Collector (2)	
Riley Road								
Bowles/Eddins	Minor Collector						Minor Collector	
Rockwood Road								
Proposed River/Lyons	Minor Collector						Prime Arterial (6)	
Lyons SR-98	Minor Collector						Prime Arterial (6)	
SR-98/Anza	Major Collector						Major Collector	
Ross Road								
Drew/Bennett	Major Collector	1,500	1,740	2,310	1.64	4,000	Major Collector (4)	A
Drew/Austin	Major Collector						Major Collector (4)	
El Centro/SR-111	Minor Arterial						Minor Arterial (4)	
SR-111/Mets	Local	N/A	560	2,120	1.64	3,500	Minor Collector (2)	B
Ruegger Road								
Kalin/SR-111	Minor Collector						Minor Collector (2)	
Rutherford Road (S26)								
Proposed Banister/Kalin							Major Collector (4)	
Kalin/Butters	Major Collector						Major Collector (4)	
Butters/Irvine	Minor Collector						Minor Collector (2)	
Schartz Road								
Proposed SR-86/Dogwood	None						Major Collector (4)	
Dogwood/McConnell	Minor Collector						Major Collector (4)	
Proposed McConnell/River	None						Major Collector (4)	
Seybert Road								
Taecker/SR-78	Minor Collector						Minor Collector	
Shank Road								
Best/SR-115	Minor Arterial						Minor Arterial (4)	
SR-115/Irvine	Minor Collector						Minor Collector (2)	
Silsbee Road								
Evan Hewes Hwy/McCabe	Minor Collector						Minor Collector (2)	
Sinclair Road								
Gentry/SR-111	Major Collector						Prime Arterial (6-divided)	
SR-111/Weist	Minor Collector						Minor Collector (2)	
Slayton Road								
Worthington/Holtville (City)	Minor Collector						Minor Collector (2)	
Snyder Road								
Worthington/Bonds Corner Road	Minor Collector						Minor Collector (2)	
Stahl Road								
McConnell/End	Minor Collector						Minor Collector (2)	
Streiby Road								
Fifield/Wiest	Minor Collector						Minor Collector (2)	
Taecker Road								
Seybert/Hastain	Minor Collector						Minor Collector (2)	
Titsworth Road								
Butters/End	Minor Collector						Minor Collector (2)	
Townsend Road								
SR-115/Holt	Minor Collector						Minor Collector (2)	
Vail Road								
Lack/Kalin	Minor Collector						Minor Collector (2)	
Van Der Linden								
Hunt/Connelly	Minor Collector						Minor Collector (2)	
Vencill Road								
Connelly/Heber	Minor Collector						Minor Collector (2)	

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume[a]	Year 2005 ADT Volume[a]	Year 2025 ADT Volume[c]	25 Year Total Growth Factor[d]	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS[e]
Verde School Road								
Keffer/Bornt	Minor Collector						Minor Collector (2)	
Villa Road								
Dogwood/Cooley	Minor Collector						Minor Collector (2)	
Wahl Road								
Nichols/Clark	Minor Collector						Minor Collector (2)	
Walker Road								
Gentry/End	Major Collector						Major Collector (4)	
Gentry/Brandt	Minor Collector						Minor Collector (2)	
Ware Road								
Fawcett/Willoughby	Major Collector						Major Collector (4)	
Weaver Road								
Kalin/SR-86	Minor Collector						Minor Collector (2)	
Webster Road								
Kalin/Brandt	Minor Collector						Minor Collector (2)	
Westmorland Road								
Boley/Evan Hewes Hwy	Minor Collector						Minor Collector (2)	
Westside Road								
Evan Hewes Hwy/End	Minor Collector						Minor Collector (2)	
Wheeler Road								
Erskine/Pierle	Minor Collector						Minor Collector (2)	
Wieman Road								
Steiner/Cady	Minor Collector						Minor Collector (2)	
Wienert Road								
Guthrie/Forrester	Minor Collector						Minor Collector (2)	
Wiest Road								
SR-78/Griffin	Minor Collector						Minor Collector (2)	
Griffin/Boyd	Local						Minor Collector (2)	
McDonald/SR-115	Minor Collector						Minor Collector (2)	
Wilkins Road								
English/Cuff	Minor Collector						Minor Collector (2)	
Wilkinson Road								
Brandt/SR-111	Minor Collector						Minor Collector (2)	
Wiest/Flett	Minor Collector						Minor Collector (2)	
Willoughby Road								
Proposed La Brucherie/Clark	none						Major Collector (4)	
Clark/Dogwood	Minor Collector						Major Collector (4)	
Dogwood/Kloke	Major Collector						Major Collector (4)	
Wirt Road								
Wiest/Kaiser	Minor Collector						Minor Collector (2)	
Wixom Road								
Liebert/Drew	Minor Collector						Minor Collector (2)	
Wormwood Road								
Dearborn/Fisher	Minor Collector						Minor Collector (2)	
Worthington Road (S28)								
Huff/Highline	Major Collector						Major Collector (4)	
Yocum Road								
Proposed Dogwood/Lyerly	none						Major Collector (2)	
Lyerly/Kershaw	Minor Collector						Major Collector (4)	
Kershaw/Blair	Local						Major Collector (4)	
Young Road								
SR-111/Blair	Minor Collector						Minor Collector (2)	
Zenos Road								
Barbara Worth/Holtville (City)	Minor Collector						Minor Collector (2)	
State Route 78								
S.D.-Imperial County Line/Junction SR-86	State Hwy	N/A	920	8,104	1.64	13,500	Collector (4)	A
SR-111/SR-115N	State Hwy	N/A	3,950	10,592	1.64	17,500	Collector (4)	B
SR-115N/SR-115S	State Hwy	N/A	3,100	13,447	1.64	22,500	Collector (4)	B
115S/Glamis	State Hwy	N/A	1,950	7,340	1.64	12,500	Collector (4)	A
Glamis/Olgilby	State Hwy	N/A	1,850	4,909	1.64	8,500	Collector (4)	A
Olgilby/Palo Verde, Fourth	State Hwy	N/A	2,000	5,307	1.64	9,000	Collector (4)	A
Palo Verde, Fourth/Imperial County Line	State Hwy	N/A	2,000	5,307	1.64	9,000	Collector (4)	A

TABLE 3
IMPERIAL COUNTY PROJECTED STREET SEGMENT CONFIGURATIONS AND VOLUMES (continued)

Segment Location	2003 Classification	Year 2002 ADT Volume[a]	Year 2005 ADT Volume[a]	Year 2025 ADT Volume[c]	25 Year Total Growth Factor[d]	Year 2050 ADT Volume	Year 2050 Recommended Classification (# of Lanes)	2050 LOS[e]
State Route 86								
Imperial County Line/Desert Shores	State Hwy	N/A	12,900	21,138	1.28	27,500	Minor Arterial (4)	C
Desert Shores/Brawley Ave.	State Hwy	N/A	12,400	20,319	1.28	26,500	Collector (4)	C
Brawley Ave./S. Marina	State Hwy	N/A	13,400	21,957	1.28	28,500	Minor Arterial (4)	C
S. Marina/Air Park	State Hwy	N/A	12,100	19,827	1.64	33,000	Prime Arterial (6-divided)	B
Air Park/SR-78 West	State Hwy	N/A	10,800	17,697	1.64	29,500	Minor Arterial (4)	C
SR-78 West/Lack	State Hwy	N/A	10,800	17,890	1.64	29,500	Minor Arterial (4)	C
Lack/West Westmorland City Limits	State Hwy	N/A	10,200	19,650	1.64	32,500	Prime Arterial (6-divided)	B
E Westmorland C. Limits/W Brawley C. Limits	State Hwy	N/A	14,000	19,440	1.64	32,000	Prime Arterial (6-divided)	B
South Brawley City Limits/Legion	State Hwy	N/A	21,400	28,300	1.13	32,500	Prime Arterial (6-divided)	B
Legion/Keystone	State Hwy	N/A	19,100	27,940	1.13	32,000	Prime Arterial (6-divided)	B
Keystone/Imperial Ave.	State Hwy	N/A	14,700	27,980	1.13	32,000	Prime Arterial (6-divided)	B
I-8/McCabe	State Hwy	N/A	21,500	24,890	1.28	32,000	Prime Arterial (6-divided)	B
McCabe/Heber	State Hwy	N/A	7,100	26,100	1.28	33,500	Prime Arterial (6-divided)	B
Heber/Dogwood	State Hwy	N/A	7,500	26,100	1.28	33,500	Prime Arterial (6-divided)	B
Dogwood/SR-111	State Hwy	N/A	5,200	26,000	1.28	33,500	Prime Arterial (6-divided)	B
South Imperial City Limits/North El Centro City Limits	State Hwy	N/A	6,500	27,980	1.13	32,000	Prime Arterial (6-divided)	B
State Route 98								
Imperial Hwy/Drew	State Hwy	N/A	2,300	1,730	1.64	3,000	Local Collector (2)	B
Drew/Clark	State Hwy	N/A	3,800	5,350	1.64	9,000	Collector (4)	A
Clark/Dogwood	State Hwy	N/A	4,550	8,800	1.64	14,500	Collector (4)	B
Dogwood/West Calexico City Limits	State Hwy	N/A	9,800	24,180	1.64	31,500	Prime Arterial (6-divided)	B
East Calexico City Limits/Barbara Worth	State Hwy	N/A	24,400	26,000	1.64	33,500	Prime Arterial (6-divided)	B
Barbara Worth/Bonds Corner	State Hwy	N/A	16,300	26,000	1.64	33,500	Prime Arterial (6-divided)	B
Bonds Corner/E. Highline Canal	State Hwy	N/A	4,500	770	1.64	1,500	Local Collector (2)	A
E. Highline Canal/I-8	State Hwy	N/A	2,200	250	1.64	500	Local Collector (2)	A
State Route 111								
North Calexico City Limits	State Hwy	N/A	50,000	97,570	1.13	111,000	Freeway (8)	C
Heber/McCabe	State Hwy	N/A	33,500	98,650	1.13	112,000	Freeway (8)	C
McCabe/I-8	State Hwy	N/A	37,000	90,830	1.13	103,000	Freeway (8)	C
I-8/Evan Hewes Hwy	State Hwy	N/A	16,300	52,980	1.13	60,500	Expressway (6)	D
Evan Hewes/Aten	State Hwy	N/A	14,100	60,200	1.13	68,500	Expressway (6)	D
Aten/Worthington	State Hwy	N/A	11,300	58,160	1.13	66,000	Expressway (6)	D
Worthington/Keystone	State Hwy	N/A	10,600	58,710	1.13	67,000	Expressway (6)	D
Keystone/E. Junction 78	State Hwy	N/A	9,300	57,590	1.13	65,500	Expressway (6)	D
North Brawley City Limits/Rutherford	State Hwy	N/A	9,500	18,510	1.64	30,500	Prime Arterial (6-divided)	B
Rutherford/South Calipatria City Limits	State Hwy	N/A	6,600	18,560	1.64	30,500	Prime Arterial (6-divided)	B
North Calipatria City Limits/Sinclair	State Hwy	N/A	5,700	15,640	1.64	26,000	Minor Arterial (4)	C
Sinclair/Niland Ave	State Hwy	N/A	5,100	13,532	1.64	22,500	Collector (4)	B
Niland Ave/English	State Hwy	N/A	3,700	9,817	1.64	16,500	Collector (4)	B
English/Bombay Beach	State Hwy	N/A	2,300	6,103	1.64	10,500	Collector (4)	A
Bombay Beach/Imperial-Riverside County line	State Hwy	N/A	1,900	5,041	1.64	8,500	Collector (4)	A
State Route 115								
Junction I-8/East Holtville City Limits	State Hwy	N/A	1,850	4,140	1.64	7,000	Local Collector (2)	C
West Holtville City Limits/West Junction Evan Hewes Hwy	State Hwy	N/A	6,600	8,320	1.64	14,000	Collector (4)	B
West Junction Evan Hewes Hwy/SR-78	State Hwy	N/A	2,850	27,870	1.13	32,000	Prime Arterial (6-divided)	B
SR-78/Rutherford	State Hwy	N/A	990	13,450	1.64	22,500	Minor Arterial (4)	B
Rutherford/Wirt	State Hwy	N/A	1,650	9,720	1.64	16,000	Collector (4)	B
Wirt/East Calipatria City Limits	State Hwy	N/A	1,150	9,240	1.64	15,500	Collector (4)	B
State Route 186								
I-8/International Border	State Hwy	N/A					State Hwy	

Notes:

* See Table 1 regarding additional right-of-way for transit facility with roadway.

a. Volume from Imperial County Circulation and Scenic Highways Element Manual (Dec. 2003).

b. Volume from Caltrans, Imperial County, or Linscott Law & Greenspan, Engineers counts.

c. Volumes from Caltrans CalexGP+ Model and adjusted higher in some cases.

d. A 0.5%, 1.0%, or 2.0% annual growth rate was applied to the Year 2025 volumes to obtain Year 2050 volumes.

e. Capacity based on the Imperial County Classification Table (depending on the Year 2050 volume amount).

Appendix C

Traffic Impact Significance Criteria from Imperial area EIRs

4.6.2 Impact Significance Criteria

Significance Criteria

The significance criteria summarized in Table 4.6-2 by Linscott, Law and Greenspan Engineers is based upon the City of El Centro and the County of Imperial's goal for intersections and roadway segments to operate at LOS C or better. In general, a degradation in LOS from LOS C or better to LOS D or worse is considered a significant direct impact. A cumulative impact can occur if the intersection or segment LOS is already operating below City/County standards and the project increases the delay by more than 2 seconds or the v/c ratio by more than 0.02.

Table 4.6-2
Significance Criteria

INTERSECTIONS			
Existing	**Existing + Project**	**Existing + Project + Cumulative Projects**	**Impact Type**
LOS [1] C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS D or worse	-	Direct
LOS D	LOS E or F	-	Direct
LOS E	LOS F	-	Direct
Any LOS	Project does not degrade LOS and adds > 2.0 seconds of delay	LOS E or worse	Cumulative
Any LOS	Project does not degrade LOS and adds < 2.0 seconds of delay	Any LOS	None
SEGMENTS			
Existing	**Existing + Project**	**Existing + Project + Cumulative Projects**	**Impact Type**
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS D or worse	-	Direct [2]
LOS D	LOS E or F	-	Direct
LOS E	LOS F	-	Direct
Any LOS	LOS E or worse and v/c [3] > 0.02	LOS E or worse	Cumulative
Any LOS	LOS E or worse and v/c [3] < 0.02	Any LOS	None

Source: Linscott, Law & Greenspan, Engineers (July 2004)

Notes:

1. LOS: Level of Service
2. Exception: post-project segment operation is D and intersections along segment are D or better, no significant impact.
3. V/C: Volume to Capacity Ratio

In addition the project would have a significant impact if:

- It would substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

TABLE 5.1
SIGNIFICANCE CRITERIA

Intersections			
Existing	**Existing + Project**	**Existing + Project + Cumulative Projects**	**Impact Type**
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS C or better and project adds < 2.0 seconds of delay	LOS D or worse	None
LOS C or better	LOS C or better and project adds > 2.0 seconds of delay	LOS D or worse	Cumulative
LOS C or better	LOS D or worse	LOS D or worse	Direct
LOS D	LOS D and project adds < 2.0 seconds of delay	LOS D or worse	None
LOS D	LOS D and project adds > 2.0 seconds of delay	LOS D or worse	Cumulative
LOS D	LOS E or F	LOS E or F	Direct
LOS E	LOS E and project adds < 2.0 seconds of delay	LOS E or F	None
LOS E	LOS E and project adds > 2.0 seconds of delay	LOS E or F	Cumulative
LOS E	LOS F	LOS F	Direct
LOS F	Project add < 2.0 seconds of delay	LOS F	None
LOS F	Project adds 2.0 to 9.9 seconds of delay	LOS F	Cumulative
LOS F	Project adds 10.0 or more seconds of delay	LOS F	Direct
Segments			
Existing	**Existing + Project**	**Existing + Project + Cumulative Projects**	**Impact Type**
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS or better and project increases V/C by < 0.02	LOS D or worse	None
LOS C or better	LOS C or better and project increase V/C by >0.02	LOS D or worse	Cumulative
LOS C or better	LOS D or worse	LOS D or worse	Direct[1]
LOS D	LOS D and project increases V/C by < 0.02	LOS D or worse	None
LOS D	LOS D and project increases V/C by > 0.02	LOS D or worse	Cumulative
LOS D	LOS E or F	LOS E or F	Direct
LOS E	LOS E and project increases V/C by < 0.02	LOS E or F	None
LOS E	LOS E and project increases V/C by > 0.02	LOS E or F	Cumulative
LOS E	LOS F	LOS F	Direct
LOS F	Project increases V/C by < 0.02	LOS F	None
LOS F	Project increases V/C by > 0.02 and < 0.09	LOS F	Cumulative
LOS F	Project increases V/C by > 0.09	LOS F	Direct

Notes: LOS = Level of Service; V/C = Volume to Capacity Ratio; [1] Exception: If Existing + Project segment operation is LOS D and intersections along segment are LOS D or better, then there is no significant impact.

In addition to the above listed projects, the Lerno/Verhaegen project was recently submitted and is currently starting the CEQA process. This project is listed for information purposes but cannot be analyzed in cumulative terms. The following is a brief description based on the limited information available for this project.

Lerno-Verhaegen Specific Plan is proposed to be a mixed-use development of 2,708 dwelling units. The project consists of 680 acres on the west side of the City of El Centro. The project includes a zone change, Tentative Map, an amendment of the City's General Plan and an annexation.

Individual traffic assignments were completed for each cumulative project. Figure 2-7 depicts the total cumulative project traffic volumes in the area. Figure 2-8 shows the existing + project + cumulative projects traffic volumes for the vicinity. Appendix D of this Mitigated Negative Declaration contains the individual cumulative project traffic assignments.

Significance Criteria

The significance criteria summarized in Table 2-7 by Linscott, Law and Greenspan, engineers is based upon the County of Imperial's goal for intersections and roadway segments to operate at LOS C or better. Intersections or segments operating at LOS D, E or F are unacceptable and therefore constitute a significant impact.

Table 2-7 – Significance Criteria

INTERSECTIONS			
Existing	**Existing + Project**	**Existing + Project + Cumulative Projects**	**Impact Type**
LOS [1] C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS D or worse	-	Direct
LOS D	LOS E or F	-	Direct
LOS E	LOS F	-	Direct
Any LOS	Project does not degrade LOS and adds > 2.0 seconds of delay	LOS E or worse	Cumulative
Any LOS	Project does not degrade LOS and adds < 2.0 seconds of delay	Any LOS	None
SEGMENTS			
Existing	**Existing + Project**	**Existing + Project + Cumulative Projects**	**Impact Type**
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS D or worse	-	Direct [2]
LOS D	LOS E or F	-	Direct
LOS E	LOS F	-	Direct
Any LOS	LOS E or worse and v/c [3] > 0.02	LOS E or worse	Cumulative
Any LOS	LOS E or worse and v/c [3] < 0.02	Any LOS	None

Source: LL&G, July 2004.

Notes:

1. LOS: Level of Service
2. Exception: post-project segment operation is D and intersections along segment are D or better, no significant impact.
3. V/C: Volume to Capacity Ratio

TABLE 5-1
SIGNIFICANCE CRITERIA

INTERSECTIONS			
Existing	**Existing + Project**	**Existing + Project + Cumulative Projects**	**Impact Type**
LOS [a] C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS D or worse	—	Direct
LOS D	LOS D and adds 2.0 seconds or more of delay	LOS D or worse	Cumulative
LOS D	LOS E or F	—	Direct
LOS E	LOS F	—	Direct
LOS F	LOS F and delay increases by ≥ 10.0 seconds	LOS F	Direct
Any LOS	Project does not degrade LOS and adds 2.0 to 9.9 seconds of delay	LOS E or worse	Cumulative
Any LOS	Project does not degrade LOS and adds < 2.0 seconds of delay	Any LOS	None
SEGMENTS			
Existing	**Existing + Project**	**Existing + Project + Cumulative Projects**	**Impact Type**
LOS C or better	LOS C or better	LOS C or better	None
LOS C or better	LOS C or better and v/c [b] > 0.02	LOS D or worse	Cumulative
LOS C or better	LOS D or worse	—	Direct
LOS D	LOS D and v/c > 0.02	LOS D or worse	Cumulative
LOS D	LOS E or F	—	Direct
LOS E	LOS F	—	Direct
LOS F	LOS F and v/c increases by > 0.09	LOS F	Direct
Any LOS	LOS E or worse and v/c 0.02 to 0.09	LOS E or worse	Cumulative
Any LOS	LOS E or worse and v/c < 0.02	Any LOS	None

Source: Linscott, Law & Greenspan, Engineers

Footnotes:

a. Level of Service

b. Volume to Capacity Ratio

Appendix D

Count Data

WEDNESDAY - AUGUST 31ST, 2016 CITY: IMPERIAL VALLEY PROJECT: PTD16-0902-04

DREW N-O WIXOM

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		1					12:00	2		2				
00:15	1		4					12:15	3		1				
00:30	1		1					12:30	2		5				
00:45	0	2	0	6			8	12:45	4	11	3	11			22
01:00	0		1					13:00	0		2				
01:15	0		0					13:15	1		2				
01:30	1		0					13:30	2		2				
01:45	0	1	2	3			4	13:45	0	3	8	14			17
02:00	0		2					14:00	1		2				
02:15	1		0					14:15	2		4				
02:30	0		0					14:30	5		6				
02:45	1	2	1	3			5	14:45	5	13	7	19			32
03:00	0		0					15:00	1		4				
03:15	0		0					15:15	3		2				
03:30	1		0					15:30	2		2				
03:45	0	1	0	0			1	15:45	1	7	3	11			18
04:00	4		2					16:00	1		8				
04:15	1		0					16:15	1		4				
04:30	0		1					16:30	6		3				
04:45	1	6	1	4			10	16:45	8	16	3	18			34
05:00	3		2					17:00	2		6				
05:15	4		2					17:15	3		3				
05:30	3		3					17:30	0		2				
05:45	2	12	4	11			23	17:45	0	5	2	13			18
06:00	4		3					18:00	3		5				
06:15	1		4					18:15	6		2				
06:30	3		9					18:30	0		2				
06:45	3	11	6	22			33	18:45	3	12	2	11			23
07:00	3		4					19:00	0		1				
07:15	3		1					19:15	0		0				
07:30	10		3					19:30	1		3				
07:45	2	18	9	17			35	19:45	0	1	0	4			5
08:00	3		3					20:00	4		1				
08:15	1		2					20:15	0		1				
08:30	0		2					20:30	0		0				
08:45	0	4	5	12			16	20:45	0	4	2	4			8
09:00	2		4					21:00	0		1				
09:15	0		2					21:15	1		1				
09:30	0		6					21:30	1		0				
09:45	0	2	1	13			15	21:45	0	2	3	5			7
10:00	5		1					22:00	2		0				
10:15	0		1					22:15	2		0				
10:30	3		4					22:30	0		0				
10:45	1	9	3	9			18	22:45	0	4	1	1			5
11:00	5		2					23:00	0		0				
11:15	3		3					23:15	1		1				
11:30	5		1					23:30	0		0				
11:45	1	14	1	7			21	23:45	1	2	0	1			3
Total Vol.		82		107			**189**			80		112			**192**

Daily Totals

NB	SB	EB	WB	**Combined**
162	219			**381**

	AM			**PM**		
Split %	43.4%	56.6%	**49.6%**	41.7%	58.3%	**50.4%**
Peak Hour	06:45	06:15	**07:00**	16:30	14:15	**14:15**
Volume	19	23	**35**	19	21	**34**
P.H.F.	0.48	0.64	**0.67**	0.56	0.75	**0.71**

WEDNESDAY - AUGUST 31ST, 2016 CITY: IMPERIAL VALLEY PROJECT: PTD16-0902-04

DREW S-O WIXOM

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	1		0					12:00	2		2				
00:15	2		1					12:15	4		1				
00:30	1		0					12:30	2		6				
00:45	0	4	0	1			5	12:45	4	12	1	10			22
01:00	0		0					13:00	0		2				
01:15	0		0					13:15	0		1				
01:30	0		1					13:30	2		3				
01:45	0	0	1	2			2	13:45	8	10	4	10			20
02:00	0		0					14:00	1		5				
02:15	0		0					14:15	0		5				
02:30	0		0					14:30	3		6				
02:45	3	3	1	1			4	14:45	6	10	7	23			33
03:00	0		0					15:00	1		2				
03:15	0		0					15:15	1		2				
03:30	0		0					15:30	1		1				
03:45	0	0	0	0				15:45	1	4	3	8			12
04:00	2		3					16:00	1		6				
04:15	0		1					16:15	1		4				
04:30	1		1					16:30	5		3				
04:45	1	4	0	5			9	16:45	5	12	5	18			30
05:00	2		3					17:00	2		5				
05:15	2		3					17:15	3		3				
05:30	3		3					17:30	0		1				
05:45	2	9	1	10			19	17:45	0	5	1	10			15
06:00	2		3					18:00	2		3				
06:15	2		3					18:15	3		2				
06:30	5		1					18:30	0		2				
06:45	3	12	6	13			25	18:45	4	9	1	8			17
07:00	4		5					19:00	0		1				
07:15	2		1					19:15	0		0				
07:30	5		4					19:30	1		2				
07:45	4	15	7	17			32	19:45	1	2	0	3			5
08:00	2		3					20:00	3		1				
08:15	3		1					20:15	1		0				
08:30	0		1					20:30	0		0				
08:45	1	6	4	9			15	20:45	0	4	1	2			6
09:00	1		3					21:00	3		1				
09:15	5		2					21:15	0		0				
09:30	1		5					21:30	0		0				
09:45	1	8	3	13			21	21:45	0	3	0	1			4
10:00	6		1					22:00	1		0				
10:15	2		0					22:15	1		1				
10:30	0		3					22:30	0		0				
10:45	1	9	2	6			15	22:45	0	2	1	2			4
11:00	4		2					23:00	0		0				
11:15	2		3					23:15	1		1				
11:30	4		1					23:30	0		0				
11:45	0	10	1	7			17	23:45	0	1	0	1			2
Total Vol.		80		84			**164**			74		96			**170**

Daily Totals

NB	SB	EB	WB	**Combined**
154	180			**334**

	AM			PM		
Split %	48.8%	51.2%	**49.1%**	43.5%	56.5%	**50.9%**
Peak Hour	07:00	07:00	**07:00**	16:30	14:00	**14:00**
Volume	15	17	**32**	15	23	**33**
P.H.F.	0.75	0.61	**0.73**	0.70	0.82	**0.63**

WEDNESDAY - AUGUST 31ST, 2016 CITY: IMPERIAL VALLEY PROJECT: PTD16-0902-04

WIXOM W-O DREW

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		0			12:00			0		0		
00:15			0		2			12:15			0		1		
00:30			1		0			12:30			1		0		
00:45			0	1	0	2	3	12:45			0	1	1	2	3
01:00			1		0			13:00			0		0		
01:15			0		0			13:15			1		1		
01:30			0		0			13:30			1		0		
01:45			0	1	3	3	4	13:45			1	3	8	9	12
02:00			0		2			14:00			3		0		
02:15			1		0			14:15			5		1		
02:30			0		0			14:30			2		0		
02:45			1	2	2	4	6	14:45			0	10	4	5	15
03:00			0		0			15:00			2		4		
03:15			0		0			15:15			1		0		
03:30			1		0			15:30			2		1		
03:45			0	1	0	0	1	15:45			0	5	0	5	10
04:00			1		0			16:00			1		1		
04:15			0		0			16:15			0		0		
04:30			0		1			16:30			2		0		
04:45			1	2	0	1	3	16:45			6	9	0	1	10
05:00			0		0			17:00			0		0		
05:15			1		0			17:15			1		0		
05:30			0		0			17:30			0		0		
05:45			2	3	1	1	4	17:45			1	2	1	1	3
06:00			2		0			18:00			2		1		
06:15			1		1			18:15			3		0		
06:30			2		4			18:30			0		0		
06:45			5	10	5	10	20	18:45			0	5	0	1	6
07:00			2		1			19:00			0		0		
07:15			1		0			19:15			0		0		
07:30			4		1			19:30			1		0		
07:45			1	8	0	2	10	19:45			1	2	0	0	2
08:00			1		1			20:00			0		0		
08:15			1		4			20:15			0		0		
08:30			0		1			20:30			0		0		
08:45			0	2	2	8	10	20:45			1	1	0	0	1
09:00			2		2			21:00			2		3		
09:15			1		4			21:15			1		1		
09:30			1		1			21:30			1		0		
09:45			6	10	0	7	17	21:45			0	4	3	7	11
10:00			1		0			22:00			3		0		
10:15			1		2			22:15			1		1		
10:30			6		1			22:30			0		0		
10:45			1	9	0	3	12	22:45			0	4	0	1	5
11:00			0		0			23:00			0		0		
11:15			1		1			23:15			0		0		
11:30			2		0			23:30			0		0		
11:45			1	4	0	1	5	23:45			1	1	0	0	1
Total Vol.				53		42	**95**					47		32	**79**

Daily Totals

NB	SB	EB	WB	Combined
		100	74	**174**

	AM			PM		
Split %	55.8%	44.2%	**54.6%**	59.5%	40.5%	**45.4%**
Peak Hour	09:45	06:15	**06:15**	13:45	13:00	**13:45**
Volume	14	11	**21**	11	9	**20**
P.H.F.	0.58	0.55	**0.53**	0.55	0.28	**0.56**

INTERSECTION TURNING MOVEMENT COUNTS

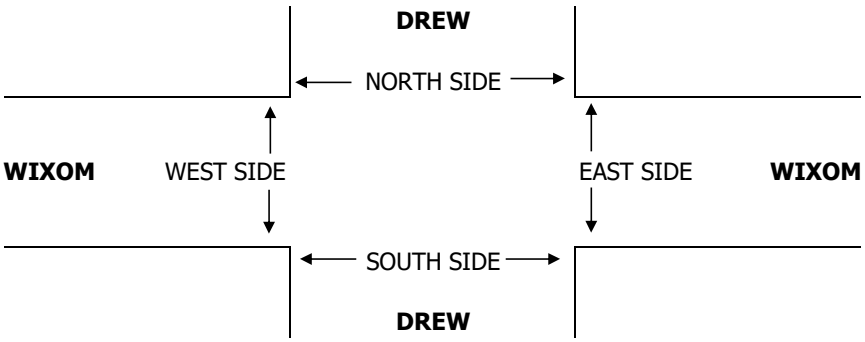
PREPARED BY: PACIFIC TECHNICAL DATA

DATE:	LOCATION:	IMPERIAL VALLEY	PROJECT #:	PTD16-0902-04
8/31/16	NORTH & SOUTH:	DREW	LOCATION #:	1
WEDNESDAY	EAST & WEST:	WIXOM	CONTROL:	1-WAY STOP (EB)

NOTES:

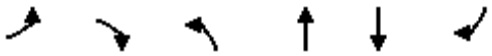
AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND DREW			SOUTHBOUND DREW			EASTBOUND WIXOM			WESTBOUND WIXOM			
	LANES:	NL 0	NT 1	NR X	SL X	ST 1	SR 0	EL 0.5	ET X	ER 0.5	WL X	WT X	WR X	TOTAL
AM	7:00 AM	0	3			4	1	1		1				10
	7:15 AM	0	2			1	0	1		0				4
	7:30 AM	0	6			3	0	4		0				13
	7:45 AM	1	2			8	0	1		0				12
	8:00 AM	0	2			3	1	1		0				7
	8:15 AM	2	1			0	2	0		0				5
	8:30 AM	0	0			2	1	0		0				3
	8:45 AM	1	0			4	1	0		0				6
	VOLUMES	4	16	0	0	25	6	8	0	1	0	0	0	60
	APPROACH %	20%	80%	0%	0%	81%	19%	89%	0%	11%	0%	0%	0%	
	APP/DEPART	20	/	24	31	/	26	9	/	0	0	/	10	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	1	13	0	0	16	1	7	0	1	0	0	0	39
	APPROACH %	7%	93%	0%	0%	94%	6%	88%	0%	13%	0%	0%	0%	
	PEAK HR FACTOR		0.583			0.531			0.500			0.000		0.750
	APP/DEPART	14	/	20	17	/	17	8	/	0	0	/	2	0
PM	4:00 PM	0	1			7	1	1		0				10
	4:15 PM	0	1			4	0	0		0				5
	4:30 PM	0	6			3	0	1		1				11
	4:45 PM	0	4			3	0	5		1				13
	5:00 PM	0	2			5	0	0		0				7
	5:15 PM	0	3			2	0	1		0				6
	5:30 PM	0	0			2	0	0		0				2
	5:45 PM	0	0			1	1	1		0				3
	VOLUMES	0	17	0	0	27	2	9	0	2	0	0	0	57
	APPROACH %	0%	100%	0%	0%	93%	7%	82%	0%	18%	0%	0%	0%	
	APP/DEPART	17	/	26	29	/	29	11	/	0	0	/	2	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	12	0	0	17	1	7	0	2	0	0	0	39
	APPROACH %	0%	100%	0%	0%	94%	6%	78%	0%	22%	0%	0%	0%	
	PEAK HR FACTOR		0.500			0.563			0.375			0.000		0.750
	APP/DEPART	12	/	19	18	/	19	9	/	0	0	/	1	0



Appendix E

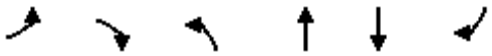
Existing Intersection LOS Calculations



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	7	1	1	13	16	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	1	1	14	17	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	34	18	18			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	34	18	18			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	978	1061	1598			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	9	15	18
Volume Left	8	1	0
Volume Right	1	0	1
cSH	988	1598	1700
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.7	0.5	0.0
Lane LOS	A	A	
Approach Delay (s)	8.7	0.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



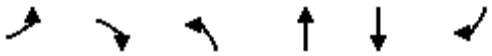
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	7	2	0	12	17	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	2	0	13	18	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	32	19	20			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	32	19	20			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	982	1059	1597			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	10	13	20
Volume Left	8	0	0
Volume Right	2	0	1
cSH	998	1597	1700
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix F

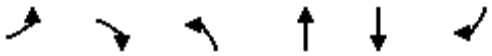
Existing + Project (Phase 1) Intersection LOS Calculations



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	18	2	4	13	16	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	2	4	14	17	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	54	31	45			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	54	31	45			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	952	1043	1564			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	22	18	45
Volume Left	20	4	0
Volume Right	2	0	27
cSH	960	1564	1700
Volume to Capacity	0.02	0.00	0.03
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.8	1.7	0.0
Lane LOS	A	A	
Approach Delay (s)	8.8	1.7	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	14.2%	ICU Level of Service	A
Analysis Period (min)	15		



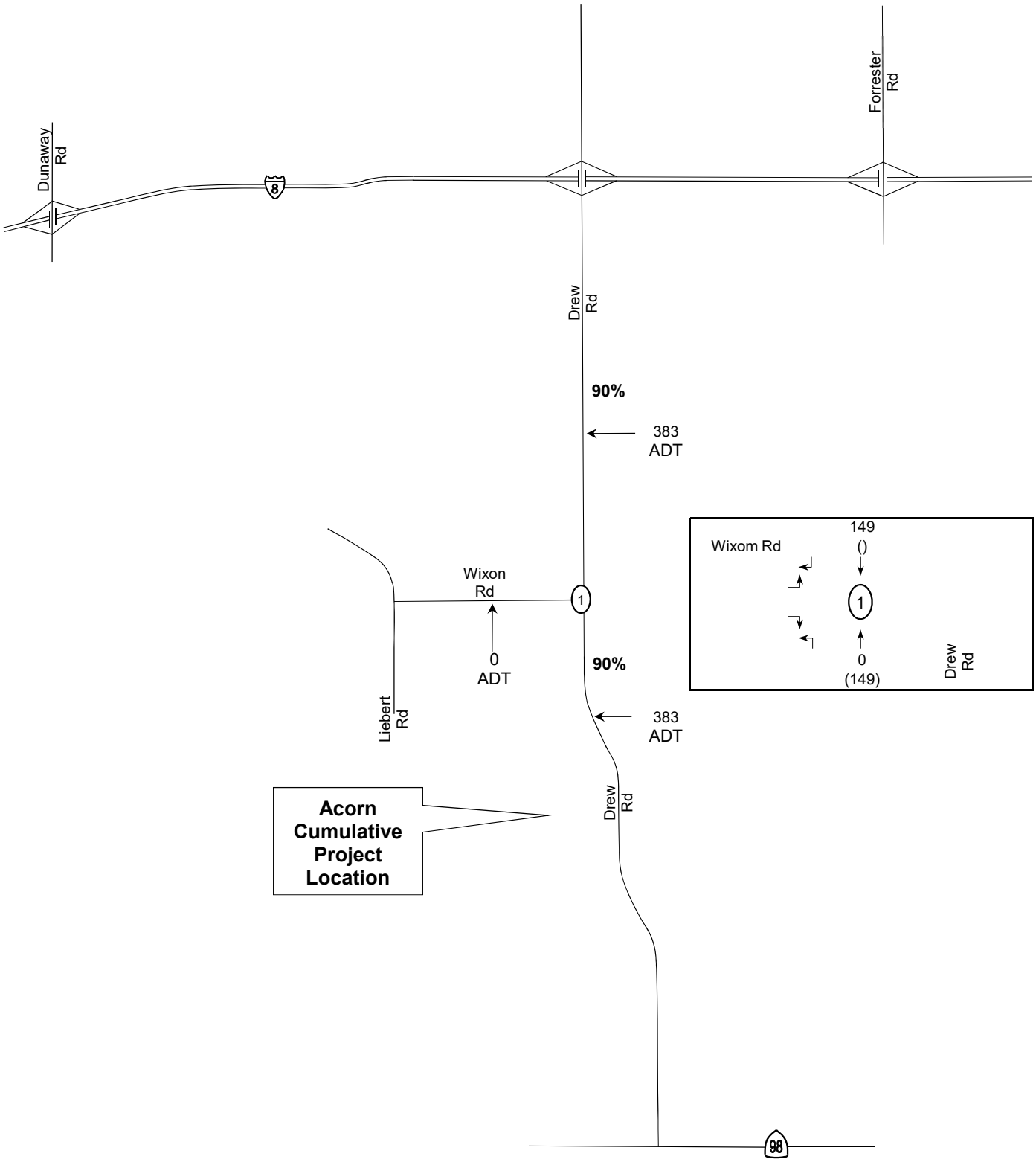
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	23	4	0	12	17	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	4	0	13	18	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	34	21	23			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	34	21	23			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	100			
cM capacity (veh/h)	980	1057	1592			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	29	13	23
Volume Left	25	0	0
Volume Right	4	0	4
cSH	990	1592	1700
Volume to Capacity	0.03	0.00	0.01
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.7	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.7	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix G

Cumulative Project (New Development) Data

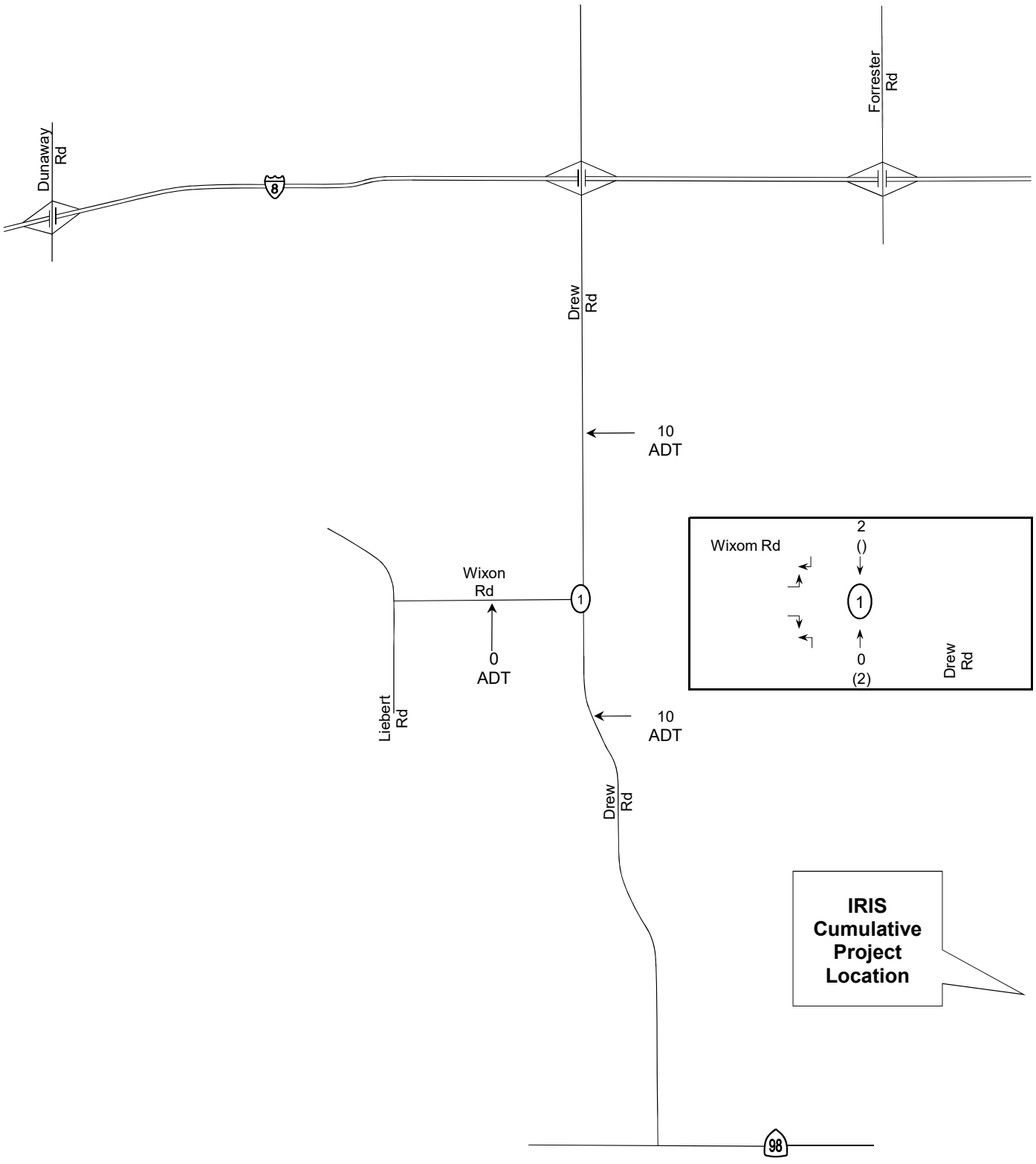


LEGEND

XX	AM peak hour volumes at intersections
(YY)	PM peak hour volumes at intersections
Z,ZZZ	ADT volumes shown along segments
(#)	Intersection Reference Number to LOS Tables
——	Existing Roads
()	Represents 0 PM volume

N

No Scale

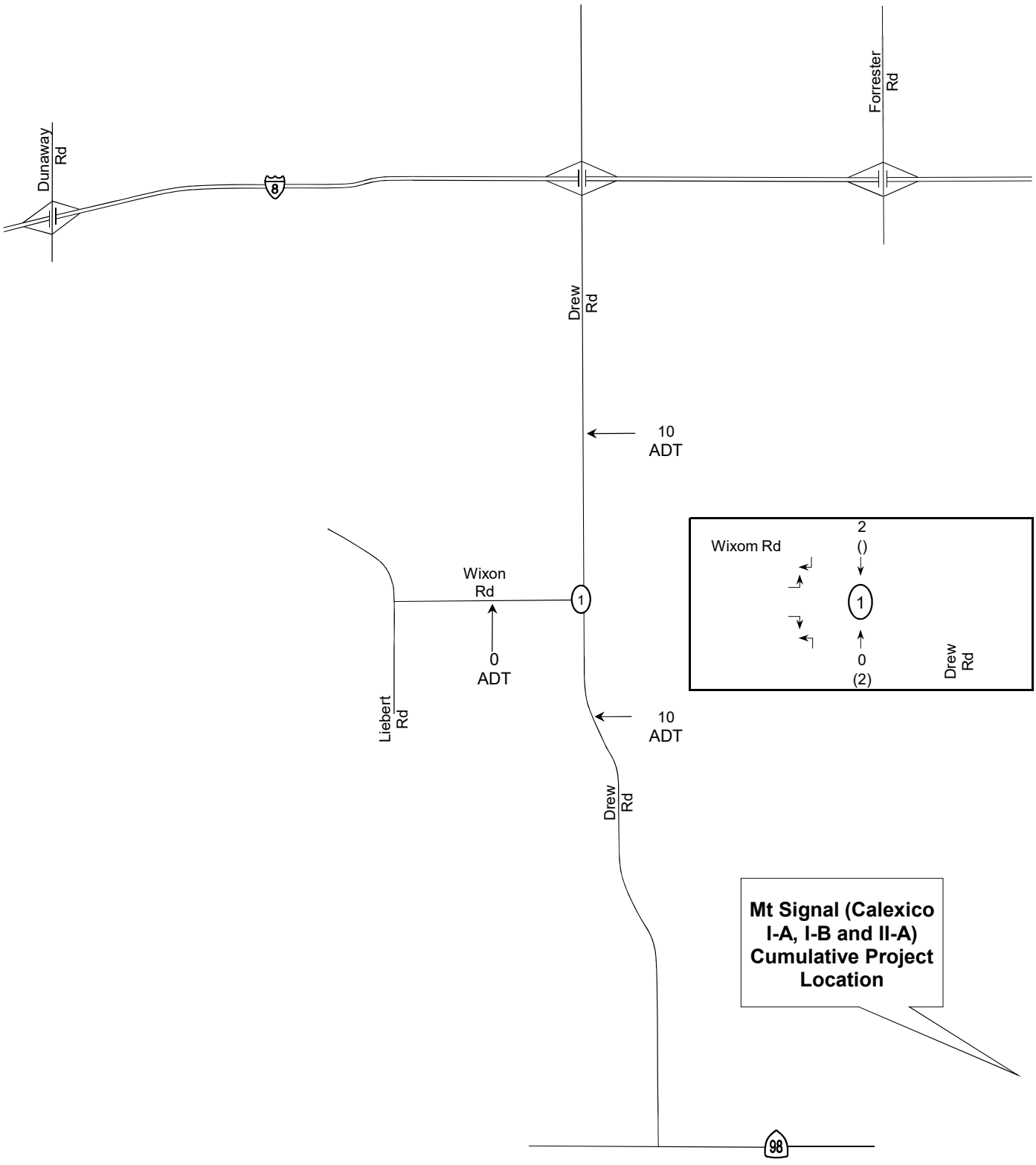


LEGEND

XX	AM peak hour volumes at intersections
(YY)	PM peak hour volumes at intersections
Z,ZZZ	ADT volumes shown along segments
(#)	Intersection Reference Number to LOS Tables
——	Existing Roads
()	Represents 0 PM volume

N

No Scale

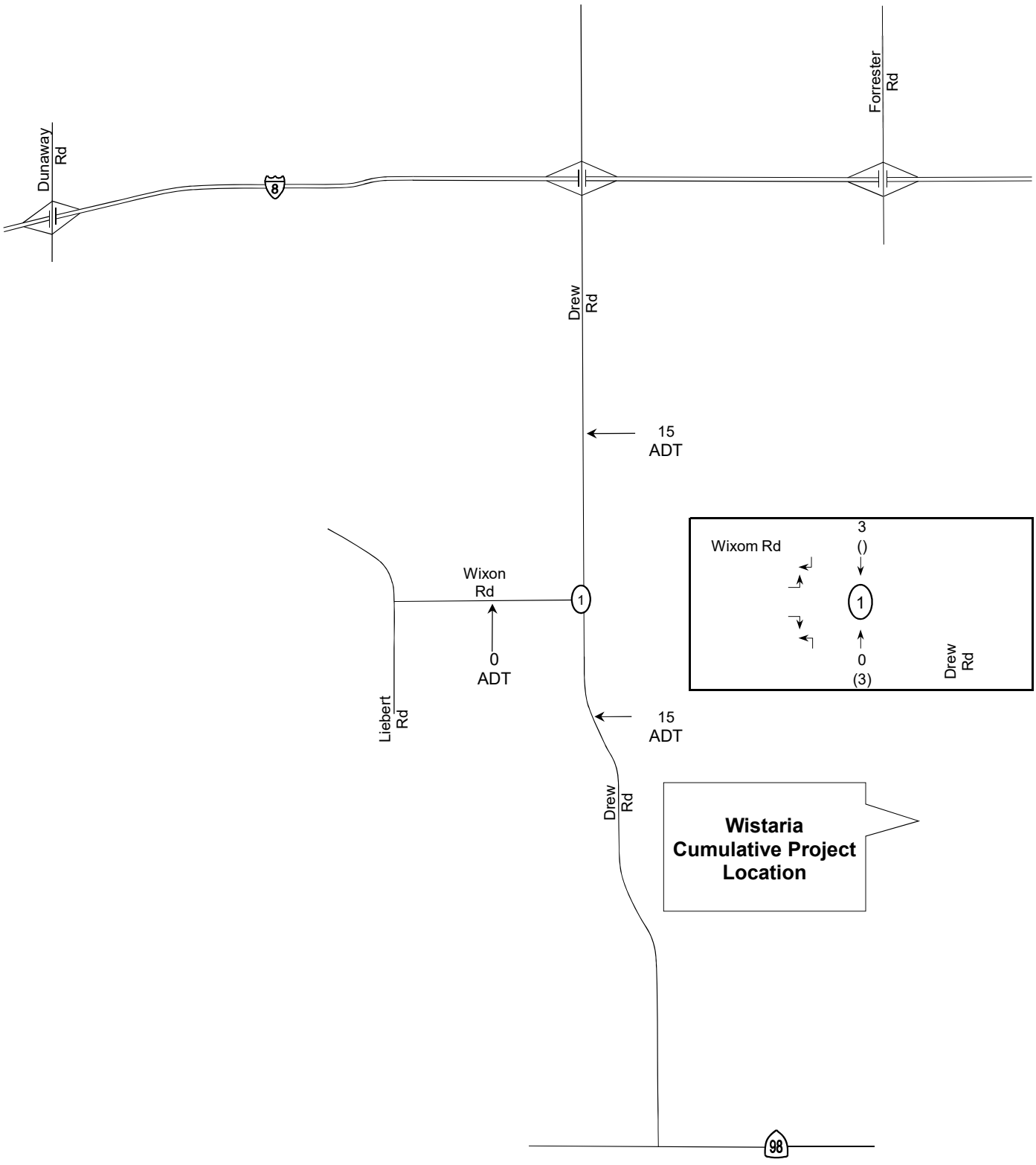


LEGEND

XX	AM peak hour volumes at intersections
(YY)	PM peak hour volumes at intersections
Z,ZZZ	ADT volumes shown along segments
(#)	Intersection Reference Number to LOS Tables
——	Existing Roads
()	Represents 0 PM volume

N

No Scale



LEGEND

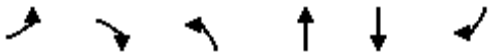
XX	AM peak hour volumes at intersections
(YY)	PM peak hour volumes at intersections
Z,ZZZ	ADT volumes shown along segments
(#)	Intersection Reference Number to LOS Tables
——	Existing Roads
()	Represents 0 PM volume

N

No Scale

Appendix H

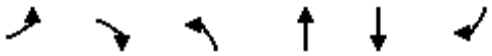
Existing + Project (Phase 1) + Cumulative Intersection LOS Calculations



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	18	2	4	17	212	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	2	4	18	230	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	271	244	258			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	271	244	258			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	100			
cM capacity (veh/h)	716	795	1307			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	22	23	258
Volume Left	20	4	0
Volume Right	2	0	27
cSH	723	1307	1700
Volume to Capacity	0.03	0.00	0.15
Queue Length 95th (ft)	2	0	0
Control Delay (s)	10.1	1.5	0.0
Lane LOS	B	A	
Approach Delay (s)	10.1	1.5	0.0
Approach LOS	B		

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization		22.7%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	23	4	0	168	17	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	4	0	183	18	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	203	21	23			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	203	21	23			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	100			
cM capacity (veh/h)	785	1057	1592			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	29	183	23
Volume Left	25	0	0
Volume Right	4	0	4
cSH	816	1592	1700
Volume to Capacity	0.04	0.00	0.01
Queue Length 95th (ft)	3	0	0
Control Delay (s)	9.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix I

Growth Factor Support Data

LAND USE ELEMENT
of the Imperial County
GENERAL PLAN

Prepared by:

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County of Imperial
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JURG HEUBERGER, AICP, CEP, CBO
Planning & Development Services Director

Approved By:

Board of Supervisors

October 17, 2006

II. EXISTING CONDITIONS AND TRENDS

A. Preface

Knowledge, experience and reasoned expectations of future conditions determines the scope of the issues that the Land Use Element must address. This chapter includes a generalized description of existing physical, cultural, and land use features within the County, from both a historic and expected future perspective.

B. Land Use/Population

Imperial County is, and will continue for the foreseeable future to be, a predominantly agricultural area, **although in 2003 a significant increase in urbanization began to show.** Presently, approximately one-fifth (534,328) of the nearly 3 million acres of the County is irrigated for agricultural purposes. In addition, approximately 50 percent of County lands are largely undeveloped and under federal ownership. The developed area where the County's incorporated cities, 'nincorporated communities, and supporting facilities are situated comprise less than one percent of the land (see Table 1).

Imperial County Planning & Development Services Department bases its population estimates on building permits and housing unit change. From this annual compilation, the Population Research Unit of the California Department of Finance (DOF) estimates the annual change in population. According to the Department of Finance's January 1, 2006, estimates, the population for the unincorporated area is 36,166 with the total population for Imperial County being 166,585. This compares to the 1990 census results of 27,339 for the unincorporated area with the total population for the County being 109,303 and the 2000 census results of 32,772 for the unincorporated area and 147,361 for the entire County (see Table 2). According to DOF 2006 figures, the average household size county-wide is approximately 3.32 persons per household, with the average in cities being 3.42 persons per household and the average in the unincorporated area being 2.96 persons per household.

Population in the unincorporated areas of the County tends to concentrate in agricultural areas and in recreation/retirement communities. Agricultural related communities include the townsites of Heber, Niland and Seeley in the Imperial Valley. Along the Colorado River, in the eastern portion of the County, small population clusters exist within the townsites of Palo Verde and Winterhaven. Recreation/retirement communities include Ocotillo/Nomirage located in the southwest portion of the County, and Hot Mineral Spa and Bombay Beach, on the northeastern shore of the Salton Sea. The West Shores communities of Salton City, Salton Sea Beach, and Desert Shores are also largely retirement and recreation communities, though increasingly their populations are becoming more diversified. These communities experience a noticeable increase in population during the winter months when visitors converge to the area to avoid cold/wet winters in other parts of the country.

E-2. California County Population Estimates and Components of Change
Revised July 1, 2006 and Provisional July 1, 2007
Table 1.

County	Total Population		Change 2006-2007		Components of Change					
	Revised July 1, 2006	Provisional July 1, 2007	Number	Percent	Births	Deaths	Natural Increase	Net Migration	Net Immigration	Net Domestic Migration
Alameda	1,513,859	1,530,620	16,761	1.11	20,906	9,384	11,522	5,239	10,033	-4,794
Alpine	1,254	1,261	7	0.56	16	9	7	0	2	-2
Amador	38,083	38,320	237	0.62	291	418	-127	364	19	345
Butte	217,548	219,101	1,553	0.71	2,584	2,148	436	1,117	312	805
Calaveras	45,663	45,950	287	0.63	390	429	-39	326	32	294
Colusa	21,551	21,945	394	1.83	400	142	258	136	108	28
Contra Costa	1,031,012	1,044,201	13,189	1.28	13,584	6,836	6,748	6,441	4,168	2,273
Del Norte	29,009	29,207	198	0.68	374	290	84	114	25	89
El Dorado	176,969	178,689	1,720	0.97	1,981	1,250	731	989	290	699
Fresno	906,365	923,052	16,687	1.84	17,110	5,951	11,159	5,528	4,365	1,163
Glenn	28,628	29,018	390	1.36	455	249	206	184	99	85
Humboldt	131,876	132,364	488	0.37	1,605	1,255	350	138	77	61
Imperial	168,979	174,322	5,343	3.16	3,280	914	2,366	2,977	2,373	604
Inyo	18,221	18,253	32	0.18	242	239	3	29	28	1
Kern	790,246	809,903	19,657	2.49	15,446	5,406	10,040	9,617	3,114	6,503
Kings	149,883	153,268	3,385	2.26	2,742	841	1,901	1,484	564	920
Lake	63,618	63,821	203	0.32	737	850	-113	316	155	161
Lassen	35,521	36,223	702	1.98	268	209	59	643	19	624
Los Angeles	10,247,672	10,294,280	46,608	0.45	152,479	60,800	91,679	-45,071	69,567	-114,638
Madera	146,064	149,916	3,852	2.64	2,565	921	1,644	2,208	505	1,703
Marin	254,000	256,310	2,310	0.91	2,625	1,787	838	1,472	534	938
Mariposa	18,187	18,356	169	0.93	148	176	-28	197	13	184
Mendocino	89,264	89,669	405	0.45	1,137	857	280	125	238	-113
Merced	248,258	252,544	4,286	1.73	4,867	1,435	3,432	854	1,271	-417
Modoc	9,690	9,747	57	0.59	77	114	-37	94	3	91
Mono	14,019	14,055	36	0.26	167	47	120	-84	43	-127
Monterey	421,463	425,356	3,893	0.92	7,371	2,431	4,940	-1,047	2,490	-3,537
Napa	134,186	135,554	1,368	1.02	1,760	1,266	494	874	615	259
Nevada	99,248	99,587	339	0.34	773	982	-209	548	95	453
Orange	3,075,341	3,098,183	22,842	0.74	44,582	17,389	27,193	-4,351	17,584	-21,935
Placer	322,953	329,818	6,865	2.13	3,897	2,257	1,640	5,225	699	4,526
Plumas	21,013	20,891	-122	-0.58	174	226	-52	-70	29	-99
Riverside	2,004,174	2,070,315	66,141	3.30	35,144	13,539	21,605	44,536	7,898	36,638
Sacramento	1,396,496	1,415,117	18,621	1.33	21,703	9,716	11,987	6,634	5,424	1,210
San Benito	57,128	57,493	365	0.64	886	275	611	-246	245	-491
San Bernardino	2,011,404	2,039,467	28,063	1.40	35,351	12,227	23,124	4,939	6,907	-1,968
San Diego	3,077,877	3,120,088	42,211	1.37	46,460	20,298	26,162	16,049	13,067	2,982
San Francisco	806,210	817,537	11,327	1.40	8,683	6,105	2,578	8,749	9,192	-443
San Joaquin	671,115	680,183	9,068	1.35	11,880	4,392	7,488	1,580	3,572	-1,992
San Luis Obispo	264,972	267,154	2,182	0.82	2,740	2,082	658	1,524	431	1,093
San Mateo	726,260	734,453	8,193	1.13	9,667	4,626	5,041	3,152	4,820	-1,668
Santa Barbara	421,337	425,710	4,373	1.04	5,998	2,884	3,114	1,259	1,884	-625
Santa Clara	1,790,272	1,820,176	29,904	1.67	26,347	8,454	17,893	12,011	12,867	-856
Santa Cruz	262,150	265,183	3,033	1.16	3,583	1,666	1,917	1,116	1,340	-224
Shasta	180,129	181,380	1,251	0.69	2,213	1,838	375	876	107	769
Sierra	3,464	3,400	-64	-1.85	14	37	-23	-41	1	-42
Siskiyou	45,618	45,695	77	0.17	532	533	-1	78	43	35
Solano	421,815	423,970	2,155	0.51	5,909	2,668	3,241	-1,086	1,637	-2,723
Sonoma	477,615	482,034	4,419	0.93	5,874	3,836	2,038	2,381	1,226	1,155
Stanislaus	515,660	523,095	7,435	1.44	8,918	3,598	5,320	2,115	1,959	156
Sutter	92,715	95,516	2,801	3.02	1,634	725	909	1,892	871	1,021
Tehama	61,369	62,093	724	1.18	839	641	198	526	109	417
Trinity	13,959	14,012	53	0.38	124	153	-29	82	6	76
Tulare	422,594	430,974	8,380	1.98	8,633	2,668	5,965	2,415	2,106	309
Tuolumne	56,882	56,910	28	0.05	497	620	-123	151	42	109
Ventura	818,803	826,550	7,747	0.95	12,442	5,120	7,322	425	3,575	-3,150
Yolo	193,262	197,530	4,268	2.21	2,689	1,121	1,568	2,700	949	1,751
Yuba	70,053	71,612	1,559	2.23	1,376	554	822	737	184	553
California	37,332,976	37,771,431	438,455	1.17	565,169	237,884	327,285	111,170	199,931	-88,761

POPULATION PROJECTIONS BY RACE/ETHNICITY FOR
CALIFORNIA AND ITS COUNTIES 2000-2050
REPORT 06 P-1

TABLE 1	TOTAL POPULATION					
	2000	2010	2020	2030	2040	2050
ALAMEDA	1,453,078	1,550,133	1,663,481	1,791,721	1,923,505	2,047,658
ALPINE	1,261	1,369	1,453	1,462	1,411	1,377
AMADOR	35,357	40,337	47,593	54,788	61,550	68,487
BUTTE	204,065	230,116	281,442	334,842	387,743	441,596
CALAVERAS	40,870	47,750	56,318	64,572	72,230	80,424
COLUSA	19,027	23,787	29,588	34,488	38,131	41,662
CONTRA COSTA	956,497	1,075,931	1,237,544	1,422,840	1,609,257	1,812,242
DEL NORTE	27,680	30,983	36,077	42,420	49,029	56,218
EL DORADO	158,621	189,308	221,140	247,570	280,720	314,126
FRESNO	804,508	983,478	1,201,792	1,429,228	1,670,542	1,928,411
GLENN	26,764	30,880	37,959	45,181	54,000	63,586
HUMBOLDT	126,839	134,785	142,167	147,217	150,121	152,333
IMPERIAL	143,763	189,675	239,149	283,693	334,951	387,763
INYO	18,181	19,183	20,495	22,132	23,520	25,112
KERN	665,519	871,728	1,086,113	1,352,627	1,707,239	2,106,024
KINGS	130,202	164,535	205,707	250,516	299,770	352,750
LAKE	58,724	67,530	77,912	87,066	96,885	106,887
LASSEN	34,108	37,918	42,394	47,240	51,596	55,989
LOS ANGELES	9,578,960	10,514,663	11,214,237	11,920,289	12,491,606	13,061,787
MADERA	124,696	162,114	212,874	273,456	344,455	413,569
MARIN	248,449	253,682	260,305	273,151	287,153	307,868
MARIPOSA	17,150	19,108	21,743	23,981	26,169	28,091
MENDOCINO	86,736	93,166	102,017	111,151	121,780	134,358
MERCED	211,481	273,935	348,690	439,905	541,161	652,355
MODOC	9,628	10,809	13,134	16,250	20,064	24,085
MONO	13,013	14,833	18,080	22,894	29,099	36,081
MONTEREY	404,031	433,283	476,642	529,145	584,878	646,590
NAPA	125,146	142,767	165,786	191,734	219,156	251,630
NEVADA	92,532	102,649	114,451	123,940	130,404	136,113
ORANGE	2,863,834	3,227,836	3,520,265	3,705,322	3,849,650	3,987,625
PLACER	252,223	347,543	428,535	512,509	625,964	751,208
PLUMAS	20,868	21,824	22,934	24,530	26,279	28,478
RIVERSIDE	1,559,039	2,239,053	2,904,848	3,507,498	4,103,182	4,730,922
SACRAMENTO	1,233,575	1,451,866	1,622,306	1,803,872	1,989,221	2,176,508
SAN BENITO	53,927	64,230	83,792	103,340	123,406	145,570
SAN BERNARDINO	1,721,942	2,177,596	2,581,371	2,958,939	3,309,292	3,662,193
SAN DIEGO	2,836,303	3,199,706	3,550,714	3,950,757	4,241,399	4,508,728
SAN FRANCISCO	781,209	818,163	844,466	854,675	858,532	854,852
SAN JOAQUIN	569,083	741,417	965,094	1,205,198	1,477,473	1,783,973
SAN LUIS OBISPO	248,322	269,734	293,540	316,613	338,760	364,748
SAN MATEO	711,031	736,667	761,455	786,069	807,587	819,125
SANTA BARBARA	401,115	434,497	459,498	484,570	509,920	534,447
SANTA CLARA	1,693,128	1,837,361	1,992,805	2,192,501	2,412,411	2,624,670
SANTA CRUZ	256,695	268,016	287,480	304,465	318,413	333,083
SHASTA	164,794	191,722	224,386	260,179	295,281	331,724
SIERRA	3,701	3,628	3,508	3,290	3,356	3,547
SISKIYOU	44,634	47,109	51,283	55,727	60,656	66,588
SOLANO	396,995	441,061	503,248	590,166	697,206	815,524
SONOMA	461,618	495,412	546,151	606,346	676,179	761,177
STANISLAUS	451,190	559,708	699,144	857,893	1,014,365	1,191,344
SUTTER	79,632	102,326	141,159	182,401	229,620	282,894
TEHAMA	56,130	65,593	79,484	93,477	108,345	124,475
TRINITY	13,155	15,172	18,236	22,136	26,030	30,209
TULARE	369,873	466,893	599,117	742,969	879,480	1,026,755
TUOLUMNE	54,863	58,721	64,161	67,510	70,325	73,291
VENTURA	758,884	855,876	956,392	1,049,758	1,135,684	1,229,737
YOLO	170,190	206,100	245,052	275,360	301,934	327,982
YUBA	60,598	80,411	109,216	137,322	168,040	201,327
CALIFORNIA	34,105,437	39,135,676	44,135,923	49,240,891	54,226,115	59,507,876

Department of Finance
Demographic Research Unit
2007

COUNTY OF IMPERIAL

2000-2005 HOUSING ELEMENT

JURG HEUBERGER, AICP, CEP
Planning Director

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The exception of this low density aspect can be found in the several small rural unincorporated communities such as Heber, Seeley, Niland, Salton City and Palo Verde that have the basic infrastructure (to a lesser extent) associated with the incorporated cities. These small rural communities tend to be isolated from the cities. Beyond these small rural communities and located in the agricultural lands and the desert open space areas of the unincorporated County, there is a relatively small and geographically dispersed population that lacks the infrastructure associated with either the incorporated cities or the small rural communities.

The majority of the growth that occurs in the County tends to happen in the incorporated cities or in the areas surrounding the cities. The County has essentially established urban buffer areas around all the cities and communities located in agricultural areas (Please see the "Urban Areas" illustrated in the County General Plan Land Use Map provided in Appendix A of this Element). It is these buffer areas where growth outside of the incorporated cities tends to occur. Development in these areas is accomplished through the connection of services from a neighboring city, annexation into the city, or the establishment of new services to support the development. Growth outside of the "urban area" tends to be on a single lot basis. With the exception of a few small districts, neither major subdivisions nor major developments typically occur in the unincorporated areas outside of the "urban areas" due to the County's rural character, lack of available infrastructure and the agricultural based activities.

2. County Growth Trends

The best available source of demographic information is the federal census, which is conducted once every ten years. The Population Research Unit of the California Department of Finance is the best source for annual population estimates. One problem with the federal census is that it does not take into account the seasonal population changes. Imperial County attracts many seasonal migratory workers and retired people, especially during the months of November through February.

Population Characteristics

Based on the 1990 census, the total population of Imperial County increased from 92,500 to 109,303 between 1980 and 1990, an increase of 16,803 persons or 18.2 percent. The unincorporated area increased from 24,459 to 27,339 persons in the same period of time. This 11.8 percent increase represents a population growth of 2,880 persons in the unincorporated area and highlights the lower population growth in the unincorporated areas when compared to the County as a whole. Based on April 1998 SCAG estimates, the year 2000 population of Imperial County is 148,980, with an estimated 39,422 people living in unincorporated areas.

There are a number of potential factors that may support an accelerated population growth in the near future. These factors include: growth of the geothermal industry in the County; additional prisons; an additional USA/Mexico border crossing; the possible expansion of the U.S. Naval Air Facility; and a possible regional airport.

Household Characteristics

A household is any group of people living together in a residence, whether related or unrelated. A survey of household characteristics is useful to determine household size trends, income, overcrowding or under-utilization of housing, and the number of special needs households such as large families and female-headed households.

According to the 1997 Housing Survey there were an estimated 4,388 households in the unincorporated portions of the County in 1997. Approximately 24.5 percent of the households were renter-occupied, while the remaining 75.5 percent were owner-occupied.

The average household size was estimated to be 3.45 persons per household. Further, larger households with five or more persons per household comprised 29.7 percent of the community, while three or four person households constituted 36.8 percent of the households in the unincorporated County.

As depicted in Table 1, approximately 66 percent of the owner- and renter-occupied households in the unincorporated County have annual incomes below 80 percent of the area median income, meaning 2/3 of the households are considered lower income households. In addition, Table 1 also shows that a majority of renter households have annual incomes less than 50 percent of the median income, or 60 percent of the renter households are considered very low income.

Community Development Division
Southern California Association of Governments

SCAG

2004 Regional Transportation Plan/ Growth Vision:

SOCIO-ECONOMIC FORECAST REPORT

June 2004




Counties and Subregions

Imperial County Subregion

Population and Households

Imperial County shares a border with Mexico and is primarily agricultural. The county currently has about 1 percent of the SCAG regional population and about 1 percent of the households. The 2000 July figure shows that the population is 147,000 with 39,500 households.

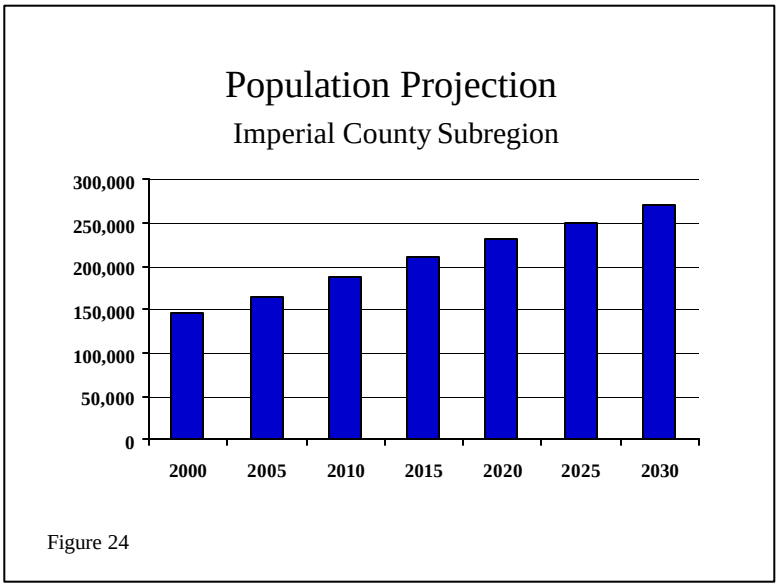


Figure 24

Imperial County's population is projected to be 270,000 in 2030, an 84 percent increase from its 2000 population. The number of households is projected to be 84,000 in 2030, up 112 percent from 2000. Based on the SCAG adopted 2004 RTP Socioeconomic Forecast, the Imperial County population and households are expected to grow at a faster pace than the regional average. Population is projected to grow at an annual rate of 2.8 percent and households are projected to grow at annual rate of 3.7 percent.

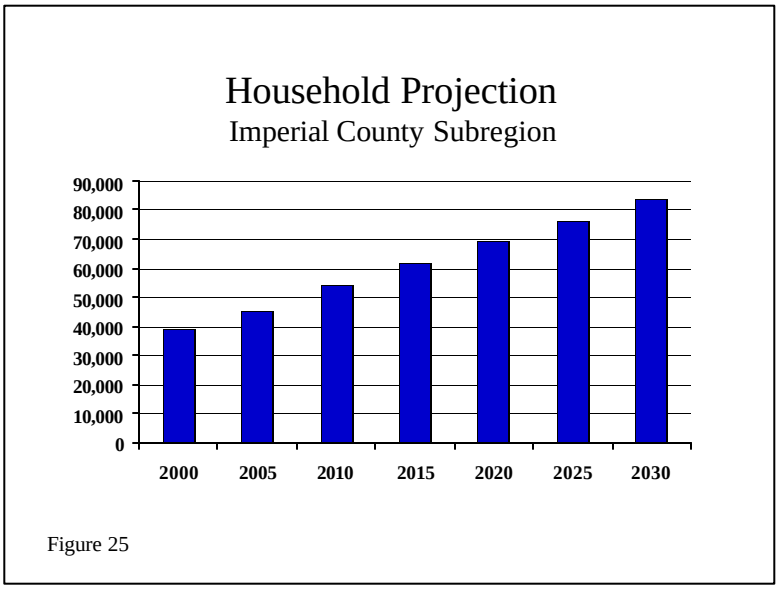


Figure 25

The County's rapid growth rate is primarily a result of the large Hispanic population in the county. In 2000, seventy two percent of the Imperial County population was Hispanic. Hispanics have the highest fertility rate,

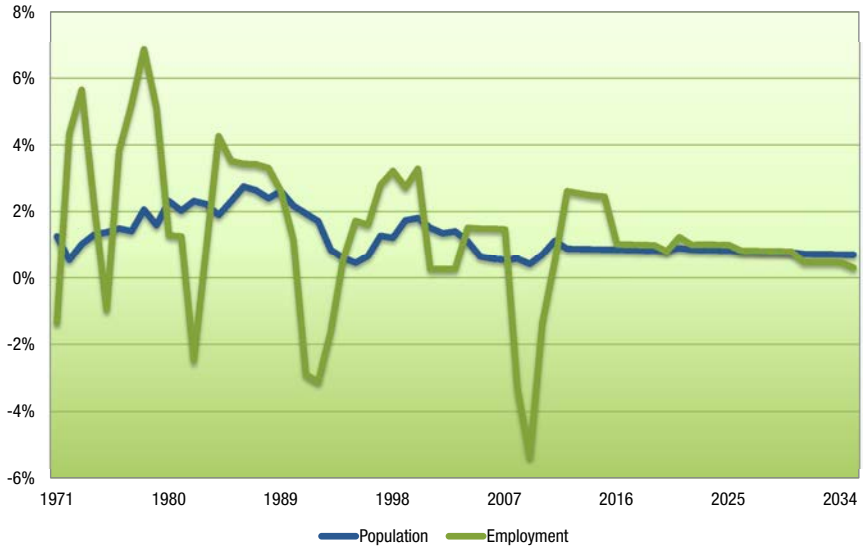
GROWTH FORECAST APPENDIX

REGIONAL TRANSPORTATION PLAN
2012–2035
SUSTAINABLE COMMUNITIES STRATEGY
Towards a Sustainable Future
RTP

Southern California Association of Governments

ADOPTED APRIL 2012

FIGURE 13 Percent Change of Population and Employment, SCAG Region, 1970–2035



POPULATION

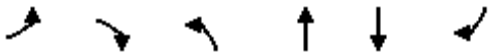
The slower population growth pattern experienced in the last decade is expected to continue into the future. Between 2010 and 2035, the annual population growth rate will be only 0.9 percent, which is lower than the growth rate for the past 20 years. The region will grow mainly through natural increase (see **FIGURES 16–18**).

The most salient demographic characteristics of the projected population in the region will be the aging of population and shifts in ethnic distribution (see **TABLE 5** and **FIGURES 14–15**). With the aging of the baby boomer generation (born between 1946 and 1964), the median age of the population is projected to increase from 34.2 in 2010 to 36.7 in 2035. The share of the population 65 years old and over is projected to increase from 11 percent in 2010 to 18 percent in 2035, while the share of the population less than 65 years old decreases from 89 percent in 2010 to 82 percent in 2035. In particular, the share of the population of the working age 16–64 has its share sharply decline from 65 percent to 60 percent during the projection period. This implies a future shortage of workers. With the increasing share of the older population and the decreasing share of the working age population, the aged dependency ratio (i.e., the number of aged people per hundred people of working age) is projected to increase from 17 percent in 2010 to 30 percent in 2035 (an increase of 13 percent during the period).

The other characteristic of the projected population is the racial/ethnic diversity (see **TABLE 5**). The region already has a high level of racial/ethnic diversity in 2010 with a Hispanic population of 45 percent, a non-Hispanic White population of 34 percent, a non-Hispanic Asian population and others of 14 percent, and a non-Hispanic Black population of 7 percent. The region's racial/ethnic composition is projected to exhibit a rapid change toward a majority Hispanic population of 56 percent in 2035, while the share of the non-Hispanic White population is projected to drop sharply to 22 percent.

Appendix J

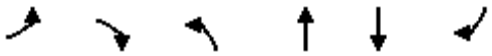
Year 2018 Intersection LOS Calculations



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	7	1	1	14	17	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	1	1	15	18	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	36	19	20			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	36	19	20			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	975	1059	1597			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	9	16	20
Volume Left	8	1	0
Volume Right	1	0	1
cSH	985	1597	1700
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.7	0.5	0.0
Lane LOS	A	A	
Approach Delay (s)	8.7	0.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



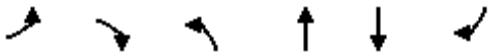
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	7	2	0	13	18	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	2	0	14	20	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	34	20	21			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	34	20	21			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	979	1058	1595			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	10	14	21
Volume Left	8	0	0
Volume Right	2	0	1
cSH	995	1595	1700
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.7	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.7	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix K

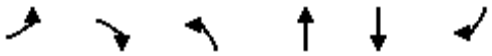
Year 2018 + Project (Phase 2) Intersection LOS Calculations



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	21	3	6	14	17	44
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	3	7	15	18	48
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	71	42	66			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	71	42	66			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	930	1028	1535			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	26	22	66
Volume Left	23	7	0
Volume Right	3	0	48
cSH	941	1535	1700
Volume to Capacity	0.03	0.00	0.04
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.9	2.2	0.0
Lane LOS	A	A	
Approach Delay (s)	8.9	2.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	16.0%	ICU Level of Service	A
Analysis Period (min)	15		



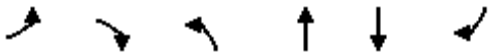
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	48	7	1	13	18	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	8	1	14	20	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	42	26	33			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	42	26	33			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	99	100			
cM capacity (veh/h)	968	1050	1579			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	60	15	33
Volume Left	52	1	0
Volume Right	8	0	13
cSH	978	1579	1700
Volume to Capacity	0.06	0.00	0.02
Queue Length 95th (ft)	5	0	0
Control Delay (s)	8.9	0.5	0.0
Lane LOS	A	A	
Approach Delay (s)	8.9	0.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix L

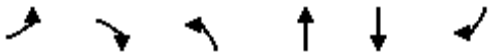
Year 2018 + Project (Phase 2) + Cumulative Intersection LOS Calculations



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	21	3	6	18	213	44
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	3	7	20	232	48
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	288	255	279			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	288	255	279			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	99			
cM capacity (veh/h)	699	783	1283			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	26	26	279
Volume Left	23	7	0
Volume Right	3	0	48
cSH	708	1283	1700
Volume to Capacity	0.04	0.01	0.16
Queue Length 95th (ft)	3	0	0
Control Delay (s)	10.3	2.0	0.0
Lane LOS	B	A	
Approach Delay (s)	10.3	2.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		



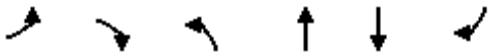
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	48	7	1	169	18	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	8	1	184	20	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	212	26	33			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	212	26	33			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	99	100			
cM capacity (veh/h)	776	1050	1579			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	60	185	33
Volume Left	52	1	0
Volume Right	8	0	13
cSH	802	1579	1700
Volume to Capacity	0.07	0.00	0.02
Queue Length 95th (ft)	6	0	0
Control Delay (s)	9.8	0.0	0.0
Lane LOS	A	A	
Approach Delay (s)	9.8	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	19.7%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix M

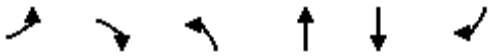
Year 2038 + Project (Phase 2) Intersection LOS Calculations



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	12	2	2	23	28	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	2	2	25	30	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	61	32	33			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	61	32	33			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	944	1042	1579			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	15	27	33
Volume Left	13	2	0
Volume Right	2	0	2
cSH	957	1579	1700
Volume to Capacity	0.02	0.00	0.02
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.8	0.6	0.0
Lane LOS	A	A	
Approach Delay (s)	8.8	0.6	0.0
Approach LOS	A		

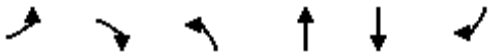
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	12	3	0	21	30	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	3	0	23	33	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	57	34	35			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	57	34	35			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	951	1040	1577			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	16	23	35
Volume Left	13	0	0
Volume Right	3	0	2
cSH	967	1577	1700
Volume to Capacity	0.02	0.00	0.02
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.8	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.8	0.0	0.0
Approach LOS	A		

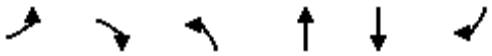
Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	26	4	7	23	28	45
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	4	8	25	30	49
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	95	55	79			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	95	55	79			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	99			
cM capacity (veh/h)	900	1012	1519			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	33	33	79
Volume Left	28	8	0
Volume Right	4	0	49
cSH	913	1519	1700
Volume to Capacity	0.04	0.01	0.05
Queue Length 95th (ft)	3	0	0
Control Delay (s)	9.1	1.8	0.0
Lane LOS	A	A	
Approach Delay (s)	9.1	1.8	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	53	8	1	21	30	13
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	9	1	23	33	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	65	40	47			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	65	40	47			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	99	100			
cM capacity (veh/h)	940	1032	1561			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	66	24	47
Volume Left	58	1	0
Volume Right	9	0	14
cSH	951	1561	1700
Volume to Capacity	0.07	0.00	0.03
Queue Length 95th (ft)	6	0	0
Control Delay (s)	9.1	0.3	0.0
Lane LOS	A	A	
Approach Delay (s)	9.1	0.3	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	13.4%	ICU Level of Service	A
Analysis Period (min)	15		